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Housing Design Standards Evidence Summary

Summary of evidence on proposed housing design standards for the
Examination in Public of the draft replacement London Plan

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1. EXECUTIVE SUMMARY

- 1.1 Housing standards have frequently been used to shape the quality of new homes in London, particularly from the late 19th century arising from social and public health concerns of poor quality housing to present day where focus has shifted to place-making, creating inclusive, accessible environments for all, and mitigating housing's contribution to climate change. Space standards have been a common feature for publicly funded housing in the UK since 1919, though these have largely applied to new homes built with public sector investment rather than to private sector housebuilding – a trend which continues today.
- 1.2 Today, the design of new housing in London is governed by various policy and regulatory frameworks through the planning system, building regulations and public sector funded housing. There is a pressing need for continuity and consistency in the design standards that the industry is currently expected to work with. Current standards often overlap or contradict each other and are measured in various ways. Those developed at national level typically do not relate well to the higher density development context in London. Different standards are also applied inconsistently through mechanisms such as public funding criteria or planning policy, contributing to further complexity in developing mixed tenure sites (a key aim of planning policy).
- 1.3 In reviewing the current standards, most mechanisms to ensure high quality homes are already in place within London Plan policy and are therefore applicable across all tenures of housing. Space standards are the key missing element. As the private sector is the dominant provider of housing, there is a need to ensure that the homes they are providing are fit for purpose both now and in the future. The review of the London Plan provides a timely mechanism to ensure an appropriate, clear and consistent set of standards are in place to deliver London's housing needs.
- 1.4 In London, there is a clear need to deliver higher standards of housing. A 2004 audit of new housing developments in London found that only 18% achieved a score of 'good' or better¹. High land costs and constrained land capacity are putting intense pressure on space and design quality. Higher

¹ CABE, *Housing Audit: Assessing the Design Quality of New Homes (London, the South East, and the East of England)*, 2004

density development is needed to accommodate London's projected population and household growth in a sustainable way, but it must be done well. Higher density development leads to more intensive use of space and shared areas with implications for management, security and overall quality of life. Issues of noise, daylight, privacy and overlooking all become more acute as densities increase, requiring careful design. Several recent reports have called for increasing density to be accompanied by higher standards of space, amenity and management or there is a risk of recreating the cramped and poor housing environments of the past.

- 1.5 Higher standards of design are also needed to ensure that new housing developments create places that work well, address the impacts of climate change and CO₂ emissions, and cater for London's changing demographics and diverse range of needs, including a significant growth in one-person households and an increasing population of older people, as well as the need for more affordable family-sized homes.
- 1.6 Within this context, the Mayor has developed a set of harmonised design standards to apply to new homes built in London. The aim is to provide a 'level playing field', leading ultimately to an alignment with the standards that apply through public funding. The underlying principle of this approach is that homes should be built not only for short-term market demands or current occupant needs, but to provide long term flexibility with homes that will meet the changing needs of occupants and tenures over time, contributing to the sustainability of London's housing stock.
- 1.7 The proposed design standards also respond to the London context, providing a balance to the pressures of building at higher densities in order to ensure functionality and amenity in new homes. New standards have been proposed in relation to the size of homes, shared circulation areas, single/dual aspect, ceiling heights and private open space. These do not appear in current regulation but are viewed as a means to protect amenity, privacy, daylight and ventilation in homes particularly when configured in blocks of flats at higher densities.
- 1.8 A comparison with a number of international housing standards shows that these design criteria are common in other countries, which are applied to all homes through mechanisms such as planning and building control. England is notable in the examples provided for its lack of certain design controls,

particularly in regards to the size of homes. Australia and Ireland provide recent examples of implementing higher housing design standards through their respective planning systems, at a national as well as city/regional level. Implementing these standards was deemed necessary in response to concerns very similar to the London context – an increasing provision in the number of flats being built and concerns over the quality of developments being provided.

- 1.9 Research and case studies show that the benefits of higher quality housing include reduced crime rates, contribution to the mitigation of health inequalities, better welfare and reduced costs to society, and higher residual values for developers. A set of harmonised standards for London would also be expected to bring greater consistency and certainty to the development and planning process.
- 1.10 The second part of this report focuses specifically on space standards, as a key measure of quality embedded in Policy 3.5 within the Draft Replacement London Plan. Various research studies and consumer surveys show a considerable degree of consistency not only in the preferences expressed regarding the importance of space in the home, but also in levels of dissatisfaction with inadequate space a frequent issue raised amongst residents. In looking at what is currently being provided in actual development schemes, there is a general trend towards decreasing space with more rooms being ‘crammed’ into dwellings, leading to smaller habitable rooms and significant reductions in storage space.
- 1.11 The evidence points towards a clear mismatch between resident needs and preferences and market provision. Particularly in London, several recent studies of new developments have shown that new homes consistently fall short of current benchmarks, such as those proposed by the Homes and Communities Agency (HCA) and the Draft Replacement London Plan (DRLP) and that storage space is minimal, if provided at all. Research shows that the average one-bed flat in London has shrunk by 13% since 2000². Another recent study³ found that 60% of the one-bedroom dwellings in London analysed within the study had no storage space. The same study found that two-bedroom dwellings in particular fell well below proposed HCA and DRLP benchmarks by an average of 10 sq.m. (roughly the size of a

² London Residential Research quoted in P Bill, ‘Size matters to Boris when it comes to flats’, Evening Standard, 27 June 2008

³ HATC, *Room to swing a cat? The amount and use of space in new dwellings in London & the South East*, 2010

small double bedroom), and that some of the two-bedroom dwellings being marketed in London were the same size as the proposed DRLP standards for a one-bedroom dwelling. This is of particular concern for London, as a large proportion of homes being provided are two-bed flats (two-thirds of total output in 2008/09⁴), which could potentially be occupied as family homes.

- 1.12 Space is an important determinant in the quality of a home in providing comfort, privacy and utility, as well as the flexibility to respond to changing needs such as increased home-working or the ageing population and to allow rooms to take on multiple uses. Evidence also points towards a growing demand for space, regardless of household size. It is argued that the expected growth in one-person households in London points to the need for smaller flats, particularly for young, first-time buyers. However, these single households do not directly equate to small dwellings and demand for less space. GLA statistics show that the major growth in one-person households is expected to be in the middle aged demographic, many being divorced or former co-habitees who may share children between homes and therefore need more space. Consumer research shows that space is high on the list of priorities of the increasing number of one-person households⁵, and that criticism about lack of space is expressed 'by all groups of home buyers with singles just as vociferous as families'⁶.
- 1.13 There is evidence that lack of space has an impact on health and well-being, particularly when this is linked to due to levels of overcrowding. While overcrowding is highest in the social rented sector, where homes are usually occupied to maximum capacity, it has also been rising steadily in the private rented sector. The private rented sector in London has seen the biggest rise in overcrowding since 2001, nearly doubling in ten years⁷. Since household size, tenure and length of occupation can vary in a home over the longer-term, smaller homes built now by any sector may be storing up potential problems for the future. Research also suggests that pressures on space impact disproportionately, even in market homes, on those who are more economically disadvantaged.

⁴ CLG Housing Statistics, Live Tables on House Building, Table 254, op cit

⁵ Bartlett K et al, *Consumer Choice in Housing: The beginnings of a house buyer revolt*, Joseph Rowntree Foundation, 2002

⁶ CABE, *What Home Buyers Want: Attitudes and decision making among consumers*, 2005

⁷ Mayor of London, *Housing in London: The evidence base for the London Housing Strategy*, GLA, 2009

- 1.14 While not part of the national planning or building control framework, space standards do currently exist in a number of London borough and other UK district and local planning guidance, and as part of funding criteria for publicly funded homes. Historically, guidance on space standards has varied, but has been broadly consistent within a range of about +/- 10% since the Second World War, and the Parker Morris standards of 1961 are still a commonly cited benchmark for space standards in the UK⁸. Space standards are commonly set in other countries, usually through the local equivalent of the Building Control/planning permission system.
- 1.15 The Mayor's proposed space standards seek to provide a new benchmark, based on a functional approach to the needs of residents, incorporating furniture, activity and circulation space depending on the number of occupants and number of storeys within the dwelling. The space standards, as well as the other new requirements, look beyond initial sale and the needs of the first owners or tenants to ensure that the next generation of new London homes have wide-ranging appeal, functionality and longevity. The draft London Plan space standards have therefore been set at a level which allows the property to cater for a reasonably wide variety of diverse household needs over the lifetime of the property, and do not appear to be overly onerous when compared to other existing space standards. A similar exercise undertaken by the HCA in developing its proposed new space standards for national application to publicly funded homes resulted in similar findings, though based on a different methodology. This convergence would appear to provide evidence that the measures are robust.
- 1.16 Implementing space standards through planning has highlighted concerns over their impact on costs, viability, affordability and development capacity. These issues have been addressed in a separate GLA study⁹, though the final section of this report responds to a number of comments raised in the consultation responses to the Draft Replacement London Plan (DRLP). Because of their cumulative importance to quality of life, space standards do have a role in the strategic planning system for London, contributing to the wider sustainable development objectives set out in national planning policy and the DRLP. While there are arguments that standards limit flexibility and innovation, there is also the benefit of a more consistent approach to quality in

⁸ HATC, 2006, op cit

⁹ GVA Grimley, *Draft London Housing Design Guide: Cost and delivery impact assessment, pre publication draft*, London Development Agency, 2010

planning, with common standards contributing to greater flexibility of tenure as market circumstances change and allowing more competition for land. The DRLP and its associated Housing SPG will also make very clear that there is flexibility for their implementation to take account of local circumstances.

2. INTRODUCTION

- 2.1 This report was commissioned by the GLA to inform the Examination in Public into the Draft Replacement London Plan (DRLP), by bringing together and summarising the evidence that supports the need for the Mayor's proposed housing design standards. These standards are proposed in Policy 3.5 of the DRLP for all housing tenures and will be detailed in the forthcoming draft Housing Supplementary Planning Guidance (SPG).
- 2.2 The GLA's brief for this report was to provide a statement of the necessity for higher housing design standards, including a review of current standards, the history of design and space standards in the UK, customer demand/need and market and public sector provision, and an overview of the value that higher standards can bring in terms of policy priorities set out in the DRLP.
- 2.3 This report builds on the work undertaken by HATC in their 2006 report for the GLA, *Housing Space Standards*, providing a review of more recent research, case studies and evidence specifically in regards to the Mayor's proposed standards that have evolved since the publication of the HATC report.
- 2.4 As background, the standards proposed within Policy 3.5 of the DRLP and the draft Housing SPG draw on those outlined in the draft London Housing Design Guide, which was published for consultation in summer 2009 and was aimed at new homes developed on LDA owned land or with public sector investment. These standards have been revised for application on LDA owned land, taking into account the consultation feedback, further discussions with key stakeholders, and a cost and delivery impact assessment¹⁰. The revisions will inform the standards in the forthcoming draft Housing SPG and the way in which they may be applied to different tenures.
- 2.5 The main focus of this report is the need for the introduction of minimum space standards, as this has been explicitly embedded in Policy 3.5. The report also touches on the other standards proposed in the DRLP and forthcoming draft Housing SPG, focusing on those which are new or go

¹⁰ GVA Grimley, 2010 op cit

beyond existing standards that apply under current planning policy and which received the most comment on their potential impact in the consultation responses. These include shared circulation, private open space, dual aspect and ceiling heights as well as higher standards in relation to the mitigation of climate change.

3. THE NEED FOR HOUSING DESIGN STANDARDS

- 3.1 Historic approach and trends in housing standards
- 3.1.1 The quality of housing in London has continually been shaped by some form of local and national regulation. The first building regulations in the UK stem from the London Building Act of 1667 established following the Great Fire of London, which specified that all houses were to be built in brick or stone and the number of storeys, width of walls, and width of streets allowed within the walled City of London. The London Buildings Acts in the 19th century set out specific provisions for new housing, including street widths, thickness of walls, room heights, minimum size for back gardens, and the placing and design of chimneys, fireplaces and drains.
- 3.1.2 Planning and housing policy originated from the public health movement towards the end of the 19th century and a concern that public intervention, both through regulatory standards and direct public sector development, were necessary if overcrowding and disease were to be overcome¹¹. The Public Health Act of 1875 had a direct influence on the type of housing built, by requiring local authorities to implement regulations, or 'bye-laws', that each house should be self-contained with its own sanitation and water. By 1880, and further influenced by the philanthropic movement, most towns had similar bye-law regulations: streets a minimum of 36 feet (11 meters) wide, 150 square feet (14 sq. m.) of unbuilt space at the rear of each house, a minimum room height of 8 feet (2.4 m), a lavatory and drainage, and windows of a certain size in relation to rooms¹². By the end of the 19th century, the dominant form of housing in the UK became the 'bye law' terraced house, with 2.5 million built between 1870 and 1910¹³.
- 3.1.3 In 1918, the Government commissioned the Tudor Walters Committee to review housing conditions and make recommendations regarding the design and layout of new homes to be built following the First World War. The Tudor Walters report, based on the standards and densities of the Garden Cities movement, recommended that every house should contain three ground floor rooms (a living room, parlour and scullery), at least three

¹¹ D Bowie, 'No more hobbit homes', Planning in London, Issue 71, October-December 2009

¹² Woodman E and Greeves E, *Home / Away: Five British Architects Build Housing in Europe: The Development of Housing in Britain 1870 – 2008*, British Council, 2008

¹³ *Ibid*

bedrooms (one of which must take two beds), and a bathroom and larder. These were the first set of space standards applied to the construction of new homes, based on the number of rooms provided. Recommendations were also made in regards to external appearance and layout – houses were to be built as cottages set amongst front and back gardens, built in cul-de-sacs rather than long terraces at densities of 12 dwellings per acre, with a 21 m minimum distance between facing rows of houses¹⁴. The report's recommendations were adopted in the 1919 Housing Act and applied to new council housing.

- 3.1.4 Toward the end of the Second World War, the Government commissioned another housing review, the Dudley Report of 1944, to assess housing standards post-Tudor Walters in preparation for peace time re-construction. The Report provided the basis for the 1944 Housing Manual, which set out guidance to local authorities on housing and estate design, covering site layout, density, house types, size of rooms, flats, efficiency in building, new methods and materials, heat, insulation, etc. The subsequent 1949 Housing Manual called for a greater variety of dwelling types and higher space standards than the 1944 Manual, with the requirement for a 3-bedroom house increasing from the previous 800-900 sq ft benchmark to 900-950 sq ft. Despite limitations and unprecedented demand, the standards of housing were generally high, with average space standards reaching their highest in 1949¹⁵.
- 3.1.5 In 1961, the Ministry of Housing and Local Government published the influential report of the Parker Morris Committee, *Homes for Today and Tomorrow*. This set out the need for space standards, which for the first time were derived from a review of how residents actually used their homes and its different rooms. The report also highlighted the need for storage space, and called for all rooms in the house to be heated. Unlike previous standards that sought to influence the form and appearance of housing being built, the report's main concern was the internal arrangement of the home to provide for resident needs in response to the impacts of a fast-changing and increasingly affluent society.
- 3.1.6 The Parker Morris standards were further developed by the Ministry of Housing and Local Government in Design Bulletin 6 published in 1963. This illustrated the space and furniture requirements for family and personal

¹⁴ HATC, *Housing Space Standards*, Greater London Authority, 2006

¹⁵ *Ibid*

activities along with the space required to use and move around furniture, and included dwelling plans to illustrate the approach and standards recommended by Parker Morris. This was also a period in which a considerable amount of good practice guidance was published, including the Greater London Council's Generic House Plans and Housing Layout guidance, also based on the Parker Morris standards.

- 3.1.7 The Parker Morris standards were initially used as good practice guidance throughout the 1960s until they were made mandatory for the new towns in 1967 and for all new council housing in 1969. The HATC report on Housing Space Standards for the GLA notes that this was a period when public sector housebuilding exceeded private for several years; however the adoption of dwelling space standards did not always lead to well designed, popular housing. 'This was also the era of multi-storey, industrialised building, Radburn layouts, etc many of which proved unpopular. This highlights that good quality design requires not just good space standards, but also good site planning and good quality construction'¹⁶.
- 3.1.8 The minimum areas in the Parker Morris report quickly became maxima for public subsidy purposes, once set against the Government's Housing Cost Yardstick. The Parker Morris standards were abolished in 1980 due to cuts in public expenditure; however they are still frequently cited even today as a good practice benchmark.
- 3.1.9 During the 1980s, as Local Authority housebuilding significantly declined, 'Housing Associations' emerged to become the main provider of new social housing. New homes were built to guidelines set out by the Housing Corporation in the 1983 document Design and Contract Criteria, which largely equated with the Parker Morris standards. Though by 1987, as housing grant gradually decreased, cost efficiency was prioritised over and above adherence to housing quality criteria¹⁷.
- 3.1.10 By the early 1990s, a drop in Housing Association quality standards in England began to be identified by a number of research reports, showing that 68% of Housing Association properties built in 1991/1992 fell below Parker Morris standards by more than 5%, as well as reductions in storage,

¹⁶ HATC 2006, op cit, p.23

¹⁷ Croydon Council, *Scrutiny Investigation: Room sizes in new housing developments*, 2008

circulation space, and amenities and even standards of construction materials and workmanship¹⁸.

- 3.1.11 The Housing Corporation set out to reverse the deterioration of quality standards by developing its Scheme Development Standards (SDS) in 1993. The SDS core performance standards defined the minimum that was expected in a housing development funded through social housing grant. These have since been updated, using the Housing Quality Indicators scoring system that currently applies to grant funded housing and incorporates criteria such as space standards.
- 3.1.12 The 1990s also saw the emergence of greater awareness of the rights of people with disabilities and housing standards have moved to address accessibility, encouraged by the work of the Joseph Rowntree Foundation and the development of 'Lifetime Homes' standard which aims to ensure that new homes are designed to be able to adapt to the changing needs of their occupants, particularly in later life. This lead has been followed up through Building Regulations in response to the 1995 Disability Discrimination Act, where certain elements of the Lifetime Homes standard such as entrances with level access have been legislated for in private sector homes¹⁹. The London Plan has also adopted the full Lifetime Homes standard as planning policy for all new homes in London²⁰.
- 3.1.13 Focus has also shifted to the emergence of place-making and urban design criteria as key components in creating good housing. Though the planning system has only recently adopted this wider design agenda, with a general acceptance that urban design, rather than architecture, represents the most appropriate and effective means through which local authorities can influence the quality of new developments. Acceptance of the role for urban design has come slowly, with urban design mentioned for the first time in planning guidance in 1996²¹. Urban design principles, including housing layout and massing and legibility and connectivity of the public realm, have since been embedded within the planning system through the publication of By Design and Planning Policy Statement 3 (Housing) and form a key part of

¹⁸ Ibid

¹⁹ K Kintrea and J Morgan, *Evaluation of English Housing Policy 1975–2000, Theme 3: Housing Quality and Neighbourhood Quality*, Office of the Deputy Prime Minister, 2005

²⁰ London Plan (2008) Policy 3A.5 Housing Choice, and Consultation Draft Replacement London Plan (2009) Policy 3.8 Housing Choice

²¹ M Carmona, *Housing Design Quality, Through Policy, Guidance and Review*, Spon Press, 2001

the Building for Life standard promoted by Commission for Architecture and the Built Environment (CABE) and London Plan policy²².

- 3.1.14 More recently, environmental sustainability and resource efficiency have taken a central role in shaping the standards debate and the quality of all new homes, in response to predicted changes in climate due to carbon emissions. At present, Government has a target of all new homes being zero carbon by 2016, and the Code for Sustainable Homes was launched in December 2006 to assess the environmental performance of new build housing.
- 3.1.15 Housing standards in the UK have frequently been used in the past to improve the quality of new housing, arising from social and public health concerns of poor quality housing to more recent concerns in relation to housing's contribution to climate change. Standards have also been used to set the benchmark to be achieved in periods of major housebuilding. At times, the housing standards set have been quite prescriptive, impacting directly on the form and type of housing. However, twentieth century housing has been typified by higher standards for public sector housing provision, including the application of minimum space standards at various periods since 1919. This trend of higher standards for publicly funded housing continues to this day.

²² See policies in chapter 4B of the London Plan (2008), and chapter 7 of the Consultation Draft Replacement London Plan (2009)

3.2 Current standards context

3.2.1 Today, the design of new housing developments in London, and indeed the rest of the UK, is governed by various policy and regulatory frameworks.

3.2.2 The planning and development control system and Building Regulations apply to all new housing, regardless of type or tenure. Building Regulations apply nationally in England and Wales and generally cover health and safety issues including structural concerns, fire safety, sound insulation, drainage, and ventilation, as well as energy efficiency and accessibility. The current national planning policy framework in Planning Policy Statement 1 (PPS1) Sustainable Development and PPS3 Housing sets out the need for housing that is well-designed and built to a high standard, with access to transport, services and green space, built at a scale, density and layout that complements the local context and seeks to adapt to and reduce the impact from climate change. At the regional planning level, the London Plan sets specific policies in relation to density, housing mix and tenure, sustainable design and construction, access to open space and provision of external space for children's play.

3.2.3 A number of other current standards have an impact on the design of new homes, though these are not applied consistently to all new homes:

- **Code for Sustainable Homes** – the national benchmark for the environmental performance of new homes. There are nine categories covering energy and CO₂ emissions, water, materials, surface water run-off, waste, pollution, health and wellbeing, management and ecology; with points assigned to each category. Some elements such as energy and water are mandatory, while others are tradable to provide more flexibility in reaching a certain Code Level. The Code is primarily used as a standard for publicly funded homes (currently set at minimum Level 3) and is not mandatory for market housing. However the intention is that the energy and CO₂ elements will apply to all homes as Building Regulations are revised at regular intervals to align with higher energy levels in the Code, aligning with Code Level 3 in 2010 leading to all new homes being zero carbon (Code Level 6) by 2016. The London Plan also applies specific policies in relation to energy and CO₂ reduction and sustainable design and construction in new developments.

- **Lifetime Homes** – 16 criteria developed by the Joseph Rowntree Foundation and managed by Habinteg Housing Association, which cover access to the home, moving around indoors, and moving between levels within a home to help ensure greater adaptability to changing circumstances. Parts of the standard were adopted into Part M of the Building Regulations in 1999, but a development must still meet all 16 criteria to achieve the Lifetime Homes standard. The standard applies to the development of all new homes in London through London Plan Policy 3A.5 Housing Choice²³ and also sits within the Code for Sustainable Homes where it is mandatory to achieve at Code Level 6.
- **Building for Life** – The Building for Life standard, developed by the housebuilding industry and administered by CABI, comprises 20 criteria placing new homes in their wider context and assesses how they integrate with their surroundings. Again, Building for Life has been adopted in the public sector primarily through the Housing Corporation in relation to affordable housing grant and English Partnerships in developing public sector land²⁴, specifying a minimum number of points to score out of 20. Increasing numbers of local authority planning departments now use the standard to evaluate development proposals, particularly as local authorities are expected to use Building for Life as part of their annual monitoring report for Communities and Local Government (CLG).
- **Secured by Design** – A police initiative that promotes crime prevention measures in new residential development, covering issues of site layout and design and the specification of physical elements such as windows, doors and locks. To achieve full certification, design measures must be agreed between the developer and a police Crime Prevention Design Adviser (CPDA) or Architectural Liaison Officer (ALO). The physical elements of the standard have been incorporated in the Code for Sustainable Homes but are not mandatory. The standard has been used for public sector funding (e.g. in the 2008-11 National Affordable Housing Programme, the Housing Corporation specified that the physical security measures within the Code were mandatory), and the

²³ Draft Replacement London Plan, Policy 3.8 Housing Choice

²⁴ Both organisations have now been subsumed into the Homes & Communities Agency, though their existing housing standards continue to apply to existing programmes up to April 2011.

general principles have been reflected in London Plan policy 4B.6 Safety, security and fire prevention and protection²⁵.

- 3.2.4 As noted previously, higher set of standards apply to public sector funded homes. The Government's **Homes & Communities Agency** (HCA) has recently published its proposed national core housing and sustainability standards for consultation, aimed at new homes in receipt of public funding or built on HCA land. The proposals incorporate a number of the above standards, including a minimum Building for Life score of 14 out of 20 and minimum Code for Sustainable Homes Level 4 with mandatory points for security, but go further in specifying standards in relation to the internal layout of the home. These include minimum space standards for dwellings, minimum storage provision and recommended room sizes and ceiling heights, none of which sit within existing legislation. The HCA states that the proposed standards have been derived from '*a clear evidence base and the needs of the people that matter most – the residents themselves*'²⁶.
- 3.2.5 There is now more emphasis than ever on excellence in design and sustainability, which is to be welcomed. However, the housing standards context has become increasingly complex and fragmented.
- Recent standards have been developed in a piecemeal fashion in response to singular issues, potentially contradicting each other and if formed at a national level may not respond well to the higher density London context.
 - There is a good deal of overlap and cross-referencing between the above set of standards (i.e. Lifetime Homes and Secured by Design principles are embedded in London Plan policies, but are also referenced within the Code for Sustainable Homes as non-mandatory).
 - There are existing standards that measure the same criteria in very different ways – for instance, some space standards within local planning guidance are based on unit sizes, while the HCA's current space standards which relate to the National Affordable Housing Programme are set out as a range of sizes based on occupancy and set

²⁵ Draft Replacement London Plan, Policy 7.3 Secured by Design

²⁶ HCA draft standards consultation (2010) – www.homesandcommunities.co.uk/design-sustainability-standards

against a performance based scoring system rather than a minimum threshold to achieve²⁷.

- Applicability of standards varies by tenure with higher standards applying to publicly funded homes, adding complexity on mixed tenure sites and therefore putting pressure on the quality of a development site as a whole.

3.2.6 There is a pressing need for consolidation and consistency, an approach which received strong support in responses to the draft London Housing Design Guide consultation in 2009²⁸. The London Plan, as the strategic planning framework for London coupled with the fact that a replacement Plan is currently under review, presents an ideal mechanism to consolidate standards for new housing across the capital providing clarity at the outset of any development project of what is expected. Though there are differences between tenures, most mechanisms are already in place within the London Plan to ensure higher quality standards in housing, with policies in relation to energy efficiency, sustainable design and construction, outdoor space including children's play space, Lifetime Homes, security and urban design – the missing element being the internal space of the home.

3.2.7 This, of course, raises the thorny issue of applying a common set of design standards across all tenures of housing, particularly in relation to space standards which historically has been avoided as a requirement for private sector housing. Though with the private sector the dominant provider of housing, even of new affordable housing in recent years, there is a need to understand whether the homes being provided in London are fit for purpose both now and in the future.

²⁷ See Housing Corporation Design and Quality Standards (2007) and Housing Quality Indicators version 4 (2008)

²⁸ Responses can be found on the London Development Agency's consultation portal – http://lda-consult.limehouse.co.uk/portal/housing_design_guide/draft_housing_design_guide?tab=list

3.3 The London context

- 3.3.1 The case for standards in London is set within the context of a growing city. London's population is set to increase by 1.3 million in the 25 years to 2031, and the number of households is expected to rise by 25 per cent²⁹. To meet this growing demand, the Draft Replacement London Plan proposes a target of building an average 33,400 additional homes per year³⁰.
- 3.3.2 More homes are needed, but the Mayor has made it clear that this must not be at the expense of quality³¹. Development pressures in London are intense, with constrained capacity and high land costs within a speculative market putting pressure on the design quality achievable in new housing developments. The overall challenge is to ensure housing designed now not only meets the needs of current residents but that will also have longer-term appeal.
- 3.3.3 Across all housing sectors, some great schemes have been built, but overall the quality of housing in London is not good enough. A 2004 audit of new housing developments in London found that over two-thirds (69%) achieved 'average' scores, with 15% achieving a 'poor' score. Only 18% achieved a score of 'good' or better³². There is clearly room for improvement.

Making higher densities work

- 3.3.4 Constrained capacity for housing and the projected growth in the population make selective development at higher densities than the national average a necessity in the unique circumstances of London. The new DRLP makes clear that new developments must optimise housing output and not simply maximise it. This means taking proper account of local context and public transport capacity³³, building on London's rich urban tradition of building well-designed housing at higher densities.
- 3.3.5 Average densities in London have risen from around 85 dph in the mid 1990s to over 130 dph. London Plan Annual Monitoring figures show that while the average density of residential approvals is starting to fall, in

²⁹ DMAG Update, 'Demographic Projections for the draft London Plan', GLA, October 2009

³⁰ Mayor of London, *Consultation Draft Replacement London Plan*, 2009

³¹ Mayor of London, *Planning for a Better London*, 2008

³² CABE, *Housing Audit: Assessing the Design Quality of New Homes (London, the South East and the East of England)*, 2004

³³ Draft Replacement London Plan, Policy 3.4 Optimising Housing Potential

2008/09, 64% of were still above the recommended ranges in the London Plan density matrix for different types of location³⁴.

- 3.3.6 High density has many advantages, but it has to be appropriate and done well. Several reports have called for increasing density to be accompanied by enhanced standards of space, amenity and management services, enforceable through the planning system³⁵, and by innovation in housing design and building regulations or there is a risk of recreating the cramped and poor housing environments of the past³⁶.
- 3.3.7 In the report, *Recommendations for Living at Superdensity*³⁷, four of London's major architects specialising in residential development emphasised the need for greater care in designing higher density development to ensure a better quality of life for residents and that homes have lasting appeal. In assessing high density proposals, they noted that greater emphasis was put on 'streetscape and aesthetics... with less thought given to the quality of life the housing could sustain, and therefore the long-term sustainability of the housing itself. We believe the balance has to be restruct'. Though the authors sound a note of caution in regards to the use of standards over concerns of 'contradictory legislation and overzealous application', they state that 'it is clear further guidance is required, but it is for others to decide whether this should be made mandatory'.
- 3.3.8 Increases in density have been closely related to changes in the mix of dwellings being produced. Whereas in England overall, 83% of households live in houses, in London 45% live in flats and the proportion is growing³⁸. Recent trends in London are towards the increasing provision of flats (making up 90% of total output in 2008/09), with a particular increase in the provision of two-bedroom dwellings (64% of total output in 2008/09)³⁹.
- 3.3.9 These new homes will be expected to cater for a diverse range of needs, including a growing number of one-person households (accounting for 70 per cent of the total expected growth in households to 2031)⁴⁰, as well as an

³⁴ Greater London Authority, *London Plan Annual Monitoring Report 6*, 2010

³⁵ PRP Architects and Urbed, 'Less Could Mean More: Streamlining the development process to achieve better results', 2007

³⁶ J Barlow et al, *Land for Housing: Current Practice and Future Options*, 2002

³⁷ Design for Homes et al, *Recommendations for Living at Superdensity*, 2007

³⁸ 2001 Census in England and Wales, Office for National Statistics

³⁹ CLG Housing Statistics, Live Tables on House Building, Table 254: Permanent dwellings completed, by house and flat, number of bedroom and tenure, London

⁴⁰ DMAG, 2009, op cit

increasing population of older people, and the need for more affordable homes particularly for families⁴¹. Good design is essential to achieve a successful mix and quality homes for this diverse range of needs, particularly in the higher density London context.

Place-making

- 3.3.10 The spaces between and around buildings are as important as the spaces within. Design quality is not just about the buildings or a particular architectural style, but creating places that work well. Though new developments often struggle to give places a coherent identity. Developments should enhance the character and legibility of an area, integrate with the wider public realm network and provide opportunities for access to open and green space. The Mayor has put stronger emphasis on neighbourhoods and community in the Draft Replacement London Plan, aiming to enable growth while retaining London's heritage and distinctiveness and creating a better quality of life for all.

Shared circulation and communal areas

- 3.3.11 Security and management issues become more acute when higher numbers of people use the same space. The Capital Gains report⁴² argues that the higher the density, the greater the need for high quality design and management to ensure liveable homes and neighbourhoods in London. Methods of organising and accessing flats are critical, and become more so in proportion to increasing densities. Higher density development creates increased pressure on space and leads to more intensive use of communal, shared areas such as entrances, corridors, and lifts with subsequent management and maintenance implications.
- 3.3.12 The design of the approach to the home can also have a significant impact on the management and social dynamics in a block of flats. The safety of these areas is also a key design concern as this is where the public meets the private realm, and their design is of particular importance for wheelchair users or people with visual impairments.

⁴¹ Mayor of London, *London Housing Strategy*, 2010

⁴² H Cope, *Capital Gains: Making high density housing work in London*, London Housing Federation, 2002

Space

- 3.3.13 Homes that are sensibly planned and functional; designed to meet the demands of everyday life, providing enough space and facilities such as privacy and storage, will better enable residents to live comfortably and conveniently. As new housing is built at increasingly higher densities, there is pressure on the quality of both indoor and outdoor space. But it is the provision of this space that can make higher density living more tolerable.
- 3.3.14 A 2005 report on attracting and retaining families in inner urban, mixed income communities, reviewed several London case studies and found that these communities work best when the homes are designed with families in mind, with adequate storage, ample kitchens, family bathrooms and access to outdoor space where possible.⁴³
- 3.3.15 Evidence also points towards a growing demand for space, regardless of household size⁴⁴. It is argued that the expected growth in one-person households in London points to the need for smaller flats, particularly for young, first-time buyers. However, these single households do not directly equate to small dwellings and demand for less space. GLA statistics⁴⁵ show that the major growth in one-person households is expected to be in the middle aged demographic, many being divorced or former co-habitees who may have children living with a former partner and may need more space to 'share' children between homes. Consumer research shows that space is high on the list of priorities of the increasing number of one-person households⁴⁶, and that criticism about lack of space 'was expressed by all groups of home buyers with singles just as vociferous as families'⁴⁷.

Amenity

- 3.3.16 Designing a mix of different sized homes at higher densities on mixed tenure sites creates a number of design challenges in terms of providing appropriate amenity in homes. Issues of aspect, prospect and sunlight,

⁴³ E Silverman et al, *A Good Place for Children? Attracting and retaining families in inner urban mixed income communities*, CIH and JRF, 2005

⁴⁴ See J Stewart, *Room to move? Reconciling Housing Consumption Aspirations and Land-use Planning*, HBF, 2005; and C Whitehead, 2008 op cit

⁴⁵ GLA data, based on CLG 2006-based household projects for London

⁴⁶ Bartlett K et al, *Consumer Choice in Housing: The beginnings of a house buyer revolt*, Joseph Rowntree Foundation, 2002

⁴⁷ CABE, *What Home Buyers Want: Attitudes and decision making among consumers*, 2005

overlooking, and visual and acoustic privacy, all become more acute as densities increase, and require great care in design⁴⁸. London development sites are often surrounded by challenging conditions for new housing, and together with the general noise and activity of daily life in the city, can impact negatively on the home. Natural light is also vital to a sense of wellbeing in the home, and this may be restricted in dense parts of the city. High density development in London is increasingly being defined by long, internal corridors flanked by small, single aspect units off both sides, which if poorly designed without regard to orientation or context can have a detrimental impact on daylight, ventilation, noise and privacy within the home. Higher standards of design can help ensure adequate amenity and enjoyment of the home.

Climate change

- 3.3.17 The Mayor is committed to making London a world leader in tackling climate change⁴⁹. London's 3.2 million homes account for 38 per cent of London's total carbon emissions (excluding aviation) through the energy they consume. Without intervention this will increase, driven by the growth in the number of homes and increases in energy and water consuming household goods. As well as being London's largest single carbon emitting sector, its housing stock is also exposed to the impacts of climate change – the increased risk of flooding, water scarcity and overheating.⁵⁰
- 3.3.18 The London Plan seeks to ensure that all new housing is built to the highest standards of sustainable design and construction that are possible for each scheme, thereby reducing carbon emissions, conserving water, mitigating flooding and safeguarding biodiversity. It also provides a comprehensive set of policies that seeks to “decarbonise” the energy supply network in London.

⁴⁸ CABE, *Design Reviewed: Urban Housing*, 2004

⁴⁹ Mayor of London, *Draft Replacement London Plan*, 2009

⁵⁰ Mayor of London, *London Housing Strategy*, 2010

3.4 International comparisons

- 3.4.1 A 2003 study comparing the technical building requirements of eight European countries⁵¹ found that there are considerable variations in requirements and that a broad variation of systems and formulations were used, including:
- Generalised “functional” requirements in combination with “deemed-to-satisfy” practical design solutions;
 - Generalised “functional” requirements with design guidance or reference to external sources of design guidance;
 - “Prescriptive” requirements with reference to solutions; and
 - Quantitative “performance” requirements without reference to practical design solutions.
- 3.4.2 The study reported that in the countries assessed, planning and building control functions are combined into a single Building Permit, except for England and Wales and Sweden. It also found that each country has some requirements for the size of homes, ceiling heights and daylighting – the only exception being England.
- 3.4.3 In terms of size, requirements for the overall floor area of dwellings are rare but each country has some requirements for the size of habitable rooms, except England. There are also further accessibility requirements in some countries that have implications for the size of rooms, most notably in Sweden and France. The Netherlands has the most extensive requirements for floor area and dimensions of rooms, with the highest standard for one room at 11 sq.m. The authors note that ‘it is particularly interesting to contrast the standards of the [Netherlands] Building Decree with the lack of controls in England, both being countries with relatively small dwellings, high land costs, and considerable pressure towards densification’⁵². Minimum ceiling height requirements range from 2.3 m in France to 2.6 m in the Netherlands.

⁵¹ L Sheridan et al, *Building Regulations in Europe, Part II: A comparison of technical requirements in eight European countries*, 2003. The eight countries studied were the Netherlands, England, France, Germany, Sweden, Norway, Belgium and Denmark.

⁵² Ibid, p. 272

3.4.4 A recent study comparing the regulatory framework in England and Wales with Italy⁵³, primarily in regards to space standards, reports that the building regulations in Italy include total net and room floor space minimums, ceiling heights and window dimensions in relation to daylighting. The study found that national housing space standards evolved initially from nineteenth century concerns over public health (shared in England) and later the experience of poor housing quality due to rapid urban growth in the 1960s. In comparison to the approach in England, the study concludes that in Italy space standards are viewed as a measure to ensure a liveable balance between housing quality and quantity and are essential controls in higher density schemes. The regulatory standards are not viewed as a threat to other planning priorities in Italy, including affordability or density. The report does qualify that regulation can undermine creativity, as lamented by several Italian architects interviewed for the study, but at the same time the standards are also strongly associated with the quality of homes being built.

3.4.5 The Republic of Ireland introduced apartment design standards as national planning policy in 2007. This was in response to apartments becoming an increasingly popular form of dwelling in Irish urban areas and ‘to promote sustainable urban housing, by ensuring that the design and layout of new apartments will provide satisfactory accommodation for a variety of household types and sizes – including families with children – over the medium to long term’⁵⁴. The standards include:

- minimum space standards floor areas for different types of apartments, storage spaces, sizes for apartment balconies / patios, and room dimensions for certain rooms;
- minimum areas for balconies (by number of bedrooms, starting from 5 sq.m. for a one-bed dwelling);
- the need for shared circulation areas to be well-lit preferably with some natural light and ventilation;
- dual aspect apartments should be the norm to maximise the availability of sunlight;
- minimum floor-to-ceiling height of 2.7 m generally and 3 m on the ground floor of multi-storey dwellings.

⁵³ N Gallent et al, *International Housing Space Standards in Italy and England: Comparing the ‘conditions’ of regulation*, RICS, 2010

⁵⁴ Ireland Department of the Environment, Heritage and Local Government, *Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities*, 2007

- 3.4.6 The Dublin City Development Plan was also updated in 2007 to include a new section on 'Achieving Liveable Sustainable New Apartment Homes', as around 90% of new housing in Dublin is built as apartments and 'achieving family friendly apartment housing quality and attractive new neighbourhoods are key challenges for the future success of the City'. The Plan states that the key issue in relation to apartment housing quality and liveability is the size or floor area of individual units as 'this is the envelope within which all the other qualities and facilities can be delivered'. A range of other factors that affect housing quality and liveability are identified such as: dual aspect, facilities for children, above minimum floor to ceiling heights, daylight and sunlight, balconies and terraces, proper provision for drying clothes, sufficient storage, kitchens/bathrooms with windows, noise insulation, energy efficiency, and good design and layout⁵⁵.
- 3.4.7 The Dublin Development Plan goes further than the national Irish guidelines (and the Mayor of London's proposed standards), requiring:
- Higher minimum floor areas (one-bed 55 sq.m., two-bed 80-90 sq.m., and three-bed or equivalent 100 sq.m.)
 - Minimum storage areas within the apartment to be 3 sq.m. for a one-bed, 7 sq.m. for two-bed, and 9 sq.m. for three-bed or equivalent
 - Target of two apartments per lift / stairs core per floor providing for 100% dual aspect, with the maximum for single aspect being 15%, none facing north, and each single aspect unit assessed in terms of its quality
 - Minimum balcony sizes of 6 sq.m. for a one-bed, 8 sq.m. for a two-bed, and 10 sq.m. for three-bed or equivalent
 - A minimum floor to ceiling height of 2.7 m (3 m floor to floor).
- 3.4.8 In 2002, the New South Wales (NSW) state government in Australia adopted planning policy SEPP65 in regards to the design quality of residential flat developments⁵⁶. This originated in response to the greater demand for flats in urban areas arising from a growing population and demographic changes, and concerns regarding the quality of new developments⁵⁷. SEPP65 identifies ten design quality principles and is supported by the Residential Flat Design Code, which provides detailed guidance on how the principles

⁵⁵ Dublin City Council, *Achieving Liveable Sustainable New Apartment Homes, Variation (No. 21) of the Dublin City Development Plan 2005-2011*

⁵⁶ New South Wales Government, *State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development*

⁵⁷ New South Wales Urban Design Advisory Committee, *Achieving Better Design: Residential Flat Developments in NSW, 2000*

should be applied to development proposals. To improve standards alongside the Code, SEPP65 also requires residential flat buildings to be designed by architects and recommends the establishment of local or regional design review panels to provide independent design advice to local planning authorities.

- 3.4.9 The NSW Residential Flat Code is based on the principle that 'good quality buildings help improve the quality of life'. It includes detailed guidance on site design, building design and local context issues, including space standards which increase in relation to number of bedrooms as well as aspect (i.e. recommended area for a one-bed 'cross-through' apartment – long, deep plan dwelling with aspect on opposite sides of the external elevation – is 50 sq.m. with a private external area of 8 sq.m., while a one-bed single aspect dwelling should have a larger internal area of 63.4 sq.m. and larger private external area of 10 sq.m.). The Code sets out a number of 'rules of thumb' including 2.7 m floor-to-ceiling height minimum for all habitable rooms on all floors, minimum balcony depth of 2 m, and recommended storage areas.
- 3.4.10 The examples in this section highlight that a range of similar design criteria are regulated internationally through building control or planning systems; the main difference being the way these criteria are measured. England is notable in the examples provided for its lack of particular design controls, particularly in regards to the size of homes. Both Ireland and Australia provide recent examples of design controls introduced through the planning system. These were established in response to a similar context to that in London, with an increasing provision in the number of flats being built and concerns over the quality of developments being provided. While some international standards reviewed are higher than the Mayor's proposed standards, it could be concluded that the London standards are pitched at a more reasonable level, taking account of the London context and evidence set out in later sections of this report.

3.5 Benefits

3.5.1 Recent research by CABA⁵⁸ pulls together a number of existing research and case studies that point to the benefits of good quality housing, including:

- Links between housing quality, better welfare and reduced costs to society, often in the form of public health benefits;
- Case studies showing that exemplar schemes can achieve higher residual values than conventional schemes;
- Residential developments designed to Secured by Design (SBD) standards had lower reported crime rates and less fear of crime than those without, and that the average cost of building in SBD measures was £440 per new dwelling, compared with average losses of £1,670 per dwelling from burglary; and
- Additional residual value for the developers of a well-designed housing scheme has been estimated at almost £11 million per scheme, realised over the five years from first completion of the scheme.

3.5.2 Good quality housing also contributes to the mitigation of health inequalities. The Marmot Review, 'Fair Society, Healthy Lives', for the Department of Health identifies 'Healthy Standards of Living for all' as being one of six policy objectives that will help reduce health inequalities. Quality of the home environment is part of the equation of a healthy standard of living. Definable characteristics of the home that contribute to health include access to natural daylight and appropriate noise insulation and layouts which promote privacy in the home to avoid stress. Treating illnesses arising from poor housing conditions costs up to £2 billion per year, according to a study for the Royal Institution of Chartered Surveyors – more than local authorities spend on all their own housing stock each year⁵⁹.

3.5.3 The benefits of higher standards of environmental performance and resource efficiency in new housing have been well-documented, not only in mitigating and adapting to climate change by reducing carbon emissions but providing fuel bill savings for residents and helping to tackle fuel poverty⁶⁰. However, sustainability is also about providing buildings that have a reasonably long life, which requires them to have sufficient inbuilt flexibility

⁵⁸ CABA, *Why we need standards for housing design*, March 2010

⁵⁹ Quoted in CABA, *Why we need standards for housing design*, 2010

⁶⁰ Mayor of London, *London Housing Strategy*, 2010

for them to adapt to changing needs of their lifetime. The main factor which provides flexibility and adaptability in dwellings is space⁶¹.

- 3.5.4 It is recognised that high quality design will not be achieved by the use of physical standards alone. The aim is to provide a clear set of parameters to inform the development of a scheme from the outset, to avoid trying to improve a scheme when it is too far down the line to change without major impacts on time and cost leading to the potential for unsatisfactory compromises. This clarity should benefit and give greater certainty to the design and planning process for new homes in London.

⁶¹ HATC, 2006, op cit

- 3.6 The Mayor's proposed standards
- 3.6.1 It is within this context that the Mayor has introduced the proposed standards within Policy 3.5 of the DRLP and the forthcoming draft Housing SPG (see Appendix 1 for detail of the emerging standards).
- 3.6.2 Policy 3.5 and implementation guidance within the draft Housing SPG aim to bring together in one document the full range of issues which impact on the quality of dwellings, including accessible homes that respond to changing needs, have adequate space, daylight and ventilation, provide a sense of security and privacy, are energy and resource efficient and respect and enhance their surrounding context.
- 3.6.3 The draft Housing SPG standards have been informed by the standards set out in the draft London Housing Design Guide, first published by the Mayor for consultation in July 2009. The London Housing Strategy states that the Mayor will work with the HCA to apply the standards in the Guide to all affordable homes developed with public funding in London. The Mayor's ultimate aim is convergence of the design guidance to create a consistent, all-embracing package of standards for all housing in London.
- 3.6.4 The strength of the Mayor's requirements is three-fold. Firstly, that it consolidates existing standards about place-making, sustainability, security and accessibility – secondly, that it deals with internal space and shared circulation spaces in blocks of flats as the missing link to ensure design quality at higher densities – and thirdly, and as a result of the first two, it looks to the future and not just the present.
- 3.6.5 However, consultation on the draft of the London Housing Design Guide and the Draft Replacement London Plan raised a number of criticisms of introducing new or higher standards in certain areas, primarily due to their impact on cost, site viability, land values, affordability and development capacity. These are addressed in a separate impact study⁶², though section 5 of this report addresses some of the criticisms of implementing standards through the London Plan.

⁶² GVA Grimley, 2010, op cit

- 3.6.6 This section looks in detail at those standards in the draft Housing SPG which are new or go beyond existing standards that apply under current planning policy and received the most comment on their potential impact in the consultation process. These include shared circulation, dual aspect, private open space, and ceiling heights as well as higher standards in relation to the mitigation of climate change. Given that they form an integral part of proposed policy 3.5, the proposed space standards are addressed separately in more detail in Section 4 of this report.
- 3.6.7 The standards addressed below have been derived from recent research and guidance and have been compared against current and previous standards. They have been revised to take account of consultation feedback on the draft London Housing Design Guide, further discussions with key stakeholders, and a cost and delivery impact assessment.

Shared circulation

The number of dwellings accessed from a single core should be no more than eight per floor

- 3.6.8 The report published by the London Housing Federation, Higher Density Housing for Families (2004), sets out acceptable solutions for access via common circulation to flats and maisonettes, based on a sliding scale as density increases. It points out that, as far as common circulation is concerned, it is not the density itself that is the determining factor, but rather the number of people served by each separate stair and lift core. As the density increases buildings get taller, lifts become a necessity and, even if flats are grouped around as many separate cores as possible (within limits set by the need to reduce the number of lifts and so keep service charges to a minimum); there is an inevitable rise in the number of dwellings accessed from each core.
- 3.6.9 The 'Capital Gains' report by the London Housing Federation (2002) reports that minimising the number of dwellings sharing a landing aids stewardship of the communal spaces, improves security and privacy as well as supporting stronger community networks. It is also suggested in the report that more manageable numbers of dwellings to a core helps to reduce crime and perception of crime. The report suggests that access to each floor should be limited to no more than four homes per landing. The report, however, is mainly focused on family housing provision. Given that many

developments in London offer a mix of accommodation, the DRLP standard is set at a level more acceptable to the broader scope of developments whilst preventing the worst possibility seen in the endless ‘hotel’ style layouts based on long internal corridors of single aspect flats off both sides. One poor quality scheme analysed as part of the development of the draft London Housing Design Guide had a 95 m corridor from the street entrance to the lift core and a further 25 m to the front door of one dwelling⁶³. The proposed standard is designed to restrict such scenarios.

- 3.6.10 The particular figure of eight per floor per core was established in the ‘Recommendations for Living at Superdensity’ report⁶⁴. It recommends: ‘Grouping between four and eight flats around a single core makes good use of lifts and allows at least some homes to be dual aspect. It also tends to be more space efficient (in net-gross floorspace) than double-banked corridors. Well designed cores can be easier to manage and more secure than corridor or deck arrangements.’
- 3.6.11 The report continues that ‘the longer the corridor, the more cost/space-efficient the layout, because all can be served off one main core plus an escape stair. This may be acceptable where the orientation of the block avoids a north-only outlook, and views from either side are not compromised. Long corridors can be improved by daylight and view at each end and by good quality interior design and lighting. However, the practical and psychological disadvantages of single-aspect flats and long corridors are obvious. Some of the worst post-war social housing blocks adopted this arrangement’⁶⁵.
- 3.6.12 The architects of the Angel Waterside development in Islington, winner of Building magazine’s 2010 Housing Project of the Year, undertook detailed financial studies to work out the most efficient use of space, and found that multiple cores not only allowed them to design dual-aspect apartments with favourable views over the canal, but also gave more saleable space than traditional double-banked corridors⁶⁶.

⁶³ Unpublished review of schemes undertaken by Mae architects for the London Development Agency

⁶⁴ Design for Homes et al, 2007, op cit

⁶⁵ Ibid

⁶⁶ Building, April 2010 – www.building.co.uk/story.asp?sectioncode=607&storycode=3162152&c=1

- 3.6.13 No amendment has been made to this standard as a result of the consultation; however it is anticipated that it will be a recommended standard rather than a required minimum for all tenures in the Housing SPG.

Dual aspect

Developments should avoid single aspect dwellings that are north facing, exposed to noise exposure categories C or D, or contain three or more bedrooms. Where single aspect dwellings are proposed, the designer should demonstrate how good levels of ventilation, daylight and privacy will be provided to each habitable room and the kitchen.

- 3.6.14 Dual aspect dwellings are defined as having windows on at least two sides of a dwelling. The draft London Housing Design Guide set out the benefits of dual aspect dwellings, which include better daylight, a greater chance of direct sunlight for longer periods, cross ventilation, a choice of views, access to a quiet side of a building, and greater flexibility in the use of rooms⁶⁷.
- 3.6.15 The requirement to avoid single aspect dwellings was advocated in English Partnerships Quality Standards published in November 2007. It requires that houses and apartments should be dual aspect where possible to facilitate cross ventilation, and that homes only facing north are not acceptable. The requirement has echoes in policy tracing back to the 1909 Housing and Town Planning Act, which outlawed back-to-back housing as unfit for human habitation.
- 3.6.16 Dual aspect is a matter of human comfort and quality of life offered by managing and enhancing daylight into the home. In the research study 'What Homebuyers Want', CABE (2005) reported that good natural light ranked second in the features that were considered important in a quality home. Dual aspect also offers greater opportunities for retreat and privacy, and for varied aspect and views.
- 3.6.17 An architectural practice with experience designing homes in Ireland recently reported on their experience with the Irish Department of the Environment and Dublin City Council requirements for new developments to adhere to rules on orientation and aspect. These state that single-aspect dwellings must be avoided where possible and no northern or eastern

⁶⁷ Mayor of London, *London Housing Design Guide: Draft for consultation*, 2009

single-aspect dwellings are allowed, ‘thereby requiring new apartments to be dual aspect and eliminating corridor developments at a stroke. This has the benefit of creating more intimate and secure landings, and increasing activity on the street rather than in corridors. In our experience, this constraint has led to some intriguing solutions, particularly for corner situations, which still retain a good degree of efficiency.’⁶⁸

3.6.18 As many of London’s development sites are constrained, the aspiration for full dual aspect development is not always achievable in high density sites. The dual aspect standard proved one of the most contentious issues in the consultation on the draft London Housing Design Guide, originally worded as follows: ‘There will be a presumption against single aspect. In sites where dual aspect dwellings may be impossible or unfavourable, the design must demonstrate how a good level of natural ventilation and daylight will be provided to each habitable room.’ The balance of consultation responses recognised that there were benefits to dual aspect dwellings, but indicated that the wording was too onerous and open to misinterpretation as a blanket ban on single aspect units.

3.6.19 The requirement has therefore been adapted to better suit the London context where often constrained sites or sites with poor aspect are a common reality. The wording, therefore, aims to limit single aspect only where it is most likely to have a detrimental impact on the quality of the dwelling and a developer must demonstrate how conditions such as noise, privacy, daylight and ventilation have been addressed.

Private open space

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. The minimum depth of all balconies and other private external spaces is 1.5 m.

3.6.20 The ‘Perceptions of Privacy and Density in Housing’⁶⁹ report found that ‘virtually everyone we spoke to put a high priority on having a small place in the sun even if it was only their own backyard or a balcony. The space might only be a few meters square but it gave residents the chance to relax

⁶⁸ Mitchell T, ‘How to make room for housing’, The Architects’ Journal, 13 March 2008

⁶⁹ Mulholland Research & Consulting, *Perceptions of Privacy and Density in Housing*, Design for Homes Popular Housing Research, 2003

outdoors in privacy.’ It goes on to say: ‘This private outdoor space was seen as vital in making high-density living acceptable for a wide cross-section of different households.’

- 3.6.21 In the research study ‘Residents’ Views of New Forms of High Density Affordable Living’⁷⁰, residents spoke enthusiastically of having access to exterior space and access to a balcony was seen as a benefit. Living in an urban area without access to a private garden or outside space influenced some residents in wishing to move. The study also revealed that access to one’s own garden was a more common feature within than might be expected (based on eight case study schemes), and that this was determined by scheme design rather than tenure or other factors.
- 3.6.22 Research undertaken by the Housing Corporation⁷¹ also found that the demand for safe usable outdoor space is common to all life-stage groups and all types of dwelling (both market and affordable) and is a high priority particularly for families. Similarly, it is not only the provision of outdoor space that residents are seeking, but also the configuration of this space so that it is useful and not too constrained.
- 3.6.23 The recent HAPPI (Housing our Ageing Population: Panel for Innovation) report also identified private outdoor space as particularly valuable for older people, who leave the home less frequently⁷².
- 3.6.24 The National Housing Federation’s ‘Standards and Quality in Development: A good practice guide (2nd edition)’ advocates a minimum private open space of ‘1 sq.m. useable floor area per person, and not less than 3 sq.m. area’⁷³. In order to test the fitness for purpose of minimum external areas, efficient layouts were planned around furniture requirements for different occupancy numbers. Furniture included suitable table and chair space relative to occupancy numbers, plus space for drying of laundry and space for visitor seating to arrive at a minimum of 5 sq.m. to provide for amenity and usability. A minimum dimension of 1.5 m has been allowed for a

⁷⁰ J Bretherton and N Pleace, *Residents’ Views of New Forms of High Density Affordable Living*, Joseph Rowntree Foundation, 2008

⁷¹ S Davis and R Capie, *Planning for the future: Life in affordable housing*, Housing Corporation and Chartered Institute of Housing, 2008

⁷² PTEa and Levitt Bernstein, *Housing our Ageing Population: Panel for Innovation report*, Homes and Communities Agency, Communities and Local Government, Department of Health, 2009

⁷³ Standard 6.7.12 (Part C, External Environment) in National Housing Federation, *Standards and Quality in Development: A good practice guide (2nd edition)*, 2008

wheelchair turning circle in line with the principles of Lifetime Homes and to incorporate the furniture noted above. This standard has not been altered as a result of the consultation and impact assessment process.

Ceiling heights

The minimum floor to ceiling height in habitable rooms is 2.5 m between finished floor level and finished ceiling level. A minimum floor to ceiling height of 2.6 m in habitable rooms is considered desirable and taller ceiling heights are encouraged in ground floor dwellings.

- 3.6.25 Good floor to ceiling heights, if matched with generous window sizes, facilitate good daylighting, ventilation and a sense of wellbeing. Better ventilation contributes to our building stock's ability to adapt to future temperature increases due to climate change and reduces reliance on mechanical air conditioning with its high energy demand and harmful emissions. In addition, higher floor to ceiling heights can contribute to the flexibility and sustainability of our building stock, allowing residential development to take on other uses in the future, and can help overcome problems of low daylight levels in units on lower floors in the more dense, urban context of London.
- 3.6.26 In CABI's 'What Homebuyers Want' research study (2005), focus groups identified high ceilings and good daylight as the most sought after qualities for interior spaces. The 'Perceptions of Privacy and Density' research (2003) of case studies concluded that there was an almost universal demand for spacious, light and airy rooms with the most successful examples of higher density accommodation all having plenty of internal space, both in terms of room size and ceiling height.
- 3.6.27 Average floor-to-ceiling heights have tended to fall over the last century. A height today of 2.4m is more typically determined by the dimension of a standard building plasterboard than the quality of the space it delivers. However, building boards are not limited to these dimensions, and suppliers are readily capable of adapting to policy.
- 3.6.28 English Partnerships Quality Standards advocated a floor-to-ceiling height for upper floors of 2.7 m, and 3 m on the ground floor to encourage greater flexibility in use. This is a considerable advance on industry standard. The 2.5 m previously used by the Housing Corporation, as defined in the

Housing Quality Indicators version 4, seems to be a more acceptable measure and readily achievable without unnecessary construction waste. The original standard was set at 2.6 m, but following the consultation and impact assessment process has been reduced to 2.5 m. A standard building board of 2.4 m plus skirting and architrave will deliver a 2.5 m floor-to-ceiling height.

Code for Sustainable Homes

Designers should seek to achieve a minimum of Level 4 of the Code for Sustainable Homes in all new developments

- 3.6.29 The London Housing Strategy sets out the requirement for all publically funded schemes to reach Code level 4 as part of the next HCA funding round. This standard will be more discretionary in the draft Housing SPG given it will apply to all tenures and full achievement of Code level 4 may not always be possible. However, the Mayor expects all housing will meet the energy and CO₂ reduction requirements of Code Level 4 as a minimum in the Draft Replacement London Plan (Policy 5.2 Minimising carbon dioxide emissions).

4. THE NEED FOR SPACE STANDARDS

- 4.1 The importance of space
- 4.1.1 Space is one of the key factors in defining how comfortable residents feel within a home and how much privacy is achieved within it. It is argued that space within dwellings is one of the greatest concerns for many residents, and that there is no effective compensation for inadequate space⁷⁴.
- 4.1.2 A 2008 survey by Building Design magazine⁷⁵ with the British Council found that 75 per cent of respondents felt that the government shows 'no genuine commitment' to raising housing design quality, and when asked what would help 37.6 per cent favoured introducing new space standards, the highest response rate.
- 4.1.3 The Homes and Communities Agency has also prioritised space in its proposed national housing standards for publicly funded homes, and that in order to deliver good quality, well designed homes, they should be 'sensibly planned and functional; designed to meet the demands of everyday life, providing enough space and facilities, such as privacy and storage, to enable residents to live comfortably and conveniently'⁷⁶.
- 4.1.4 The Parker Morris standards introduced in 1961 responded to the increasing prosperity and accumulation of goods, noting that 'new homes are being built at the present time which not only are too small to provide adequately for family life but also are too small to hold the possessions in which so much of the new affluence is expressed'. The Parker Morris report, *Homes of Today & Tomorrow*, noted that at the time:
- 1 in 3 households had a car
 - 1 in 3 had a washing machine
 - 2 out of 3 had a TV
 - 2 out of 3 had a vacuum cleaner
 - 1 in five had a fridge

⁷⁴ H Cope, *Higher Density Housing for Families: A design and specification guide*, London Housing Federation, 2004

⁷⁵ W Hurst, 'Government fails on pledge for good design', *Building Design*, 2 October 2008. The survey was launched in response to the British Pavilion at the 2008 Venice Architecture Biennale which focused on housing design by British architects in UK and Europe. 800 readers responded over a two week period in September 2008.

⁷⁶ HCA draft standards consultation (2010), op cit

- 4.1.5 In determining how much space a home needs, the Parker Morris standards established a functional approach, based on living patterns, furniture and equipment: 'the right approach to the design of a room is, first to define what activities are likely to take place in it, then to assess the furniture and equipment necessary for those activities, and then to design around these needs, plus others no less important, such as aspect, prospect and communication with other parts of the home'.
- 4.1.6 At a basic level, these functional requirements still determine the space needs of a home regardless of household size. Space is needed for residents to cook, eat, bathe and sleep, with sufficient space for furniture and the ability to access and use it comfortably, as well as space to move around the home and access doors and windows. Homes are also places to relax, study or work, keep fit, and enjoy time with friends and family. Today's home environment has to perform even harder with people expecting to be able to work at home, facilitated through the ease of IT communications.
- 4.1.7 The consumer needs set out in the Parker Morris report are now more widespread and are augmented by more modern needs for recycling bins in the kitchen, space for a dishwasher and clothes dryer, and cycle storage. As levels of consumption of products and goods have increased, storage space for personal possessions remains a key concern⁷⁷, and arguably will become increasingly important due to the growth in recycling and moves towards a less disposable society. Space for storage should also be considered for bulky items such as a vacuum cleaner, ironing board and suitcases.
- 4.1.8 For family homes, a good practice guide on higher density housing design published by the Northern Ireland Housing Executive contends that space is a key factor in making apartment living in higher densities attractive to families in European cities. The guide notes that apartments in internationally admired developments such as Hammarby Sjostad in Stockholm are built at relatively high densities of 145 homes per hectare, but a one-bed flat is typically 64 sq.m. and a two-bed is 83 sq.m. (well above the Mayor's recommended minimum standards – see section 4.5). 'In most UK

⁷⁷ CABE, 'Building for Life Newsletter 07: Storage Space', July 2006

cities these floor areas are reduced by one-fifth to one-quarter, even though the density might be exactly the same. But it is this extra space that makes higher density apartment living manageable' ⁷⁸.

- 4.1.9 The Superdensity report argues that in family homes, enough space is needed to strike the right balance of social space and private space, where people can be alone. For example, in a fully occupied two-bedroom, four-person dwelling there are no habitable rooms which aren't shared, and in larger family homes especially, there is a stronger likelihood of more than one family member needing personal space⁷⁹. Stakeholder interviews in the Housing Space Standards report by HATC for the GLA (2006) identified the lack of privacy arising from open-plan designs as a major issue, as it means that bedrooms in particular need to be multifunctional (e.g. places for privacy, study and recreation, not just sleeping and dressing).
- 4.1.10 The HATC report also suggests that market demands appear to be pushing in the direction of increased space and flexibility and the ability for more rooms to be "multi-use", rather than designed for one use such as a bedroom. Research by CABE also points to an emerging preference for rooms that are capable of being used for a number of functions rather than a large number of bedrooms, and this would mean providing more living space⁸⁰.
- 4.1.11 Space is key in allowing greater flexibility in the home. People's lifestyles change such as starting a family, working from home and ageing and in this regard people would like more flexibility in the use of space⁸¹. Higher space standards allow for more possibilities in terms of alternative room layouts and relationships, as very small flats tend to only have one workable generic layout. In 2008, the Government published 'Lifetime Homes, Lifetime Neighbourhoods: A National Strategy for Housing in an Ageing society', which set out the need to build more flexible and inclusive housing in order to meet the future requirements of the UK's ageing population. As demographics change and people live longer, their lifetime needs change and homes need to be able to adapt to suit changes in mobility and deal with physical impairments. The Lifetime Homes standard aims to ensure greater

⁷⁸ Design for Homes and Levitt Bernstein, *Higher Density Design for Quality and Low Maintenance: a good practice guide*, Northern Ireland Housing Executive, 2008

⁷⁹ Design for Homes et al, 2007, op cit

⁸⁰ CABE, *What Home Buyers Want: Attitudes and decision making among consumers*, 2005

⁸¹ R Ozaki, 'Mind the Gap: Customers' perceptions and the gaps between what people expect and what they are offered' in K Bartlett et al, *Consumer Choice in Housing: The beginnings of a house buyer revolt*, Joseph Rowntree Foundation, 2002

flexibility and accessibility in the home, setting criteria in relation to space needs in bathrooms and corridors to accommodate wheelchair use, to enable stairs to be wide enough to accommodate future stair-lift provision, and to provide space on the ground floor of homes above one storey to accommodate a WC and a convenient temporary bed-space at ground level if needed.

- 4.1.12 It is worth noting that size alone does not guarantee quality homes. Indeed, the Parker Morris standards were criticised for focusing primarily on the internal environment of the home and not wider issues of context and place-making. However, space standards are one of the means of achieving a level of housing quality that will ensure that homes offer basic utility for different households⁸².

⁸² Argued in HATC (2006) op cit, and N Gallent et al (2010) op cit

4.2 Resident needs and preferences

- 4.2.1 This section focuses specifically on recent research concerning space provision in the home and market demand in relation to homebuyers preferences (both national and London focused). In terms of informing the debate around the introduction of space standards, the various research studies and consumer surveys summarised below show a considerable degree of consistency not only in the preferences expressed regarding space in the home, but also in levels of dissatisfaction with inadequate space a frequent issue raised amongst residents.
- 4.2.2 In their report '**What Home Buyers Want**' (2005), CABE undertook an evidence review of 25 consumer surveys commissioned by a range of charitable trusts, house building interests and government agencies over the last decade, as well as conducting focus group research and online surveys with prospective home buyers. A post-occupancy survey undertaken as part of the study rated internal layout as the first of eight important aspects with size of rooms fifth and number of rooms seventh, and a previous survey of prospective buyers ranks spacious rooms as the first of eight features considered desirable in a good-quality home. However, the findings indicate that a key drawback of new homes was considered to be an overall shortage of space. Around a third of prospective new home buyers were dissatisfied with this aspect of their new home, and 40% of secondhand home buyers were put off buying a new home by the lack of space. More living space was preferred, as were fewer but bigger bedrooms. The study found that criticism about lack of space was expressed by all groups of home buyers with singles just as vociferous as families. Inadequate storage space was also a complaint voiced by all groups of home buyers.
- 4.2.3 A study commissioned by the Housing Corporation '**Life in Affordable Housing**' (2008) compared the preferences of affordable housing residents with owner occupiers and found that, while there were differences, the desire for more indoor and outdoor space seems to be a strong theme across all tenure groups and household types, and to be especially crucial for families. The research found that more space was sought to accommodate non-resident children coming to visit, for other visitors, or in order to work from home. Kitchens were often seen as too small and a lack of storage space was also highlighted, especially in flats. Several focus groups also felt that the lack of space would be felt more acutely in the

future as people increased the amount of material possessions in their homes such as computers and fitness equipment.

4.2.4 A Joseph Rowntree Foundation (JRF) study, '**Preferences, quality and choice in newbuild housing**' (2004), concludes that in regards to space and space standards, the various analyses in the report 'contain strong suggestions that house-building outcomes are very different from new-build house buyers' needs and preferences'⁸³. The size of the property was of great importance to participants in focus group and interview work undertaken during the study, particularly in regards to the number of bedrooms and room sizes. However, the study points to a clear trend involving buyers getting an increasing number of smaller bedrooms as time goes on, and that there is significant dissatisfaction among new-build house buyers and prospective buyers. Some focus group participants in the study, especially those from lower-priced estates, even felt that they were misled about room sizes, pointing out that the show home used smaller furniture than normal to give the impression of more space, which in some cases led to furniture needing to be replaced as this was only noticed once people moved in.

4.2.5 The JRF report also highlights conflicting evidence in terms of the desire for more space in bedrooms. Participants in the study almost always responded to questions regarding trade-offs between larger or more bedrooms by opting for more rooms. The report concludes that the number of bedrooms remains an important driver when people choose to purchase a home, particularly as it is this rather than floor area that is a determinant in the value of a home and it is likely buyers wish to maximise the future investment value of their purchase. It is recommended that the GLA undertake further research in this area to understand the impacts of how homes are valued and marketed on the long-term quality and utility of homes, and whether there is a case to be made for changes in the valuation and marketing of all homes to protect future provision of space and how this may be implemented.

4.2.6 Another study published by JRF, '**Consumer choice in housing: The beginnings of a house buyer revolt**' (2002)⁸⁴, concluded that apart from location, space seems to be a major factor for most groups in their choice of housing in the private market. Space is high on the list of priorities of the

⁸³ JRF (2004), p.27

⁸⁴ See in particular A Hooper, 'Consumer Housing Preferences in a Market Context'

increasing number of one-person households. Yet the study suggests there is evidence that housing consumers are experiencing a growing pressure on the amount of domestic space they can buy through the housing market and that this pressure is especially evident in London.

4.2.7 An HATC / Ipsos MORI survey for CABE, '**Resident Satisfaction with Space in the Home**' (2009)⁸⁵, sought to investigate residents' satisfaction with the space in their home with newly-developed dwellings, specifically in London and the Southeast. The survey methodology sought to control risks in regards to 'aspiration' where most people would say 'yes' if asked whether they would like more space in their home. Questions were therefore designed to avoid responses being a reflection of unfulfilled ambition, potentially leading to overly critical responses. The survey also sought to avoid a potential 'honeymoon effect', where buying a home is an emotional experience as well as the biggest investment of most people's lives and few would wish to admit that their chosen home was less than ideal. To counteract this, the sample was drawn from buyers over a three-year period between 2003 and 2006, so respondents were living in their properties for between two and five years when the survey was carried out in 2008. The results of the survey found that recent occupiers do indeed appear to be the most satisfied, whilst those who have lived in the home for more than 2 years are significantly less satisfied.

4.2.8 Overall, the survey found that 54% of respondents said the amount of space in the home was very important and 39% said it was fairly important to them (totalling 93%) when choosing where to live. However, the findings indicate that many residents in new private homes do not have sufficient space for basic daily activities and needs. Key findings include:

- 72% of all respondents say that there is not enough space in their kitchen for recycling bins;
- 47% of all respondents, and 58% of those in fully occupied homes do not have enough space for all the furniture they own, or would like to have;
- 51% of all respondents and 65% of those in fully occupied homes say that the amount of space in their homes limited the choice of furniture layout in rooms;
- 57% of all respondents and 69% of fully occupied households do not have sufficient storage to accommodate everything they need to store;

⁸⁵ Also see the executive summary by CABE, *Space in new homes: what residents think*, 2009

- There is often inadequate space for children and adults to socialise, and many people cannot find a quiet or private place to relax particularly in more fully occupied homes;
- 90% of new homes surveyed had spare bedroom space, which CABE argues 'adds extra weight to the problems uncovered by this research... even a spare room does not guarantee enough space to meet household needs'⁸⁶;
- Higher satisfaction levels with the space in homes of residents living outside London compared with those living in London, supporting anecdotal evidence that pressures on dwelling sizes have been greatest in London.

4.2.9 The report '**Perceptions of Privacy and Density in Housing**' (2003) undertook focus groups and in-depth interviews with residents living in 10 schemes across England (including 2 in London) in order to assess views on space, security, noise and privacy across a range of house types. The report found that there was an almost universal demand for spacious, light and airy rooms, and the most successful examples of higher density accommodation from the case study schemes all had plenty of internal space, both in terms of room size and ceiling height. The report concluded that 'this spaciousness of accommodation was seen as a vital ingredient in the success of the Edwardian mansion flats, the Regency and early 20th century terraces and, more recently, the Greenwich Millennium Village houses [in London]. These were sustainable homes in the sense that they were big enough to accommodate the changing needs of the household over time'. The report also notes that in households with children, it was important that the adults and children could have well demarcated, private space in which to get on with their own activities and that open plan designs in the smaller homes reviewed in the study did not give enough privacy between adults and children. Lack of storage space compounded these problems, as there was not enough space to store everything that babies and children need as well as space for adults to keep their possessions private.

4.2.10 A report by the NHBC Foundation '**Modern Housing: Households' views of their new homes**' (2007) aimed to compare differences in the housing stock profile between new homes (built between 1991 and 2001) and the older housing stock (built before 1991). The report highlights that the

⁸⁶ CABE, *Space in New Homes: What residents think*, p.7

majority of households are currently satisfied with many aspects of their homes; however the design of future homes could be improved by increasing room sizes and providing more storage. Concerning room sizes, the study found that 69% of households living in new homes think that their room sizes are about the right size, though 26% think that the rooms are too small, significantly different to the findings for the older stock. More households in new homes (26%) compared with the older stock (16%) would prefer to have larger rooms, and 32% of households rate the amount of storage space in new homes as very or fairly poor.

- 4.2.11 In contrast, house builder surveys often point to high levels of satisfaction from new home buyers. In their latest **annual consumer satisfaction survey, the Home Builders Federation**⁸⁷ reports that a large majority of Britain's new home buyers are satisfied with their purchase, with 88% of purchasers saying they were very or fairly satisfied with the overall quality of their home and the same percentage saying they would recommend their home builder to a friend. However, it is worth noting that these surveys are primarily focused on the point of sale with questions regarding the condition of the home on move-in day, quality of finish and build defects, and satisfaction with customer service, rather than focusing on the experience of living in the home.
- 4.2.12 Why do the above research findings matter? As noted by CABE, consumer preferences cannot dictate policy, but should help inform it⁸⁸. Leishman et al (2004) argue that it is especially important to know whether planning and building controls reflect preferences in an era aiming for substantial new-build housing output⁸⁹. They also highlight the importance of housing in that it represents a substantial component of wealth and is one of the most important investments that a household ever makes, and it contributes to the quality and vitality of the urban environment and to meet the changing needs of households for decades to come. They argue that viewed in this context, findings showing levels of dissatisfaction among new-build house buyers are particularly worrying⁹⁰.

⁸⁷ Home Builders Federation, 'National New Home Customer Satisfaction Survey', 2010, www.hbf.co.uk/fileadmin/documents/barker/Cust_Satisfaction_2010_print_ready.pdf

⁸⁸ CABE, *What Home Buyers Want: Attitudes and decision making among consumers*, 2005

⁸⁹ Leishman C et al, *Preferences, Quality and Choice in New-build Housing*, 2004

⁹⁰ Ibid, p29

4.3 What is being provided

- 4.3.1 This section looks specifically at the size of new homes being developed. The evidence suggests a clear mismatch between consumer preferences and market provision, and that the issues raised within the research and consumer surveys in the previous section are real and not perceived.

General trends

- 4.3.2 It is difficult to assess general trends in space provision due to a lack of data, particularly as national statistics in relation to the size of dwellings are based on the number of bedrooms rather than room size or floor area. However, there is some evidence that space standards are decreasing. In their 2007 report 'Better Homes and Neighbourhoods', the RIBA noted that while house sizes have remained relatively constant in the past 20 years, they now contain on average 20% more rooms⁹¹. An RICS report in 2005 also indicates British homes are becoming more condensed, with increased 'cramming' of rooms (such as additional bathrooms) into dwellings leading to smaller habitable rooms and significant reductions in storage space⁹².
- 4.3.3 The Housing Space Standards report for the GLA suggests that in the absence of controls, studies have shown that developers will tend to reduce the size of dwellings⁹³. Evidence also indicates that Britain currently has some of the lowest dwelling sizes and average room sizes in Europe⁹⁴.

Within London

- 4.3.4 According to London Residential Research, the average one-bed flat has shrunk by 13% since 2000⁹⁵. The smallest examples uncovered were one-bedroom flats at 300 sq ft, two-bedroom dwellings of 445 sq ft and three-beds at 657 sq ft – significantly smaller compared to the Parker Morris standards that a one-bed flat should be at least 490 sq ft, a two-bed flat 623 sq ft and a three-bed dwelling 792 sq ft⁹⁶.

⁹¹ RIBA, *Better Homes and Neighbourhoods*, 2007

⁹² BCIS, *Five Year Review of UK Housing*, 2005

⁹³ HATC, 2006, op cit

⁹⁴ MIIR, *Housing Statistics in the EU 2005/06*

⁹⁵ Quoted in P Bill, 'Size matters to Boris when it comes to flats', *Evening Standard*, 27 June 2008

⁹⁶ *Ibid*

- 4.3.5 A recent dwelling size survey by HATC reviewed the amount of space being provided in different dwelling types in London and the South East marketed for sale in late summer 2008⁹⁷. The study sample was drawn from developments by 17 different housebuilders, and 89 dwellings were analysed and compared against the new draft benchmark sizes proposed by the Homes and Communities Agency and the Draft Replacement London Plan.
- 4.3.6 The study found that all property types examined were on average smaller than the benchmarks. The study also found that nearly 60% of the one-bedroom flats in London had no storage space at all.
- 4.3.7 The average gross internal floor area of the one-bedroom flats in the London sample was 46.9 sq.m., compared to the minimum standards proposed by the HCA (48 sq.m.) and the draft London Plan (50 sq.m.). The most noticeable variance in the schemes reviewed was in the two-bedroom flats, where 91% of London dwellings were below the HCA and draft London Plan benchmark levels – 10 sq.m. smaller on average. In London, some of the flats marketed as two-bedroom / four-person dwellings (i.e. showing 2 bed spaces in each bedroom such as one double bed or two single beds) were as small as 49 sq.m., roughly equivalent to the draft London Plan minimum standard for a one-bedroom / two-person flat. This is of particular concern for London, as a large proportion of homes being provided are two-bed flats (two-thirds of total output in 2008/09⁹⁸), which could potentially be occupied as family homes.
- 4.3.8 The study also notes that some housebuilders market an 8 sq.m. bedroom as a double (e.g. showing two bed spaces) and that some single bedrooms were as small as 4.5 sq.m., despite the fact this would count as overcrowding under the 1985 Housing Act if occupied in this way⁹⁹.
- 4.3.9 The London Borough of Croydon recently carried out an investigation of room sizes in new developments¹⁰⁰. They focused particularly on the lower end of the home ownership market and on the most common type of family home in the borough, the two-bedroom dwelling.

⁹⁷ HATC, *Room to swing a cat? The amount and use of space in new dwellings in London & the South East*, 2010

⁹⁸ CLG Housing Statistics, Live Tables on House Building, Table 254, op cit

⁹⁹ Housing Act 1985 Part 10 S.326. In measuring overcrowding, the 'bedroom standard' takes account of age, gender, and marital status of occupants in relation to room sizes – 10.2 sq.m. is deemed suitable for 2 occupants in a double bedroom and 6.5 sq.m. and above for one occupant.

¹⁰⁰ Croydon Council, 2008, op cit

- 4.3.10 The study found that in half of the properties reviewed, one of the two bedrooms was below 9 sq.m., and of these about a fifth measured less than 7 sq.m. The report notes that in one property, the second bedroom measured 1.65 m along the narrowest wall, which was occupied by a bed, leaving no flexibility to set the bed against the longer wall if desired as this would have left no room for other furniture such as cupboards or a desk. The study also found that storage space varied considerably, with some homes provided with no storage space whatsoever, 'the pattern being the smaller the sizes, the less generous the provision of storage space'¹⁰¹.
- 4.3.11 The Croydon report concludes that 'principles of accessibility, flexibility and sustainability are not being implemented in all new housing developments, and that new properties are being erected with cramped room sizes, little room for storage, and thus little room to adapt to a family's changing needs'¹⁰².

¹⁰¹ Ibid, p22

¹⁰² Ibid, p11

4.4 Impacts

- 4.4.1 Lack of space can lead to overcrowding, impacting negatively on the quality of life of residents particularly in London where overcrowding rates are highest in the UK and rising¹⁰³. The HATC Housing Space Standards report for the GLA suggests that while it is difficult for causative links to be clearly identified, there does appear to be associative links between overcrowding and stress, educational achievement and mental health. The 'Full House' report by Shelter¹⁰⁴ questioned over 500 overcrowded households, showing that overcrowded families face a variety of problems caused, and made worse, by their living conditions. These include lack of privacy, sleep disturbance, increased conflict, and impacts on family relationships, physical health and mental health.
- 4.4.2 While it is acknowledged that overcrowding is primarily an issue in the social rented sector, particularly as private sector housing is more generally under-occupied, it is the private rented sector in London that has seen the biggest rise in overcrowding since 2001, nearly doubling in ten years¹⁰⁵. Overcrowding is also heavily concentrated in particular neighbourhoods in London, with a fifth of overcrowded households in the worst hit wards¹⁰⁶. As it cannot be predicted who will live in a home over the longer-term and household size, tenure and length of occupation can vary, smaller homes built now may be storing up potential problems for the future.
- 4.4.3 The 2009 HATC space survey for CABE also suggests that pressures on space in private market homes impact disproportionately on those who are more economically disadvantaged, and lower income households suffer more from inadequate space than wealthier households. This was also found to be the case in the 'Perceptions of Privacy and Density in Housing' report, where not having sufficient space (in the form of small rooms, not enough separation of adult from child space and not enough storage) was determined to be a significant privacy problem for some housing sectors, with families living in lower cost private housing and social housing the most seriously affected.

¹⁰³ Mayor of London, *Housing in London: The evidence base for the London Housing Strategy*, GLA, 2009

¹⁰⁴ Shelter, *Full house? How overcrowded housing affects families*, 2005

¹⁰⁵ Mayor of London, *Housing in London: The evidence base for the London Housing Strategy*, GLA, 2009

¹⁰⁶ Ibid

4.4.4 There is little research in regards to the relationship between overcrowding and educational attainment, though some policy -oriented studies have pointed to the difficulty of completing homework in overcrowded homes¹⁰⁷. More generally, a 2006 study undertaken by the Housing Corporation as part of an update of its Scheme Development Standards for new affordable housing, found that more than a quarter of UK school children (27%) lack a space at home they can concentrate in to do their homework¹⁰⁸.

¹⁰⁷ Croydon Council, 2008, op cit

¹⁰⁸ Housing Corporation, 'No homework space for the MySpace generation', News Release, 16 October 2006

4.5 The Mayor's proposed space standards

4.5.1 The Mayor's proposed minimum space standards are set out in Table 3.3 within Policy 3.5 of the Draft Replacement London Plan as follows:

	Dwelling type (bedroom/persons)	Essential GIA (sq.m.)	
Flats (one storey)	1b2p	50	
	2b3p	61	
	2b4p	70	
	3b4p	74	
	3b5p	86	
	3b6p	95 (incorrectly published as 100)	
	4b5p	90	
	4b6p	99	
	Two storey homes	2b4p	83
		3b4p	87 (incorrectly published as 86)
3b5p		96	
4b5p		100	
4b6p		107	
Three storey homes	3b5p	102	
	4b5p	106	
	4b6p	113	

4.5.2 The approach taken in developing the internal space standards was to establish a new evidence base, taking a functional approach to calculate the minimum space required for each room (based on occupancy) to meet the Lifetime Homes standard¹⁰⁹ and to accommodate a basic inventory of furniture that is commonly required in particular rooms relative to occupancy, as well as allowing adequate access and activity space. Additional circulation space needed in dwellings above one storey has also been taken into account.

¹⁰⁹ Based on London Plan (2008) Policy 3A.5 Housing Choice, and Consultation Draft Replacement London Plan (2009) Policy 3.8 Housing Choice

Methodology

- 4.5.3 The proposed minimum space standards were derived from the work of Mae architects and are largely based on existing requirements and good practice. They build on the furniture and activity requirements first expressed in the Guide to Standards and Quality developed by the National Housing Federation with the Joseph Rowntree Foundation (1998) and later incorporated in the Housing Quality Indicators, last updated by the Housing Corporation (now part of the HCA) in 2008 as part of their affordable housing grant funding requirements. These represent a basic level of furniture provision to meet day-to-day needs relative to specific numbers of occupants, i.e. 2 residents require dining space for 2, a double bed or two single beds, living room seating for 2, etc along with associated space for circulation and activity zones.
- 4.5.4 The 16 Lifetime Homes criteria also have implications for the amount of space provided in the home. Corridors need to be of a minimum width, bathrooms need to accommodate wheelchair users and a living space needs to be able to accommodate a temporary bedspace and a future through the floor lift. Efficient room sets were then plotted for different occupancy numbers, resulting in minimum areas that can be achieved whilst accommodating the furniture and Lifetime Homes requirements.
- 4.5.5 The space standards proposed in Policy 3.5 are Gross Internal Floor Areas (GIA). GIA is defined by the RICS Guidance Note 'Code of Measuring Practice' 6th Edition as the area of the building measured to the internal face of the perimeter walls at each floor, including space taken up by partitions and circulation areas. An additional measure was added to the cumulative total for room areas to allow for circulation and internal partitions. Partitions have been calculated at 5% of the Net Internal Area; a consistent percentage observed in a range of completed schemes that were reviewed and measured by Mae architects. The area for circulation has been calculated from these same schemes, though inevitably due to a range of site constraints and building types the area for circulation varies. An average area for circulation was therefore added; however, it is acknowledged that some layouts may allow for greater efficiencies in circulation.

- 4.5.6 The GIAs arrived at match the ‘Indicative Minimum Dwelling Areas’ recommended in the National Housing Federation’s ‘Standards and Quality in Development: A good practice guide (2nd edition)’. In this instance the measurements were derived through a different methodology – by calculating the aggregate floor area taken up by the furniture sizes and activity zones, then adding an allowance of 40% for room layout, partitions, and circulation.
- 4.5.7 The proposed London GIAs vary slightly from those proposed by the HCA in their draft core national housing standards (published for consultation after the Draft Replacement London Plan). It is believed the allowance for circulation accounts for the minor differences between the two sets of standards. The Mayor and the HCA are working to align space standards in London, taking into account the HCA consultation on its proposed national core standards and the Draft Replacement London Plan preparation processes.

Occupancy

- 4.5.8 The proposed new minimum space standards for London are based on the premise that all new homes should be fit for purpose now and into the future. The standards, and many of the other new requirements, look beyond initial sale and the needs of the first owners or tenants to ensure that the next generation of new London homes have wide-ranging appeal, functionality and longevity. The London Plan space standards have therefore been set at a level which allows the property to cater for a reasonably wide variety of diverse household needs over the lifetime of the property.
- 4.5.9 In principle, the minimum amount of space needed per person is not felt to vary by tenure, though it is accepted that levels of occupancy do tend to be tenure related with under-occupancy more prevalent in the private sector. However, to ensure that all future homes will be comfortable when occupied to their full capacity by various households, the space standards have been predicated on the principle that a double bedroom must be able to accommodate two bed spaces (e.g. either a double bed or two single beds) and a single bedroom one bed space, along with associated furniture and access requirements. This has resulted in minimum recommended areas of 12 sq. m. and 8 sq. m., respectively.

Room sizes

- 4.5.10 The minimum standards are based on overall dwellings sizes, as initial assumptions about dwelling size have to be made very early on in a project, long before detailed room arrangements are tested. Architects have to test site capacity by 'drawing boxes', and the client and QS have to test the financial viability by establishing a construction cost, based on floor area. For this reason, it is suggested that figures used should be more in line with 'good practice', rather than the 'minimum acceptable'¹¹⁰.
- 4.5.11 However, setting overall dwelling areas does not guarantee the utility of particular rooms and insufficient habitable areas may result. Enough space should be provided to ensure rooms are generally usable, particularly to ensure flexibility to use rooms for various functions, giving residents further choice in how they use their home and helping to ensure longer-term flexibility for future occupants. The draft Housing SPG includes recommended room sizes rather than mandatory minimum thresholds in order to address concerns of over-prescription, and to allow more flexibility to meet the overall dwelling size standards on constrained sites or to respond to particular market demands. However, the draft Housing SPG requires that dwelling plans demonstrate that rooms can accommodate furniture, access and activity space relating to the declared level of occupancy. To ensure greater flexibility in use, the SPG also sets a standard that dwelling plans should be able to demonstrate alternative seating arrangements in living rooms and that at least one double room can accommodate either a double or two single beds.
- 4.5.12 The recommended size of 12 sq.m. for a double room will allow it to function also as a twin room and still accommodate the necessary furniture for two people. A recommended size of 8 sq.m. for a single bedroom allows space to accommodate a bed, storage and a desk as well as space for a visitor, making a single bedroom at 6.5 – 7 sq.m. inadequate¹¹¹.
- 4.5.13 Guidelines for widths of habitable rooms are also given to ensure better proportioned rooms, as a smaller room allows much less flexibility in how the furniture in the room can be arranged, and therefore in how the room can be used and adapted over time for different users. In bedrooms, the

¹¹⁰ Levitt D and Park J, 'Space probe', RIBA Journal, Issue 05, May 2008

¹¹¹ Design for Homes et al, 2007, op cit

recommended widths help ensure there is enough space to pass the end of a bed.

- 4.5.14 For larger family homes, the provision of two living spaces such as living room and kitchen/diner will improve opportunities for separate activities to be more manageable. This requirement is based on the Housing Quality Indicators Version 4, requirement 6.2.5, which awards additional points for 'two separate living rooms or areas being provided'. This is more explicitly stated in the National Housing Federation's 'Standards and Quality in Development: A good practice guide (2nd edition)' where Standard 2.4.1 requires that 'in 5 person and larger dwellings, at least two separate family spaces (i.e., separate rooms, not just separate areas) should be provided, large enough for all the family to gather.

4.6 Comparison of space standards

4.6.1 Historically in the UK, the approach to space standards has become more sophisticated over the years, progressing through:

- Number of rooms (Tudor Walters/1919 Housing Act)
- Minimum floor space for rooms and the dwelling as a whole (Parker Morris/Design Bulletin 6)
- Functional/activity based requirements, including provision for disabled people (Guide to Standards & Quality, Lifetime Homes)
- Functional/activity based requirements carried through to the Mayor's proposed standards, incorporating Lifetime Homes requirements.

4.6.2 Overall, guidance on space standards has varied, but has been broadly consistent within a range of about +/- 10% since the Second World War, and the Parker Morris standards of 1961 are still a commonly cited benchmark for space standards in the UK¹¹². The table below in section 4.6.7 shows how the proposed London standards compare to Parker Morris.

4.6.3 Most other European countries have some form of minimum space standards for housing, apart from England and Wales¹¹³. Space standards are commonly set in other countries, usually through the local equivalent of the building control / planning permission system. In some cases, space standards are expressed as floor area, either of the dwelling as a whole or habitable rooms. In others, it is derived from functional criteria based on use of the rooms¹¹⁴.

4.6.4 While there is no current national regulation of space standards in England and Wales, a number of local authorities and public agencies advocate space standards for housing. The methodology for setting space standards tends to be based on occupancy numbers or bedroom size; however, the evidence base for the specific sizes is often absent from the policy document advocating those standards.

4.6.5 Local authorities who have recently adopted minimum space standards through planning guidance include Mid Sussex District Council¹¹⁵, with minimum dwelling sizes based on those of English Partnerships minimum

¹¹² HATC, 2006, op cit

¹¹³ L Sheridan et al (2002) op cit; and N Gallent et al (2010) op cit

¹¹⁴ HATC, 2006, op cit

¹¹⁵ Mid Sussex District Council, *Dwelling Space Standards Supplementary Planning Document*, 2009

standards. The SPD also seeks to secure a minimum storage space equivalent to approximately 5% of the gross internal floor area of the dwelling.

4.6.6 In London, 22 boroughs currently have planning policy or supplementary guidance encompassing housing standards. Of these, 12 boroughs include space standards within supplementary guidance for different types of rooms based on occupancy, though the figures used vary¹¹⁶.

4.6.7 The following table sets out the minimum areas used within various existing standards (and proposed in the case of the HCA figures, which are currently subject to consultation).

¹¹⁶ HATC 2006, op cit

Floor area (m ²) by housing type	1B 2P (Flat)	2B 3P (Flat or Bungalow)	2B 3P (2-storey house)	2B 4P (Flat or Bungalow)	2B 4P (2-storey house)	3B 5P (Flat or Bungalow)	3B 5P (2-storey house)	3B 5P (3-storey house)	4B 6P (Flat or Bungalow)	4B 6P (2-storey house)	4B 6P (3-storey house)
Draft Replacement London Plan Policy 3.5 (2009)	50	61	x	70	83	86	96	102	99	107	113
Parker Morris, Homes for Today & Tomorrow (1961)¹¹⁷	45	60	x	73	79	82	89	98	89	97	102
HCA proposed national standards (2010)	48	61	71	70	80	86	96	102	99	108	114
Housing Corporation - ranges from HQI v4 (2008)	45-50	57-67	57-67	67-75	67-75	75-85	82-85	85-95	85-95	95-100	100-105
English Partnerships Quality Standards (2007)	51	66	66	77	77	93	93	93	106	106	106
NHF Standards and Quality in Development (2008)	50	61	x	70	82	86	96	102	x	108	114
Mid Sussex District Council, Dwelling Space Standards SPD (2009)	51	66	77	66	77	93	93	93	111	111	111
Royal Borough of Kensington & Chelsea Housing Standards SPG (2002)	44.5	57	x	57	x	70	72-74.5	x	80.5	82-85	94
London Borough of Southwark Residential Design Standards SPD (2008)	45	60	x	60	x	75	x	x	90	x	x
Dublin City Development Plan (2007)	55	80-90	80-90	80-90	80-90	100	100	100	x	x	x

4.6.8 The proposed London space standards compare well to others in regard to flats, though are higher for dwellings over more than one storey. This is down to the additional circulation space for stairways and corridors required in homes of two storeys or more, which have been incorporated into the London standards. Other differences occur where the London standards have incorporated Lifetime Homes requirements, such as the need for space for a ground floor WC in dwellings above one storey.

¹¹⁷ Mean taken of the different sizes specified by housing type (e.g. flat, maisonette, terrace) and separate storage requirements have been added in

4.6.9 A similar exercise undertaken by the HCA in developing its proposed new standards for application nationally to publicly funded homes from April 2011 resulted in similar findings, though based on a different methodology. This convergence appears to provide evidence that the two sets of measures are robust.

5. IMPLEMENTATION THROUGH PLANNING

- 5.1 This section covers a number of implementation issues arising from the enforcement of design standards through the planning system, primarily in regards to minimum space standards and in response to issues raised in the consultation responses to the Draft Replacement London Plan. Impacts of the standards on cost, land values, site viability and development capacity are assessed in a separate study¹¹⁸.

Space standards in the planning system

- 5.2 The planning system has always encompassed residential amenity as a matter of fundamental concern. As set out previously, a number of housing standards already exist in London planning policy, apart from space standards which have largely been regarded as a matter outside the planning process for the market to decide.
- 5.3 The HATC report on Housing Space Standards for the GLA investigated the issue of implementing space standards through the planning system. The report concluded that 'The London Plan (February 2004) and the Planning and Compulsory Purchase Act 2004 taken together represent a watershed. There can be little doubt that space standards are now capable of being considered a "material planning consideration" and a component of "sustainable development".'¹¹⁹ The report goes on to conclude that 'space standards are capable of being a key component in delivering government aspirations regarding quality of life; ensuring decent homes for all; maximising densities; providing an appropriate mix of house types capable of meeting demonstrated strategic and local needs; providing high quality residential environments; and delivering sustainable design and construction'¹²⁰.
- 5.4 The success of the GLA in incorporating a requirement for new developments to be built to the Lifetime Home standard as an enforceable policy further supports the view that residential space standards could be set in and enforced through the planning system.

¹¹⁸ GVA Grimley 2010, op cit

¹¹⁹ HATC 2006, op cit, p.73

¹²⁰ Ibid. See Appendix 9 – Tetlow King Advice on Planning Powers, p.20

Regional planning policy

- 5.5 Several consultation responses suggest that the proposed space standards set out in the London Plan should be in an SPG, and that they are inappropriate to a strategic level spatial strategy and introduce a level of detail into the Plan best left to local development documents or supplementary guidance, as per GOL Circular 1/2008 (para 2.3).
- 5.6 The Mayor considers that cumulatively the size of new homes is a key strategic issue for London. As covered in previous sections, one of the biggest contributors to the quality and utility of a home is space, though measures to ensure adequate provision do not currently appear in national regulation or planning policy. The evidence in this report suggests that there are issues with space provision in London's homes which should be addressed. Space also impacts on the use of land and site capacity and should therefore be an important element to consider within the context of London Plan policy in relation to optimising densities¹²¹.
- 5.7 Under the Mayor's vision in the Draft Replacement London Plan, unfettered growth which impacts negatively on quality of life is not acceptable. The draft Plan not only seeks to bring forward enough capacity to meet the capital's identified housing needs but has shown that it can do this on new housing sites without having to maximise housing density or to take a blanket approach to it¹²². However, because land is scarce in London, densities as a whole are likely still to be higher than in many other parts of the country, so it is essential that new development is of a high quality to ensure that the capital remains an attractive place to live. Which, as the earlier parts of this report have demonstrated, is where housing standards come in: they are essential to securing the new qualitative dimension to the London Plan – a fundamental part of its 'smart growth' future.
- 5.8 The need for standards in the affordable sector, particularly for social rented housing, is generally agreed, as residents have less choice in where they live and homes are more likely to be occupied to full capacity, resulting in even more pressure on space and shared or communal facilities. However, as set out in section 4, the proposed London Plan space standards seek to move beyond a short-term, market focus on saleability to ensure the

¹²¹ Draft Replacement London Plan Policy 3.4

¹²² Mayor of London. Strategic Housing Land Availability Assessment. GLA, 2009

functionality of homes under different patterns of occupancy over the longer-term; therefore contributing to the achievement of the strategic sustainable development objectives in PPS1.

- 5.9 Not only are space standards considered to be of regional importance for London, the HCA also regards them as nationally significant by including minimum space standards in its proposed national core housing standards currently out to consultation. Other cities such as Dublin have incorporated minimum space standards within planning policy, citing that ‘the floor area of an apartment is the critical measure of its liveability’¹²³.
- 5.10 Approximately two thirds of London boroughs already include some form of space standards in their supplementary planning documents. However, these standards are largely confined to advice notes and planning guidance, to which it is not always possible to attach significant weight in terms of planning decisions, in planning appeals or in the planning enforcement process. Giving space standards weight in policy terms will help mainstream this important issue and will allow London boroughs to counter applicants’ appeals on grounds of insufficient size, knowing that they will be supported by local regulations and by the Planning Inspectorate.

Prescription and innovation

- 5.11 The standards were also criticised as being too prescriptive, specifying a level of detail that goes beyond what is required in regional plans in contradiction to PPS3 (para 38). It is also argued standards stifle innovation, with development control officers applying them as rigid, inflexible rules and housing providers working to the standard rather than providing the creative design solutions needed on quite difficult and constrained development sites often found in urban areas.
- 5.12 The other side of the argument is that standards provide consistency in the approach to the development and planning process, prohibiting the worst case scenario and potentially reducing burdens of regulation through review and consolidation into a more streamlined approach. It is argued that common standards allow a more competitive market with land values adjusting to take account of the requirements¹²⁴, as well as allowing greater

¹²³ Dublin County Council (2007) op cit

¹²⁴ See PRP and Urbed (2007) op cit; and N Gallent et al (2010) op cit

flexibility of tenure when market circumstances change¹²⁵.

- 5.13 It is considered that the proposed space standards should not limit flexibility and choice. Their very inclusion within the planning, rather than say the Building Regulations, process means that they must be considered 'in the round' as one among a series of other material policy considerations. While it is highly desirable that a development should meet or exceed all the design standards, the Plan and its associated SPG make very clear that there is flexibility for their implementation to take account of local circumstances. Thus, for example, the Plan has been clarified to show explicitly that it does not preclude single person dwellings of less than 50 sq. m. providing these are of exemplary design. Rather than seeking to discourage any particular dwelling types, the standards simply provide a measure to assess the quality and functionality of a particular unit type when provided within a development.
- 5.14 The requirements in the forthcoming draft Housing SPG will also be prioritised, noting where the Mayor expects they should generally apply to all development proposals as a minimum, or where there is more flexibility when applying them to private development proposals (i.e. they are provided as good practice guidance).
- 5.15 In response to criticisms that prescriptive standards lead to rigid application by local authorities, it is suggested that the GLA provide a section on evaluation within the Housing SPG with guidance on how the standards should be applied, as well as investigating training opportunities with the boroughs. The SPG should also set out how the standards will be monitored and in what format applicants should submit information in relation to the requirements, particularly in regards to minimum space standards by occupancy. This should help with consistent collection and monitoring of data.
- 5.16 It has also been suggested that it would be inequitable if the standards did not apply to residential conversions as well as to new development. In fact, given the way in which the standards are phrased as planning policy, there would appear to be no reason why they should not apply to residential conversions. As noted above, the Plan provides sufficient flexibility to respond to local circumstances. Most of the standards are established

¹²⁵ See D Bowie, Planning in London (2009) op cit; and C Stothart, 'More room: the demise of the ultra small flat', Building magazine, 14 August 2009

policy requirements and will in any case be being applied already. Some of the new or extended standards, such as those for dwellings per core are unlikely to be relevant, and the space standards are flexible in accommodating smaller single person homes.

- 5.17 Some consultation responses noted that as the standards are relevant to the design quality of homes across London, any changes in local policy or guidance should only be made where there is clear and demonstrable need. The GLA should also clarify their approach to this issue within the Housing SPG, to help ensure a level of consistency and clarity in the development and planning process across London while allowing local circumstances to be taken into account.

Timing and transitional arrangements

- 5.18 Clarification was also sought in the consultation responses as to how the GLA envisages these standards will apply to developments that have already been granted planning permission, particularly where outline consent or reserved matters have already been agreed, or in later phases of larger sites. Again, this matter should be clarified in the Housing SPG prior to final publication.
- 5.19 On the broader issue of managing the introduction of the standards to all tenures, the GLA group has mapped out a transition process to ensure that stakeholders are fully consulted and that there is sufficient lead-in time to adjust to the new standards. This started with the Mayor's early 'direction of travel' documents for the London Plan where he flagged his housing quality concerns. These were followed by the draft London Housing Design Guide, clearly addressed to development on LDA owned land and with future application to affordable housing developed with public funding, but also illustrating how the Mayor's thinking was emerging on broader application of standards to all tenures. This was confirmed by the Draft Replacement London Plan which cited the draft Guide and included its space standards as a policy proposal. Both the draft Guide and the new Plan have been subject to wide ranging consultation. In light of this an interim version of the Guide is about to be published, still with its original public sector locus, and a new draft Housing SPG is in preparation to show how the refined standards might be applied to all tenures and to support the draft Plan's Examination in Public (EIP). The EIP and consultation on the draft SPG will provide further opportunities for refinement of the standards.

6. CONCLUSIONS

- 6.1 Evidence presented in this paper shows that:
- 6.1.1 Housing standards have frequently been used to shape the quality of new homes in London, particularly from the late 19th century to present day. Whilst internal space is one of the most important and highly valued attributes in the home, it has primarily applied to publicly funded developments and has never been regulated across all tenures in the UK.
 - 6.1.2 The current plethora of standards applicable to new homes is in need of rationalisation. The London Plan, as the strategic planning framework for London coupled with the fact that a replacement Plan is currently under review, presents an ideal mechanism to consolidate standards for new housing across the capital, providing clarity at the outset of any development project of what is expected.
 - 6.1.3 Though there are differences between tenures, most mechanisms are already in place within the London Plan to ensure higher quality standards in housing, with policies in relation to energy efficiency, sustainable design and construction, outdoor space including children's play space, Lifetime Homes, security and urban design – the key missing element being the internal space of the home.
 - 6.1.4 Proposed new London standards in relation to size of homes, as well as shared circulation areas, single/dual aspect, ceiling heights and private open space help protect residential amenity and quality of life in the face of increasing densities in London.
 - 6.1.5 A comparison with a number of international housing standards shows that these standards are common design criteria in other countries, which are applied to all homes through mechanisms such as planning and building control. England is notable for its lack of certain design controls, particularly in regards to the size of homes.
 - 6.1.6 Regarding space standards, various consumer research studies and surveys as well as audits of recently built schemes show that there is a clear

mismatch between consumer demand and market provision, with residents consistently expressing dissatisfaction with the space being provided.

- 6.1.7 Studies show evidence of decreasing space provision in new homes. High land costs, increasing densities and the absence of controls are leading to smaller dwellings, though the evidence points to increasing demand for more space for all household sizes.
- 6.1.8 Studies of space provision in new homes in London show that flats are being provided well below proposed benchmarks set by the DRLP and the HCA. One study found that two-bedroom dwellings were on average 10 sq.m. smaller than the benchmarks, and that 60% of one-bed flats reviewed in London had no storage provision whatsoever. Homes not serving even the needs of current purchasers would seem to make them even less attractive propositions to meet a range of needs in the future and could negatively impact on the longer-term sustainability of London's housing stock.
- 6.1.9 The Mayor's proposed space standards are based on a long history of a functional approach to space in the home, which incorporate furniture, activity and circulation space to arrive at the proposed standards and seek to ensure usability of space and flexibility for potential changing demands.
- 6.1.10 Space is a key factor in the sustainability of a home and its ability to adapt to changing needs and has therefore been put into policy. Application through planning sets a consistent framework for all housing in London, allowing greater flexibility in tenure, the importance of which was evident in the current market downturn when developers struggled to sell homes on the open market.
- 6.2 Several further suggestions for the GLA were highlighted within the report:
- Undertake further research into how space is valued and marketed in the sale of housing in London in regards to bedroom numbers and floor area; what impact this has on the long-term quality and utility of homes; and whether there is a case to be made for changes in the valuation and marketing of all homes and how this may be implemented.

- Work with the London boroughs on implementing the DRLP and Housing SPG standards to avoid a 'tick-box' approach, providing training and further guidance as needed.
- Provide guidance in the draft Housing SPG on the level of consistency sought in applying these standards across London, or where boroughs have discretion to amend based on local need.
- Clarify in the SPG how standards will be monitored, including guidance on information expected to be submitted at planning application stage to help ensure consistent data collection and monitoring.
- Continue to work with other 'owners' of standards such as Habinteg Housing Association (Lifetime Homes) to ensure a consistent approach to future changes to standards and that they are fit for the London context.

Appendix 1 – Proposed Housing Design Standards

Design Standards		Classification
1.0	Shaping Good Places	
1.1	Defining places	
1.1.1	1.1.1 Development Proposals should 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 relates to the identified character of the place and to the local vision and strategy or how bolder change is justified in relation to a coherent set of ideas for the place expressed in the local vision and strategy or agreed locally.	Priority 1
1.1.2	Development proposals should 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 extensive 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 planned role and character of these spaces within the local movement network, and how new spaces relate to the local vision and strategy for the area.	Priority 1
1.2	Outdoor spaces	
1.2.1	Development proposals should demonstrate that they comply with the borough's open space strategies, ensuring that a review of surrounding open space is undertaken and that opportunities to address a deficiency in provision by providing new public open spaces are taken forward in the design process.	Priority 1
1.2.2	For developments with a potential occupancy of ten children or more, development proposals should make appropriate play provision in accordance with the London Plan SPG, Providing for Children and Young People's Play and Informal Recreation.	Priority 1
1.2.3	Where communal open space is provided, development proposals should demonstrate that the space: - is overlooked by surrounding development; - is accessible to wheelchair users and other disabled people; - is designed to take advantage of direct sunlight; - has suitable management arrangements in place.	Priority 1
2.0	Housing for a Diverse City	
2.1	Appropriate density	
2.1.1	Development proposals should demonstrate how the density of residential accommodation satisfies London Plan policy relating to public transport accessibility level (PTAL) and the accessibility of local amenities and services, and is appropriate to the location in London.	Priority 1
2.2	Residential mix	
2.2.1	Development proposals should demonstrate how the mix of dwelling sizes and the mix of tenures meet strategic and local borough targets and are appropriate to the location in London.	Priority 1
3.0	From Street to Front Door	
3.1	Entrance and approach	
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.	Priority 1
3.1.2	The distance from the accessible car parking space of requirement 3.3.4 to the home or to the relevant block entrance or lift core should be kept to a minimum and should be level or gently sloping [Lifetime Homes Criterion 2].	Priority 1
3.1.3	The approach to all entrances should preferably be level or gently sloping [Lifetime Homes Criterion 3].	Priority 1

3.1.4	All entrances should be illuminated and, have level access over the threshold, Entrance doors should have 300mm of clear space to the pull side, and clear minimum opening widths of 800mm or 825mm depending on the direction and width of approach. Main entrances should have weather protection and a level external landing [Lifetime Homes Criterion 4].	Priority 1
3.2	Shared circulation within buildings	
3.2.1	The number of dwellings accessed from a single core should not exceed eight per floor.	Priority 2
3.2.2	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. Additional security measures including audio-visual verification to the access control system should be provided where any of the following apply, unless a 24 hour concierge is provided: - more than 25 dwellings are served by one core - the potential occupancy of the dwellings served by one core exceeds 100 bed spaces - more than 8 dwellings are provided per floor.	Priority 1
3.2.3	Where dwellings are accessed via an internal corridor, the corridor should receive natural light and adequate ventilation.	Priority 1
3.2.4	The minimum width for all paths, corridors and decks for communal circulation is 1200mm wide. The preferred minimum width is 1500mm, and is considered particularly important where corridors are double loaded (they serve dwellings on each side) and where wheelchair accessible dwellings are provided.	Priority 1
3.2.5	For buildings with dwellings entered from communal circulation at the first, second or third floor where lifts are not provided, space should be identified within or adjacent to the circulation cores for the future installation of a wheelchair accessible lift.	Priority 2
3.2.6	All dwellings entered at the fourth floor (fifth storey) and above should be served by at least one wheelchair accessible lift, and it is desirable that dwellings entered at the third floor (fourth storey) are served by at least one such lift. All dwellings entered at the seventh floor (eighth storey) and above should be served by at least two lifts.	Priority 1
3.2.7	Every designated wheelchair accessible dwelling above the ground floor should be served by at least one wheelchair accessible lift. It is desirable that every wheelchair accessible dwellings is served by at least two such lifts.	Priority 1
3.2.8	Principal access stairs should provide easy access* regardless of whether a lift is provided. Where homes are reached by a lift, it should be fully wheelchair accessible [Lifetime Homes Criterion 5].	Priority 1
3.3	Car parking	
3.3.1	All developments should conform to London Plan policy on maximum car parking provision. In areas of good public transport accessibility and/or town centres the aim should be to provide less than one space per dwelling. Elsewhere parking provision should be as follows: 4+ bedroom dwellings: 1.5 - 2 spaces per dwelling; 3 bedroom dwellings: 1 - 1.5 spaces per dwelling; 1 - 2 bedroom dwellings: less than 1 per dwelling.	Priority 1
3.3.2	Each designated wheelchair accessible dwelling should have a car parking space 2400mm wide with a clear access way to one side of 1200mm. **	Priority 1
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.	Priority 1
3.3.4	Where car parking is within the dwelling plot, at least one car parking space should be capable of enlargement to a width of 3300mm. Where parking is provided in communal bays, at least one space with a width of 3300mm should be provided per block entrance or access core in addition to spaces designated for wheelchair user dwellings [Lifetime Homes Criterion 1].	Priority 1
3.4	Cycle storage	
3.4.1	All developments should provide dedicated storage space for cycles at the following levels: 1 per 1 or 2 bedroom dwelling; or	Priority 1

	2 per 3 or more bedroom dwelling																																							
3.4.2	Individual or communal cycle storage outside the home should be secure, sheltered and adequately lit, with convenient access to the street. Where cycle storage is provided within the home it should be in addition to the minimum GIA and minimum storage and circulation space requirements. Cycle storage identified in habitable rooms or on balconies will not be considered acceptable.	Priority 2																																						
3.5	Refuse, post and deliveries																																							
3.5.1	Communal refuse and recycling containers, communal bin enclosures and refuse stores should be accessible to all residents including children and wheelchair users, and located on a hard, level surface. The location should satisfy local requirements for waste collection and should achieve full credits under the Code for Sustainable Homes, in accordance with the Technical Guide. Refuse stores within buildings should be located to limit the nuisance caused by noise and smells and provided with means for cleaning.	Priority 1																																						
3.5.2	Storage facilities for waste and recycling containers should be provided in accordance with the Code for Sustainable Homes Technical Guide and local authority requirements.	Priority 1																																						
4.0	Dwelling Space Standards																																							
4.1	Internal floor area																																							
4.1.1	<p>All developments should meet the following minimum space standards:</p> <table border="1" data-bbox="331 887 1165 1579"> <thead> <tr> <th></th> <th>Dwelling type (bedroom/persons)</th> <th>Essential GIA (sq.m)</th> </tr> </thead> <tbody> <tr> <td rowspan="8">Single storey dwelling</td> <td>1b2p</td> <td>50</td> </tr> <tr> <td>2b3p</td> <td>61</td> </tr> <tr> <td>2b4p</td> <td>70</td> </tr> <tr> <td>3b4p</td> <td>74</td> </tr> <tr> <td>3b5p</td> <td>86</td> </tr> <tr> <td>3b6p</td> <td>95</td> </tr> <tr> <td>4b5p</td> <td>90</td> </tr> <tr> <td>4b6p</td> <td>99</td> </tr> <tr> <td rowspan="5">Two storey dwelling</td> <td>2b4p</td> <td>83</td> </tr> <tr> <td>3b4p</td> <td>87</td> </tr> <tr> <td>3b5p</td> <td>96</td> </tr> <tr> <td>4b5p</td> <td>100</td> </tr> <tr> <td>4b6p</td> <td>107</td> </tr> <tr> <td rowspan="3">Three storey dwelling</td> <td>3b5p</td> <td>102</td> </tr> <tr> <td>4b5p</td> <td>106</td> </tr> <tr> <td>4b6p</td> <td>113</td> </tr> </tbody> </table> <p>For dwellings designed for more than 6 people, at least 10sq.m. gross internal area should be provided for each additional person.</p>		Dwelling type (bedroom/persons)	Essential GIA (sq.m)	Single storey dwelling	1b2p	50	2b3p	61	2b4p	70	3b4p	74	3b5p	86	3b6p	95	4b5p	90	4b6p	99	Two storey dwelling	2b4p	83	3b4p	87	3b5p	96	4b5p	100	4b6p	107	Three storey dwelling	3b5p	102	4b5p	106	4b6p	113	Priority 1
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Two storey dwelling	2b4p	83																																						
	3b4p	87																																						
	3b5p	96																																						
	4b5p	100																																						
	4b6p	107																																						
Three storey dwelling	3b5p	102																																						
	4b5p	106																																						
	4b6p	113																																						
4.1.2	Dwelling plans should demonstrate that dwellings will accommodate the furniture, access and activity space requirements relating to the declared level of occupancy. **	Priority 1																																						
4.2	Flexibility and adaptability																																							
4.2.1	Dwelling plans should demonstrate that dwelling types provide flexibility by allowing for alternative furniture arrangements in living areas and by accommodating double or twin beds in at least one double bedroom.	Priority 1																																						
4.3	Circulation in the home																																							
4.3.1	The minimum width of hallways and other circulation spaces inside the home should be 900mm. This may reduce to 750mm at 'pinch points' e.g. next to radiators, where doorway widths meet the following specification:	Priority 1																																						

	<table border="1"> <tr> <th>Minimum clear opening width of doorway (mm)</th> <th>Minimum width of hallway where door is in side wall (mm)</th> </tr> <tr> <td>750</td> <td>1200</td> </tr> <tr> <td>775</td> <td>1050</td> </tr> <tr> <td>900</td> <td>900</td> </tr> </table> <p>Where a hallway is at least 900mm wide and the approach to the door is head-on, a minimum clear opening door width of 750mm should be provided [Lifetime Homes Criterion 6].</p>	Minimum clear opening width of doorway (mm)	Minimum width of hallway where door is in side wall (mm)	750	1200	775	1050	900	900					
Minimum clear opening width of doorway (mm)	Minimum width of hallway where door is in side wall (mm)													
750	1200													
775	1050													
900	900													
4.3.2	The design of dwellings of more than one storey should incorporate potential for a stair lift to be installed and a suitable identified space for a through-the-floor lift from the entrance level= to a storey containing a main bedroom and an accessible bathroom [Lifetime Homes Criterion 12].	Priority 1												
4.4	Living / dining / kitchen													
4.4.1	<p>The following combined floor areas for living / kitchen / dining space should be met:</p> <table border="1"> <tr> <th>Designed level of occupancy</th> <th>Minimum combined floor area of living, dining and kitchen spaces (sq.m.)</th> </tr> <tr> <td>2 person</td> <td>23</td> </tr> <tr> <td>3 person</td> <td>25</td> </tr> <tr> <td>4 person</td> <td>27</td> </tr> <tr> <td>5 person</td> <td>29</td> </tr> <tr> <td>6 person</td> <td>31</td> </tr> </table>	Designed level of occupancy	Minimum combined floor area of living, dining and kitchen spaces (sq.m.)	2 person	23	3 person	25	4 person	27	5 person	29	6 person	31	Priority 2
Designed level of occupancy	Minimum combined floor area of living, dining and kitchen spaces (sq.m.)													
2 person	23													
3 person	25													
4 person	27													
5 person	29													
6 person	31													
4.4.2	The minimum width of the main sitting area should be 2.8m in 2-3 person dwellings and 3.2m in dwellings designed for four or more people.	Priority 2												
4.4.3	Dwellings with three or more bedrooms should have two living spaces, for example a living room and a kitchen-dining room. Both rooms should have external windows. If a kitchen is adjacent to the living room, the internal partition between the rooms should not be load-bearing, to allow for reconfiguration as an open plan arrangement. Studies will not be considered as second living spaces.	Priority 2												
4.4.4	There should be space for turning a wheelchair in dining areas and living rooms and basic circulation space for wheelchairs elsewhere [Lifetime Homes Criterion 7].	Priority 1												
4.4.5	A living room, living space or kitchen dining room should be at entrance level= [Lifetime Homes Criterion 8].	Priority 1												
4.4.6	Windows in the principal living space should start 800mm above finished floor level (+/- 50mm) to allow people to see out while seated. At least one opening window should be easy to approach and operate by people with restricted movement and reach. [Lifetime Homes Criterion 15].	Priority 1												
4.5	Bedrooms													
4.5.1	The minimum area of a single bedroom should be 8 sq m. The minimum area of a double or twin bedroom should be 12 sq m.	Priority 2												
4.5.2	The minimum width of double and twin bedrooms should be 2.75m in most of the length of the room.	Priority 2												
4.5.3	In homes of two or more storeys with no permanent bedroom at entrance level=, there should be space on the entrance level that could be used as a convenient temporary bed space [Lifetime Homes Criterion 9].	Priority 1												
4.5.4	Structure above a main bedroom and an accessible bathroom should be capable of supporting a ceiling hoist and the design should allow for a reasonable route between this bedroom and bathroom [Lifetime Homes Criterion 13].	Priority 1												

4.6	Bathrooms and WCs	
4.6.1	Dwellings designed for an occupancy of five or more people should provide a minimum of one bathroom with WC and one additional WC.	Priority 2
4.6.2	Where there is no accessible bathroom at entrance level=, a wheelchair accessible WC with potential for a shower to be installed should be provided at entrance level ∞ [Lifetime Homes Criterion 10].	Priority 1
4.6.3	An accessible bathroom should be provided in every dwelling on the same storey as a main bedroom [Lifetime Homes Criterion 14].	Priority 1
4.6.4	Walls in bathrooms and WCs should be capable of taking adaptations such as handrails † [Lifetime Homes Criterion 11].	Priority 1
4.7	Storage and utility	
4.7.1	Built-in general internal storage space free of hot water cylinders and other obstructions, with a minimum internal height of 2m and a minimum area of 1.5 sq m should be provided for 2 person dwellings, in addition to storage provided by furniture in habitable rooms. For each additional occupant an additional 0.5sqm of storage space is required.	Priority 1
4.8	Study and work	
4.8.1	Dwelling plans should demonstrate that all homes are provided with adequate space and services to be able to work from home. The Code for Sustainable Homes guidance on working from home is recommended as a reference.	Priority 1
4.8.2	Service controls should be within a height band of 450mm to 1200mm from the floor and at least 300mm away from any internal room corner [Lifetime Homes Criterion 16].	Priority 1
4.9	Wheelchair user dwellings	
4.9.1	Ten percent 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 Guide for Wheelchair Accessible Housing.	Priority 1
4.10	Private open space	
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.	Priority 1
4.10.2	Private outdoor spaces should have level access from the home ‡ [Lifetime Homes Criterion 4].	Priority 1
4.10.3	The minimum depth and width of all balconies and other private external spaces is 1500mm.	Priority 1
5.0	Home as a Place of Retreat	
5.1	Privacy	
5.1.1	Design proposals should demonstrate how habitable rooms within each dwelling are provided with an adequate level of privacy in relation to neighbouring property and the street and other public spaces.	Priority 1
5.2	Dual aspect	
5.2.1	Developments should avoid single aspect dwellings that are north facing, exposed to noise exposure categories C or D, or contain three or more bedrooms.	Priority 1
5.2.2	Where single aspect dwellings are proposed, the designer should demonstrate how good levels of ventilation, daylight and privacy will be achieved in each habitable room and the kitchen.	Priority 1
5.3	Noise	
5.3.1	The layout of adjacent dwellings and the location of lifts and circulation spaces should seek to limit the transmission of noise to sound sensitive rooms within dwellings.	Priority 1
5.4	Floor to ceiling heights	
5.4.1	The minimum floor to ceiling height in habitable rooms is 2.5m between finished floor level and finished ceiling level. A minimum floor to ceiling height of 2.6m in habitable rooms is considered desirable and taller ceiling heights are encouraged in ground floor dwellings.	Priority 1
5.5	Daylight and sunlight	
5.5.1	Glazing to all habitable rooms should be not less than 20% of the internal floor area of the room.	Priority 2

5.5.2	All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight.	Priority 2
6.0	Climate Change Mitigation and Adaptation	
6.1	Environmental performance	
6.1.1	Designers should seek to achieve a minimum of Level 4 of the Code for Sustainable Homes in all new developments.	Priority 2
6.1.2	All homes should satisfy London Plan policy on sustainable design and construction and make the fullest contribution to the mitigation of, and adaptation to, climate change.	Priority 1
6.2	Energy and CO2	
6.2.1	Development proposals should be designed in accordance with the London Plan energy hierarchy, and should meet the following minimum targets for carbon dioxide emissions reduction. Year Improvement on 2006 Building Regulations 2010 - 2013 44 per cent 2013 - 2016 55 per cent 2016 - 2031 Zero carbon	Priority 1
6.3	Overheating	
6.3.1	Development proposals should demonstrate how the design of dwellings will avoid overheating during summer months without reliance on energy intensive mechanical cooling systems.	Priority 1
6.4	Water	
6.4.1	New dwellings should be designed to ensure that a maximum of 105 litres of water is consumed per person per day.	Priority 1
6.4.2	Where development is permitted in an area at risk of flooding, it should incorporate flood resilient design in accordance with PPS25.	Priority 1
6.4.3	New development should adhere to standards for surface water run-off as set out in the Code for Sustainable Homes.	Priority 1
6.4.4	New development should incorporate Sustainable Urban Drainage Systems and green roofs where appropriate.	Priority 1
6.5	Materials	
6.5.1	All new residential development should meet the requirements of the Code Level 4 with regard to using materials with lower environmental impacts over their lifecycle.	Priority 2
6.5.2	All new residential development should accord with Code for Sustainable Homes Level 4 and the London Sustainable Design and Construction SPG with regard to the sourcing of materials.	Priority 1
6.6	Ecology	
6.6.1	The design and layout of new residential development should avoid areas of ecological value and seek to enhance the ecological capital of the area in accordance with GLA best practice guidance on biodiversity and nature conservation.	Priority 1

* In the Lifetime Homes Criteria a stair providing easy access is defined as one having maximum risers of 170mm, minimum goings of 250mm and a minimum width of 900mm measured 450mm above the pitch line.

** Refer to the GLA Best Practice Guidance on Wheelchair Accessible Housing for specific guidance on design standards for wheelchair accessible dwellings.

= In the Lifetime Homes Criteria the entrance level of a dwelling is generally deemed to be the storey containing the main entrance door. Where there are no rooms on the storey containing the main entrance door (e.g. flats over garages or shops and some duplexes and townhouses) the first storey level containing a habitable or non-habitable room can be considered the entrance level, if this storey is reached by a stair providing 'easy access', as defined above.

‡ Balconies and terraces over habitable rooms which require a step up to increase slab thickness / insulation are exempt from the Lifetime Homes level access standard.

∞ Dwellings over more than one storey with no more than two bedrooms may instead be designed with a Part M compliant WC at entrance level. A floor drain should be provided to allow for an accessible shower to be installed at a later date

† Adequate fixing and support for grab rails should be available at any location on all walls within a height band of 300mm - 1800mm from the floor.

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