



Better Neighbourhoods:
Making higher densities work



Foreword	3
Summary	4
1/Challenges	5
2/Benefits	11
3/Barriers	16
4/Key factors for success	18
5/Recommendations	26
Appendix: Tools for better neighbourhoods	

Building new housing at higher densities is increasingly being seen as the solution to the high demand for housing and the acute shortage of land in London and the south east of England.

Yet building at higher density is often viewed as a problem rather than an opportunity, and can present major challenges, particularly in terms of achieving agreement between local authorities, developers and residents.

This report considers how barriers to successful higher-density housing can be overcome. It analyses the challenges associated with building at higher densities, and shows how housing intensification can provide significant benefits for developers and residents alike. It argues for an understanding of how higher densities can create popular, sustainable neighbourhoods.

The key to building successful communities is to achieve consensus among all those involved in the development process. Yet the range of potential barriers to building higher-density housing, the complexity of the process and the variety of interests involved can create adversarial situations, resulting in too many low-quality developments being built.

A significant idea emerging from this report is the use of a charter or compact to agree minimum standards between local authorities and developers. This approach is already being trialled in various parts of the country.

So much guidance, research and policy information is already available on housing density that information overload can be a problem. This report provides a shortcut – it analyses key issues, and combines the most useful research in one document. It can help public and private sectors work together to realise the benefits of building better neighbourhoods and to make higher density work.



Peter Derrick
Chamberlain, Corporation of London



Richard Simmons
Chief Executive, CABE

Introduction

This short report addresses how to increase the supply of homes in areas of high demand, and in particular how to build at higher densities without sacrificing quality.

It draws on new research into housing intensification commissioned by CABE and the Corporation of London. It also includes a literature review and stakeholder interviews assessing barriers to high density, as well as five case studies.

Case studies include large strategic sites in a metropolitan city, small urban infill sites, intensification around transport nodes, edge-of-town growth/new out-of-town settlements, and the regeneration of local authority estates. The literature review and case studies are featured on CABE's *Building for Life* website www.buildingforlife.org.

The report also draws on CABE's *Design Reviewed* publications, considers projects reviewed by CABE's expert design panel, and looks at CABE's report on what house buyers want from their homes. All these are available at www.cabe.org.uk

The report is divided into five sections, which cover:

- 1/ The challenge of higher densities
- 2/ The benefits of higher densities
- 3/ The barriers to higher densities
- 4/ Key factors for success
- 5/ Tools for better neighbourhoods.

The report aims to:

- Respond to changing national policies, pressures for innovation, the imbalance between supply and demand, and the need for new types of housing

- Provide a basis for negotiating a charter for better neighbourhoods, or for charters with individual developers where they agree to abide by agreed standards

The report can be used to:

- Provide a quick review of all relevant research to help councillors and others entering unfamiliar territory
- Offer tools to assess and reach agreement on major schemes
- Develop new ways of more collaborative working

Findings

The key recommendations of the report are for partners to:

- Adopt a more consensual approach throughout the development process, including the use of charters and development agreements
- Build capacity among local authorities and developers
- Investigate use of planning and development charges
- Share learning between all participants in the development process

The report emphasises the importance of consensus for successful development, and argues the case for using a charter to reach agreement between the public and private sectors on improving standards of design, sustainability, affordability and community benefits, in areas of housing growth where higher densities are appropriate.

It stresses that the aim is to create better neighbourhoods, not just boost housing numbers. In situations where high density is appropriate – adjoining town centres and transport nodes or overlooking public space – it works well, provided public authorities and house builders are partners and not adversaries.



Definition of density used in PPG3

Net site density includes only those areas that will be developed for housing and directly associated uses, this includes:

- 1/access roads within the site
- 2/private garden space
- 3/car parking areas
- 4/incidental open space and landscaping
- 5/children's play areas

It excludes:

- 1/major distributor roads
- 2/primary schools
- 3/open spaces serving a wider area
- 4/significant landscape buffer strips

Measurements of density

- 1/Dwellings or units per hectare or per acre (the number of homes on a site)
- 2/Habitable rooms (meaning rooms that people actually live in) per hectare or per acre (for example a two bedroom house with one double and one single bedroom, living room, kitchen and bathroom counts as having three habitable rooms, as kitchens and bathrooms are not included in the measurement)
- 3/People or bed spaces per hectare or per acre (using the above example the two bedroom house sleeps up to three people)
- 4/Plot ratios (the total area of the building – the floor area multiplied by the number of storeys/the area of the site)

The aim of building at increased densities to make better use of constrained land supply is now enshrined in policy, for example through the Government's Planning Policy Guidance Note 3 (PPG3). However, while there are many benefits to building at higher densities the subject remains controversial with developers, local authorities and the public. There is concern among professionals at the extra expense that can sometimes be associated with building at high densities. For instance, the need to provide extra features, such as communal facilities, can increase costs in some developments, though these costs are often outweighed by added value. Equally, the complexity of obtaining permission for higher densities can have financial consequences for developers.

There is also public distrust of higher density housing schemes, often centred on the belief that too many residents will create overcrowding and associated problems. Pressure on parking space is a major concern, but the general perception is that more people living in the same amount of space will inevitably reduce the quality of life for existing residents.

Despite these misgivings, housing will be built across London and the South

East at the densities demanded by PPG3. Higher-density developments can help to create more viable neighbourhoods capable of supporting local services. However, opposition will only be won over by high quality designs that can demonstrate that the benefits of higher-density housing will offset the real and perceived disadvantages. Our common goal is to create better neighbourhoods, and higher densities should be seen as the means rather than the end. Furthermore, though each development site will be different, there are some techniques that can be used to streamline the process and secure a range of benefits.

Although most people agree on the need to provide more and better housing, in practice almost every major planning application will generate debate and public interest. Higher-density housing causes particular concern because it is associated by many people with unpopular types of housing, but we often forget that it also includes examples such as urban villages and historic market towns. The failure of some types of housing often has very little to do with their density and more to do with underlying social or management issues.

Despite all the stress on improved design, exemplary higher-density housing schemes are still disappointingly rare, as found by CABE's 2004 *Housing Audit*, based on an assessment of 100 recent schemes.

To better understand the barriers, CABE and the Corporation of London commissioned this report and background research which is featured on CABE's Building for Life website www.buildingforlife.org. In addition, the report draws on CABE's *Design Reviewed: urban housing, lessons learnt from projects reviewed by CABE's expert design panel*, and a report for CABE summarising the results of market research into what house buyers want from their homes.

Changing policy priorities

Both house building rates and investment levels lag far behind what is needed to make up the current shortfall. For local authorities the main impetus for change comes from the reform of the planning system through the Planning and Compulsory Purchase Act 2004. Other policies, like PPG3 and its companion guide *Better Places to Live*, seek to encourage more sustainable development. The Office of the Deputy Prime Minister's Sustainable Communities Plan focuses on increasing house building in the Growth Areas and its objectives are taken up in regional plans which set density guidelines according to the character of areas and their accessibility by public transport. These could be evaluated against a density gradient as illustrated by the table opposite.

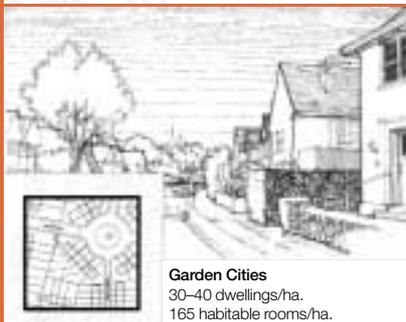
'Many local authorities would welcome a stalemate on the density issue which blocks development altogether.'¹

The meaning of density

Older housing types



Victorian Terraces
60-80 dwellings/ha.
280 (average) habitable rooms/ha.

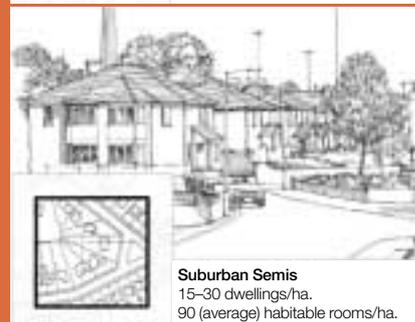


Garden Cities
30-40 dwellings/ha.
165 habitable rooms/ha.

Recent developments

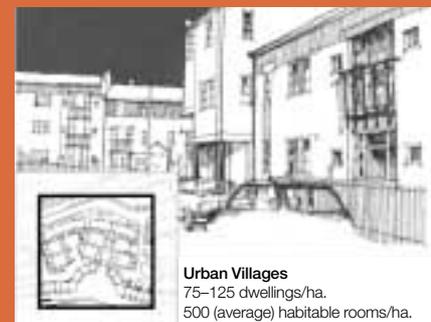


Executive Homes
5-10 dwellings/ha.
40 (average) habitable rooms/ha.

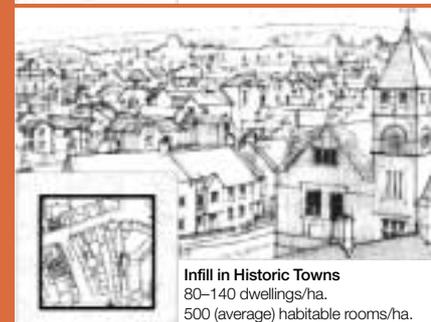


Suburban Semis
15-30 dwellings/ha.
90 (average) habitable rooms/ha.

Alternative approaches



Urban Villages
75-125 dwellings/ha.
500 (average) habitable rooms/ha.



Infill in Historic Towns
80-140 dwellings/ha.
500 (average) habitable rooms/ha.

What is higher density development?

The following table shows that density itself should not be viewed as a reliable guide to the form or quality of residential development.

Density gradient	Units/Ha	Persons/Ha
Low density detached – Hertfordshire	5	20
Average net density – Los Angeles	15	60
Milton Keynes average 1990	17	68
Average density of new development in UK 1981–91	22	88
Minimum density for a bus service	25	100
Private sector 1060s/70s – Hertfordshire	25	100
Inner-war estate – Hertfordshire	30	120
Private sector 1980s/90s – Hertfordshire	30	120
Hulme – Manchester 1970s	37	148
Average net density London	42	168
Ebenezer Howard – Garden city 1898	45	180
Minimum density for a tram service	60	240
Abercrombie – low density	62	247
New town higher density low-rise – Hertfordshire	64	256
Sustainable urban density	69	275
Victorian/Edwardian terraces – Hertfordshire	80	320
Abercrombie – Medium density	84	336
Central accessible urban density	93	370
Holly Street – London 1990s	94	376
Holly Street – London 1970s	104	416
Abercrombie – High density	124	494
Hulme – Manchester 1930s	150	600
Average net density Islington – 1965	185	740
Singapore planned densities 1970s	250	1,000
Kowloon actual	1,250	5,000

An average dwelling size of 4 bedspaces has been assumed throughout this table although it should be noted that this is higher than the average household size in the UK

The new planning system also puts extra emphasis on involving communities early on, and preparing design and access statements showing how new developments will fit into existing areas and meet policy objectives.

These initiatives combine to transform the planning process and provide a potential basis for a charter with specific partners to resolve conflicts over complex schemes.

The new system is intended to be more flexible, while also providing a stronger lead, and will affect house building in a number of ways.

Pressures for innovation

A number of studies have called for radical changes to the way we plan and design housing. Economist Kate Barker's 2004 *Review of Housing Supply* for the Treasury said that Britain had the highest house price inflation but the lowest building rates in Europe because of its adversarial system. It recommended paying more attention to 'market signals' – in other words, councils should understand more about the economics of development.

The ODPM's 2003 Egan Review of Skills clearly put responsibility on councils to be more proactive in managing urban

change, said officers should have more authority, and reinforced the importance of improving design through skills development at national level. There are also pressures to modernise construction methods, and new policies to enable private house builders to provide social housing.

Imbalance between supply and demand

The Town and Country Planning Association claims the root cause of the housing problem lies in supply and demand: 'Mainly as a result of too few homes for sale being built, prices have been forced up to unaffordable levels. It is not possible for many people on average incomes to buy even cheaper homes.'

Rising housing demand looks unavoidable as people live longer, as family structures change and as individuals demand more living space.

Projections for south east England show supply lagging far behind demand, while London's position is aggravated by people from elsewhere moving in. And although private house builders have maintained output, social house building has dropped sharply, leading to the lowest levels of public sector completions since the 1920s.

The new planning system and housing

- Housing development has to comply with a plan-led system that is not only intended to secure the best use of land, but also to achieve a range of other objectives. Spatial planning links land use issues to other service provisions and public interventions.
- There is a spatial hierarchy, with Regional Spatial Strategies and sub-regional Spatial Frameworks providing the context for Local Development Frameworks and Community Strategies, and Local Development Documents including Area Action Plans for specific areas that are at risk or that offer major development opportunities.
- The Local Development Frameworks will consist of a suite of documents, including a Statement of Community Involvement that will set out how to engage the community and how consultations are to be handled. This could include how the impact of new housing schemes is to be assessed.
- Design and Access Statements are required to accompany planning applications to justify and explain the approach
- Section 106 on Planning Obligations is being amended to allow for tariffs to be charged, and planning fees on major applications are also likely to be changed.

'...other groups... are often dismissed as niche markets but in reality they outnumber the young families generally regarded as the mass-market. Three in every four households are childless and more than half of these are below retirement age.'²⁸

‘Factors which were not necessarily related to density appeared to be the most important in their priorities, size of home, its design details, the quality of construction’ ... ‘when choosing an area to live in, people were attracted by low crime rates, good health facilities, low cost of living, good shopping and good race relations’⁵

Need for fresh approaches

Future demands cannot be met by building detached houses. It may have suited house builders to build detached homes in the past, because they were relatively easy and profitable to develop on greenfield sites. But in the South East there has been a dramatic shift towards building flats and maisonettes.

Matthew Carmona in *Housing Design Quality* (Spon Press 2005) points out that, ‘The product is the house and only to a lesser extent the context it defines. The simplest way to judge what sells is to repeat what sold before’.

But as with most products, housing is going through a revolution.

New types of layout, fittings, and building methods have joined new concepts like loft apartments and urban villages. There is also a return to the kinds of neighbourhoods that have stood the test of time, such as streets of town houses. Research shows buyers increasingly want something other than a standard housing estate.

CABE’s *What House Buyers Want* report analyses the tensions between supply and demand in the housing market, and looks at what people want from their homes. The findings appear to suggest that the majority of house buyers are unlikely to initially choose to live in higher density developments. Most people say they would like to live in a detached house in a village, rather

than a flat in an inner city area. Older people say they would prefer a bungalow. However, probing behind the initial responses, it is possible to see how many people’s requirements can be met through building at higher densities.

Modern apartments can offer better security than many detached houses. They can also provide affordable, usable outside space, often in the form of shared gardens or a balcony. Most people want to live in somewhere distinctive and with character, which can be provided if housing is well-designed. Everyone wants privacy, which is why sound insulation is important, and layout that is designed to avoid problems of overlooking. Elderly or disabled people can have the advantage of easy access, if lifts are well-maintained.

As house buyers worry about their investment, they are very concerned with how the area is managed. Consequently, it is particularly important to ensure long-term maintenance of the public realm through management agreements. Higher-density neighbourhoods have the potential to capture the appeal of older places, by contributing to lively, well-used neighbourhoods and by creating a sense of community.

Streamlining the process

Above all a critical barrier to smooth development is poor communication. Barker found today’s process too adversarial with conflicting objectives, priorities and timescales.

New homes in the South East

Percentage of house starts

	1998	2000	2002	2003
detached houses	44	37	26	19
detached bungalows	2	2	1	1
semi-detached houses	15	13	15	13
terraced houses	21	20	22	20
attached bungalows	1	1	1	1
flats & maisonettes	17	28	34	46



Home owners want to protect house prices and fear change; builders want to work to a budget, build what will sell, and recoup land costs. Other public bodies such as the Environment Agency and the Highways Agency have their own agendas, budgets and timetables too.

Therefore if we want a significant change in housing quality, these stakeholders must adopt a different approach. This is clearly not a simple task.

Research into the barriers that arise at each of the stages in the development process has shown there is no simple

solution. However, checklists such as the South East of England Development Agency (SEEDA's) Sustainability Checklist, can be used to assess the scope for intensification before too much time is wasted on detailed design, and battle positions have been assumed. Mutually agreed terms in the form of a charter, expanded on later in this report, will establish a common basis for building understanding.

The rest of this report shows how to build consensus, step by step, starting with understanding the benefits that can come from higher densities.

'...the findings suggest that to promote opportunities for privacy within households and to reduce conflict over use of space within and outside households there should be more space within the home, more facilities outside and plans for how public space can be used to supplement them, for example by young people.'⁴

'Experience in existing developments has clearly shown that, in the UK, the socio-economic status of residents is a critical density issue because the number of people actually resident in similar-sized houses varies across different socio-economic groups by more than 100%. Similarly the amount of time people spend within the home also varies widely according to age and socio-economic status.'⁵

'There is a danger of altering the well understood models of public street and private courtyard and providing the worst of all worlds, courtyards crowded with parked cars – and empty streets.'⁶



‘The compact city and intensive development does not necessarily imply high rise buildings. London has achieved some of its highest residential densities in relatively low rise areas, while isolated, poorly designed tower blocks have not necessarily delivered high density or usable public space.’⁷

The success and sustainability of our towns and cities demonstrates the long-term viability of high density living.

Research by the London School of Economics in 2004 shows that higher density can bring benefits. Successful developments espouse Building for Life standards in terms of character; roads, parking and pedestrianisation; design and construction; and environment and community. Developers are achieving higher densities without sacrificing quality by building three storeys instead of two, choosing terraced instead of detached homes, or through building apartments for growing numbers of childless households.

To help the South East England Regional Assembly develop policies, and to produce *The Councillors’ Toolbox on making the best use of land*, URBED and MORI asked councillors in the region for their views. They identified benefits from higher densities in avoiding sprawl and protecting rural England, and in improving services.

Higher density housing can deliver social benefits

‘There is a real misunderstanding about what higher density housing is, particularly in the context of London and the South East. Many of the problems blamed on density are in fact a combination of problems with location, design, tenure mix, allocation policies, lack of management and maintenance.

In the area we work in, higher density housing is not only necessary because land is scarce, but also desirable as it can deliver real social benefits. For example:

- much of the more desirable housing in urban areas is of a higher density design
- higher density housing in existing urban areas creates vibrant, successful neighbourhoods, and the number and variety of people who live there support local shops, transport and community facilities
- higher density neighbourhoods do not mean all higher density housing is the same (a combination of housing types allows for different designs at different times in a person’s or a family’s life), and
- higher density housing allows for private outdoor spaces and for shared spaces (such as parks) and shared facilities’

In the right circumstances, higher densities can produce a range of benefits such as:

Increasing value

Many of the areas we like to visit on holiday, such as historic towns and areas in city centres with the highest house prices, are in fact built at higher densities. Georgian residential areas are becoming popular again. Where land values are high, increased densities can help fund environmental improvements and the provision of affordable housing through Section 106 agreements.

Convenient shops and services

With more people living in an area, better local shops and schools become economically viable, as do regular bus services. Thus while 25 homes per hectare may be needed to support fairly frequent bus services, double the number could support an express bus service within a quarter of a mile. Places that are not over-dependent on car use enjoy livelier streets and in turn create better neighbourhoods.

Safer streets

Streets that are overlooked by homes not only feel safer but are safer, with much lower rates of burglary. Slower car speeds, more walkers and cyclists mean it is safer for children to walk to school or play outside. Higher density development can increase site values, which in turn can provide higher-quality public spaces like Home Zones being introduced in some areas to provide safe outdoor playing space.

Design for living

If well-designed higher-density housing can respond to many demands of 21st century living, flexible layouts and lifetime homes standards can be readily achieved. Most people want more space under their control.

Energy conservation

New houses cost less to heat than older houses thanks to better insulation and more efficient heating systems. Higher density homes further reduce energy losses and can include schemes to save natural resources such as Combined Heat and Power.

Mixed communities

In an effort to increase affordable housing, the ODPM wants far more mixed-tenure developments and now recommends more affordable housing in new schemes. The larger the scheme, the easier it is to provide a balance of tenures and house types. In town and city centres families may end up living in flats, and careful design is required to make schemes work.

'Somewhere not anywhere'

Higher density development makes it easier to create a sense of identity and place. When combined with greenery and attention to detail, it can turn locations into desirable places. Far from reducing the quality of neighbourhoods, higher density housing can make them more distinctive and introduce a much-needed element of diversity.

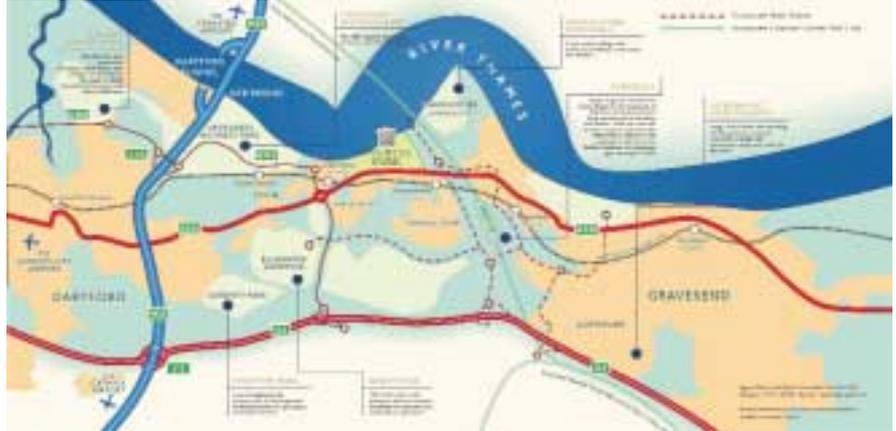
'In many urban situations, medium rise, higher density buildings (of about 3-4 storeys) in general provide the optimum form that maximises density whilst minimising perceived intensity or overcrowding. They can also be designed to be attractive, energy efficient and mixed use whilst:

- **Reducing costs of land acquisition and site infrastructure**
- **Avoiding costs of lifts and other services**
- **Providing a robust form that allows for changes in use over time**
- **Forming terraces or low rise flats, the most cost effective building form in housing**
- **Increasing energy efficiency and the ability to be oriented for passive solar gain**
- **Providing lifetime homes that can be readily adapted for the elderly or disabled.'**⁸



Case study: Oakridge

The new community centre sits at the heart of Oakridge, a regeneration of an overspill estate of four/five-storey walk-up maisonettes and flats near to Basingstoke. A pub is also under construction and five shops are already operating successfully in prominent locations adjacent to the main square, having been relocated from less well connected locations on the demolished estate. The new housing development also has a health visitor and nursery school on site and a regular bus service stops on the High Street and connects Oakridge to facilities in Basingstoke.



Case study: Hammarby Sjöstad

Hammarby Sjöstad was initially planned as the Olympic Village in Stockholm’s unsuccessful bid for the 2004 Olympic Games. Sufficient impetus built up within the city’s planning department and through investment in infrastructure for the scheme to proceed despite the failure of the Olympic bid. The resulting scheme reflects the desire of the city of Stockholm to provide high quality and higher density homes which benefit from excellent levels of sustainability together with new transportation and infrastructure. Once the phased development is completed, Hammarby Sjöstad will provide 9,000 mixed tenure homes at an average density of 145 dph. In addition there is a new school, church, shops, offices and a park all located on a 7.6 hectare brownfield site within easy reach of Stockholm’s inner city.

Case study: Ingress Park

Ingress Park, Greenhithe, is a seven-year masterplanned development by Crest Nicholson Residential Limited. When complete, it will provide up to 950 homes, live-work units, a local shopping centre, community facilities and a site for a new school. It is being constructed on a 29 hectare brownfield site on the south side of the River Thames, about one mile east of the Dartford Crossing, and is set in grounds previously landscaped by Capability Brown surrounding the Grade II listed Ingress Abbey. The density of the development ranges from 40–150 dph.



Case study: Fulham Island

Fulham Island is an innovative mixed-use scheme located in the heart of Fulham Broadway, west London, on a busy island site. Developed by Manhattan Loft Corporation Ltd with CZWG Architects as designers, it provides retail, residential and commercial premises with 38 private homes (22 new, 16 refurbished) at an average density of 132 dph. A major design objective was to deal with the entirety of the site (a ‘doughnut’ shape) and to clear out the messy central service area behind the existing buildings, which attracted anti-social behaviour, whilst retaining existing listed buildings. The resulting scheme is modern in design and creates interest and a sense of identity in a previously neglected area. Particularly notable are the vertical and horizontal mix of uses, and the provision of underground car parking. The central area has been covered with a deck, which creates maximum retail space while also unifying the different elements of the scheme. It also provides an attractive garden for residents at first floor level.



Reiselfeld

Innovative housing in Reiselfeld, Freiburg, attracts families because children can play together safely.



Case study: Beaufort Court

Beaufort Court is located on Lillie Road in north Fulham and comprises 65 homes at an average density of 116 dph. The homes are a mix of terraced houses with gardens, maisonettes and flats with a community facility and a semi-underground car park covered by a fenced kickabout pitch. Built and developed by the Peabody Trust on land bought from the local authority, the London Borough of Hammersmith and Fulham, the scheme provides a mixture of affordable tenures in an area of high housing costs and high demand.

Homes and Work for Change

Homes for Change in Hulme, Manchester, provides housing above workspace, with large decks.



Earl's Court

The air space above a superstore provides stylish housing in Earl's Court.

Case study: Ingress Park

At Ingress Park, Greenhithe, the overall development is phased, moving generally west to east across the site. The density of the phases and the architectural approach in each is varied, creating different senses of character across the site. Place and context are at the heart of this approach, with high-level investment in the public realm to enhance the setting.

Case study: Fulham Island

As Fulham Island incorporates a mix of uses, and both refurbishment and new build, affordable housing in this case would not have been viable.



Vauban

Continental blocks of flats, like these in Vauban in Freiburg, use solar panels to reduce heating costs.

The term 'high density' is in itself a barrier in terms of public perception. This is partly because of the association between higher density housing, and high-rise system-built housing estates suffering from physical and social problems. There is also a belief that higher density additions to a neighbourhood are unlikely to make it a better place to live. Understandably, people can see disadvantages if more residents compete for the same schools, the same public transport, and the same parking spaces. The significant advantages of higher density can be much harder to see at first, and only become apparent when there are successful models that show how good high density can be.

There are also a number of other common issues which need to be addressed if we are to build better neighbourhoods:

Distrust and conflict

Plenty of schemes appear to comply with government policy but are turned down at planning stage. If the relationship between local authorities and developers is not based on mutual understanding and

cooperation, it may be easier for authorities to reject schemes rather than to seek improvements. However fighting public inquiries ties up resources that could be better used in improving the quality of the design in the first place, and can also inhibit later flexibility.

Institutional inertia

We have only recently changed how we look at towns and cities. The 2000 Urban White Paper, *Our Towns and Cities: the Future*, was a turning point in its view of towns as assets not just liabilities, but it takes time for new ideas to take hold.

The White Paper supported the earlier Urban Task Force vision of urban renaissance as places where people want to live out of choice, not necessity. This led to other guidance at regional level aimed at changing how we build. Many councils are now changing how they assess schemes, but this demands an adjustment in staff attitudes, not just rewriting planning policies. New policies can be daunting but more positive planning could make working

in the built environment a much more attractive career.

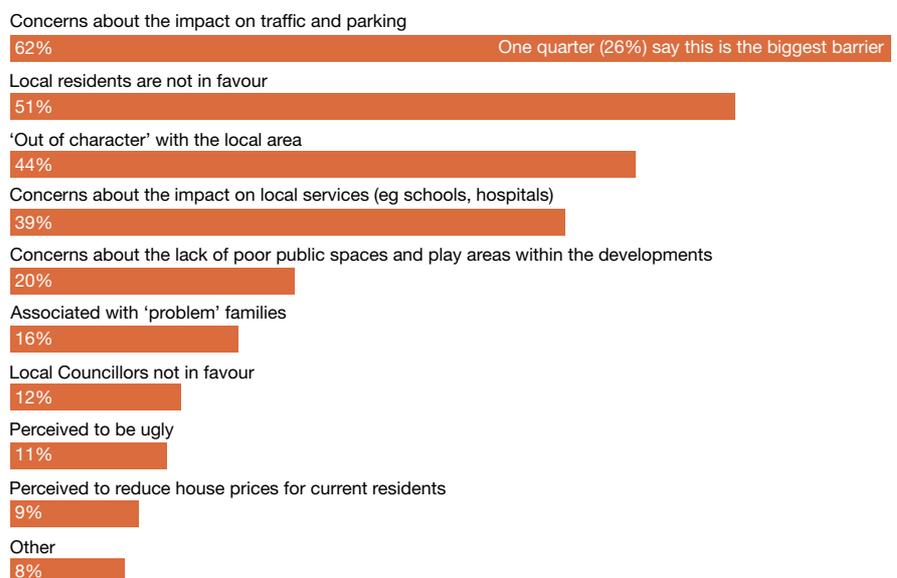
Lack of capacity

A more fundamental barrier to higher density housing is the overloaded transport, service and social infrastructure that exists in many places. Add to this articulate local opposition to traffic problems, school and teacher shortages and a lack of health staff and facilities. One solution is to ensure developers and schemes contribute to increasing capacity, through planning obligations as well as providing affordable housing or the likes of teachers and health workers. In London, density guidelines are highest around town centres, and where there is most public transport, and it makes general sense to promote a 'density gradient'.

Design challenges

Complaints by councillors and residents about poor quality homes are borne out by CABE's *Housing Audit*. Good design may cost more but there is evidence it can add much more in terms of value.

The top 10 biggest barriers to building higher density development in the South East





Charter Quay

Charter Quay, Kingston, has underground parking to keep cars out of the way, and provide public gardens above.

The Staiths

The Staiths, South Bank. Distinctive new housing in Gateshead with high quality, landscaped public space.

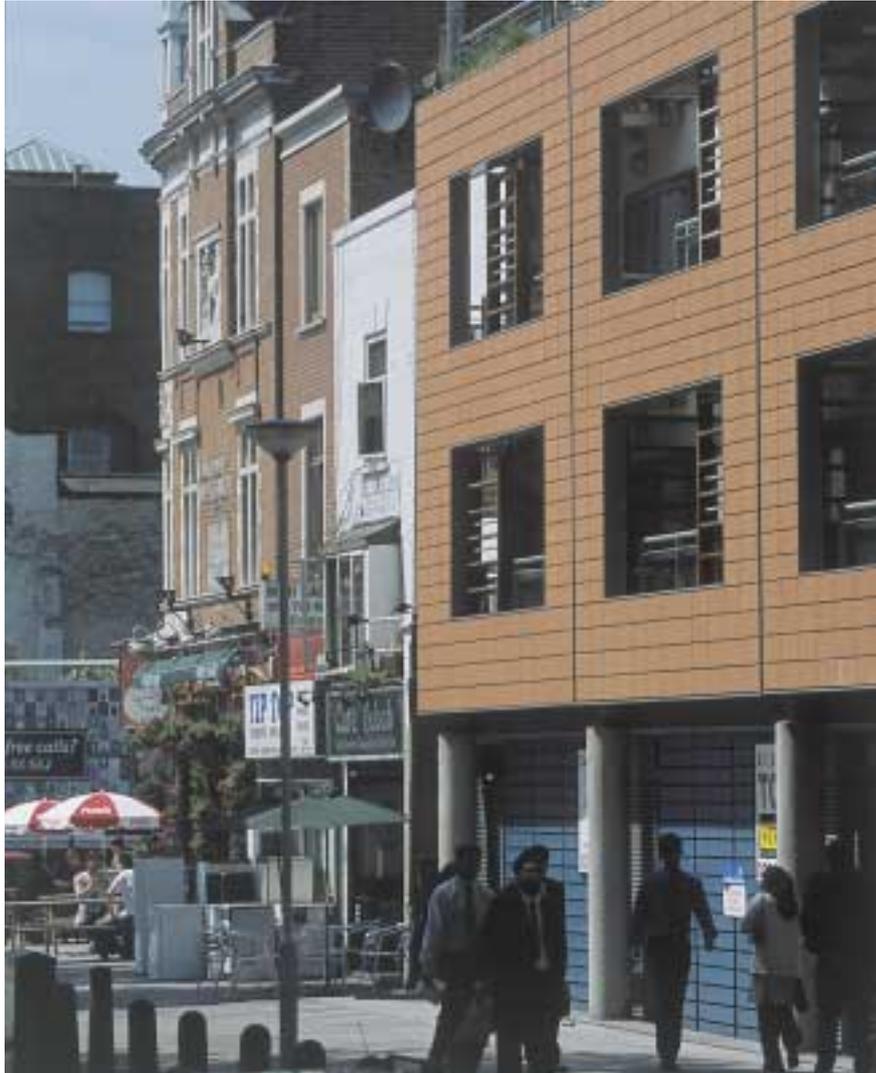


Too often, issues over design get bogged down in pointless arguments over style or detailing, when there are more important design issues to resolve:

- **Parking** New housing in locations that are badly served by public transport require more parking, but this should be carefully integrated to avoid cars dominating the public realm. Underground or multi-storey parking becomes viable at densities over 100 dph. Intelligent design needs to be employed in developments of medium densities of 30 to 100 dph, where underground parking is not viable.
- **Privacy** Acoustic and visual privacy are a major worry about higher density living. Careful planning to design out problems of overlooking and better methods of insulation are needed.
- **Mixed uses** Planners often want multi-functional neighbourhoods but this does not have to involve different uses in one building. Higher density building

alongside existing town and local centres, or even redeveloping redundant space in retail and business parks, allows a balance of uses without conflict.

- **Mixed communities** Even more important is maintaining and improving the balance between household types and tenures. While locations will differ in their basic appeal, a carefully planned mix of tenures can entice renters to become owners and vice versa. It can enable people at different life stages to find appropriate accommodation without moving far.
- **Management** Higher density housing requires ongoing management at block and neighbourhood level if standards are to be maintained and rubbish, graffiti and deterioration are to be avoided. As in any well-managed estate, an agreement on standards and service charges can reduce risks and maintain the value of the investment.



‘Successful higher density housing has four key factors – location and sense of place, a successful allocation policy and occupancy, successful management approach and good design.’⁹



The benefits of higher densities need to be clearly communicated to overcome negative attitudes and misunderstandings that can block development. Consensus and collaborative working is needed between different parts of the public sector, between local authorities and developers, and also to win over local communities. One size does not fit all, and density standards have to suit the site.

Below we draw out five major lessons that form the basis for agreements between local authorities and house builders. These have been drawn from case studies of a selection of recent successful

higher density schemes that illustrate different approaches in different contexts, plus influential schemes in other parts of the country which are providing fresh ideas on higher density design and layout.

Understand the economics of the scheme

Housing intensification is financially complex. Schemes vary enormously, even in the same area. Financial realism is essential when it comes to negotiating community benefits, as not only development costs differ (for example, in their requirements for decontamination or new infrastructure) but so too do likely values and development risks.

Chronos

Chronos in Whitechapel exploits a location near the underground station.

Brewery Square

Brewery Square in Clerkenwell reinforces the idea of it being an ‘urban village’.



Case study: Fulham Island

Despite potential opposition from local amenity groups, the Fulham Island scheme owes much of its success to the vision and experience of Manhattan Loft Corporation and to the support of the local authority. Due to their inherent complexity the delivery and funding of high quality mixed-use schemes requires an innovative approach by developers. Manhattan Loft Corporation's experience and commitment was instrumental in the successful delivery of Fulham Island. A 'hands-on' approach to resolving such issues as existing occupiers, conflicting uses, access, amenity provision and local objectors, will help the successful delivery of mixed use schemes. Manhattan Loft arranged short-term leases and ensured that the scheme as a minimum 'stood still' financially while they dealt proactively with design, planning and consultation issues.

Close relationships between developers, planners and architects can allow innovation and aid delivery. The planners at the London Borough of Hammersmith and Fulham supported the innovative mixed use scheme once Manhattan Loft and their architect had demonstrated the quality of their initial vision and design ideas.

Local authorities can help to understand the economics and bring forward viable sites by:

- Undertaking housing potential/capacity studies to assess all main sources of new housing in an area, including sites such as properties above shops or under-used car parks
- Reviewing policies covering land use and providing use and density guidelines for different kinds of area (as the Greater London Authority's London Plan has done, for example)
- Working with landowners and/or house builders to prepare masterplans or development frameworks for areas ripe for regeneration or neighbourhood revival

Once there is agreement on where new housing is to go, house builders may want to share information on the economics of schemes on a confidential basis, as they already do, for example, when they are working in partnership with public agencies or are applying for grants.

Build consensus through collaborative working

Density is contentious. Sustainable communities cannot be built in the most efficient and effective way if local authorities and developers are locked in conflict and local grievances go unresolved.

Existing communities may be averse to additional housing. Collaborative working is needed not only on large sites that may take years to develop, but also on complex sites where the risks inherent in assembling land and building infrastructure are high.

Local authorities can improve the process by:

- Showing leadership by advocating well designed higher densities
- Engaging local communities early on, particularly in creating Local Development Frameworks
- Holding pre-application meetings on major developments (more than 10 homes)
- Meeting house builders and professionals on a regular basis, for example through a housing forum
- Organising study tours to learn from relevant projects
- Using the new planning system to develop the vision and masterplan for the intensified development, setting out the community's needs ahead of negotiations with specific developers

House builders can help in the way they consult the local community, and through the information they make available, for example by:

- Finding out local concerns before designs are finalised
- Making available the results of viability studies on a confidential basis.

'Modern masterplanning for higher density housing should be a robust but flexible process that allows design to evolve in response to changing circumstances, while at the same time achieving a relatively unified and consistent architectural approach.'¹⁰



Case study: Old Haymarket

The redevelopment of this site has been described as a ‘textbook approach to urban renewal’. The site is located in Liverpool city centre. The owners, Liverpool City Council, granted Urban Splash a 999-year lease on the site after they won the project through a development competition in 1996. The relationship between the council and Urban Splash has been good and positive throughout. Liaison with the local authority was sought at an early stage, as the buildings are located within a designated conservation area. The development has excellent access to all central shops, offices, hotels and leisure facilities. No affordable housing was actually required under the terms of the lease, but Urban Splash thought it would be beneficial to creating diversity in the area. A number of the apartments, therefore, were sold by Maritime Housing on a shared ownership basis, the first joint venture for Urban Splash.

Case study: Hammarby Sjöstad

Hammarby Sjöstad is an example of how collaborative working can achieve high standards of design, spacious apartments and superb open spaces. An integrated, multi-disciplinary project team working towards shared goals can be instrumental in achieving successful delivery of intensification. The City of Stockholm established a dedicated project team for Hammarby Sjöstad responsible for all aspects of the project. Agreement on transport infrastructure at Hammarby Sjöstad was instrumental in moving the project from vision to reality.



Case study: Limehouse

Limehouse Cut in Tower Hamlets, east London is an example of how successful community engagement and collaborative teamwork can result in the delivery of new homes and can aid neighbourhood regeneration. The regeneration programme implemented by Poplar HARCA (Poplar Housing and Regeneration Community Association) in the Limehouse Cut area identified refurbishment, redevelopment and infill opportunities with a view to realising the potential of Bartlett Park, the nearest green space, and of the Limehouse Cut waterway that passes through the neighbourhood. The project comprises a series of small infill schemes rather than a single development. The objective has been to develop small sites in the Limehouse area of Tower Hamlets to diversify housing tenure, generate income for the client, Poplar HARCA, while at the same time removing areas of redundant, underused land that attract anti-social behaviour.



Case study: Beaufort Court

Securing a higher density scheme can benefit the developer financially and can generate funds to deliver a better quality design solution. Peabody Trust eventually secured planning consent at Beaufort Court in Fulham with a scheme which represented a significant improvement, in both financial and design terms, over their earlier scheme. Architects Feilden Clegg Bradley designed the scheme which was built using modern methods of construction. The project had a chequered planning history, being delayed for two years, and early problems were experienced with financial viability. The final scheme is higher density and includes a broader mix of tenures than previously envisaged by Peabody. These factors together made the project viable as well as providing an attractive and innovative scheme.

Invest in design quality

New housing is often criticised for its poor quality, including not fitting into the context – and higher density housing on a large scale can compound the problem.

Until recently there has been no means of making an objective assessment. CABE's *Housing Audit* used the *Building for Life* criteria to judge schemes and found that: *'The dominance of highway infrastructure was particularly alarming, with an evident tension between the priorities of highway standards and urban design.'*

Local authorities can facilitate good design by:

- Reviewing highway and other policies to ensure they include new thinking on road layouts, such as that in Better Places to Live
- Encouraging developers to explain how new buildings will fit into their context
- Publishing, possibly at county level, design guides identifying features that contribute to local distinctiveness.

Features of successful higher density housing schemes

- Good sound insulation between dwellings
- Relationship with the surrounding area in terms of connectivity, scale and integration
- Proximity to good (reliable, clean and safe) public transport
- Priority for pedestrians and cyclists
- High-quality open space to provide visual relief and recreation
- Some usable private outside space, such as patios or balconies
- Clear demarcation between public and private spaces
- Adequate level of car parking that does not dominate the street scene.

'Good masterplans make connections and reveal opportunities which might otherwise not be apparent.'¹¹

Adopt high standards appropriate for the site

Good design is fundamental to successful intensification but because sites differ it would be wrong to set the same standards everywhere. However the literature and interviews show that:

‘Density itself does not appear to be a determining issue with regard to people’s perceptions of a good place to live. Rather it is coloured by feelings about safety and security, low crime rates, [and] access to good facilities.’

There are a wide range of standards to draw on including CABE’s and the House Builders Federation (HBF)’s Building for Life Standard, English Partnership’s Millennium Communities Standard, the Building Research Establishment (BRE)’s Eco Homes Standard and SEEDA’s Sustainability checklist.

Local authorities can encourage higher standards by:

- Appointing design champions
- Praising and publicising successful schemes, for example through awards
- Using design guides to allow flexibility in how masterplans are implemented.

House builders can support this by negotiating community benefits that reflect the nature of the location and site. A good example is in Camden where house builders have to provide 50% of the space (rather than 50% of the homes) as affordable housing. This enables them to provide the extra space that families need.

Achieve sustainable urban neighbourhoods

Because new building rates are relatively low, it is particularly important that we build to last. This is why attention is placed on the natural resources used during the lifetime of a new building.

But rather than building isolated examples of ‘eco houses’ it is more important to raise standards generally and set an example. Equally important as density rises is to maintain and manage the public realm.

There are numerous ways to address environmental impact, such as reducing the need to travel and the demands on utilities. Methods such as these can produce a better neighbourhood and make new housing cheaper to run and hence more valuable. Yet it is unrealistic to expect developers to invest more in environmental measures if they make the scheme financially unviable. The brief must be tailored to the situation.

Local authorities can lead in promoting sustainable urban neighbourhoods by:

- Identifying areas where higher densities are appropriate
- Supporting better neighbourhoods through improved local services
- Introducing initiatives, and encouraging attitude change, to make neighbourhoods more sustainable, such as pro-walking and cycling measures
- Using a charge on value created through development to create and top up a fund for maintaining the quality of a neighbourhood
- Ensuring that noise, rubbish and the maintenance of open space do not turn into problems, through good management and service charge agreements.

House builders can help by piloting new forms of construction, including allowing occupiers to specify higher environmental standards in customised packages as is possible when you buy a new car.



Case study: Hammarby Sjöstad

Sustainability should be a mainstream element of a new development, not an add-on, and needs to be planned for from the outset. The commitment does not end with construction but should include the education of residents in maximizing sustainability. At Hammarby Sjöstad part of the development includes an Environment Information Centre dedicated to informing residents and to educating interested groups.

‘...some of the most attractive and enduring residential environments have the simplest of structures...houses face the street, gardens run end to end and cars are parked mainly on the street. The sense of quality comes from detailed design of the buildings, the corners and boundary treatments, and from mature landscape.’¹²



The new planning system promotes better design, more sustainable development and greater community involvement. It is an ideal opportunity to overcome potential barriers to higher density building without sacrificing quality.

Case study: Planning for growth in Milton Keynes

One of the main growth areas in the South East, Milton Keynes, is expected to account for 5% of the new houses in the country. As a Local Delivery Vehicle (LDV) to cope with continued expansion, Milton Keynes Partnership has been set up by Government as a sub committee of English Partnerships to promote further development. Following the preparation of a business plan, which sets out the costs of expansion including facilities and infrastructure, masterplans for the areas are being developed and design codes are being drafted which will guide the detailed design, while still allowing a degree of flexibility.

Current developments are being built at twice the traditional densities, and Shenley Park at Kingsmead, marketed as 'the village in the city' is a good example of the new approach. 200 units have been built by Westbury at densities of around 60 to the hectare, and these have sold at prices of between £130,000 and £550,000. The scheme incorporates some attractive public spaces, with features derived from traditional villages. In the east of Milton Keynes at Oakgrove, a Millennium Village

is to be developed by Crest Nicholson, which will set new environmental standards, and which will be used to pilot new standards in relation to broadband, with every property being "wired up" from day one.

The most interesting development of all is the move towards agreeing a section 106 framework, which will support application for planning permission, and also ensure the necessary infrastructure is provided. The framework will be agreed with the ODFM, based on estimates of the cost of infrastructure in the Business Plan, it will aim to lever in additional government funding in return for a higher contribution from developers.

Using the idea of a planning tariff, the Milton Keynes Partnership is asking developers to sign up to making phased payments on a cost per dwelling in stages as development proceeds. In return this will be used to secure commitments from other bodies, such as the Highways Agency, to provide the extra physical and social infrastructure. Greater certainty should help in maintaining demand, and developers are also going to be joining together to market the expanded New Town.



Case study: Planning for smart growth in Kent

Kent faces pressures for major new housing developments and the County Council is adamant that the necessary physical and community infrastructure must be provided. It is therefore pioneering a number of new approaches to help build partnerships with developers. The Kent Design Guide was one of the first to set out guidelines based on good practice, and the Kent Architecture Centre is helping to raise design literacy, and has a panel of approved designers. The County Council is encouraging the adoption of innovative ways of collecting and distributing developer contributions.

Work is also underway on drawing up charters for major schemes, such as the growth of Ashford. These are seeking to incorporate the aspirations of existing communities from the outset; and to work with developers on deliverability. This entails ensuring

that the public sector can respond in a joined up way. Hence it is crucial to bring all the stakeholders together, including bodies like the Highways and Environment Agencies, or English Partnerships and SEEDA where appropriate. It is also important to understand the common ground with developers, as well as the differences.

The approach of Kent Design and local initiatives in Kent recognises that through working upfront with developers and communities on masterplanning, the planning process, site briefs, Enquiry By Design and similar initiatives, agreement can be reached more easily rather than later in the development process. If there is general agreement on the approach then concordats on the processing of planning applications could be agreed, entailing more speed and certainty than at present. But equally important, it should lead to schemes that stand the test of time and to quality places in Kent where people want to live.

Higher densities are sometimes controversial, and are not always appropriate. However, when well-designed and built in the right situation this report shows they can be a means of creating better neighbourhoods. But local authorities and house builders have to work together if better neighbourhoods and sustainable communities are to be achieved. Because higher densities can create special challenges, they require a higher degree of bespoke design. New approaches are being applied in areas such as the Millennium Villages and the growth areas of Milton Keynes and Ashford, as well as in pioneering regeneration schemes in the North such as Hulme in Manchester and the Renaissance Towns in Yorkshire. The report makes four recommendations:

1/Charters and development agreements

In areas where a substantial increase in new house building is required (such as where house prices have outstripped incomes) the public and private sectors can use the idea of 'charters' to 'fast track' development that complies with basic agreed principles. A charter goes beyond a vision in enabling stakeholders to sign up to a set of rules of engagement.

The charter would be signed by public agencies, and linked to local housing allocations. It could form the basis for agreements with developers or house builders as part of the planning process. It could stipulate what each party can expect from the other over a suitable time period (for example, ten years in the case of major sites) to provide the necessary confidence. It may be incorporated into development agreements and Section 106 planning obligations. It may be linked to the application of design guides or codes, or use of design panels, as well as design statements for major schemes. Although it may focus on situations where higher densities are sought, a charter may be relevant for other situations as well.

2/ Capacity building and shared learning

Greater use should be made of tools like team training and study tours to change fixed mindsets. Design champions can ensure a multi-disciplinary group exists within the authority to handle major applications outside normal development control. Developers and house builders can ensure they have special teams to handle complex projects. Full use can be made of the growing range of tools to reach agreement between the main stakeholders, as well as drawing on the many published sources of information, such as the *Building for Life* website www.buildingforlife.org.

3/ Planning and development charges

To ensure existing communities do not lose out from new development, the charter may be the basis for a tariff to mitigate the impact on communities, local services and infrastructure. The charge could be related to the numbers of units or the value of the development, and could be used for neighbourhood revival. It could be linked to the statements for community involvement, but the funds would need to be clearly accounted for in ways that communities could understand. Further work is needed to take proper account of risks.

4/ Monitoring and evaluation

Faster progress will be made by sharing lessons from earlier successes and, indeed, failures. Success should not be measured by density levels on specific sites but by whether better neighbourhoods are created. Key indicators may include increasing supply and choice of homes, raising satisfaction levels with new and existing neighbourhoods, ensuring those on average or lower incomes can get on the housing ladder, and changes in property values and turnover rates. Further work is also needed to provide ways of monitoring success so results can be fed into planning and design.

The use of charters

The idea of a charter is a document that sets out rights and privileges. In the USA the Charter of the New Urbanism, which is available on the Congress for New Urbanism website, www.cnu.org, promotes the restoration of existing urban centres and towns within coherent metropolitan regions. It aims to counter sprawling suburbs through three sets of nine succinct principles for the region, neighbourhood, and block or street level, and the principles are being adopted both by individual designers and developers, and also by public agencies, for example in the region around San Francisco, and in Portland Oregon.

In Britain, Yorkshire Forward has led the way through its Renaissance Towns programme to draw up charters for 18 towns and cities.

These set out a 20-year vision, along with key themes and projects. The Town Team uses an extensive process of community engagement backed up by expert teams of consultants to raise aspirations. Once signed, the charter forms the basis for commissioning masterplans and strategic development frameworks. Major successes are being scored in Barnsley, Doncaster and Scarborough, and over £80 million of investment has been lined up in the former mining town of Castleford, including a significant amount of higher quality housing than would have otherwise been developed. Wakefield Council wants to keep the 5 towns distinctive and to secure something different from the suburbs that have been built in the past. They are using Design Coding on two large sites close to the town centre, and the developers are being supportive.

A different application of the idea is being taken forward by the Oxfordshire Design Partnership, which brings together the County Council and the

five district authorities, supported by CABE. Some authorities are already using charters to ensure that clients receive higher standards of customer care. An initial discussion led to the idea of using a charter for housing as a Supplementary Planning Document to secure higher standards of design, and to commit all parties to working together to achieve the highest possible design results. Ambitions include encouraging the wider use of project or development teams with design skills. The charter will emphasise the skills needed to plan and design better neighbourhoods, and exemplary schemes will be celebrated through awards, and used in training programmes.

With a limited but growing number of success stories, it is more and more important to share experience on what works, and this is happening in a number of ways. While practice varies from place to place, there is a selection of tools which will improve the quality of new housing development and also help to speed up the process:

Building for Life

To promote higher standards in new housing a number of organisations have joined forces to form the Building for Life Partnership. A practical outcome is the Building for Life website, www.buildingforlife.org, and its e-newsletter. The partners are CABE, the House Builders Federation, and the Civic Trust, in association with Design for Homes, and it is endorsed by the Housing Corporation. The Building for Life website has examples of new housing schemes that meet the Building for Life standards, and will include examples of charters and development agreements.

Design champions

Progress depends on people, and many local authorities are appointing councillors who can take the lead on design matters, supported by an officer with relevant experience or training. They are supported regionally by a number

of Architecture Centres, some of which have their own panels of designers who are recognised for being able to create better neighbourhoods. Some of the Regional Development Agencies, like the South East and Yorkshire Forward, have put a particular stress on design in the support they are giving to local initiatives, and Yorkshire Forward is supporting a series of Town Teams with consultants who know how to produce masterplans and development frameworks.

Capacity building and training

Courses are on offer often run by local universities working with groups of councils to improve their understanding of good design and how to create it. For example, CABE has been working with a group of councils in the Oxfordshire Design Partnership, with support from the University of the West of England, and a range of short courses are also being run including an annual Summer School. (<http://environment.uwe.ac.uk/OXDP>)

Guides for clients

Cabe has published a series of guides designed to help all those involved in commissioning buildings and developments. These include *Creating Excellent Buildings*, *Creating Successful Masterplans*, and *Creating Successful Neighbourhoods*, all of which are available from www.cabe.org.uk.

This report has been prepared for CABE and the Corporation of London by URBED with research by PRP, Savills, Buro Happold and the LSE Cities Programme.

CABE wishes to thank the members of project steering group: June Barnes, Malcolm Cooper, Peter Derrick, David Edmonds, John Pounder, John Slaughter, Martin Willey, Liz Willis.

Quotations

1 & 5 *Land for Housing: Current Practice and Future Option* Barlow, J., Bartlett, K., Hooper, A., and Whitehead, C., YPS in association with the Joseph Rowntree Foundation, 2002

2 *But would you live there? Shaping attitudes to urban living* URBED, MORI and the School for Policy Studies, University of Bristol For the Urban Task Force, ODPM, 1999

3 & 4 *Housing Density: What do residents think?* Tunstall, Rebecca, Department of Social Policy, London School of Economics. For East Thames Housing Group, 2002

6, 10, & 11 *Design Reviewed Urban Housing – Lessons learnt from projects reviewed by CABE's expert design panel* CABE, 2004

7 *The Draft London Plan: A draft Spatial Development Strategy for London* Greater London Authority, 2002 (Para 4B.23)

8 *Urban Design Compendium* Llewelyn-Davies, English Partnerships and the Housing Corporation, 2000

9 *Capital Gains: Making High Density Housing Work in London* Cope, Helen with Avebury International, for the London Housing Federation, 2002

12 *Better Places to Live: By Design* DTLR/CABE, 2002

References

p5 Measurements of density, Definition of density used in PPG3 *Councillors' Toolbox: Making the best use of land*, SEERA, 2004

p6 *The Meaning of density: Living Places*, URBED for DETR, 2000
The insert maps are reproduced with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. Crown Copyright. All rights reserved. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number 100041331

p7 *The density gradient: Building the 21st Century Home*, Rudlin, David and Falk, Nicholas, Architectural Press, 1999

p9 *New homes in the South East: House Builders Federation*

p11 Higher density housing can deliver real social benefits: *In principle...*, The Hyde Commission, 2003

p16 *The top 10 biggest barriers to building higher-density development in your district: Attitudes to higher density developments in the South East*, URBED with MORI, 2004

p21 *Features of higher-density housing schemes – based on research conducted by PRP Architects*

Picture credits

Front Cover Tenants outside their home on the south coast: ©www.third-avenue.co.uk
Two boys: Mark Ellis and Ashley Bingham ©ICD Ltd

p4 Methleys, Leeds ©Lizzie Coombes – Heads Together Productions

p10 Gainsborough Studios, Hackney, London ©info.be

p12 Beaufort Court, Lillie Road, London ©PRP Architects

p13 Ingress Park, Greenhithe, London ©Crest Nicholson. Hammarby Sjöstad, Stockholm ©PRP Architects. Oakridge, Basingstoke ©Alex Ely

p14 Fulham Island, London ©PRP Architects. Vauban, Freiburg, Germany ©Alex Ely.

Homes for Change, Manchester ©Sabine Engelhardt. Reiselhof, Freiburg, Germany ©Nick Falk

p15 Fulham Island, London ©URBED. Tesco's, Kensington, London ©Wagstaff's Design

p16 Ingress Park, Greenhithe, London ©PRP Architects. Staiths, South Bank, Gateshead ©Wayne Hemingway

p18 Brewery Square, Clerkenwell, London ©Richard Learoyd, Phil Sayer, Harry Ker. Chronos, Whitechapel, London ©Mark Ellis

p19 Fulham Island, London ©Alexi Marmot Associates

p20 Old Haymarket, Liverpool ©Richard Cooper. Hammarby Sjöstad, Stockholm ©PRP Architects. Charter Quay, Kingston-upon-Thames

©St George Plc. Limehouse Cut, London ©Telford Homes. Beaufort Court, Lillie Road, London ©Amos Goldreich/FCBA

p22 Hammarby Sjöstad, Stockholm ©PRP Architects

p23 Milton Keynes and Campbell Park ©EDAW

p24 Chatham Maritime, St. Mary's Island, Chatham ©PCKO Architects



The Corporation of London
Guildhall
London EC2P 2EJ

T 020 7606 3030
F 020 7332 1991
E chb-secretat@corpoflondon.gov.uk
W www.cityoflondon.gov.uk

cabe

Commission for Architecture & the Built Environment
The Tower Building, 11 York Road
London SE1 7NX

T 020 7960 2400
F 020 7960 2444
E enquiries@cabe.org.uk
W www.cabe.org.uk