London Housing Design Guide

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Draft for Consultation

MAYOR OF LONDON

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Foreword

The finest city in the world deserves the finest housing.

In building London's future we reflect on a past which has already created some of the best buildings and urban spaces to be found in the world.

We also, more recently, have experience of some less inspiring examples, particularly in the design of housing with space sacrificed to unit numbers and inappropriate densities and family needs not being met. New homes in London are some of the smallest in Western Europe and to continue to build cramped 'hobbit homes' is indefensible.

Understanding the foundations of both London's design achievements and its failures must be the basis of any attempt to renew the capital's traditions of design excellence - and to ensure that we create homes where people want to live and in which they and their families can flourish now and in the longer term.

My draft London Housing Strategy has at its heart not simply an increase in the supply and range of homes for Londoners, but equally the promotion of excellence in design quality and sustainability. The publication of the draft London Housing Design Guide underpins that commitment and will help to make a reality of it. I believe it is right to expect higher housing standards for taxpayers' money, especially as allowing design mistakes today would inevitably burden the public purse tomorrow.

Above all, this guide should be read as a statement of intent – that the purpose is not to 'deliver housing units' but to provide homes; homes that are fit for this most dynamic of cities and that can also create places of retreat from it so that urbanity and domestic life are in balance.

I am determined to deliver the highest quality homes for the long term, innovating in the best tradition of this unique city, and using all the tools available to make this happen.

This guide is brought forward at a challenging time for London and the development industry. One of the main aims of the guide is to consolidate and simplify current requirements to help bring greater certainty to the development process. This is also a good moment to remember that, regardless of economic circumstances, excellence in design and sustainability should not be seen as extra costs but as a shrewd investment essential to London's continued success. It's also what Londoners deserve in their housing.

Though aimed at improving homes provided through public funding, the standards set out in this guide will be expected to influence good practice across all sectors of the housebuilding industry. I want to use this draft to start a wider debate on applying a consistent set of standards for all new housing, regardless of tenure.

I am keen to work with all sectors of the development industry to ensure that higher standards can be successfully delivered in London's housing. I welcome your feedback on the standards set out in this guide, and whether these are right to achieve the type of housing needed for 21st century living in London.

Introduction

London's growing population needs to be housed and housed well. This guide is intended to achieve this goal. It sets a new benchmark for the design and quality of London's housing, supporting the delivery of key policy areas in the London Plan and the draft London Housing Strategy.

As part of the London Housing Strategy, the design standards set out in the guide will have an influence over the quality of housing built using public sector investment. In the first instance, this applies to developments involving London Development Agency (LDA) funding or land, and the Mayor is working closely with the new Homes and Communities Agency (HCA) to arrive at a unified set of standards for London. This draft marks the start of that process. The Mayor will also be working with other public sector and private sector developers to encourage the take up of these standards.

The intention is to help simplify and harmonise the current range of standards and to provide consistency and clarity about what is expected in London from the outset of a development. Rather than setting out over-detailed specification, the guide prioritises the key design issues that will have the greatest impact on the strategic choices that must be made early on in a project, which are key to delivering high quality design but are more difficult to change at a later stage.

The guide also promotes improvements in the development process so that design remains valued from vision to delivery.

London's complex challenges

This is a guide for London. Whilst it learns from the best practice and standards that have been identified in relevant national design guides, its guidance and values are derived from, and are meant to meet the needs of, London. What we build, and who we build for, reflect the uniqueness of this world city and the diverse communities who make their home here.

All cities pose complex challenges:

- of reconciling their economic or leisure functions with their residential role;
- of enabling successful coexistence of diverse populations;
- of facilitating social mobility within city boundaries so that 'getting out' is not required to 'go up';
- of ensuring dynamic development and environmental responsibility go hand in hand;
- of balancing density with sociability and diversity and a sense of place, so that development is appropriate and strengthens a community not imperils it;
- of making places and building appropriate homes for real people and families rather than 'units' for market segments or social classes;
- of housing relevant to modern family formation as much as modern family dispersal; and
- of housing for those who need shelter as for those who wish to get a foot on the property ladder.

As befits a world city, London faces all these challenges and more. At the heart of the London challenge is land and how we design, build, and manage this vital resource now and for subsequent generations. Confronting climate change, improving quality of life and creating communities are objectives which converge on the key issue of land. The consequent choices to be made on space standards, densities, building types, carbon efficiency and open space, are all central to this challenge and addressed in this guide.

The design challenge

At the heart of the challenge for London today are the key issues of building at higher densities and space standards. Whereas in England as a whole over 80% of people live in houses, in London 50% live in flats and the proportion is growing. Driving this are two key London forces: sustainable development policies which recognise the pressure on land and make a virtue of public transport, and demography.

The aim of this guide is to encourage development which combines efficiency in land use with the environmental benefits of well-designed, well-managed housing built to higher densities. Cities which fail to balance these forces and enable 'city-living' to be attractive for the widest range of populations throughout their lives, are unbalanced and likely to become socially and spatially segregated.

Spiraling land costs and often inappropriate (or badly executed) densities have contributed to London having some of the smallest homes in the developed world. This is not sustainable.

The over-production of such a housing type in London, allied with inflexibility in design and construction techniques, will result in homes which cannot meet the changing needs of individuals and families. Space – higher minimum standards – and homes with long term adaptability and potential for flexibility as inhabitants change or families grow, lie at the heart of London's new standards.

The guide also responds to the second key driver of demography and the special profile of housing demand in London. In London over 2000 new households form each month. This results in two main – and quite different - sources of demand for housing. On the one hand, 60% of these new households are single people. All forecasts are that pressures will increase over time as people live longer, families break-up and re-form, and as migration to London continues both from within the UK and internationally. This means that higher density and apartment living will remain core parts of the London offer, and that the design of such needs to be accessible and suitable, where residents of all ages and physical needs are not excluded or segregated.

The second source of demand means that the London offer must also provide more family sized homes, particularly affordable homes. The task is to ensure the highest standards are achieved and that flats as much as suburban houses are flexible enough to meet the needs of different end-users and provide the space, privacy, security and sunlight that people look for when seeking to make a home.

Building in an urban context throws up a number of other design challenges including how to offer

suitable levels of outdoor amenity, particularly for family homes, to create privacy both in terms of noise and sight whilst maintaining a level of surveillance of the public realm to improve safety, and to manage the number of homes that share common circulation to enable a sense of ownership and community to develop.

A new London vernacular

We confront these challenges in a city with its own historic patterns of building and identity. The London terraced house, street forms, and squares, for example, have all underpinned that identity with great success. Laid out to form coherent urban places, with houses and flats facing out onto the street or other public spaces and with easy access to more private outdoor space, such simple arrangements have provided the basis for numerous styles and indeed densities of housing in locations from the inner city to the outer suburb. London has developed its own successful ways – surviving all changes in fashion and flexible enough to meet changing demands.

This guide learns from the enduring success of Georgian and Victorian precedents, as well as some of the best of the 20th century's patterns of building in London. New models are needed to achieve the same success in new environments and to respond to new challenges such as climate change. This guide consciously seeks to provide ways to build anew in the context of London's historic achievements and its identity; creating a new London vernacular which respects and learns from the tradition out of which it evolves.

Housing standards

It is worth recalling the impact of previous designstandards for UK public housing, primarily those set out in the influential 1961 report Homes for Today and Tomorrow by the Parker Morris Committee which are still quoted today. The concern at that time was to ensure that every home was provided with a basic level of functionality and amenity – space, heating, and even an indoor bathroom. Today the concern has moved to the quality of provision and whether it is fit for all. It is not just about providing space, but ensuring that space can be flexibly used to respond to varying needs and that development takes an inclusive approach for all users. Beyond requiring that every home has heating, today we recognise the issue is how to provide heating and use other limited resources such as water and energy in the most efficient way in order to reduce carbon emissions and lessen the environmental impact.

The last decade has seen a wide array of design guidance issued by a variety of agencies. As a result, there is much more emphasis on excellence in design and sustainability than in previous years and that is to be welcomed. The aim of the design guide is not to add needlessly to these. Indeed, the guide is derived from them and seeks to harmonise them to fit the capital's needs.

However, there is a pressing need for a period of continuity and consistency in the design standards that the industry is expected to work with. Current standards often overlap or contradict each other and are measured in various ways, and those developed at national level typically do not relate well to the higher

density development context in London. This guide sets these standards in the London context and also responds to the capital's unique governance context, reflecting the policy framework established by the Mayor in the draft London Housing Strategy and the London Plan.

The creation of the new HCA and the strengthening of the collaboration with the LDA, has brought together the largest sources of funding for social housing and urban regeneration in the capital and has provided a good opportunity to strengthen and integrate guidance and standards in designing homes and neighbourhoods.

Delivering high quality housing

Many will point to the economic conditions of the moment and stress the need to relax or lower standards so as to reduce regulatory burdens and transaction costs on developers. Whilst appreciating the difficulties confronted by the development industry, this will not be the approach taken in London. Early clarity on standards and consistency in maintaining them will actually increase certainty and reduce costs. Developers' costs are often more affected by changing requirements as the project proceeds than by upfront quality thresholds which may be demanding but are fixed. The expectation is that the standards set out here should act as incentives to investment rather than as burdens on resources.

Standards alone are in no way a guarantee of quality, and they must be underpinned by robust forms of procurement and longer-term management plans for a development to be successful. Where land is in the ownership of public sector agencies such as the HCA and the LDA, or its development potential is influenced through public funding or grant, then the influence over the development process and the standards deliverable can be more direct. The final section of this guide therefore deals with the development process to help ensure that the best intentions on the drawing board are delivered on the ground.

Previous guidance and standards linked to public grant criteria often failed the real-life test because so much of affordable housing has been delivered through planning (Section 106) agreements with the private sector - with standards lower than in homes directly funded and provided by housing associations. While currently only applicable to publicly funded housing, the intention is to provide a level playing field for developers of all tenures. The guide will therefore be considered as part of the London Plan review and will be subject to separate consultation as part of this process. Early clarity that the high standards we require will indeed be required of all will aid decision-making and bring greater clarity to the development process in London.

Using the guide

Key themes

The guide is based around 6 key themes. Embedded within each there is a set of clearly defined minimum standards or guidance to consider. The structure of the themes starts at the scale of a locality then focuses in on the individual home. These are:

- **1.0 Shaping good places:** The spaces between and around buildings are as important as the spaces within. Developments should integrate with the wider public realm network, providing opportunities for access to open and green space and enhancing the character of an area.

- **2.0 Housing in a diverse city:** A mix of housing sizes, types and tenures at a range of densities are needed to respond to Londoners diverse needs. This section emphasises the ground rules for meeting this challenge.

- **3.0 From the street to the front door:** The design of access to the home can have a significant impact on the management and social dynamics of the block, the perceived quality of the environment and the safety and experience of all users. The guide sets out minimum requirements for the design of entrances and shared circulation areas.

- **4.0 Dwelling space:** New minimum internal space standards are set out, along with further requirements and guidance on the size and layout of different rooms to ensure greater flexibility of space in the home, and minimum sizes for storage and private amenity space.

- **5.0 Home as a place of retreat:** The hustle and bustle of city living can have a negative impact on the quality of life within the home. This section covers privacy, noise, and the relationship between floor-to-ceiling heights, daylight and sunlight and cross-ventilation, which all underscore the importance of dual aspect development.

- **6.0 Climate change mitigation and adaptation:** Ensuring homes are suitable for warmer summers and wetter winters, as well as limiting the extent of future change, are key priorities for London. The guide aims to clarify the London approach to the implementation of the Code for Sustainable Homes in the context of the London Plan.

The final section sets out guidance in relation to the development process to better ensure the delivery of successful, well-designed schemes.

Development of the standards

Existing standards and policies were reviewed in detail, covering in particular the London Plan, the draft London Housing Strategy and HCA inherited standards (including the Housing Quality Indicators and English Partnerships standards), identifying conflicts between standards, and undertaking design testing where needed to determine what would be appropriate for London.

The approach taken in developing the internal space standards, for example, was to establish a new evidence base incorporating Lifetime Homes criteria (established London Plan policy) and basic furniture and activity space commonly required in particular rooms relative to occupancy numbers (derived from the Housing Quality Indicators). This ensures that the standards are founded on established principles and are not overly onerous.

We have sought to focus on key requirements that will make the most difference to the quality of housing and to simplify the requirements that apply in current standards, particularly for affordable housing.

It is worth noting how several current standards have been handled. The guide incorporates the Lifetimes Homes criteria for all housing to ensure future adaptability to changing needs, in particular for older and disabled people. The criteria are integrated at relevant points in the guide rather than set out in a single section. This is to ensure that relevant information is to hand when considering the design of particular elements of the building, home, or access to them and to ensure that inclusive design principles are integrated throughout the guide rather than being viewed as a 'specialist' add-on.

As with Lifetime Homes, the core principles of Secured by Design have also been integrated at relevant points throughout the guide rather than sitting in their own section, particularly in regards to the safety of entrances, parking and other shared communal areas.

What it will apply to

It is proposed that the design guide would provide the basis for minimum standards for the design of new build publicly subsidised housing across London. In the first instance , this applies to developments involving LDA funding or land.

A key partner in the delivery of the standards set out in this guide is the Homes and Communities Agency. With the HCA having only recently formed, work is underway to achieve a new set of national minimum standards for the whole organisation. The Mayor is working with the HCA to develop the draft guide into specific housing design standards that are relevant for London, and to ensure that these are compatible with the standards being reviewed and consulted on to provide a consolidated suite of core national HCA standards. The housing design standards that apply within London may be set at a higher level than the HCA's core standards to reflect the special nature and density of the capital city.

For consistency, it is intended that the programme for adoption of this guide and its standards will run in parallel with that adopted for the new national HCA standards. As a result, this guide and the standards contained within it would become applicable to all housing development funded by the HCA from April 2011 onwards; the start of the next funding round. This timetable requires the guide to be formally published by April 2010 to provide a lead-in period for developing organisations to obtain planning permissions that are compatible with the new standards prior to seeking funding from April 2011 onwards.

The Mayor would also like to use this consultation period to open the debate on applying standards consistently for all new housing in London, whether publicly funded or not. The Mayor is considering adopting the standards contained within this guide as Supplementary Planning Guidance to the revised London Plan. Taking this forward would be subject to a separate statutory consultation process as part of the publication of the new London plan. However, the Mayor is keen to hear from all sectors of the development industry as part of this current consultation period.

Consultation and Next Steps

Consultation process

The publication of this draft starts a three month period of consultation, during which the Mayor would like to receive views about the standards set out in the design guide.

Consultation ends on 30 September 2009.

To view an interactive version of this document and provide comments, please visit:

www.lda.gov.uk/consultation

If you do not have access to the internet and wish to make comment, you can write to:

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Please note that if you submit an electronic response it is not necessary to also send in a paper copy. All information in responses, including personal information, may be subject to publication or disclosure under Freedom of Information legislation.

This document can also be downloaded from www.designforlondon.gov.uk.

Next steps

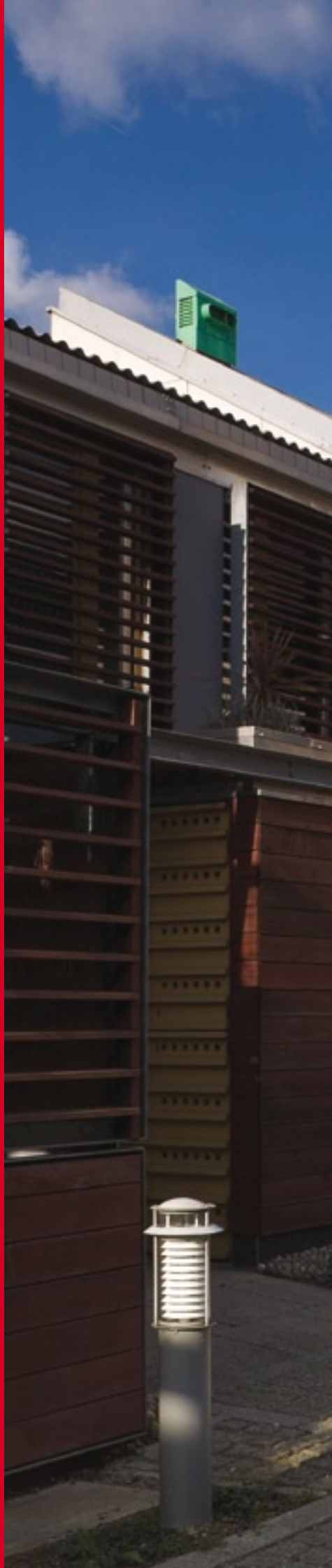
Alongside the consultation period, a cost/benefit impact study will be undertaken on the standards set out within the guide to understand the costs and benefits in greater detail as well as their cumulative cost and wider scheme impacts.

During this period the Mayor will continue to work with partners, particularly the Homes and Communities Agency through the London HCA Board, to ensure continuity with their work on their national standards to arrive at a unified set of standards for London.

Following the consultation period, the guide will be revised in the light of comments received and the outcomes of the cost/value study. It is anticipated that the final guide will be published in April 2010.

1.0 Shaping Good Places

The Mayor wants London to secure a legacy of housing that is well designed and shapes good places in the city; places which raise the spirit and inspire confidence in our time. We must take great care over how each development relates to its surroundings, and how it adjusts or reshapes the place it occupies. Good design involves making careful judgements about a development's size, shape and architectural character, how it adjusts or makes a new part of the city's network of public spaces, and how uses in and around these spaces give them life and meet the needs of Londoners.



1.1 Defining Places

Character and context

All housing developments need to be designed so that the housing itself is excellent and new buildings contribute to shaping good places. Each building is a participant in the city, and its external architecture contributes to the character of a part of London. It matters how our housing looks, how it enhances people's enjoyment of a place, and how it brings life to surrounding spaces.

The best developments are those designed with a sensitive understanding of their urban context, responding to the characteristics of the place and the community and making good use of opportunities offered by existing buildings, landscape, public space and topography.

It is not the role of this guide to prescribe a particular architectural approach. However, it is noted that London has no shortage of urban diversity, but new developments do often struggle to retain or give places a quality of coherence. Because of this, the Mayor encourages a design approach that carefully responds to the whole context of a development, gives priority to how a place will be experienced, and how it will feel coherent. Residential architecture that celebrates the elements which link inside and outside – the entrances, windows, terraces, balconies and gardens – is also encouraged.

To respond carefully to their context, new developments should either correspond with the prevailing tendency of an area, or it should be clear in what way a departure is positive and how new ideas for the shape and character of the place can be sustained and can be successful.

The processes through which places are shaped play an important role, particularly for larger-scale developments and developments that vary from the prevailing characteristics of an area, due to their prominence and potential impact on an area's identity, services and amenity. Designing changes to a place should be based on a thorough understanding of and a vision for that place. Proper planning is important, and where area based design guidance or spatial frameworks are in place these should be respected.

Where no guidance or process is in place, the proposers of bolder developments are encouraged to suggest in what way they form part of a coherent vision for the future of an area.

All the standards set out in this guide need to be met through design that is carefully and skillfully considered. Key to this will be choosing appropriate design consultants and establishing a good process that values design throughout (refer to the Design Process section).

Well-connected and legible

A well-designed locality has a network of connected spaces and routes for pedestrians, cyclists and vehicles that is easy to understand and navigate. The layout of each new development should integrate into the surrounding context by connecting these spaces and working with the network of routes and its hierarchy. Public transport facilities should be designed as an integral part of this network.

Urban spaces are most successful when it is inherently clear who is meant to use them. It is therefore important to design urban spaces

so they engender a sense of ownership by defining spaces which use enclosure and a clear distinction between public and private use. This will help residents feel safer and gives clarity and legibility to the locality.

The configuration, massing and architectural expression of a development, and the placement of uses, windows and entrances, will all have a significant effect on the character of public spaces, how they are used and how people identify with place.

Placing entrances and windows facing the street improves the quality of street frontage and provides a sense of security. Such active frontages provide passive surveillance [1] of other dwellings and public areas and add interest and life to public spaces. Windowless elevations and blank walls adjacent to public space, for example at the end of a terrace, can attract vandalism and inappropriate behaviour. [2] Active frontages and clearly defined entrances can also help aid orientation and wayfinding, especially for visually impaired people.

Non-residential uses at ground floor level are encouraged wherever the location is appropriate. In situations where future viability of non-residential uses is uncertain, it may be desirable to design ground floor accommodation to allow it to be adapted to different uses at a later date.

Requirements

1.1.1 Development proposals must demonstrate:

- How the design responds to its physical context, including the character and legibility of the area and the local pattern of building, public space, landscape and topography
- How the scheme defines or strengthens the character of a place, or how bolder change is justified in relation to a coherent set of ideas for that place

1.1.2 Development proposals must demonstrate:

- How the scheme complements the local network of public spaces, including how it integrates with existing streets and paths
- How public spaces and pedestrian routes are designed to be overlooked and safe, and blank elevations onto the public realm at ground floor have been avoided
- For larger developments, how any new public spaces including streets and paths are designed on the basis of an understanding of the site's context, and the planned role and character of these spaces within the local movement network

NOTES:
1. Passive surveillance is a core Secured by Design principle, which operates on the basis that encouraging neighbours to watch over each other's properties creates the conditions that will make potential offenders feel vulnerable to detection. Secured by Design Principles, Association of Chief Police Officers, 2004.
2. Secured by Design, New Homes, 2009

1.2 Outdoor Spaces

Our city is weaved through with a vast network of public space made up of streets, paths, squares, gardens and parks. This is the framework which holds London together, allowing people to get to where they want to go and to take part in the outdoor life of the city. New housing should play its part in shaping the public space network to suit our lives, be full of and support use, and be a pleasure to experience.

People need access to a variety of outdoor spaces within walking distance of their homes to fulfil a number of needs, including sport, informal recreation, relaxation and learning, as well as just moving about. Green space can also play an important role in adapting to the effects of climate change by managing flood risk, providing urban cooling, and supporting biodiversity.

New development should ensure a balanced provision and range of outdoor spaces - public, communal and private.

Where a development is of a scale to justify on site creation of new outdoor spaces, they should be provided in a way which is appropriate to the setting of the site and the scale of development. Larger residential developments should consider the provision of outdoor sports facilities, local parks and other generous public spaces, taking into account the requirements set by individual boroughs in their LDFs and Open Space Strategies based on the London Plan benchmark public open space hierarchy. [3] Open space provision is best negotiated with the Local Authority and consideration made at the outset as to how these spaces are to be managed.

Even small housing developments should maximise the opportunities for providing greening elements and a generosity and usability of public space, for example, through tree planting, attractive landscaping, useful street furniture and quality materials and workmanship in public spaces.

Opportunities to provide communal open space for residents and their visitors should also be investigated. This is particularly important for family homes, and London Plan policy [4] seeks to ensure that all children have access to good quality, secure and stimulating play and informal recreation provision. Appropriate levels of provision for children's play space have been set out in the London Plan SPG on providing for children and young people's play and informal recreation, which applies to residential development where more than ten children are expected to live (information on assessing child occupancy is set out in the SPG). [5]

The type and size of local provision will be dependent on the needs arising from the development and existing provision in the area. The SPG contains a table of play space types, which should be consulted with regard to the category, size, appropriate age group equipment and suitable location for such facilities. [6]

The placement of open space is crucial to delivering safe and secure environment. It is important to clearly define the boundary between public and private space, to establish access rights to the spaces, and to give residents a sense of ownership.

Urban green space can also help London adapt to the effects of climate change by soaking up rainwater, providing flood storage capacity, and providing cooler environments. Hard external areas can also contribute to sustainable urban drainage by using porous or permeable surfaces.

A strategy for the public space and landscape of larger sites should be developed, and a landscape management plan should be drawn up and agreed prior to practical completion of a development. Innovative opportunities for the provision of outdoor space should be maximised, for example, utilising roof space to include gardens, terraces and raised patios, and structures to support plant growth. [7]

Requirements

1.2.1 Development proposals must demonstrate:

- How they comply with borough's open space strategies ensuring that a review of surrounding open space is undertaken and that opportunities to address a deficiency in provision and/or provide public open space are taken forward in the design process

1.2.2 For developments with an estimated occupancy of ten children or more, development proposals should make appropriate play provision in accordance with the London Plan SPG on Providing for Children and Young People's Informal Recreation

1.2.3 Where communal open space is provided, development proposals must demonstrate that the space:

- is overlooked by surrounding development and secure for residents [8]
- is wheelchair accessible [9]
- is designed to take advantage of direct sunlight
- has suitable management arrangements in place [10]

NOTES:
3. London Plan, GLA February 2008, Table 3D.1, p.180
4. London Plan, GLA February 2008, Policy 3D.13
5. Providing for Children and Young People's Play and Information Recreation SPG, GLA, March 2008
6. Providing for Children and Young People's Play and Information Recreation SPG, GLA, March 2008, Table 4.6
7. London Plan, GLA February 2008, Policy 4A.11
8. Secured by Design, New Homes, 2009 and Secured by Design, Playing Areas, Association of Chief Police Officers
9. London Plan, GLA, February 2008, Policy 4B.5
10. based on Building for Life, criteria 16

2.0 Housing for a Diverse City

Part of London's challenge as it grows is to design well and appropriately for a diverse city – for urban and suburban contexts, at a wide range of intensities, and for a uniquely varied population. This section embraces this challenge. We need to accommodate a range of housing types across a range of densities, and to ensure that new housing is not planned in isolation from an understanding of location and place, the spaces between and around buildings, and the need to accommodate the other uses which support daily life. A particular priority is to make good places for families to live right across London, and key to this will be making sure that flats work for families as well as individuals.

2.1 Appropriate Density

London is a multi-density city, which can accommodate a wide range of housing types and combinations. It has a rich urban tradition of building well-designed housing at higher densities, which is even more essential for London's future if we are to make the best use of scarce land and to contain urban sprawl and conserve energy.

More recently, the overriding concern for many new developments in London has been to achieve the maximum permissible density, sometimes to the detriment of their surroundings, existing environments and local social infrastructure.

The development of housing to support London's growth must be carefully steered towards a geography which makes fullest use of the most appropriate locations. This should avoid the problems that occur when significant populations are concentrated in places without the range of facilities and the level of accessibility needed to go about their lives.

The London Plan balances the need to make optimum use of the potential of sites in areas with good public transport and access to facilities, with the need for a more cautious approach in areas where there is inadequate transport accessibility and local facilities. Design considerations and compatibility with local context must also be taken into account when determining the optimum density for a site.

In the balancing of various policy priorities, it is crucial that the density policy in the London Plan is not disregarded. The role of planning is critical and Local Authorities should take the lead on determining appropriate densities for development sites and appropriate locations for high density development in local areas.

Requirements

2.1.1 Development proposals must demonstrate how densities of residential accommodation reflect a sound understanding of public transport accessibility level (PTAL), accessibility to local amenities and services, and appropriateness to physical context [11]

2.1.2 Developments which propose higher density on the basis of providing additional local facilities or transport connections must demonstrate how this meets local needs and how this will be achieved.

NOTES:
11. London Plan, GLA, February 2008, Policy 3A.3; and A new plan for London, April 2009, p.45

2.2 Residential Mix

The London Plan and draft London Housing Strategy seek to ensure that residential developments provide a mix of housing types, sizes and tenures that can meet the full range of housing need.

London's housing comprises a wide variety of housing types. From the Georgian terraces of Islington, the Regency Squares and mews of Pimlico and the Edwardian Mansion blocks of Bloomsbury, the Victoria semi-detached houses of Clapham or the detached villas of Bedford Park through to the post war deck-access apartments, maisonettes and tower blocks. The last decade has been characterised by the predominance of corridor access apartment blocks or flats arranged around stair cores, but the growing need to create a more balanced provision of family housing and smaller dwellings requires a more creative approach to dwelling types and mix of sizes.

Achieving a desirable mix at higher densities demands the exploration of different models that can deliver family housing. Schemes should consider habitable room densities, as set out in the London Plan density matrix[12], in order to deliver a greater mix of dwelling type. A mix of dwelling types such as flats above maisonettes or compact courtyard terrace housing will help achieve high habitable room densities.

Combinations of housing types within a larger development site can also help achieve larger homes at higher densities. Terraces deliver around 80 dwellings per hectare, whilst a block of 1 and 2 bed flats with a row of terrace houses behind will deliver greater unit density but lower habitable room density. A richer mix may actually reduce overall dwelling numbers and unit densities but achieve a higher habitable room density.

Providing a mix of dwellings makes communities safer and more secure as there is more potential for homes to be occupied during the day, giving greater natural surveillance, community interaction and environmental control.

Developments should also cater for various needs by having a mix of housing tenure including affordable housing and specialist housing such as the provision of wheelchair accessible dwellings. Large groups of homes of the same tenure should be resisted. However it is acknowledged that dispersing affordable homes raises management issues with potential implications for resident service charges. Housing design should be 'tenure blind' where affordable and private homes are indistinguishable from one another in terms of design quality, appearance or location on a site.

Requirements

2.2.1 Development proposals must demonstrate:

- How the accommodation mix reflects the needs and aspirations of the local community [13]
- How tenure mix reflects the needs of the local community [14] and local borough targets, and that the development is tenure blind

NOTES:
12. London Plan, GLA, February 2008, Table 3A.2
13. based on Building for Life, criteria 2
14. based on Building for Life, criteria 3

2.3 Mix of Uses

Places with a good range of services, amenities and facilities are important to the success of London's neighbourhoods. Neighbourhoods are successful where people are able to fulfil daily tasks within a comfortable walking distance such as getting to a station or bus stop, food shopping, and relaxing in a park, café or pub. The best neighbourhoods are well connected both to jobs and to places people spend their leisure time. They are places where people can live at any stage of their lives, regardless of physical ability or financial means.

Achieving a mix of uses in an area is important to creating a compact sustainable city and strengthening local communities and economies. Mixed-use development can make the most of higher density and encourage more intensive activity at locations with good access to public transport.

- Proposals for larger residential developments should assess the need for community and ancillary services such as local health and education facilities, and their distance from a development to determine what if any could be integrated into a development.

- If provision is beyond a desirable walking distance of the development or deficient in the area consider whether it is appropriate to include commercial uses within development proposals itself.

- Integration of different uses sets up its own design challenges. Noise pollution, delivery and refuse collection, and access to the different uses all need careful design consideration with residents needs prioritised as much as other uses.

3.0
From Street to Front Door

The design of the approach to a home significantly impacts on the perceived quality of development and can compromise the safety of users, bringing about unsociable spaces and higher management costs. Examples abound of developments with narrow, badly lit, oppressive corridors, more appropriate to a short-stay hotel than the entrance to someone's home. In many cases, the management regime vital to success in mixed tenure higher density developments is undermined by poor design. Achieving high quality design and management of such spaces, so as to enhance safety and access for all, is a core principle of this guide.

3.1 Entrance and Approach

The entrance to a house or a flat marks an important transition between public space and the private space of the home. Entrances should be designed with care as they can affect people's sense of ownership and security.

The entrance to a building, whether it serves an individual house or block of flats, should above all feel welcoming and safe.

For safety and security, entrances should be well lit and overlooked by the dwelling or by neighbouring properties. They should be visible from public spaces and easy to find, with a direct line of approach from the street.

Entrances should be distinct and can help enhance the character of the property. Clear naming and numbering of properties is important to assist residents, visitors and emergency services. Providing lighting and shelter from rain also helps to identify entrances from the street.

To provide access for all residents and their visitors, entrances should be designed with level thresholds. Paths from the street and car parking should have a suitable width and gradient for wheelchair users, with a level landing in front of any entrance door.

Requirements

3.1.1 All main entrances to houses, ground floor flats and communal entrance lobbies should be visible from the public realm and clearly identified. [15]

3.1.2 All entrances should be illuminated and have level access over the threshold, and main entrances should be covered. [16]

3.1.3 Any external footpaths within the curtilage of an individual dwelling should be a minimum of 1050mm wide.

3.1.4 Any external footpaths to a communal entrance within the curtilage of a development should be a minimum of 1200mm wide. [17]

3.1.5 The approach to all entrances should be level or gently sloping with a level landing of 1500mm x 1500mm clear of any door swing. [18]

NOTES:
15. based on Building for Life criteria no. 8
16. Lifetime Homes Criterion 4, www.lifetimehomes.org.uk
17. Lifetime Homes Criteria 2 and 4, www.lifetimehomes.org.uk
18. based on Lifetime Homes Criteria 2 and 4, www.lifetimehomes.org.uk

3.2 Shared Circulation

Forms of circulation are closely related with housing type. Shared circulation may be defined in two broad categories: 'cluster arrangements', where dwellings are arranged around a core including walk-up flats, mansion blocks and most tower blocks, and 'linear arrangements', where dwellings are accessed along a corridor or deck including atrium, deck-access and corridor access building types.

With good design, all types of shared circulation can result in successful housing. Even so, it should be recognised that choices made about the organisation and design of circulation can significantly affect the social dynamics of a building, management and security requirements, and the satisfaction of residents.

Important considerations for shared circulation include:

- The number of dwellings sharing a circulation core and landing
- Design considerations including width, enclosure, view, light and ventilation of circulation spaces
- The number and size of lifts
- The type of access control and other security measures
- Management arrangements for maintenance, cleaning and security

Number of dwellings sharing a landing

Security and management issues become more acute when higher numbers of people use the same space. Residents sharing access with a smaller number of others on their floor tend to enjoy greater privacy and a greater sense of ownership of the space outside their home. As a result they may take more responsibility for the upkeep of shared spaces. External circulation space shared by a small number of homes can also offer residents a valuable second external space for sitting out.

By contrast, increasing the number of dwellings sharing access on each floor increases the need for management and security, in the form of extra security doors, CCTV or a concierge for example.

This guide requires the number of dwellings sharing a circulation core to be limited to a maximum of eight per floor. A smaller number is considered preferable.

Design of shared circulation

Shared corridors and staircases should be sheltered, adequately lit and wide enough for people to pass each other comfortably. Communal stairs should also provide easy access with uniform risers and goings and suitable handrails.

Common entrances should lead to a hall large enough for people to manoeuvre with shopping and baby buggies, and for wheelchair users to move with ease. Entrance lobbies in larger developments will have special design considerations, as they have potential to be used for varying uses including post, storage for

cycles, buggies and/or mobility scooters, as well as a concierge desk where appropriate.

Shared circulation spaces will generally be expected to have good levels of natural light and natural ventilation. Views out will also enhance the quality of shared circulation. Buildings with double loaded corridors are discouraged but, where used, the design should aim to provide circulation spaces of a more generous size with a good quality of light and ventilation.

Access controls

Access doors should be easy to operate and manoeuvre through. Access control systems should be accessible to disabled people in terms of height and use of tactile numbers.

Access cores serving more than four dwellings should provide entry phones in all homes linked to a security door at the entrance. For access cores serving a larger number of dwellings, additional security measures should be provided such as an access control system with audio-visual verification. A management plan should establish the security measures in place and make provision for future maintenance.

A more dependable method of achieving security for access cores serving a larger number of dwellings appears to be provision of a concierge. For flexibility in larger developments where a concierge is not immediately viable, it is advisable to allow space for a concierge in the future.

The whole-life cost of a project will need to be considered when weighing up the ratio of dwellings to service cores. Cost savings achieved by maximising the number of dwellings on a core may be outweighed by the cost of a full-time concierge.

Management and maintenance

Management plans should demonstrate how shared circulation and communal areas will be cleaned and maintained (refer to Design Process section).

Requirements

3.2.1 The number of dwellings accessed from a single core should be no more than eight per floor. [19]

3.2.2 Communal circulation corridors should be a minimum of 1200mm wide. [20]

3.2.3 An access core serving 4 or more dwellings should provide an access control system, with entry phones in all dwellings linked to a main front door with electronic lock release. [21]

3.2.4 An access core serving more than 25 dwellings should consider additional security arrangements such as access control systems with audio-visual verification or provision of a concierge (where viable). [22]

Lift provision

Lifts should be provided in all apartment buildings where dwellings are entered at or above the third floor (fourth storey), measured from the main entrance level. A minimum of two lifts per core will be expected where dwellings are entered at or above the eighth floor (ninth storey) in order to reduce waiting times and to ensure accessibility for wheelchair users, older people and families with small children is maintained if one lift is out of service. Two lifts per access core will also be considered preferable for buildings below nine storeys where individual access cores serve 25 dwellings or more.

A relaxation of these requirements may be considered in small developments of fewer than 15 dwellings where the cost of lifts would make the development unviable.

Although no lifts are required in a building lower than four storeys and may not be required in a small development, provision must be made in the design and servicing of the building to install a lift in future, inside or outside the building, adjacent to existing landings.

Requirements

3.2.5 For all buildings with dwellings entered at the first and second floor (second and third storey), space should be identified within or adjacent to the common circulation for the future installation of a wheelchair accessible lift. [23]

3.2.6 All dwellings entered at the third floor (fourth storey) and above should be served by at least one lift. [24]

3.2.7 All dwellings entered at the eighth floor (ninth storey) and above should be served by at least two lifts.

3.2.8 Where lifts are provided, at least one lift in each access core must be wheelchair accessible with internal dimensions of 1100mm x1400mm and clear landing entrance of 1500x1500mm. [25]

NOTES:
19. Recommendation for living at superdensity, Design for Homes 2007
20. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 2
21. Secured by Design, New Homes, 2009
22. based on Secured by Design, New Homes 2009
23. DD266, Design for Accessible Housing: Lifetime Homes Code of Practice, British Standards Institution, 2007
24. Higher Density Housing for Families: A design and specification guide, London Housing Federation, 2004)
25. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 5

3.3 Car Parking

Car parking can have a great impact on the appearance and amenity of open spaces. All too easily, if there is inadequate thought and care, open spaces can come to be dominated by parked cars.

The various ways of accommodating parking – on the dwelling plot, on the site, and on the street – must be carefully integrated with the design of landscape and buildings, with the intention of maximising useable amenity and play space and creating a pleasant and well connected network of open spaces. To this end, designers should seek to minimise surface area dedicated to car parking.

The amount of on-site car parking provided with a new development should relate to the public transport accessibility of the area (PTAL level) and the proposed mix of dwelling sizes. In areas with good public transport accessibility and areas close to town centres, less parking should be provided. An element of car-free housing is encouraged where good accessibility and housing type allow.

Parking should be located close enough to the home to avoid undue inconvenience but consideration should also be given to avoiding noise in the home. It will often be advisable to make on-street parking spaces available for visitors and deliveries.

The type of parking for blocks of flats – on-street, on-site, courtyard, undercroft and underground – will be affected by the density and site area. Generally, multi-storey and undercroft parking should not be exposed on the ground floor in a way that results in a blank street edge.

The needs of disabled residents will need to be taken into account in developments with low car parking provision, so that adequate spaces, either on site or convenient dedicated on-street spaces, are identified for residents. Parking bays for disabled people should be longer and wider than standard bays so that drivers and passengers, either of whom may be disabled, can get in and out of the car easily and safely. Blue badge parking bays should be located adjacent to lift cores to keep travel distances to a minimum. Where blue badge parking is proposed on a public highway, the developer must ensure that local parking rules allow these spaces to be reserved for disabled residents only.

To facilitate an increase in the use of electric cars, it is recommended that electric charge points are included in all developments with parking, or that appropriate services should be provided to enable provision of charge points at a future date. Car clubs should also be considered in large developments.

Requirements

3.3.1 All developments in areas of good public transport accessibility and/or town centres should aim for less than one space per dwelling. Elsewhere parking provision should be as follows: [26]

- 4+ bedroom dwellings: 2 – 1.5 spaces per dwelling maximum
- 3 bedroom dwellings: 1.5 – 1 space per dwelling maximum
- 1-2 bedroom dwellings: 1 (or less than 1) per dwelling maximum

3.3.2 Each designated wheelchair accessible dwelling should have a car parking space 2.4m wide with a clear access way to one side of 1.2m wide. [27]

3.3.3 Careful consideration should be given to the siting and organisation of car parking within an overall design for open space so that car parking does not negatively affect the use and appearance of open spaces. [28]

NOTES:
26. London Plan, GLA, February 2008, Annex 4
27. based on DD 266:2007
28. based on Building for Life criteria no. 12

3.4 Cycle Storage

In the past, far too little cycle parking has been provided for housing in London. Provision must be increased to ensure cycling is increasingly adopted as a more sustainable mode of travel by London residents, as encouraged in both the London Plan and the Code for Sustainable Homes.

All new housing developments should offer secure, convenient, sheltered cycle parking to encourage people to use their bicycles for everyday journeys.

Cycle parking should be located in a convenient storeroom, private garden or secure common space close to the street. Out of the way locations have been shown to increase the occurrence of cycle theft.

Requirements

3.4.1 All developments should aim to provide storage for cycles as follows: [29]

- 1 per flat
- 1 per 1-2 bedroom house
- 2 per 3+ bedroom house

3.4.2 Cycle parking should be secure, sheltered and adequately lit with convenient access to the street. [30]

NOTES:
29. Cycle Parking Standards, TfL Proposed Guidelines, Transport for London, 2008
30. Cycle Parking Standards, TfL Proposed Guidelines, Transport for London, 2008

3.5 Refuse and Services

The London Plan requires suitable waste and recycling storage facilities in all new developments. [31] Care should be taken with the design of communal refuse facilities, as this can impact on the experience of the ground floor entrance and amenity space in developments.

For non-recyclable waste, a minimum 100 litres volume of storage space is required for a one-bedroom dwelling, and a further 70 litres is required for each additional bedroom as set out in the Code for Sustainable Homes. [32]

Where London boroughs have recycling collection schemes at least once a fortnight, the following requirements must be met:

- Where recyclable household waste is sorted after collection, at least one 30-litre container should be provided per dwelling in a suitable internal space (e.g. within the kitchen).
- Where recyclable household waste is sorted before collection, at least three containers with a total capacity of 30 litres should be provided per dwelling in a suitable internal space. Each bin must have a capacity of at least 7 litres. [33]

Communal bin enclosures and refuse stores should be accessible to all residents, including children and wheelchair users, and the design should facilitate refuse collection. They should be conveniently placed for residents and refuse collectors and preferably screened from view.

Refuse stores within buildings should be located to limit the nuisance caused by noise and smells and should be provided with a means for cleaning. Dwellings next to refuse stores need special consideration to preserve their amenity.

Composting at home is an effective way to recycle organic waste and reduce landfill. Composting facilities should be considered within gardens (where available) or as part of communal kitchen waste collection service for dwellings without gardens.

Utility meters and service connections can easily spoil the appearance of a development if they are not incorporated into the design of buildings at an early design stage. Meter and connection boxes should be concealed from view and situated for convenient access by utility companies.

Requirements

3.5.1 Large waste and recycling containers (e.g. Euro bins) should be easily accessible to all residents and the location should satisfy local requirements for waste collection.

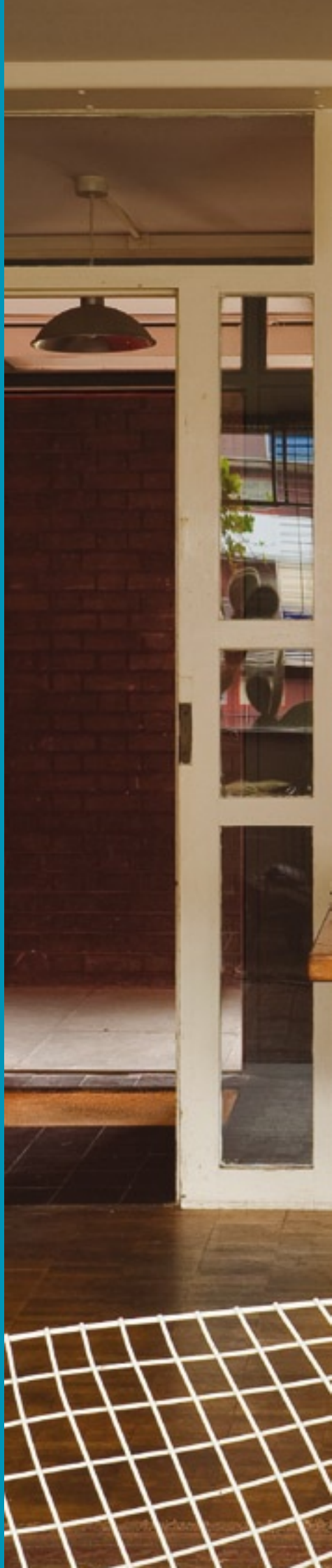
3.5.2 Non-recyclable waste storage facilities should be provided in new residential development in accordance with the Code for Sustainable Homes Technical Guide and local authority requirements.

3.5.3 Storage for recyclable materials should be provided in accordance with London Plan at the level required to achieve full credits under the Code for Sustainable Homes. [34]

NOTES:
31. London Plan, GLA February 2008, Policy 4A.22
32. Code for Sustainable Homes Technical Guidance, CLG, October 2008, WAS1
33. Code for Sustainable Homes Technical Guidance, CLG, October 2008, WAS1
34. Code for Sustainable Homes Technical Guidance, CLG, October 2008, WAS1

4.0 Dwelling Space Standards

Space – higher minimum standards – and homes that are adaptable to change as new occupants move in, circumstances alter or families grow, lie at the heart of London's new design standards for housing. This section sets out requirements for the size of new homes in London and guidance on the layout of rooms. Minimum sizes for bedrooms, private outdoor space and living areas are also provided to help ensure that homes can accommodate different patterns of use and are accessible to all potential occupants.



4.1 Internal Floor Area

'Crowded House', a report produced by Shelter in 2004 [35], brought to light levels of overcrowding in London that are above the national average. It gave evidence of the serious long-term effects of overcrowding on families. For children, it means an increased risk of infection and a lack of space and privacy that can affect how they perform at school. For parents, it is a barrier to providing opportunities for their children as well as a constant cause of anxiety and stress.

A study commissioned by the Mayor of London in August 2006 reported that space standards in the UK are below the European average; indeed, they are near the bottom of the range. The study also revealed that the difference in size between homes built by the public and private sector is greater in the UK than elsewhere in Europe. [36]

The central aim of this guide is to promote a new minimum standard for the size of housing in London. The quality of housing is affected by space as well as design, and good housing cannot be made from spaces that are too small.

Every home needs to provide spaces to gather in – indoors and outdoors – as well as space for solitary activities, privacy and quiet. Homes should have sufficient storage, space for work and study, and circulation spaces that provide for the needs of all potential occupants and their visitors.

Minimum gross internal floor areas (GIA) [37] for new homes have been established relative to the number of occupants. The GIA are derived from an inventory of the furniture commonly required in different rooms and take account of space for activities, access around furniture, and the requirements of the Lifetime Homes standards. Changing lifestyles and patterns of occupancy mean the rooms of a home are put to use in a greater variety of ways. The space requirements aim to ensure rooms are large enough to take on varying uses.

Space standards relate to the occupancy of a home rather than number of bedrooms, and the developer will be required to declare the number of occupants each dwelling has been designed to accommodate. The occupancy of private housing on the point of sale is not a reliable prediction of future levels of occupancy over the lifetime of a home. The only sensible assessment of occupancy is therefore the designed level of occupancy.

The space standards in this guide are minimum requirements and should not be taken as maxima. Housing which exceeds the minimum standards will always be encouraged.

Developers may need to make allowance to add floor area to the GIA in order to design successful housing and rational plot dimensions on a given site. In exceptional situations where all of the standards cannot be met, the priority should be to design homes to accommodate the furniture, access and activity space required for the intended number of occupants while not falling below the minimum GIA.

The choice to provide additional rooms - en-suite bathrooms and separate utility rooms, for example - is considered to be a solely commercial decision. Additional floor area will have to be provided beyond the minimum GIA to accommodate these rooms.

Requirements

4.1.1 The following space standards must be met as a minimum in new developments. [38] For dwellings designed for more than 6 people, allow approximately 10sq.m. per extra person.

Minimum dwelling by floor area	Dwelling type (bedroom/ persons)	Essential GIA (sq.m)
Flats	1b2p	50
	2b3p	61
	2b4p	70
	3b4p	74
	3b5p	86
	3b6p	100
	4b5p	90
	4b6p	99
2 storey houses	2b4p	83
	3b4p	86
	3b5p	96
	4b5p	100
	4b6p	107
3 storey houses	3b5p	102
	4b5p	106
	4b6p	113

NOTES:
35. Crowded House: cramped living in England's housing, Shelter, October 2004
36. Housing Space Standards, HATC for the GLA, August 2006, Page 8
37. See Appendix 3 for definition of how gross internal area is measured
38. Standard based upon spatial analysis of furniture requirements from Housing Quality Indicators Version 4, (former) Housing Corporation, April 2007 and Lifetime Homes criteria

4.2 Layout and Adaptability

The sections that follow provide guidance on the design of different rooms of a home. They show how the minimum space requirements for furniture and circulation can be met, taking into account the number of occupants and the range of activities each room may accommodate.

Designers should provide dwelling plans with dimensions clearly illustrated in order to show the design meets these requirements. Dwelling plans should also illustrate the position of furniture, activity zones and turning circles that are scheduled in Appendix 2.

If rooms of smaller dimensions are proposed, the onus will be on the designer to demonstrate that the dwelling accommodates all the furniture, access and activity space requirements for the intended number of occupants, as well as meeting Lifetime Homes standards.

Flexibility and adaptability are also key considerations in the design of the layout of a home.

Flexibility is the potential to use the rooms of a home in a variety of ways; for example, the ability to rearrange furniture in a room, make space to put up guests, convert a double bedroom into a twin bedroom, or create suitable spaces for work and study. Flexibility is determined by space and room layout, and also by the number of rooms in a home. Homes where the living areas and circulation spaces are entirely open-plan will not necessarily create the greatest degree of flexibility when the home is in use.

Adaptability is the potential to modify the spaces of a home by altering the fabric of the building. Designers should aim to provide built-in adaptability by designing the structure to allow new openings to be made in internal walls with relative ease. If the roof does not already include living accommodation, the roof space of houses with pitched roofs should be designed to allow conversion. Pitched roofs should preferably be constructed using panel systems rather than close-boarded trusses, and the top floor of the house should be designed to accommodate a stair.

Requirements

4.2.1 Dwelling plans should demonstrate that dwellings will accommodate the furniture, access and activity space requirements set out in Appendix 2

4.2.2 Dwelling plans should demonstrate how the construction of the building will allow for the internal reorganisation of rooms or the extension of the dwelling. [39]

NOTES:
39. based on Building for Life criteria no.18

4.3 Circulation in the Home

Corridors, hallways and stairs within the home should be designed for ease of access for all potential residents and visitors. To anticipate the changing needs of occupants, stairs in dwellings over more than one storey should allow for the installation of a stair lift, and space should be provided within circulation areas or habitable rooms for the provision of a through-floor lift.

A well planned home will have a minimum of space solely used for circulation. The aim should be to plan layouts efficiently and consider how circulation areas can accommodate other functions, including storage, study or utility uses where fire escape requirements allow.

Circulation should allow space near the entrance for off-loading outdoor items – prams, umbrellas, coats and boots – preferably without the need to pass through habitable rooms. It is recognised that this recommendation may lead to the inclusion of corridors in some flats, which could in turn compromise space in habitable rooms. These considerations should be balanced with care.

Circulation areas should be naturally lit where possible. Circulation spaces can serve an important role in natural ventilation, passive winter heating and thermal regulation. Consider how circulation spaces can provide stack ventilation or act as sun spaces or thermal buffers.

Requirements

4.3.1 The width of the doorways and hallways should conform to the specifications below:

- The clear opening width of the front door should be at least 800mm. [40]
- A 300mm nib is required beside the leading edge (latch side) of all doors at entrance level. [41]
- All internal doors should have a clear opening width of at least 775mm. [42]
- All hallways and corridors inside a dwelling should have a clear width of at least 1050mm. [43]

4.3.2 The design of dwellings over more than one storey should provide space for (a) provision of a stair lift, and (b) a suitably identified space for a through-the-floor lift from the ground to the first floor. [44]

NOTES:
40. based on Lifetime Homes, www.lifetimehomes.org.uk, Criterion 6
41. based on Lifetime Homes, www.lifetimehomes.org.uk, Criterion 6
42. DD 266:2007, Design of Accessible Housing: Lifetime Home Code of Practice, British Standards Institute, December 2007 (The DD 266 requirements for door and corridor widths is clearer and more succinct than the current Lifetime Homes standard)
43. DD 266:2007, Design of Accessible Housing: Lifetime Home Code of Practice, British Standards Institute, December 2007
44. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 12

4.4 Living/Dining/ Kitchen

The minimum floor areas for living room, kitchen and dining areas are combined in this guide as a set of aggregate living areas for different occupancy levels. The intention is to allow the designer the freedom to organise and combine these spaces in different ways. Where housing is being designed for specific cultural needs, this flexibility will be particularly important.

When choosing the combination and layout of rooms, designers should consider a variety of situations of the rooms in use by family members, as a group or separately, with and without guests. An entirely open-plan layout will often be less satisfactory than two separate rooms, or interlocking spaces that achieve a degree of separation for one living space and for the work area of the kitchen. Families tend to benefit when children and adults are able to occupy separate living spaces, and two separate rooms should generally be provided in all larger family homes .

The usefulness of a room is affected by the width of the room as well as the floor area. To allow sufficient space for circulation around furniture and adequate daylight in deeper rooms, the guide requires that the minimum width of a room used as a living room is 3.2m at the narrowest point.

People should be able to see out of living room windows whilst seated by providing maximum glazing height of 800mm from the floor, though care should be given to retain privacy. Wheelchair users should be able to operate at least one window in each room.

Requirements

4.4.1 The following aggregate floor areas for living/kitchen/dining areas should be met:

Floor area for the aggregate of the living/ dining area are:	**(sq.m)**
1 person / 2 person	23
3 person	25
4 person	27
5 person	29
6 person	31

4.4.2 The minimum width of a living area should be 3.2 metres at the narrowest point. [45]

4.4.3 Dwellings with three bedrooms or more should have two living spaces, e.g. living room and kitchen-dining room.

4.4.4 There should be space for turning a wheelchair in dining areas and living rooms and adequate circulation space for wheelchairs elsewhere. [46]

4.4.5 A living room or kitchen-dining room should be at entrance level. [47]

4.4.6 Living room window glazing should begin at 800mm or lower and windows should be easy to open and operate. [48]

4.5 Bedroom

Where space allows, a bedroom may be used for home working or relaxing in quiet, away from the social spaces of the home. Children and young people need space in a bedroom for homework and private study, play and hobbies, entertaining friends, and spending time alone.

The minimum floor areas – 8.4 sq.m. for a single bedroom and 12.8 sq.m. for double and twin bedrooms – allow for a variety of activities and provide space for the access of wheelchair users. Double and twin bedrooms have the same minimum floor area and both should have a minimum width of 3m to allow the rooms to be used as either type of bedroom. It should be noted, the floor space occupied by built-in wardrobes will count towards the floor area of the bedroom.

All homes should be able to anticipate the changing needs of residents. If a home is more than one storey, the layout of the home should be capable of providing space for a bed at entrance level to help with a temporary change in circumstances, e.g. a household member with a broken leg or recovering from a hip operation. The design of all homes should also make allowance for a reasonable route for a potential tracking hoist from a main bedroom to the bathroom.

Requirements

4.5.1 The minimum area of a single bedroom should be 8.4 sq.m. The minimum area of a double bedroom should be 12.8 sq.m.

4.5.2 The minimum width of double and twin bedrooms should be 3 metres at the narrowest point.

4.5.3 In homes over more than one storey, there should be space on the entrance level that could be used as a convenient bed-space. [49]

4.5.4 The design should provide a reasonable route for a potential hoist from a main bedroom to the bathroom. [50]

NOTES:
45. Quality Standards: Delivering Quality Places, (former) English Partnerships, November 2007, Page 16
46. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 7
47. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 8
48. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 15
49. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 9
50. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 13

4.6 Bathroom

The introduction of extra bathrooms often results in the loss of space from habitable rooms.[51] The minimum gross internal areas (GIA) provide space for one bathroom in dwellings occupied by up to five people and one bathroom and an additional WC in dwellings occupied by more than five people. As per the Lifetime Homes standard, the GIA also allows for a fully accessible WC in all flats, and the inclusion of a WC at entrance level for homes that are 2 storeys and above. Floor space for bathrooms not included in the requirements will need to be provided in addition to the minimum GIA.

Bathrooms must be designed for adaptation to meet the needs of future occupants. WCs should have a clear space of 1100mm in front and 700mm to one side to allow for a wheelchair user to manoeuvre.

Lifetime Homes standards also require that the build-up of the bathroom floor (for flats on one level or for an entrance level WC if a home is 2 storeys or above) should allow the installation of a level access shower. Bathroom layouts should indicate an area of 1000mm x 1000mm for a shower (which may overlap with a bath) to allow an accessible shower to be installed in the future. Walls in bathrooms and WCs should also be capable of taking handrails, and wall reinforcements should be provided between 300 and 1500mm from the floor.

Requirements

4.6.1 Dwellings designed for an occupancy of 5 persons or more should provide a minimum of one bathroom and one additional WC.[52]

4.6.2 All dwellings should provide wheelchair accessible entrance level WC, with drainage provision enabling a shower to be fitted in the future.[53]

4.6.3 Bathrooms should be designed to incorporate ease of access to the bath, WC and wash basin.[54]

4.6.4 Walls in bathrooms and WCs should be capable of taking adaptations such as handrails. Wall reinforcements should be located between 300 and 1500mm from the floor.[55]

NOTES:
51. Housing Space Standards, HATC Report for the Mayor of London, August 2006
52. Housing Quality Indicators Version 4, (former) Housing Corporation, April 2007, Page 25
53. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 10
54. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 14
55. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 11

4.7 Storage and Utility Spaces

Many people consider lack of storage to be a major problem in new homes. [56]

Minimum areas for storage cupboards are set out in the adjacent requirement. The space has been included in the minimum GIA. Storage cupboards should be provided in addition to the furniture listed in Appendix 2 and may be located in any room or circulation area.

Flat layouts should make suitable provision for waste and recycling bins, washing machines and drying clothes. Space for a washing machine and recycling bins is included in the furniture schedule for the kitchen. Clothes drying may be accommodated in circulation areas, bathrooms and bedrooms. In larger flats and houses, a separate utility room for washing and drying clothes may be more desirable.

Requirements

4.7.1 A storage cupboard with a minimum floor area of 0.8 sq.m. should be provided for 1-2 person dwellings. For each additional occupant, a minimum of 0.15 sq.m. storage area should be provided. [57]

4.7.2 Dwelling plans should demonstrate that suitable space is provided for a washing machine, for drying clothes, and for waste and recycling bins within the home.

NOTES:
56. What Homebuyers Want, CABE, 2005
57. Housing Quality Indicators Version 4, (former) Housing Corporation, April 2007, Page 29

4.8 Study and Work

Flexible working patterns, wider access to home computing and developments in internet technology are making it possible for more people to work from home. Occupants of all ages will also require space in the home to study.

Space for work and study may be included within bedrooms, living rooms, extended landings and broad corridors. Consider where power and data sockets are located in relation to potential spaces for desks.

Requirements

4.8.1 Dwelling plans should demonstrate that all homes are provided with adequate space and services to be able to work from home.

4.9 Wheelchair User Dwellings

More Londoners are living longer and more older people are choosing to remain in their own homes for longer, rather than go into residential institutions. However, there is a severe shortage of wheelchair accessible housing in London. As only 1% of the housing stock is replaced each year most people will continue to live in housing that is already built, and most of these existing homes do not adapt easily to enable disabled and older people to continue living independent lives.

This creates an underlying need to improve the accessibility of all new homes, taking into account what space or design features people will require to be able to do this successfully. The London Plan and the draft London Housing Strategy therefore require all homes to be built to Lifetime Homes standards , which are based on the idea that, by careful design, homes can be adapted in response to the changing needs of their occupants and allows disabled people, including wheelchair users, to visit the home and use the living room and bathroom. These requirements have been mainstreamed in this guide.

While suitable and offering choice for some disabled people, Lifetime Homes will not necessarily have the additional spatial requirements all wheelchair users need to live in the home easily and comfortably, thereby maximising their independence. To access every room and use all the facilities of the dwelling some wheelchair users need more manoeuvring space, more storage space for additional equipment and larger rooms, which may make the footprint of a home designed to be wheelchair accessible different to other dwellings.

The Mayor's London Plan and Draft London Housing Strategy therefore seek to ensure that at least 10% of new housing is designed to be wheelchair accessible or easily adaptable for a wheelchair user (easily adaptable means without the need to do substantial structural alterations to the home such as moving walls to enlarge rooms, but would include smaller alterations such as the installation of grab rails, replacing a bath with a shower or changing kitchen units). The key requirements for wheelchair accessible housing are set out in the GLA's Best Practice Guide on Wheelchair Accessible Housing.

Requirements

4.9.1 Ten per cent of new housing should be designed to be wheelchair accessible or easily adaptable for residents who are wheelchair users in accordance with the GLA Best Practice Guidance on Wheelchair Accessible Housing. [58]

NOTES:
58. London Plan, GLA February 2008, Policy 3A.5 and Best Practice Guidance on Wheelchair Accessible Housing, GLA September 2007

4.10 Private Open Space

Private open space is highly valued and should be provided for all houses and flats.

Private open space standards have been established in the same way as internal space standards, by considering the space required for furniture, access and activities in relation to the number of occupants. The minimum areas provide sufficient space for clothes drying, a meal around a small table, and for a family and visitors to sit outside.

Dwellings on upper floors should all have access to a terrace or balcony, and the use of roof areas for additional amenity or garden space is encouraged. Houses and ground floor flats should preferably have private gardens.

In exceptional circumstances where it is not suitable to provide private open space, the space requirement should be met with an enclosed winter garden or internal living space of the same size.

All private open spaces should be wheelchair accessible. The threshold should be level and weather-tight with an upstand not exceeding 15mm. Balconies should be at least 1.5m deep to allow adequate access and circulation around furniture.

Where possible, gardens should have separate direct access in addition to access through the home. Gardens should provide a paved area for garden furniture and areas of lawn and planting, which are important for amenity, biodiversity and sustainable urban drainage. Consider making hard surfaces porous and/or permeable as part of a sustainable urban drainage strategy.

Private outdoor spaces will be used for drying clothes, and the requirements allow space for 4m of drying line for 1-2 bedroom dwellings and 6m for 3+ bedroom dwellings, which could be in the form of a clothes rack, rotary dryer or drying line.

Balconies should preferably be located next to a dining or living space and should preferably receive direct sunlight. They should be designed to provide some shelter and privacy to neighbouring properties. This may be achieved using screens or by setting the balcony back within the facade.

Balconies should have solid floors draining to a downpipe. Where balconies overlook noise sources, solid parapets and absorptive soffit materials should be considered for their acoustic benefits. In addition to clothes drying, balconies tend to be used for storage of household items, and for this reason, solid balustrades may be preferable.

Secured by Design principles should be incorporated in the design of all private outdoor spaces. For example, fences and balconies (as well as communal bins and fuel stores) should be designed so as not to provide climbing aids to gain access into a property.

Requirements

4.10.1 A minimum of 5 sq.m. of private outdoor space should be provided for 1-2 person dwellings and an extra 1 sq.m. should be provided for each additional occupant: [59]

Minimum sizes for private open space:	Unit type (persons)	Minimum (sq.m)
Flats/Houses	1p/2p	5
	3p	6
	4p	7
	5p	8
	6p	9
	7p	10
	8p	11

4.10.2 All private outdoor space should have level access from the home. [60]

4.10.3 Balconies should have a depth of not less than 1.5 metres. [61]

NOTES:
59. Spatial analysis using furniture requirements from Housing Quality Indicators Version 4, April 2007, plus drying space and private open space requirements in the Code for Sustainable Homes Technical Guide, October 2008, ENE4 and HEA3
60. Lifetime Homes, www.lifetimehomes.org.uk, Criterion 4
61. Quality Standards: Delivering Quality Places, (former) English Partnerships, November 2007, Page 16

5.0
Home as a Place of Retreat

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Living in this city provides both unique opportunities and challenges. Homes can be overlooked by a range of uses quite hostile to successful residential development. There can be noise, activity, the hurly burly of global, city living. Combine problems of privacy with barriers to daylight and sunlight and you have a major design challenge to achieve the kinds of standards or experiences – the stillness, silence, well-being - people seek in their homes whether in the country or the city. We are determined to see development which achieves these standards and experiences – and we believe the solutions are to hand to suit the diverse challenges of this city.

5.1 Privacy

One advantage of living in the city should be the opportunity to look out on and enjoy the shared open spaces immediately around the home. At the same time, the home should offer privacy and the possibility of retreat from the world outside. The interior should be a comfortable private setting for family and individual pursuits, personal relationships and relaxation.

In the past, design guidance for privacy has been concerned with achieving visual separation between dwellings by setting a minimum distance of 18-21m between facing homes. This guide recognises that 18m is a useful yardstick for visual privacy, but rigid adherence to the 18m rule can limit the variety of urban spaces and housing types that are possible and desirable in the city.

Instead, design proposals will be required to demonstrate how the design provides for privacy within the home through a variety of measures. Among them, designs should provide a reasonable distance between dwellings – preferably 18m or more on one aspect of a dwelling – and designers should consider the position and aspect of habitable rooms, avoiding directly facing windows in dwellings standing opposite one another, and the placement of gardens and balconies.

A garden, set-back or buffer strip should be considered where ground floor dwellings face onto a public thoroughfare, e.g. a street, lane, courtyard or access deck. However, the need for this will be affected by the type and character of the thoroughfare, its width, the quantity of traffic, and the presence of existing gardens and trees.

Requirements

5.1.1 Design proposals must demonstrate how an adequate level of privacy has been provided for habitable rooms within each dwelling. [62]

NOTES:
62. Secured by Design New Homes 2009, Association of Chief Police Officers, 2009

5.2 Dual Aspect

Providing a home with two aspects can have many benefits: better daylight, cross ventilation, a choice of views, access to a quiet side of the building, and greater flexibility in the use of rooms and the potential for future adaptability to re-arrange rooms within the home. Dual aspect design should be the default.

A dual aspect dwelling is defined as one with openable windows on two external walls, which may be opposite or adjacent around a corner. One aspect may be towards an external access deck, courtyard, or ventilated atrium.

Single aspect flats are difficult to naturally ventilate and more likely to overheat, an increasing concern for homes in London due to anticipated temperature increases from climate change coupled with the urban heat island effect where London is inherently warmer than its surrounding areas. Single aspect flats will only be permitted where the design is shown to allow adequate daylight and ventilation to all habitable rooms.

Requirements

5.2.1 There will be a presumption against single aspect units. In sites where dual aspect dwellings may be impossible or unfavourable [63], the design must demonstrate how a good level of natural ventilation and daylight will be provided to each habitable room.

NOTES:
63. may include small sites flanked by an existing party wall on more than one side, or sites where more than one aspect impinges on the privacy of an existing building

5.3 Noise

Noise from the street and adjoining properties is an important cause of stress, sleep disturbance and friction between neighbours. Recent research also suggests that privacy issues in new homes are now predominantly noise-related rather than visual. [64] This refers not only to invasive noise within the home, but also that people do not want their private conversations overheard by neighbours.

All housing should be built with acoustic insulation and tested to current Building Regulations standards, but acoustic insulation should not be relied upon as the only means of limiting noise.

Internal layouts should be planned to limit the effect of noise from adjoining properties in sound sensitive rooms of the home, for example by arranging bedrooms of adjacent properties beside or above one another, or arranging hallways, kitchens and cupboards next to party walls where noise transfer is more likely.

To limit the effect of external noise, the aim should be to arrange living rooms and bedrooms to face quieter external spaces. Quiet external spaces should be created within larger developments.

Further advice is given in of the London Plan SPG on Sustainable Design and Construction. [65]

NOTES:
64. Perceptions of Privacy and Density in Housing, Design for Homes, 2003
65. London Plan SPG on Sustainable Design and Construction, section 2.4.2

5.4 Floor to Ceiling Heights

Generous ceiling heights make a home feel spacious and when matched with generous window sizes, high ceilings can improve the quality of natural light and ventilation in a home. High ceilings are especially important where daylight is limited, for example ground floor rooms in built-up urban contexts. Taller rooms are more flexible to a variety of uses and may allow homes to take on other functions in future.

All dwellings will be expected to have a minimum floor to ceiling height of 2.6m in all habitable rooms. Single aspect habitable rooms should have a ceiling height greater than or equal to the depth/2.5 and not less than 2.6m (see worked example in requirement 5.4.2 opposite). Ceiling heights below 2.6m will be possible in circulation areas and other rooms. The inclusion of taller spaces in a home exceeding 2.6m in height is encouraged.

Requirements

5.4.1 The minimum floor to ceiling height in all habitable rooms is 2.6 metres.

5.4.2 The minimum ceiling height for single aspect habitable rooms is indicated in the table below:

Worked Example	H (floor to ceiling height in metres)	D (depth of habitable room in metres)
Single Aspect Room H≥D/2.5	2.6:	5
	2.6:	6
	2.8:	7
	3.2:	8

5.5 Daylight and Sunlight

As well as reducing the need for artificial light and contributing passive energy for winter heating, the main impact of good daylighting in the home is on the comfort and wellbeing of occupants. A good quality of natural light makes the interior of the home more pleasant and enjoyable to occupy.

The quality and quantity of natural light in an interior depends both on the design of the building – the size and position of windows, the depth and shape of rooms, the colours of internal surfaces – and the presence of buildings and objects in the surrounding environment.

All dwellings should achieve adequate levels of daylight in habitable rooms. In addition, all dwellings should be designed to receive direct sunlight in at least one habitable room in all months of the year.

Good daylighting is promoted by the London Plan SPG on Sustainable Design and Construction [66]. The Code for Sustainable Homes provides technical guidance on designing for adequate internal daylighting and requires daylight levels to be calculated using the BRE assessment method.

For the purpose of this guide, the following rules of thumb are offered as basic design guidance for achieving adequate levels of daylight:

- In all habitable rooms (bedrooms, living rooms, kitchen-dining rooms)provide an area of glazing equivalent to 20 per cent of the floor area
- If this results in an opening above 25 per cent of the area of the external wall, the building will benefit from solar control glass or external shading
- Room depth should be less than 2.5 x the height of the top of the window.

Daylight will be more uniformly distributed in a space if windows are horizontal, or where they are vertical if they are spread out rather than concentrated. If possible, place windows on more than one wall, as bilateral lighting instead of unilateral lighting is better for glare reduction and light distribution. Where windows are placed adjacent to other interior walls, the walls will act as a low brightness reflector. Light shelves such as very deep window sills can help bounce light into the depth of a room, whilst shades can help reduce overheating in summer.

The design of the window will also have a bearing on the quality of light in the home. An ordinary window will create an elevated illuminance level (measure of the illumination of a surface) just inside a room, which will rapidly drop to inadequate levels the deeper the plan. It may cause direct glare and overheating and/or excessive brightness ratios.

Requirements

5.5.1 Glazing to all habitable rooms should be not less than 20 per cent of the internal floor area of the room.

5.5.2 All homes must provide for direct sunlight to enter at least one habitable room for part of every day.

NOTES:
66. London Plan SPG on Sustainable Design and Construction, GLA, May 2006, Page 55

6.0 Climate Change Mitigation and Adaptation

The Mayor is committed to making London a world leader in tackling climate change and is taking steps to ensure London develops a low carbon future and manages its resources responsibly and effectively. London is already feeling the effects of climate change. It is particularly vulnerable to flooding, subsidence, water scarcity and overheating. Climate change will increase the probability and severity of these events through rising sea levels, heavier winter rainfall, higher tidal surges, hotter summers and less summer rainfall. New housing can make a significant contribution to tackling climate change and to reducing carbon emissions.

6.1 Environmental Performance

Both central government and the Mayor have set demanding carbon-reduction targets with the aim of all new housing being zero carbon by 2016.

The Code for Sustainable Homes is the national performance standard to achieving sustainable housing. All new publicly funded homes in London are expected to adhere to a minimum requirement of Level 3 between 2008 and 2011 as set out in the draft London Housing Strategy. However, there are opportunities to go much further and priority is already being given to funding homes that exceed level 3, with the Mayor's Targeted Funding Stream supporting schemes that reach levels 5 or 6.

As this guide is intended to apply to the next funding round for new affordable homes from 2011 onwards, requirement 6.1.1 opposite sets a higher minimum target of Code level 4 reflecting the commitment to move towards zero carbon housing.

In achieving this, the London Plan requires the highest standards of sustainable design and construction and that all new developments make the fullest contribution to the mitigation of and adaptation to climate change. This means being able to adapt to and build for the impacts of climate change - through minimising overheating, reducing flood risk, improving water efficiency, and protecting and enhancing green infrastructure - as well as taking steps to mitigate further climate change by reducing greenhouse gas emissions, principally carbon dioxide.

This section specifically highlights relevant requirements of the London Plan and supporting guidance to help achieve the targets in the Code for Sustainable Homes.

Requirements

6.1.1 All homes must achieve minimum level 4 of the Code for Sustainable Homes

6.1.2 All homes should adhere to London Plan policy on sustainable design and construction and make the fullest contribution to the mitigation of and adaptation to climate change

6.2 Energy/CO^2

The Mayor seeks to achieve an overall reduction in London's carbon dioxide emissions by 60 per cent below 1990 levels by 2025 and expects that 25 per cent of the heat and power used in London will be generated through the use of localised decentralised energy systems by 2025.

Meeting a minimum Code Level 4 requires a 44 percent improvement in energy efficiency compared to 2006 Part L Building Regulations. Whilst the Code does not prescribe any specific measures to achieve this target, the London Plan requires that all developments adopt the following hierarchy in providing energy for heating, lighting, and cooling the home:

- Lean: using less energy, by incorporating sustainable design and construction measures (London Plan policy 4A.3)
- Clean: supplying energy efficiently, by prioritizing decentralised energy generation (London Plan policies 4A.5 and 4A.6), and
- Green: using renewable energy (London Plan policy 4A.7). [67]

Using less energy

The first priority in the Mayor's energy hierarchy is for developments to demonstrate that they have utilised more energy efficient design to reduce energy consumption. This means minimising the need to use energy as much as possible through a more efficient building fabric as well as using the site layout to maximise natural solar energy and ventilation, before decentralised or renewable energy technologies are considered. Key design considerations to minimise energy use include:

- Passive solar design including orientation and location of windows
- Use of natural ventilation
- Energy efficient window glazing and frames
- Building envelope air tightness
- Appropriate use of thermal mass and insulation
- Installation of energy efficient lighting and appliances

Passive solar design refers to designing the form, fabric and internal layout of buildings so that natural light and solar heat gains are controlled thereby reducing the need for electric lighting, space heating, and mechanical ventilation and cooling (also see section 5.4 daylighting).

However, designers must also take care to avoid overheating. More energy efficient building designs that effectively trap heat within the home, combined with predicted warmer temperatures due to climate change and London's urban heat island effect (where urban areas experience higher ambient temperatures than surrounding rural areas), mean homes will be increasingly at risk of overheating. New housing needs to be designed for the climate it will experience over its design life.

This design guide seeks the development of dual aspect dwellings to promote natural ventilation and minimise overheating (see section 5.2). The London Plan Sustainable Design and Construction SPG suggests further solutions for preventing overheating, including providing a wider aspect to promote natural ventilation and using shading devices to prevent too much solar gain in the summertime. Planting deciduous trees can be used to reduce solar gain during the summer months, though care should be taken to ensure

that trees do not impede opportunities for natural surveillance.

Supplying energy efficiently

Decentralised energy generation is a series of local systems generating heat and power, at or near the point of use, connected to local distribution networks. Decentralised energy schemes make more efficient use of energy than large-scale generation via the national grid.

The London Plan expects all major new developments to connect into existing heating and cooling networks, or provide site-wide CHP networks where feasible. Where future heating and cooling network opportunities do not exist yet but are identified, developments should be built 'heat network-ready'. [68]

Where CHP is not feasible, developments should still incorporate communal heating and provide space for a central boiler plant room at basement or ground level in larger developments. This ensures the carbon reduction potential of a development is not capped at the time of construction, and, for example, a 'Code level 3' home still has the opportunity to become 'Code level 5' home at some point in the future by changing its fuel source or how energy is supplied.

Using renewable energy

The provision of on-site renewable energy generation is also another valuable method of reducing energy use. Development proposals should seek to provide a reduction in carbon dioxide emissions through the use of onsite renewable energy generation where it is feasible. Renewable energy technologies include: solar thermal systems, biomass fuelled heating and/or power, ground source heating and cooling, air source heat pumps, photovoltaics, wind power, and renewable energy from waste.

Requirements

6.2.1 Development proposals must adopt the following Mayor's energy hierarchy:

- using less energy (by incorporating sustainable design measures)
- supplying energy efficiently (by prioritising decentralised energy generation)
- using renewable energy (incorporating the London Plan's presumption of 20% renewable energy)

NOTES:
67. London Plan, GLA, February 2008, Policy 4A.1
68. London Plan, GLA, February 2008, Policy 4A.6
69. London Plan, GLA, February 2008, Policy 4A.7

6.3 Water

Internal and external water use

Water is a vital and increasingly scarce resource for which there is rising demand. The predicted hotter, drier summers due to climate change may also increase the overall demand for water whilst reducing availability, and stormier rainfall patterns are likely to make it more difficult to retain the water that does fall. Combined with London's anticipated population growth, it is important to ensure that London's future water resource needs are sustainable.

To achieve Code Level 4, a maximum water consumption of 105 litres per person per day is established. Policy 4A.16 of the London Plan, 'Water Supplies and Resources', reiterates this target and states that future revisions of the Plan will take into account the currently prevailing standards of the Code.

Flood risk and managing surface water run-off

London is prone to flooding from five sources: tidal, fluvial, groundwater, surface and sewer flooding. Climate change will increase the probability of flooding from all these sources (except perhaps groundwater). Reduction in flood risk can be achieved through appropriate location, design and construction of development and the sustainable management of surface-water run off.

Managing surface water run-off from developments is a mandatory requirement of the Code for Sustainable Homes. The Technical Guide accompanying the Code sets targets for greenfield runoff for sites of less than 200 hectares and for those of 200 hectares or more.

A further two credits are available under the Code with regard to flood risk. The aim is to encourage housing development in low flood risk areas or to take measures to reduce the impact of flooding on houses built in medium or high risk areas. Policies 4A.12, 'Flooding', and 4A.13, 'Flood Risk Management', set out the London Plan approach to flood risk management.

Flood risk should be assessed in accordance with Government guidance established in PPS25 and where development in areas at risk from flooding is permitted management and mitigation measures should be implemented.

London Plan policies 4A.14, 'Sustainable Drainage' and 4A.11, 'Living Roofs and Walls', set out the expectations for developers to manage flood risk.

Sustainable Urban Drainage Systems (SUDS) can comprise a range of techniques including soakaways, green roofs, soft landscaping, holding ponds, swales and reed beds. London Plan policy 4A.14 states that SUDS should be incorporated within development unless there are practicable reasons for not doing so, which may include local ground conditions or the density of development. Where this is the case, the London Plan requires developers to manage as much run-off as possible on-site and explore sustainable methods for managing the remainder as close as possible to the site.

Living roofs and walls should be incorporated within developments where feasible. Living roofs can have the added benefit of providing private amenity space, contributing to the biodiversity value of the area and reducing the demand for supplied water. They can also reduce heat

loss from the building and thus reduce energy consumption, fuel costs, air pollution and the urban heat island effect.

Requirements

6.3.1 New dwellings should be designed to ensure that 105 litres of water is consumed per person per day as a maximum. [70]

6.3.2 Where development in areas at risk of flooding is permitted in accordance with PPS25, new development should incorporate flood resilient design. [71]

6.3.3 New development should adhere to standards for surface water run-off as set out in the Code for Sustainable Homes. [72]

6.3.4 New development should incorporate space for SUDS, Living Walls and Roofs unless there are demonstrably practical and feasible reasons for not doing so. [73]

NOTES:
70. London Plan, GLA, February 2008, Policy 4A.16 and Code for Sustainable Homes Technical Guidance, DCLG, October 2008, WAT1
71. London Plan, GLA, February 2008, Policies 4A.12 and 4A.13 and Code for Sustainable Homes Technical Guidance, DCLG, October 2008, SUR2
72. Code for Sustainable Homes Technical Guidance, DCLG, October 2008, SUR1
73. London Plan, GLA, February 2008, Policies 4A.11 and 4A.14

6.4 Materials

The Code assesses the embodied environmental impacts of construction products and materials used in roof, external walls, internal walls, upper and ground floors, and windows of buildings. The relevant Green Guide rating [74] is used to rate the materials used and to distribute credits across these aspects of the building envelope. This is a mandatory requirement of the Code, and at least three of the five aspects of the building envelope should achieve a Green Guide rating of between A+ and D.

A further nine credits are available with regard to the responsible sourcing of materials.

The London Plan Sustainable Design and Construction SPG also provides standards for the use of materials based upon the principles of:

- Procure and use materials sustainably;
- Select materials with low lifecycle impacts;
- Optimise use of local materials; and
- Use an appropriate palette of materials [75]

Requirements

6.4.1 All new residential development must meet the requirements of the Code Level 4 with regard to using materials with lower environmental impacts over their lifecycle [76]

6.4.2 All new residential development should accord with Code Level 4 and the London Sustainable Design and Construction SPG with regard to the sourcing of materials [77]

NOTES:
74. The Green Guide to Specification, www.thegreenguide.org.uk
75. London Plan SPG on Sustainable Design and Construction, section 2.3.3
76. Code for Sustainable Homes Technical Guidance, DCLG, October 2008, MAT1
77. Code for Sustainable Homes Technical Guidance, DCLG, October 2008, MAT2 and MAT3 and London Plan SPG on Sustainable Design and Construction, May 2006

6.5 Ecology

Development should be directed away from land of ecological and wildlife value and, where possible, enhances the ecological value of a site. The Code seeks to protect existing ecological features from damage during construction and promotes the most efficient use of a building's footprint by ensuring that land and materials are optimised across the development.

Policy 3D.14 of the London Plan, 'Biodiversity and Nature Conservation', promotes a proactive approach to the protection, promotion and management of biodiversity across the capital. The GLA's best practice guidance relating to Development Plan Policies for Biodiversity provides advice on the conservation and enhancement of the biodiversity and natural heritage of London [78]. Proposals for development should give full consideration to their direct and indirect effects.

Requirements

6.5.1 The design and layout of new residential development should avoid areas of ecological value and seek to enhance the ecological capital of the area where possible in accordance with GLA best practice guidance on biodiversity and nature conservation. [79]

NOTES:
78. London Plan Best Practice Guidance on Development Plan Policies for Biodiversity, November 2005
79. London Plan, GLA, February 2008, Policy 3D.14 and Code for Sustainable Homes Technical Guidance, DCLG, October 2008, ECO1-4

6.6 Other Considerations

The Code covers a range of other tradable criteria, including pollution, health and wellbeing and management.

- Pollution: The Code measures pollution inside the building resulting from insulation and heating systems. The London Plan sets out an approach to improving air quality in Policy 4A.19 and Contaminated Land in Policy 4A.33. Further information is provided in section 2.4.3 of the London Sustainable Design and Construction SPG, based on the principles of minimising emissions from building services plan and protecting internal air quality.

- Other criteria covered in the Code such as waste and recycling, Lifetime Homes, daylighting and noise or covered separately in other areas of this guide. Some of these which are currently tradable in the Code or mandatory only at higher levels (such as Lifetime Homes) are already mandatory for London as required by London Plan policies and indicated in this guide.

Design Process

Introduction

Achieving design excellence is not simply about applying a set of design standards. It is about having a design team who are capable of interpreting those standards and applying them in a thoughtful, coherent and legible way. It is about a shared commitment to a successful outcome, and importantly it is about being clear in your requirements and protecting the quality of the project throughout the process. The success of a development will also be influenced by a considered lettings policy and the quality of the ongoing management and local services. A successful outcome is, therefore, about commitment to good design based on a sound understanding of the needs of who will live there and longer-term investment in a development.

Too often the original aims and objectives of a project get lost and the quality of schemes becomes compromised as issues of procurement take over. This may be to do with the consideration of highest capital receipt instead of best value in the case of land release, or prioritising time and cost over quality in the case of design and construction. This sections aims to summarise some of the key requirements to being a good client and identifies what project managers should consider when delivering a project.

Being a good client

- Identify a design champion who can provide strong client leadership throughout the project.
- Draft a realistic programme for procurement and delivery, allowing enough time at the right time particularly for the production of Stage E information.
- Identify best practice exemples that offer models of what you are aiming for.
- Develop and communicate a clear brief (refer to next section).
- Make a realistic financial commitment from the outset that considers best value, whole life costings and ongoing management.
- Adopt integrated processes: consider project partnering and adopt forms of contract that allow for the retention of the design team throughout the project, recognising the architect as the design team leader.
- Find the right people for the job: assess project, design and delivery team's commitment to quality and understanding of design issues and relevant experience in order to achieve best value.
- Respond and contribute to the context of the development.
- Adopt the design and sustainability standards advocated in this guide.
- Sign off all key stages both during the design process and construction to ensure that what is delivered is what was proposed. [80]

NOTES:
80. Based on Creating Excellent Buildings: a guide for clients, CABE, October 2003

Design Process

Brief writing

A good project brief needs a clear and legible structure. Defining the requirements of the project and terms of engagement from the outset are essential to avoid ambiguity further down the line. If requirements, such as design quality standards, are not stated from the outset, then it is harder and more costly to add such requirements once contracts and financial offers have been agreed. The development brief should reflect the requirements set out in this guide. A project brief should be drafted in collaboration with the future managers of a scheme such as RSLs.

At a minimum, development briefs should include the following:

1.0 Introduction including the organisation's overall vision and the project's role in meeting it

2.0 Aims and objectives for the project to act as measures for its success or failure

3.0 The organisation including its structure and decision-making processes

4.0 Site details

4.1 The project's context: physical, historical, economic, ecological, social and political, with discussion of any potential conflicts

4.2 The urban design and town planning context: listed building issues, the building's role in its setting and its contribution to urban spaces or landscape, relevant planning policies

4.3 Site ownership

4.4 Constraints: easements, covenants etc

4.5 Technical information such as surveys of existing buildings

4.6 Identify any technical surveys and assessments to be conducted by the developer/consultant

5.0 Procurement process including the proposed form of building contract and any delivery requirements

6.0 Stakeholder consultation and any partners likely to be involved

7.0 Technical requirements

7.1 Requirements for accommodation, e.g.

dwelling mix (numbers), tenure mix with regard to local borough targets, and non-housing requirements (e.g. healthcare, retail)

7.2 Density for habitable rooms/units and parking requirements

7.3 Specialist housing requirements, e.g. supported housing, wheelchair housing

7.4 Requirements for public open space - play areas, parks etc with regard to the local borough open space strategy and play strategy

7.5 Design requirements as defined in this guide, including clear indication where higher than minimum standards are expected

7.6 Other performance indicators to be met as part of key sign-off items

8.0 Cost parameters and funding including life cycle analysis relating to short and long-term business plans

9.0 Selection process if applicable

9.1 The competition process

9.2 Submission requirements

9.3 Judging panel and selection criteria

9.4 Protocol for questions and answers

9.5 Format for submissions

9.6 Announcement of winner

10.0 Timetable including target deadlines for key sign-off and completion dates

Procurement

The acknowledgement that the success and value of a project is determined by the quality of design is widely accepted. What is not so readily understood is the impact that forms of procurement have on a successful outcome. Too often a desire to offload risk or prioritise capital receipt lead to design aspirations being compromised, or the quality of a project stopping at the level of urban design and not continuing through to the level of construction and detail. The level to which the quality outcomes can be controlled or protected relies on the manner in which the design and development is procured. The process by which developers and design teams are selected needs careful consideration. There are a number of possible approaches all of which have strengths and weaknesses. A number are illustrated opposite.

The success of any form of procurement relies on the strength of relationships of those involved. Project partnering is only meaningful if all partners are identified early in the process and retained throughout the process. There is evidence that increasingly partnering contracts get diluted into Design and Build forms of contract, with the design team often being replaced after receipt of planning permission, or that design teams proposed at competitive tender stage get used in a superficial way to rubber stamp the design. Genuine partnering means all parties agreeing to shared objectives and a commitment to work together to achieve them. Any tender or contract will need to be clear about the expectations, roles and responsibilities of all involved.

Design Process

Identify, therefore, at the outset the full consultant team that will be retained throughout the project; including architects, landscape architects, access consultant, engineers etc as well as the RSL partner or those expected to manage the properties upon completion.

The retention of the initial design team throughout the project is preferable as concepts about detail design are inherent in the early stage of outline designs.

Forms of competition and design development:

1. Two-stage Competition: Pre-qualification of consortia (developer partner with their selected design team) followed by Invitation to Tender with design proposals and financial offer

- Ensure: That a commitment to meet the design standards advocated in this guide is made by the developers prior to appraising the financial offer.
- Avoid: Assessing best price instead of best value, bidders that exceed design standards may offer better long term value than those that just meet the baseline standard but offer a higher price.

2. Developer partner selection followed by joint design team selection/ open design competition

- Ensure: Clear criteria are established for selecting developer and subsequent design team - on the basis of track record, a commitment to a joint venture (JV) and an open book approach to risk and reward.
- Avoid: Being unrealistic about the timeframe required for selecting developer and design teams in sequence.

3. Design team selection followed by developer/ contractor selection

- Ensure: That the developer/contractor signs up to working with the client's design team.
- Avoid: Shifting the design responsibility to the developer/contractor once they are appointed as this often leads to the design team being marginalised and quality being compromised.

Risk

At the start of any project it is important to identify the potential risks to the delivery of that project. The compilation of a risk register will allow you, early on in the process, to measure the risks in terms of impact and likelihood of that risk occurring.

Control measures can then be introduced to reduce the likelihood of the risk occurring with individuals identified to manage each risk. During the design process any changes to the project brief should be re-analysed in terms of their impact.

The critical areas that are likely to be affected are:

- Programme
- Cost plan
- Quality
- Work of consultants
- Risk to planning

On this basis, a proper allocation of risk can be undertaken. Off-loading risk, such as withholding fees until receipt of planning permission, or using fixed price building contracts such as Design and Build, will rarely lead to a satisfactory outcome as these approaches are premised on the basis of achieving time and cost objectives over any design objectives. If there is an equitable share of reward then partners are more willing to share risk. Therefore, prioritise risks instead of trying to eliminate all risk. Managing risk is about identifying and mitigating, not ticking boxes. Share good practice and avoid demanding too much evidence to take on a positive risk-taking approach. Support your decisions with a design vision that everyone signs up to.

Communicate the opportunities of a higher risk, higher reward strategy within the risk assessment process to all stakeholders. Take more time to design, in order to allow others to learn and present the design work in stages.

Commission regular cost plan reports at all stages of the project. These should usually be prepared at the end of each work stage, especially pre-planning at Stage C and D in order to avoid going to planning with a scheme that is beyond the budget where savings will lead to unnecessary negotiation on reserved matters.

Design Process

Monitoring and evaluation

Post completion appraisal and feedback is necessary to ensure that targets have been met.

The methodology for the preparation and appraisal of any Key Performance Indicators needs to be established at brief development stage. There must be clear definitions of targets to be met. This may include monitoring embodied energy and energy use in operation - the "designed asset rating" of a building.

Developers should provide verified and verifiable information on how targets have been met, both on the completion of design, and again on completion of construction. The developer must provide evidence that subcontractors' targets have also been met.

It is invaluable that lessons are learnt and help to inform future projects. Protocols and procedures should be reviewed regularly, integrating any findings from the evaluation process.

Post-occupancy management

The Mayor expects to leave a long-term legacy across London, creating places that foster community interaction and cohesion and that give residents and users influence in what happens within their environment.

All projects designed in line with this guide should include a methodology for engaging the community and maintaining facilities in future years as part of a planning application. New developments must have robust management structures that deliver a secure, supportive and safe environment for residents. They must provide for cleaning of common parts, upkeep of landscaping, management of parking including blue badge spaces, collection of service charges rents and enforcement of conditions of leases.

Historically, management has often been under-funded. At the inception of a project, steps must be taken to ensure that the business plan allows for adequately funded and well ordered management to be provided. Provision must be made for residents to have an ongoing say so that they can influence policy in response to changing circumstances.

There should be a legally binding management and lettings plan, preferably six months prior to practical completion.

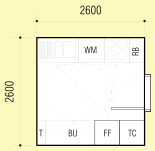
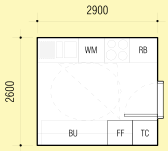
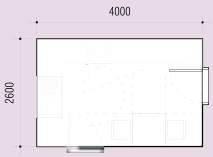
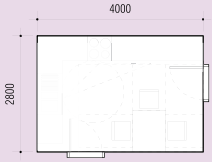
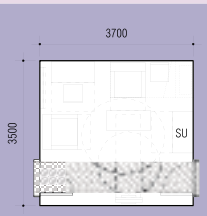
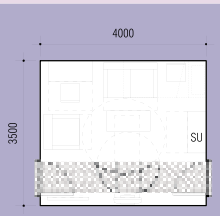
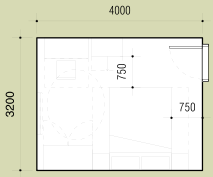
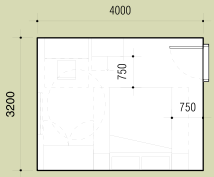
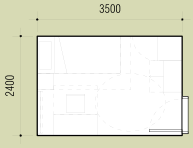
There should be a management plan, for which the freeholder is responsible, that specifies how the landlord(s) will manage the development and includes the following:

- The plan should provide a means of communicating between landlord and tenants and ensure that they are aware of their rights and obligations under the agreement.
- The plan must demonstrate that satisfactory levels of security can be achieved and include measures to address antisocial behaviour by individual residents.
- Effective management and enforcement of parking is essential, particularly of Blue Badge parking bays. The plan should set out clear procedures for addressing future demand from disabled residents for Blue Badge bays.
- The plan should set out the anticipated initial rents and ground rent, service or any other charges, and the process by which these will be changed in the future. These must be demonstrably affordable to the anticipated residents.
- There must be an Allocation Plan for first lettings where a local authority or RSL has nomination rights to ensure a balanced intake of households. This should specify targets on issues such as child densities, household types, under-letting, whether households are economically active and tenancy history.
- A maintenance plan should set out objectives and standards, which specify the quality of the works and method of response to reports of failure, e.g. for breakdown of lifts, as well as the frequency and scope of cyclical works.
- The maintenance plan should specify how replacement and maintenance works will be funded and the charge that the freeholder or landlord will make to procure and manage them.
- There should be a schedule of the amenities to which the residents will have access. Where there is a charge or residents are liable for the cost of their upkeep, the initial charges should be stated, together with a description of how those charges will be decided in the future.
- It is recommended that residents be given the opportunity to manage and maintain communal facilities through a funded arrangement, such as the establishment of a Community Development Trust with adequate financial resources.
- There should be a forum to discuss management and changes in procedures and obligations, to which all residents (including those of private landlords) are invited. This should take account of third party interests, for instance where a Section 106 Agreement has been entered into with the local authority.[81]

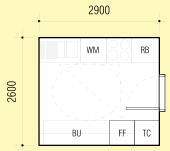
NOTES:
81. Based on Recommendations for Living at Superdensity, Design for Homes et al, June 2007

Appendices

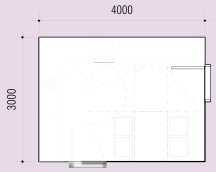
Appendix 1. Space Standards Study

	1-bed, 1-person / 2 persons	2-bed, 3-persons
Kitchen Key to Items AE Ancillary Equipment BU Base Unit DR Drawers DW Dishwasher FF Fridge Freezer RB Recycle Bins TC Tall Cupboard TD Tumble Dryer WM Washing Machine CYL Hot Water Cylinder SU Storage Unit	 kitchen 2p 2600 x 2600 6.76 sq.m	 kitchen 3p 2600 x 2900 7.54 sq.m
Dining dining area calculated as difference of kitchen-dining and kitchen	 kitchen 2p 2600 x 4000 10.40 sq.m dining area 3.60 sq.m	 kitchen 3p 2800 x 4000 11.20 sq.m dining area 3.60 sq.m
Living Combined Kitchen/ Living/ Dining:	 Living Room 2p 3500 x 3700 13.00 sq.m 23 sq.m	 Living Room 3p 3500 x 4000 14.00 sq.m 25 sq.m
Double	 Double Bedroom 4000 x 3200 12,80 sq.m	 Double Bedroom 4000 x 3200 12,80 sq.m
Twin		
Single		 Single Bedroom 3500 x 2400 8.40 sq.m

2-bed, 4-persons

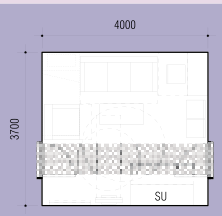


kitchen 4p
2600 x 2900
7.54 sq.m



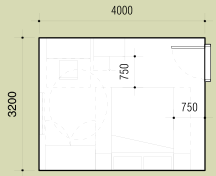
kitchen 4p
3000 x 4000
12.00 sq.m

dining area 4.50 sq.m

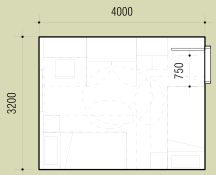


Living Room 4p
3700 x 4000
14.80 sq.m

27 sq.m

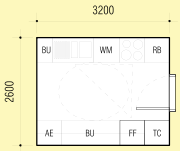


Double Bedroom
4000 x 3200
12,80 sq.m

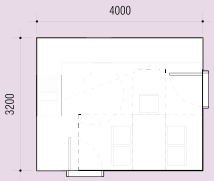


Twin Bedroom
4000 x 3200
12,80 sq.m

3-bed, 5-persons

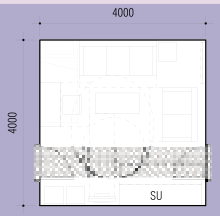


kitchen 5p
2600 x 3200
8.32 sq.m



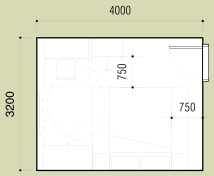
kitchen 5p
3200 x 4000
12.80 sq.m

dining area 4.50 sq.m

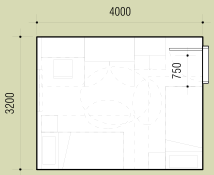


Living Room 5p
4000 x 4000
16.00 sq.m

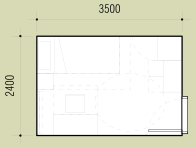
29 sq.m



Double Bedroom
4000 x 3200
12,80 sq.m

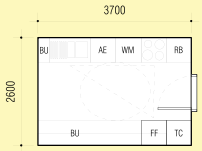


Twin Bedroom
4000 x 3200
12,80 sq.m

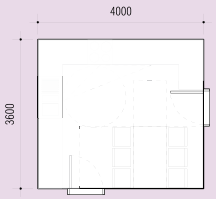


Single Bedroom
3500 x 2400
8,40 sq.m

4-bed, 6-persons

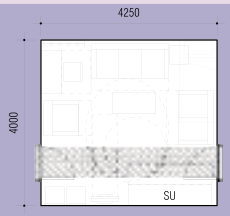


kitchen 6p
2600 x 3700
9.62 sq.m



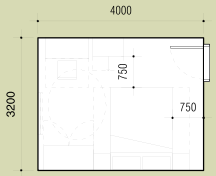
kitchen 6p
3600 x 4000
14.40 sq.m

dining area 4.80 sq.m

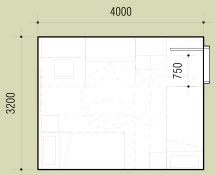


Living Room 6p
4000 x 4250
17.00 sq.m

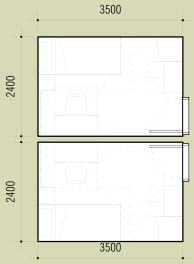
31 sq.m



Double Bedroom
4000 x 3200
12,80 sq.m

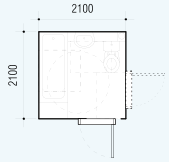
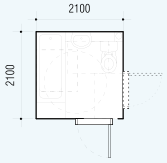
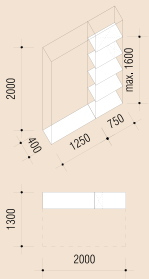
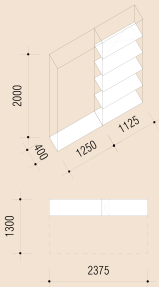
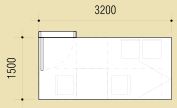
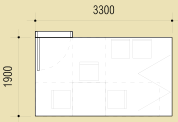


Twin Bedroom
4000 x 3200
12,80 sq.m



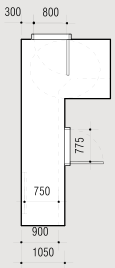
2 Single Bedroom
3500 x 4800
16.8 sq.m

Appendix 1. continued

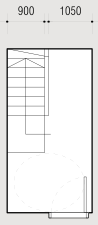
	1-bed, 1-person / 2 persons	2-bed, 3-persons
Bathroom	 Bathroom 2100 x 2100 4.4 sq.m	 Bathroom 2100 x 2100 4.4 sq.m
Storage/ Utility	 Storage 1/2p 400 x 2000 0.80 sq.m	 Storage 3p 400 x 2375 0.95 sq.m
Outdoor amenity space	 Amenity space 1500 x 3200 5 sq.m	 Amenity space 1900 x 3300 6 sq.m
Net internal:	41 sq.m	52 sq.m
Circulation:	1 level flat + 6 sq.m	1 level flat + 6 sq.m
Partition walls allow 5 %	47 sq.m + 5% walls	58 sq.m + 5% walls
GIA [exc. amenity]	50 sq.m	61 sq.m

Circulation Layouts:

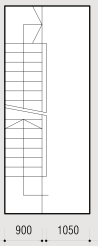
Stairs for 3m floor to floor height
15 steps 230/200



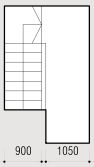
one level flat circulation area 6-12 sqm



ground level



1st level

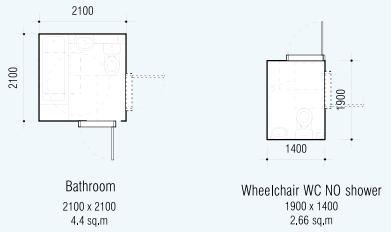


2nd level

two storey house circulation area 18 sqm

three storey house circulation area 25 sqm

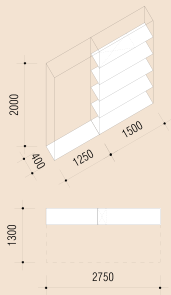
2-bed, 4-persons



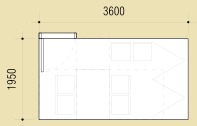
Bathroom
2100 x 2100
4.4 sq.m

required on entrance level for multi-level units

Wheelchair WC NO shower
1900 x 1400
2,66 sq.m



Storage 4p
400 x 2750
1,10 sq.m



Amenity space
1950 x 3600
7 sq.m

58 sq.m

1 level flat
+ 9 sq.m

67 sq.m

+ 5% walls

70 sq.m

60 sq.m

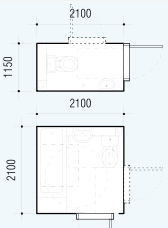
2 storey house
+ 19 sq.m

79 sq.m

+ 5% walls

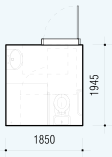
83 sq.m

3-bed, 5-persons

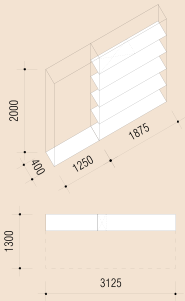


Bathroom + WC
2100 x 2100 + 1150 x 2100
6.8 sq.m

required on entrance level for multi-level units

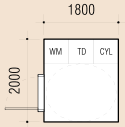


Wheelchair WC WITH shower
1945 x 1850
3,6 sq.m

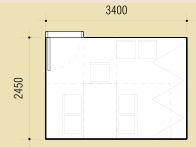


Storage 5p
400 x 3125
1,25 sq.m

option - utility room



Utility room
2000 x 1800
3,60 sq.m.



Amenity space
2450 x 3400
8 sq.m

71 sq.m

1 level flat
+ 11 sq.m

82 sq.m

+ 5% walls

86 sq.m

72 sq.m

2 storey house
+ 19 sqm

91 sq.m

+ 5% walls

96 sq.m

72 sq.m

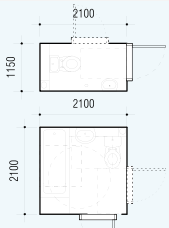
3 storey house
+ 25 sqm

97 sq.m

+ 5% walls

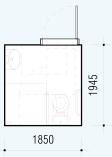
102 sq.m

4-bed, 6-persons

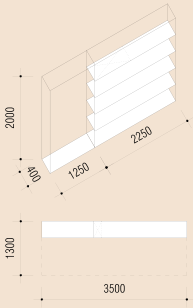


Bathroom + WC
2100 x 2100 + 1150 x 2100
6.8 sq.m

required on entrance level for multi-level units

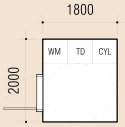


Wheelchair WC WITH shower
1945 x 1850
3,6 sq.m

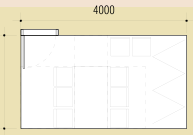


Storage 6p
400 x 3500
1,40 sq.m

option - utility room



Utility room
2000 x 1800
3,60 sq.m.



Amenity space
2250 x 4000
9 sq.m

82 sq.m

1 level flat
+ 12 sq.m

94 sq.m

+ 5% walls

99 sq.m

83 sq.m

2 storey house
+ 19 sq.m

102 sq.m

+ 5% walls

107 sq.m

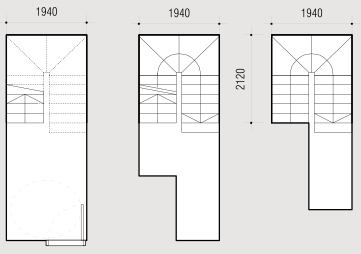
83sq.m

3 storey house
+ 25 sq.m

108 sq.m

+ 5 % walls

113 sq.m



ground level
1st level
2nd level

Alternative stair configuration

Variation: 3-bed, 4-persons

1 level flat: 70.00 -12.80 +(8.4x2)= **74 sq.m**

2 storey house: 83.00-12.80+ (8.4x2)= **87 sq.m**

Variation: 4-bed, 5-persons

1 level flat: 86.00 -12.80 +(8.4x2)= **90 sq.m**

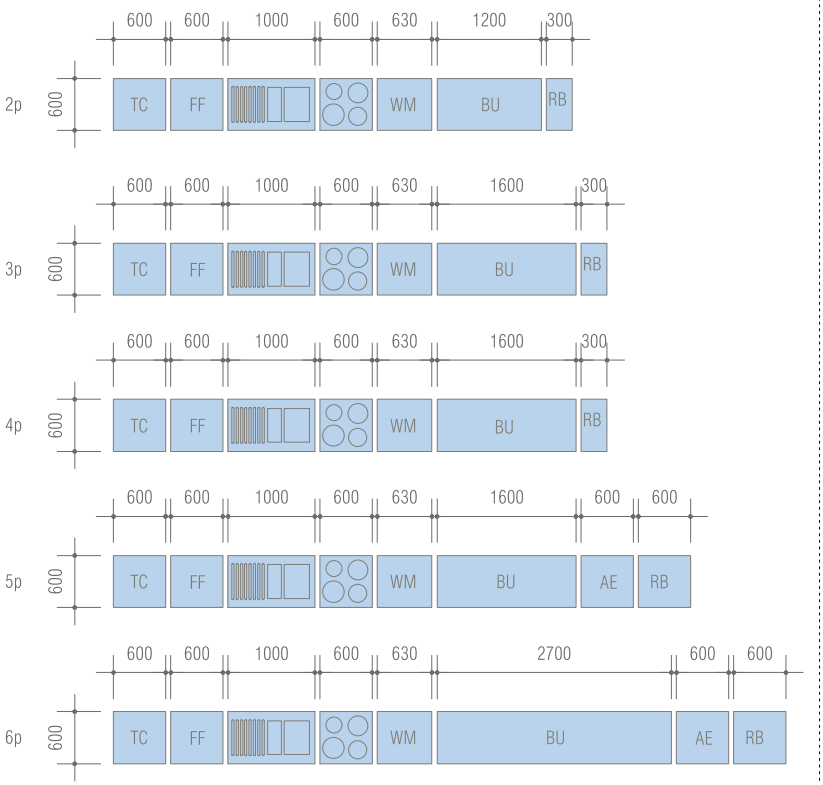
2 storey house: 96.00-12.80+ (8.4x2)= **100 sq.m**

3 storey house: 102.00-12.80+ (8.4x2)= **106 sq.m**

Date	Job Name
30.06.09	Mayor's Housing Design Guide
Title	SPACE STANDARDS STUDY

Appendix 2. Furniture Schedule

Kitchen furniture schedule



Key to Items

AE	Ancillary Equipment
BU	Base Unit
DR	Drawers
DW	Dishwasher
FF	Fridge Freezer
RB	Recycle Bins
T	Tray Space
TC	Tall Cupboard
TD	Tumble Dryer
WM	Washing Machine
CYL	Hot Water Cylinder
SU	Storage Unit

Dining space furniture schedule

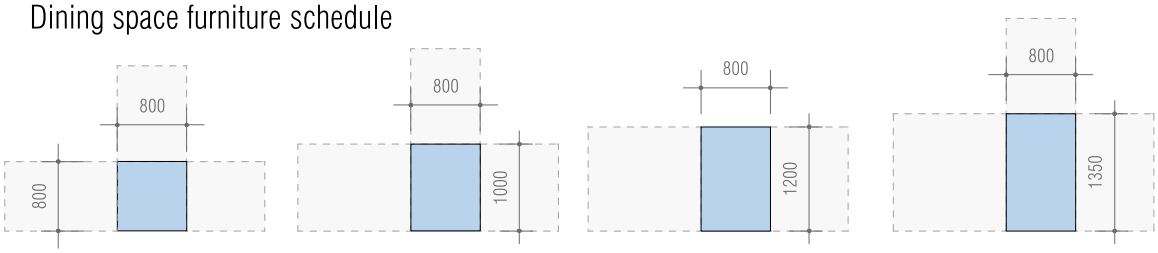


Table 1p-2p | Table 3p | Table 4p | Table 4p

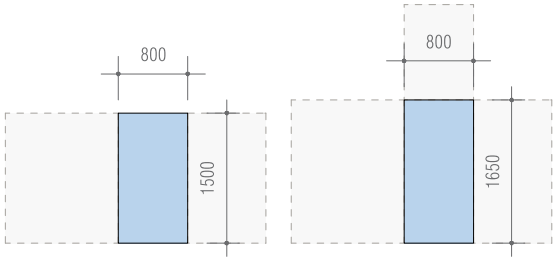
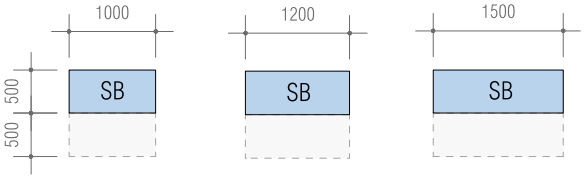
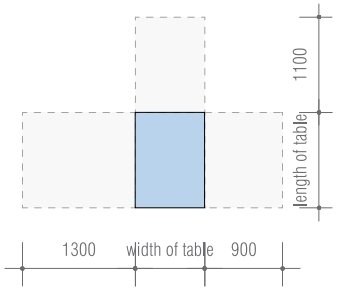


Table 6p | Table 7p



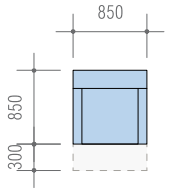
Sideboard Options (depending on number of persons)

Circulation Zones

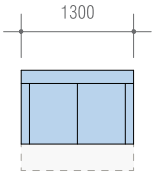


Passing Zone around Dining table:

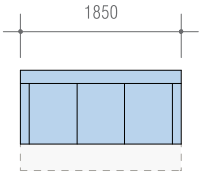
Living space furniture schedule



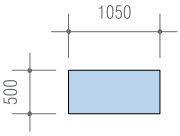
Armchair



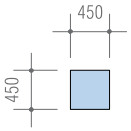
Settee



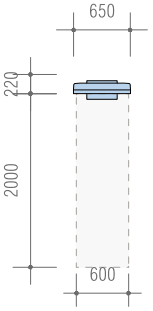
Settee



Coffee table

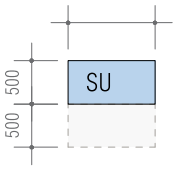


Optional
Coffee table

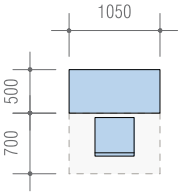


space for TV

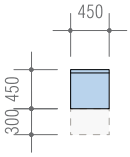
Length varies (refer to furniture schedule)



Storage unit

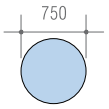


PC/Laptop desk



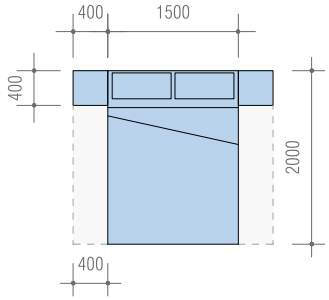
Visitors chair

Heat source

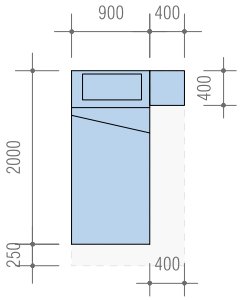


Occasional
table

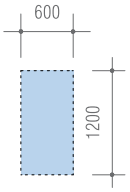
Bedroom space furniture schedule



Standard Double bed

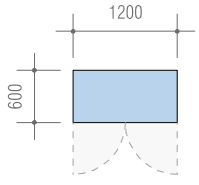


Standard Single bed

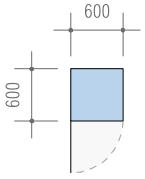


Occasional cot space

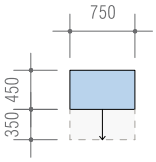
Heat source



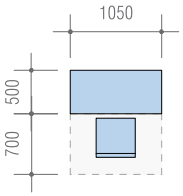
Double wardrobe



Single wardrobe



Chest of drawers

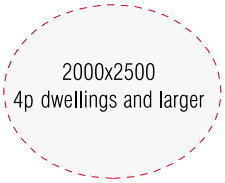


Dressing table &
chair/stool

Activity Zones

Dressing/Drying Space
700x1100

Bed Making Space
400x length of bedspace



Appendix 2. continued

Type of space	Furniture schedule	Furniture sizes mm	Dwelling Size 2p	3p	4p	5p	6p	7p	+
Living Space	arm chair – combination to equal one seat/person	850x850	2	1	1	2	1	2	+1
	settee – 2 seat (optional; as above)	850x1300		1			1	1	
	settee – 3 seat (optional; as above)	850x1850			1	1	1	1	
	TV - [dim. Approx. 26" flat]	220x650	1	1	1	1	1	1	1
	coffee table	500x1050 or 750 diameter	1	1	1	1	1	1	1
	occasional table	450x450				1	1	1	1
	storage units	500x1000/incrementally larger	*1000*	*1000*	*1500*	*2000*	*2000*	*2000*	+
	PC/Laptop desk and chair	1050x500	1	1	1	1	1	1	1
	space for visitor's chair	450x450	2	2	2	2	2	2	2
Dining space	dining chair	450x450	2	3	4	5	6	7	+
	dining table	800x800 /incrementally larger	*800*	*1000*	*1200*	*1350*	*1500*	*1650*	+
	sideboard (but not in dining kitchen)	450x1000 /incrementally larger	*1000*	*1000*	*1200*	*1500*	*1500*	*1500*	+
Bedrooms									
Double Bedroom	Double bed	2000x1500	1	1	1	1	1	1	1
Optional	2 x single bed	2000x900							
	bedside table	400x400	2	2	2	2	2	2	2
	dressing table and chair/stool	500x1050	1	1	1	1	1	1	1
	chest of drawers	450 x750	1	1	1	1	1	1	1
	double wardrobe – could be built in	600x1200	1	1	1	1	1	1	1
Optional	occasional cot space for family dwelling	600x1200			1	1	1	1	1
Twin bedroom	2 x single bed	2000x900			2	2	2	2	2
	bedside table	400x400			2	2	2	2	2
	chest of drawers	450 x750			1	1	1	1	1
	table and chair/stool	500x1050			1	1	1	1	1
	double wardrobe – could be built in	600x1200			1	1	1	1	1
Single Bedroom	single bed	2000x900		1	1	1	1	1	1
	bedside table	400x400		1	1	1	1	1	1
	chest of drawers	450 x750		1	1	1	1	1	1
	table and chair/stool	500x1050		1	1	1	1	1	1
	single wardrobe – could be built in	600x600		1	1	1	1	1	1
	Total bed spaces		**2**	**3**	**4**	**5**	**6**	**7**	**+**
Kitchen						length in mm			
	(1) sink top drainer	600x1000	1000	1000	1000	1000	1000	1000	1000
	(2) cooker space	600x600	600	600	600	600	600	600	600
	(3) washing machine position/worktop	600x630	630	630	630	630	630	630	630
Optional	(3a) tumble dryer/ workstop	600x600		600	600	600	600	600	600
Optional	(3a) dishwasher/worktop	600x length	450	600	600	600	600	600	600
	(4) other base units	600x length	1200	1600	1600	1600	2700	2700	+
	(5) ancillary equipment space	600x length				600	600	1200	1200
	(6) fridge/freezer space (space above not in VOL)	600x600	600	600	600	600	600	600	600
	(7) broom cupboard (Note this may be counted towards the 'tall storage' requirement)	600x600x1950[H]	600	600	600	600	600	600	600
	(8) tray space	600x150	inc	inc	inc	inc	inc	inc	inc
	(9) recycling bins space	600x length	300	300	300	600	600	600	600
	(10) length of fitments (items 1to 9 [**excl 3a and 3b**]		4930	5330	5330	6230	7330	7930	+
	(10a) length of fitments (items 1to 9 [**incl 3a and 3b**]		5380	6530	6530	7430	8530	9130	+
	(11) VOL - min capacity (cu m.) (MUST include drawers) [**excl 3a and 3b**]		1.5	2	2.1	2.2	2.4	2.6	+
	Any wall units provided should be 300 deep and 450 above base units								
	Note: Item 3,5 6,7,9 may be in adjacent rooms to the kitchen								
Bathroom	WC+cistern	500x700	1	1	1	1	1	1	1
	Bath	700x1700	1	1	1	1	1	1	1
	Wash hand basin	600x400	1	1	1	1	1	1	1
Optional	shower tray	750x750							
Separate toilet	WC+cistern				1	1	1	1	1
	cloakroom basin				1	1	1	1	1

Appendix 3. Definitions

Adaptable: The ability to modify spaces for a new use or purpose by altering the physical fabric of the building, such as removing or moving internal walls or extending a property.

Flexible: The ability for spaces to accommodate a range of uses and respond to altered circumstances.

Gross Internal Area: (GIA) Gross Internal Area is the area of a building measured to the internal face of the perimeter walls at each floor level. Measurement is in accordance with the RICS Guidance Note 'Code of Measuring Practice' 6th Edition

Habitable Room: Habitable rooms provide the 'living accommodation' of the dwelling. They include living room, dining room, study, home office, conservatory, bedroom etc. They exclude the bathroom, WC, utility room, store room and circulation space. A kitchen is not a habitable room unless it provides space for dining.

Lifetime Homes: This refers to 16 design features that together create a flexible blueprint for accessible and adaptable housing in any setting. The Lifetime Homes concept increases choice, independence and longevity of tenure, vital to individual and community well being. The standard is managed by Habinteg Housing Association and the criteria are set out in full on www.lifetimehomes.org.uk.

Appendix 4. References

A new plan for London: Proposals for the Mayor's London Plan, GLA, April 2009

By Design - urban design and the planning system: towards better practice, DTLR, 2001

Capital Gains: Making high density housing work in London, London Housing Federation, May 2002

Car parking: what works where, English Partnerships and Design for Homes, 2006

Code for Sustainable Homes Technical Guidance, DCLG, October 2008

Creating Excellent Buildings: A guide for clients, CABE, October 2003

Crowded House: cramped living in England's housing, Shelter, October 2004

Delivering Excellent Places: Building for Life, CABE/HBF, 2007 edition

Design and Quality Standards, Housing Corporation, April 2007 Design and Quality Strategy, Housing Corporation, April 2007

Design of Accessible Housing: Lifetime Homes Code of Practice, BSI Draft for Development DD266:2007

English Partnerships' Quality Standards: Delivering Quality, English Partnerships, Revised November 2007

Higher Density Housing for families a design and specification guide, London Housing Federation, Oct 2004

Homes for Today & Tomorrow, Ministry of Housing and Local Government, 1961

Housing for a Compact City, GLA, February 2003

Housing Quality Indicators Form v4, Housing Corporation, April 2008

Housing Space Standards, HATC for the GLA, August 2006

London Plan Best Practice Guidance on Wheelchair Accessible Housing, GLA, September 2007

London Plan Supplementary Planning Guidance (SPG) on Achieving an Inclusive Environment, GLA, April 2004

London Plan SPG on Providing for Children and Young People's Play and Informal Recreation, GLA, March 2008

London Plan SPG on Sustainable Design and Construction, GLA, May 2006

Perceptions of Privacy and Density in Housing, Design for Homes 2003

Recommendations for Living at Superdensity, Design for Homes, June 2007

Secured by Design New Homes, Association of Chief Police Officers, 2009

Standards and Quality in Development: A good practice guide (2nd edition), National Housing Federation, July 2008

The London Housing Strategy: Draft for public consultation, GLA, May 2009

The London Plan: Consolidated with alterations since 2004, GLA, February 2008

Urban Design Compendium, English Partnerships, November 2007

The London Development Agency commissioned this guide from Mae architects and Urban Initiatives.