



The Prince's Foundation  
FOR THE BUILT ENVIRONMENT



# VALUING SUSTAINABLE URBANISM

A 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.

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A Report Measuring & Valuing New Approaches  
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 English Partnerships  
The National Regeneration Agency

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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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, Senior Graphic Designer, The Princes's Foundation.

JULY 2007



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



[PART I: By Hank Dittmar,  
Chief Executive and James Hulme,  
Director of Public Affairs at The Prince's  
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## Introduction: The Future of British Urban Life

Anybody working on the future growth of the UK; the developers, planners, architects and builders of our future communities, should contrive to take a long train journey across Britain. Shutting down PDA and laptop, you gaze from your seat at an extraordinary passing landscape.

The train describes a path through a quickly changing scene, maintaining its even grade as the country moulds into the soft peaks of hills and valleys. Heading north from the capital, bridges and stations of London stock will be left behind in favour of bright red brick for the houses and the factories of the Midlands, then, carried on viaducts across the heads of deep, green dales, you will see stone and slate marry in the form of barns. The field patterns are punctuated first by needle sharp elegant white spires; later, worship is indicated by the squat square bell towers better suited to the green-grey building stone of Lancashire and the Northern Fells. Head west, and you will be dazzled by sunshine on honey-coloured Cotswold townscape reminiscent of Provence; stay on the train another hour and you are amongst the "magpie" villages of black timber framed houses so characteristic of Herefordshire.

Down in the South West, beyond the exhilarating sea wall the train will pitch and roll over fierce gradients between shining fields of bright russet soil that is the base material of the cob and thatch cottages which huddle in the coombes below. The end of the line down here is marked by a terminus of sparkling granite, fit tribute to elegant Penzance. Everywhere, landscape, town and building are seen to blend.

But while the landscape and our built environment present us with an embarrassment of riches there are contrasting notes more likely to induce a creeping shame. Impartially, the train cuts through the best and worst of town and country. You cannot help but see the ring roads girdling every town you pass with their inevitable grey misery. No settlement of any size fails to have an attendant industrial estate of crinkly tin boxes where useful employment is hidden from sight, while all the larger towns have their retail sheds in the more obvious primary colours. These attract the cars from the endlessly swirling traffic roundabouts as iron filings toward a magnet. You see the windowless call centres, and the grotesque swollen hulks of the out-of-town malls, with little to choose between them and both standing featureless in shining seas of parked cars. You see neglected streets of boarded-up houses, where uncertain demolition jobs have been left half done.

Approach the big cities and be chilled by the sentinel high-rises, wind shaking their rattling concrete panels, the green spaces between too bleak even for weeds to thrive, the tower blocks that the councillors of Glasgow, Bristol or Liverpool – egged on by the city planners – once decided would be fit homes for people. And everywhere, ancient towns swamped by the little red boxes left by yesterday's housebuilders, their pantiles rising like a rampant, invasive and calcified last crop in fields around, identikit from Milford Haven to Sheringham, Eastbourne to Inverness. All these represent the aberrations from earlier forms of urban development that our forbearers could recognise as humane, necessary and desirable.

By contrast, development today represents a dirty word, inspiring resistance and enmity wherever it is proposed. And perhaps small wonder; these ugly accretions tell a complex, interwoven story: architectural indulgence; planners' social experiment; the short sighted business models of developers; ill-informed choices of homebuyers; absent leadership or emergency measures amongst the civic fathers. Most of all these strange, and markedly inefficient ways of living suggest a preference for suburban living in ourselves, and moreover our dependence on the cheap energy which allows us to space ourselves out at such distances from one another and our basic needs. This lifestyle now represents an age that is almost over.

#### OUR SCARCE RESOURCE

Statistics inform us that the United Kingdom covers 94,526 sq miles (244,820 sq km), less than half the size of our nearest EU neighbour France (at 211,209 sq miles) with whom we have broadly compatible population and GDP. With approximately 60 million inhabitants to accommodate at the new millennium, the British have for many years placed a necessary premium on our scarce land resource and, accordingly, have hotly debated the ways this land should be developed.

We are fortunate that so many dedicated and enlightened politicians, professionals and passionate activists have, through the years, done what they can in design, planning and policy to preserve the country from despoliation through overdevelopment; in current estimation something like 12% of the UK land mass is identified as developed. Many imagine the figure must be higher; in a recent CPRE poll a cross section of population questioned had the idea that over 50% of our surface area was urbanised. Some argue that our success in protecting the landscape leaves us room now to sprawl, as if the husbandry of past generations can all be spent in this one.

Unfortunately, despite cautious, preventative policies in the past there is no room for complacency in the contemplation of our future. The unique character of this island, its qualities of variety and subtle modulation, its gentle landscape, has been sorely compromised by a century of rapid, land-hungry and often wasteful growth, whose sprawling patterns have irrevocably marked and compromised the identity of our urban areas. This has not been, as some argue, a necessary adaptation to democracy, population growth and the rise in prosperity and well being.

Much of the growth we have seen, especially since the rise to predominance of the motor car, is unnecessarily profligate of land, mono-cultural and defies the traditions of urbanity for which the country was renowned through the 18th and 19th Centuries. It is not yet too late to accommodate further growth while repairing the damage, but it requires some strong intervention, planning skills and a frank appraisal by all of the right way of building, which can then be objectively pursued through good local governance.

Once we only spoke of scarce land, now the pinching realities of peak oil production and of global warming means there is no option but to moderate our land use and build in denser, cohesive urban forms, we must eschew previous tendencies toward car dependent sprawl and single-use zoning that began the planning disasters of the late 20th century, whose legacy is polarised, fragmented, mono-cultures. Today, near-derelict low income estates chafe against the insular covens of executive homes pushing ever further into green fields.

#### A NATION OF TOWN FOUNDERS

As the industrial age dawned we clearly knew how to build dense, high quality townscape, and the value – both economic and social – of planned urban areas was recognised by town alderman and speculator alike. The new streets that extended in regimented grids from the medieval centres of London and Edinburgh, Bristol, York, Liverpool and a host of smaller places were consistent. They shared a common goal by adding to settlements in a way that was harmonious and created value, despite being completed over many years; successive waves of growth often employed generations of planners and architects. Their quality, where they remain, is all the more remarkable today for the turbulent economic circumstances of the Georgian and Regency periods. These fluctuations did not affect the consistency of the building character nor – especially – compromise either rate of delivery or their enduring appeal. These periods may have benefited from a wealth of individual talent - from Wren to the Woods of Bath, Craig & Playfair in Edinburgh, Foulston in Plymouth – but their prototypes were easily and readily interpreted by a much broader range of practitioners, all identifying and building to a common pattern of urbanity where residences, offices and shops were assimilated into blocks and blocks into robust gridded plans, simple to understand and practical to negotiate for the town dweller.

Earlier ages have offered inviting precedents for urban dwelling; the methods of the 18th century are highlighted here because they channelled rapid urbanisation in town after town while delivering a flexible and adaptable arrangement of homes and streets. The pace of growth often outstripped that of our present day. Studying this legacy we see how many of these places offer a mix of uses and variety of architecture that now command high premiums. Our Georgian and Regency planners, later to be joined by the great engineers bringing metalled roads, rails and sanitation to the picture, accommodated rapid growth without the neglect of a quality we might call humanism. But swept along with the rate of change in industrial towns, the patterns began to break up in the late 19th Century, the suburbs put distance between the well-heeled and their workers, plans for the rich adopted romantic curves and carriage drives, while their terraces were swapped for paired and single villas set deep in sumptuous gardens of rhododendron and lilac.

Faced with the stark inequalities of the late 19th Century city, and the pollution, noise and grime of contemporary industry, Ebenezer Howard and the garden city proponents championed the advantages of the suburbs, suitably downscaled, for the factory hands and tradespeople, and slowly but inexorably the citizen retreated from the city, and gaps of empty waste ground began to appear between the filthy factories. Seldom were new suburbs even of the quality of Letchworth, Hampstead Garden Suburb or a Port Sunlight philanthropists' studies. Increasingly, they were the unplanned product of speculation along the arterial roads and across the former farms at the city edge, regional differences subsumed by the standards and fashions of the inter-war "Ideal Home". The growth of the suburb is always the story of transport, and as the trams and trains that had been the pulse of the Victorian suburbs were displaced by the perceived advantages of the private car, the next generation of suburbanite was anticipated in a new style of planning. This attempted to build on the appeal of the garden suburbs to offer yet lower densities with plenty of space between homes, and the appearance of the Radburn Plan, a direct import from the US, now took these homes from their places on an interconnected grid and arranged them in quiet enclaves. The cul-de-sac became the emergent mechanism for movement control, and was proposed as the solution to traffic noise and child road safety, burglary and even ill health, as the proud home owner retreated behind a screen of privet. The age of residential insularity was not far off.



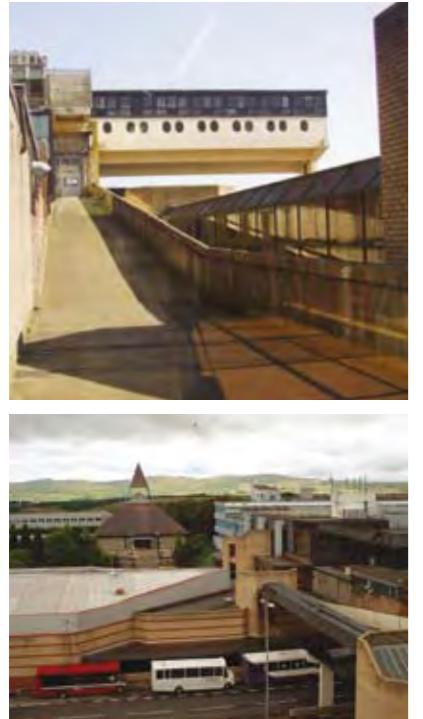
## LOSS OF CHARACTER, LOSS OF HOPE

Bettjeman predicted without intervention the country would become; “a civilisation which spends most of its waking hours in tin boxes, watching traffic lights and decanting itself into multi-storey boxes which are the architecture of the motor age”

As the suburbanisation gathered pace, the enormous social changes it brought did not go unnoticed. The housing boom of the 1930s, in which four million homes were added in ribbon development or radial estates, in the familiar semi-detached style, attracted adverse commentary from a broad range of critics including John Betjeman, Clough Williams-Ellis, DH Lawrence and many others. Lawrence styled the villas “hideous little man-traps”, for Williams-Ellis, writing in *England and the Octopus*, the unsustainable patterns of urban development identified in the 20s and 30s afforded a grim future legacy. (A passionate advocate for rural conservation, Williams-Ellis was a leading founder of the CPRE and his own celebrated model village – Portmerion – is a violent reaction to what he saw as the monotony of contemporary life). Betjeman would return to the subject throughout his life, from his days as a provocative architecture critic to his final elevation to Poet Laureate. In the 60s he predicted that without intervention the country would become: “*a civilisation which spends most of its waking hours in tin boxes, watching traffic lights and decanting itself into the multi-storey boxes which are the architecture of the motor age.*”

For each concerned the loss of regional identity was paramount, as the new places took on a style that was neither local nor offered the proportions and character of previous ages, beyond vague stylistic references that were “tudorbethan” or “jazz-age” as taste dictated. Some of these products are so bizarre as to have a quaint appeal today, most are merely banal, and all have compromised the idiosyncrasy of the towns to which they were added. Most were in fact put up by the local builder, and there is regional variety – the stone built semis of the North, for example, or the application of some particular rendertype, but there was no official guidance on the subject, nor any particular means to check development, a laissez faire that seems incredible today.

[Cumbernauld New Town today]



## THE AGE OF INTERVENTION &amp; PLANNING

By the end of the war social change and a new political will identified town planning as the business of the public sector. Vast numbers needed new homes, historic centres were bomb-damaged and worn. At the same time, the unplanned growth of the 30s was – commendably – checked in the Town and Country Planning Act of 1945 together with the identification and adoption of Green Belt around major urban areas. We still benefit from the protection of these Acts today. New building was of course necessary and a policy of new centres of population was pursued with New Towns incepted at Harlow, Hatfield and Stevenage, north of London.

The movement spread countrywide over the next thirty years with the creation of towns like Telford, Runcorn, Skelmersdale, Peterlee, Cumbernauld and others, while Milton Keynes emerged as the movement’s apogee (and most singular success). That most of these are car-based communities based on zoned subdivisions reflects planning theory from 1945 onward. Many fail on this basis alone, and in recent years have been the subject of efforts to re-integrate different uses and break up the mono-cultural patterns of the past. As these post war ideal communities begin to show signs of strain (often precipitated by economic downturns to which their single-industry dependence made them vulnerable) their impermeable street layouts, their segregated footpaths and roadways, their remote shopping and leisure centres and illegibility have made them inflexible, unpopular with newcomers and often isolated and insular places to remain.

## RECENT PLANNING POLICY

Despite the new towns, growth of traditional towns continued through the 60s, 70s and 80s, as residential estates were grafted onto old centres. The visual blight they caused, together with the strain on local services and local roads, was by the 70s prompting new concern and tighter planning. Manuals such as the Essex Design Guide were drafted in an attempt to influence the visual character of otherwise ordinary developments. But in the 1980s a further blow was dealt to the efficacy of traditional town centres with the relaxation of controls on out of town office and retail development – in the ensuing scramble, most towns received some peripheral development and town centres suffered from falling demand as their shops could not compete with the incoming “big box” retailers. Car use increased exponentially, helped by general prosperity and the decline of bus services prompted by the chaos of bus deregulation.

By the 1990s, an outcry against further new roads that the increased car use demanded, together with a general sense that the character of many special places had been eroded, prompted “town centre first” policies by both conservatives and labour governments, and a more comprehensive guidance on urbanism has been enshrined in the PPG series of John Prescott’s department (this now continues as DCLG Planning Policy Statements).

But our car dependency, establishing behaviour and patterns of land use, has been a genie hard to return into the bottle. Only once since the war has car ownership suffered a serious check in the wake of the OPEC crisis, but there were a million fewer vehicles on the road in 1974. How would we cope with a similar crisis today?

## CURRENT GROWTH PLANS

There are approximately 160,000 new houses built in the UK each year. Kate Barker’s reviews of Housing Supply and Planning both posit mechanisms for accelerated delivery of these homes, which would maximise the potential of the designated growth areas to bridge the affordability crisis, predominantly in the South East. The four main designated Growth Areas are the Thames Gateway; Milton Keynes & South Midlands; London-Stansted-Cambridge-Peterborough (M11 Corridor) and Ashford, Kent. Combined with London, the aim is for these areas to sustainably provide 200,000 additional homes above previously planned levels by 2016. Additionally, in December 2005, 29 more peripheral areas have now been named as New Growth Points across the East, South East, South West, East Midlands and West Midlands. If all of the proposed growth is realised these New Growth Points would further contribute around 100,000 additional dwellings by 2016, an increase of around 32 per cent on previous plans for housing supply in these areas. We can therefore estimate two million new homes have been rubber stamped for delivery over a mere 10 years. Built in the unsustainable, sprawling, manner that current models espouse, these homes will have a deleterious effect on both the urban centres from which they feed and the countryside that they encroach. Following the low density model of the housing estate, car use can only be exacerbated by such mind boggling growth and the impacts on pollution, climate change, social exclusion and loss of natural habitat and natural amenity will be devastating. At 12 units per hectare (the built norm of 1980s growth) this number of homes would cover an area rather larger than Greater London; even at 50 units per hectare (the upper level of current governmental guidelines for suburban development) this number of homes represents a land take four times the size of Leeds or Leicester. Already the Barker report promotes the declassification of the very “green belts” that have so successfully held back low density sprawl these last fifty years. Ignore the fine

[Examples of sprawl in the United States]

grained mix of uses that traditionally supported communities, and these places will fail in vast numbers, lacking the local schools, local shops, characterful streets and walkability of true neighbourhoods. A frank awareness of the absence of supporting infrastructure (particularly public transport) mean that these lofty allocations are now being challenged on the ground by local area planners in Thames Gateway and elsewhere.



#### THE VIEW FROM HERE

Their reliance on a car means that the average US citizen consumes four times more than an equitable per capital share of the world's resources would allow

One does neither need the qualities of a clairvoyant nor an advanced social scientist to see the potential threat of a deregulated planning system and a return to urban sprawl. We only have to look across the Atlantic to see how years of unchecked development have served the United States. The US system of residential subdivision attached to urban centres by major arterial freeways continues unchecked, despite valid alternative models offered by developers of the New Urbanism that actually suggest more value accrues to traditional style mixed use communities where these are built. The latest manifestation of the United States tract development, the "McMansion", now sees enormous homes filling residential plots while resolutely detached from the adjacent dwelling next door, and of course offering ample garaging for the car that are the only valid way to leave the neighbourhood. Car dependency for most areas is total, and an attendant obesity epidemic (mentioned later in this report) is crippling the nation's health resources. Their reliance on a car means that the average US citizen consumes four times more than an equitable per capital share of the world's resources would allow.

Translate the sheer scale of American sprawl to the UK and the extent of the problem becomes clear – imagine huge areas of continuous development from London to Birmingham, Oxford to Cambridge, development from the Vale of York to Newcastle or Liverpool to Hull and the distances involved in the sprawl of Atlanta, Houston or Orlando become apparent. But this is precisely what will happen to large parts of the South East if the growth areas are allowed to pursue their course with little or no intervention or guidance from either central or local government, the design professions and regional strategists. The "mono-zoning" of the UK into macro economic uses is marked and insidious. Observe on any

journey across the Midlands the preponderance of distribution sheds in the formerly quiet shires of Northampton and South Leicestershire – this is the "Golden Triangle", promoted by agents and planners as a centre of regional and national warehousing and distribution. Located between Northampton, Coventry and Leicester, its success is primarily due to its central location and strategic road communications to the M1, M6, M69 and A14. There is no urbanity here, only big boxes and arterial roads, the human interest provided by transitory jobs based on stock movements – is this a valid way to deploy our scarce resources of land and building materials? Meanwhile Ashford, another of the major growth areas in the South East, and well placed at a national and international rail centre, has been the victim of the most featureless piecemeal planning in the past fifteen years, causing civic leaders to demand something better of future growth and establish – at last – a rigorous masterplan.

**BUT CAN WE DO IT?** In an economy which champions rapid growth, which thrives on economies of scale, in sectors which favour the global over the local, can we even begin to redress the balance, promoting strong local leadership, positive planning, mixed use settlement that eschew the car? This report offers evidence that by demanding these urban patterns we are not anti-competitive and uneconomic, but does ask for commitment and a long term, collaborative approach. Indeed, evidence from this report supported by experience in the US suggests that where the private sector has taken the lead on creating real communities, a value has been created far in excess of the local market average, and at little or no extra cost to the developer.

Our own observations, and those of property market specialists, are that the most value accrues to the timeless places, where astonishing levels of mixed use and density are achieved, although they would not be built today – Kensington, Notting Hill, Bloomsbury, Islington, Edinburgh New Town, Glasgow West End, Bath, Jesmond, Clifton, and their smaller town comparators. These are also places that keep value through lean periods and recover their premium quicker. By comparison, there are places whose character and identity have been compromised to the extent that their homogeneity offers no market differential, and this has a suppressant effect on their market performance – Swindon, Ashford, Chatham, Portsmouth, Wolverhampton, Stoke-on-Trent, Bolton, Burnley, Gateshead – these, in the prosperity of recent times, are not necessarily trapped in unbreakable cycles of poverty but have become the "nowhere" places lacking the means to place a value on identity in a fickle market.

[Local character and fine grain at Poundbury]



We now have built exemplars of this physical model, which can be identified with the Sustainable Communities agenda and beyond. The principles of mix, legibility, flexibility, local character and fine grain translate to every scale and every part of the town planning spectrum. The design characteristics are within the wit of the home builders and the developers, but they have to be encouraged by willing and engaging planners, and shown the evidence that these models work. Government must continue its drive towards walkable, dense urban centres and resist any entreaty for bigger roads and out of town blight. At the same time, it must be made easier to achieve mixed-use walkable developments, and the planning system must be revised to ease the path towards real sustainability. Current government policy pushes, but does not beguile, developers, and the speedier attainment of planning will be a powerful incentive for change. Energy must be treated as a special resource, not to be squandered, and location efficiency should be maximised when planning the interrelationship of home, school, shop, office and workplace. There will still be a place for the house with a garden in our vision of the future, but also flats, sheltered accommodation, desirable town houses, all mixed with shops and services. Local leadership must also re-emerge; the trend towards Transition Towns led by

Totnes in Devon sees local groups mobilized on energy descent plans. Suburbs like Brixton in South London have now signed up – how long before the first Transition City emerges? But local leadership is simultaneously inspiring, emotive and easily disheartened. Central government must endorse and promote these efforts, maximising on the ability of local knowledge to tap sustainable sources particularly in areas like food and construction.

Hopefully this study deals with one of the perceived barriers to better urbanism – the myth that it doesn't pay or cannot be realistically afforded. Others remain and are being tackled – street and highway standards, allocation of land by use rather than for mixed communities, the planning gain system and others. The Prince's Foundation seeks to build these better communities both by example and by working with other partners in efforts like this Report. In developing the commercial argument for sustainable urbanism in the UK we acknowledge that there are several industry initiatives underway which to improve the quality and sustainability of residential development. It is hoped that this report will put wind in their sails. Since 2006, The Prince's Foundation and the Home Builders Federation have worked on several initiatives, including design training and recognition criteria, that identify the challenges to the industry delivery model when building a mixture of uses, densities, types and tenures to development. The HBF have also formed the Zero Carbon Homes task force, which addresses on behalf of the industry Gordon Brown's December 2006 resolution that all new homes will have a neutral carbon footprint by 2016. Meanwhile CABE's Building for Life standard, established in partnership with the HBF, the Civic Trust and others, sets the national benchmark for well-designed housing and neighbourhoods in England. The scheme has been designed to recognise and promote new housing projects that demonstrate a commitment to high design standards and good place making. On another front, The Prince's Foundation and the Sustainable Development Foundation have joined several non PLC housebuilders to form the Good Homes Alliance, committed to pushing the envelope on improved environmental performance and quality through a rigorous post occupancy evaluation.

This has been a snapshot of the planning debate, appended to a warning of a dark future of overdevelopment, homogeneity, loss of identity and marginalisation of our weakest social groups if we fail to make the right choices. We have plenty of evidence showing both the right and wrong way to go about planning our future; have we the strength of conviction to follow the humane path, and so endow the country with a long term vision for ourselves and our heirs, in a country that still offers the richest opportunities for a contented life on our overburdened planet.



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



## PART II

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[PART II: SECTION 1]

## Background & Methodology

This report contains the results of research undertaken by Savills Research in the second half of 2006. The research was designed to do two things; first, to define and then to measure the physical characteristics of sustainable urbanism. Second, to look at the economic characteristics of sustainable urbanism in terms of present total development value and to identify any differences in other forms of value generation and residential value growth between it and other forms of urbanism.

The results of this research are discussed below in Section 4 and the details of the method and results are contained in a technical report at Section 5.

### 1.2 METHODOLOGY

The research sets out to measure and analyse different types of neighbourhood form and land use, looking at building occupation and financial perspectives to develop a baseline model against which examples of sustainable urbanism and conventional suburban development are tested. In doing so, it attempts to identify the potential quantitative value associated with sustainable urbanism.

A focus group was held with the land promoter/land owner of each of the sustainable urbanism case studies in order to gain an understanding of their experiences. These discussions highlighted the similarities and differences in their respective working methods/business models/procurement models. The performance of the schemes in relation to speed of planning, rates of sale, and robustness of performance over time was also discussed, as were the lessons learnt. This assisted in producing a more detailed understanding of exemplar schemes.

**The value calculated for each of the case studies was based on publicly available sources of information on residential and commercial values, therefore the development value calculated in each case is an approximation rather than being representative of exact value.**

Three types of neighbourhood, in three different locations, were selected to be measured. It was envisaged that the research would yield a better understanding of the relative land use and financial performance under each scenario. It was also envisaged that this research would identify the commercial and financial factors that presently inhibit the property market from delivering a form of urban development that more closely matches proven market demand, and the government's objective of delivering sustainable communities.

The starting point of the research was the identification of three sustainable urbanism schemes (exemplar) to which traditional (old) and conventional (standard) schemes could be compared. The exemplar case studies selected were

- FAIRFORD LEYS, AYLESBURY
- POUNDBURY, DORCHESTER
- CROWN STREET, GLASGOW

## Three elements of sustainable urbanism: Environmental, Social & Economic

The second stage of the analysis focuses on identifying the potential differences that exist in value between the exemplar schemes and their comparators. We have identified value derived from the residential element of the schemes and from the commercial premises also found on each of the sites.

The value of each of the schemes has been 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 residential properties. This provided a basic value expressed as £ per hectare of the total site area and £ per ha of the built area only.

The following sections discuss the differences and similarities that exist between the exemplar schemes and their standard and old comparators, and how their unique features enhance or hinder the creation of a sustainable place/scheme.

### 1.3 WHAT IS SUSTAINABLE URBANISM?

For the purposes of this report, we first have to define what we mean by sustainable urbanism. There are three elements of sustainability: Environmental, Social and Economic. The urban fabric and layout of a place can have a big impact on all three.

Environmental sustainability can have as much to do with the layout of a place as with the architecture and technology of individual buildings. An urban form that is environmentally sustainable will be one that enables, or even facilitates, inhabitants and visitors to engage in a more environmentally sustainable lifestyle. One major impact that the layout of a place will have, for example, is on the ability of its inhabitants and visitors to walk to all the amenities that they need rather than be forced to use a car. Many traditional urban forms achieve this, largely because they evolved in the absence of motorised transport. More recent styles of late 20th century urban form make car use a necessity by separating and segregating different use classes into different neighbourhoods. Sustainable urbanism puts dwellings, retail, leisure and commercial uses into much closer, often walkable, proximity to effective public transport connections.

Social sustainability is more difficult to define but, in the context of urbanism, might be said to mean a place that enables people and communities to achieve their full potential and physical forms and layouts that do not hinder, discourage or distract from this. In practice, this may involve the provision of an appropriate and varied mix of dwellings of different tenures, sizes and types, a variety of spaces and buildings for recreational and community activities, suitable, flexible spaces and buildings to allow a wide variety of service providers and commercial enterprises – employers – to flourish and expand, or change over time. This physical layout might be combined, or combinable, with the ongoing provision of suitable estate management services to ensure that a place is capable of evolving as the broader environment – physical, social and economic – matures.

Our observations are that the social sustainability of a place is often reflected in the open-market values of residential property in the area. We see this as an effect, not a cause of social sustainability as is evidenced by price rises that occur with gentrification of old areas as new social groups move in. This element is therefore closely linked with the third element of sustainability, economic sustainability without which, arguably, there can be no other types.

When it comes to economic sustainability, there are two elements. First, the commercial viability of developing a socially and environmentally sustainable scheme in the first place. This will be dependent on sufficient, or superior, value being created by taking an

environmentally and socially sustainable approach to development. Second, the ongoing ability for a neighbourhood or settlement to sustain its inhabitants economically, by providing suitable space for economic activity to occur and prosper, in encouraging economic synergies to take place and by insulating property owners from value fluctuations.

Sustainable housing, for example, will need to achieve sufficient value to make a scheme viable and will need to grow in value at least in line with the rest of the market to minimise the risk of deprivation in its occupants. Equally for an area's housing provision to meet the test of social sustainability it must be able to respond to individual and household needs across the range of 'life-stages' and economic circumstances enabling the maintenance of a robust and stable community.

### 1.4 LOCATION

There is a growing realisation that the quality of housing is not governed by the quality of architecture and design of single buildings alone. No matter how high the quality of a single dwelling, the value of it will be more affected by what many Estate Agents might call 'location'.

The quality of 'location' is elusive and many-faceted. It is made up of more than just proximity to workplaces and access to transport networks (although these undoubtedly have a part to play). Access to amenities such as shops, leisure, open space, schools and their catchment areas, hospitals and other public services are also important and so too is the overall look and 'feel' and urban design of a place. There has been a growing interest in this phenomenon in recent years amongst the design community and some have termed it 'new urbanism', some 'good urbanism' and some 'sustainable development'. We have chosen to dub it 'sustainable urbanism' for the purposes of this report. Some studies, in both the US and UK, have shown that certain types of urbanism have the capability to add value to real estate, by creating locational value, over and above what might otherwise be expected from the buildings on the original site alone. This added location value causes problems in site appraisal for development purposes because it is difficult to factor in using conventional, backward-looking valuation methods. The increased predominance of large sites, capable of and requiring to, create their own location has, in recent years, brought the issue increasingly to the front line of thinking on new build development.

A recent survey of UK householders (Savills Research, 2006) showed that "wanting to live in a better neighbourhood" was a motivating factor in 14.2% of moves. Clearly, an understanding of what constitutes a 'better neighbourhood' will enable such schemes to be built more frequently and reliably.

*"...wanting to live in a better neighbourhood"*

[UK householders motivating factor in 14.2% of moves]

### 1.5 THE PHYSICAL FORM ASSOCIATED WITH SUSTAINABLE DEVELOPMENT

That which constitutes a high quality location is much less easy to define than what constitutes a high quality house and yet, thousands of developers around the country are being asked to provide 'sustainable developments'. Unprecedented pressure to provide large numbers of housing units in a limited number of huge, designated development areas means that we have to learn what makes places, and new places in particular, the sort of places that people want to live and are capable of thriving. Many of the development models from the second half of the 20th century have not resulted in this sort of outcome.

One purpose of the research in this report is to measure some of the characteristics of places that may have an impact on both the nature of their urbanism and on their value. This will help us to begin to identify what sustainable urbanism actually consists of and what its important features may be said to be. We can then go on to determine whether these features incur a sufficient value premium to motivate developers and/or landowners to incentivise their future development.

Our physical form analysis starts by measuring the proportion of land used for:

- Roads
- Pavements
- Cycle paths (where possible)
- Verges & small greens
- Parks
- Other open space
- Playgrounds
- Public buildings
- Private, commercial premises
- Driveways
- Front gardens
- Rear gardens
- Car parks/parking courtyards
- Garages
- Shops, offices and other commercial uses
- Open water
- Other spaces

[The scheme's architecture should respond to its context in style, scale and in choice of materials]

Our analysis also involved examining and comparing other features of each of the schemes in relation to residential and commercial mix and demographic differences such as:

- Number and type of dwelling units
- Number and type of businesses and other organisations present
- Type of households present and housing tenure
- Population numbers

## 1.6 SELECTION OF EXEMPLAR CASE STUDIES & COMPARATORS

The selection of the exemplar case studies was based on the fact that they demonstrate principles of sustainable urbanism. But what constitutes sustainable urbanism? For the purposes of this research a definition of sustainable urbanism has been based on the analysis of physical and land-use qualities of existing urban areas which are judged by The Princes Foundation to provide 'walkable' sustainable urban form.

From this analysis the qualities of 'sustainable' urbanism were identified and informed the selection of the exemplar case studies (SEE QUALITIES OF SUSTAINABLE URBANISM)

The measurement exercise undertaken has provided valuable data to place these observed qualities of sustainable urbanism onto a more analytical footing. The first stage of the work provides the measured comparisons of the disposition and proportion of specific uses on land within each scheme, to form the basis of objective comparison of one manifestation of urbanism to another. This will begin to enable relative costs and values to be placed against specific urban features, and uncovers useful data around the relative 'land efficiency' of different forms of urbanism.



### QUALITIES OF SUSTAINABLE URBANISM

**MIXED USE:** The schemes are expected to be predominantly residential with a mix of other uses such as retail, business and community uses.

**MIXED TENURE:** A resident population mixed in terms of income groups and occupations.

**ARCHITECTURAL QUALITY:** The scheme's architecture should respond to its context in style, scale and choice of materials.

**MIXED HOUSING TYPE:** Provision of a range of housing types to support movement within the neighbourhood and therefore encourage community stability.

**WELL CONNECTED TO PUBLIC TRANSPORT:** To encourage walking and cycling and therefore reduce car dependency.

**WALKABLE NEIGHBOURHOODS:** The design of the development to incorporate community and neighbourhood commercial facilities in such a way that they can be accessible by foot. This also means the provision of a street layout that is well interconnected allowing pedestrians to take a variety of routes throughout the scheme.

**HIGH QUALITY URBANISM THAT CREATES DEFINABLE STREETS:** Streets which display a legible hierarchy with appropriate dispersal of building densities/uses/typologies to the nature of the street with building height contributing to street character.

**ROBUST, ADAPTABLE URBAN FORM:** A permeable grid of streets that avoids cul-de-sacs and encourages a range of option routes for pedestrians and vehicles. The street grid should also be integrated with the existing surrounding area.

**RELATIVELY HIGH NET DENSITIES:** Density levels should be distributed across the site with suitable densities to support the viability of mixed use areas.

**WELL INTEGRATED OPEN SPACE:** Open space provided should be designed to have a clearly definable use and long term management regime, as well as being easily accessible.

**SUSTAINABLE BUILDINGS:** There should be some consideration to the provision of sustainable buildings, with an aim of meeting a minimum of BREAM Ecohomes 'good' standard.

**URBAN FORM SHOULD SUPPORT A RANGE OF WORK/LIFESTYLE CHOICES:** The urban form should accommodate economic as well as residential activity, providing the opportunity for home working.

In order to examine the value of sustainable urbanism, the methodology employed was to compare the exemplars to other urban forms, namely standard new build development and traditional (old) examples of urbanism. The comparison with standard forms of new build development was to review what the value impacts of building to sustainable urbanism principles are. The examination of old examples of urbanism was to identify if there was something we could learn from traditional urban form both in terms of the disposition of land use within a scheme and in terms of values generated.

It is important to note that the exemplars selected did not demonstrate the full range of characteristics associated with sustainable urbanism but they did demonstrate a significant number, particularly over their standard comparator.

It was envisaged that the comparators to which the exemplar scheme was to be compared should come from the same town. This was to control for any differences such as proximity to London and other regional differences which could impact on the value exercise of the research.

The need to control for extraneous variables also informed the selection of the standard comparators within the same area. The standard comparators identified were schemes completed within the last 10 years that do not demonstrate the full range of sustainable urbanism features seen on the exemplar. The schemes were also selected based on them being of a relatively similar size as well as possessing, where possible, a relatively similar location to the exemplar. Having said this, whilst individual sites could be controlled for size, their context could not. This means that standard comparators were often on smaller, stand-alone sites whilst exemplar schemes were part of much bigger overall developments. Thomas Hardy Gardens, for example, is a very similar size to the exemplar site at Poundbury but is not surrounded by a further 240 hectares of exemplar development. We believe that this means the densities cannot be directly compared and there may also be an impact on value growth going forward on the completed scheme.

Comparator schemes were also selected on the basis that they showed similarities in build quality and their housing markets. This assisted in controlling somewhat for any impact locational differences could potentially have on the financial value associated with each of the comparators as they were to be examined on a like-for-like basis.

[Design of an urban development to incorporate the needs of the community]

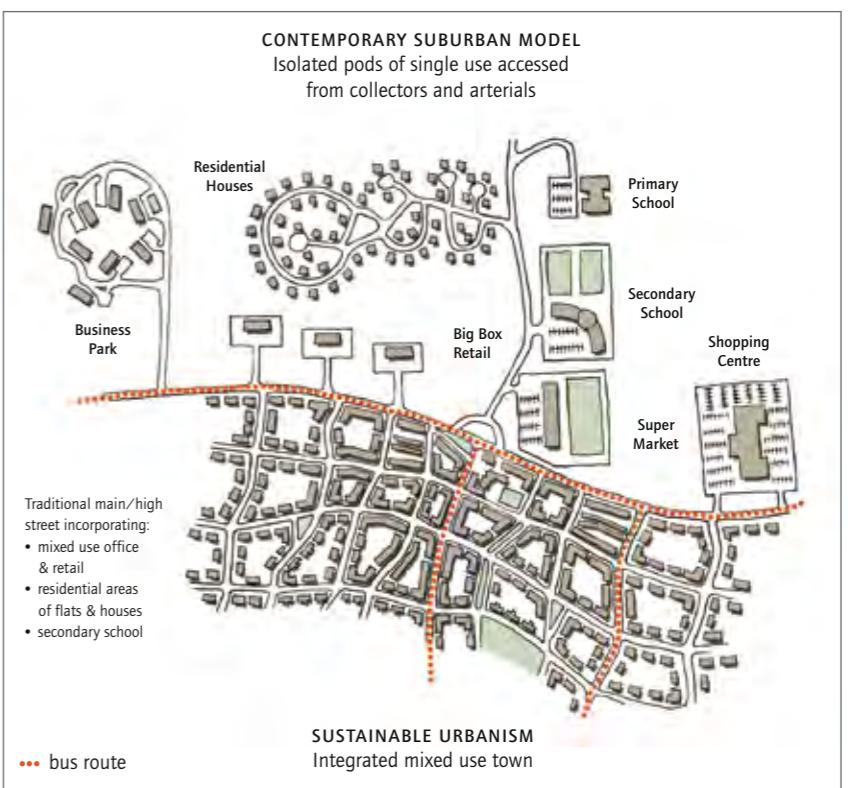


The ability to control for location differences and ensure the measurement of a similar site area was more difficult to ensure for the old comparators. The old comparators were selected last, locationally relative to the exemplar and conventional comparators, identifying proximate areas of old Victorian or Edwardian urbanism. In the case of the small market town examples (Aylesbury and Dorchester) these types of area are relatively limited in scale and are relatively close to the original town centre. This meant it was impossible in these examples to identify old comparators that shared a similar location and context to the exemplar and standard schemes, all of which were located on the town's periphery and are major planned

residential extensions. As a result the old comparators that were selected were closer to the town centre, and in the case of Fairford Leys, much smaller. The proximity of the town centre, and as a result main line station, to the 'old' areas is important to bear in mind in relation to the value exercise, but equally may be an indication of what is being 'valued' by the present property market.

By contrast the identified example of old urbanism in Glasgow was part of the massive Victorian expansion of the city. This makes it much more comparable in terms of its function (an urban extension), context and scale to modern development conditions. The Glasgow examples of old and 'sustainable urbanism' were therefore relatively more comparable in terms of typology and possibly value, than the other two case studies.

### Comparison of Neighbourhood Models





[PART II: SECTION 2]

## The Results for Fairford Leys, Aylesbury

Aylesbury is a relatively small town of a population of approximately 58,000, situated north west of London, approximately an hour from London by train. It has been identified as a growth area and has a planned housing target of almost 17,000 units to be built over the next 20 years, of which the development at Fairford Leys was a part.

It is a relatively affluent town, with 53% of households classified as mid-high affluence, with only 27% falling into the bottom two affluent groupings (low-mid, and low). The urban population is dominated by families (48% of households), with the next major group being young households with no children (25%).

Aylesbury has for long been considered the slightly poor relation when compared to surrounding towns, such as Oxford and High Wycombe. Large areas of its historic town centre were demolished in the 1960's and 1970's to make way for modern development, and in population the town has doubled in size since the 1960's. It is not particularly attractive to commuters, compared with other surrounding towns, due to its relatively poor rail transport links but has been popular with buyers as it offers a more affordable alternative. This is reflected in house price growth in the town. Between 2000 and 2006 residential values in Aylesbury have increased by approximately 73%, just above the 72% growth seen in Aylesbury Vale District as a whole. The popularity of the town to buyers was also demonstrated in the sales rates seen on Fairford Leys, which averaged 15 units per month, almost double the eight units we would expect to see on a new build scheme of that size. The high quality of Aylesbury's schools has also been an attraction to potential family buyers, with a number of local grammar schools.

### Fairford Leys

Fairford Leys is an urban extension of Aylesbury found on the town's western fringe. It is bounded by an industrial estate to the north west (which formed part of the comprehensive masterplan for the scheme) and playing fields to the south, also part of the masterplanned area. While it does not enjoy the most attractive of settings, relative to the example of standard urbanism, this did not have a detrimental impact on the popularity of the scheme to buyers as demonstrated by its new build sales rates.

Fairford Leys accommodates approximately 2,100 residential units, combined with a village centre. The development has its own civil parish and institutions. Architecture is inspired by traditional Aylesbury housing styles and features Victorian-style lamp posts and railings. The estate is built on land belonging to The Ernest Cook Trust, which is a nationally operated, charitable foundation with interests in land ownership, conservation, architecture, design and community development. The Trust worked closely with the Aylesbury Vale District Council and John Simpson who masterplanned the site. The developers involved in the scheme included Taylor Woodrow, Bellway and George Wimpey Homes.

**MAP 1**  
Location of Comparators



Housing on the scheme ranges from single-bedroom starter homes to five-bedroom detached properties, which should ensure that the population is representative of all life stages, from young singles, through to young and growing families, to the retired and the elderly. The vision was that people would want to stay in Fairford Leys, moving house within the village, as their family needs change. This ambition is already being realised.

Fairford Leys has its own village centre with a range of traditionally fronted shops, a Chinese restaurant, a nursery, an ecumenical church and a community centre. There is also a Health Club with swimming pool which was opened in October 2003. The village centre was officially opened in November 2004. There is also a primary school provided on site, which has been achieving some of the highest average point scores across the town.

#### Watermead

The example of conventional development that was selected for comparison to Fairford Leys was Watermead located to the north of Aylesbury. The scheme is bounded by a lake and green open space to the west and open farm land to the east. As a result it is considered to enjoy a more attractive setting than Fairford Leys. The development began in the late 1980's, with the final properties completed in 2000. It consists of approximately 1,000 units developed by Royco Homes. Like Fairford Leys, it has its own parish council, as well as a mix of uses concentrated in one location. Other similarities to Fairford Leys include the fact that both sites feature water. Fairford Leys is built on a floodplain with a number of rivers running through the site. At Watermead there is a lake. It might reasonably be said that Watermead is not absolutely typical of standard housing development as practised in Aylesbury as it contains a very large amount of open space, some mixed use and it contains larger, more expensive properties. What is important here, however, is its comparability to Fairford Leys in terms of the size of site and period over which it was developed. In this respect it shows very clearly an alternative model of development that might have been employed at Fairford Leys at the same time. The question as to whether the design response of aiming "up market" succeeded in adding land value is an interesting one as it is a tactic that most house builders attempt to employ in a market where land is a scarce and valuable resource.

[Aylesbury Town Centre]



#### Highbridge Road

The old comparator that was selected for Fairford Leys is the area which we are calling the Highbridge Road area just south east of the town centre. As already discussed the selection of a suitable old comparator which was similar in location and size was difficult for the reasons previously explained. The area selected is made up largely of Victorian terraces, with a significant amount of commercial property and land (offices and depots) on the northern and north east edges of the site.

#### 2.1 LAND USE

Detailed in TABLE 1 is the land use breakdown across all three comparators. What is important to note is that as Fairford Leys is still under development land use data on the entire site is not available from Ordnance Survey. Therefore the land use breakdown is based on the land area that was measurable, although the entire site area is in the region of 160 hectares.

TABLE 1 – Aylesbury Land Use Breakdown

	Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
Site area (ha)	162.1	74.0	15.3
Site area – built area (ha)	53.1	34.5	14.6
Site area – built area minus non residential uses (ha)	48.2	33.2	11.3
Roads	5.1%	6.6%	15.1%
Pavements	3.2%	4.5%	8.7%
Verges & Small Greens	2.2%	2.6%	4.0%
Parks	0.0%	0.0%	0.0%
Other open space (green)	10.8%	39.1%	4.3%
Other open space (non-green pedestrian areas)	0.8%	0.0%	0.9%
Playgrounds	0.0%	0.0%	0.0%
Residential	4.5%	7.6%	12.9%
Public buildings/Community facilities	1.6%	0.0%	1.1%
Private commercial premises	1.1%	0.6%	6.8%
Commercial land	1.1%	0.0%	10.8%
Outdoor leisure*	58.9%	0.2%	0.0%
Driveways/front gardens	1.0%	5.2%	3.9%
Rear gardens	6.4%	15.9%	22.7%
Residential parking courtyards	1.6%	1.1%	0.1%
Commercial car parking	0.0%	1.2%	0.3%
Public car parking	0.3%	0.9%	2.5%
Garages	0.8%	0.5%	0.8%
Open water/river	0.6%	14.2%	4.9%

\*ski slope at Watermead; Golf course & playing fields at Fairford Leys

MAP 2

**Fairford Leys Land Use**

Scale: 1cm = 0.12km



MAP 3

**Watermead Land Use**

Scale: 1cm = 0.12km



Source: Ordnance Survey

MAP 4

**Highbridge Road Land Use**

Scale: 1cm = 0.04 km

Note: this is to a different scale as the site area measured was smaller than that of Fairford Leys and Watermead



Source: Ordnance Survey

**Map Key**

commercial land	pedestrian only access
commercial car parking	playground
commercial premises	public parking
community	rear garden
community facilities	residential
front garden/driveway	road
garages	sheds
open space	ski slope
open water	sub station
park	unknown building
parking courtyards	verges and small greens
pavements	water

Both Fairford Leys and Watermead were built to a significant scale as planned extensions of Aylesbury. The most significant differences between the two schemes can be grouped under the following headings;

- PRIVATE SPACE
- PUBLIC SPACE
- WALKABLE NEIGHBOURHOODS
- RESIDENTIAL LAND USE

The old urbanism comparator is of a limited scale relative to the size and nature of 19th Century Aylesbury. Therefore, it is a development that was dependent on the proximity to the town centre and was never conceived to be a self sufficient neighbourhood, although nevertheless displays a relatively high level of mixed use as a result of this proximity.

#### **Private space**

Fairford Leys would appear to have significantly less proportionally of its site area given over to private space, accounting for 7.4%. This is in sharp contrast to Watermead and Highbridge Road who have similar proportions of their sites given over to private space (21.1% and 26.6% respectively). The real difference exists in how this private space is split between front and rear gardens. On all the comparators it is Watermead that has the largest proportion of land cover given over to front gardens (5.2%), with a lower proportion of land cover given over to front gardens on the exemplar and old comparators (1.0% and 3.9% respectively).

We suspect that a significant proportion of land given over to private space found to the front of properties at Watermead is made up of driveways although, on the evidence of site visits, there is a significantly higher quotient of front garden space. Due to mapping constraints it is impossible to measure out exactly what proportion this constitutes. From site visits there is a clear focus on the car at Watermead. This will be discussed in more detail under the heading 'walkable neighbourhoods'.

While the car has been accommodated at Watermead through the provision of private driveways, this does not mean that the car has been completely removed from Fairford Leys. Parking courtyards for residential properties are a significant feature at Fairford Leys and account for 1.6% of land use. This is in contrast to Watermead where 1.1% of the site is identified for parking, although this is concentrated on a fewer number of larger car parks. At Fairford Leys, parking courtyards are situated to the rear of a block of properties and are relatively small, hidden, and spread out throughout the development. In contrast, the car parks found at Watermead are large in size and small in number. On the old comparator parking courtyards are not a feature, although there is one courtyard accounting for 0.1% of the site area, most of the parking is on-street. In conjunction with this there is public car parking provision accounting for 2.5% of site area, although this is provided as part of the council offices situated in the site area and to serve adjacent town centre activities.

The provision of rear parking courtyards has not completely removed cars from the streets at Fairford Leys, and has not solved the issue of car parking completely. While Fairford Leys enjoys relatively good levels of parking provision in comparison to the guidelines of the now defunct PPG3, as it achieved planning permission before its introduction, car parking still remains an issue. Occupiers have tended not to use the rear parking courtyards provided, rather preferring to park directly outside their property. This has led to over crowded on-street parking, particularly at weekends.

#### **Open space**

None of the comparator areas contain designated parkland, but open space includes any leisure uses, playgrounds, and 'other public space', including green space that exists between buildings or along waterways, and verges/small greens. At Fairford Leys there is



[There are large expanses of green space in the form of verges and small greens between clusters of properties at Watermead which would appear to provide little amenity value]

Fairford Leys has approximately 72% of its land cover classified as open space, compared to 42% at Watermead, and 9% at Highbridge Road



a very significant area of green space provided as part of the development in the form of playing fields and a golf course. Watermead also has relatively high green provision – and is land which is liable to flooding – accommodating a ski-slope and other leisure uses, but does not constitute a locally managed park like Fairford Leys.

Fairford Leys has approximately 72% of its land cover classified as open space, compared to 42% at Watermead, and 9% at Highbridge Road. If you exclude the golf course and playing fields this falls to 13% of site cover. Outdoor leisure uses at Watermead, which includes the ski slope, only constitutes 0.2% of total site cover. The bulk of open space at Watermead is classified as green open space (40%), significantly higher than the 11% provided at Fairford Leys. While there is this proportional difference, the biggest difference is in the quality of this space.

The green open space found at Fairford Leys is made up of what can be better described as floodplain as it lines the rivers that run through the site. Access to this public space is maximised through the use of public footpaths which run through the space along the rivers and is part of a 'sustainable urban drainage' plan.

Watermead's large provision of green open space is also relatively well accessed by footpaths, but a significant proportion of this is made up of large, ill-defined, green expanses that lie between clusters of properties.

The public space found on the old comparator is made up of verges and small greens, and non-green pedestrian areas, with an almost equal split between that classified as verges and open space. Verges and small greens are also a feature on the exemplar and standard comparators accounting for a similar proportion of site coverage on each of approximately 3%.

#### **Walkable neighbourhoods**

One of the driving principles of the sustainable urbanism agenda is the creation of walkable neighbourhoods. Examination of the land use differences that exist across the comparables, highlights this principle in the masterplanning of Fairford Leys.

There is very little to differentiate the exemplar and standard comparator in terms of site area given over to pavements and roads. Reliance on the car at Watermead is possibly encouraged by the provision of private driveways, although there is very little to differentiate the two schemes in pavement provision. For example, based on built area 10.7% and 9.5% of site cover respectively is classified as pavement. This is almost identical to the 9.2% designated as pavement on the old comparator. The real difference is the nature of this pavement provision. Watermead is characterised by cul-de-sacs and as such its level of connectivity is poor, which is then reflected in the connectivity of its pavements. It is relatively common to find pavements on Watermead that do not run the whole length of a road, finishing in a dead end. On the exemplar there would appear to be a clear focus on providing walkable routes that actually go somewhere, in line with the urbanism of the past.

The creation of walkable neighbourhoods is also enhanced through the provision of neighbourhood retail, other commercial, and community space. The success and viability of these elements can be enhanced where careful masterplanning recognises the nexus between activities such as the school drop-off and shopping trip, and where these elements are co-located with public transport stops.

In terms of the built area of retail floorspace, it is the old exemplar that has the greatest level of provision of 974 sq.ft per hectare. It is then followed by Fairford Leys with 500 sq.ft per hectare of built area and 374 sq.ft at Watermead. This level of provision will be discussed in greater detail in Section 5.3. In terms of land use, it is the old comparator

that has the greatest proportion of land area given over to commercial use (17.7%), 61% of which is classified as commercial land rather than commercial buildings. This reflects the areas proximity to the town centre and the fact that a number of depots are found on the site adjacent to the canal. Watermead has the smallest proportion of its site area given over to commercial uses, accounting for only 0.6% of its total area, increasing to 1.2% of built area. Fairford Leys, in contrast has 2.2% of total area allocated to commercial.

As already mentioned, connectivity is also a design feature of sustainable urbanism, and has been clearly adopted at Fairford Leys. The road network is clearly interconnected within the area measured, and accounts for the larger proportion of built area given over to roads (17%) compared against the standard comparable (14%). It is worth noting that connectivity with the main road that runs through the site (Coldharbour Way) is limited to two points – a design failing of the scheme. Watermead does not enjoy a comparable level of connectivity, with the majority of roads terminating as cul-de-sacs. Moreover, there is only one entrance point from the main road (Buckingham Road) to the whole development site.

Connectivity is also a significant feature on the example of old urbanism as roads also account for a significant proportion of built area (16%). It also points to car parking provision as parking is mainly provided on-street. The presence of parking courtyards, as seen on the exemplar, do not feature.

#### Residential land use

There is very little to differentiate the comparators in the proportion of their built area given over to residential properties. The traditional example accounts for the smallest proportion of 13.6%, with the standard comparator accounting for the greatest (16.2%). This is possibly a reflection of the fact that large detached and semi-detached properties are found on Watermead, with the provision of commercial and community uses diluting the proportional allocation at Fairford Leys. That said, it is important to note that residential flats are built over the majority of commercial uses in the village centre at Fairford Leys. This proportional breakdown of land cover given over to residential properties is not expressed in the residential densities of the comparators. In terms of densities for the built area, it is Fairford Leys that comes out on top with 39.6 units per hectare followed by Highbridge Road with 32.2 units. Watermead has the lowest density with 29.6 units per hectare.

[There is significant commercial floorspace provision at Fairford Leys, concentrated in its village centre]



TABLE 2 – Fairford Leys Residential Breakdown

Exemplar Fairford Leys	
1 bed house	0.3%
2 bed house	27.6%
3 bed house	45.2%
4+ bed house	9.2%
1 bed flat	5.9%
2 bed flat	11.7%
3 bed flat	0.2%

Source: Aylesbury Vale Local Authority

#### 2.2 HOUSING & POPULATION CHARACTERISTICS

Fairford Leys possesses the greatest number of residential units totalling approximately 2,100, followed by Watermead with just over half this, with 1,021 units, and the old comparator with only 470 units. The huge disparity that exists in unit numbers between the old comparator and Fairford Leys is down to a difference in site area.

The generous provision of open space on both the exemplar and standard comparators diffuses residential density measured across the entire site, with 13 and 13.6 units per hectare respectively. While this appears to be a very generous green space provision it must be acknowledged that some of this land was not developable given its propensity to flooding and other site constraints. Naturally unit density per hectare increases in relation to built area and built area excluding commercial and community facilities (see table 3). It is Fairford Leys that has the highest unit density on the built area excluding commercial and community facilities across the three comparators (43.5 units per hectare), followed by the old comparator (41.7 units per hectare). The standard comparator has the lowest unit density of 30.7 units per hectare.

Another measure of density is number of habitable rooms per hectare. This measure is useful in assessing density in relation to housing rather than flats. The use of units per hectare will ensure that it is those sites dominated by flats that will have the highest density. But with the need to provide high density family housing as opposed to more flats, measuring number of habitable rooms per hectare is a more effective measure. As with unit density it is Fairford Leys that has the highest number of habitable rooms per hectare (191.5) of built area minus commercial and community uses. Highbridge Road has just over 170 habitable rooms per hectare, with Watermead having the lowest number of 146.8 rooms per hectare. Despite having a relatively low density, Watermead has the highest number of habitable rooms per unit across the three comparators. This reflects the fact that this scheme is dominated by large detached properties as opposed to Fairford Leys and the old comparator.

In terms of residential unit breakdown there are a number of similarities across the sites. Unsurprisingly, houses dominate, accounting for over 80% of units across all three sites. There is a similar proportion of flats on the exemplar and standard schemes of around 17%, with the old comparator having only 11% of units classified as flats. The higher proportion of flats on the exemplar and standard schemes reflects the fact that they are newer, and were therefore designed acknowledging the increasing proportion of smaller households that exist today. We would suspect that the flats found on Highbridge Road area are made up of conversions rather than purpose built flats.

While we do not have a residential breakdown based on type for Fairford Leys we do know the split between the various property types which is detailed in Table 2. Smaller houses (2 and 3 bed) are the most common house type on Fairford Leys, with 2 bed flats dominating flat supply. This level of detail is not available for Watermead and Highbridge Road but we can make the assumption that detached properties will tend to be those with 4 or more bedrooms, with semis and terraces tending to have 2 to 3 bedrooms. Based on these assumptions there would appear to be a clear differential between Fairford Leys and its standard comparator. Watermead is dominated by large detached properties (34.4%) followed by terraces (29.1%) and semis (19.5%). This is demonstrated in part by the fact that Watermead has the highest number of habitable rooms per dwelling across the three comparators. We suspect that it is the old comparator that is most similar in residential profile to Fairford Leys as the majority of housing types (71%) are classed as smaller terraced properties.

TABLE 3 – Aylesbury Housing Breakdown &amp; Density Analysis

	Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
Number of residential units	2,100	1,021	470
<b>Type of resi units (%)</b>			
Houses	82.2%	82.9%	88.9%
Detached	n/a	34.4%	6.6%
Semi	n/a	19.5%	11.3%
Terraced	n/a	29.1%	71.0%
Flats	17.8%	17.1%	11.1%
<b>Density (units per ha)</b>			
On whole site	13.0	13.8	30.7
On built area	39.6	29.6	32.2
On built area excl non residential uses	43.5	30.7	41.7
<b>Density (hab rooms per ha)</b>			
On whole site	57.0	65.9	127.3
On built area	174.0	141.2	133.9
On built area excl non residential uses	191.5	146.8	173.3
<b>Number of habitable rooms per dwelling</b>	<b>4.4</b>	<b>4.8</b>	<b>4.2</b>

Source: Aylesbury Vale Local Authority, ONS

[BOTTOM LEFT & RIGHT: Residential streets at Fairford Leys. TOP RIGHT: Commercial street at Fairford Leys]

All three schemes are heavily dominated by owner-occupied housing as a result of them being granted planning permission prior to the introduction of PPG3. Fairford Leys housing tenure is 93.2% owner-occupied, with a mere 0.7% socially rented housing. It is important to note, however, that the tenure profile for Fairford Leys is based on the 2001 census and therefore does not reflect an up to date breakdown of residential types. Highbridge Road has the highest percentage of social housing out of the three comparators (3.0%).

Highbridge Road has the largest private rented sector accounting for approximately 20% of households. This is probably a result of the area being closer to the station and town centre – attracting a young professionals rental market. Watermead also has a strong private rented sector, with 15.7% of properties being privately rented.

At first glance, the three schemes have a relatively comparable household composition. Couple households with no dependent child(ren) form around a third of households types across all three schemes. Out of the three schemes, Fairford Leys has the highest proportion of 43.4%. For households with dependent children it is Watermead that possesses the highest proportion across the three comparators (26.9%), although the difference is marginal. We suspect that this may be down to the availability of larger properties which tend to be attractive to families. The proportion of one person households is significantly higher on the old comparator, accounting for 37% of households, as opposed to 28% on both the exemplar and standard schemes. As with the high proportion of private rented households in the Highbridge Road area, we suspect that this is due to the area's proximity to the town centre.



TABLE 4 – Aylesbury Tenure &amp; Household Composition

	Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
<b>Housing tenure</b>			
Owner-occupied	93.2%	83.2%	77.3%
Social rented	0.7%	1.0%	3.0%
Private rented	6.1%	15.7%	19.7%
<b>Type of households</b>			
Couple households with dependent child(ren)	24.1%	26.9%	24.6%
Couple households with no dependent child(ren)	43.4%	38.3%	31.6%
Lone parent households with dependent child(ren)	2.8%	4.0%	3.1%
Lone parent households with no dependent child(ren)	1.2%	2.5%	3.4%
One person households	28.5%	28.2%	37.4%
<b>Population</b>	<b>4,652</b>	<b>2,326</b>	<b>1,043</b>

Note: tenure profile for Fairford Leys is based on the 2001 census and therefore does not reflect the entire development site. Source: ONS



The comparators were selected not only on the similarities in site size, but also on their socio-demographic profiles. In terms of social grade, both Fairford Leys and Watermead have the greatest proportion of their population in the top social grade (AB), 43% and 44% respectively. Social grade C2 accounts for the largest proportion of residents at Highbridge Road (32%) closely followed by social grade AB. Despite a slight concentration of residents in the top social grade at Watermead there would appear to be a more even spread across the lower grades than seen at Fairford Leys. Just under 20% of residents at Watermead are in social grades C2 to E, with 3.3% of residents in the lowest social grade E as opposed to 1.9% at Fairford Leys. Highbridge Road has the largest proportion of its residents in the lowest social grades (39.6%), with 8.3% residents in social grade E.

This social grade profile is a reflection of economic activity and housing tenure. While Watermead does not have the largest proportion of residents working full-time, it does have the largest proportion who are self employed and the smallest proportion of those classified as unemployed. In contrast Highbridge Road has the lowest proportion of residents working full-time, despite similar proportions to Watermead classified as self-employed. There is a greater presence of those classified as unemployed account (3.7%) at Highbridge Road, compared with the other locations.

Watermead is associated with larger higher end family housing, while by contrast Fairford Leys is aimed at the mid-market, and this is reflected in the difference in average values seen between the two developments and which is discussed in greater detail later in this report. Despite this disparity both comparators would appear to share a very similar socio-demographic profile. What is surprising is the higher proportion of residents in lower social grades, particularly in social grade E. We suspect that while Watermead's larger detached properties are aimed at a higher end of the market, its smaller units (terraces and flats), are cheaper than those at Fairford Leys, and as a result would appear to attract those of a lower social grade.

At Highbridge Road, it is likely that the older Victorian terraced properties with relatively numerous rooms have been popular for multi-tenanted letting which has determined its socio-demographic profile which is concentrated in the mid to low social grades. Recent price rises within the area may be a sign of gentrification beginning to take hold.

TABLE 5 – Aylesbury Socio Demographics

	Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
<b>Economic Activity</b>			
Part-time Employees	7.4%	9.2%	8.2%
Full-time Employees	70.7%	63.6%	53.0%
Self Employed with employees	2.3%	3.2%	3.1%
Self Employed without employees	4.8%	5.5%	5.5%
Unemployed	2.1%	1.8%	3.7%
Student	2.4%	3.7%	8.4%
Retired	3.2%	4.0%	5.7%
Looking After Home/Family	5.2%	6.1%	6.8%
Permanently Sick/Disabled	0.8%	1.4%	1.8%
Other	1.2%	1.6%	3.7%
<b>Social Grade</b>			
AB	43.0%	44.2%	28.0%
C1	39.1%	35.9%	32.4%
C2	9.7%	11.0%	14.2%
D	6.3%	5.5%	17.0%
E	1.9%	3.3%	8.3%

Source: ONS

[Higher density terrace houses at Fairfield Leys]



of built area, it is the provision at Fairford Leys which sees the greatest increase to 5,257 sq.ft per hectare. For Watermead and Highbridge Road, provision per hectare of built area increases to 1,807 sq.ft and 8,810 sq.ft respectively.

In terms of commercial floorspace it is Fairford Leys that would appear to have a far better distribution across the use classes compared to its standard comparator. The majority of commercial floorspace is classified as a combination of B1/B2/B8 uses provided on the industrial estate (61%), B1 uses provided in the village centre accounts for only 5.8% of total floospace provision. There is also an almost equal split in provision across the retail, D1 D2 and 'other' use classes of around 20,000 sq.ft reflecting the provision of a church and other community facilities. Retailing (A1, A2, A3) accounts for 10% of total commercial floorspace.

It has been noted that the B1 (office space) found in the Fairford Leys village centre has been the most difficult to let, and on the whole still remains empty. This may reflect the nature of Aylesbury's office market. As an office location, Aylesbury is a poor relation to Oxford, Milton Keynes and other surrounding areas and as a result does not attract a significant amount of new businesses to the area, and what new businesses would relocate would find the town centre or an industrial/businesses estate more attractive reflecting its connectivity. As a result of its location in the village centre the office development would be considered to have poor connectivity regionally. As a result this space is more attractive to local businesses and we would expect a longer take-up than seen in more dedicated business locations.

In contrast almost 80% of Watermead's floorspace provision is concentrated in the 'other' use class accounting for the hotel and nursing home found on the site, with the remaining 12,863 sq.ft in the 'A' use class, which includes standard retailing, cafés, restaurants, and public houses. There is no provision in the other use classes.

The good level of distribution across the use classes at Highbridge Road is a reflection of its close proximity to the town centre and the fact that the lower end of the high street runs along its northern boundary. As a result of this proximity, the largest proportion of commercial floorspace is classified as B1 (76%), and is mainly made up of offices as there are council offices and other office blocks located in the area. General retailing, excluding restaurants, pubs etc, accounts for only 4% of total floorspace. In terms of total floorspace this is only 25% of the general retailing floorspace provided at Fairford Leys. Despite this, there is a far greater level of provision of other retailing uses such as restaurants, takeaways, and pubs. The proximity of the town centre to Highbridge Road has no doubt meant that the need for significant general retailing is unnecessary. As a result the retail offering at Highbridge Road would be considered as 'secondary' and explains the prevalence of takeaways. In the case of Fairford Leys, distance from Aylesbury town centre meant that a significant proportion of general retailing was desirable in order to meet the local needs of residents.

#### 3.4 VALUE ANALYSIS

As detailed in the methodology we have carried out an value analysis of each of the comparator sites based on their residential and commercial values to derive an assumed value on a per hectare basis. We have also examined house price growth for each of the localities in order to assess if there is any greater value growth associated with the exemplar scheme – in other words sustainable urbanism.

MAP 5

**Fairford Leys Non-Residential Property Uses**

Scale: 1cm = 0.12km

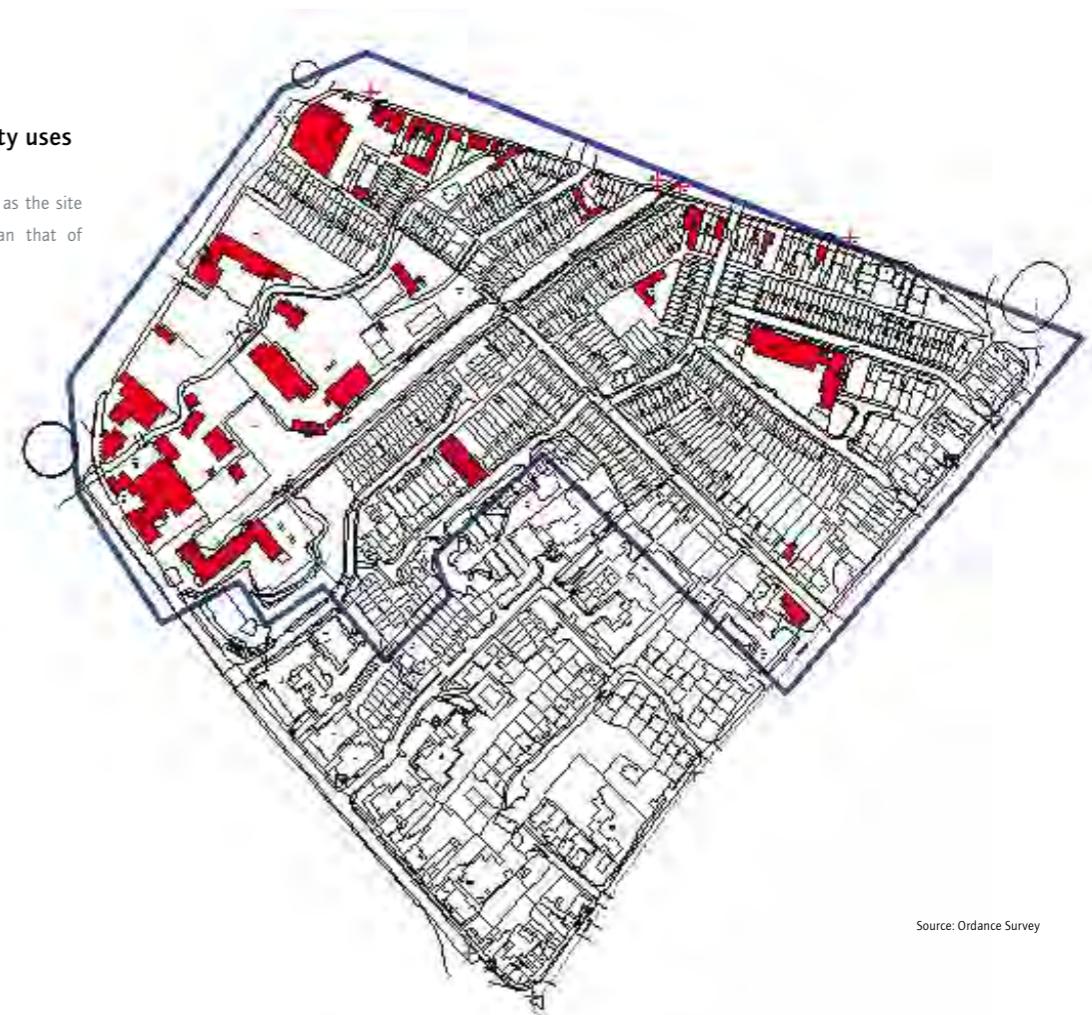


MAP 7

**Highbridge Road Non-residential Property uses**

Scale: 1cm = 0.04 km

Note: this is to a different scale as the site area measured was smaller than that of Fairford Leys and Watermead



MAP 6

**Watermead Non-Residential Property Uses**

Scale: 1cm = 0.12km



Source: Ordnance Survey

Source: Ordnance Survey

**Map Key**

- non residential uses
- water
- site area boundary

In terms of £psq.ft  
Fairford Leys achieves  
the higher values, almost  
£20 psq.ft higher than  
seen at Watermead

TABLE 6 – Non-residential breakdown

	Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
<b>BUSINESS TYPE BREAKDOWN</b>			
Total # businesses (including home based businesses)	100	83	63
Agricultural & materials	1	1	0
Building & Engineering	10	9	4
Business & Household Services	7	8	6
Business services	14	14	12
Civic	3	1	5
Domestic Services	6	2	1
Education	4	3	1
Food & Drink	0	4	9
General Retail	2	6	2
Household Services	2	2	1
Leisure	2	3	2
Manufacturing	6	0	3
Media	0	1	1
Neighbourhood Retail	2	1	0
Personal Services	6	8	1
Transport	2	0	1
Utilities & infrastructure	1	1	1
Wholesale	2	3	1
Unknown	30	16	12
<b>Number of businesses (per ha)</b>	<b>0.6</b>	<b>1.1</b>	<b>4.1</b>
<b>COMMERCIAL FLOORSPACE BREAKDOWN (sq.ft)</b>			
A1	19,913	4,951	4,974
A2	3,068	807	837
A3	3,552	7,104	2,793
A4	n/a	n/a	4,090
A5	n/a	n/a	1,498
B1	16,146	n/a	97,849
B1/B2/B8	169,700	n/a	n/a
D1	21,528	n/a	n/a
D2	24,757	n/a	16,375
Other	20,451	49,514	n/a
<b>Total commercial floorspace</b>	<b>279,115</b>	<b>62,376.8</b>	<b>128,414.9</b>
<b>Commercial floorspace (per ha)</b>	<b>1,722</b>	<b>843</b>	<b>8,376</b>
<b>Commercial floorspace (per ha built area)</b>	<b>5,257</b>	<b>1,807</b>	<b>8,810</b>

Source: Experian, Aylesbury Vale Local Authority, Savills Research

## Unit release on new build schemes tends to dampen house price growth

Based on average unit values there is not a premium associated with residential at Fairford Leys. For example, average values across all properties are 14% lower than seen on the standard comparator of Watermead, although being 8% higher than the old comparator. But this underperformance of the exemplar scheme reflects the differences in unit sizes between the two schemes. Examining values in terms of £ per sq.ft allows us to exclude the effect the presence of larger properties can have on average values. In terms of £psq.ft it is in fact Fairford Leys that achieves the higher values, almost £20 psq.ft higher than seen at Watermead.

Watermead has a far greater number of larger properties than at Fairford Leys, with the exemplar characterised by higher density units such as townhouses, terraces and flats. It is the presence of these large detached and semi-detached properties on the standard scheme that has pushed up average values above that seen at Fairford Leys. The value seen on a £psq.ft basis would suggest that sustainable urbanism does confer a premium.

TABLE 7 – Average Residential Values &amp; % Difference to Exemplar (2006)

	Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
Detached	£241,529	£284,901	18.0%
Semi-detached	£195,116	£201,150	3.1%
Terraced	£179,638	£189,798	5.7%
Flats	£155,547	£146,981	-5.5%
All	£185,095	£215,149	16.2%
<b>Average £psq.ft</b>	<b>£296</b>	<b>£279</b>	<b>-5.7%</b>
			<b>£235 -20.6%</b>

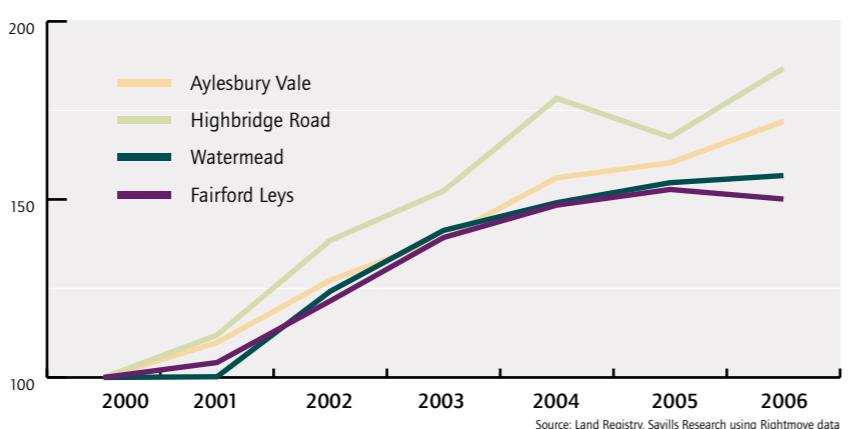
Source: Land Registry, Savills Research using Rightmove data

## 2.4.2 HOUSE PRICE GROWTH

House price growth on each of the comparators was examined to investigate whether building to sustainable urbanism principles enhanced value growth.

Total house price growth in the wider local authority over the period 2000 to 2006 totalled 72%. Only the old comparator saw growth over that seen in the wider area of 87%. Both the exemplar and standard comparators experienced uplift below the district average, but both saw very similar levels of uplift. Value uplift on both has ranged from 50-57% over this period, with Watermead seeing enhanced uplift 7 percentage points above that seen for Fairford Leys.

Despite this marginal underperformance against the standard comparator, considering the degree of unit release that was taking place over this period at Fairford Leys, value growth has been significant. It would appear therefore, that sustainable urbanism has conferred some improved performance in value growth. It may be the case that going forward, now that the development of Fairford Leys has come to an end, we may see value growth over that seen on the standard comparator reflecting the 'place making' at the exemplar.

**FIGURE 1 – House Price Growth****2.4.3 MARKET COMMENTARY**

Based on the number of large detached properties and higher average values, combined with its socio-demographic profile would suggest that Watermead is aimed at higher end market. In contrast, Fairford Leys and Highbridge Road appear to be predominately mid-market. While this is true to some extent this is not reflected in market demand.

According to local agents there is no clear preference between Fairford Leys and Watermead. Watermead benefits from a more attractive setting, but Fairford Leys has a better range of property types. Despite a less attractive setting, when Fairford Leys was being marketed units sold extremely well. Across the life of the development units sold at an average rate of 15.4 units per month, far exceeding the 8 units per month you would normally see on a large new build scheme. One of the major selling features of the development cited by agents was the provision of the village centre, and the presence of a desirable primary school, as well as the range of the units on the development. This has meant that families have been able to stay on the estate as their housing needs have changed. It was also cited that a community spirit has been fostered which has meant that people have wanted to stay on the scheme.

Demand for family properties at Watermead has suffered from its poor school catchment, whereas Fairford Leys has benefited from the fact that one of the top primary schools in Aylesbury (based on OFSTED's 2005 average point score) is situated within Fairford Leys itself (St Mary's Church of England school). By contrast the two closest primary schools to Watermead (St. Louis Primary Catholic School and Elmhurst Junior School) are ranked 5th and 11th in the town.

**2.5 THE VALUE OF URBANISM AT FAIRFORD LEYS**

It is the traditional example of urbanism that achieves the highest assumed values on a per hectare basis across all the comparators, almost double that achieved on the exemplar and standard comparators.

The presence of the playing fields and golf course at Fairford Leys has diffused development value on a per hectare basis, as has the large amount of green open space at Watermead, compared to that achieved at Highbridge Road. Based on built area, it is in fact the exemplar that out performs on a per hectare basis. On this basis values increase to £9.6m per hectare at Fairford Leys, 46% higher than the value of the old comparator and standard.

The greater value derived at Fairford Leys is in part a result of the higher density of the exemplar compared to that of the standard example of urbanism. While this higher density has allowed greater value to be derived from the site it has not detracted from £psq.ft values which are 6% higher at Fairford Leys than its standard comparator. Development value has also been enhanced through the commercial development on the exemplar.

**TABLE 8 – Value of Urbanism for Aylesbury**

Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
£ha site area (ha)	£3,158,966	£3,093,265
£ha site area – built area (ha)	£9,644,959	£6,628,691

Note: values are based on publicly available data sources. Source: Savills Research/Savills Research using egi data; Land Registry

**2.6 BUILD COSTS AT FAIRFORD LEYS**

It was outside the scope of this research to measure the build costs of this development but the preceding analysis would appear to suggest that there is additional value available to developers which could be utilised in additional build costs. Taking this additional value, and based on a number of assumptions relating to build costs and margins, it would appear that residual revenues per hectare of built area are enhanced on the exemplar. For example, the additional revenue accounts for 120% of build costs at Fairford Leys. This means that there is potentially more revenue available on the exemplar for land and any additional costs (SEE TABLE 9).

It is worth noting however, that the build costs of a small area of the Fairford Leys development was measured as part of a previous study carried out for CABE titled *The Value of Housing Design and Layout* (2003). This pointed to higher build costs over a standard new build comparator (not Watermead), although this was confined to a far smaller site area than examined as part of this study.

This is not to say that additional build costs are necessarily associated with sustainable urbanism and building to 'new urbanist' principles, developers will need to make their own decisions about this. The evidence is mixed as to whether there is an additional cost associated with the design of buildings according to the principles of sustainable urbanism. The above case would suggest that, if there is, is mitigated by improved values.

**TABLE 9 – Additional Available Revenue for Aylesbury (based on built area)**

Exemplar Fairford Leys	Standard Watermead	Old Highbridge Rd.
Residual per hectare – for land & additional costs (£m)	5.41	2.28
Amount available over standard (% of build costs)	120%	—

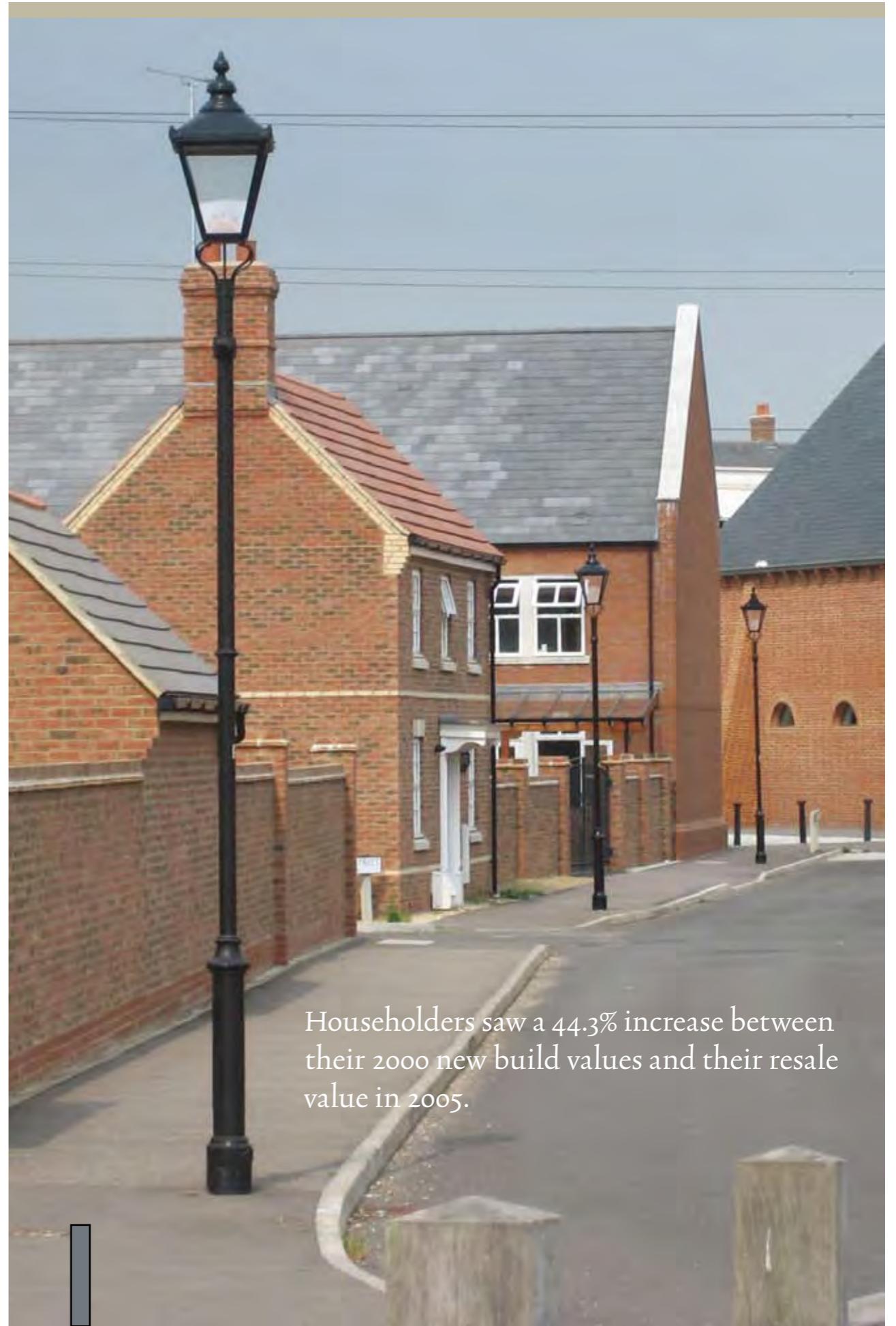
Note: values are based on publicly available data sources. Source: Savills Research/Savills Research using egi data; Land Registry

## 2.7 LAND VALUE &amp; LAND OWNERSHIP AT FAIRFORD LEYS

In the case of large developments like Fairford Leys land tends to be sold in tranches rather than as a bulk sale. According to the original land owner, The Ernest Cook Trust, land values over the course of the development reflect site specific variables. For example, the first land sales were subject to infrastructure costs which depressed land values, as opposed to later site sales which were not subject to the same costs. This makes it impossible to effectively measure land value growth over the course of the development. Despite this, there would appear to have been some added value generation to the original land owner with the development of Fairford Leys.

From discussions with The Ernest Cook Trust they suggest that it was the property owner that capitalised on the value associated with the quality place-making that characterises the Fairford Leys development. For example, on a like for like basis property values saw a 44.3% increase between their 2000 new build values and their resale value in 2005. They do not believe that this translated directly into higher land values. This may be the case, but the use of a top-up payment, which meant that the Trust received an extra 28% of uplift over the estimated unit price meant that the value derived from the scheme increased over the course of the development.

The single land ownership by the Ernest Cook Trust and the use of phased sales of sites also ensured that the masterplan was adhered to. Housebuilders understood that they would not be sold later phases if they did not follow the masterplan on the earlier stages.



Householders saw a 44.3% increase between their 2000 new build values and their resale value in 2005.



[PART II: SECTION 3]

## The Results for Poundbury, Dorchester

Dorchester is the county town of Dorset, with a population just over 15,000. While 36% of households fall into the mid to high affluence bracket, an equal proportion of households are classified as low to mid affluence. The remaining 28% of households fall into the middle affluence grouping.

The town, and its wider area, has become popular with retirees, 32% of households in Dorchester are made up of retired seniors. The second largest group after empty nesters (37%) – these are older households which are not yet retired.

Unlike Aylesbury, Dorchester is not a commuter town for London as it is over 2.5 hours by train from the capital, and as a result has not experienced the similar levels of expansion as seen in towns closer to London. That said, throughout the South West the phenomenon of long distance commuting is becoming established due to the high quality of life on offer, and the attractiveness of the region to London out-movers.

House price growth in the town has been over that seen in the wider area, with a 110% increase in average values between 2000 and 2006, in contrast to 94% in West Dorset. It has been popular with families on the strength of its schools, with Dorchester's Thomas Hardy Secondary School being one of the top performing schools in the county.

### Poundbury

Poundbury has been the largest development to date in Dorchester, and is an urban extension to the west of the town bounded on all but one side by farm land. It is a mixed urban development of town houses, cottages, shops and light industry built on land owned by the Duchy of Cornwall. The vision for the scheme was to demonstrate how traditional architecture and modern town planning could be used to create a thriving new community that people could live and work in close proximity. Following an Enquiry by Design stakeholder planning workshop the masterplan for the scheme was drawn up by Luxembourg-born urban designer, Leon Krier. The masterplan covers 154 hectares and it is envisaged that it will take around 20 years to build out.

Poundbury is being promoted by the Duchy of Cornwall which is required by law to operate on a commercial basis. The scheme is being phased according to market demand and is expected to increase the population of Dorchester by about one-third over the next few decades. The masterplan divides Poundbury into four distinctive quarters – the first phase of which started construction in 1993 is a mixture of affordable, social and privately-owned housing. Each quarter reflects much that is familiar in the English town or villagescape, with a hierarchy of scale and type of building.

For this measurement exercise, we have focused on the first phase of the scheme, which consists of 274 units and a number of retailers, a café, a pub, an enterprise and business centre. The remaining phases of Poundbury are still under construction, with phase 2 coming to completion. This is important to consider when examining the residential value

**MAP 1**  
**Location of Comparators**



of the development, as new supply can depress values and value growth. End value is also not often realised until some time after completion. This is important to consider as Poundbury is still under construction.

#### Thomas Hardy Gardens

The standard comparator selected for Poundbury was 'Thomas Hardy Gardens'. It is situated on the periphery of Dorchester, but to the south east, bounded by existing development on all sides. It is also central sited closer to the town centre than Poundbury. The scheme, developed by Betterment Properties, was completed in 2004 and has taken on some but not all, of the urban design and architectural characteristics of Poundbury. For example there is no focus on walkable neighbourhoods; no mixed use element and little attempt to mix type or tenure. Although there is some attempt to create the sort of urban village street scene reminiscent of Poundbury, this is somewhat ill informed and has, for example, failed to capitalise on the creation of a central green to create a real sense of place. Like Poundbury, this scheme was also developed on former Duchy of Cornwall land.

#### Monmouth Road

In Dorchester, the scale of Victorian or Edwardian residential expansion was relatively limited and was sufficiently proximate to the town centre to be served by its mixture of uses and amenities. As at Aylesbury, this has made it difficult to identify a suitable old urbanism comparator. While it was impossible to identify a 'self sufficient' neighbourhood of the scale of Poundbury, an area of predominantly Victorian terraces at Monmouth Road situated adjacent to Dorchester railway station and nearby to Thomas Hardy Gardens was selected for analysis. There are some 1930s semis also found in the area as well as some very small scale development from the 1980s immediately adjacent to the railway line.

#### 3.1 LAND USE

Detailed below is the land use breakdown across all three comparators as well as the land use maps for the various comparators.

Due to the fact that Thomas Hardy Gardens took on some of the design principles of Poundbury, there are a number of superficial similarities between the two schemes. For example, the proportion of both sites that are used for parking courtyards and garages, the

[There are no traditional front gardens found on Phase 1 at Poundbury, with properties opening out directly onto the street.]



relatively permeable street layout and the configuration of the scheme around a central village green. What is interesting is that there would appear to be no proportional land use similarities between the exemplar and old comparator. The key differences across the schemes are examined below under the same headings used for Fairford Leys; private space, public space, walkable neighbourhoods, and residential land use.

TABLE 1 – Dorchester Land Use Breakdown

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd.
Site area (ha)	9.9	7.2	7.53
Site area - built area (ha)	9.6	6.7	7.53
Site area - built area minus non residential uses (ha)	9.0	6.7	7.51
Roads	16.5%	18.0%	10.6%
Pavements	8.9%	11.6%	12.0%
Verges & Small Greens	4.1%	2.3%	7.4%
Parks	2.8%*	0.0%	0.0%
Other open space (green)	0.0%	6.8%	0.0%
Other open space (non-green pedestrian areas)	1.4%	0.1%	0.9%
Playgrounds	0.0%	0.0%	0.0%
Residential	13.2%	16.6%	20.1%
Public buildings/ Community facilities	0.3%	0.0%	0.0%
Private commercial premises	5.6%	0.0%	0.3%
Commercial land	0.5%	0.0%	0.0%
Driveways/ front gardens	0.0%	5.0%	4.8%
Rear gardens	20.5%	23.1%	43.3%
Residential parking courtyards	18.2%	12.8%	0.0%
Commercial car parking	3.4%	0.0%	0.0%
Public car parking	1.4%	0.0%	0.0%
Garages	3.1%	3.7%	0.7%
Open water/river	0.0%	0.0%	0.0%

\* Park area has been re-proportioned based on the total masterplanned area, based on the assumption that the park will have amenity value to the entire scheme and not just to Phase 1.

#### Private space

It is the old comparator that has the greatest proportion of land use given over to private space, totalling 48%. The majority of this is classed as rear gardens (90%) with the remaining 10% given over to front gardens. Thomas Hardy Gardens follows second with 28%, with Poundbury having the smallest proportion of site area given over to private space (20.5%). While the exemplar and standard comparators have relatively similar levels of private space provision, there is a difference in how this is split.

Poundbury has no mapable front garden provision whereas Thomas Hardy Gardens has 22% of its private space given over to front gardens. The old comparator also has a significant provision of front gardens, similar to the standard scheme, accounting for almost 5% of total site area. The relative under-provision of private space on Poundbury is arguably counterbalanced by the provision of public open space, which will be discussed in greater detail under the next heading. On the whole there would appear to be a clear focus on ensuring that space fronting properties in Poundbury is shared, and maximising private space to the rear. This is clearly demonstrated by the fact that a large proportion of properties on the exemplar open out right onto the street as opposed to having private front gardens.

MAP 2

**Poundbury Land Use**

Scale: 1cm = 0.033 km



MAP 3

**Thomas Hardy Garden****Land Use**

Scale: 1cm = 0.033 km



Source: Ordnance Survey

Source: Ordnance Survey

MAP 4

**Monmouth Road**

Scale: 1cm = 0.033 km

**Map Key**

commercial land	pedestrian only access
commercial car parking	playground
commercial premises	public parking
community	rear garden
community facilities	residential
front garden/driveway	road
garages	sheds
open space	ski slope
open water	sub station
park	unknown building
parking courtyards	verges and small greens
pavements	water

[Poundbury's mix of uses includes a pub, a variety of shops, a market hall and café.]



On the standard housing scheme, private space to the front of properties has been used largely to accommodate cars. With the relatively small proportion of each of the comparators used as front gardens/driveways, the car has been accommodated through the use of parking courtyards while on the old comparator on-street parking is a major feature. The parking courtyards found on the exemplar and standard schemes are found to the rear of properties, often containing garages. In terms of land given over to this use both the exemplar and standard comparator possesses relatively similar proportions of between 13-18%. The rear parking courtyards are relatively well used, and Poundbury has not suffered to the same extent from overcrowded on-street parking seen on more recent new build developments. Use of covenants, as well as peer pressure in some cases, has ensured that residents, on the whole, use the rear courtyards, although on-street parking does still take place.

#### **Public space**

Poundbury is the only scheme which features a designated park. It accounts for approximately 3% of total land area of Phase 1. This proportion is based on a re-proportion of the actual park area relative to total masterplan area of Poundbury on the basis that the park will provide a facility which will benefit the whole masterplanned scheme.

Even having factored this in, all three comparators have relatively similar levels of land area given over to public open space, this includes parks, other green space, verges and small greens, and pedestrian only areas. This equates to approximately 8% at Poundbury and Monmouth Road, and just over 9% on the standard comparator.

Poundbury's public space is not situated at the heart of the development but is found on the periphery of the Phase 1 site boundary. The masterplanning of the scheme seeks to create a relatively dense settlement, focused on developing a walkable neighbourhood. This has been achieved by excluding any public space which has no clear urban design benefit from the development. Some of the streets at Poundbury are sufficiently attractive to take on the qualities of public open space.

On the standard comparator, public open space is concentrated within the green found in the centre of the development. Although this creates a defined public space, this urban design gesture was not capitalised upon by the developers to create a real sense of place whether through the location of a landmark use such as a pub on the green, nor through building higher value or denser properties around it. The remainder of this open space is found on the periphery of the site.

On the whole, the quality of public open space on the standard scheme is lower than that seen at Poundbury. We would suspect from our site visit that the green space found at the centre of the Thomas Hardy Gardens development is rarely used as a park space with no play facilities and very limited planting.

#### **Walkable neighbourhoods**

One of the basic principles in the design of Poundbury was the creation of walkable neighbourhoods. This has been achieved with the provision of local services and facilities, as well as the attraction of employment on the site. Approximately 6% of the site is designated as private commercial premises. This includes the shops, pub, and café at Pummary Square, as well as the business premises provided at the Enterprise Centre and the Business Centre. In stark contrast, there has been no attempt to provide any form of local services at Thomas Hardy Gardens. On the Monmouth Road area there is some commercial provision although of a far lesser extent than that seen on Poundbury. Commercial premises account for only 0.3% of site area, which is made up of a post office and small corner shop. This in part can be accounted for because of the site's relative proximity to the town centre.

[TOP PHOTO: Open space at Thomas Hardy Gardens.  
BOTTOM PHOTO: Play park at Poundbury]



The creation of a walkable neighbourhood at Poundbury has also been reinforced through the provision of pavements and pedestrian streets, as well as the general inter-connectivity of the site. While Thomas Hardy Gardens has proportionally more of its land area given over to pavements (11.6%), similar to the 12% on the old comparator, as opposed to the 9.0% at Poundbury. The provision of pedestrian village lanes on the exemplar increases the proportion of site area given over to pedestrians to 10.3%, although this is still below that seen on the other comparators.

In terms of connectivity, all of the schemes are relatively well interconnected in terms of road networks. Both the exemplar and standard schemes have similar proportions of land area given over to roads, 17% and 18% respectively. The Monmouth Road area has the lowest proportion of 11%.

It would appear that Thomas Hardy Gardens clearly took on board the design principles of Poundbury which supported the notion of walkable neighbourhoods, and as a result the scheme provided adequate pedestrian access and is well interconnected. Unfortunately, the developers excluded the very element which forms the basis of a walkable neighbourhood and why interconnectivity and pedestrian access is a major feature of Poundbury – the provision of local services and commerce.

#### **Residential Land Use**

It is the old comparator that has the largest proportion of land area given over to residential properties (20.1%) followed by Thomas Hardy Gardens (16.6%) and then Poundbury (13.2%). This difference is demonstrated in the residential densities calculated across all three sites. Unsurprisingly, it is the old comparator that has the highest residential density across the whole site (40.6 units per hectare) with Poundbury having the lowest (25.5 units per hectare). A more detailed discussion of residential densities on the comparators is found in the next section.

#### 3.2 HOUSING & POPULATION CHARACTERISTICS

The old comparator comprises a greater number of residential units totalling just over 306 units, followed by Poundbury with 274 units, and then Thomas Hardy Gardens with 224 units. The discrepancy in residential unit numbers between the old comparable and Poundbury is due to the higher level of commercial property in the exemplar scheme, and we suggest, the highly efficient land use of tight terraced forms at the old comparator. This differential is also highlighted when looking at the unit density per hectare. Monmouth Road has the highest level of unity density on the whole site (40.6) compared to Thomas Hardy Gardens (31.1) and Poundbury (25.5). When removing commercial and community land use from site area Poundbury still has the lowest density of 28 units per ha.

When looking at the number of habitable rooms per hectare, it is not surprising when taking into account the above, that Poundbury has the lowest number of habitable rooms per hectare on built area (133.2) compared to Thomas Hardy Gardens (164.2) and Monmouth Road (261.3).

Poundbury has the lowest number of habitable rooms per dwelling (4.7) across the three comparators. This suggests Poundbury has smaller houses than the standard comparator (4.9). Interestingly, the old old urbanism comparable has 6.4 habitable rooms per dwelling, unexpected in an area dominated by terraced properties, but perhaps indicative of the highly efficient footprint represented by the Victorian terrace. The standard scheme, has the lowest number of habitable rooms per dwelling of 4.9.



TABLE 2 – Dorchester Housing Breakdown &amp; Density Analysis

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd.
Number of residential units	252	224	306
<b>Type of resi units (%)</b>			
Houses	80.7%	100.0%	95.3%
Detached	27.4%	26.8%	5.8%
Semi	16.7%	47.3%	12.7%
Terraced	36.7%	25.9%	76.8%
Flats	28.0%	0.0%	4.7%
<b>Density (units per ha)</b>			
On whole site	27.7	31.1	40.6
On built area	28.5	33.4	40.6
On built area excl non residential uses	30.5	33.4	40.7
<b>Density (hab rooms per ha)</b>			
On whole site	129.4	152.9	261.3
On built area	133.2	164.2	261.3
On built area excl non residential uses	142.5	164.2	262.2
<b>Number of habitable rooms per dwelling</b>	<b>4.7</b>	<b>4.9</b>	<b>6.4</b>

Source: Duchy of Cornwall, ONS

As Thomas Hardy Gardens was completed following the 2001 census we do not have any information on the property type breakdown in terms of detached, semi etc, although based on the development plan we have been able to calculate an estimate. No flats were developed on site, with units made up of 2, 3 and 4 bed houses. We estimate that the majority of these can be classified as semis (47.3%), with an almost equal split between detached and terraced properties. This contrasts with Poundbury where the majority of residential types are terraces.

As already mentioned Thomas Hardy Gardens' completion after the 2001 census means that we do not have information on the tenure and household composition of the scheme. What we do know from the scheme planning application is that no affordable housing was provided on site, and as such we assume that tenure is dominated by owner occupiers. As a result of this limited information we cannot discuss the standard comparator in much detail.

Both the exemplar and old schemes are dominated by owner-occupier housing, and we assume the standard comparator is also, although there are significant disparities between the two. 75.5% of housing at Poundbury is owner-occupied compared to 87% at Monmouth Road. The lower number of owner-occupiers in Poundbury is accounted for by the higher level of social housing on this phase 20.1%. This is significantly higher than the

TABLE 3 – Thomas Hardy Gardens Residential Breakdown

	Standard Thomas Hardy Grdns.
1 bed house	0.0%
2 bed house	22.3%
3 bed house	64.7%
4+ bed house	12.9%
1 bed flat	0.0%
2 bed flat	0.0%
3 bed flat	0.0%

Source: Savills Research using Betterment Property Information

old comparable of which social rented households account for only 1%. The programmed social mix of Poundbury is integral to the masterplan which provides for a 'pepper-potted' distribution of social housing throughout the scheme. Provision of affordable housing has become a part of S106 agreements on new build schemes, and in the case of Thomas Hardy Gardens this provision was provided off site. While we do not know the socio-demographic profile of the development as it was completed after the 2001 census, based on its planning permission we believe there is no social housing on site. The old comparator, by contrast, may be associated with long term owner-occupation.

With regard to privately rented accommodation, Monmouth Road has the largest provision accounting for approximately 12.3% of households, compared to Poundbury which is 4.4%.

With a low proportion of flats in the area and a high percentage of owner occupiers and houses, one would assume that the old comparator area at Monmouth Road, is dominated by family households. However, the proportion of one person households (29.3%) is almost equal to the proportion of couple households with dependent children (29.9%). Interestingly, 64% of these one person households are classified as pensioners. This may be an indication of a low level of turnover of the properties and reflect the length of tenure of the householders who may have brought up families who have since left home.

The largest proportion of household types at Poundbury are classified as one person households (36.8%). Similar to the old comparator the majority (58.7%) of these are pensioners. While there is an almost equal split between couple households with and without dependent children, those with no dependents slightly lead the way. This would suggest that Poundbury is attracting both young professional couples and empty nesters. The proportion of this household type is also significant on the old comparator, accounting for an almost equal proportion as couple households with dependents. It would appear based on the household composition for both comparators that there is a good mix of household types, in line with sustainable urbanism principles.

TABLE 4 – Dorchester Tenure &amp; Household Composition

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd.
<b>Housing tenure</b>			
Owner-occupied	75.5%	Unknown	86.7%
Social rented	20.1%	0.0%	1.0%
Private rented	4.4%	Unknown	12.3%
<b>Type of households</b>			
Couple households with dependent child(ren)	22.5%	Unknown	29.9%
Couple households with no dependent child(ren)	25.5%	Unknown	29.0%
Lone parent households with dependent child(ren)	11.3%	Unknown	7.3%
Lone parent households with no dependent child(ren)	3.9%	Unknown	4.4%
One person households	36.8%	Unknown	29.3%
<b>Population</b>	<b>614</b>	<b>Unknown</b>	<b>717</b>

Note: Thomas Hardy Gardens completed following 2001 census so no socio-demographic data available. Source: ONS



The exemplar and old comparator share very similar socio-demographic profiles, specifically in terms of social grade. Over half the population in Poundbury and Monmouth Road are in the top two social grades. The top social grade, AB, accounts for 30% of the residents in

both comparators and C1 accounts for 28.9% of the residents in Poundbury and 31.6% in Monmouth Road. Half of the residents in Poundbury are in social grades C2 to E, with an equal number in C2 and D (11.1%) and 19% in social grade E. The old comparator has a slightly higher proportion of residents falling into category C2 (17.6%) and D (12.5%) compared to Poundbury. While social grade E accounts for the lowest proportion of residents at Monmouth Road, at Poundbury it is the third largest social grouping after AB and C1.

The social grade profile of the comparators is a reflection of their respective economic activity and housing tenure profiles. Around 60% of Monmouth Road residents fall into social grade AB & C1 and so not surprisingly 47.6% of residents are in full time employment or part time employment (18.4%). Similarly, over 60% of Poundbury residents fall into AB & C1 category. However, unlike the old comparator only 28.5% of residents are in full time employment and 12.6% in part-time. Nearly a third of residents (27.2%) however fall into the retired category which suggests that those pensioners that live at Poundbury are relatively wealthy.

The significantly higher percentage of E grade residents in Poundbury may be a reflection of the significant proportion of social renters found on the scheme (social renters account for 32% of housing tenure). By contrast, Monmouth Road has only 1% of units that are social rented, and under half the proportion of residents in social grade E.

[Retail use on Pummary Square, Poundbury]



### 3.3 NON RESIDENTIAL PROPERTY USES

Using Experian data, we have been able to identify all businesses registered on each of the comparator sites. These include businesses using commercial premises as well as those working and registered from home addresses.

TABLE 5 – Dorchester Socio Demographics

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd.
<b>Economic Activity</b>			
Part-time Employees	12.6%	Not available	18.4%
Full-time Employees	28.5%	Not available	47.6%
Self Employed with employees	1.3%	Not available	3.0%
Self Employed without employees	6.8%	Not available	4.2%
Unemployed	4.3%	Not available	1.4%
Student	5.5%	Not available	7.6%
Retired	27.2%	Not available	11.2%
Looking After Home/Family	6.5%	Not available	2.9%
Permanently Sick/Disabled	4.8%	Not available	1.7%
Other	2.5%	Not available	2.0%
<b>Social grade</b>			
AB	30.0%	Not available	30.2%
C1	28.9%	Not available	31.6%
C2	11.1%	Not available	17.6%
D	11.1%	Not available	12.5%
E	19.0%	Not available	8.2%

Source: ONS

Across all the comparators Poundbury has the greatest number and range of businesses, with 3.1 businesses per hectare, compared to 1.6 on the old comparator and no businesses at all found on Thomas Hardy Gardens. The high proportion of businesses on Poundbury is a reflection of the provision of commercial floorspace provided on the site, whereas the standard comparator has no commercial provision. On the old comparator commercial premises are confined to a small shop and post office. As a result of better provision of commercial premises, Poundbury is well served in terms of retail and personal services (7 and 6 businesses respectively) in contrast to the old comparator (1 business in each category). Poundbury also has 2 food and drink establishments, whereas the standard and old comparators have none.

The absence of any home run businesses registered at Thomas Hardy Gardens is possibly a reflection on the fact that it was only recently completed. It may be the case that over time, as the scheme matures, we would expect to see some small one-man-bands operating out of homes on the scheme.

As the number and range of businesses registered at Poundbury suggests, it has the greatest provision of commercial floorspace across the comparators, with Thomas Hardy Gardens having none and the old comparator only possessing 2,500 sq.ft, all of which is classed as A1 use. On Poundbury the majority (42%) of commercial floorspace falls into use class B1. This represents the offices and workshops found at the Middle Farm Business Centre and Enterprise Centre.

There is a further 12,000 sq.ft classified as 'other' which includes the vet, nursery and fire brigade premises at the business centre. The remaining 22% of commercial floorspace falls under use class A, the majority of which is general retailing (A1).

Awareness of B1 uses in relation to its impact on residential uses in terms of location and access was highlighted by the Duchy in the case of Poundbury. For example, there has been some conflict between some of the residential occupiers and occupiers of the commercial properties as a result of access and frequency of deliveries etc. In the case of Poundbury it has now been recognised that it is not simply a case of mixing commercial and residential uses, but rather particular attention needs to be paid to the end user and how their activities can affect the residential element.



[Quality open space at Poundbury lends itself to a range of activities.]



TABLE 6 – Dorchester Non-residential Breakdown

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd
<b>BUSINESS TYPE BREAKDOWN</b>			
Total # businesses (including home based businesses)	31	n/a	12
Agricultural & materials	0	n/a	0
Building & Engineering	0	n/a	4
Business & Household Services	2	n/a	1
Business services	1	n/a	2
Civic	3	n/a	1
Domestic Services	0	n/a	0
Education	1	n/a	1
Food & Drink	2	n/a	0
General Retail	7	n/a	0
Household Services	5	n/a	0
Leisure	0	n/a	0
Manufacturing	0	n/a	1
Media	0	n/a	0
Neighbourhood Retail	0	n/a	1
Personal Services	6	n/a	1
Transport	0	n/a	0
Utilities & infrastructure	0	n/a	0
Wholesale	1	n/a	0
Unknown	3	n/a	0
Number of businesses (per ha)	3.1	n/a	1.6
<b>COMMERCIAL FLOORSPACE BREAKDOWN (sq.ft)</b>			
A1	5,000	n/a	2,503
A2	n/a	n/a	n/a
A3	500	n/a	n/a
A4	2,000	n/a	n/a
B1	14,000	n/a	n/a
D1	n/a	n/a	n/a
D2	n/a	n/a	n/a
Other	12,000	n/a	n/a
Total commercial floorspace	33,500	n/a	2,503
Commercial floorspace (per ha built area)	3,484	n/a	332

Source: Experian, Duchy of Cornwall, Savills Resea

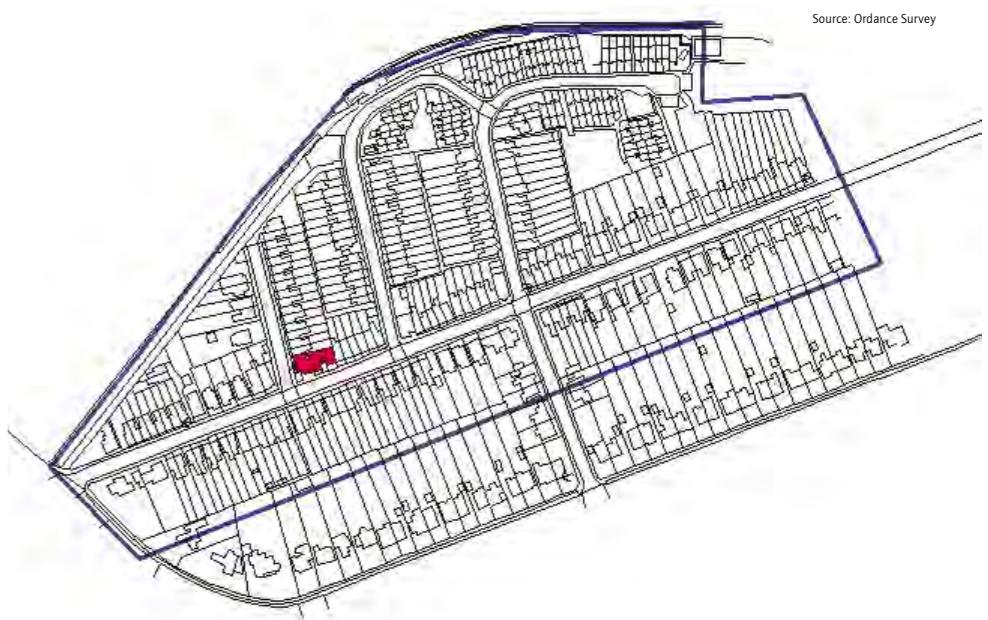
MAP 5  
Poundbury Non-residential  
Property Uses

Scale: 1cm = 0.033 km



MAP 6  
Highbridge Road  
Non-residential Property Uses

Scale: 1cm = 0.033 km



## Map Key

- non residential uses
- water
- site area boundary

Source: Ordnance Survey

Source: Ordnance Survey

### 3.4 VALUE ANALYSIS

As detailed in the methodology we have carried out a value analysis of each of the comparator sites based on their residential and commercial values to derive an assumed value on a per hectare basis. We have also examined house price growth for each of the localities in order to assess if there is any indication of higher values associated with the exemplar scheme – in other words with sustainable urbanism.

#### 3.4.1 HOUSE PRICES

Across all residential property types there would appear to be a clear premium for residential property at Poundbury over its standard and old comparators, pointing to the existence of a premium associated with sustainable urbanism. Across all properties, it is Thomas Hardy Gardens that achieves the highest average values as a result of an absence of flats on the scheme. By examining values on a £ per sq.ft basis we can exclude the impact of property size, on this basis it is Poundbury that achieves the highest values, almost 17% higher than the standard comparator and 44% higher than the old comparator.

This premium is most marked when you consider that the standard comparator adopted a number of design principles used at Poundbury in terms of the design of properties and use of parking courtyards. In spite of its more central location, the depression of values at the standard comparator by contrast with Poundbury, may be due to a number of factors, most obviously the absence of neighbourhood facilities, relatively low quality public space and the lesser quality of the architectural detailing of the scheme.

TABLE 7 – Average Residential Values & % Difference to Exemplar (2006)

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd.	
Detached	£377,475	£267,738	-29.1%	n/a
Semi-detached	£264,000	£234,333	-11.2%	£249,363 -5.5%
Terraced	£218,500	£195,833	-10.4%	£169,500 -22.4%
Flats	£140,898	n/a	-	n/a
All	£228,354	£236,145	3.4%	£183,389 -19.7%
Average £psq.ft	£319	£272	-14.7%	£222 -30.4%

Source: Land Registry, Savills Research using Rightmove data

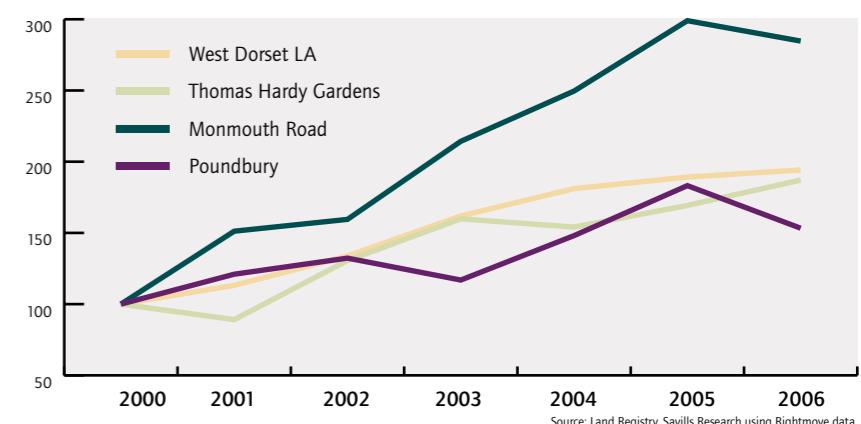
#### 3.4.2 HOUSE PRICE GROWTH

House price growth on each of the comparators was examined to investigate whether building to sustainable urbanism principles enhanced value growth.

Total house price growth in the Local Authority district between 2000 and 2006 averaged 94%, with only value growth at the old comparator exceeding this with approximately 184%, expressing growth off a relatively low base. While both the exemplar and standard comparators under-performed against the district, up until 2005 Poundbury experienced greater levels of growth above that seen for the standard comparator (83% and 69% respectively). We suspect that value growth at the exemplar was suppressed in 2006 due to supply becoming available in Poundbury's later phases.

Despite this 2006 anomaly, it would appear that, as well as a value premium, sustainable urbanism has also aided value growth, particularly when you consider that growth was not markedly suppressed by the surfeit of new supply coming onto the market. We expect that once Poundbury is complete in its entirety, future value growth may outstrip that seen on the standard comparator.

FIGURE 1 – House Price Growth



#### 3.4.3 MARKET COMMENTARY

According to local agents each of the comparators have particular selling features, and tend to be popular with different types of buyers.

One of the key market differences between Poundbury and its standard and old comparator is that it is more popular with buyers from outside Dorchester. These buyers also tend to be retirees as demonstrated by the fact that approximately 27% of residents fall under this category. By contrast Thomas Hardy Gardens and Monmouth Road area are popular with existing Dorchester residents. Monmouth Road is particularly popular due to its proximity to the town centre and train station and the presence of period properties with relatively large private gardens, which may go some way to explain the pronounced level of value growth seen between 2000 and 2005.

The good range of property types found at Poundbury, particularly the provision of flats, has also meant, according to local agents, that it has been successful in meeting some of the demand from first time buyers. The proximity of good schools to Poundbury has potentially been influential in attracting families to the development. Thomas Hardy School which is found immediately adjacent to Poundbury Phase 1 is one of the top performing Secondary schools in the County. Although Poundbury may benefit from immediate proximity, its catchment includes the whole of Dorchester therefore all of the schemes benefit from its presence.

## 3.5 VALUE OF URBANISM AT POUNDBURY

The examination of total assumed Gross Development Value (GDV) identifies that it is Poundbury that has a higher value than its standard and old comparator. This is based on the fact that, compared to Thomas Hardy Gardens, Poundbury has a greater number of residential properties and achieves higher unit values. This residential unit premium at the exemplar also explains its higher GDV set against its old comparator despite the latter having more residential units. Total value has also been enhanced by the commercial properties that exist on Poundbury in contrast to Thomas Hardy Gardens.

While the presence of commercial properties has been key in enhancing total development returns at Poundbury, it must be acknowledged that commercial lease-hold rents produce lower returns than residential. A judgement has been made that it is the provision of these commercial properties, in terms of assisting in the creation of a real and mixed place with the provision of local amenities, which has assisted in raising residential values on the development. The Duchy has created this balance and covered these reduced returns by developing residential over ground floor commercial uses.

Despite the residential unit premium that exists on the exemplar over its comparators, in terms of total value yielded on a per hectare basis, the differential is less clear cut. In terms of value yielded per hectare for the entire site area measured, it is the old comparator that achieves the highest value, followed by Poundbury, with the standard comparator achieving the lowest value. When looking at the value yielded from the built area alone, Poundbury out-performs the standard by approximately 18%.

It is clear that there is a premium associated with 'sustainable urbanism' at Poundbury on a unit basis, suggesting that there is value to developers to build to similar principles. It may be the case that the provision of public open space and commercial uses has enhanced unit values at Poundbury, yet on the flip side its presence has negated values on a per hectare basis compared against the traditional example of urbanism. (The single use approach on the old urbanism comparable is however a product of its proximity to the town centre and would not be sustainable, particularly given its lack of car parking space, on a larger scale, peripheral location).

TABLE 8 – VALUE OF URBANISM FOR DORCHESTER

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd.
£ha site area (ha)	£ 6,871,107	£ 5,563,166	£ 7,510,115
£ha site area - built area (ha)	£ 7,071,526	£ 5,971,860	£ 7,510,115

Note: values are based on publicly available data sources. Source: Land Registry, Savills Research using egri data

## 3.6 BUILD COSTS AT POUNDBURY

It was outside the scope of this research to measure the build costs of this development. The preceding analysis suggests that there is additional value available to developers which could be utilised in any additional masterplanning and build costs. Based on this additional value, and a number of assumptions relating to standard build costs and margins, it would appear that residual revenues per hectare of built area are enhanced on the exemplar by approximately 23%. This means that there is potentially more revenue available on the exemplar over the standard comparator for land and any other additional costs (SEE TABLE 9).

[Building during Phase 2 at Poundbury]



This is not to say that additional build costs are necessarily associated with sustainable urbanism and building to 'new urbanist' principles, developers will need to make their own decisions about this. The evidence is mixed as to whether there is an additional cost associated with the layout of buildings according to the principles of sustainable urbanism. The above This case suggests that, if there is, it can potentially be mitigated by improved values.

TABLE 9 – ADDITIONAL AVAILABLE REVENUE FOR DORCHESTER (based on built area)

	Exemplar Poundbury	Standard Thomas Hardy Grdns.	Old Monmouth Rd.
Residual per hectare – land & additional costs (£m)	3.19	2.09	3.63
Amount available over standard (% of build costs)	46%	—	64%

Note: values are based on publicly available data sources. Source: Land Registry, Savills Research using egri data

## 3.7 LAND OWNERSHIP

Single land ownership by the Duchy was key in delivering the masterplanned vision for Poundbury. Rather than selling off parcels of land to housebuilders the Duchy used licence agreements in order to ensure that housebuilders adhered to the masterplan and design of housing units.

This single ownership, combined with the overarching vision for the site and detailed design code, meant that much of the front end work, and costs, was carried out before the housebuilder even came to the table. While this was a costly exercise for the landowner it had the benefit of ensuring speedy resolutions to grant, in most cases within 8 weeks.

The Duchy also addressed the S106 requirements. This took out the risk when selling the land out to tender, therefore taking out the risk for the developer. The cost of the S106 came off the land value.



COMPLETED CROWN STREET MASTERPLAN BY CZWG

[PART II: SECTION 4]

## The Results for Crown Street, Glasgow

Glasgow is the largest city in Scotland with a population of just over 585,000. Due to its size it is mixed both socially and economically. It has recently experienced a high volume of new-build activity, which has been concentrated in the development of flats in the city centre, although there is now a surplus of larger two bed flats.

This has been reflected in value falls on new-build properties over 2006, which averaged -1%, as opposed to the 12% increase seen in 2005. On the whole, Glasgow has seen relatively healthy levels of house price growth totalling 106% since 2000, 8 percentage points above that seen in Scotland (98%).

Crown Street is a mixed use urban regeneration area situated in the Gorbals in Glasgow, close to the city centre. The area was previously characterised by high-rise residential blocks built in the 1960s (Hutchesontown 'A' 'B' and 'C') which had been constructed on the site of what had been perceived to be overcrowded and unsanitary tenement blocks. By the early 1980s, however, the area was synonymous with decline and social failure, and the tower blocks were eventually demolished in 1987. The Crown Street regeneration project was set up in 1990 as a joint venture between the Glasgow Development Agency (now Scottish Enterprise Glasgow), Glasgow District Council (now Glasgow City Council) and Scottish Homes (now Communities Scotland), as well as the local community. The first phase was completed in 1994.

The masterplan for the project was a competition-winning scheme produced by CZWG. It combines an urban form modelled on the Ladbroke Estate of combined communal and private rear garden spaces (also commonly found in the Scottish cities where the communal garden was used as a drying green) and an update of the original tenement model, achieved by setting the blocks on a more spacious street pattern. Within the street blocks, a mixture of two storey maisonettes (ground and first floor) and flats are accommodated, to provide a mix of family and smaller scale accommodation. The masterplan also integrates mixed uses within the ground floors of tenemented blocks on the main street, reflecting and updating the traditional street forms of Victorian Glasgow.

Much attention was placed on the achievement of high quality design and each of the development parcels was the subject of a developer design competition. The entire scheme comprises of approximately 1,950 homes, 31% of which (600) are social rented. There are no shared equity units found on the scheme. There are also 12 local shops, a supermarket, hotel, library, local park, and approximately 54,000 sq.ft of office space on the scheme.

For this measurement exercise we have focused on phases 1 through to 6, including the supermarket and library, which consists of 899 residential units. The measured area of the regeneration project is bounded by major roads (A74; A728; A730) on all but one side. The area to the east of the selected area is made up of later development stages of the regeneration project.

**MAP 1**  
**Location of Comparators**



Source: Ordnance Survey

**Mavisbank Gardens**

Due to the level of affordable housing provision at Crown Street it was extremely difficult selecting a suitable standard comparator as there is no requirement placed on developers to provide on-site affordable housing units in central Glasgow. This is due to particular market conditions where the policy objective is to introduce high quality residential into the centre, to reinforce and diversify the residential population. Laing's Mavisbank Gardens development found on the banks of the River Clyde in the Plantation area just north west of Crown Street was eventually selected on the basis of its relative location to the city centre and generally similar market positioning. It must be acknowledged, however, that Mavisbank Quay is a waterfront location and potentially enjoys a premium as a result. Although a former industrial site, the challenge of regeneration was less severe than at Crown Street where part of the challenge lay in reversing negative preconceptions of a stigmatised location.

**Albert Drive**

As Crown Street is located in a previous tenement area there were a number of suitable existing Victorian tenement areas within the vicinity that could have been selected as comparators. The area found immediately west of Pollockshields East train station and centred around Glenmap Street was identified as an old urbanism comparator and for the purposes of this study was called Albert Drive. As already mentioned, it is made up predominately of tenement blocks (flats), with a significant Asian population. Like Crown Street, it is also a mixed use neighbourhood with a number of shops and B1 accommodation types found on the site.

**4.1 LAND USE**

DETAILED IN TABLE 1 the land use breakdown across all three comparators as well as the land use maps for the various comparators.

Each of the comparators reflect varying degrees of land use intensity. The traditional example of urbanism has the most intense use of land, with the standard comparator

having the least intensive use of its site area. Albert Drive (traditional urbanism) has 99% of its site area built on; this excludes any parks, verges & small greens and any other open space, but includes front and rear gardens. Within the street blocks, a mixture of 2 storey maisonettes (ground and first floor) and flats are accommodated, to provide a mix of family and smaller scale accommodation.

TABLE 1 – Glasgow Land Use Breakdown

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
Site area (ha)	14.31	6.2	4.2
Site area - built area (ha)	13.46	5.3	4.2
Site area - built area minus non residential uses (ha)	13.03	5.3	3.9
Roads	26.0%	8.5%	29.1%
Pavements	14.7%	6.6%	16.4%
Verges & Small Greens	4.6%	27.9%	1.3%
Parks	6.0%	0.0%	0.0%
Other open space (green)	8.6%	13.9%	0.0%
Other open space (non-green pedestrian areas)	4.0%	7.1%	0.0%
Playgrounds	0.0%	0.0%	0.0%
Residential	15.0%	9.6%	22.9%
Public buildings/Community facilities	0.9%	0.0%	3.3%
Private commercial premises	2.1%	0.0%	4.5%
Outdoor leisure (ski slope @ Watermead)	0.0%	0.0%	0.0%
Driveways/ front gardens	4.1%	3.7%	4.0%
Rear gardens	9.8%	9.6%	17.1%
Residential parking courtyards	1.2%	11.2%	0.0%
Commercial car parking	3.0%	0.0%	0.0%
Public car parking	0.0%	0.0%	0.0%
Garages	0.0%	1.5%	0.2%
Open water/river	0.0%	0.0%	0.0%
Unknown buildings/ sub station	0.0%	0.4%	1.3%

[Open space at Crown Street is well overlooked]



There are also a number of similarities in the land use of both the exemplar and traditional case studies, no doubt reflecting the fact that the design for the Crown Street masterplan was based on the typology of a traditional tenemented land use pattern. Despite the intensity of land use on the example of old urbanism, the provision of private space is significantly greater than seen on the exemplar. It would appear on the exemplar there is a trade-off between private, semi-private (communal) and public space, with a greater level of provision of semi-private public space at Crown Street. The standard example of development is markedly different from the other two case studies in its land use pattern. The similarities and differences between all three case studies will be grouped under the following headings;

- PRIVATE SPACE
- PUBLIC SPACE
- WALKABLE NEIGHBOURHOODS
- RESIDENTIAL LAND USE

MAP 2

**Crown Street Land Use**

Scale: 1cm = 0.04 km

Note: this is to a different scale to the standard and old comparator as the site area measured was larger



Source: Ordnance Survey

MAP 4

**Albert Drive Land Use**

Scale: 1cm = 0.02 km



Source: Ordnance Survey

MAP 3

**Mavisbank Gardens Land Use**

Scale: 1cm = 0.02 km

**Map Key**

commercial land	pedestrian only access
commercial car parking	playground
commercial premises	public parking
community	rear garden
community facilities	residential
front garden/driveway	road
garages	sheds
open space	ski slope
open water	sub station
park	unknown building
parking courtyards	verges and small greens
pavements	water

### Private space

While the regeneration of Crown Street was based on a tenement land use pattern, in terms of provision of private space, it is Crown Street and the standard comparator that are more closely aligned. Both Crown Street and Mavisbank Gardens have approximately 13-14% of their land cover assigned as private space (rear and front gardens) as opposed to Albert Drive with 21%. There is also an almost identical split in front and rear gardens on both the exemplar and standard case study of 30/70. In spite of the numerically similar split of private garden space between Crown Street and the standard comparator, the distribution of garden space at Crown Street is qualitatively different. Reflecting the typology of the traditional Glasgow tenement, the ground floor flats have small private rear gardens (and in some cases front gardens too), the rear garden giving on to a substantial semi-private communal garden. In this way, families requiring their own gardens are catered for within the dense urban form of the tenement block, and at the same time, the relative under-provision of private garden space is compensated by the provision of a formal well-managed park and semi-private communal gardens.

At the standard comparator, while there is significant provision of open green space, it is not defined public space as seen on the exemplar scheme.

### Public space

There is an issue of quality of public space provision across the comparators. The old comparator has no public space provision, whereas both the exemplar and standard comparator have similar proportional levels of provision. Crown Street is the only case study where there is clearly designated public open space in the form of a park and communal gardens, accounting for 15% of total land cover. The standard comparator also has a significant provision of green open space (14%) although this is not clearly designated as on the exemplar. Here, the green space is diffused throughout the site.

The presence of verges and small greens also adds to public space provision, although this space would not be considered as being of a particularly high quality. To a certain extent this space could be considered as being wasted space as it has a low amenity value. The standard comparator has by far the greatest proportion of its land cover assigned as verges and small greens, accounting for 28% of total land cover. This is in contrast to 5% on Crown Street and only 1% on Albert Drive.

[Each block benefits from private gardens for ground floor residents and communal gardens for all residents]



While on the whole, the standard comparator would appear to be well provided for in terms of public open space, accounting for 42% of total land cover, the quality of this space would be considered to be relatively low as it is primarily verges and small greens.

In this case, standard new-build development is characterised by a provision of low amenity green and public space. The effect such provision has on values generated, however, may have been mitigated by the fact that the site lies on the Clyde Waterfront, and therefore the river rather than the relationship to green or public space, provides the development with a valuable setting. While Crown Street is a regeneration project, it is still a new-build scheme, and as a result has a certain level of provision of verges and small greens. This provision clearly of a far lower level and generally deployed to create a separation between the development area and high traffic volume in adjacent roads.

The provision of open space in the form of semi-private communal gardens and public open space compensates for a lack of private garden space and possibly provides more equitable access to garden space within a relatively high density, flatted scheme. While on the whole, the standard comparator would appear to be well provided for in terms of public open space, accounting for 42% of total land cover, the quality of this space would be considered to be relatively low as it is primarily made up of verges and small greens.

[Crown Street provides a varied convenience retail]



### Walkable neighbourhoods

The creation of walkable neighbourhoods is a key feature of 'sustainable urbanism'. This means designing a well connected street pattern, which as a result means that there is a good level of provision of roads and pavements.

Again, there are clear similarities between the exemplar and old comparator, with the standard comparator clearly standing out in the proportion of land cover given over to road and pavements. Albert Drive has the greatest proportion of its land cover given over to roads and pavements (45%), closely followed by Crown Street (41%). Mavisbank Gardens has under half this level of provision of only 15%.

These proportional differences reflect varying degrees of connectivity. Both the exemplar and old comparator are well interconnected, with buildings placed in block patterns. They are also relatively well connected to the wider street network, the old comparator being more so. By contrast, the development at Mavisbank Gardens runs along a single road with a series of cul-de-sacs providing access to the flat blocks to the front and housing clusters to the rear. Access to the wider street network is restricted to two access points.

Both the exemplar and old comparator provide on-street parking, in contrast to the standard scheme where parking is provided off street either in driveways or in designated parking areas outside the flat blocks. Parking provision at Crown Street is surprisingly high (provision is at 115%) which is surprising considering the high level of social housing on the scheme, which is normally associated with low levels of car ownership, and considering the scheme's relative proximity to the city centre. There are, however, none of the parking problems reported on the other exemplar sites.

Connectivity is also enhanced through the provision of pavements and footways. Again, both the exemplar and old comparator have similar levels of provision: 15% and 16% respectively. On the standard this accounts for only 7% of total land cover. If the footpaths that run through the green open space/verges and small greens are also included, provision increases to 14%, more in line with that on the other two comparators.

The amenity value of this pavement/footpath provision on the standard comparator, while in line with the exemplar and traditional examples of urbanism, is low as there is no provision of local amenities on site which would encourage their use. Based on the land area measured, the old comparator has the largest proportion of its site cover given over to commercial uses (4.5%), at Crown Street this land use accounts for 2% of total land cover. When public buildings/community facilities are taken into account, non-residential land use increases to 8% at Albert Drive and 3% at Crown Street. Mavisbank Gardens has no commercial or community provision.

#### Residential land use

While there have been a number of similarities in land use between the exemplar and traditional example of urbanism, they diverge in the proportion of land given over to residential use.

Just under 23% of Albert Drive's site area is assigned to residential, in contrast to the 15% at Crown Street, and only 10% at Mavisbank Gardens. Residential land use cover on the old comparator has been optimised on the back of it having no park or public open space, other than a minimal amount of verges. This has translated into higher densities. Across the site as a whole density equates to 70.4 units per hectare, a figure which should be considered, however in the light of the relatively small size of the sample. While Crown Street has been based on a tenement layout, the presence of a park and communal gardens has reduced the amount of land cover assigned to residential use and densities, which equates to 62.8 units per hectare across the whole site. It is unsurprising therefore considering the amount of Mavisbank Gardens site area, that is not built on, and considering the greater proportion of non-flat units on the site, that it has the lowest densities across all three comparators. Gross density on the standard site stands at 42.1 units per hectare.

#### 4.2 HOUSING & POPULATION CHARACTERISTICS

Due to the relative disparities in the site areas under measurement, the Crown Street case study has the greatest number of residential units, totalling around 900 units, followed by Albert Drive with 299, and Mavisbank Gardens with 259 units.

Residential density on a per hectare basis is relatively similar between Crown Street and its old comparator, as you would expect considering the similarities in land use. Based on built area densities are 66.8 and 70.4 units per hectare respectively. In contrast, Mavisbank Gardens only yields 48.9 units per hectare of built area. This reflects the presence of low density semi-detached and terraced properties to the rear of the scheme and the relatively profligate dispersal of green space.

The provision of commercial premises at Crown Street and the old comparator impact further on the density calculations. Excluding these from the density analysis pushes residential densities upwards to 69.0 and 76.4 units per hectare respectively indicating a highly efficient land use pattern.

Despite similar densities at Crown Street and Albert Drive based on units per hectare, in terms of habitable rooms per hectare, it is Albert Drive that possesses a higher density than the exemplar (268.2 and 147.9 rooms per hectare respectively). This ties in with the fact that Albert Drive has a higher number of habitable rooms per dwelling (3.8) than Crown Street (2.4) suggesting that properties in the traditional example of urbanism are larger. Mavisbank Gardens' higher number of habitable rooms per dwelling than the exemplar, reflects the fact that the standard scheme contains a greater proportion of houses than seen at Crown Street.

Residential supply across all comparators is dominated by flats. Albert Drive has the greatest proportion of flats (95.6%) followed by Crown Street with 89.4%, and Mavisbank Gardens having 78.5% of its properties classified as flats. This reflects the fact that flatted dwellings are the most common residential typology in the traditional residential areas of central Glasgow, closely followed by terraced houses in more upmarket streets. The exemplar scheme has 11% of property types classified as houses, of which the majority (8.1%) are terraced. Albert Drive has only 4.4% of properties classified as houses, 3% of which are terraces. The relatively low density nature of the standard comparator is reflected by the fact that almost 22% of residential properties are houses, 63% of which are classified as semi-detached.

TABLE 2 – Glasgow Housing Breakdown & Density Analysis

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
Number of residential units	899	259	299
<b>Type of resi units (%)</b>			
Houses	10.6%	21.5%	4.4%
Detached	1.1%	0.0%	0.7%
Semi	1.3%	13.5%	0.7%
Terraced	8.1%	8.1%	3.0%
Flats	89.4%	78.5%	95.6%
<b>Density (units per ha)</b>			
On whole site	62.8	42.1	70.4
On built area	66.8	48.9	70.4
On built area excl non residential uses	69.0	48.9	76.4
<b>Density (hab rooms per ha)</b>			
On whole site	147.9	140.4	268.2
On built area	157.3	163.0	268.2
On built area excl non residential uses	162.5	163.0	290.9
<b>Number of habitable rooms per dwelling</b>	2.4	3.3	3.8

Source: ONS



All three schemes are dominated by owner-occupied housing. While Crown Street has the greatest proportion of owner-occupation across all three case studies, it is deficient in terms of private renters in comparison. Albert Drive has nearly a third of its housing in the private rented sector (27.6%) possibly reflecting the maturity of the property market within the area, with Mavisbank Gardens having approximately 19% in this sector. Crown Street has only 10% of housing classified as private rented.

Around 50% of households at Crown Street are 1 person households. In contrast the proportion of this category at Albert Drive is just over half this. Households with dependent children form a far larger group at Albert Drive. Including lone parent households, those with dependent children account for 51% of households at Albert Drive. At Crown Street this figure is reduced to 24%. This suggests that more families are living in the flatted accommodation at the old comparator than at Crown Street.

TABLE 3 – Glasgow Tenure &amp; Household Composition

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
<b>Housing tenure</b>			
Owner-occupied	71.4%	70.1%	69.2%
Social rented	18.7%	11.1%	3.2%
Private rented	9.9%	18.8%	27.6%
<b>Type of households</b>			
Couple households with dependent child(ren)	14.8%	4.5%	42.3%
Couple households with no dependent child(ren)	20.0%	31.0%	20.4%
Lone parent households with dependent child(ren)	8.9%	3.0%	8.5%
Lone parent households with no dependent child(ren)	4.1%	1.5%	2.5%
One person households	52.1%	60.0%	26.4%
<b>Population</b>	<b>1,517</b>	<b>428</b>	<b>1,234</b>

Source: ONS

Due to the location of the standard comparator with its waterfront setting, and proximity to the new BBC Scotland HQ at Pacific Quay, it is unsurprising that Mavisbank Gardens accommodates the wealthiest residents. Just over a third of residents are in the top AB social grade, with those falling under C1 accounting for another third.

Both the exemplar and traditional comparators share similar social grade profiles. The majority of residents of each fall into social grade C1, accounting for 30% in Crown Street and 34% in Albert Drive. Both comparators also have an equal proportion in the top social grade (AB) with 16.3% in the exemplar and 17.8% at Albert Drive. Additionally, they both have around 50% in category C2 to E with slight variations in individual categories. Albert Drive, for example, has a slightly higher percentage of residents in the lowest grade (27.6%) compared to Crown Street which has 25.3% in this category. The old comparator also has slightly lower proportions in category C2 (8.4%) & D (12.7%) compared to Crown Street (11% and 17% respectively), however, these differences are only marginal. Although comparing less favourably than the standard scheme, the social mix present in the Crown Street scheme is an indication of the success of the project as a regeneration scheme which has turned around a blighted location (with very negative locational perceptions.)

The social grade profile is a reflection of economic activity and housing tenure. Mavisbank Gardens has the greatest proportion of economically active residents, accounting for approximately 73%. In contrast Crown Street and Albert Drive have approximately 52% and 45% of residents respectively, falling into this category.

### 3.3 NON RESIDENTIAL PROPERTY USES

Using Experian data we have been able to identify all businesses registered on each of the comparator sites. These include businesses using commercial premises as well as those working and registered from home addresses. The number of registered businesses at each of the comparators appear to reflect the level of commercial floorspace provision and age of the localities. For example, based on a per hectare basis Albert Drive, which is the most established area, has the greatest level of commercial floorspace and number of businesses, followed by Crown Street, and then Mavisbank Gardens, which has no commercial provision on site. In terms of total provision it is Crown Street that comes out on top. This reflects its larger site area, the original masterplan brief, and the presence of a supermarket.

TABLE 4 – Glasgow Socio Demographics

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
<b>Economic Activity</b>			
Part-time Employees	6.3%	4.8%	9.2%
Full-time Employees	43.3%	58.0%	28.9%
Self Employed with employees	1.3%	5.8%	2.6%
Self Employed without employees	1.2%	4.8%	3.9%
Unemployed	4.0%	4.3%	6.0%
Student	15.4%	7.7%	12.8%
Retired	8.4%	3.9%	3.2%
Looking After Home/Family	5.2%	3.9%	10.5%
Permanently Sick/Disabled	9.5%	4.6%	7.9%
Other	5.4%	2.2%	14.8%
<b>Social grade</b>			
AB	16.6%	36.5%	17.8%
C1	30.2%	34.6%	33.5%
C2	10.9%	6.4%	8.4%
D	17.0%	13.6%	12.7%
E	25.3%	8.8%	27.6%

Source: ONS

In terms of business mix, both Crown Street and Albert Drive are dominated by retail, which accounts for approximately 32% and 30% of all registered businesses respectively. Interestingly this is not reflected in the floorspace breakdown by use class, as Albert Drive has 81% of its commercial floorspace classified as A1, compared to 54% at Crown Street reflecting the small footprint of the retail units at Albert Drive.

Also worth noting is that in the case of Crown Street there was some difficulty at the start of the development to let the retail units based on their relatively small size. Those retailers that were looking for space were looking for larger units, which did not conform to the creation of a mixed community with a maturing residential mix. This has now been resolved and all units are now occupied.

[Mixed use activity in Glasgow]



As already indicated the majority of floorspace at both Crown Street and Albert Drive is classified as retail (A1 – a very small proportion of this would be classified as A5), 54% and 81% respectively, with a more even division of floorspace across the various use classes at Crown Street as opposed to the traditional comparator. For example, the remaining 50% of commercial floorspace is split almost equally between B1 and D1 uses. Again, this may be a reflection of the relatively small sample measured within the old urbanism comparator.

While in terms of total floorspace, the provision Crown Street does appear to be well provided, local agents did note there was a relatively poor range of local services compared to more established traditional neighbourhoods. This was cited as an issue for potential buyers and will be discussed in greater detail in Section 4.4.3.

TABLE 5 – Glasgow Non-residential Breakdown

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
<b>BUSINESS TYPE BREAKDOWN</b>			
Total # businesses (including home based businesses)	41	3	33
Agricultural & materials	0	0	0
Building & Engineering	1	1	0
Business & Household Services	4	0	3
Business services	6	2	4
Civic	1	0	3
Domestic Services	0	0	0
Education	1	0	0
Food & Drink	0	0	0
General Retail	4	0	5
Household Services	0	0	3
Leisure	2	0	3
Manufacturing	0	0	1
Media	0	0	0
Neighbourhood Retail	9	0	5
Personal Services	3	0	2
Transport	0	0	0
Utilities & infrastructure	0	0	0
Wholesale	1	0	0
Unknown	9	0	4
Number of businesses (per ha)	2.9	0.5	7.8
<b>COMMERCIAL FLOORSPACE BREAKDOWN (sq.ft)</b>			
A1	31,166	n/a	21,236
A2	n/a	n/a	n/a
A3	n/a	n/a	1,378
A4	n/a	n/a	n/a
B1	12,209	n/a	3,634
D1	14,210	n/a	n/a
D2	n/a	n/a	n/a
Other	n/a	n/a	n/a
Total commercial floorspace	57,586	n/a	26,248
Commercial floorspace (per ha)	4,280	n/a	6,180

Source: Experian, Savills Research

MAP 15

**Crown Street Non-residential Property Uses**

Scale: 1cm = 0.04 km

Note: this is to a different scale to the standard and old comparator as the site area measured was bigger



Source: Ordnance Survey

MAP 6

**Albert Drive Non-residential Property Uses**

Scale: 1cm = 0.02 km



Source: Ordnance Survey

**Map Key**

- non residential uses
- water
- site area boundary

## 4.4 VALUE ANALYSIS

As detailed in the methodology, we have carried out a value analysis of each of the comparators based on their residential values to derive an assumed value on a per hectare basis. We have also examined house price growth for each of the localities in order to assess if there is any greater value associated with the exemplar scheme, in other words, with sustainable urbanism.

## 4.4.1 HOUSE PRICES

It is the standard comparator, Mavisbank Gardens, which achieves the highest average values per unit – 13% higher than those achieved at Crown Street, reflecting its waterfront location, and the aspirational nature of the development. Albert Drive has the lowest average values across the three comparators, although only 2% below those achieved at the exemplar. On a £psq.ft basis it is in fact the exemplar that achieves the highest average values, although only 2% above the standard comparator. Scottish residential values are not broken down by property type, but considering that the majority of properties across all the three comparators are flats, the average values quoted are more than likely to reflect average flat values.

What is of most interest is the relative over-performance of Crown Street over its old urbanism comparator. As already mentioned, both areas share a similar profile in terms of social grade, and under other circumstances we would have expected the old comparator to achieve higher values reflecting its period properties and closer proximity to a train station (Pollockshields East train station is situated on the eastern periphery of the area measured). In this instance this has not been the case. There has been a clear premium, ranging from 55% to 2%, for Crown Street properties over its old comparator since 2000. However, the extent of this premium has steadily reduced since 2000. It is worth noting that the value of properties at Albert Drive may historically have been depressed as it is a mixed ethnic area tending to attract buyers from within the same community. Over recent years this may have changed with buyers from outside the area/community now buying properties. The relative revival of interest in larger, centrally located older properties in Glasgow generally may also go some way to explain the reduction in premium of Crown Street over the old comparator.

Setting the old comparator aside, the £psq.ft value premium for Crown Street over its standard comparator would indicate that there is a premium associated with 'sustainable urbanism' and the creation of location or 'place value'. It would appear that the regeneration of Crown Street has succeeded in shifting the nature of the area away from what existed previously, demonstrated by the values achieved.

TABLE 6 – Average Residential Values &amp; % Difference to Exemplar (2006)

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
All	£118,573	£133,555	12.6%
Average £psq.ft	£175	£171	-2.3%

Source: MyHousePrice, Savills Research using Rightmove data

## 4.4.2 HOUSE PRICE GROWTH

House price growth on each of the comparators was examined to investigate whether building to sustainable urbanism principles enhanced value growth.

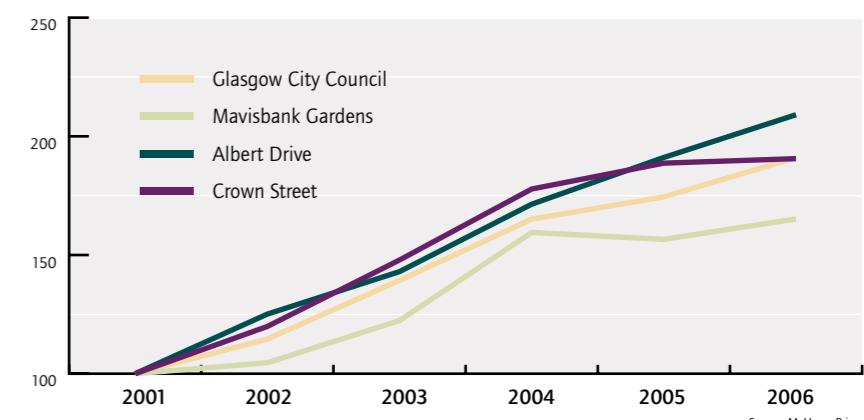
All three case study locations have seen relatively similar levels of house price growth since 2001, pretty much in line with that seen across the Glasgow unitary authority, where values have seen a 91% increase.

Both the exemplar and old comparators have experienced growth above that seen in the wider district. On the whole, value increases on both have been very similar, with the old comparator experiencing the greatest value uplift of approximately 110%. Crown Street has seen an increase of 91%. There was a slow down in growth on the exemplar in 2006, which we suspect may be the result of the removal of a new build premium as this part of the development has reached maturity. The oversupply of large 2-bed new build flats in Glasgow city centre may also have had a part to play in this slowdown in value growth. The standard comparator has experienced the lowest level of value growth, below that seen in the wider district. Between 2001 and 2006 values grew by approximately 65%, 25 percentage points below that seen on Crown Street.

Based on the above, it would appear that the 'sustainable urbanism' of Crown Street has conferred some increased house price growth over its standard comparator.

The higher level of house price growth at Albert Drive reflects the attractiveness, and value for money of its period properties over new build units, something which will be discussed in greater detail in the following section. But it would appear that even without this, Crown Street has seen an uplift in value akin to that seen on the old example of sustainable urbanism.

FIGURE 1 – House Price Growth



## 4.4.3 MARKET COMMENTARY

According to local agents, the Crown Street regeneration area is still viewed as a relatively low value area, similar to Albert Drive. In conjunction, it would appear to be subject to the same issues associated with a number of new-build schemes throughout Glasgow.

At the launch, units evidently sold well, but the area has since been characterised by a high level of turnover combined with a slow rate of sale. A number of explanations behind this have been cited. Firstly, unit values appear excessive compared to those for character

properties, and this is partly supported by the lower average values achieved at Albert Drive compared to Crown Street. Secondly, new-build unit sizes tend to be smaller than those for similar period property types, and as a result people are increasingly looking to period properties that offer 'more for your money'. This preference for period properties is demonstrated by the higher level of growth seen at Albert Drive over that at Crown Street.

Thirdly, the lack of local amenities was also cited as a restricting factor to value growth, and poor rate of sale, at Crown Street. While there are a small number of retail premises, and supermarket on the site, agents feel there is not the full range of local retailers and services that you would normally find in a more established areas within the city.

As to school provision, while there were no new schools provided on the regeneration area of Crown Street there are four primary schools located in the wider Gorbals area. Their roles have increased due to the increase in housing developed in the area, and by all accounts are performing well. While superficially Crown Street has relatively far lower family appeal (24%) than the old urbanism established neighbourhood at Albert Drive (50%), when compared with the standard comparator (7%), and given the neighbourhood's historic reputation, the proportion of families with dependent children is very striking. The proportion of families with dependent children is comparable with that of Fairford Leys (27%) though lower than Poundbury where 33% of households are families with children. The proportion of families with children present at Crown Street is particularly significant given the highly 'urban' form and location of the Crown Street development. It could be argued that the inclusion of ground floor maisonettes with garden and communal garden access combined with an adequate existing schools provision has successfully challenged the trend towards occupation by small, adult households within the city centre.

Mavisbank Gardens' location on the River Clyde, although the site is a former industrial area, meant it did not need to reverse negative locational perceptions as at the Gorbals. This has no doubt enhanced values above that seen on the other comparators. Despite this, the value differential is not excessive, and may reflect its generally lower level of accessibility to the city centre; lack of accessibility to local amenities, as well as the generally older and less architecturally ambitious nature of its stock compared to Crown Street.

#### 4.5 VALUE OF URBANISM AT CROWN STREET

In terms of assumed Gross Development Value (GDV), on a per hectare basis there is a clear differential between the exemplar and traditional urbanism case studies and that calculated for the standard comparator. Both the exemplar and old case studies would appear to have very similar GDV's per hectare, with Crown Street out-performing marginally based on built area.

The marked under-performance of Mavisbank Gardens, despite it having the highest average values across all three comparators, is attributable to: the absence of any commercial property (which, we suggest, has conferred additional locational value on the other comparators); its poor urban design; the presence of large areas of unused land as verges and small greens; and less efficient land use generally.

The premium associated with residential properties at Crown Street, over that at the old comparator, has enhanced per hectare Gross Development Values. The presence of a significant amount of commercial floorspace has also enhanced total development value and helped to establish the regeneration of the area through the creation of location or 'place value'.

Based on this analysis, there would appear to be a clear value to developers to build to the principles of 'sustainable urbanism' as opposed to pursuing standard residential development. The value differential between the two would appear to suggest that the regeneration of Crown Street to principles of sustainable urbanism which reflect the typologies and dispersal of uses inherent in the old urbanism exemplar, has reduced or eliminated any Gorbals discount that existed previously.

TABLE 7 – Glasgow Value of Urbanism

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
£ha site area (ha)	£7,548,903	£5,328,811	£7,957,797
£ha site area - built area (ha)	£8,029,577	£6,186,037	£7,957,797

Source: MyHousePrice, Savills Research using egi data

#### 4.6 BUILD COSTS AT CROWN STREET

It was outside the scope of this research to measure the build costs of this development but the preceding analysis would appear to suggest that there is additional value available to developers which could be utilised in additional build costs. Based on this additional value, and a number of assumptions relating to standard build costs and margins, it would appear that residual revenues per hectare of built area are enhanced on the exemplar by approximately 75%. This means that there is potentially more revenue available on the exemplar over the standard comparator for land and any other additional costs (SEE TABLE 8).

This is not to say additional build costs are necessarily associated with sustainable urbanism and building to 'new urbanist' principles; developers will need to make their own decisions about that. The evidence is mixed as to whether there is an additional cost associated with the layout of buildings according to the principles of sustainable urbanism. The above case would suggest that, if there is, it can be mitigated by improved values.

TABLE 8 – Glasgow Additional Available Revenue (based on built area)

	Exemplar Crown Street	Standard Mavisbank Grdns.	Old Albert Drive
Residual per hectare – land & additional costs (£m)	4.01	2.17	3.94
Amount available over standard (% of build costs)	75%	—	72%

Note: values are based on publicly available data sources. Source: MyHousePrice, Savills Research using egi data, Valuation Office

#### 4.7 LAND VALUES & LAND OWNERSHIP

Maximising land values was not a primary concern at the outset of the regeneration of Crown Street as a result of its public ownership and wider regeneration objectives. Ensuring a healthy profit was not the principle aim of the original land owner, but rather it was to reverse the fortunes of the area.

A significant amount of funding was provided upfront by Scottish Enterprise to cover infrastructure costs, and this, in conjunction with the overall nature of the development, meant land values were enhanced. There was use of a clawback agreement between the land owner and developer, which involved a 50/50 profit split between the two, and then further subdivided between the various public organisations involved in the project (Scottish Enterprise, the City Council, and Communities Scotland).



This clawback agreement was part of the strict development briefs that developers had to sign up to, and which ensured adherence to the masterplan. Grants were also provided to the housebuilder to reflect the low market value of the area before regeneration, and this was a further useful tool in encouraging housebuilders to abide by the masterplan.

In the first instance rather than sell outright to the developer, the promoter sold the lease of the land to cover the development period. The freehold was then passed from the original land owner to the respective owner/occupiers once the development was complete. According to the parties involved this was an effective tool in maintaining that housebuilders adhered to the plan as ultimate ownership remained with landowner up to completion. This is not a method that can be used across the board for tax reasons, making it difficult for the land owners in the private sector to make use of this form of control. There may be a case for a review of present tax arrangements to enable this form of control to be adopted without incurring disproportionate large tax losses.

[PART II: SECTION 5]

## Summary of the Research Results

### 5.1 IMPACT ON TOTAL DEVELOPMENT VALUE

The examination of current total development value of the case studies examined was carried out to identify whether there was enhanced value associated with building to sustainable urbanism principles as opposed to standard forms of development. The main finding from this examination was that building to some or all of the features of sustainable urbanism can enhance total development value. At the very least this research has demonstrated that developing to sustainable urbanism principles is not commercially unviable.

The most obvious impact of sustainable urbanism on development value, based on the case studies examined, is that it often allows for higher density so that land effectively 'yields' more units. Perhaps more importantly, the difference between sustainable urbanism and more conventional approaches to high density is that it is predicated on variety of property types, allowing large scale expansion to be sustained and creates desirable places that hold their value and in which people want to live.

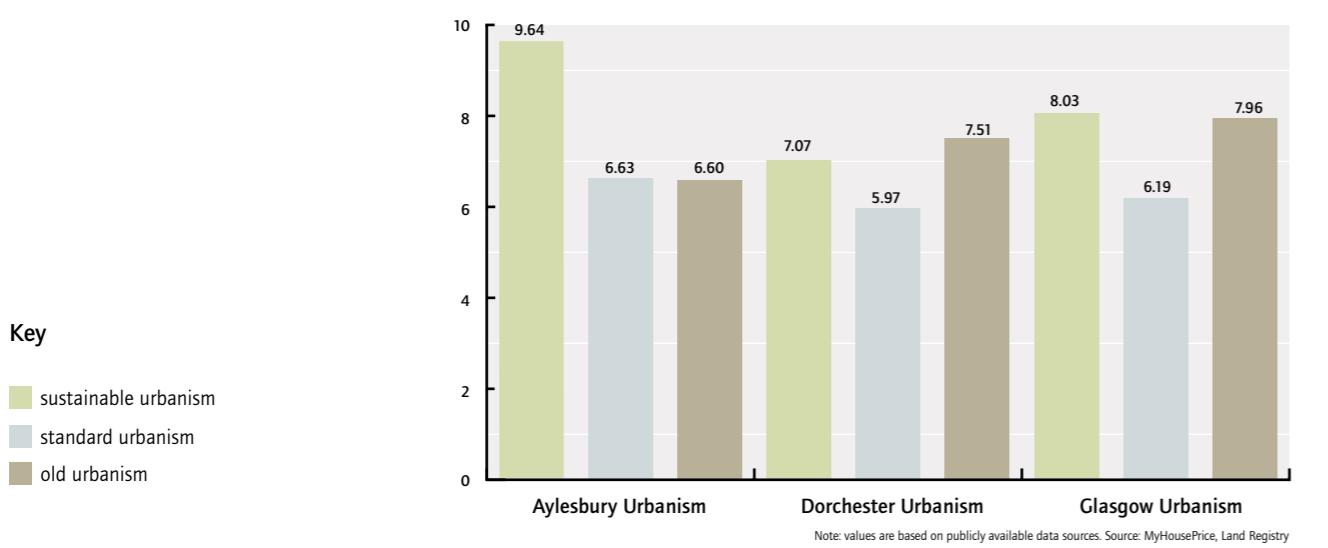
This is particularly important in the property development world now because there is huge pressure on land which is in scarce supply. This means that competing developers have to extract the maximum value possible from sites. Employing higher densities of build are an obvious way of achieving this but it is difficult to maintain value if standard housing models and layouts are used. There is a limit to which standard housing types can be 'crammed' into standard layouts before values suffer.

Density is further regarded as a precursor of sustainable urbanism insofar as it makes infrastructure investment more viable and cost effective, and creates sufficient critical mass for a range of neighbourhood services to be sustained. The regulatory regime: planning policy and broader government policy seeks to encourage diversity in housing mix and environmental sustainability as well as maximising the number of housing units delivered by developers. It can be seen from the study that density of itself does not achieve sustainability and in fact can lead to negative environments. Blanket density targets can therefore be an insensitive instrument and therefore need to be treated with caution – to be successful, density needs to be carefully modulated through competent masterplanning to achieve the desired result.

Larger scale sites, primarily in growth areas also face a potential problem of oversupply. Any means of diversifying the types of property on offer and creating a higher-density and attractive place for potential buyers can be important for the site to be commercially viable and therefore for the site to be developable. Diversity of types and uses is a means of spreading market risk and maximising the potential market.

TABLE 1 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. This includes the value/cost of commercial property and affordable housing as well as residential and any other type of property built on the site. It shows the results for the example of 'sustainable urbanism' (good), 'standard urbanism' (stand) and 'old urbanism' (old) in each area.

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



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 low 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 would appear, based on the comparison of these different scenarios, that particular market conditions can have an impact on the level of value enhancement associated with sustainable urbanism.

Sustainable urbanism would appear to provide the greatest value enhancement where development is taking place in a low demand market. At Fairford Leys there was a 46% uplift in values per hectare over the standard comparator. For Crown Street there was a 30% uplift in values, despite the release of units on the exemplar taking place in a market experiencing an oversupply of large 2-bed new build flats. Poundbury demonstrated a value uplift over its standard comparator of 18% however in a very buoyant local market.

The example of traditional urbanism only exceeded the exemplar case study in terms of total development value per hectare in the case of Dorchester. In the case of old urbanism, density has paid off producing a highly land use efficient built footprint, while at the same time accommodating larger private gardens and higher proportion of mixed use., while proximity to the station and town centre may be a further factor. The Glasgow example of old urbanism is of particular note because of the very high level of land use efficiency achieved namely 70.4 gross units per HA and in addition a high level of mixed use provision at 9.1% of the land take. This level of density was achieved in relatively low rise flatted blocks – with generous communal garden space – but is hitting some of the highest levels of density present in the UK. The old urbanism example generated relatively high total development values.

In the case of standard urbanism, it would seem that density does not necessarily have so much of a part to play in determining value. We would however caution that density of itself does not necessarily create higher values. The reason that high density works on these exemplars is that they are envisaged as part of a master-planned scheme, where there is a provision of open space and local amenities. It is probably much more about determining what is appropriate in a given location and neighbourhood type than cramming suburbia to urban levels inappropriately.

#### 5.1.1 WHAT HAPPENS TO VALUES ON THE LAND?

Establishing the superior development value of sustainable urbanism per hectare of land cannot be done without factoring in build costs and developer margin. Developers will need to make their own decisions regarding build costs but based on the exemplars presented here there would appear to be a compelling incentive to look at sustainable urbanist forms as a development model.

Our analysis of the case study sites suggests that there is a sufficient revenue surplus, after developer margin is allowed, to fund substantial additional build costs that may be associated with sustainable urbanism, without affecting land value. At the same time we see no reason why sustainable urbanism should necessarily be more expensive (a view supported by developers consulted in our study).

We believe that there is a strong case for more landowner involvement in sustainable urbanism. This report recognises that investment in early masterplanning and other quality control mechanisms confers potentially higher land value. This was borne out from the discussions with the land promoters in each case suggested that the added value of the scheme came at the end of the development. Based on these experiences it may be the case that a developer who is also the landowner could reap the greatest rewards, potentially opening the field to a wide range of new players. It must be recognised however that much of this early work bears higher risk and upfront costs and requires new and creative approaches to development procurement and funding.

The signs are that sustainable urbanism could also diversify risk for the developer, by spreading market exposure to single building types, and even sectors (e.g. owner occupied residential, build to let, retail and offices) and allowing for flexibility in switching uses as, and if, the market changes.

Developers have increasingly looked to diversify their product in order to enhance rates of sales, and sustainable urbanism development no doubt fits in with this as it supports the development of a range of property types. The data is not available to suggest that higher rates of sale were seen on the exemplar case studies as opposed to their standard comparators. But in the case of the 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 and/or land owner believed that it was the property diversity of the schemes which maintained sales rates.

From interviews with landowners and promoters, there was evidence to suggest that the initial appraisals of Poundbury, conventionally backward-looking and not taking into account the potential and future uplift in values, significantly underestimated its current value, even leaving aside the general market uplift that has occurred throughout its development. As the attitudes of the property industry change and long term financing mechanisms and valuation methods evolve, this 'sustainable urbanism discount' at outset may disappear.

If the supply constraints on land remain as extremely tight as they currently are, all of this should, theoretically, further increase land values. The land developer who masterplans the site according to the principles of sustainable urbanism can expect increased land values over and above what might otherwise be expected.

#### 5.1.2 WHAT MIGHT THE COST ISSUES BE? WHAT DECISIONS & CHOICES DO DEVELOPERS FACE?

One of the primary differences between standard urbanism and sustainable urbanism is the cost, time, and effort that is involved at the pre-planning stage. Whether in the form of Enquiry by Design costs or detailed, contextual design effort. Sustainable urbanism schemes are non-standard and site specific and therefore likely to involve more outlay in the initial stages.

While this early stage design commitment increases development risk, greater values can potentially be realised in the later stages of the development in terms of total development value on a per hectare basis, as evidenced by the landowner participants in the study. It must be borne in mind however that the exemplars are all fairly mature schemes, which were pioneering this form of development, and all three were conceived in a less conducive planning and development environment. Increasingly however, a non-standard solution is required on a growing number of the sites that are becoming available these days. Sustainable urbanist masterplanning practices can generate support from local communities and local planning authorities at an early stage. This in itself can save the costs of lengthy planning enquiries and appeals in the long run. This view is supported by the experiences of the land promoter involved in the Poundbury exemplar case study, for example, where the pre planning outlay produced resolution to grant within 8 weeks.

As local authorities move more strongly to require development to demonstrate its sustainability, it is clear that schemes promoted to embrace the principles of sustainable urbanism from the outset will be met with a more favourable reaction.

#### Return on Capital Employed

An observation from the authors on this point, based on the experience of the landowners and promoters interviewed for this study and broader development experience, is that the longer-term nature of capital value uplift and front-loaded cost profile that appears to be associated with sustainable urbanism, could prove a problem for conventionally-funded development. The publicly quoted house builders may be at a particular disadvantage as their business models often rely on fast acquisition and build-out to maximise return on capital employed. Longer-term developments requiring detailed, even meticulous, planning and infrastructure will show a lower return on capital employed than the purchase and rapid build-out of small, 'oven ready' sites. This is not a risk-profile that many conventional equity investors (shareholders) are happy with.

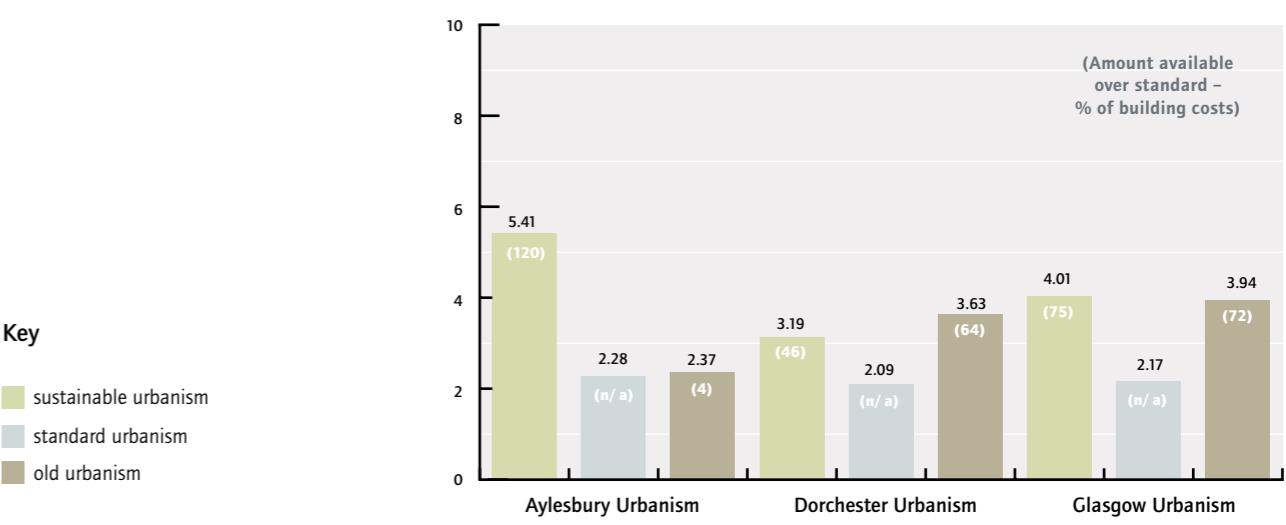
The experience of many commercial property companies, who often employ longer-term acquisition and build-out strategies is that they often trade at a net discount to asset value. It may be that commercial property companies, used to the process of site assembly and urban development and with funding, and management strategies to match, may be better placed to take large and complex sites forward. Additionally, or alternatively, it may be that a new breed of land development company or trust will be needed in future to take these schemes forward. We suggest that further research and investigation is needed on this point.

#### Build Costs

It was outside the scope of our research to measure the build costs of any of the types of development but our analysis would appear to suggest that there is additional value available to developers which could be utilised in additional build costs.

TABLE 2 below details the theoretical residual revenue per hectare of built land for each of the case study areas. These are the additional monies available for land and additional build costs. Compared against the standard comparator in each case, the exemplar scheme has a greater amount of monies available for any potential additional costs although in two of the three cases it is the old comparator that provides the greatest residual over its exemplar.

#### Residual Revenue per Hectare of Built Land (£m)



This is not to say that additional build costs are necessarily associated with sustainable urbanism and building to sustainable urbanist principles. The evidence is mixed as to whether there is an additional cost associated with the layout of buildings according to the principles of sustainable urbanism. In most cases, our research would suggest that at least some increases in cost could be mitigated by improved values. Developers will need to make their own decisions about this.

A final point is that while new, often historic, building typologies need to be developed to meet the requirements of sustainable urbanism (eg. Mixed use blocks, terraces) in a departure from conventional standard house types, and that from a standing start, the costs both of design and construction of a new as opposed to established standard product may be higher, as these typologies become standard novelty costs will reduce.

It should perhaps be noted that the research method attempted to control the differences in build costs by selecting schemes where the quality and type of build for the individual units was relatively similar within the chosen comparator locations.

### 5.1.3 WHAT IS THE RESIDENTIAL VALUE & VALUE GROWTH PROFILE ASSOCIATED WITH THE EXEMPLAR/SUSTAINABLE URBANISM DEVELOPMENTS?

The higher densities associated with sustainable urbanism made it difficult to accurately compare residential unit values. For example, on standard schemes where larger detached and semi-detached properties were more common, average unit values were skewed upwards. This meant that in all cases average unit values were higher on the standard example of development.

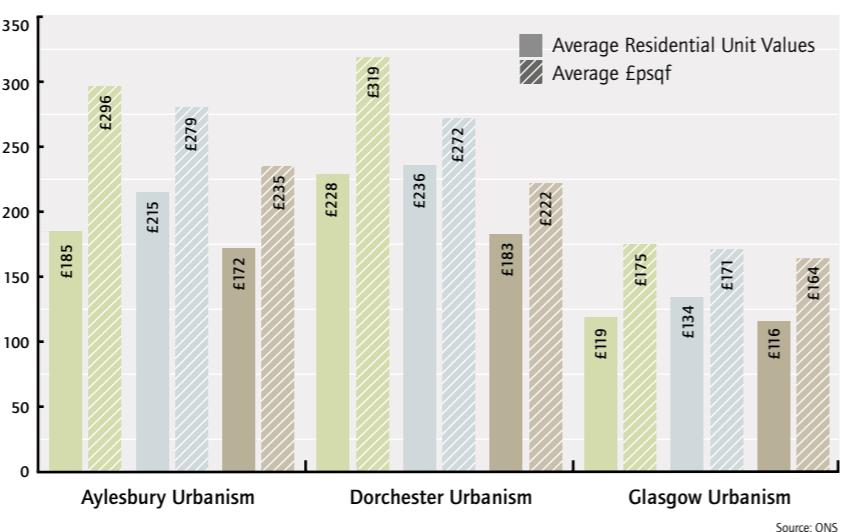
The examination of residential values on a £ per sq.ft basis provides a more accurate measure of value and excludes the impact of property size on value. This analysis demonstrated that, unlike the examination of average unit values, there was a £ per sq.ft premium associated with sustainable urbanism. All exemplar schemes achieved higher £ per sq.ft values than their standard and old comparators.

This premium is more marked in the cases of Dorchester and Glasgow. In the case of the former the standard scheme adopted a number of design principles used on the exemplar, and in the case of Glasgow the exemplar was part of a regeneration project in a low value area. It would appear that this regeneration project has shifted the nature of the area away from what existed previously, as is demonstrated in the values achieved.

Average Unit Values (£000)

**Key**

- [green square] sustainable urbanism
- [light blue square] standard urbanism
- [brown square] old urbanism



The residential value uplift across all the comparators in each of the case study locations was also examined in order to ascertain whether there was enhanced value uplift associated with sustainable urbanism. While the examination of total development value bears the greatest interest for developers, the examination of house price growth could identify the potential benefits of some form of continued interest in the scheme by the original land owner. It can also be used to demonstrate the potential popularity of the scheme to buyers and the ability of sustainable urbanist schemes to withstand price compressions as a result of surfeit supply – considerations that are important from a developer viewpoint.

Our research showed that there were some signs of superior residential value growth in the exemplar case studies compared to the conventional urbanism. Any out-performance over time of any type of development was tempered by a surfeit of supply coming on stream from

[Variety in residential developments in Crown Street, Poundbury, and Fairfield Leys.]



future phases. Despite this dampening of house price growth, the fact that the exemplar scheme (particularly in the case of Fairfield Leys) was still able to demonstrate a very similar level of growth to its standard comparator would indicate that sustainable urbanism may have reduced the impact of surfeit supply on house price growth. It is difficult to provide definitive analysis which proves that there is superior longer-term growth in dwelling prices on sustainable urbanism.

The capability that sustainable urbanism might have in regeneration situations to lift value over and above surrounding areas is an important consideration but tested in only one of our case studies, Crown Street. The other schemes were not regenerative. The Crown Street development definitely bucks the price trend found in the rest of the Gorbals and sets new values for the area. The capability therefore of sustainable urbanism to achieve one-off value uplifts for itself and perhaps the immediate surroundings in an otherwise deprived area is therefore evident.

The impact of this is that developers and landowners need to find some way of identifying what this uplift might be in advance in order to inform valuation and viability models and also to design mechanisms by which they can have ongoing benefit from it in order that development can be effectively forward-financed.

New, sustainable developments, urban extensions or regenerative projects can have a substantial impact on surrounding communities. In terms of providing new services and creating critical mass for community facilities, or providing new ones, this can often be beneficial. The result of this can be an uplift in the value of other nearby land and buildings, regardless of whether they are officially part of the scheme or in need of regeneration.

We suggest that further analysis and investigation of new valuation models to support the delivery of sustainable urbanism would be useful.

### 5.1.4 HOW DOES THE DEVELOPMENT VALUE OF SUSTAINABLE URBANISM PROJECTS DIFFER FROM CONVENTIONAL DEVELOPMENT?

Primarily then, the development value of sustainable urbanism differs from conventional development in that:

- It appears to be greater (from the limited range of case studies we have looked at)
- It comes from a wider range of sources, including commercial property and social housing
- It will often take longer to be fully realised
- It may involve greater up-front planning costs and development risk capital, but can expedite the achievement of planning permission and should also involve less risk and diversified risk at the sales stage
- It can involve more outlay in the form of ongoing 'estate management' activity

### 5.2 LAND OWNERSHIP

The nature of land ownership played a key role in the delivery of each of the exemplar schemes examined for the purposes of this report. In all three cases there was one single land owner who had an overarching vision for the site.

The land owner delivered their vision through different agreements/tools in each case. These included phased sales of the land, which meant that developers could only secure

later phases if they stuck to the masterplan on their previous phase. Development briefs combined with leased site sales were also used, as were licence agreements.

Based on the experiences of the land promoters involved in each of the exemplars it would appear that a single vision combined with single ownership would appear to have been key to delivery.

Large sites under single ownership are not common, and if developers seek to develop to sustainable urbanist principles they may need to address the land ownership issue. The need for equalisation agreements may become central to delivery, but there will still be the issue of selling the vision to single land owners. This is a time consuming and costly task, but if the land promoter/land owners were to keep an interest in the site, the added long term value generated from sustainable urbanist development may compensate for this.

### 5.3 THE USE OF THE LAND

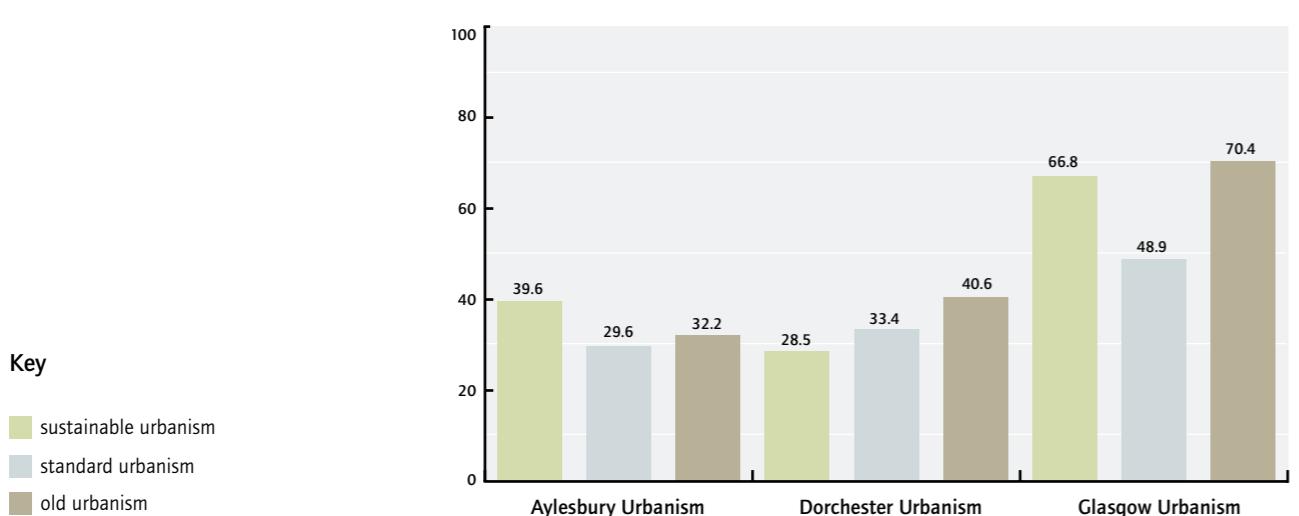
The research showed that there are no hard and fast rules about the proportion of land used for different functions in sustainable urbanism but there are some themes that emerge from our analysis.

#### Density

Density is a critical factor in delivery a more sustainable approach to development in so far as it optimises the occupation of land while also providing a critical mass of occupiers to sustain local commercial and community uses and a viable public transport provision. The higher densities of sustainable urbanism were clearly demonstrated in two of the three exemplars examined, over their conventional comparisons. In the case of the third, the comparator site was much smaller than the potential, full area of the example of sustainable urbanism and includes open space provision for the whole. This is an important consideration as it is doubtful whether the conventional urbanism that we measured would be scalable across a much bigger site without severely compromising quality and value.

**Table 4** below shows the number of residential units per hectare of built land for each of the case study areas, Aylesbury, Dorchester and Glasgow. It shows the results for the example of sustainable urbanism, standard urbanism and old urbanism in each area.

#### Residential Units per Hectare of Built Area



The densities we found on the schemes studied are all higher than the national average density for all built areas in the UK, which is 14.3 dwellings per hectare (ONS 2001). Densities are, not surprisingly, lower in the more suburban locations of Aylesbury and Dorchester and higher in the more urban locations of Glasgow. The standard comparators have densities around the level of the old PPG3 guide. Two of the three sustainable urbanism examples have higher densities than the standard comparator; only Poundbury is the exception, with a lower density than its standard comparator. This is, in large part, to do with the scale of Poundbury and also the provision of commercial and community uses, which have diluted the residential density. We have found evidence to suggest that larger areas studies yield lower densities as very high densities are not easily sustainable over wider areas. At the level of towns and London boroughs, the highest dwelling density found in the whole country is 69 units per hectare and the top 98th percentile is 20 units per hectare.

TABLE 5 displays where each of our study locations fit, in terms of densities, against the gross densities achieved in urban areas across the UK. All schemes, including both the standard and old examples of urbanism, achieve gross densities in the top 70th percentile, indicating that by national standards all schemes studied can be considered to be high density.

#### Urban Area Gross Densities (units per ha)

10 percentile	4.3
20 percentile	6.2
30 percentile	7.7
40 percentile	9.1
50 percentile	10.2
60 percentile	11.5
70 percentile	12.8
<b>Aylesbury – Sustainable urbanism</b>	<b>13.0</b>
<b>Aylesbury – Standard urbanism</b>	<b>13.8</b>
80 percentile	14.2
90 percentile	16.0
95 percentile	17.7
98 percentile	20.0
<b>Dorchester – Sustainable urbanism</b>	<b>25.5</b>
<b>Aylesbury – Old urbanism</b>	<b>30.7</b>
<b>Dorchester – Standard urbanism</b>	<b>31.1</b>
99.6 percentile	31.3
<b>Dorchester – Old urbanism</b>	<b>40.6</b>
<b>Glasgow – Standard urbanism</b>	<b>42.1</b>
<b>Glasgow – Sustainable urbanism</b>	<b>61.4</b>
Max	69.2
<b>Glasgow – Old urbanism</b>	<b>70.4</b>

The sustainable examples of urbanism do not produce the highest gross densities in all cases. As this analysis is based on gross densities rather than build area, the examples of sustainable urbanism achieve lower densities than their standard comparators in two out of three cases. This is a result of green open space and non-residential property provision

which has diluted densities below those seen on the standard comparator where this level of provision is minimal and/or non-existent.

This suggests that, outside of cities, sustainable urbanism does not involve super-high densities. Again, single national formulas or targets are unreliable methods of determining appropriate densities.

The trick for developers is getting the balance right between density and other features to both maintain values and use land efficiently.

One noticeable feature of the old urbanism – the fully evolved, traditional streetscapes that are also used as comparators – is that the new, sustainable urbanism does not achieve the same high densities. In two out of the three case studies, 'old urbanism' yielded the highest number of residential units per hectare of built land. In the third, the density was similar to that achieved by the sustainable urbanism and will probably be further developed and intensified in the near future as empty commercial sites are reused. The very high density figure that the old urbanism example in Glasgow yielded, may however, be due in part to the size of the sample measured as this was considerably smaller than the comparable exemplar and standard schemes, equally the relative proportion of green space may be under-played.

Density is an important component of development value, and land value, but it is not a determinant of it. Simply cramming more units on a site does not automatically yield more revenue as the market response is sometimes to devalue the resulting place and properties. The trick for developers is getting the balance right between density and other features to both maintain values and use land efficiently. We discuss this in more detail below.

#### Mixed Use

In a sustainable world, there is no such thing as a single use class and so residential property becomes mixed use. The act of a population 'landing' on a given site, particularly a large one, gives rise to a huge range of human activities. The need is not just for dwellings. Recent research has suggested that at least a third of the jobs in a small town will arise from the residential population, not from inward investment and relocation (Savills 2006) There are a raft of other facilities and amenities needed by a population that need to be provided close by if car reliance is to be minimised in a place. Another component of the urbanism to be measured is therefore the intensity of use on a site.

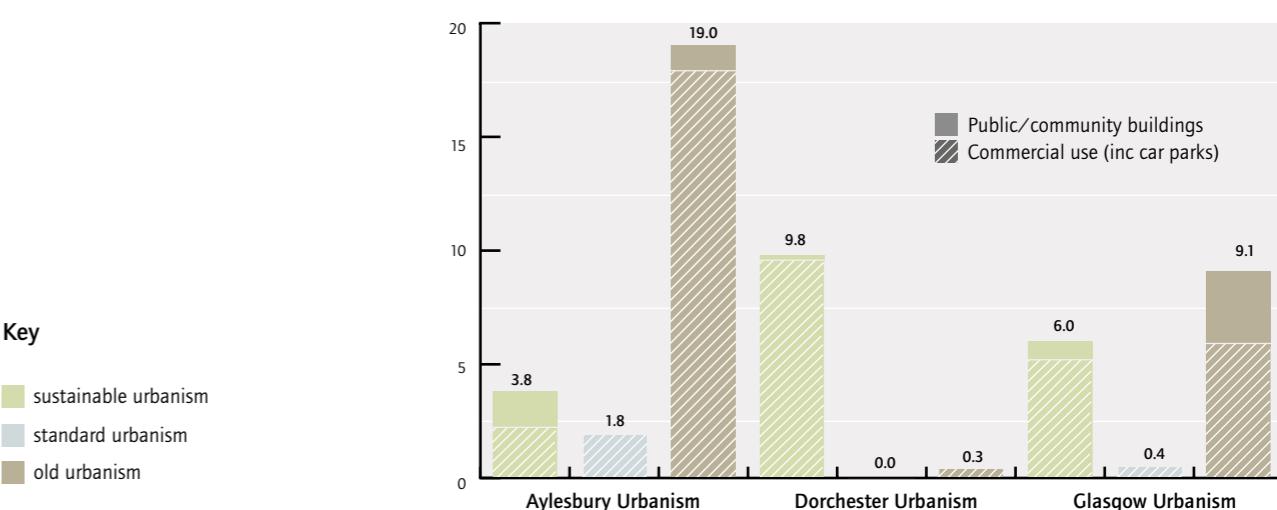
TABLE 6 below shows the proportion of total land used for non residential purposes on each of the case study sites, Aylesbury, Dorchester and Glasgow. It shows the results for the example of sustainable urbanism, standard urbanism, and old urbanism in each area. In all three case studies, sustainable urbanism lends a higher proportion of land to non residential use than the standard forms of new development, although the old example of urbanism out performs the exemplar in two out of three cases. In the third case, the standard scheme, although mixed use has low density, highly segregated commercial and leisure uses on site which increases the land take for this type of use whilst not necessarily providing more floorspace nor being easily walkable from other parts of the site.

Land take is perhaps an incomplete measure of the amount of other use on site as it does not take into account the density of buildings. A small land take is not necessarily an indication of low provision just as a high land take may only include a single building in landscaped grounds, for example. This illustrates that sustainable urbanism, with a variety of uses is not necessarily land-hungry. It also illustrates that prescriptive formulas or targets of land use will not necessarily produce sustainable urbanism.

It may be significant however that in the four of the examples the proportion of land given over to mixed use components namely, Crown Street, Poundbury, Aylesbury (old urbanism), Glasgow (old urbanism) the percentage of land given over to mixed uses was in the range of 6-19%. On the basis of site visits, it could be argued that each of these

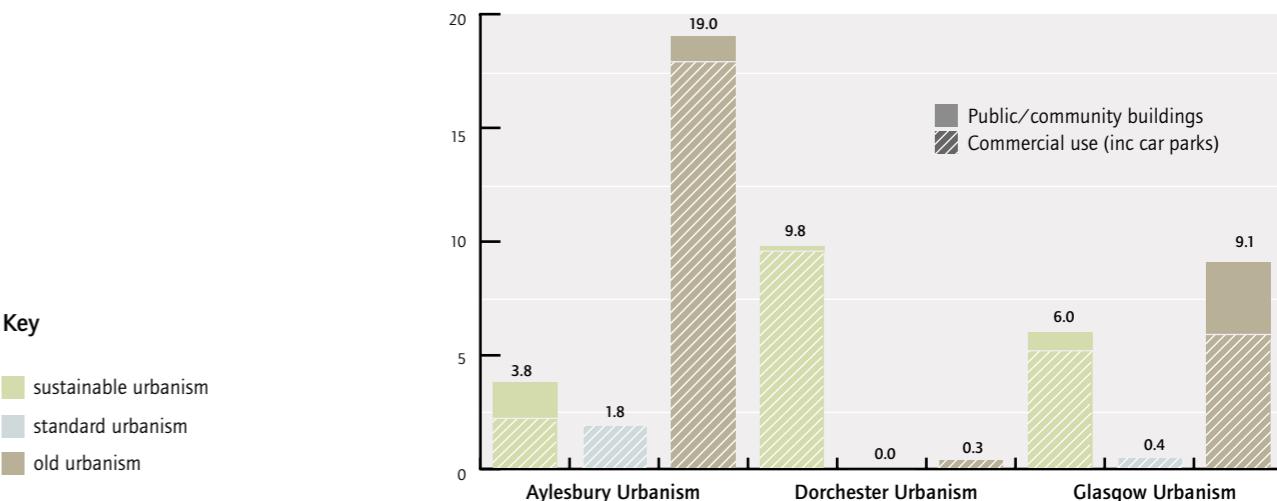
examples demonstrate a higher level of 'walkability' perhaps suggesting that this order of percentage land use split is required to achieve a truly walkable mix. We suggest that further research into the relationship between the proportion and configuration of mixing uses within neighbourhoods is required to understand how higher levels of walkability might be achieved.

#### Proportion of Total Non Residential Land (by percentage)



#### Key

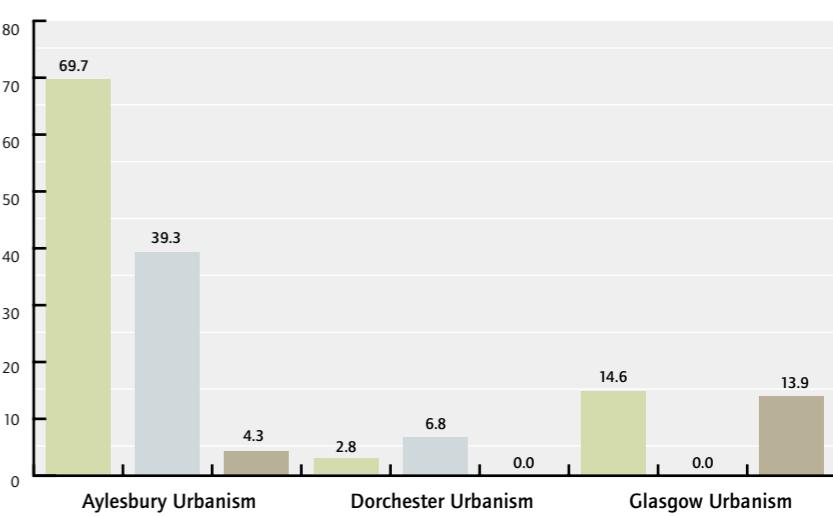
- sustainable urbanism
- standard urbanism
- old urbanism



#### Open space

Open space is another issue where quantity is not necessarily indicative of quality. In two out of three cases, the standard urbanism had more of it but there were different degrees to which it was integrated in the fabric of the development according to the site situation. In some cases, the open space available to the residents of the development that was studied lay outside the study area. The high level of provision of open space on the sustainable example of urbanism in Aylesbury is down to the provision of playing fields and golf course as part of the development.

#### Open Space, Leisure and Playgrounds (by percentage)





[ABOVE PHOTOS: Property frontages in Poundbury and Fairfield Leys. RIGHT PHOTOS: Parking provision at Poundbury, Fairfield Leys and Crown Street]

The employment of open space in developments was wide and varied in all cases. There did not appear to be any hard and fast rules about the deployment of parks, public gardens and other public green space. It would appear that the development of open space is very often site-dependent and may sometimes be prescribed by planners, or the physical features of the site itself e.g. flood plains.

Examination of each of the sites did show that there is often a qualitative difference between green space on sustainable urbanism and that on standard developments. This highlights the importance of ongoing management and maintenance of the whole development beyond the first phases of a development as this is often found to be the factor separating well-used and high quality open spaces from little-used expanses of rough grass.

To confer value open space should be 'defined' space – whether a park or garden square to which surrounding buildings have a direct relation. We would suggest, based on these case studies, therefore that diffuse, amorphous open space provision tends to lead to long term management difficulties with an unclear relation to individual properties.

Other research, undertaken by Savills for CABE (*Does Money Grow on Trees*, 2004), has suggested that open space can, in certain circumstances, confer between 4% and 34% uplift in values to properties on adjoining streets. Some of this value uplift can also be conferred on residential properties one or two blocks away from the park, depending on sight lines and street landscaping.

#### Private outdoor space

##### Car parking and driveways

The treatment of frontages and the streetscape is a key feature of the exemplars. In each case, the amount of land given to front gardens and driveways is generally much smaller than that given to rear alleys, courtyards, garages and gardens. This has the effect of both intensifying the street frontage, enabling greater density in some cases and 'enclosing' the street, providing it with natural surveillance and intimacy.

The amount of land take for front gardens and driveways is measurably different between sustainable and standard urbanism where developments are mainly houses (as opposed to flats).

It must be recognised that the appropriateness of the treatment of fronts and back garden space should be sensitive to context both in terms of location (urban extension or inner urban site) and dependent upon the role of the street within the overall hierarchy of the scheme.

The amount of space given over to gardens is a potentially contentious in terms of the 'market acceptability' of the sustainable urbanism product and one where sustainable urbanism might learn some lessons from old urbanism, which while achieving high levels of density and a unified street façade manages to provide a higher percentage of garden space, both front and rear, in each case.

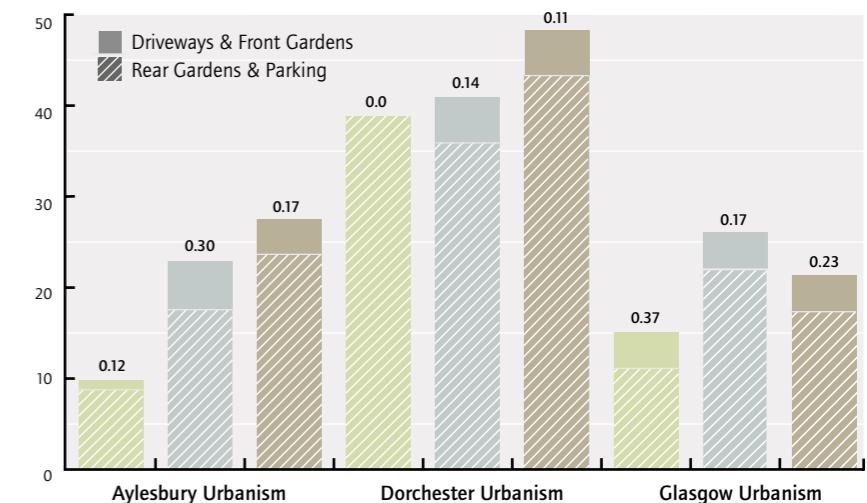
##### Front versus back

A distinct feature of sustainable urbanism in the more suburban locations was the difference in the ratios of space used for gardens and driveways. In the case of sustainable urbanism, frontages are minimised, or even zero and proportionately more land is used at the rear of buildings for gardens and parking. In all the urban cases of Glasgow, the amount of land given to frontages and driveways was similarly low.

#### Key

- sustainable urbanism
- standard urbanism
- old urbanism

#### Front/Rear Ratio Used for Private Outdoor Space (by percentage)



The issue of car parking on new build schemes has become a major issue for developers in meeting the demands of buyers. All the exemplar schemes were built prior to the introduction of PPG3, so compared against PPG guidelines, do have higher levels of parking provision than seen on later new build schemes. Despite this, parking on two of the three exemplar schemes restricted parking in line with 'sustainable' urbanism principles in order to reduce dependence on the car. This was counterbalanced through the provision of some local amenities on the site.

This relative restriction on parking combined with high levels of car ownership in two of the three case study locations has meant that parking availability has become an issue. The provision of parking courtyards on the Aylesbury and Dorchester exemplars, has not negated the preference for people to park outside their homes. As a result of this, over-crowded on-street parking has become a feature in these two cases, although to a lesser extent in the case of Dorchester. At Crown Street in Glasgow, all parking is provided on-street which is considered to be both ample (at 115%) and un-vandalised. In order to achieve this level of parking and at the same time the generous communal garden provision (in place of rear parking courts) a relatively high proportion of the site has been given over to roads (29%).

CABE's study of residents' views on the design of new build housing (2005) highlighted that one of the most contentious issues on new build schemes was the provision of parking, with only 46% of respondents scoring the layout (including level of provision) as good or very good. From those respondents the main issue was that it was felt that the level of provision was inadequate for the scale of car ownership and demands for visitor parking.

The worry among housebuilders is that reduced parking provision could devalue units, and therefore building to 'good' urbanism principles, which is associated with lower level of parking, could reduce development value. But the fact is that housebuilders/developers cannot get away from reduced parking provision irrespective of whether they are building to 'good' urbanism principles or not. Government policy supports the reduction in car

dependence in line with the sustainable development agenda, as a result reduced parking provision is being sought on all new build schemes.

There is no evidence to suggest that reduced parking provision devalues unit values or impacts on sales rates, although it is clear that it is an issue for occupiers once in their property. The new PPS3, which has superceded the previous PPG3, is not as prescriptive in terms of parking guidelines as PPG3. As a result it could mean that levels of parking provision may be more in line with location of the scheme and local level of car ownership. It proposes that Local Planning Authorities should apply their own guidelines dependent on car ownership in the local area and location of the scheme (urban or suburban).

#### 5.4 ARE WE MISSING A TRICK – CAN WE LEARN FROM PREVIOUS/OLD URBANISM?

## Value in sustainable urbanism is all about desirable density, not density at any price

Each of the exemplar sustainable urbanist developments were compared against examples of old urbanism in order to identify if there was something we could learn from traditional urban forms. On the basis of the chosen old urbanism comparators it would suggest that old urbanism tends toward higher densities in terms of buildings per hectare than new, sustainable urbanism although this result may in part be due to the relatively small sample sizes of old urbanism under consideration.

It must be recognised that none of the chosen studies highlights prime 'old urbanism' as the case study selection was driven by the location of the sustainable urbanism example. We would expect an entirely different result had the case studies focused on the better examples of Victorian urban extension which still 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. We suggest the best examples of working 'walkable urbanism' are the mixed use 'urban villages' built prior to 1914 in most UK towns. Within this study however, the only example of urbanism that conforms to this typology is the Glasgow 'old' urbanism where there is significant land take for non-residential uses accounting for 9.1% of the study area. The land use within the examples of 'old urbanism' in both the Aylesbury and Dorchester were typical of smaller towns, reflecting their relative proximity to the town centre. We highlight the need for further land use research to understand in more detail the relative components, occupation, and nexus of pre WW1 'walkable' urban areas to help inform future sustainable urban development.

Within the chosen case study areas there is an indication of lower values per square foot of residential built area suggesting a less coveted, or perhaps less well-maintained, product in these areas. Old urbanism is not always more desirable and, although it has a higher total development value per hectare than standard new development in 2 out of 3 cases, it does not out-value the new, sustainable urbanism on a residential £ per sq ft basis.

The superior growth over time that is seen in all the case studies may, in our view, be a result of recent growth off a low base due to specific market conditions which includes renewed interest in centrally located period stock as it benefits from greater proximity to local amenities and a larger building footprint. Having said this, it may be that the performance of the old urbanism shows that values naturally decay on standard, new developments over time, as the new build premium disappears.

This demonstrates that the value in sustainable urbanism is all about desirable density, not density at any price.

#### 5.5 SOME CONCLUSIONS

- The research has showed that sustainable urbanism can enhance development value and may even potentially enhance land value. At the very least this research has demonstrated that developing to sustainable urbanism principles is not commercially unviable.
- It would appear that in each of the case studies, that the assumed gross development value of each sustainably-urban site was greater than that of its standard counterpart.
- We have seen little evidence to lead us to suspect that build costs need be significantly higher on sustainable developments provided that the sustainable urban form is designed into the scheme at an early stage. Given that all developments now face significantly higher build costs in the face of regulation on green issues and planning policy on housing mix, any differences will, we think, diminish over time as the costs of novelty diminish.
- Many of the results obtained in this study are site specific, however there are a number of significant areas of similarity between the exemplar schemes in terms of development method and urban design characteristics.

#### Development process

- A significant factor in each of the exemplar schemes was the presence of landowners who were driven by the objective of creating a community on their sites. In each case, the landowners assumed the role of masterplanner and promoter and drove forward the overarching 'vision' for the development. In each exemplar case the land had been released over time and was tightly controlled by development agreements, design codes and other quality control mechanisms.

#### Development product

- In terms of urban design, in each case the exemplar schemes demonstrated the presence of the following characteristics;
  - Mixed use
  - Mixed tenure
  - Mixed residential types
  - Masterplanned to produce high quality 'legible' urban design to produce recognisable street, squares, and other urban features
  - Defined public and green space – parks and garden squares were created rather than diffuse and amorphous green space provision.
  - With the exception of Glasgow, quality educational provision was included in or close to the development (and the Glasgow scheme was well served with pre-existing schools)
  - Relatively high overall density
  - Relatively high architectural quality

Although none of these factors can be seen to be definitive in creating value of itself, they appear to collectively provide the conditions from which a quality location can emerge.

#### Further points of interest

- In the face of the competition from competing sites that developers will be faced with in future especially in the growth areas of, for example, North Northants, Stansted Corridor, Milton Keynes and Thames Gateway, for example, variety and quality of design and build will become a necessity,

We foresee fewer and fewer opportunities for what has hitherto been considered standard forms of housing development in the future.

- Under new regulatory and planning environments, developers are now having to provide non-residential units on site for local amenities in order to achieve planning permission on large sites. The forms of sustainable urbanism studied here suggest that land owners and/or developers can turn this necessity into a virtue.
- There appears to be a clear need for a new skills set and "cultural shift" in approaching the funding, management/property types, planning and timescales involved in developing large sustainable urbanism developments in an appropriate way. Part of this may involve the longer-term ownership and management of places by a private, public or community landowner or investor.
- There are public and private sector implications of these findings. There is a challenge for planning and other authorities to recognise and help to promote the development of sustainable urbanism and for the private sector to find suitable, often long-term funding mechanisms to actually develop it. These include vehicles where landowners can maintain a stake in the development and as a result realise some of the end value associated with sustainable urbanism development. Other considerations include realising alternative forms of funding affordability. There is also a skills challenge amongst many types of property consultants and advisors to shift away from the predictable and backward-looking late 20th century method of developing sites to embracing what is fully possible in building new places that people love to visit and live in.
- Also important is the likelihood that developments will be owned and maintained ongoingly by a single estate in order to facilitate the scale of development and maintenance and management that will be needed to make them work on the scales envisaged. The creation of places that will hold, or increase in value and prove permanently popular as the fabric ages will be particularly important for investors and land owners who continue to hold an equity stake in schemes after they are developed – or indeed through development stages that may last decades.
- We foresee fewer and fewer opportunities for what has hitherto been considered standard forms of housing development in the future. This is because available sites are bigger and more complex than before. The wholesale development of homogenous housing types on vast estates simply will not sell at the rates that would be needed to be both viable and meet government and local authority delivery targets. Sustainable urbanism becomes a necessity rather than a choice in these situations.

[PART II: SECTION 6]

## Important Note

Finally, in accordance with our normal practice, we would state that this report is for general informative purposes only and does not constitute a formal valuation, appraisal or recommendation. It is only for the use of the persons to whom it is addressed and no responsibility can be accepted to any third party for the whole or any part of its contents. [It may not be published, reproduced or quoted in part or in whole, nor may it be used as a basis for any contract, prospectus, agreement or other document without prior consent, which will not be unreasonably withheld.](#)

Savills' findings are based on the assumptions given. As is customary with market studies, our findings should be regarded as valid for a limited period of time and should be subject to examination at regular intervals.

Whilst every effort has been made to ensure that the data contained in it is correct, no responsibility can be taken for omissions or erroneous data provided by a third party or due to information being unavailable or inaccessible during the research period. The estimates and conclusions contained in this report have been conscientiously prepared in the light of our experience in the property market and information that we were able to collect, but their accuracy is in no way guaranteed.



## PART III

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[PART III]

## Social Benefits of Good Urban Design

The first section of this report painted a picture of the stark consequences for the UK if urban development is allowed to proceed on conventional lines. The purpose of the second section, the heart of our analysis, was to show that good urban design need not be uneconomic, but on the contrary can in the right circumstances deliver handsome profits for developers. This final section is concerned to illustrate the wider social case for developing communities in accordance with the principles of sustainable urbanism, and it falls into a number of sections.

The first considers the environmental benefits which can be associated with good urban design, among which reduced carbon emissions are particularly important. The second looks at the ways in which the layout of communities can help reduce crime and the fear of crime. Next we examine the links between the character of the urban environment and the health and well-being of its citizens. And finally we look at the contribution that important features of sustainable development, such as mixed tenure and mixed use, can make to reducing social exclusion and the economic development of local areas. This all adds up to the social case for good urban design.

It is important that exaggerated claims should not be made for the contribution that urban design can make in all these areas, partly because many other factors clearly affect the rate of crime, the health of the community and the rest, and also because the available research into the links between the layout of communities and the social wellbeing of their citizens is somewhat patchy. It is nonetheless true that a number of well constructed studies have been carried out in different countries, which are highlighted in this section of the report, and give grounds for confidence that good urban design can make a useful contribution in the areas discussed below.

[PART III: SECTION 1]

## Environment, Energy & Climate Change

First, the environment, and the ways in which good design can help reduce carbon emissions. Two recent reports illustrate the importance of urban planning in a cross-sector review of the necessary responses to Climate Change. These are the Stern Review on the Economics of Climate Change (Dec 2006) and the Royal Commission on Environmental Protection's recent authoritative report *The Urban Environment 2007*.

It is scarcely necessary to rehearse the importance of reducing carbon emissions in order to contain global warming here since the case is so well known. What is less well appreciated, however, is the contribution which the principles of sustainable development can make towards achieving this objective – particularly, in this context, by reducing wasteful transport patterns (and also, as the government has recognised, by building zero carbon homes). In this respect, it is now urgent that those principles should be widely applied, because otherwise the UK housing growth agenda set by HM Treasury has the potential to directly conflict with these carbon reduction targets. Construction, maintenance and the heating and lighting of our building stock account for over 50% of total carbon emissions, with the transport sector accounting for another 25%. Enlightened planning can therefore help to reduce three quarters of the total carbon footprint of human activity. Without significant changes in planning practice, the impact of the growth area projections, in which close to two million homes are planned for the South East before 2015, will significantly offset benefits of other carbon reduction initiatives.

### 1.1 TRANSPORT & DENSITY

Key principles of The Foundation's model for sustainable communities are that there should be walkable catchment areas within which the daily needs of a household can be met, a permeable street network, and street design that favours pedestrians and cyclists. As a result, the carbon footprint of new communities can be reduced. Walkable catchment areas require a nexus of relatively dense developments together with a critical mass of complimentary uses developed in proximity to public transport stops.

Government guidelines now advise development at 30-50 units per hectare (PPS3 – Housing), which although helpful, is a blunt instrument in delivering truly sustainable urbanism, which requires a coordinated approach to land use, the provision of public transport, and well considered urban design.

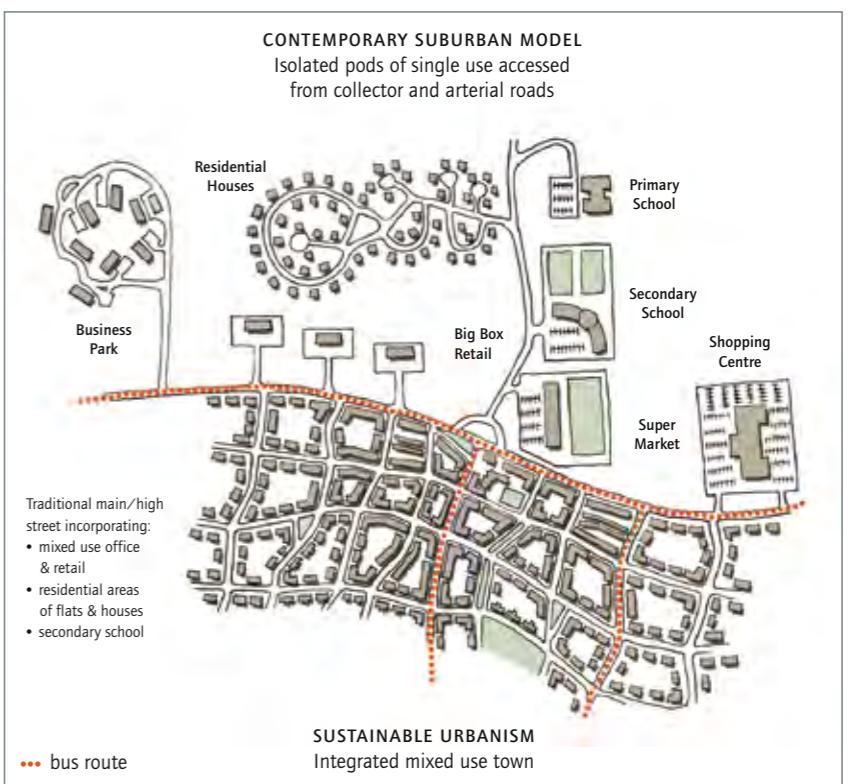
It is also important to keep in mind the Royal Commission on Environmental Protection's (RCEP) finding that density need not be detrimental to attractive neighbourhoods, privacy or noise quality:

"Privacy can be a concern in high density housing, but can be protected by good quality construction. High densities can also be achieved using familiar building styles such as the Victorian terrace, and in traditional configurations such as Poundbury. There is no reason why density should be synonymous with the unpopular inner city high-rises of the past, or with overcrowding and lack of space" [*The Urban Environment 2007*]

The Foundation promotes environmentally responsible neighbourhood planning using a basic neighbourhood unit that offers a dense mix of uses at its centre (or along key arterials) and moves to a less dense residential edge. The exact nature of uses and densities depends on the neighbourhood's location, but the basic principle is that it should be possible to satisfy basic daily needs within a five minutes walk. This reduces dependency on the car, and hence carbon load.

Furthermore, The Foundation has long argued against the "zoning" of towns into separate use areas as this inevitably increases the need to travel. The diagram below illustrates the difference between planning separate zoned elements – the "housing estate/retail park" model of much recent planning, and The Foundation's model of a permeable network of streets accommodating a full range of daily needs. While major employment centres, railway stations, large hospitals and secondary schools etc. are likely to be outside immediate catchments, the "pint of milk" test is the yardstick for measuring the provision of daily needs within a local walkable radius.

### Comparison of Neighbourhood Models

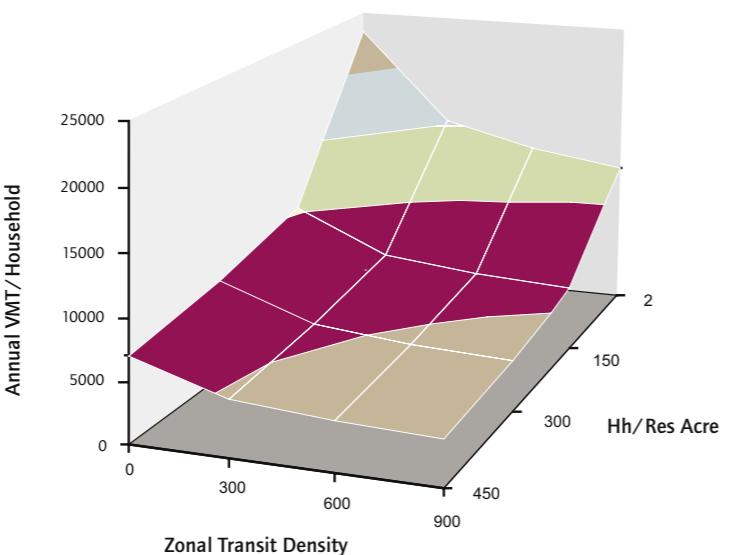


The notion that permeable street networks, together with overlooked streets which are animated by a broad range of activities, encourage walking and cycling throughout the day received authoritative support from a well designed study in the United States.<sup>1</sup>

This demonstrated the correlation between low residential density and car dependency. Proximity to public transport is also shown to influence car ownership. Residents within a ½ mile of fixed guideway transit, to use the American terminology, were found to own an average of 0.9 cars, compared to 1.6 cars/household for metropolitan regions across the US.

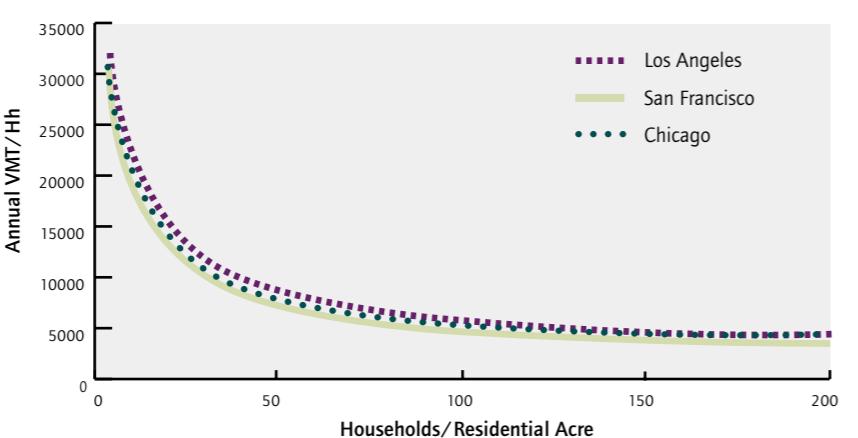
Other studies in America have produced similar results. In San Francisco, a study of vehicle miles travelled and residential density demonstrated that car use fell sharply within a range of medium density but that further reduction in demand levelled off at city centre levels, as a residual amount of car dependency can always be expected in urban areas. (FIGURE 1)

**FIGURE 1 – Impact of Density & Transit on Driving in San Francisco Bay Area**



A tripartite study of San Francisco, Chicago and Los Angeles found the relationship between residential density and car dependency matched these results, with the optimum density for minimizing car use remaining consistent at around 30-50 units per hectare. (FIGURE 2)

**FIGURE 2 – Location Efficiency: Driving vs Residential Density**



Transport statistics for the UK display broadly similar patterns, with commuting to and from London achieving phenomenally high trips by rail systems (approx 80% of modal share) in marked contrast to the countrywide average of 62% of commuter trips taken by car<sup>2</sup>. This is a reflection of the centrifugal force exerted by London over its regional economy and beyond, as well as of the historical development of underground and railway-served suburbs during London's mid 19th to mid 20th century expansion, before the primacy of the car took hold.

While much can be done to reduce the impact of car-based commuter journeys through the provision of public transport in cities, reductions of many local journeys (less than two miles) can only be achieved through a more considered approach to land use, and the remediation of non-permeable street layouts that predominate in our outer suburbs. A study produced by the MTRU for Transport 2000 and London Councils in 2006<sup>3</sup> looked at the differences in travel mode between central and outer London. Within central London a staggering 75% of journeys are undertaken on foot – by far the most popular means of transport. Within the wider area described as 'inner London', which includes the traditionally planned inner suburbs, the figure dropped to 46.8% reflecting the less mixed nature of the constituent areas and their principally residential function. Within areas defined as 'outer London' the number of trips achieved by walking dropped to 30.6%. These figures suggest that there is scope for a significant drop in car dependency if areas were regenerated or planned to encourage walkability.

A further figure highlighted in the study was that in outer London the proportion of non-commuting trips (i.e. shopping, education, leisure escort' trips to school and elsewhere) totals 59%. This figure suggests that even if it is unachievable to deliver jobs within walking proximity of home, that a very significant level of journey reduction could be achieved merely by enabling people to walk to school, to shop and to relax. Further work to analyse the 'location efficiency' of different urban forms and the correlation with trip reduction would be useful to inform future planning and land use decision-making.

Finally, although the design of buildings – as opposed to communities – is not the primary focus of this report, the importance of measures that increase the thermal insulation of the building stock, and incorporate opportunities for renewable energy sources, recycled materials or water recycling, should not be overlooked as important contributors to reduced emissions.

The Foundation advocates a general principle of good thermal mass for buildings of all types, with low thermal gain. In view of the energy dependency of many modern buildings and materials, The Foundation has positively evaluated traditional building materials and traditional built forms for their energy effectiveness rather than pursuing technological fixes. Once again the terraced house and traditional apartment block evidence robust types that are far more thermally efficient than the isolated detached dwelling of current housebuilder practice.

## 1.2 ADAPTING OUR ENVIRONMENT TO MITIGATE THE EFFECTS OF CLIMATE CHANGE

Sustainable designs for buildings and neighbourhood planning try to anticipate and mitigate the likely effects of climate change into the future. In the UK, these will include hot summers and mild winters; heavier, shorter rain showers with potential for flooding; and rising sea levels with an increasing likelihood of extreme tides.



While promoting thermally efficient homes, offices, schools and shops we must also anticipate long spells of warm summer weather, and take account of this in homes that are naturally cooling, with heavier thermal mass and opportunities for shading.

Many existing buildings have the potential to adapt to climate change, particularly in our historic housing stock, which often offers better location efficiency, as it was planned before the advent of the car. Research and testing of regeneration, especially in the Housing Market Renewal areas, is needed if we are to provide flexible modern housing without sacrificing the embodied energy and convenient location of the original homes.



[Housing in Upton, Northampton, which responds to environmental and flooding challenges sets new standards in Sustainable Urban Drainage (SUDS), as illustrated. High quality SUDS design provides urban amenity for the new development.]

#### WATER MANAGEMENT - SUSTAINABLE DRAINAGE

The likelihood of more unpredictable and intensive rainfall patterns raises serious concerns about flooding, affecting the insurance of existing building stocks and the siting of new developments. Historic urban development has affected surface drainage systems with the culverting of natural channels, loss of absorption as fields and river banks are urbanised, and in recent times the paving of domestic gardens to ease maintenance and provide car parking. It is estimated that an area 22 times the size of London's Hyde Park has been lost as a result of converting many of the capital's front gardens to hard standing. These urban development patterns reduce the environment's ability to cope with downpours and hamper the effectiveness of drainage systems.

Sustainable Urban Drainage Systems (SUDS) combine management strategies and structures, including open ditches, to mimic natural drainage in order to ameliorate flood threat. Their natural characteristics also provide more opportunities for wetland habitat and can promote biodiversity.

The Foundation's endorsement and evaluation of a Sustainable Urban Drainage System for water management at Upton, Northampton, tests better management of water run-off from development and mitigates the potential for flooding. The Foundation continues to evaluate the effects of SUDS, including the impact on local biodiversity, in partnership with the University of Northampton, as well as advocating the incorporation of SUDS at new developments such as that at Sherford, near Plymouth.

[PART III: SECTION 2]

## Crime

The next area where good urban design can generate social benefits is in relation to the prevention of crime. By understanding and building in the opportunities for natural surveillance and a helpful level of street activity, sustainable urbanism aims to create connected and permeable communities that will reduce the incidence of criminal behaviour and the fear of crime in urban areas.

Criminologists, planners, and architects have long debated the factors influencing crime in a particular locality. Criminologists associate crime primarily with socio-demographic factors such as income, racial composition, youth concentration and levels of education. Architects and planners on the other hand, relate crime to environmental design factors such as lighting, target hardening, or orientation of entrances<sup>4</sup>. The approach of the police has been to advise on design characteristics liable to reduce crime, most recently through the 'Secured by Design' initiative.

The desirability of defensible or accessible space is a controversial question. The traditional urbanist will refer to the work of Jane Jacobs<sup>5</sup> who, in promoting open and permeable environments, highlighted how strangers passing through spaces, as well as inhabitants, are part of the natural policing mechanism. But there is also an opposing viewpoint characterized for example by Oscar Newman<sup>6</sup>, who supported closed and impermeable environments, in which inhabitants are the only natural police, and the fundamental mechanism is that residents recognize strangers as intruders and challenge them. Proponents of cul-de-sacs argue for the limitation of access to occupiers and legitimate visitors, minimizing crime by reducing opportunity. Traditional urbanism by contrast encourages individuals to interact with each other, by establishing a vibrant active environment through a range of uses during the day and night.

#### 2.1 DEFENSIBLE SPACES VERSUS SEGREGATED NETWORKS

Bill Hillier in his paper "Can streets be made safe?"<sup>7</sup> examines the arguments and provides evidence that demonstrates the strengths and weaknesses of both definable space and traditional urbanism.

The study extrapolates from data collected on crime within the plan of a UK town, and identifies a set of characteristics of cul-de-sac models:

- burglaries are dispersed, but are usually found in the deep parts of cul de sacs, and most of all at the end of the cul de sac; in every case, the burglar gains access to the dwelling not from the cul de sac itself, but from the network of footpaths which surrounded the dwellings at the back and side

- the pattern of burglary shifts to areas with low movement potential and local visibility, where they are likely to be alone, and with limited visual connection to other spaces;
- where cul de sacs are simple and linear, have a visual connection to a through street (part of the classic urban formula), and also have the local conditions right, then they can be safe places;
- but when they are combined together to form hierarchical systems of interconnected cul de sacs, they become extremely vulnerable, especially if the deep parts of the cul de sac complex are reconnected by segregated footpaths.

Elsewhere in the study it was shown that no burglaries were found along a long main residential road which was fairly wide and continuously lined on both sides with dwelling entrances. The comparative length and linearity of the spaces (compared with others in the layout) gives unusually good intervisibility of dwelling entrances. This seems to be a significant element in terms of crime inhibition. However, a through street which has high hedges and long driveways was associated with a comparatively high level of burglary. The houses are effectively concealed from the road, providing an increased opportunity thorough the lack of surveillance.

The study draws the following conclusions about connection and integration:

- when integrated streets are continuously constituted with a strong building line on both sides, with good intervisibility of the front entrances, then integrated streets tend to be fairly safe;
- secondary access in the form of side or back alleys or exposure to other public space such as parks or car parks will compromise the safety of integrated through routes;
- an integrated location appears to reduce the risk of crime by as much as 40%, although a highly connected space which is not programmed with a range of transport users and activities can have the opposite effect, increasing the risk of crime by around 30%.

In order to be confident that permeable design will be associated with a reduced risk of crime it is important that this is associated with integration of different transport options that mean a variety of street users are in evidence.

This analysis suggests that a carefully designed streets network may help to reduce the risk of crime, particularly in as far as it encourages movement of people and well surveyed streets where residents have a relationships with each other and are within sight of each others' properties. This is not to deny the utility of highly protective environments to accommodate particular activities or vulnerable groups. While restricted access 'gated communities'<sup>8</sup> are an anti-social manifestation of the privatisation of public space, there is a clear rationale for such urban forms for educational or health campuses, or communities of elderly or infirm. Other defensible space in a mixed use community may also be incorporated in the form of small front gardens or courtyards shared by a number of dwellings, where these are clearly defined within the street hierarchy.

## 2.2 HOUSING ESTATES & THE INCIDENCE OF CRIME

John Hills in his comprehensive review of social housing criticises bad design of social housing and makes particular reference to flatted council estates and the impact of these developments on crime levels. He reports that in badly designed estates more than a fifth of social tenants report the presence of drug users or dealers as a serious problem, nearly a fifth of tenants report general fear of crime (fear of being burgled, vandalism, litter) and 18 percent felt unsafe alone even at home or outside in daylight<sup>9</sup>.



Holly Street, Hackney, a 1960s housing estate, made up of four 19 storey tower blocks and 19 five storey blocks interconnected by walkways became an anonymous warren where residents suffered from the effects of isolation and crime. The Commission for Architecture and the Built Environment (CABE) highlights that prior to the redevelopment of the estate, a concentration of unemployment and economic deprivation had been compounded by the urban form, leading to crime and drug abuse becoming commonplace in the tower blocks and communal areas.

In an attempt to reverse the downward spiral the area facing Holly Street was demolished and redesigned. A traditional street pattern with houses and low-rise flats which overlooked pathways and streets with well defined open spaces was introduced. A CABE survey completed in 1996 displays the impact this had on the local population:

- residents perceiving Holly Street to be dangerous fell from 60% to 5%
- residents who had witnessed a crime fell from 43% to 1%
- residents seeing graffiti or vandalism fell from 78% to 9%
- calls to the police fell by more than 33% and perceptions of personal safety improved dramatically

It must also be acknowledged however that the regeneration scheme was accompanied by a range of social and employment measures that potentially helped to build community buy-in and pride in the newly redeveloped Holly Street neighbourhood. It must be recognized that while good urban form can help to 'design out' crime, there are limits to how far physical form encourages or dictates behaviour. Ultimately the social and economic circumstances of a community and level of social cohesion will inform the level and tolerance of crime.

Creating well defined open space within communities – a landscaped park, playground or playing field – determines how that space can be used and increases the confidence of space users. Ensuring that the space is well integrated with the broader community and well overlooked also gives it a sense of place and clear 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 the focus for anti social and criminal activity.

## APPROPRIATE PERMEABILITY

"Having studied both the urban design theory behind each approach as well as observing the impacts of permeability in practice, I feel that more thought must be given to the exact nature of links within the permeable network, and that predominantly residential areas suffer from an absence of sustained street activity making a quiet, interconnected network of paths between homes susceptible to crime. This is borne out by observations of rear pedestrian links and rear parking courts being both ideal locations for criminal activity and the means for quick and anonymous escape. Unrestricted, multiple access-ways to rear courts that are not overlooked and often ill-lit, will lead to vehicle break-ins and even assault. In many instances I have advised on the gating of rear courts subject to crime; it is a pity that these measures are usually implemented retrospectively on new developments after crimes have taken place."

## [PART III: SECTION 3]

## Health

This debate can only be resolved by a much better appreciation by local area planners of the different attributes of urban areas and the suburban housing estate. New developments that combine higher residential densities, a broader range of activities through mixing uses, combined with the creation of small defensible spaces at the entrance to dwellings, can avoid the presumptions and inherent flaws of the suburban model. But mixed use represents a seismic shift. Truly addressed, it offers the animation of the street acclaimed by urbanists and validates the permeable street model, while a balanced residential population incorporated into retail can offset patterns of crime in town centres that currently focus on out of hours shops and 'night-time economies' of bars and clubs.

A high crime area is never sustainable and there will be no 'urban renaissance' if we continue to drive people out of the city because of designed in crime!"

[Dave Stubbs MA PG Cert Crime Prevention Design Advisor  
(Berkshire) Thames Valley Police]

**The third social area where good urban design can make a useful contribution is health.**

The relationship between public health and the built environment has always informed the planning process, and influenced regulation. The practice of land use segregation in particular arose from health concerns during the era of heavy industry in Western cities. But the focus on single health issues has failed to take into account the interrelationship of different factors on human health and wellbeing, and has resulted in significant imbalances in the current health profile of the UK population. Particularly important is the impact on physical inactivity and resultant obesity, but mental health issues and a spectrum of inter-related diseases should be considered.

In planning future development, the sustainable urbanism model demonstrably encourages patterns of behaviour amongst local people that are active, healthy and safe, and in particular can play a vital role in tackling rising levels of inactivity<sup>10</sup>. Communities which are developed to the principles of sustainable urbanism can:

- improve health through increasing the opportunities to boost individuals' level of incidental physical activity by providing walkable, cycle friendly, mixed use communities and
- improve both physical and mental well being through the appropriate use of high quality public realm, including attractive streets and public squares, and multi purpose green spaces.

In the 21st century we need to understand that the fostering of health is not just about the prevention of illness but includes social and environmental factors conducive to well being.

### 3.1 THE BURDEN OF INACTIVITY IN THE UK

**"A mass shift in current activity levels is needed"**

[Professor Sir Liam Donaldson,  
Chief Medical Officer]<sup>11</sup>

The influence of physical activity on our health cannot be overestimated. Statistics from the Department of Transport show that walking and cycling for travel purposes have declined significantly over the past twenty years. Concurrently we have seen a sharp rise in obesity. The UK has the highest levels of obesity in Europe and a recent publication from the Department of Health<sup>12</sup> clearly demonstrates the onset of an obesity epidemic. Currently 66% of men and 60% of women are obese<sup>13</sup> and if current trends are not altered by 2010 33% of all children within the UK will be overweight or obese<sup>14</sup>.

Physical inactivity is quickly becoming a serious threat to the health of the nation. The British Heart Foundation in its recent research report *The Burden of Physical Activity Related Ill Health in the UK* found that a total of 287,206 deaths within the UK occurred due to diseases that were linked to physical inactivity, and estimated that 35,429 deaths were directly attributable to physical inactivity; almost two thirds (64%) of these deaths

were due to coronary heart disease<sup>15</sup>. The cabinet office in its policy document *2002 Health Economics for Game Plan* calculated the annual cost of angina due to physical inactivity to be £215 million and cost of heart attacks £89 million<sup>16</sup>.

Adults who are physically active have a 20-30% reduced mortality risk compared to those who are inactive<sup>17</sup> and regular walking can reduce the risk of a stroke by 30%.

Sustainable development increases the amount of incidental physical activity by providing walkable, cycle-friendly mixed use communities. As the Royal Commission on Environmental Protection put it in its recent Report:

**"Urban Environments which are dense, mixed use, easily accessible on foot or by bicycle and with a high quality green infrastructure could deliver positive health outcomes, promoting active lifestyles whilst making prudent use of scarce resources. Improved links between planners and health professionals could help to achieve this."**<sup>18</sup>

By providing a friendly, safe, connected environment which encourages the pedestrian and cyclist, incorporating the car but mitigating its impact, the footfall activity of these communities increases as:

- individuals have alternative options to the car in commuting to local employment or to a public transport link;
- people have the choice to walk to local retail and suppliers;
- individuals will be able to walk to a range of facilities such as schools, churches and libraries.

### 3.2 URBAN SPRawl & INACTIVITY

Interest in the interrelationship of land use, urban form, physical inactivity and health has risen dramatically in the face of the US obesity epidemic. The report of Ewing-Schmid, Killingsworth, Zlot and Raudenbush *Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity* (2003) has a particularly strong evidence base cross referencing US County health statistics with the Smart Growth Sprawl Index, to useful effect.

The study of the US found that, after controlling for individual differences, those living in sprawling counties are likely to walk less in their leisure time, weigh more, and have greater prevalence of hypertension than those living in more compact places. The report concludes:

**"If this assertion holds true, health practitioners can improve public health by advocating for more compact development patterns. Public health researchers can refine their understanding of physical activity, obesity, and morbidity by including urban form variables in their analyses."**

The analysis is developed by a subsequent report for Smartraq, *Obesity Relationships with Community Design, Physical Activity, and Time Spent in Cars* (Frank, Andersen, Schmid) which highlights the incidence of obesity in sprawling neighbourhoods, and identifies land use mix as the most important factor in promoting daily physical activity.

Land use mix was the most significant predictor of the probability of being obese (BMI  $\geq 30 \text{ kg/m}^2$ ) with each quartile increase being associated with a 12.2 percent reduction the likelihood of obesity. Each additional hour spent in a car per day is associated with a 6 percent increase in the likelihood of obesity. Conversely, each additional kilometer walked per day is associated with a 4.8 percent reduction in the likelihood of obesity.



Another promoter of preventative measures for obesity, Dr. Richard Jackson MD, the former director of the US National Center for Environmental Health at the Centers for Disease Control and Prevention, builds on the weighty body of evidence around the impact of urban form on health in the US to conclude that the inhabitant of a cul-de-sac on a suburban subdivision is statistically likely to weigh 8lbs more than his centrally-dwelling equivalent!

These American studies benefit from extensive databases enabling nationwide samples to be analysed with accuracy. Additionally, the extensiveness of American sprawl to an extent justifies our reliance upon US analysis in predicting consequences of poor planning in the UK and Europe. While no UK study has been undertaken covering the same subject, commentators in this country can on this basis broadly support the health argument against zoning, low density and car dependent suburbs in our future growth.

A study in Holland noted that "for every 10% increase in green space there was a reduction in health complaints equivalent to a reduction of five years of age."

There is huge potential for physical activity to increase if appropriate high quality green space is provided. Well integrated defensible open spaces will encourage people to be more physically active, promoting the walkability of a neighbourhood. Giles-Corti et al researched the importance of distance, attractiveness and size of public open space on walking – the conclusions of the report shows the importance of open space to the community and that good access to large attractive high quality open spaces were associated with higher levels of walking: simply providing open space in a community is not enough<sup>19</sup>, quality is what counts. CABE and the RSPB have described high quality green spaces as the gyms of lifestyle activity,<sup>20</sup> by designing, building and managing such spaces appropriately at a local level can have a significant impact on us as individuals but also on a national scale through the reduction of health care costs, a premise The Young Foundation in its report *Mapping Value in the Built Environment*<sup>21</sup> supports. A study in Tokyo found that with more space to walk in a high quality green area life expectancy increased by five years<sup>22</sup>, and a second study in Holland showed that living near green space created fewer health complaints - authors noted that 'for every 10% increase in green space there was a reduction in health complaints equivalent to a reduction of five years of age'.<sup>23</sup>

### 3.3 MENTAL HEALTH

Our mental well-being can be positively influenced by the appropriate use of high quality green public space and high quality public facilities, with a concomitant reduction in health spending. The current annual cost of adult depression to the NHS is 370 million and results in 2615 deaths. Mixed anxiety and depression is the most common form of mental illness in the UK, and increased from 7.8% of the population in 1993 to 9.2% in 2000,<sup>24</sup> a period when physical activity across the nation fell. An inactive lifestyle, over time, is one cause of clinical depression. Evidence suggests that well designed and accessible green space can contribute to better mental health outcomes.<sup>25</sup> Proximity to nature and greenery can relieve some of the stress of city living, and good public space can foster beneficial social interaction, which adds to well-being. In a review for the *American Journal of Public Health*, nature was associated with improved attention among children with attention deficit disorder and improved self discipline among inner city girls. There is also evidence that contact with nature enhances emotional development in school children.

It is easy to underestimate the impact that the built environment has on health. The redevelopment of the Holly Street estate referred to earlier, which involved replacing tower blocks with a range of housing, produced a notable improvement in health standards. A survey completed after the first phase of the development found that demand for NHS services had fallen by 33%, and measures of mental well-being also improved. The environment in which we live is critical for health.

[PART III: SECTION 4]

## Creating Inclusive, Cohesive, Stable 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, along with a mix of uses, 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 development to incorporate an element of social or affordable housing. The successful integration of different income groups within a scheme requires thorough analysis of local housing need to provide a workable balance of housing types required by the specific local market. Also important to creating successful, balanced communities is the manner in which different housing types are accommodated within the neighbourhood plan. Experience at Poundbury also suggests that "pepper potting" tenure types rather than segregated affordable housing within a development promotes social inclusion. In addition, it can create communities that are easier to manage and maintain without external intervention.

Essentially, the argument is that developments that are designed according to the principles of sustainable urbanism:

- promote social integration by delivering high quality housing with a choice of tenures and sizes, mitigating the stigma traditionally associated with social housing, and creating popular and desirable communities;
- reduce social exclusion by creating robust and integrated communities which have access to educational and health related facilities as well as normal retail services;
- encourage community cohesion and stability by enabling households to remain within a given neighbourhood through different life stages.

### 4.1 IMPORTANCE OF MIXED TENURE

Economic segregation has grown in Britain over the past few decades. Rising income inequality<sup>26</sup> and housing policy have exacerbated the concentration of wealth and deprivation.<sup>27</sup> A recent review conducted by Professor John Hills examined social housing provided by councils and not-for-profit housing associations. John Hills reported that even though the social housing sector has been weakened in recent decades there are still four million households defined as in need of social housing.<sup>28</sup> In 2004-05 two-thirds of social housing was located within areas originally constructed as council estates in spite of policies that have aimed to encourage housing diversification. Such concentrations carry immense social costs, both direct and indirect. Large deprived areas exert downward pressures on school quality, stimulate high levels of crime and disorder, and exacerbate health inequalities; while concentrations of deprivation reduce private sector activity.<sup>29</sup> The lack of competition among retailers in these communities potentially increases the

"Whilst there are other influences affecting people's choice of housing – particularly, good schools, health services and a 'safe' environment – it is also necessary to meet the aspirations of today's society and provide housing of the mix, size, type and tenure to meet the needs of the whole community"

level of actual deprivation as those with the most need of support are actually paying more for basic goods and services than middle income families.<sup>30</sup>

Mixed tenure cannot on its own improve communities or reduce social exclusion and poverty, but when it is part of a number of initiatives such as high quality physical environment and the provision of a range of local services<sup>31</sup> it can contribute significantly towards creating a sustainable community providing a higher quality of life and an opportunity for those who are economically challenged to break out of the spiral associated with concentrated disadvantage.<sup>32</sup> Graham Martin and Judi Watkinson in their report *Rebalancing Communities by Mixing Tenures* published by the Joseph Rowntree Foundation make the point that "whilst there are other influences affecting people's choice of housing – particularly, good schools, health services and a 'safe' environment – it is also necessary to meet the aspirations of today's society and provide housing of the mix, size, type and tenure to meet the needs of the whole community".<sup>33</sup> By achieving a social and economic mix, concentrations of poverty and social polarisation can be avoided and mitigated.

A thriving community is characterised by "full employment, a range of jobs and training opportunities for young people leaving school and university, and a vibrant and diverse business community. It is a place where people do not just want to live, but also have the opportunity to work and access to housing which they can afford".<sup>34</sup> In order to achieve this ideal, it is helpful if communities can support a range of individuals and families at all life stages, so that people who move to a community as a young couple or family have the opportunity either to adapt their property or move within the area as their circumstances change enabling the community to retain its successful residents.<sup>35</sup> This simple principle was neglected in the dependence of post-war social housing policy on flatbed developments that were relatively inflexible, forcing community upheaval as those who could afford to moved away to accommodate their growing families.

Some critics of mixed-income communities tend to concentrate on whether owners and tenants share a common social life; but Richard Best, former Director of Joseph Rowntree Foundation, points out that this misses the key objective of achieving more balanced communities: "It is the stigmatising effect of having a tenure which identifies its occupants with failure and poverty which has contributed to the decline in the value of social housing, difficulties in filling the homes and loss of morale on the part of the residents".<sup>36</sup> In short, mixed tenure developments offer a physical model for the reduction of deprivation and an equitable distribution of opportunity within the UK.

### GUINNESS AT POUNDBURY, THE EXPERIENCE OF PEPPERPOTTING

'The Guinness Trust has been involved at Poundbury since its conception and we now have 1 over 150 homes in management across all of the phases.'

Our affordable housing is pepperpotted throughout Poundbury in pairs and small terraces and indistinguishable for the neighbouring privately owned homes. The Guinness Trust is a great supporter of this form of development

[PART III: SECTION 5]

## Economics & Mixed Use

and seeks to persuade many of our partners, both in the private sector and in Social Housing, that it is the way forward and achievable both in terms of finance and management.

Certainly in Poundbury we feel that it has been a great success as our residents are keen to live and remain there, and over the last fourteen years so the levels of anti social behaviour at Poundbury has been minimal compared to many of our more traditional estates. Pepperpotting on new developments may not be the sole answer to many of today's social and housing problems but it may be part of the solution.'

[Roger Browning, Operations Manager, The Guinness Trust - South West Area]

[Dorset Cereals, based in Peverell Avenue East, Poundbury]



Until specialised segregation of uses was introduced to segregate polluting and noisy industrial facilities from housing and other buildings in the early 20th century mixed use was, of course, a natural outcome of town-making.

The advent of use-zoning, facilitated by cheap and reliable car transport that no longer required individuals to access work or shopping on foot from their homes nor rely upon fixed public transport facilities, was enshrined in planning policy for many years. This trend only began to reverse in the wake of regeneration policy initiatives of the 1980s, which culminated in the rewriting of PPG1, and subsequently Richard Roger's Urban Task Force Report (1997) and planning policy guidance that sprang from this under the Office of Deputy Prime Minister (ODPM). Indeed, true to the example offered by a wide variety of traditional town centres and inner urban suburbs, government now acknowledges that a mix of uses does much to promote sustainable, interactive and attractive places to live and work. A true mix of uses offers:

- Places whose range of function make them diverse, independent and adaptable, supporting a vigorous economy providing jobs, local wealth and the means for social exchange.
- Buildings and streetscapes whose flexibility and adaptability promote long term economic health, mitigating the effects of recession brought about by changing local and national economic circumstances and "catching" prosperity by offering the means to work and spend locally.

### 5.1 WHAT IS MIXED USE?

Various bodies and government offices offer different interpretations of mixed use. The 2002 White Paper *Mixed Use Development, Practice and Potential* identified mixed use as "(uses) in an individual building, a series of buildings grouped together, or a predominant characteristic across an urban area identifiable by a mix of functions which jointly activate the built form".<sup>37</sup> The report usefully observes that while mixed-use schemes are of broad variety, recent manifestations under the title often containing a preponderance of one element (eg commercial offices, or a large development of flats). These are only partially successful in achieving the goals of mixed use.

The aspiration when planning mixed use should be for an outcome of broader scale aggregation, offering the vitality and attractiveness of real town or neighbourhood centres. At its simplest, the term anticipates the presence of a variety of uses to include – primarily – housing, office and retail accommodation. More aspirationally, these should be well integrated and arranged in a fine grain pattern of buildings within legible blocks and streets. By implication, good mixed use will not be established by the provision of one particular mixed use element within buildings or groups of buildings (eg, residential tower blocks)

that are inherently inflexible; instead, mixed use will best be achieved through the creation of a robust urban form capable of containing a variety of different uses and adopting over time as occupational requirements change. Consider the example of the historic London Estates that were built primarily as residential accommodation, but which over times have adapted to accommodate the multitude of uses that make up central London.

As set out, the nature of the urban form is an important factor in the success of a mixed use neighbourhood. Walkable streets, within a permeable and legible network, and which are perceived to be safe, of reasonable distance to other uses and reliable, frequent and affordable public transport,<sup>38</sup> determine the success of mixed use with a community. Research suggests such development significantly reduces private car use, by creating alternative choices as well as easy access for those without any means of private transport. *Mixed Use Development; Practice and Potential* – examining a range of mixed-use cases studies - found generally that there was a "wide variation in car ownership and usage, but, as expected, a high proportion of households had no car, with the average well below 0.5 cars per household. A small but significant proportion of households were found to have given up their car since moving into the development; and most car-owning residents said they used the car less than before".<sup>39</sup> It is significantly easier to envisage this modal shift being achieved within town centre locations as the dominant radial structure of our towns and cities (and corresponding public transport systems) means that the town centre resident has a far greater choice of potential destinations available via public transport routes than the suburban resident.

The greater challenge will be to develop a sustainable approach to the remodelling of outer urban areas that do not have the benefit of convergent public transport systems nor the density to sustain them. The development and intensification of outer suburbs to the 'walkable neighbourhood' model may provide a solution, but will require some reordering of land use locally, public sector investment in the improvement of local transport and a distributed approach to the delivery of health and educational services so that these can be accessed on foot.

The same report<sup>40</sup> identifies a positive response of residents to a town centre lifestyle where a range of uses are in close proximity. The demographics of mixed use places identified in the study was far broader than the affluent young professionals that are habitually associated with new (usually apartment based) city centre living, and there was a significant spread across both age and income spectrums in the 20 case studies identified. The report concluded that mixed use is not an elite but a broad market. Negative responses from residents tended to share specific themes based on practical disadvantages, particularly parking (for residents and visitors), deliveries to adjacent retail units, and the particular 'bad neighbour' problems of 'night time economies'.

## 5.2 PERCEIVED BARRIERS

Given that mixed use has the flexibility to adapt to a broad range of occupier and consumer aspirations for their environment and housing choices, it strikes the uninitiated as odd that its adoption as a business model is neglected by mainstream development. Broadly speaking, the developer and investor markets have adapted to the zoned model to the extent that both the rate of return and anticipated land values (particularly on central sites) render mixed use models less attractive or even unviable on certain sites.

Some of the factors encouraging market preference for single use are as follow:

- Simpler construction and delivery

- Simpler management regime
- Current valuation practice
- Property market segmentation where organizations and funds tend to focus on a specific segment of the property market (retails, commercial, residential etc)

The property market has a strong preference for single-use schemes because they generally deliver greater – perceived – profitability; usually mixed-use schemes are developed in response to planning policy. The valuation exercise at the heart of this study challenges the assertion that there is no business case for mixed use development, particularly with the acceleration in residential markets envisaged by the housing growth agenda. As has already been identified in this report, the scale of the development opportunities involved will require a mixed use approach and in most cases have the potential to produce more profit for all parties, provided that a suitable equity stake is retained by the promoter.

Leaseholds – where they are deployed – also dissuade investors from mixing uses as leases on residential property are generally 99 years whilst those for commercial property are conventionally set at 30 years, with the anticipation that the property can be subsequently redeveloped at that cycle. It is not clear however, how much longer the habitual cycle of commercial redevelopment will itself be viable in the resource-poor development circumstances of a world adapting to both Peak Oil and Climate Change, so this model is subject to shift. Further work in this area is desirable.

## 5.3 LONG TERM BENEFITS OF MIXED USE

Whatever the appeal may be to investors and developers, there is evidence that mixed use delivers economic benefit to local residents and local business.

### Economic

Residents can expect immediate returns in reduced transport costs as daily needs, including work travel, may be avoided altogether or reduced by viable public transport options not available in the mono-use suburbs. In particular, residents of a mixed use scheme can expect to make primary food and household purchases without a car, with commensurate savings on petrol, maintenance etc. In this way urban form directly offers a solution to the conundrum identified by the Government's National Strategy for Neighbourhood Renewal (2000). "The problem is not necessarily that too little money flows into a neighbourhood. Rather it is what consumers, public services and businesses do with that money. Too often it is spent on services with no local presence, and so immediately leaves the area."<sup>41</sup>

The most obvious local presence is to locate home and retail and other businesses in close proximity. Furthermore, the New Economics Foundation (NEF) have identified an economic multiplier effect for local spending. Developing a tool to measure this, NEF have established how the effect of money that stays in the local economy is amplified through subsequent cycles of spending (and equally how this effect is lost when money is spent outside the locality instead). While the nature of businesses (local outfits or national chains) obviously has a great effect on the success of the multiplier, the flexibility of the mixed use, fine grained urban model – coupled with adaptable building stock – means the multiplier has an opportunity to take effect in local hands.<sup>42</sup> A clear example of this at work is the success of the local retail and pub at Poundbury, supported by a lunchtime trade of local workers as well as the residential community (SEE MIXED USE BOX).



**MIXED USE**

The success of Poundbury's retail elements is attributed to the range of uses and the generation of activities throughout the day.

"Observing the runaway success of both the local store, the café and pub in Pummary Square, it is clear that the mix of uses within Poundbury feed off one another. Mixed use sustains mixed use. The 700 workers from the factories and local offices form the lunchtime and early evening trade for these establishments, before the commuting population from the nearby homes come home later in the day. Animation of the street by all-day uses is not therefore mere window dressing for Poundbury, it validates the business model for the small local traders. The factories also benefit from the general attractiveness and amenity of the area, in marked contrast to the average industrial estate."

Mixed use is not however without its problems. If we had foreseen that the cereal factory at the heart of the development would have double the number of HGVs than the other factories we may have thought twice about this particular use and placed this facility on the edge, a location more suitable for what is effectively a distributive use. Turning circles required by the bigger vehicles do not enhance the urban design qualities we have nurtured at Poundbury, and reverse warning noises early in the morning are no boon to good neighbourliness. It is therefore important that all factories have separate entrances and exits for HGVs so lorries can enter and leave in forward gear and stack, if necessary, within the enclosed service yard rather than wait outside for another vehicle to vacate the space. However for the working population factories are good neighbours – they are quiet during the evenings and weekends. They can be more of a problem as neighbours for retired people. Living in a mixed use settlement is a lifestyle choice for the residents. They will have to put up with some disturbance, but must recognise that the facilities they want are sustained by the spending power of the working population. That said, a sample survey of residents living in the immediate proximity of employment uses reported a 95% satisfaction rate with home and location, even taking into consideration additional noise and nuisance the businesses create."

[Simon Conibear, Poundbury Development Manager]

**Social**

Mixed use can support a wider demographic spread with the means to employ young people and young families locally. Offering opportunities to live near to the workplace (especially where jobs are low-skilled or part-time) facilitates employment for those for whom a long commute would be both financially unviable and reduce employment choices (eg working mothers). A study for the Joseph Rowntree Foundation, *Rediscovering Mixed-Use Streets*, concluded from chosen case studies that mixed use high streets at neighbourhood centres, far from being a historical hangover, form a vital component of the sustainable communities agenda:

"(attracting) a wide range of population groups, in terms of age and ethnicity, that are both representative of the local area and are drawn from a wider catchment. These streets are accessible to those without a car, as well as to car drivers."<sup>43</sup>

As well as facilitating social inclusion, the study suggested mixed use streets prompted social exchange and community focus:

"Mixed-use streets help to sustain and build local community capacity and social capital, and can contribute to reducing feelings of isolation and depression. For many people, the local high street represents the physical and cultural heart of their community, providing a valued sense of local identity."<sup>44</sup>

Whilst social capital and exchange, by nature, are hard to measure, this study concludes that the traditional urban form of mixed use streets at neighbourhood centres, supported by good public transport, are important mediums for social exchange and positive identity.

**A PRICE PREMIUM FOR NEW URBANISM IN THE US**

Research by real estate and consumer groups in the US finds that residential development built to the principles of "new urbanism" can command a price premium of up to 15% at sale, tapping an unmet demand for community focused homes amongst consumers. A 2007 report presented by the National Association of Realtors Smart Growth Programme Conference identified a 16% premium for Kentlands (a mature new urbanist community in Maryland) and 6.5% premium for Lakelands (a newer development close by) based on averages for 1997-2005 after controlling for site, interior, exterior, quality, and market characteristics. Previous research in 1999 showed 11% average price premium for New Urbanism and 13% price premium for Kentlands (for the years 1995-1997), displaying the improved increment in value at resale for this development over time.

Meanwhile the association have identified that 1/4 to 1/3 of homebuyers polled in various regions would prefer to have the ability to use the car less; to walk to more destinations; to live in a more vibrant and varied mixed-use setting; and have a shorter commute to work and the option of good public transit. They say they are also willing to make the tradeoff to a smaller home or a higher-density neighbourhood with a range of housing types, conflicting with assumptions that consumer preferences on housing form are inflexible. In January 2007, a localised study by SMARTAQ (Strategy for Metro Atlanta's Transportation and Air Quality) in the Atlanta area found there is a pent-up demand for walkable communities. About one in 20 in metro Atlanta live in compact walkable neighbourhoods but about 1/3 would have preferred a more walkable environment.

[Full report reference listed in Appendix 3. With thanks to Linda Stephen, IWPR Group, Public Relations & Speakers Bureau, New Urbanism, Sustainability, Home Building & Design]

## Conclusion

The final section of this report has summarised the social and environmental case for sustainable urbanism, just as the second section presented the case in commercial terms.

Good urban design does not offer a complete solution in any of the social areas discussed here, but the evidence suggests that it can contribute to improvements in all of them – from carbon emissions through crime and health to problems related to social exclusion. The evidence is in many ways patchy and unsystematic, but a series of authoritative studies have been carried out in a number of different countries, with broadly comparable results that support the arguments advanced here. What is needed now is more systematic research in this area, focused specifically on the needs and conditions present within the UK, and more public support for this is one of our important recommendations.

It is already clear, however, that if the bleak urban future set out in the first section of the report is to be avoided, the principles of good urban design captured by the phrase 'sustainable urbanism' must now urgently be applied across the country. ■

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## Appendix 1: The Landowners & Scheme Promoters

### 1. COMMON OWNERSHIP & PROCUREMENT THEMES

At the outset of the project the research team encountered some difficulty in identifying mature schemes that met a sufficient number of the criteria of sustainable urbanism to warrant exemplar status. While there is an increasing number of residential schemes that display high quality architecture and urban design, and these are being identified and awarded through the cross-industry Building for Life initiative (see: [www.buildingforlife.org](http://www.buildingforlife.org)), there are few examples that display a sufficient and integrated mixed use component and opportunity for 'walkability' to meet the 'sustainable urbanism' criteria set out by The Prince's Foundation. The three schemes that were ultimately identified interestingly share a number of common themes in their land ownership and the procurement routes adopted.

### 2. LANDOWNER/PROMOTER SESSION

In order to further understand what similarities exist in terms of procurement and delivery methods, The Prince's Foundation convened a working session of all three landowner/promoters. At this session the respective teams were canvassed on how the schemes were initiated, conceived and then taken forward. Areas of common experience were discussed; lessons learnt and common themes identified which might be applied to future schemes, as well as practical barriers and obstacles to the sustainable urbanism product emerging.

### 3. PROMOTER ISSUES

In each case there was a single landowner. At Crown Street this had been achieved as a result of land assembly by the key public agencies within the city; at Poundbury, the scheme was promoted by the Duchy of Cornwall; and Fairford Leys was promoted by The Ernest Cook Trust, a landowning educational charitable trust that is also concerned with the proper management and care of its land.

Each of these landowners was committed to the objective of creating a better form of urbanism. At Crown Street, the public sector remit was to achieve the regeneration of the problem Huchesontown estate and to transform perceptions of this part of Glasgow's inner city. While the scheme had to meet various tests of viability, it was not required to maximise returns to the landowner. In the case of both the Duchy of Cornwall and The Ernest Cook Trust however, the promoters are bound by law to achieve commercial returns on their activities.

In each case the landowner performed the role of development promoter, commissioning the masterplan for the scheme and putting in place urban and architectural design quality control mechanisms in the form of a design code at Poundbury and Fairford Leys, and design competitions on each block at Crown Street.

In order to establish the masterplan and begin to create a sense of place, in each scheme the promoter committed to an early investment in the 'place-making' elements of the scheme whether streetscape, landscape, or the early delivery of social and commercial facilities. It was noted that while this involved a significant financial commitment, the completion of such elements was also marked by an uplift in values or speed of uptake of units.

In each case, land was released on a parcelled basis with onerous conditions attached to the delivery of design quality both through an obligation to abide by the terms of the design code; and at Crown Street, through the use of development leases for the period of the development with transfer of the freehold only taking place on satisfactory completion. The size of the development parcels was relatively small in the case of Poundbury and Crown Street, which has potentially allowed the promoter further scope to control the quality of the built product with little scope for the dilution of the masterplan.

#### 4. DELIVERY ISSUES

##### **Land Pooling & Assembly**

Where there is not one but a multiplicity of landowners it will be vital to the ultimate success and quality of the project to bring these landowners together to create an effective promotional vehicle. This may require innovative new, potentially tax-transparent structures to emerge which will encourage landowners to work co-operatively to enable optimal masterplanning to take place. We suggest that further research is required to review the central issues, to inform a potential solution.

Consideration must further be given to the role of promoter or land developer. Few landowners have the skills and resource available to any of the exemplar schemes, and this often drives the decision to option land to a professional developer or housebuilder.

Equally many landowners do not have access to the level of risk capital required to take a scheme through the process of site promotion. There is potentially an opportunity for a new form of land development partner to emerge to work with landowner interests to assemble, land, fund and undertake project promotion towards the delivery of sustainable urbanism. Equally there may be a funding opportunity for investors to engage in the early stage of such projects.

##### **The Need for Patient Equity**

The requirement for a patient equity approach, is based on the proposition emerging from the research that successful sustainable urbanism is predicated on a higher level of investment in the design and place-making at the early stages of a scheme.

This early investment is potentially rewarded in a variety of different ways, through the allocation of the site against competition in the first instance; through speed of planning permission and early acceptance by local stakeholder and community groups; through the rate of sales and potential for sales off-plan; through higher total development values and through increased land values on later-stage land parcels.

While none of this is uncommon within commercial development practice, new funding and business models are needed to enable the development of sustainable urbanism which is inherently more complex than its standard urbanism counterpart. This could involve the landowner committing for longer than is presently the case; a remodelling of points at which value is crystallised within a scheme; a need for new, forward looking valuation methods; the attraction of funding from a variety of different sources and investment horizons; the need for a new partnership relationship to emerge between the public and

private sector in respect of the delivery of the 'social element' of the scheme. Finally there is need to develop mechanisms for the promoter to benefit from the longer term uplift in land values, in order that value creation is fully captured.

#### 5. MANAGEMENT ISSUES

A strong theme of the discussion was the need to put in place an effective and ongoing estate management regime. This has been achieved in different ways at each of the schemes.

The problem of enforceability of estate management regimes was a key theme which was addressed at Poundbury by means of associating the estate management regime with the provision of broadband and digital access, and an effective peer group-led neighbourhood association. Interestingly, the estate management team provide first line input into small domestic planning applications which tend to be dealt with very quickly by the local authority as a result.

At Fairford Leys local area management has been undertaken by means of a parish council which was set up with the encouragement of the landowner and local authority. This formalises the management effort through a democratically elected local body. This mechanism is reliant on peer group pressure to achieve enforceability and also the enthusiasm and drive of committed individuals.

In the early days of the Crown Street project, estate management was assisted by the onerous conditions that could be applied through the Scottish land ownership system of feudal tenure. One of the possibly unintended consequences of The Abolition of Feudal Tenure Act of 2000 has been the weakening of the enforceability of urban estate management regimes. Although in the early years of Crown Street it was envisaged that neighbourhood associations for each block would take on the long term oversight of the estate, the enthusiasm of local residents for participation fell away, and this role has been taken over by the housing association which owns and manages the social housing on the scheme. The housing association undertakes a high level of maintenance as well as management and have won credibility with the private occupiers of the scheme through negotiating collectively to provide cost savings on building upkeep and maintenance contracts and removes a burden from the individual householder.

## Appendix 2: Further Research

The delivery of high quality, sustainable urbanism is a rising priority in the face of the high levels of housebuilding envisaged by the government's Growth Agenda and the increasing awareness of the need to reduce carbon dependency in the light of climate change.

While there is now a considerably higher level of awareness of the desirability of good quality urban and architectural design as a result of a high level of policy commitment to the design agenda, there is perceptibly less understanding within the development industry of what, in physical terms, constitutes 'sustainable urbanism' – in spite of the fact that the delivery of sustainable communities has equally been embraced as a mainstream policy aim. This lack of clarity (or failure to embrace genuine sustainable community planning principles on the part of the industry), was borne out by the difficulty encountered by the research team in identifying exemplars to be the subject of the case studies.

The research exercise has highlighted a range of further areas of investigation and research which should be considered to help support professional and industry understanding of the nature, funding and delivery implications, as well as the impacts of sustainable urbanism.

### 1. EXTENSION OF THE SAMPLE

The sample undertaken was necessarily limited, due to budgetary constraints; the requirement to test the methodology; and finally the relative scarcity of exemplar schemes that displayed the full set of characteristics of sustainable urbanism.

In order to produce a more robust result, a wider sample would be beneficial. As well as reinforcing the statistical basis of the headline finding, namely that sustainable urbanism adds value, this work would also serve to inform a more sophisticated understanding of how sustainable urbanism impacts on value within differing market scenarios (eg regeneration; market failure; areas of aggressive land value) on one hand; and at a fine grain level, how various urban characteristics impact upon viability/profitability.

We refer to the difficulty of identifying good quality completed exemplars. We are aware however, of a significant number of schemes now under construction and in the pipeline which could usefully form the basis of the proposed analysis. It would further be beneficial to the understanding of the property market dynamics operating upon these schemes to begin to start tracking their progress now in order that their performance over time might be monitored.

Given the high level of detailed work involved, and on the basis of a now well-trialled methodology, a preferred way forward might be to work with a university department to further develop this work.

### 2. GIS/LAND USE ANALYSIS OF VICTORIAN/EDWARDIAN 'WALKABLE NEIGHBOURHOODS'

In order to establish a more defined set of urban planning principles to which 'smart growth' might be delivered, it is proposed that detailed land use analysis is undertaken of built, functioning examples of smart growth within the UK.

We suggest that 19th and early 20th century inner urban residential extensions - which were built prior to mass car ownership and usually in connection with the development of public transport infrastructure - offer a land use and planning model which might help to inform the development of 21st century sustainable urban development. These early suburbs generally display relatively high levels of density, mixed use and tenure patterns and restricted car parking opportunity while also displaying a very high level of property market performance and quality of life.

While there is a strong body of urban design theory that derives from a process of observational analysis of good places, we suggest that, in order to inform the development and regeneration process more closely, GIS based measurement analysis would begin to establish the 'metrics' of good urbanism. We propose that a research project should be undertaken to produce a fuller understanding of the densities, building typologies, occupation and land use of a sample of such areas in order to inform the development of a new, updated model for the delivery of smart growth.

The research would create a more robust understanding of metrics, building typologies and relationship between densities, uses and transport infrastructure inherent in these examples of successful urbanism.

In this way, we envisage that the work would, on one hand, help to shift developer perceptions of what constitutes 'market acceptable' development (given that these are some of the highest value neighbourhoods in the UK) and on the other would usefully help inform the developing masterplanning of the English growth areas, in particular the Thames Gateway, to ensure that the environmental and land use performance of this new wave of development is optimised.

### 3. RELATIONSHIP BETWEEN 'WALKABLE URBANISM' & TRAVEL/JOURNEY REDUCTION

A related study should be commissioned to analyse the extent to which 'walkable urbanism', with relatively high densities, a strong local provision of services and amenities and public transport, leads to a reduction in the number and length of car-borne journeys. (and potentially increases walking, cycling and use of public transport and taxis).

The study would aim to clarify what the conditions are that lead to a reduction in car-dependency; to quantify the potential for trip reduction (both in number and length);

to quantify modal shift; and to infer a potential level of carbon reduction that might be achieved by pursuing development to this model.

The conclusions of this work might be useful in making the case for public transport investment linked to new development; would help to engage the Department of Transport (and other transport related bodies eg. CTRL, TfL) in thinking around the relation of public transport to urban development and urban form; and from a developer point of view would help to inform negotiations around the environmental performance of new development.

#### 4. RELATIONSHIP BETWEEN LOCATIONAL VALUE & EDUCATIONAL PROVISION

The role of a quality educational provision in the attractiveness of a location is widely acknowledged, though little documented in urban theory. Our analysis identified that one of the key factors in establishing both the value and, significantly, the walkability of a location is the quality of its educational provision. The National Travel Survey of 2004 suggests that only 50% of primary school children walk to school, while during the morning rush hour 23% of car trips in urban areas in school term time were generated by the school run (as opposed to 17% in 1994).

We propose that further research be undertaken to gain a fuller understanding of the relationship between the success of a location and its educational provision; to understand the relationship between local educational provision and walkability; a review of whether there is an argument to be made in favour of clustering educational facilities of different levels eg nursery, primary (and other services) to improve walkability; and to review whether, in urban design terms, there is a beneficial nexus between the provision of education facilities, other community facilities and the viability of local retailing.

We suggest that the conclusions of this work might inform the development of cross departmental thinking on the role of education in urban and rural regeneration; may support the case for investment in educational facilities as part of establishing new locations; may establish thinking on how the location of educational facilities can contribute to carbon reduction; and will help to inform urban design thinking on the location of educational uses to support viable local centres. In the light of the government's 'Building Schools for the Future' programme which intends to rebuild or refurbish every secondary school in England, this work should be carried out promptly to inform the programme and to suggest beneficial links to the housing growth agenda.

#### 5. DEVELOPMENT PROCESS RESEARCH

A clear finding of this research project is that sustainable urbanism does not come about as a result of conventional development processes. Significantly, each exemplar scheme was promoted by a landowner/promoter, each of whom self-consciously adopted a novel project promotion and delivery route with the objective of creating a new community as opposed to housing estate.

A broad conclusion of the research is that new development procurement and funding routes will need to be defined if sustainable urbanism is to be widely delivered. In the course of the research, we have further begun to identify a series of issues along the route to project delivery that operate to undermine the objective of delivering development to the sustainable urbanism formula. We propose that a fuller interrogation of conventional versus planned comprehensive development routes should be undertaken to further frame

a new approach to development and identify areas that are obstacles to a beneficial outcome.

In the first instance we have identified the following three areas for further consideration:

##### **Land Pooling and Equalisation**

An issue uncovered in the course of the research was the need to facilitate the voluntary pooling of land (as opposed to CPO route) by landowners to assemble optimal sites for comprehensive neighbourhood masterplanning.

At present, land pooling and equalisation is extremely difficult to achieve (in particular where owners are not property companies or who have unequal tax status) not least because of its uncertain tax treatment and the relative ease and financial benefit to landowners of a conventional option agreement.

We suggest that a piece of work be undertaken to understand all the taxation issues relating to the assembly of land (SDLT, CGT, Corporation Tax) to produce recommendations on how the tax regime might be refined to support the objective of delivering sustainable urbanism.

##### **Land & Development Valuation Techniques**

We suggest that conventional residual land valuation techniques do not provide an adequate basis for the development of comprehensively planned, sustainable urban development. We propose that a review of how current valuation practice impacts upon the desired development outcome should be conducted, together with recommendations for how a new valuation convention might become established.

##### **Professional Incentivisation**

It has become clear that the personal incentivisation of property professionals acting as agents within the development process may, inadvertently, be operating to undermine the objective of securing a comprehensive approach to development. We suggest that this should be reviewed and recommendations made, possible through the RICS.

#### 6. NEW FUNDING MODEL

A further conclusion to be drawn from the work is that in order to deliver sustainable, mixed use urbanism, a new appraisal and funding model needs to be developed which recognises the greater complexity of 'sustainable urbanism'; the requirement for the funding model to absorb a higher level of front end cost; potentially higher levels of front end risk; but which reward this approach to development through a more efficient use of land and potentially higher returns. We propose that some work be initiated to further understand the parameters of such a model.

#### 7. CASE STUDIES

We suggest that a body of highly detailed case studies be put together of leading schemes to help to propagate knowledge good practice both in terms of product and process. We are aware that a large number of project case studies are in circulation, particularly through the auspices of CABE.

In order to inform development and investment practice however, we would point to the Urban Land Institute case studies as a model as these provide a high level of comparable detail about schemes (some of which information is unlikely to be available within the UK due to differing attitudes to commercial confidentiality).

# Appendix 3:

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# Appendix 4:

## Definition of Sustainable Urbanism

### THE PRINCE'S FOUNDATION FOR THE BUILT ENVIRONMENT'S DEFINITION OF 'SUSTAINABLE URBANISM'

The research adopted a definition of urban quality that goes beyond the measure of architectural quality/PPG3 compliance used in previous studies (See: *The Value of Housing Design and Layout*, CABE/ODPM, 2003) applying the term to new development which embraces the following qualities:

#### **Mixed Use**

Incorporating a range of uses into urban fabric, which may begin as a predominately residential development, but will be flexible enough in its structure to support complimentary uses including retail, leisure, community and compatible business uses.

#### **Mixed Tenure**

Having a structure diverse enough to support a variety of income groups and occupational models.

#### **Mixed Housing Type**

A range of housing types to be accommodated such that movement within the neighbourhood is facilitated, encouraging community stability and the possible accommodation of extended family groups within the same neighbourhood. Building types to be of a flexible nature so as to accommodate changes in income status; changes in household size and life-stage changes over time (e.g., house-flat conversion potential).

#### **Well Connected to Public Transport, Encouraging Walking & Cycling**

Incorporation of safe walking and cycle routes and realistic walking distances to public transport interchanges. (E.g. Bus stop within 5 minute walk; suburban railway station (tram/light rail/guided bus) within 10-15 minute walk). Provision of secure bike storage within street plan/housing model; at transport interchanges and at commercial/community nodes.

#### **Walkable Neighbourhood (i.e. local provision of healthcare/education/commercial)**

Urban structure designed such that community and commercial facilities are integrated in such a way that daily needs of residents may be serviced on foot, recognising link between overall density of occupation and the ability to provide local shops, services and public transport.

Consideration should be given to how new development can create/reinforce walkability of surrounding neighbourhoods. In this way viability of public and commercial facilities can be established as wider catchments are opened up.

#### **High Quality Urbanism Creating Definable Streets**

Streets should display a legible hierarchy with appropriate dispersal of building densities/uses/typologies to nature of the street with building height and contributing to street character.

#### **Robust, Adaptable Urban Form**

A permeable grid of streets is established that avoids cul-de-sacs and encourages a range of route options for pedestrians and vehicles. Street grid should be integrated with that of surrounding area such that new districts become an integrated extension of the wider settlement. Grid should be sufficiently robust to be capable of accommodating redevelopment of buildings and potential change of use without redevelopment of public infrastructure.

#### **Relatively High Net Densities; Balanced Gross to Net Density Approach**

- Development should have regard to PPG3 on appropriate densities to location.
- Density should be allocated across scheme to support the viability of identified use mix
- Location of mixed use areas and densities should inform the dispersal of gardens/public space.

#### **Well Integrated Open Space**

Open space should be designed to have a clearly definable use and long-term management regime. (E.g. gardens; communal gardens; parks; car parks; playgrounds; sports/cultural facilities). In this way, it should inform density and dispersal of uses as well as value calculations. Amorphous green space without a clear purpose or management regime should generally be avoided.

#### **Sustainable Building**

Consideration should be given in the specification of the buildings to matters of sustainability with an aim of meeting a minimum of BREAM Ecohomes 'Good' standard.

#### **Architectural Quality**

The architecture of a development should respond to its context in style, scale and in choice of materials.

#### **Urban Form Should Support a Range of Work/Lifestyle Choices**

Urban form should accommodate economic as well as residential activity providing the opportunity to support home working through provision of broadband, neighbourhood offices, and small business space. Accommodation of childcare provision should be planned to be compatible with neighbourhood movement patterns (i.e. close to main transport interchange or neighbourhood centre and should be accessible via public transport and safe cycle routes)

This definition is based on an analysis of the physical and land-use qualities of existing urban areas which are judged by The Prince's Foundation to function as 'walkable neighbourhoods' and therefore offers a model of sustainable urban form that is rooted in real, observable models. These areas are typically the Victorian suburban areas, predominantly, though not exclusively residential in their nature, which are present in most British towns and cities, particularly where rigorous conservation policies have prevailed.

## [PHOTOGRAPHER CREDITS]

### COVER

Poundbury Stores, Richard Ivey.

### PART I

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