

The future of city living: taking the long view on sustainable planning and development of Leeds city centre south

Summary

This draft paper argues that future regeneration of the Leeds city centre south area (see map on p.7) should take place within a visionary but practical framework of sustainable development. The ideas set out attempt to address both the seriousness of future challenges and the possibility of creating a neighbourhood that will enable future urban dwellers to live, work and meet a wide range of requirements within a relatively small area, thus reducing their environmental impact while ensuring a reasonable level of prosperity and well-being. It is argued that a neighbourhood designed in this far-sighted way to enable a transition to low-carbon (and generally less resource-intensive) living and working could be a selling point for the city, attracting households who may not yet have identified this as a potential lifestyle option, as well as helping to add to economic prosperity and meet local, national and global environmental targets. The aim of distributing this draft paper is to stimulate debate and draw more people into collaborative thinking about the future of the city centre.

Introduction

The first phase of city living, developed in British city centres from the late 20th century, can be criticised as a feature of the ‘casino capitalism’ of that time: a phenomenon driven by a lax lending environment and delivering an investment product that failed to meet the full range of urban design and sustainability criteria (Punter, 2010; Unsworth, 2007a). However, despite its shortcomings, this first phase has significant positive attributes: it helped to revitalise central urban areas, providing appealingly-located, affordable accommodation for many households, especially young professional couples. It could play a much greater role in future, for a wider range of occupiers and for a greater proportion of their lives, but only if the approach to urban development is significantly changed.

Property development in the UK came to a standstill in 2007. City authorities, developers, consultants and academics now need to formulate, and test with consumers, a range of ideas for the next phase of city centre regeneration. With resource pressures, climate change and ecosystem vulnerability of mounting

concern, future developments should arguably contribute to fulfilling the sustainability agenda: improving environmental quality through reducing the use of natural resources and land, minimising pollution and wastes, and optimising products and services while providing livelihoods and enhancing well-being (Jackson, 2009). The ideas set out here suggest a rationale for a more far-sighted form of city living applicable to any city in England and the example is presented of proposals to try to shape the future of a significant area of Leeds city centre.

City living in the early 21st century

Investment in city centre residential property from the end of the twentieth century up to 2007 was dominated by a sense that boom and bust had been banished and that anyone could become rich through buy-to-let investment. Occupiers were mainly young singles and couples who intended only to stay in the city centre for a short time (Nathan and Urwin, 2005). Thousands of apartments were completed and many thousands more were planned. The financial crash meant that many development sites were

rendered non-viable (as more was paid for the land than could now be recouped by development) and finance for both developers and potential purchasers was suddenly in short supply (CLG, 2010a). So began a period of paralysis in property development which also gave a chance to rethink city centre residential accommodation (Unsworth, 2010). This paper argues that while the wild exuberance of the early phase of city living was ended by the financial crisis, the fundamentals affecting consumer choice are likely to generate strong future demand for city living, and very possibly from a more varied range of households. The planning and development agenda should be about much more than forecasting total housing demand and supplying higher numbers of dwelling units in the established ways. It should be about creative reading of trend information, developing far-sighted but workable visions for future development and helping to steer future consumer choices towards sustainable options. City living of a more holistically-conceived kind could be a longer term solution for many households.

The paper draws on research over a number of years in Leeds city centre and insights from the literature on housing, sustainable place making and on futures (trends and how to think about the future). First there is a consideration of the demographic factors influencing demand for housing and supply side factors constraining delivery. This is followed by a discussion of the changing basis of housing decision-making (location, type and tenure) as we move past peak oil and into an era of increasingly costly resources and goods combined with the need to mitigate and adapt to climate change. The final section considers the supply-side responses that could/should be forthcoming from the private and public sectors in the light of these emerging demand-side phenomena and suggests ideas for

future configuration and operation of central urban areas, with a case study example from Leeds. While the arguments in favour of this approach to future city centre development may seem compelling, there are also barriers to change which need to be addressed and research is needed to create a more substantial case for a future market for this kind of place making.

Future housing supply and demand

UK household numbers are increasing and are projected to continue to do so (CLG, 2010b), though the assumptions underlying this forecast and the implications for housing supply requirements are questioned by academics, including contributors to the Land Use Futures project (Government Office for Science, 2010). Even before the recession choked off housing supply, it was looking unlikely that housing delivery could be raised to the rate suggested by the Barker Review (2004) as a response to the household projections (Chartered Institute of Housing, 2010). This is because there are deep-seated structural constraints on supply (Whitehead, 2006; Government Office for Science, 2010). A highly relevant factor is that there is likely to be continuing reluctance to encroach on greenfield sites, partly because of the political unpopularity of such development but also because of the perceived need and opportunities to continue to revitalise plentiful brownfield land in post-industrial cities (Dixon and Adams, 2008; Power and Lane, 2010; Goodier and Pan, 2010). This has been a strong policy strand since the recommendations of the Urban Task Force (DETR, 1999) were taken up in the Urban White Paper (DETR, 2000). These tendencies suggest a continuing focus on development in central and inner urban areas. It is also likely that there will be a persistent overall shortfall in numbers of units, even if the most extreme forecasts turn out to have exaggerated the increase in household numbers. Dwellings

suitable for larger households are likely to be in particularly short supply as recent delivery has been heavily weighted towards provision of flats (CLG, 2010a). Housing accessible to those with less buying power will continue to be needed and with the breakdown of the Section 106 route to providing affordable housing, new ways need to be found to expand supply and extend access (Aspinall and Unsworth, 2010).

The next section argues that future housing decision making is likely to give additional weight to resource constraints, including energy costs, and to the pressures that are already acting to move us towards a lower carbon society and economy.

Residential location decision making, climate change and resource constraints

Cheap energy and technology have enabled people to live further from their workplace and carry out many activities of production and consumption remotely, and the rolling out of fast internet connections works to enhance this effect (Ioannides *et al*, 2007). However, there is still a special value in the concentration of economic and cultural activities and opportunities in city centres, as well as better information and communications technology connectivity. In short, geography has not become irrelevant and there is considerable evidence to suggest both that people continue to enjoy gathering in city centres and that critical mass continues to generate further economic activity and productivity (Glaeser, 2011). This will be strongest in places that already boast a wide range of advantages for business, residents, students and visitors. Thus, a central location remains an attractive and affordable option for some households, especially young singles and couples – witness the strong city centre rental market since the crash (Unsworth, 2010; RICS, 2010; Association of Residential Letting Agents,

2010). In the longer term, it seems likely that this kind of location will be more appealing to a larger proportion of households, even for the significant proportion of city centre residents whose current ambition might be to migrate to the suburbs or beyond after a spell of city living (Unsworth, 2007). The English desire for a detached or semi-detached house with a garden is currently still strong and there is evidence to suggest that new housing units are smaller than people ideally want (Williams, 2009). However, some households, especially in metropolitan areas, clearly compromise more or less willingly in consuming a flat, terraced house or maisonette with relatively small floor area where there is no affordable alternative that enables them to meet other criteria such as access to work. The 'Land Use Futures' project (Government Office for Science, 2010) speculates about whether high density can be made sufficiently attractive that enough people would choose this rather than lower-density, more energy-inefficient living. Relatively dense city centres, while resource-intensive per square mile, have very much lower environmental impacts per capita (Hoornweg *et al*, 2011).

Future urban development in an era of more expensive resources and greater environmental concerns is unlikely to be a straight line continuation of existing kinds of resource and land use and already known methods of planning, building, maintenance and management. Urban areas will have to contribute more towards reducing carbon emissions through cutting domestic, commercial and transport energy use and also respond to the high likelihood of changing patterns and greater extremes of weather (Intergovernmental Panel on Climate Change, 2007; Kamal-Chaoui and Robert, 2009). The repeated failure of UN climate negotiations to reach international agreement has already stimulated individual and group action at national, settlement and citizen level to reduce

greenhouse gas emissions (Heiskanen *et al*, 2010; Peters *et al*, 2010; Bulkeley *et al*, 2011).

The climate change and energy agendas have recently come together (Hopkins, 2008; Lovell *et al*, 2009). As well as needing to reduce emissions, there will in any case be a need to recognise the profound implications of peaking oil and gas supplies: after peak production, which is widely considered to be likely to occur some time early in the 21st century (International Energy Agency, 2010), petroleum will be increasingly expensive to extract. A way of life that has depended on the profligate use of cheap energy will be under threat (Kunstler, 2005; Heinberg, 2005) and thus so will the underlying structure and functioning of the economic and social base of cities (Atkinson, 2007-8; Girardet, 2008). Other resources (metals, other minerals, soils, ecosystem services) are also being rapidly exhausted or degraded (Cohen, 2007; WWF, 2010). In order to make a transition to an affordable, lower carbon, lower resource-intensity, more ecologically sensitive, resilient and liveable urban system, there will have to be investment in retrofitting existing buildings and more stringent standards for new build, re-orientated transport policies, provision for local production and attention to blue and green infrastructure (CABE 2009 and numerous publications;¹ Calthorpe, 2011; Lerch, 2007; NEF, 2010; RCEP, 2007).

The higher (though fluctuating) cost of energy will not only influence the priorities in urban design, building and infrastructure provision; it will constrain wealth creation and consumption (Kunstler, 2005; Martenson, 2008; UK Industry Task Force on Peak Oil, 2010). Even when unemployment stops rising, job creation and pay levels will be held in check: energy prices will

¹ <http://www.cabe.org.uk/sustainable-places/cities-and-towns/advice>

increase the cost of running a business and will constrain profits and thus the wages that it will be possible to pay. For households, higher travel costs and household fuel bills are the obvious effects but higher energy costs will also be added to the prices of food and all materials and goods (Atkinson, 2007; Homer-Dixon, 2006). The additional burden of carbon taxes will further squeeze available income and all told, future households may not be able to replicate the higher levels of consumption widely adopted by the generation of post-war 'baby boomers' (McIlwain, 2010; RCEP, 2011).

At the same time, mortgage finance in the UK will be less readily available than was the case during the early 21st century boom and lenders will continue to require higher deposits. This means that first time buyers are likely to find it much tougher to get into and maintain owner occupation² and/or will have to settle for smaller, cheaper dwellings. The sub-prime crisis has in any case given pause for thought about further expansion of owner occupation (Knight Frank, 2009; Krugman, 2008; Smith, 2005; Coggan, 2010; McIlwain, 2010). The energy crisis will give cause to reconsider location (The Economist, 2011), housing type and size (Ip, 2010) and inefficient living arrangements (McIlwain, 2010; RCEP, 2011).

The rising cost of travel, as well as a range of policies to influence transport systems, are bound to have some impact on location decision making. In many parts of the world, car ownership continues to rise in parallel with the rise in incomes (Forum for the Future, 2010), with owners enjoying enhanced mobility and status.

² The age of first time buyers moved sharply upwards from 2007 (Council of Mortgage Lenders, 2009). Many would-be first time buyers are excluded from the market altogether if they cannot access substantial deposits via family (Shapiro, 2004; Chartered Institute of Housing, 2011).

However, 'the large metropolis can never comfortably accommodate more than a fraction of its citizens in this manner, and we have learned the consequences of trying to do so' (Vanderbilt, 2010, p.4). Most large cities have opted for a combination of demand management (making car travel more expensive and less overwhelmingly convenient) and investment in alternative modes of transport to reduce congestion, improve air quality, health, public spaces and quality of life (UN HABITAT, 2009). While there are fears of a city losing out economically if motorists perceive disadvantages, cities with fast, reliable, convenient mass transit systems exhibit lower car use (Bailey *et al*, 2008) and economic prosperity has been boosted, not harmed, in places such as Bogotá, Bordeaux, Copenhagen, Curitiba, Freiburg, Graz, Grenoble, Helsinki, London and Munich, (The Academy of Urbanism, 2011; PRP *et al*, 2008; Kamal-Chaoui and Robert, 2009; Forum for the Future, 2010) that have most determinedly and unflinchingly adopted various methods for moving beyond accommodating more private motor vehicles. Further justification for action in this direction comes from picking up what futures thinkers refer to as 'weak signals' (Kuusi *et al*, 2000; Mendonça *et al*, 2004): flickers of new phenomena or early indications of change of direction in established trends. For instance, in more mature economies, there is some sign of a shift in the importance accorded to owning and operating vehicles (thecityfix.com). For those who need/want the flexibility and convenience of a car, there are fast-growing car sharing and rental options which in turn are part of a new shift towards selling services rather than goods (Botsman and Rogers, 2010; Gansky, 2010). So far, there is little sign of reduced energy use associated with higher density living and limited positive effects to be gained from the current approach to land use and transport planning (Echenique *et al*, 2010), but going forward, a new

energy environment will alter decision making and only an urban location offers substantial potential energy savings. Not all households will be able or willing to change their location, travel behaviour and way of life but already there are signs of the repopulation of central city areas in both the USA and UK (Berube *at al*, 2010; Nathan and Irwin, 2005; Punter, 2010; McIlwain, 2010). Increasing numbers of households, especially perhaps newly forming and older households, will take a decision to cut the cost of travel to work by either telecommuting or by living within walking/cycling distance of work. Some younger, highly skilled Americans are turning away from car commuting because they cannot use mobile digital devices while driving (Madrigal, 2010) and this trend may well spread more widely. Overall, many elements of decision making will tend towards greater demand for a more cost-effective central location for a greater number of households (McIlwain, 2010).

Implications for urban policy

Wise administrations will latch onto these emerging shifts in decision-making by starting to reconfigure places to make them more appealing to people who will be inclined to make different location and other consumption decisions from those of preceding generations, whether or not they are 'sustainability-minded'. So far in the UK, only a minority of consumers are willing, able and motivated to take action on environmental issues (Jackson, 2005). Though 'positive greens' are strongly influenced by sustainability issues in their consumption choices and lifestyles, they remain attached to conventional car use and other elements of typical high consumption lifestyles (WBCSD, 2008). So there is a significant task ahead to convert consumers' theoretical stance into changed behaviour as well as to convince those not yet sustainability-minded that there are serious matters to take into consideration. However, there is a strongly emerging commercial trend of taking action to

shape consumer choice rather than giving people more of the products for which they have already shown a secure demand: many companies withdraw less sustainable options and adopt deliberate strategies to engage with customers concerning the social and environmental impacts of the company and its products and services (BITC, 2010). The World Business Council for Sustainable Development argues that leading businesses of the future will be those with products and services that address society's most urgent challenges and enable consumers to choose sustainable products and lifestyles that are appealing and affordable (WBCSD, 2008).

Some cities have also adopted such strategies to build demand for their 'product' and have established a reputation for a kind of urban lifestyle well suited to the challenges of the 21st century, for example Malmö (Sweden), Portland (Oregon), Amsterdam (Netherlands). Some Japanese cities have successfully developed to combine high density residential development alongside green space provision and commercial facilities (Government Office for Science, 2010). In the USA, such development is referred to under the headings of 'new urbanism' (Duany *et al*, 2010). These are liveable places with improved infrastructure for sustainable, healthy, low carbon living: environmentally-sounder buildings, supplied in part by local energy and food production, linked by walking and cycle routes and green spaces with all the requirements for low-resource-throughput, more convivial daily life conveniently located. Walkable places have a clear sense of definition or enclosure, are identifiable and memorable, relate to human 'overspend', and apply sustainability criteria to all aspects of development. In the UK, an 'Urban design compendium' was published (English Partnerships, 2000) to encourage the practice of ideas set out in the earlier Urban Task Force report and there is a rich international literature

on sustainable urban design, at the scale of buildings, blocks and whole neighbourhoods, to assist in devising and constructing the features that will create the preferred scenario.

An opportunity to do sustainable place making: the case of Leeds city centre south

In the first phase of city living in Leeds, development proposals came forward at such a pace that the local planning authority was hard pressed to keep up and there was a dearth of strategic direction (Unsworth and Smales, 2010). After the financial crash, development proposals were put on hold and evidence from developers indicates that very few of the schemes still in the development pipeline in 2007 are likely to go ahead in the form originally proposed (Unsworth, 2010). A nascent City Centre Area Action Plan has been discontinued and the Local Development Framework Core Strategy is not yet adopted. So in this policy and action gap there is an opportunity to consider the next phase of development in a more strategic and integrated way.

The main, historic city centre area in Leeds is on the north side of the River Aire but in the Unitary Development Plan (Leeds City Council, 2001) the area south of river and north of the motorways (around 86 hectares) was included as part of the city centre for planning purposes. Some regeneration took place in this area in the period from the late 1980s up to 2007 (Stillwell and Unsworth, 2008) but much land remains either vacant or with potential for change of use (see Figure 1). What functions could this area most productively include in the medium to longer term and how could land uses and infrastructure be combined in order to anticipate the trends outlined above and deliver a truly sustainable city centre neighbourhood?

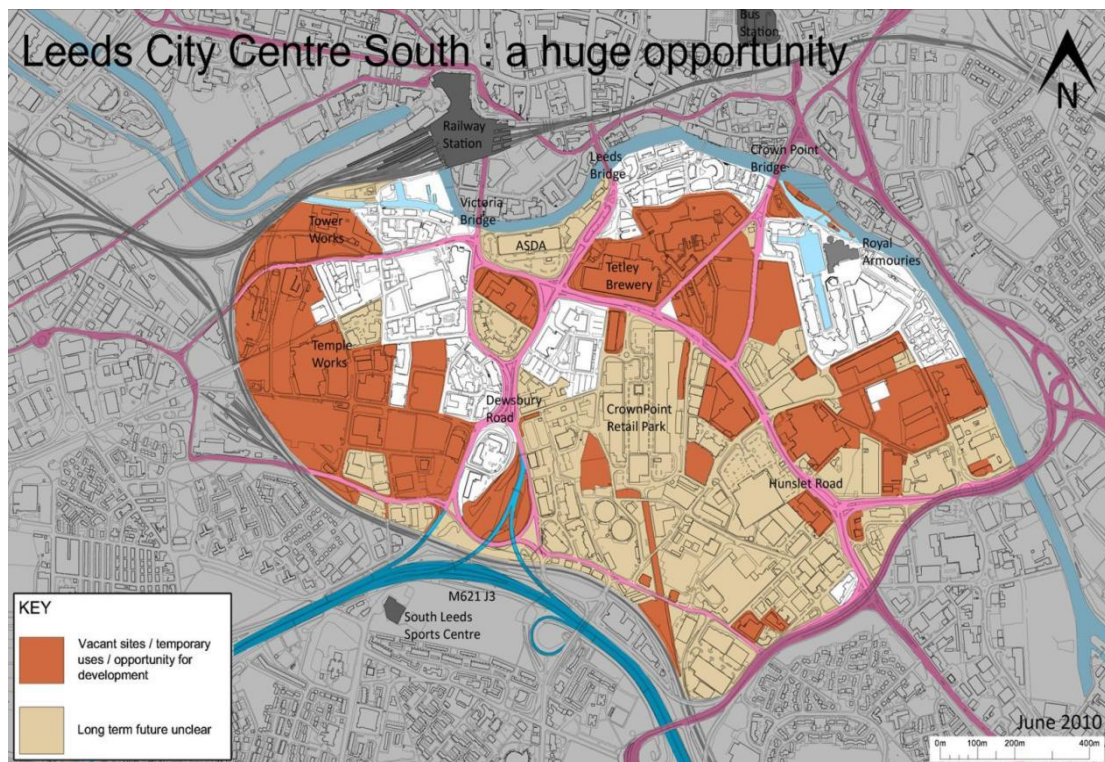


Figure 1: Leeds city centre south: development potential (see www.leeds-isdg.com)

A group of professionals gathered in Leeds early in 2010 to consider this set of questions. The meeting followed on from a process initiated by the City Council at a City Centre Vision conference in early 2008. A widespread reaction to the subsequent document (Leeds Initiative, 2008) was that it was insufficiently visionary. One response was Leeds Civic Trust’s discussion document addressing various themes in more detail (Leeds Civic Trust, 2009). This was then a starting point for detailed consideration of the potential future for the area south of the river. Ideas were worked up during 2010 and presented via a website and a series of open meetings under the banner of Leeds Sustainable Development Group (LSDG). Discussions with the City Council and other potential partners continue. Central to the approach is to construct a vision for how this part of the city centre might

be in future and a practical framework of infrastructure and land uses.

Linking the planning and development of the South Bank to futures thinking

Contemplating and planning for the future via generating scenarios may seem speculative, but it can be less risky than relying on forecasting, which may look more technically impressive but can only incorporate imperfectly modelled past relationships between variables and cannot include imaginative ideas or step changes. Using scenario thinking, we can prepare for more likely futures and try to steer towards preferable ones (Dator, 1998 and 2009; Forum for the Future, 2008; Keith, *et al*, 2008). Yet many decision makers continue to place considerable store by forecasts and lack skills or encouragement to engage in foresight (Curry and Hodgson, 2008). Landry (2004) is amongst many commentators to

express concern that institutional capacity to handle the scale of challenges ahead is seriously lacking. Hopkins comments on the need to create visions of a positive future beyond business as usual and to engage local authorities in the efforts to plan for a future beyond cheap oil (Hopkins, 2010).

In order to try to enhance future-awareness, a region-wide visioning exercise was undertaken (Yorkshire Futures, 2008) presenting a selection of potential scenarios for Yorkshire and Humber up to 2030. This exercise acknowledged the importance of major large-scale trends, some of which have already been highlighted in this paper. The 'most plausible scenario' was held to be one in which an increased population is older and more diverse; employment and the knowledge economy continue to grow, though held back by skills deficits; resource prices rise and individuals and businesses are slow to change their behaviour; housing becomes less affordable for many. An update (Yorkshire Futures, 2011) added a further scenario: 'A new era of austerity', a narrative of prolonged constraints on spending power and significant adaptations in the form of changing patterns of working, living and provisioning of daily life. Overall, it amounts to a stronger likelihood than in the previous 'most plausible scenario' of relocalisation of supply lines, reduced personal mobility and an end to widespread upward trends in consumption. It is far from a 'business-as-usual' growth scenario.

The Yorkshire Futures exercise stopped short of suggesting a 'preferred scenario': responding to the range of potential futures by actively constructing a possible future that aims to embrace some trends that cannot be altered and counteract others that are susceptible to intervention. However, the approach taken by the LSDG aims to do this for a sub-area of Leeds

city centre. The group wants to address the immediate problems of development paralysis, housing shortage and the need for sustainable regeneration, and also to suggest medium and longer term ways to anticipate and adjust to resource constraints, providing a neighbourhood that will cater for different patterns and styles of living, working, learning, mobility and use of leisure time. The suggested approach is to turn this 'preferred scenario' into a framework setting out long term aspirations and suggesting components of the whole picture that can be realised at different time scales. It is not 'masterplanning' (Barnett, 1982) as it is not prescribing exactly what should be built where; it is setting out a vision built on reading of future trends, thinking about ways to respond and then creating a framework stipulating the elements needed to reach this vision in this particular spatial context. It also suggests actions to avoid so that the longer term vision is not compromised. So what could be the overall picture and the components necessary to build up the picture?

Dimensions of a sustainable neighbourhood

Neighbourhoods that accommodate households and economic activities working within a new paradigm of resource constraints will need to have physical structures designed to last longer, to be as inexpensive as possible to acquire, run and maintain while also being carbon neutral or negative and in every way exhibiting high environmental performance. Ecological constraints are already impinging on decision making, and legislation at various spatial scales is forcing the pace of change (European Parliament and Council of the EU, 2010; Communities and Local Government, 2006; Leeds City Council, 2010a). Not many actors realise yet just how strong the forces of change will turn out to be and many consumers are still hostile to notions of sustainability as a response to the challenges,

seeing an unnecessary threat to their freedom as consumers and likely deliverance from resource shortages and environmental constraints through technological advances (Mulligan, 2010). Certainly, effective demand from the public for sustainable dwellings and lifestyles is still underdeveloped (Rydin *et al*, 2003). McIlwain (2010) reports that in the USA a majority of homebuyers want a green home, but most are unwilling to pay much more for it. The challenge there, as elsewhere, is 'to develop technologies that reduce energy use at no extra cost and to promote other sustainable practices that cost the same as or less than standard practices' (p.23). A pioneering building in Leeds, The Greenhouse,³ has shown that sustainable features can be both affordable to provide and appealing to occupiers. It also demonstrates the positive environmental impacts from retrofitting an existing structure (Frey *et al*, 2003).

Leeds, like many other cities, had been able to make positive returns to central government on the number of residential units completed and the proportion on brownfield sites, but latterly affordable accommodation for families has been in relatively short supply (Leeds City Council, 2007). In the draft Local Development Framework (Leeds City Council, 2009), the Council recognises the need for a better balance of dwelling types going forward (policy H4), the need for creating local 'housing ladder' opportunities and the importance of making use of brownfield sites. There is work to be done to convince developers that despite the greater difficulties of developing brownfield sites (Doak and Karadimitriou, 2007), there is value to be generated in this area. A more varied range of well-designed, moderate- to high-density dwelling types, including live-work options, could attract a wider range of household

³ See www.greenhouseleeds.co.uk

types and enable households who move to this neighbourhood to mature within it rather than having to migrate to a different neighbourhood to meet their changing housing needs.

There is a line of argument suggesting that rather than encouraging more independent living in ever-smaller households, new forms of co-operative living and management will have to be encouraged in order to meet housing, well-being, environmental quality and care needs in affordable ways (Bliss, 2009; Williams, 2005).

At an early stage, roads and pedestrian/cycle linkages will need to be reconfigured in order to improve quality of life in the area, to release some land for other uses and to create space for planting. Currently there are wide carriageways enabling road traffic to travel at speed through the area. Initial work by transport planners, including those in the City Council, has suggested various possible ways of re-routing traffic, cutting down on flows, reducing some road space and improving pedestrian and cycling connections. At the same time, attention needs to be paid to avoiding carrying out changes that will prejudice future site flexibility: the whole framework would be more future-proof if it kept options open wherever possible and included proposals for better linkages from the inner city to the city centre. Leeds is one of the few major UK cities still without a light rapid transit system. The latest proposal, for a trolleybus, would include a line connecting the city centre with the southern suburbs via Hunslet, on the eastern side of the city centre south area. A hub, enabling vehicles to turn, could be sited at Bridgend just south of Leeds Bridge.

All the supporting services and amenities of daily life could be closer to hand in this neighbourhood than is usually possible in lower density suburban areas where they are less viable: retail, medical

and educational services and leisure opportunities. Early approximate calculations of capacity in the area suggest that 8-12,000 residential units might be accommodated, thus giving some basis for considering the range and scale of amenities that should be provided. Ideas of neighbourhood planning developed at the turn of the 20th century have relevance here: limited size neighbourhoods with amenities within walking distance (Bliss, 2011).

As households often choose their residential location according to access to good schools (Harland and Stillwell, 2007), an early plan to develop primary, secondary and eventually tertiary education facilities would help to attract and retain in-migrants. In any case, as energy prices rise, long journeys to school will become subject to the same pressures as workplace commuting and there may need to be a more dispersed distribution of smaller schools. There is something of an impasse about how to finance and deliver future social and other infrastructure (Raco and Henderson, 2006), though with the proposed 'new homes bonus' paid to local authorities, this could be a source of funding.

Reduced affordability of new products and inputs will mean a higher demand for repair, re-use and recycling of materials and goods within the locality and thus a need to accommodate such activities. While residents will not wish to have noisy and noxious activities adjacent to their dwellings, there is scope for some of these 'closing the loop' activities to be located within the city centre, and it will help to create jobs – albeit not as well paid as some of the jobs in financial and business services that grew at a great rate from the late 20th century until the crash. There will be some demand for office space, but it is unlikely that there will be strong growth in demand as digital connections enable remote working on a greater scale. The digital media and creative sectors are likely to be important components of the future economy

and will include many kinds of work that have not yet been imagined. As a university city, Leeds could be amongst places that do relatively well out of the next generation of innovative entrepreneurs.

Green space at different scales will be essential as an attractor to future residents and businesses, to enhance quality of life (Unsworth, 2005) and confer a range of environmental benefits: reducing the urban heat island effect, acting as a carbon sink and enhancing biodiversity (Gill *et al*, 2007). Leeds City Council already aims to increase the number of urban trees. In 2010, a proposal was made to create a park on the south side of the River Aire (Leeds City Council, 2010b) as the city centre end of a large scale Aire Valley Area Action Plan and the LSDG has welcomed this as a positive start to reworking the whole area south of the river. A proposal for a complete flood defence scheme to protect the vulnerable areas of the city centre is now unlikely to go ahead, so all future development will need to take into account future flood risk.

Local water harvesting and recycling could help to reduce the need for extra supply to be brought to this area and local sources of energy generation could also help to make the area as self-sufficient as possible, through a combination of micro-generation and district-level, biomass-based combined heat and power generation. This also implies that there would be a benefit in Leeds retaining its wharves on the canal/river to allow material to be brought into the city centre avoiding road transport.

The relocalisation of production and changing levels and patterns of consumption will include making opportunities to grow and process food closer to the market. It is unrealistic to think of Leeds being able to replicate the success of Cuba's urban agriculture (Viljoen, 2005; Wright,

2008) but small quantities of food production could be incorporated into private and public spaces, as has happened in Todmorden, Middlesbrough and many other places in recent times (see Incredible Edible Todmorden website and Thackara, 2007). These projects have also had significant community cohesion and well-being effects. Viljoen (2005) suggests considering the whole city as a Continuous Productive Urban Landscape – networks of green spaces throughout the city, connected by cycle paths and walkways, which combine urban agriculture, recreation and a wealth of other uses. Bliss (2011) expounds these ideas for Leeds. In the longer term, this could even include development of vertical urban farming (Despommier, 2010).

A neighbourhood designed with these ideas in mind would create an attractive place where people want to live in the long term and in ways that are less resource-intensive, supporting

individual consumers in their attempts to reduce consumption by structuring an environment in which it is more feasible to achieve a low impact lifestyle (Heiskanen, *et al*, 2010).

Further research

Much more work is needed to refine the 'preferred scenario' and work up ideas that will enable it to be fulfilled. Research is needed on the aspirations of and realistic prospects for the young adults entering the workforce in the near future. The lack of precedents for this kind of development in the UK constitute a considerable barrier to convincing planners, developers, financiers and future occupiers of the feasibility and desirability of such a course of action, so the reactions of potential consumers to various options for housing and neighbourhood design need to be investigated to test plausibility and practicality.

Conclusions

Future demand for accommodation in and near city centres is likely to be strong, and will be all the stronger if it is developed in a cohesive and visionary way. Private and public sectors need to think ahead about the evolving logic for place making and respond appropriately and creatively. As Landry suggests, there should be an approach that breaks boundaries between disciplines and encourages collaboration (Landry, 2004), and in this way the institutional capacity deficits that he identifies can be addressed. This has already started, with various different professionals coming together to start to map out ideas and liaising with a range of City Council officers to try to ensure that the ideas can be moved forward. It is challenging for actors from the old paradigm of planning and development to step into the new paradigm and to accept that there are opportunities that outweigh and counteract threats crowding the horizon. The evolution towards sustainability of an extensive area of a city centre will take several decades – longer than individual careers, let alone terms of political office. There can be no definitive and comprehensive plan, but a new framework for future development will encourage innovation. A new style of city living will be part of the answer to adapting to a resource-constrained world. Leeds has always been an adaptable city (Burt and Grady, 1994); its greatest adaptation may still lie ahead.

References

- Aspinall, B. and Unsworth, R. (2010) *Accessible housing: the impact of affordable housing planning policy on delivery in the North*. Northern Way Regeneration Momentum Research Paper 7.
<http://www.thenorthernway.co.uk/page.asp?id=836>
- Association of Residential Lettings Agents (2010) *UK facing severe housing shortage*.
http://www.arla.co.uk/events/news_details.aspx?id=133
- Atkinson, A. (2007a) Cities after oil – I, II and III *City : analysis of urban trends, culture, theory, policy, action 1*, Volume 11, Issue 2 July, pp. 201-213.
- Atkinson, A. (2007b) *City : analysis of urban trends, culture, theory, policy, action.*, 11, 3, pp. 293 – 312.
- Atkinson, A. (2008) *City : analysis of urban trends, culture, theory, policy, action*, 111, 12, 1, pp. 79-106.
- Bailey, L., Mokhtarian, P. L. and Little, A. (2008) *The broader connection between public transportation, energy conservation and greenhouse gas reduction*. Fairfax VA: ICA International.
- Barker, K. (2004) *Review of housing supply: delivering stability: securing our future housing needs*, Final report and recommendations. London: TSO/HM Treasury.
- Barnett, J. (1982) *An Introduction to urban design*. New York: Harper and Row.
- Berube, A., Singer, A. and Frey, W. (2010) *The state of metropolitan America*. Washington DC: Brookings Institution.
- Bliss, N. (2009) *Bringing democracy home*. Dudley: Commission on Co-operative and Mutual Housing.
<http://www.ccmh.coop/document/commissions-final-report>
- Bliss, T. (2011) The urban fix, *City* 15(1) 105-119.
- Botsman, R. and Rogers, R. (2010) *What's mine is yours: the rise of collaborative consumption*. New York: Harper Business.
- Bulkeley, H., Castán Broto, V., Hodson, M. and Marvin, S. (2011) *Cities and low carbon transitions*. London: Routledge.
- Burt S. and Grady K. (1994) *The illustrated history of Leeds*. Derby: Breedon Books.
- Business in the Community (2010) *CR Index 2010*.
- CABE (2009) *Hallmarks of a sustainable city*. London: CABE.
<http://www.cabe.org.uk/publications/hallmarks-of-a-sustainable-city>
- Calthorpe, P. (2011) *Urbanism in the age of climate change*. Washington DC: Island Press.
- Chartered Institute of Housing (2011) *UK Housing Review (OR PUT UNDER WILCOX, S. – PUBLICATION NOT AVAILABLE TO DOWNLOAD, ONLY BACK ISSUES 1999-2003)*
- Cohen D. (2007) Earth audit, *New Scientist*, 26 May 2007, pp. 34-41.

- Coggan, P. (2010) A special report on debt, *The Economist*, 26.6.10.
- Communities and Local Government (2006) *Code for Sustainable Homes: A step-change in sustainable home building practice*. London: CLG.
- Communities and Local Government (2010a) *The housebuilding industry: promoting recovery in housing supply*. London: CLG. <http://www.communities.gov.uk/publications/housing/housebuildingrecovery>
- Communities and Local Government (2010b) *Household projections 2008-2033*. London: CLG. <http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/householddestimates/livatables-households/>
- Council of Mortgage Lenders (2009) *First-time buyers - are they really getting older?* <http://www.cml.org.uk/cml/publications/newsandviews/45/152>
- Curry, A. and Hodgson, A. (2008) Seeing in multiple horizons: connecting futures to strategy, *Journal of Futures Studies*, 13(1), pp. 1-20.
- Dator, J. (1998) The future lies behind: 30 years of teaching futures studies, *American Behavioural Scientist* <http://www.futures.hawaii.edu/dator/futures/behind.html>
- Dator, J. (2009) The unholy trinity, plus one, *Journal of Futures Studies* 13(3), pp.33-48.
- Department of the Environment Transport and the Regions (DETR) (1999b) *Towards an Urban Renaissance. Final report of the Urban Task Force*. London: DETR.
- Department of the Environment Transport and the Regions (DETR) (2000a) [Our Towns and Cities: The Future - Delivering an Urban Renaissance](#) - *The Urban White Paper*, published November 2000. London: DETR.
- Despommier, D. (2010) *The vertical farm: feeding the world in the 21st century*. New York: Thomas Dunne Books.
- Dixon, T. and Adams, D. (2008) Housing supply and brownfield regeneration in a post-Barker world: is there enough brownfield land in England and Scotland? *Urban Studies* 45(1), pp. 115-139.
- Doak, J. and Karadimitriou, N. (2007) (Re)development, complexity and networks: a framework for research, *Urban Studies*, 44(2), pp. 1–22.
- Duany, A., Plater-Zyberk, E. and Alminana R. (2003) *The new civic art: elements of town planning*. New York: Rizzoli International Publications.
- Echenique, M., Barton, H., Hargreaves, T. and Mitchell, G. (2010) [SOLUTIONS Final Report: Sustainability of Land Use and Transport in Outer Neighbourhoods \(PDF, 18Mb\)](#)
- English Partnerships (2000) *Urban Design Compendium*. London: English Partnerships and Housing Corporation. <http://www.urbandesigncompendium.co.uk/page.aspx?pointerid=323c7606503e49dd91d6a7defecbd95e>
- European Parliament and Council of the European Union (2010) Directive 2010/31/EU: *On the energy performance of buildings*. <http://www.diag.org.uk/>

- Ewing, R., Bartholomew, K., Winkelmann, S., Walters, J. and Chen, D. (2007) *Growing cooler: the evidence on urban development and climate change*. Washington DC: Urban Land Institute.
- Forum for the Future (2008) *Acting now for a positive 2018, preparing for radical change: the next decade of business and sustainability*. London: Forum for the Future.
<http://www.forumforthefuture.org/projects/acting-now-for-a-positive-2018>
- Forum for the Future (2010) *Megacities on the move: scenarios for the future of sustainable urban mobility*. London: Forum for the Future. <http://www.forumforthefuture.org/projects/megacities-on-the-move>
- Frey, S., Paul, A. and Barrett, J. (2003) *Using REAP for an environmental assessment of the Leeds City Region RSS housing policy*. Commissioned by the Environment Agency and WWF on behalf of the Yorkshire and Humber Environment Forum. Stockholm Environment Institute.
- Gansky, L. (2010) *The mesh: why the future of business is sharing*. New York: Portfolio/Penguin Group.
- Gill S., Handley J., Ennos R. and Pauleit S. (2007) Adapting cities for climate change: the role of the green infrastructure, *Built Environment* 33 (1), pp. 115-133.
- Girardet, H. (2008) *Cities, People, Planet: Urban Development and Climate Change*. Chichester: John Wiley.
- Glaeser, E. (2011) *Triumph of the city: how our greatest invention makes us richer, smarter, greener, healthier and happier*. Harlow: Penguin.
- Goodier, C. and Pan, W. (2010) *The future of UK house building*. London: RICS Research.
- Government Office for Science (2010) *Land use futures: making the most of land in the 21st century. Final project report*. <http://www.bis.gov.uk/foresight/our-work/projects/current-projects/land-use-futures>
- Harland, K. and Stillwell, J. (2007) Using PLASC data to identify patterns of commuting to school, residential migration and movement between schools in Leeds, *Working Paper 07/03*, School of Geography, University of Leeds, Leeds.
- Heinberg, R. (2005) *The Party's Over: Oil, War and the Fate of Industrial Societies*. Forest Row, East Sussex: Clairview.
- Heiskanen, E., Johnson, M., Robinson, S., Vadovics, E. and Saatamoinen, M. (2010) Low-carbon communities as a context for individual behaviour change, *Energy Policy* 38, pp. 7586-7595.
- Homer-Dixon, T. (2006) *The upside of down: catastrophe, creativity, and the renewal of civilisation*. London: Souvenir Press.
- Hopkins, R. (2008) *The Transition Handbook: from oil dependency to local resilience*. Totnes: Green Books.
- Hopkins, R. (2010) Transition now: lessons from the front line of communities, in New Economics Foundation (eds) *The art of rapid transition: how to thrive in times of crisis*. London: Nef, pp.21-23.
- Hoornweg, D., Sugar, L. and Trejos Gomez, C.L. (2011) Cities and greenhouse gas emissions: moving forward, *Environment & Urbanization* 23(1), pp. Xx-xx [so far only published online]
<http://eau.sagepub.com/content/early/2011/01/08/0956247810392270>

Intergovernmental Panel on Climate Change (2007) *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change - Summary for Policymakers*
http://www.ipcc.ch/WG1_SPM_17Apr07.pdf

International Energy Agency (2010) *World energy outlook 2010*. <http://www.worldenergyoutlook.org/>

Ioannides, Y., Overman, H., Rossi-Hansberg, E. and Schmidheiny K. (2007) *The Effect of Information and Communication Technologies on Urban Structure*. CEP Discussion Paper.

Ip, G. (2010) Report on America's economy, *The Economist*, 3.4.10.

Jackson, T. (2005) Live better by consuming less? Is there a 'double dividend' in sustainable consumption? *Journal of Industrial Ecology* 9(2), pp. 19-36.

Jackson, T. (2009) *Prosperity without growth? the transition to a sustainable economy*. London: Sustainable Development Commission. <http://www.sd-commission.org.uk/publications.php?id=914>

Kamal-Chaoui, L. and Robert, A. (2009) *Competitive cities and climate change*, OECD.
http://www.oecd.org/document/27/0,3343,en_2649_34361_39760027_1_1_1_1,00.html

Keith, A., O'Brien, R. and Prest, M. (2008) *The future of the global economy to 2030*. London: Outrights.
http://www.outsights.co.uk/portfolio/projects/future_of_the_global_economy_to_2030

Knight Frank (2009) *The future of residential development*. London: Knight Frank.
<http://www.knightfrank.co.uk/news/Leeds-City-Living-2010-research--Beyond-the-Boom-0137.aspx>

Krugman, P. (2008) Home not-so-sweet home, *New York Times* 23 June.
http://www.nytimes.com/2008/06/23/opinion/23krugman.html?_r=1

Kunstler J.H. (2005) *The Long Emergency : Surviving the End of Oil, Climate Change, and Other Converging Catastrophes of the Twenty-First Century*. Atlantic Monthly Press, Washington D.C.

Kuusi, O., Hiltunen, E. and Linturi, H. (2000) Heikot tulevaisuussignaalit – Delfoi tutkimus (Weak signals- a Delphi study). *Futura*, Vol. 2., pp. 78-92.

Landry, C. (2004) *Riding the rapids: urban life in an age of complexity*, London: Commission for Architecture and the Built Environment and Royal Institute of British Architects.

Leeds City Council (2001) *Unitary Development Plan*. Leeds: Leeds City Council.

Leeds City Council (2007) *Strategic Housing Market Assessment 2007*, Report by Outside Research & Development for Leeds City Council
http://www.leeds.gov.uk/Environment_and_planning/Planning/Planning_policy/page.aspx

Leeds City Council (2009) *Leeds Local Development Framework Core Strategy, Preferred Approach*. Leeds: Leeds City Council.
[http://www.leeds.gov.uk/Business/Planning/Local_development_framework/Core_Strategy_PREFERRED_Approach_\(LDF\).aspx](http://www.leeds.gov.uk/Business/Planning/Local_development_framework/Core_Strategy_PREFERRED_Approach_(LDF).aspx)

Leeds City Council (2010a) *Building for tomorrow today - sustainable design and construction – SPD*. Leeds: Leeds City Council.

[http://www.leeds.gov.uk/housing/Planning/Planning_consultations/Building_for_tomorrow_today_sustainable_design_and_construction_SPD_\(LDF\).aspx](http://www.leeds.gov.uk/housing/Planning/Planning_consultations/Building_for_tomorrow_today_sustainable_design_and_construction_SPD_(LDF).aspx)

Leeds City Council (2010b) *Leeds South Bank Planning Statement (draft)*. Leeds: Leeds City Council.
http://www.leeds.gov.uk/Business/Planning/Planning_policy/Leeds_South_Bank_planning_statement.aspx

Leeds Civic Trust (2009) *Leeds city centre transformed: a discussion document*. Leeds: Leeds Civic Trust.
http://www.leedscivictrust.org.uk/MODULES/NEWS/leedscivic_NEWSmoduleASP/NEWSMOD_newsitem.asp?itemid=64

Leeds Initiative (2008) *Leeds city centre 2020: progress so far*. Leeds: Leeds Initiative.
<http://www.leedsinitiative.org/citycentre/page.aspx?id=10358>

Leeds Initiative (2010) *Leeds City Centre Vision 2010: Conference summary*. Leeds: Leeds Initiative.
<http://www.leedsinitiative.org/citycentre/page.aspx?id=8330>

Lerch, D. (2007) *Post carbon cities: planning for energy and climate uncertainty*. Santa Rosa, CF: Post Carbon Institute.

Lovell, H., Bulkeley, H. and Owens, S., (2009) 'Converging agendas? Energy and climate change policies in the UK', *Environment and Planning C: Government and Policy* 27(1), pp. 90–109.

Madrigal, A. (2010) How mobile devices could lead to more city living, *The Atlantic*, 23 August.
<http://www.theatlantic.com/technology/archive/2010/08/how-mobile-devices-could-lead-to-more-city-living/61931/>

Martenson, C. (2008) <http://www.chrismartenson.com/crashcourse>

Mcllwain, J. (2010) *Housing in America: the next decade*. Washington DC: The Urban Land Institute.
<http://www.uli.org/ResearchAndPublications/PolicyPracticePriorityAreas/Housing/Content/Mcllwain.aspx>

Mendonça, S., Pina e Cunha, M., Kaivo-oja, J. and Ruff, F. (2004) Wild cards, weak signals and organisational improvisation, *Futures* 36(2), pp. 201-214.

Mulligan, S. (2010) Energy, environment, and security: critical links in a post-peak world, *Global Environmental Politics*, 10(4), pp. 79-100

Nathan M. and Urwin C. (2005) *City people*. London: Centre for Cities, Institute of Public Policy Research
<http://www.ippr.org.uk/centreforcities/>

NEF (2010) *Good Foundations: towards a low carbon, high well-being built environment*. London: New Economics Foundation.
http://www.neweconomics.org/sites/neweconomics.org/files/Good_Foundations.pdf

North, P. (2010) Eco-localisation as a progressive response to peak oil and climate change – A sympathetic critique *Geoforum Volume 41, Issue 4*, July 2010, pp. 585-594.

Peters, M., Fudge, S. and Jackson, T. (2010) *Low carbon communities: imaginative approaches to combating climate change locally*. Cheltenham: Edward Elgar.

Power, A. and Lane, L. (2010) *Housing futures: our homes and communities*. A report for the Federation of Master Builders, CASE report 63. London: LSE.

PRP, URBED and Design for Homes (2008) *Beyond eco-towns: applying the lessons from Europe*. London: PRP Architects.

Punter, J. (2010) 'An introduction to the British urban renaissance' in Punter, J. (ed) *Urban design and the British urban renaissance*. London: Routledge, pp. 1-31.

Raco, M. and Henderson, S. (2006) Sustainable urban planning and the brownfield development process in the United Kingdom: lessons from the Thames Gateway, *Local Environment* 11(5), pp. 499-513.

Royal Commission on Environmental Pollution (2007) *26th Report: The Urban Environment*. Cmnd 7009. London: HMSO.

Royal Commission on Environmental Pollution (2011) *29th Report: Demographic change and the environment*. Cmnd 8001. London: HMSO.

After the dosure of RCEP, March 2011, reports will be available via defra and via The National Archives: www.nationalarchives.gov.uk/webarchive/inquiries-and-commissions.htm

RICS (2010) *Residential lettings survey Q3 2010*. London: RICS. http://www.rics.org/site/scripts/press_article.aspx?pressReleaseID=346

Rydin, Y., Holman, N., Hands, V. and Sommer, F. (2003) Incorporating sustainable development concerns into an urban regeneration project: how politics can defeat procedures, *Journal of Environmental Planning and Management* 46(4): 545-561.

Smith, S.J. (2005) Risky business: The challenge of residential mortgage markets. *Housing Finance International*, 3-8.

Stillwell, J. and Unsworth, R. (2008) *Around Leeds: a city centre reinvented*. Leeds: Leeds University Press.

Thackara, J. (2007) *Wouldn't it be great if ...*. London: dott07, Design Council. <http://www.dott07.com/go/publications>

The Academy of Urbanism (2011) *The Freiburg Charter for Sustainable Urbanism*, London: The Academy of Urbanism. http://www.academyofurbanism.org.uk/events/main_events_charter_signup.html

The City Fix (2010) *The future of sustainable urban mobility: go beyond the car*. <http://thecityfix.com/the-future-of-urban-sustainable-mobility-go-beyond-the-car/>

The Economist 12.2.11 Beyond petroleum p.36-37.

UK Industry Taskforce on Peak Oil and Energy Security (2010) *The oil crunch: a wake-up call for the UK economy*, The UK Industry Taskforce on Peak Oil and Energy Security. <http://peakoiltaskforce.net/download-the-report/2010-peak-oil-report>

UN Centre for Human Settlements (HABITAT) (2009) *Planning sustainable cities: global report on human settlements 2009*. London: Earthscan.

Unsworth, R. (2005) *City living in Leeds 2005*. Leeds: University of Leeds.

Unsworth, R. (2007) 'City Living' and Sustainable Development: the Experience of a UK Regional City, *Town Planning Review* 78(6), pp. 725-747.

- Unsworth, R. (2010) *City living beyond the boom: Leeds survey 2010*.
<http://www.knightfrank.co.uk/news/Leeds-City-Living-2010-research---Beyond-the-Boom-0137.aspx>
- Unsworth, R. and Smales, L. (2010) Leeds: shaping change and guiding success, in Punter, J. (ed.) *Urban design and the British urban renaissance*. London: Routledge, pp. 68-84.
- Vanderbilt, T. (2010) The new urbanism: in future, what will our cities look like? *World Policy Journal*, 27(4), pp. 3-7.
- Viljoen, A. (2005) *CPULs – Continuous Productive Urban Landscapes. Designing urban agriculture for sustainable cities*. Oxford: Architectural Press.
- Whitehead, C. (2006) 'Housing demand, supply and the geography of inequality', in Malpass, P. and Cairncross, L. (eds) *Building on the past: visions of housing futures*. Bristol: Policy Press, pp. 73-96.
- Williams, J. (2005) Homes for the future: accommodating one-person households the sustainable way, in Kingolos, A., Brebbia, C.A. and Beriatos, E. (eds) *Sustainable development and Planning II*, Volume 1, pp. 161-170.
- Williams, K. (2009) Space per person in the UK: A review of densities, trends, experiences and optimum levels, *Land Use Policy* 26S (2009) S83–S92. <http://www.bis.gov.uk/foresight/our-work/projects/current-projects/land-use-futures/reports-and-publications>
- World Business Council for Sustainable Development *Sustainable Consumption Facts and Trends* (2008)
http://www.wbcsd.org/DocRoot/19Xwhv7X5V8cDIHbHC3G/WBCSD_Sustainable_Consumption_web.pdf
- Wright, J. (2008) *Sustainable agriculture and food security in an era of oil scarcity: lessons from Cuba*. London: Earthscan.
- WWF (2010) *Living planet report 2010*
http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/
- Yorkshire Futures (2008) *The future of Yorkshire and Humber: trends and scenarios to 2030*. Leeds: Yorkshire Futures.
- Yorkshire Futures (2011) *The future of Yorkshire and Humber: trends and scenarios to 2030. 2010 review: what has changed and where are we heading?* Leeds: Yorkshire Futures.
<http://www.yorkshirefutures.com/news/future-yorkshire-and-humber-0>