



Design guide

Revision

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Foreword

1



1 Foreword

Network Homes is a charitable Housing Association providing over 20,000 affordable homes for more than 38,000 people across London and Hertfordshire.

We were established in 1974 to support people in housing need and our mission is to increase the number of safe, secure, and affordable homes.

The Network Homes Design Guide sets out our required design and technical standards and promotes excellence in design quality and sustainability.

Our Corporate strapline is 'Because good homes make everything possible' and to this end we will strive to build attractive high-quality homes and neighbourhoods

The Design Guide is intended primarily for our project teams comprising architects, engineers and employer's agents who will be commissioned by our New Business and Partnership and Construction and Regeneration Teams.

On our land-led projects we will set an ethos of sustainability from the outset guided by Design Review Checklists, Building Information Modelling (BIM) and a specialist Development Innovation Panel.

Special thanks to Michele Haniotis who in her role as Design and Technical Manager undertook extensive stakeholder consultation and acted as the lead author of this guide.

David Gooch, Executive Director of Development



**Because good homes
make everything
possible.**



We aim to provide safe,
secure, comfortable and
affordable homes that
stand the test of time.



Introduction

2

- > 2.1 What we want to achieve
- > 2.2 Satisfying our residents' requirements
- > 2.3 What is good design?
- > 2.4 What is this document and how should it be used



2 Introduction

Network Homes' mission is to provide safe, secure and affordable homes for as many people as possible and we want to ensure our homes stand the test of time.

We want to increase the number of homes for people in housing need - a minimum of 1,000 affordable homes started by March 2023 with an ambition to do more if market conditions and grant funding allow. This reflects our drive to build quality affordable homes in the right places, that are sustainable and durable. The measure focuses on affordable homes built rather than overall numbers.

Another key strategic objective is to achieve resident satisfaction of at least 90%: design and quality standards of their homes which perform well and require minimum repairs and maintenance is bound up with achieving this aim. In the absence of prescriptive standards, it is Network's responsibility to ensure we set our own high standards of design and quality.

The context within which Network is developing is changing rapidly. There is a generally accepted need to build more affordable housing set against the growing need to address the climate emergency with more sustainable design. On the one hand the national context is one of deregularisation and standardisation while in the capital, the Mayor's London Plan and *Good Growth by Design* programme sets out prescriptions for good design within the Affordable Housing programme and planning requirements.



In the absence of prescriptive standards, it is Network's responsibility to ensure we set our own high standards of design and quality.



2.1 What we want to achieve

As housing providers our primary aim is to help our residents by meeting their housing needs. We want to build the kind of homes which are enjoyable to live in and affordable to run, in places of lasting quality.

We look for ways of doing this which also benefit the community, the neighbourhood and the environment. This has implications for the sites we choose and the way in which we approach all aspects of the design process. It also affects the development targets we set, how we brief our consultants and how we conduct ourselves as client and landlord.

We have produced this guide to focus on the role that design can play in raising standards and improving quality of life. It defines and explains core principles which we believe are fundamental to our primary aim and must apply to all our projects. It sets an aspirational and practical benchmark for our residents, for us and for those with whom we work to build homes with high standards of design quality.



We have produced this guide to focus on the **role that design can play** in raising standards and improving quality of life.



2.2 Satisfying our residents' requirements

Consulting with residents is an essential part of meeting their housing needs and we aim to continuously improve this process. This chimes with the emerging Government White Paper and the Greater London Authority's (GLA's) Affordable Homes Programme requirements to listen to residents and take their views into account.

As part of the preparation of the Design Guide we invited residents to a workshop to discuss their requirements against key areas of housing design. Their views are highlighted throughout this document.

Post-occupancy evaluation is a critical tool for assessing resident satisfaction and to drive continuous improvement. Part of our design process will be to carry out these evaluations in order to feed back to the evolving design requirements contained in the

2.3 What is good design?

We aspire to design quality in the homes we build and this guide hopes to express the key principles and requirements in a form that can be delivered.

There have been many words written about what constitutes "good design" but there is a consistent thread which combines function with aesthetics.

A well-used definition of quality is based on the Vitruvius' definition:

- **Functionality:** will it perform?
- **Firmness:** will it last?
- **Delight:** does it look good?

Design quality is about appearance as well as functionality and fitness for purpose, safety, buildability, robustness, and reliability.



2.4 What is this document and how should it be used?

This document is aimed at guiding our designers throughout the design development process by clarifying our priorities and key design principles. It is not intended to replace designers' own professional understanding and knowledge of statutory requirements and good design practice.

It is also a training tool and reference for Network staff to ensure they deliver the organisations aspirations.

The document is organised into three main sections:



CORE DESIGN PRINCIPLES: The design principles that underpin specific requirements and design guidance



PROCESS: how we want our procurement and design development to progress and be reviewed to ensure the delivery of our core design principles and specific requirements.



REQUIREMENTS: regulatory and funding requirements and our own standards and requirements

It follows the RIBA Plan of Work 2020 stages to reflect the way in which projects generally take shape.



We have produced this guide to focus on the role that design can play in raising standards and improving quality of life.

It defines and explains core design principles which we believe are fundamental to our primary aim and must apply to all our projects. It sets an aspirational and practical benchmark for our residents, for us and for those with whom we work. It seeks to clarify what we mean by our core principles and how we intend to implement them.



Core design principles

3



3 Core design principles

As a result of discussion and dialogue held with residents and colleagues within our development, housing management, leasehold and asset management teams we have identified five overarching design principles.

These are primary design aspirations and intentions to



CONTEXT, IDENTITY and COMMUNITY: Places that respect context and are attractive and distinctive, that promote positive identity and community cohesion



SAFETY AND SECURITY: Homes that are designed to be as safe and secure as possible for our residents



SUSTAINABILITY: Projects which are sustainable in terms of the environment and community



AFFORDABILITY: Developments that are financially feasible to develop and manage and affordable for residents



HEALTH AND WELLBEING: Homes that promote the health and wellbeing of our residents



The sections that follow elaborate on these guiding principles with specific requirements in the form of narrative and checklists.

Aspirations and intentions to guide all aspects of design.

Core design principles

Context, identity and community 3.1

- > 3.1.1 Density and scale
- > 3.1.2 Dwelling mix, tenure and typology
- > 3.1.3 Designing for diversity
- > 3.1.4 Intergenerational housing
- > 3.1.5 Building form, style and character and composition
- > 3.1.6 Materials and durability
- > 3.1.7 Landscape



3.1 Context, identity and community

This section covers guidance on the approach Network Homes requires for the design of places and buildings in context. We want to make places that respect context and are attractive and distinctive, that promote positive identity and community cohesion.

In line with the GLA's *Good Quality Homes for all Londoners London Plan Guidance (SPG)*, we aim to optimise site capacity rather than simply maximising density. Schemes will need to respond to the existing qualities of the surrounding context and balance growth with quality.

The design of external spaces and built form should grow out of a thorough understanding and analysis of the existing site: its location, orientation, climate, neighbours and adjacent landscape and buildings, its history and neighbours. The scale and density should reflect the context of the site, the local character and constraints and opportunities of its location.

The consensus gleaned from internal consultation is that as a developer we prefer our buildings to fit in rather than stand out from the adjacent environment, but at the same time to have a distinct identity which creates a good impression.

Places which are well designed and built well are more likely to be looked after by residents. We want to build good-looking buildings which are timeless and elegant, and which will weather well. We also want approaches and welcoming entrances which make our residents feel proud of where they live.



“A successful place is somewhere that is attractive, distinctive and vital, has integrity, character and gravitas, and provides the core ingredients for a successful, mixed community to develop”

NHF Housing Standards Handbook ¹



3.1.1 Density and scale

The density of the development is determined in a large part by what the Planning authority requires, the number of dwellings needed to make the development financially viable, the characteristics of the site itself and local need.

As a direct result of the shortage of housing particularly in London, there has been a growing trend to encourage higher density developments exceeding 350 dwelling per hectare (dw/ha). However, the London Plan SPG is now moving towards site optimisation rather than maximising density so each site will require individual justification for the density provided.

Density and scale are inter-related but not necessarily co-dependent. Very high densities can be achieved efficiently with midrise buildings while high rise blocks with large areas of open space can have low densities relatively.

Housing typology is closely related to density. It is very difficult to achieve higher density requirements with terrace houses (normally 45 to 50 dw/ha) and

compact forms of back to back courtyard houses (60 dw/ha). Flats generally have densities in excess of 100 to 130 dw/ha. In London, the Planners will be looking at the most common existing and emerging housing types based on their typical characteristics, access and circulation arrangements including terraces, villas and high-rise blocks with an understanding that one size won't fit all.

Given that in London and the South East demand is high and land expensive it will usually be right to be ambitious about scale and density but not insensitive. What is important is that the density, scale, massing and typology are appropriate to the site. The aim should be to optimise not maximise site development and place quality above quantity within the constraints of competing in the London market with high land values

Designers should consider density alongside a range of other issues including scale, massing, typology, mix, tenure, block layout, service charges, public transport and local facilities, parking and open space requirements.





CGI of Merrick Place, Southall

3.1.2 Dwelling mix, tenure and typology

Network Homes believes that sustainable communities are achieved through mixed tenure developments comprising private sale, shared ownership, London Living Rent and affordable rent.

Our developments should be ‘tenure blind’ i.e. that there should not be an obvious differentiation between the quality of homes or blocks of different tenures. However, we require flats to be grouped by tenure within separate cores in order to manage the schemes more efficiently and maintain appropriate levels of service charge.

We aim to provide a mixture of dwelling sizes and types in line with local planning policy requirements to take account of the site and its context. Certain sites are more suitable for some tenures and topologies than others. Wherever possible larger families should have houses with gardens. Where large families are housed in blocks of flats it is desirable to place those units on the lowest floors so that they can have their own front door. Maisonettes and duplexes are also desirable for families as they offer a greater separation between living and sleeping areas.

3.1.3 Designing for diversity

Designers should understand and aim to accommodate the local demographic and cultural needs within the tenure and unit mix requirements set out in the project brief.

This can include consideration of religious requirements for food preparation and personal hygiene, age ranges including older people, and the possibility of multigenerational housing.

3.1.4 Intergenerational housing

Residents tell us they care that we recognise the need to build communities that mitigate against loneliness, especially among the older generation.

Our housing schemes should encourage friendly interaction among all residents while maintaining a sense of security and privacy.

We recognise the value of providing adaptable homes that enable people to stay as their needs change and we support the principles of accessible and inclusive design.

We will normally provide wheelchair housing in accordance with local authority requirements and housing for older people may also be required.





3.1.5 Building form, style and character and composition

Style and character are judged subjectively; there are examples of good and bad buildings of all styles. Architectural style of a development usually contributes more to the character and identity of a place, than any other element.

In residential developments, variety should be balanced with consistency. When too many buildings are designed to look the same the result can be monotonous. Although the place may have a strong identity as a result of the consistent architectural treatment, residents may feel that their home lacks any individual character or that the whole environment may look like an 'estate'. At the other extreme, too much variety too close together can feel chaotic and unconsidered.

In small developments, the right balance is usually achieved when the built forms are reasonably similar in terms of scale, massing and general style but when there are small differences design which express individuality. The type of fenestration (the size, shape and proportion of the window openings), design of features – such as balconies and entrances – and materials should make links from one set of buildings to the next. The buildings may seem very similar but, looking more closely, 'controlled variety' will become apparent.

On larger sites there is more opportunity and a greater need to create areas of different style and

character within a single development. It is helpful when some themes run through the whole design but creating smaller areas which look and feel different makes for a more interesting place and helps residents to develop a sense of belonging.

Within a larger scheme, especially where non-residential uses are included, there may be main routes and public areas which need a more civic quality and robust treatments. These might suggest taller buildings, bolder forms, sharper detailing, more organised fenestration – perhaps larger windows or grouped openings to increase scale – and harder materials

In contrast, smaller buildings with more random window openings and softer materials might be more appropriate in lower key areas. Again, the different levels of importance attached to different parts of the project in the masterplan, should be interpreted by different types of treatment, rather than different levels of quality.

The style and character of buildings and landscape will also reflect a "greener" aesthetic. This will not only occur on the exterior facades of buildings (e.g. with solar panels, full height conservatories, green roofs, shading devices etc), but also with the technologies and materials used. It will affect the design and layouts of gardens and open spaces and the type of planting we provide, and we want to anticipate and adapt to the gradual changes this will bring to new streetscapes.





3.1.6 Materials and durability

The appearance of many developments is ruined by materials that have not worn well or are not easy to maintain.

Typical examples include white render in urban areas which have been discoloured by pollution over time, timber cladding that has weathered in an uneven pattern, and streaks and stains caused by blockages in inaccessible rainwater outlets and pipework. Elevation details create ledges for pigeons to roost leading to nasty guano staining.

We expect our buildings to last for a long time, but our maintenance budgets are always tight, so we need to choose materials which are resilient and which age well. We also need to make sure that we use them appropriately and put them together in ways which enhance their durability.

We require our designers to work with the project cost consultant to develop whole life costings to demonstrate the value of durable high-quality materials and components.

Designers should take account of materials which are typical of the local area and pay attention to adjoining and nearby buildings to help produce a site-specific solution and integrate a development into its surroundings.

Traditional or local materials should be used in a contemporary way to help create distinctive buildings which are identifiable of their time and which avoid historic reproduction.

3.1.7 Landscape

We value landscape as an integral part of our schemes and a vital way to settle our new developments into the neighbourhood.

The form and type of planting and the design of streets and spaces should reflect the character of the local area and contribute to the overall feel of the scheme. We look for imaginative solutions which soften urban environments, enhance biodiversity, provide amenity and add value. We seek a balance of hard and soft treatments which complement the built environment, and which will weather well.

A landscape strategy should be prepared at the earliest stages, preferably in conjunction with the design of the site layout. It should consider any existing trees and other vegetation worthy of retention, especially those which are protected by Tree Preservation Orders (TPOs). The strategy helps to inform the design of routes and orientation of open space, to make best use of microclimate and create a strong relationship with the buildings. It will not be limited to planting but will also consider hard surfaces, boundary treatments including fences, walls and railings and fixtures and fittings such as seats, signage and lighting. Levels and drainage are integral to the design of the landscape and need to be resolved, in principle, early in the design.



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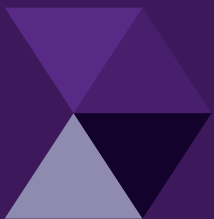


Core design principles

Safety and security

3.2

- > 3.2.1 Fire safety
- > 3.2.2 Security



We prioritise safety and security for our residents.

3.2.1 Fire safety

Network Homes prioritises fire safety in our buildings. This does not just apply to tall blocks of flats but to all our residential developments.

Following the tragic fire at Grenfell Tower in 2017, the new Building Safety Bill contains legislation that sets out legal requirement on social landlords to protect residents of High-Risk Residential Buildings (HRRB) (i.e over 18m high) and Building Regulations are continually being revised to tighten fire safety requirements for all dwellings. In order to be eligible for Greater London (GLA) grant funding from the Affordable Homes Programme 2021-2026, Network Homes London, must meet five mandatory building safety standards which will be annually audited. Mortgage lenders are also seeking clear assurances that fabric of the building is built in accordance with Building Regulation Part B requirements.

A new development's fire strategy must be initiated at Feasibility stage and be integrated into the design development at each further stage. The emphasis should be on minimising the risk of fire through the design of the buildings (compartmentalisation, means of escape, passive fire protection) so that active control measures such as sprinklers and fire alarms are an additional safeguard rather than a primary risk mitigation measure.

Our strategy remains 'Stay Put' so that if a fire breaks

out it is contained and only those in direct contact with the fire need to escape. This is achieved by compartmentalising the spaces to control the spread of smoke and fire so that it does not affect anyone else in the block.

However, our buildings must be designed so that occupants can escape safely if a fire breaks out. They must be able to reach a place of safety without being overcome by heat or smoke so the time taken to escape needs to be shorter than the likely time it will take for smoke to fire to travel. Escape routes should be designed so they are accessible and not too long or complex. People with mobility problems who may need assistance must also be considered.

The Building Safety Bill sets out Building Safety Gateways² which must be formally signed off by the Building Safety Regulator as required under the Building Safety regulations. The RIBA Fire Safety Plan of Work³ provides guidance as to what is required at each stage. More details are given in the Process and Requirements sections of the guide.

The 'Golden Thread' of fire safety information must be provided and maintained for the entire life cycle of the building. We require our designers to use Building Information Modelling (BIM) to ensure the fire safety



3.2.1 Fire safety continued

information is accurate and accessible prior to the building's occupancy.

Wayfinding signage for emergency services is now a requirement under building regulations and locations should be incorporated into the design at an early stage. There should be adequate illumination of escape routes to be able to see the way out in an emergency and generally blocks of flats should be provided with emergency escape lighting.

Services installations (MEP) layouts should be considered and coordinated at the earliest design stages to minimise penetrations through fire compartments and we would encourage the use of BIM to achieve this. Wherever possible cables and small pipework should be installed in single trays with fire dampers to minimise the amount of small random penetrations.

Designers can influence fire safety outcomes by considering:

- Horizontal means of escape, travel distances-single and double, dead end or alternatives.
- Fire fighting cores with tenable disabled refuges and fire fighting lobbies whilst maintaining viable net to gross ratios.
- Vertical means of escape-height of building with single (non-alternative) or multiple stairs, whilst maintaining viable net to gross ratios.
- Width of stairs to allow disabled egress, delayed total evacuation, but also with Fire Brigade access and use of the stairs with hoses.
- Material selection, compartmentation and firestopping specification



3.2.2 Security

We want our residents to feel safe in their homes. We want designers to follow the principles of ‘Secured by Design’ and consult with the local Police’s design team whether or not the project is to be certified.

Aligned to security is privacy. This is known to be an important aspect of wellbeing and enables our residents to feel comfortable in their homes.

External areas:

Residents must feel safe and secure in and around their home environment so we need to be satisfied that all external routes will be well used and are well-lit and overlooked.

Design features can help to identify the acceptable routes through a development, thereby encouraging their use, and in doing so enhance the feeling of safety. Where it is desirable to limit access/use to residents and their legitimate visitors, features such as rumble strips, change of road surface (by colour or texture), pillars, brick piers or narrowing of the carriageway may be used. This helps to define the defensible space, psychologically giving the impression that the area beyond is private.

It is vital that streets are overlooked by the windows of homes and that as many entrances as possible are provided along the street frontage. This is much more difficult with flats than houses but providing as many individual entrances as possible to ground level flats or maisonettes will help enormously to increase live frontage and promote street activity, as well as taking pressure off cores.

Locating balconies on the street side of a building also makes places look and feel lived in. Some form of screening should be provided to give privacy to residents and hide the clutter that is often stored on them. Bay or corner windows emphasise a corner and open views up and down the street, as well as letting in sun into homes at different times of day.

While full height windows provide high levels of light, consideration should be given to the impact on privacy and the need to provide curtains or blinds which may be unaffordable for some of our residents. Full height windows should be designed to the minimum PAS 24, with lockable restrictors to allow ventilation with security.

Good lighting is essential if security is to be maintained after dark. Both the style of fitting which is specified, and the type of light which it produces, also have an



3.2.2 Security continued

impact on character. A considerable amount of energy is wasted on unnecessary lighting and a professionally designed scheme can save on energy consumption, running costs, reduce glare and enhance buildings and spaces.

While we always provide CCTV it should always support, rather than replace, good design and layout principles.

While flatted blocks will always have some private open space, it is now more likely that there will be shared open spaces which may attract unauthorised users and antisocial behaviour.

Consideration must be given to providing a sense of defensible space through careful location and overlooking without the need to create gated environments.

Defensible space has the simple aim of designing the physical environment in a way which enables the resident to control the areas around their home. This is achieved by organising all space in such a way that residents may exercise a degree of control over the activities that take place there.

Internal communal areas:

Large blocks of flats can suffer adversely from anti-social behaviour due to unrestricted access to all areas and floors of the building. The designers should consult with Secured by Design Designing Out Crime Officer (DOCO) to consider ways to prevent unlawful free movement throughout the building through the use of an access control system and CCTV.

Mail delivery should be via a secure external letter box into a secure area of the block/ dwelling.

More details regarding requirements for shared spaces are given in the Shared Spaces section of this guide.



Core design principles

Affordability

3.3

- > 3.3.1 Capital v life cycle costing
- > 3.3.2 Low capital cost
- > 3.3.3 Modern Methods of Construction (MMC)
- > 3.3.4 Low cost management and maintenance
- > 3.3.5 Low cost in use
- > 3.3.6 Low service charges



3.3 Affordability

Affordability means many things:

- The best value in terms of the capital cost so that schemes are financially viable and deliver optimum numbers of new homes for the required quality.
- Low cost management and maintenance over the life of the building.
- Low cost in use for the residents both tenants and homeowners.
- Low service charges.



Network Homes considers affordability a key principle to apply to the design of our homes.



3.3.1 Capital v life cycle costing

As an affordable housing provider Network Homes has a long-term interest in the properties that we develop, as freeholder, landlords and as housing managers, and as such have a responsibility to keep both rents and the running costs as low as possible to ensure that they remain affordable.

Accordingly, the life-cycle costs of a development should be carefully considered when assessing the long-term affordability of a development. Savings made at design and specification stage can have costly implications over the life of the building.

3.3.2 Low capital costs

We want to build homes for the lowest cost and the highest quality. When assessing scheme options, it is important to value engineer from the outset to ensure that all new developments are viable and affordable.

Efficiency and buildability should be guiding design principles, including optimisation of net gross area, low percentages of external wall to floor area, efficiencies in layout, stacking of units, repetition and minimising dwelling types, optimising storey heights, avoiding too many contours in the elevations and other features that are expensive to build.

These efficiencies will also improve buildability and therefore minimise the risk of workmanship defects.



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Ridgeway development, Selé Farm, Herts.

3.3.3 Modern Methods of Construction (MMC)

We will consider Modern Methods of Construction (MMC) that can improve build quality, reduce waste, speed up construction and reduce costs and we will endorse the use of any such system so long as it is can be demonstrated that it will deliver tangible benefits and is supported by a suitable independent certification.

Consideration should be given to using unitised facades so that cavity barriers, thermal insulation and waterproofing are integrated and factory quality controlled.

Early design development should take into account inclusion of offsite elements such as bathroom pods, utility cupboards and riser cupboards.

The Greater London Authority (GLA) is seeking a more resilient, more sustainable and more innovative approach to homebuilding by encouraging greater uptake of MMC. Those seeking funding under the Affordable Homes Programme 2021-2026 will have to demonstrate that they have maximised the use of MMC.

3.3.4 Low cost management and maintenance

We own our buildings for several years and has liability for ongoing costs so designing schemes to reduce this cost is crucial. Designing for low management and maintenance should be an integral part of the design process.

This can be achieved by reducing the need for intensive management and maintenance through good design and ensuring that key elements of the buildings and spaces can be more easily inspected, repaired and replaced when the time comes.

Simplicity of layout is a key to minimising maintenance costs. Services should be routed efficiently and controls valves and stopcocks accessible from communal areas. Plant and equipment should be easy to reach and maintain and sophisticated communal heating plant should only be used when it can be properly managed.

The quality and durability of the external fabric is also crucial. Apart from the inherent fire safety of brick and other masonry products, these products have a long-lasting appeal that suit the English climate. Lightweight materials, cladding, render, timber etc have a shorter life, require more routine maintenance and careful detailing and are more prone to fire safety issues.

It is important not to value engineer critical elements of the elevations such as windows and doors, rainwater goods and roofing systems at the expense of long-term costs. We encourage our cost consultants to work closely with designers from the earliest stages to include life cycle costs in financial appraisals and expect this will be easier with the implementation of Building Information Modeling (BIM).



3.3.5 Low cost in use

It is important that residents can easily maintain those parts of their building that they are responsible for.

Windows and doors should be easily cleaned from the inside or from safe terraces. Balconies should have gullies that can be easily accessed for cleaning.

It is important for us to install heating and electrical services that are cheap to run. This not only benefits residents with lower energy bills, but also supports our carbon reduction targets.

As a landlord we will obviously have a priority to keep maintenance costs low. This is particularly important when passing on costs to residents through service charges. It is well known that leaseholders are concerned at the high cost of their service charges and do not see that they deliver value for money.

3.3.6 Low service charges

The following guidance is taken from the National Housing Federation's (NHF) *Housing Standards Handbook* with reference to "Super density the sequel", a recent report by a group of four leading architectural practices concerning the physical and social consequences of London's increasing density.

Key design issues affecting service charges

- 1. Building configuration:** building heights, lifts per core, units per core, cluster and core for tenure separation;
- 2. Servicing infrastructure:** access for refuse collection, car parking, emergency services, utilities and energy infrastructure requirements.
- 3. Bins, bikes and cars:** management of communal refuse collection and recycling facilities, cycle storage and parking.
- 4. Public realm:** management of communal spaces and play areas, lighting, landscaping, garden services to shared gardens and open spaces, estate cleaning, maintenance of roads and paths.
- 5. Building maintenance:** heat and light to communal areas, window cleaning and replacement, cladding maintenance, cleanable services for graffiti removal cleaning points for communal areas.
- 6. Communal facilities:** including parcel lockers, meeting spaces, cleaners' rooms with water at regular locations in tall buildings, gardening equipment storage in large developments.
- 7. Mechanical and Electrical:** lift service arrangements and replacement, computerization of systems, scheme wide IT and TV services, entry systems and locks, fobbed entry, CCTV; maintenance of new technologies for heating and renewable energy, for mechanical ventilation with heat recovery, communal district heating systems, grey water and sustainable urban drainage etc.
- 8. Caretakers:** security patrols, an active concierge responsible for a wider range of services including front door security handling internet shopping, deliveries and handyperson service.



Core design principles

Sustainability

3.4

- > 3.4.1 What our residents say
- > 3.4.2 Carbon reduction and climate change
- > 3.4.3 Reducing environmental impact
- > 3.4.4 Building sustainable communities and maintenance
- > 3.4.5 Sustainable connectivity and transport



3.4 Sustainability

By sustainability we mean:

- Environmental sustainability
- Social sustainability
- Economic sustainability

Our Targets

As soon as possible:

1. Reducing operational energy demand and carbon by at least 75%, before offsetting
2. Reducing embodied carbon by 50-70% before offsite renewables offsetting
3. Reduce potable water use by 40% per person per day

Our detailed *New Homes Sustainability Strategy* is included in Appendix A.



We aim to reduce the carbon footprint and the environmental impact of our new developments, increase biodiversity, reduce waste and water consumption and build sustainable communities.



3.4.1 What our residents say

We aim to reduce the carbon footprint and reduce environmental impact of our new developments, increase biodiversity, reduce, waste and water consumption and build sustainable communities.

- Extreme weather will need to be addressed e.g. flood risk.
- We should future proof our installations with smart technologies.
- We should consider extending existing stock rather than building new.

3.4.2 Carbon reduction and climate change

Network Homes must meet statutory targets for carbon reduction in operation and use and specific requirements for whole life carbon reduction, i.e both operational and embodied carbon, are given in the Requirements section of this guide.

There is no doubt that due to increase in carbon emissions there is an increasing likelihood of climate change: flooding, storms and temperature rise – risks which will affect the designs of new schemes and how people live in them.

Our buildings will need to address climate change by techniques such as thermal massing and solar shading (including appropriate use of deciduous vegetation) together with enough ventilation, to provide adequate levels of thermal comfort in winter and help people to stay cool in summer.

Thorough site appraisals will identify areas of flood risk and allow us to design to avoid flood damage and to work with water in a positive way.

Working with the natural environment rather than against it allows us to exploit the topography of a site and the free availability of natural resources such as solar energy, fresh air and rainwater. Designers should use the physical form of a site to help reduce noise levels, provide screening and reduce air pollution as well as to provide attractive green spaces and enhance biodiversity. This can help to reduce excavation, soil removal and therefore transportation costs and landfill too. Done sensitively, this will not only bring down the cost of our developments but make them healthier places to live in the long term.





3.4.3 Reducing environmental impact

The environmental impact of new development can be significant, and we need to reduce it as much as we can by:

- Choosing brownfield sites with relatively low ecological value and safeguarding the eco-systems which do exist
- Employing Fabric First passive design principles
- Constructing the buildings using materials and methods which are environmentally appropriate
- Specifying services and appliances which use energy and natural resources sparingly
- Employing renewable technology wisely and appropriately.

This will not only reduce our carbon emissions in the design and construction phases but allow occupiers of our dwellings to benefit from lower fuel bills. Similarly, we can promote more sustainable lifestyles by providing facilities for recycling, rainwater storage, food growing and composting and by encouraging cycling and walking and use of public transport. Collectively, these measures will contribute to reducing environmental impact from project inception to completion on site and continue to make a difference over the lifetime of the dwellings.

3.4.4 Building sustainable communities

One of core design principles is building communities which are sustainable. This can be achieved through:

- Placemaking that expresses identity and territory
- Creating secure places for privacy
- Creating places for social interaction
- Creating vibrant mixed-use places
- Providing high quality permeable links to social amenities
- Providing high quality pedestrian public realm
- Creating inclusive places for community interaction

More detailed guidance these aims is given in the Requirements section of the guide.

3.4.5 Sustainable connectivity and transport

As housing developers, we can minimise carbon emissions from vehicles by locating sites that are close to public transport and amenities and by providing infrastructure for electric vehicles.

Many of our inner London schemes are car-free but with limited spaces for wheelchair or car club users and while this remains a problem for some residents, we are sure this is the correct path to take for a sustainable future.



Core design principles

Health and wellbeing

3.5

- > 3.5.1 Light
- > 3.5.2 Comfort
- > 3.5.3 Quiet
- > 3.5.4 Privacy
- > 3.5.5 Control
- > 3.5.6 Accessibility
- > 3.5.7 Nature



3.5 Health and wellbeing

At the time of writing, the UK and the world have been in the grip of the COVID-19 pandemic. During this period entire populations have been confined to their homes during various points during this period as a result of lockdowns.

The experiences of the pandemic have made it clear that the quality of the home and external amenity spaces are critical determinants of mental and physical health and wellbeing. Livelihoods depend on the ability to work from home. Students need places to study. Space is needed to exercise internally and externally, and to get away from others to read, contemplate, meditate. Homes need to be comfortable, well-lit, well ventilated and kept at acceptable controllable temperatures.



The experiences of the pandemic have made it clear that quality of the home and external amenity spaces are critical determinants of mental and physical health and wellbeing.



3.5.1 Light

Natural daylight is one of the most fundamental human needs. It has a significant impact on mood and mental wellbeing. Daylight affects our basic systems, regulating the timing of periods of sleepiness and wakefulness throughout the day.

Small changes in the amount of daylight can have substantial impact on our mood, productivity and overall wellbeing.

When designing buildings, it's very important to consider how we can improve the quantity and quality of daylight internally and within landscaping. This must be balanced however against the risk of heat gain or loss from glazing and privacy issues.

Orientation of the building is integral to how much light each space will receive, and which areas will be overshadowed. South facing rooms will receive the most sunlight, but designers should also consider the quality of light required at certain times of the day e.g. if a space would benefit from morning light then provide the windows facing East. North facing aspects received the least light so generally should be avoided. However, some spaces may benefit from less light for example bedrooms. Shallow footprint allows for better penetration of natural light.

3.5.2 Comfort

Comfort plays a vital role in helping us to relax and feel calm and safe, all of which are key to mental health. It is therefore hugely important that our designers engage in creating comfortable home environments.

A key area for comfort in the home is thermal comfort. The temperature of spaces should be considered very early on in the design process. The technical requirements affecting building temperatures are covered in the Requirements and Employers Requirements section of this guide.

In colder climates such as the UK insulation and air tightness are key. Sensitive and efficient heating systems are essential and especially in tall blocks and with an increase in global warming, cooling has become a requirement.

Clean fresh air is essential to our health. However, the benefits of natural ventilation need to be weighed against the quality of air outside the building which can often be extremely poor in inner city locations. Air pollution can cause us serious harm; fresh air is not just important for our physical health but our mental wellbeing. Good natural ventilation can be provided through cross ventilation or passive ventilation which should be integrated into the design as soon as possible. as elsewhere described dual aspect dwellings are becoming a priority to enable cross ventilation.



< Start this section again

Next section >



3.5.3 Quiet

High density developments pose a special challenge in providing enough sound proofing within, and between dwellings and communal areas. Urban developments frequently have pressures of excess external noises from vehicular traffic, trains and planes.

Noise Impact Assessments should be carried out in line with local planning requirements. Designs should favour passive noise protection such as landscaping etc, passive noise protection such as landscaping and orientation of opening windows.

Passive design measures should be included to minimise sound transmission such as stacking of habitable rooms over each other and avoiding as much as possible putting a bedroom adjacent to a party wall, living room, kitchen or communal area, or next to a living room on the other side. Circulation areas should be located to act as a sound buffer between the areas where sound transmission would be an issue.

Care should be taken to assess how noise travels between dwellings via the windows. Put two units side by side with bedroom windows a couple of metres apart and when both windows are open, the properties are effectively linked and privacy compromised.

Better than minimum regulations sound proofing is needed at higher densities. This may mean higher density building materials but also careful attention to detail and high levels of workmanship on site.

Internal plans should separate areas where sound transmission between different generations in a household can cause problems. Increased sound insulation in partitions between living rooms and kitchens and bedrooms and bathrooms is specified in the Employers requirements.

3.5.4 Privacy

With a setting a minimum distance for separation of 22 metres between windows in principal rooms such as bedrooms and living rooms.

This is a Victorian principle which does limit the street layouts of low and medium density development and schemes in London are now finding arguments to waive these restrictions.

Outdoor space should be as private as possible; surveys show residents prefer highly value outside space where they are not overlooked to eat breakfast, sunbathe or garden without scrutiny.

There needs to be a good balance between shared, social spaces where people can do things together and private spaces where people can do things alone. This is very important for students and adults working from home.

In a typical two- bedroom, four-person dwelling there are usually no habitable rooms which aren't shared. In larger family homes especially, there is a stronger likelihood of more than one family member needing personal space. Single bedrooms should be large enough to accommodate a bed, storage and a desk as well as space for a visitor.



A photograph of a modern dining room. In the foreground, a wooden dining table is set with white plates and coasters. A small potted plant sits on the table. In the background, a grey sofa is visible, and a large window looks out onto a garden. The room is decorated with framed photos on the wall and a black pendant light hangs from the ceiling.

Create a direct interaction
with nature.

3.5.5 Control

Mental health can be affected by the extent we can alter our environment when we want to.

There should be more than one way to arrange furniture so that residents can make changes to suit their needs and circumstances. Consideration should be given to flexible use of spaces, and the use of pocket doors to divide spaces.

Generally larger family units (3b5p and larger) should have separate kitchen/ diners or living space. Modern family life lends itself to large kitchen/ diners that act as family rooms with a separate lounge space for quieter activities.

3.5.6 Accessibility

Enough space and facilities are required to allow a member of the family to remain at home if they have temporary or permanent illness or incapacity, and to offer hospitality to a visitor in a wheelchair.

Designers should follow Lifetime Homes standards to satisfy this principle.

The need for intergenerational housing may grow as the population ages so older family members can remain in the family home, thereby minimising loneliness and isolation. Accommodating restricted mobility in the home can benefit everyone. Designs should take into account mobility scooter parking and circulation.

3.5.7 Nature

Spending time in nature has been shown to improve our happiness and mental wellbeing regardless of other factors.

Design for city living should incorporate natural elements into buildings and the wider urban environment as much as possible. We would comply with the GLA and local authority targets for urban greening as much as possible.

Designers should create a direct interaction with nature within buildings wherever possible e.g. through indoor planting in atria and planters on communal walkways and terraces. Plants offer benefits to mood and happiness as well as providing the emotional rewards associated with caring for and nurturing a living thing. They also clean the air we breathe providing.

While it is desirable to bring nature into buildings wherever we can, this is not always possible due to budget or build constraints. In this situation views of nature should be maximised, and designers should aim wherever possible to give people views of green space water or trees.

Rooftop gardens can provide several benefits over ground level gardens. Not only do they provide better views, they give us cleaner air and less noise than air that at street level. We also gain a feeling of taking refuge as we look down at the world from above which is linked to a sense of safety and protection and can make us feel calmer.



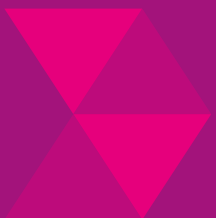


Rectory Park development, Northolt.

Process

- > 4.1 Appraising development opportunities
- > 4.2 Design review process
- > 4.3 Building Information Modelling (BIM)

4



4.1 Appraising development opportunities

Selecting the right development opportunities to ensure we deliver our design objectives is a critical first step. Getting early decisions right and keeping them under constant review is essential to the ultimate success of a scheme.

With land-led schemes we need to look at sites and the surrounding area critically so that opportunities and constraints are fully understood. The same critical assessment should apply to Section 106 and package deals.

Where we are in control of the design, we should develop the site-specific project brief to define what we want from the scheme.

Generally, our approach to the briefing and initial design process is to get the most out of every site. This will not always mean the most dwellings or even the most development, but it will mean making the best possible use of space and resources. Good residential environments achieve the right balance of internal and external space and take account of all aspects of everyday life. Even in the earliest stages we need to allow space for play, relaxation, refuse, parking and many other factors rather than simply focussing on the number of new homes we provide. Balancing these requirements is one of the greatest challenges which we face in the competitive market in which we operate.



Our approach to the briefing and initial design process is to get the most out of every site.



4.2 Design review process

Network has established a Design Review Process that should be adopted to ensure that each of our projects meet our design quality and value for money targets, are easy to maintain and manage, and offer the best possible outcomes for our residents. The Design Review Process is set out in Appendix B

All schemes should be designed in accordance with the design principles, requirements and guidance set out within this document, along with Network Homes' Employer's Requirements and site-specific Project Brief.

The process of reviewing the design of our projects explores how the buildings and places can best meet the needs of the people who will use them by improving the quality of design throughout the scheme.

The chart to the right describes the design development process in line with RIBA Plan of Work 2020, with Network Homes Design Reviews at relevant stages. This will be most relevant to land led schemes but can generally be applied to all forms of procurement depending on the stage we enter in into a build contract. It also highlights the new Building Safety Gateways which will be required to pass once the Building Safety Bill becomes law.

4.3 Building Information Modelling (BIM)

We will follow the UK BIM Framework on new developments and principles of good information management. Various core documents are available and should be used to adhere to this framework.

Requesting our design teams to use BIM and the tools it offers will provide a range of benefits for making informed design decisions including but not limited to, sunlight and daylight analysis, environmental simulations, visualising the 3D spaces with a sense of scale, quantities counting and costing, scheduling, time-management, clash detection and avoidance, and relationship to surroundings.

There are additional opportunities to use the 3D BIM models to create an interactive app for resident engagement allowing residents to view and access details about their homes in a visually appealing and accessible way. This will help to build residents trust in Network and hopefully feel more connected to and proud of their homes, as well as being able to raise any concerns they have.

Using BIM based on the UK BIM Framework will ensure coordinated design in a more collaborative way. There will be clear responsibilities outlined and robust authorisation and approval processes for receiving and accepting information. These are to be set out in the *Development Control Manual* and necessary staff will be trained to perform this function for specific projects. This will result in Network being a more intelligent client who in turn are able to make more informed decisions about both planned and responsive asset management and can provide an efficient service in identifying and responding to performance of and defects in residents homes. BIM allows for less effort required to make changes during the design process with drawings being updated from the single shared model. This reduces delays and financial losses.

Furthermore, using BIM will futureproof our information by being held in digital format, maintaining the 'Golden Thread' of information and adhering to the regulations set forth by the Building Safety Bill. The information requested, delivered and organised in the right formats will enable the Gateways to be passed and keep projects moving through the stages of works.





Millharbour development, London E14

Requirements

5



A photograph of a modern, multi-story brick apartment building with large windows and balconies. The building is set against a clear sky with some light clouds. The image is partially obscured by a large yellow triangle on the right side. The text is overlaid on the left side of the image.

In the last decade housing design standards have shifted from prescriptive local guidelines to national standards.

Requirements

Regulatory requirements and standards

5.1

- > 5.1.1 Housing Standards Review
- > 5.1.2 National Planning Policy Framework (NPPF)
- > 5.1.3 Building Better Building Beautiful
- > 5.1.4 Building safety legislation



5.1.1 Housing Standards Review

In the last decade housing design standards have shifted from prescriptive guidelines set by funding and planning authorities to national standards set out in building regulations.

Network Homes Design Guide published in 2009 reflected these requirements: HCA Housing Quality Indicators, Code for Sustainable Homes, Secured by Design, Lifetime Homes and GLA London Housing Design Guide provided clear expectations and checklists for designers to follow.

In 2012 the Government's Housing Standards Review was set up to encourage more house building by restricting the powers of Local Planning Authorities to set technical standards that might inhibit development. The report published in 2015 set out a new regulatory framework for key areas of housing development:

- **Accessibility:** Building Regulations Part M superceding Lifetime Homes and Habinteg's Wheelchair Housing Design Guide
- **Space standards:** minimum areas set out in The Nationally Described Space Standards operating through the planning system.
- **Security:** Building Regulations Part Q for new housing and the removal of Secured by Design as a funding requirement.
- **Water:** Building Regulations Part G as the baseline requirement with optional requirements depending on the area.
- **Energy:** Code for Sustainable Homes abolished and replaced by Part L of the Building Regulations with amendments in 2020 leading to the Future Homes standard currently in draft.
- **Waste:** Building Regulations Part H.





BRX development, Brixton

5.1.2 National Planning Policy Framework (NPPF)

The NPPF was published in 2012 places considerable emphasis on the importance of good design and the quality of the built environment.

Housing is given significant weight and covers of various requirements for provision of high-quality homes.

Key aims include delivering a wide choice of a high-quality homes including a mix of housing based on current and future demographic and market trends, reflecting local demand in respective tenure size and type of housing.

Responsibility for housing in London was devolved to the GLA in 2010 and subsequently the GLA produced the *London Housing Design Guide (LHDG)* setting out the standards required for new housing in London. The LHDG has now been superseded by the London Plan detailed below.

5.1.3 Building Better Building Beautiful

The Building Better Building Beautiful Commission was set up by the then Ministry of Housing, Communities and Local Government to develop practical measures to ensure new housing developments meet the needs and expectations of communities, making them more likely to be welcomed, rather than resisted, by existing communities.

The commission had three primary aims:

- To promote better design and style of homes, villages, towns and high streets, to reflect what communities want, building on the knowledge and tradition of what they know works for their area.
- To explore how new settlements can be developed with greater community consent.
- To make the planning system work in support of better design and style, not against it.

The Commission published its final report *Living with Beauty to the Government* in January 2020. A link to the report is given at the end of this section. The recommendations of the report is to:

- Ask for Beauty
- Refuse Ugliness
- Promote Stewardship

5.1.4 Building safety legislation

Recent government legislation has been introduced to ensure the safety of high-risk residential building ie over 18m.

The main impact of this legislation is the introduction of the Building Safety Regulator to ensure the implementation of the Building Regulations relevant to building safety and fire safety in particular. They are also responsible for all major regulatory decisions made at key points ('Gateways') during the design, construction, occupation and refurbishment of buildings in scope. These 'Gateways' are included in the Design Review Process under the relevant section of this guide.



Requirements

Funding requirements

5.2

- > 5.2.1 Homes England
- > 5.2.2 GLA Homes for Londoners: Affordable Homes Programme (AHP) 2021-2026
- > 5.2.3 Links



5.2.1 Homes England

Until recently, central government funding for housing was administered by the Homes and Communities Agency (HCA) with design standards set out in Housing Quality Indicators, a prescriptive schedule of requirements covering all aspects of housing design that were scored to enable housing associations to qualify for grant.

Housing Quality Indicators and other national funding standards were abolished in March 2014, with the Nationally Described Spaces Standards introduced in 2016. The Homes and Communities Agency (HCA) was replaced by Homes England in January 2018, whose strategic aims for their affordable homes programme are:

- Placing significant focus on and investment in Modern Methods of Construction (MMC).
- Encouraging uptake of the National Design Guide, which is part of the government's collection of planning practice guidance within the National Planning Policy Framework.
- Improving the energy efficiency and sustainability of new affordable housing supply.



5.2.2 Greater London Authority (GLA) Homes for Londoners: Affordable Homes Programme (AHP) 2021- 2026

The GLA's AHP published in November 2020 requires all homes built in London to be safe, sustainable and well-designed. In order to obtain funding under this programme for developments in London, we will need to comply with the standards set out in Good Growth by Design, which is at the time of writing still in consultation.

Good Growth by Design sets out the following requirements and standards the following:

- **Design for a Circular Economy:** schemes will have to take into account how all materials arising from demolition and remediation works will be re-used and/or recycled and how the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life.
- **Making London a Child Friendly Place:** the new London Plan highlights the importance of children and young people being independently mobile within their neighbourhoods and recognises that development proposals must create safe and accessible routes and increase opportunities for play and informal recreation.

- **Good Quality Homes for all Londoners (London Plan).** The Good Quality Homes for all Londoners London Plan Guidance is a set of documents designed to ensure that land is used in the best way to deliver good quality homes that Londoners' need.

The guidance demonstrates a shift away from maximising density to optimising site capacity through good design. Planners will undertake borough-wide character assessments and set out development capacity based on quality of the existing area - whether to conserve, enhance or transform the character of an area. Capacity factors will include environmental factors (noise, air quality) as well as connectivity (transport /PTAL).

- **London Housing Design Standards.** The London Plan and London Plan Good Quality Homes for All Londoners' London Plan Guidance sets out the required standards which are detailed in the relevant sections of this guide. Key headings are:

- **C1:** Shaping good places includes assessment of topography and links to wider context.
- **C2:** Housing for a diverse city looks for diversity of types and tenures and accessibility as well as community engagement.

- **C3 From Street to Front Door:** access, services, cycle and car parking standards.

- **C4:** Dwelling space standards

- **C5 Home as a place of retreat:** Key points are around privacy, acoustic separation, aspect and outlook.

- **C6 Living Sustainably:** includes environmental sustainability, urban greening, flood mitigation and air pollution.

- **C7 Future Proofing:** includes concept of adapting buildings to promote better use of resources and reduce waste. Quality, maintenance and management are also considered including consideration of service charges in design.

- **Applying standards.** The GLA will require schemes requiring grant funding to be subject to scrutiny by the London Review Panel which will have special focus on place making. All developments of over 50 residential dwellings must be subject to an independent design review as part of the planning process.



5.2.2 GLA Homes for Londoners: Affordable Homes Programme (AHP) 2021- 2026

- **Building Safety.** The GLA places special emphasis on Building Safety Standards including the provision of sprinklers to all blocks of flats, and non-combustible materials to the external walls of all homes, regardless of height.
- **Sustainability Standards.** The GLA requires all developments of 10+ homes to be net zero-carbon. This must include at least a 35 per cent reduction in on-site carbon dioxide emissions against Part L2013 of the Building Regulations, of which there must be at least a 10 per cent reduction from energy efficiency measures. Any shortfall in emissions must be paid into the local authority's carbon offset fund.
- All referable development proposals must calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.
- All developments of 10 or more homes must submit data to the GLA's "Be Seen" monitoring portal in accordance with relevant guidance.
- All developments of 10 or more homes must be at least Air Quality Neutral.
- All developments of 10 or more homes must meet relevant borough Urban Greening Factor target scores or, where none exist, the interim score of 0.4.7
- All developments of 10 or more homes must demonstrate through an Energy Strategy how they will reduce the potential for internal overheating in accordance with the cooling hierarchy in accordance with the London Plan.
- **Modern Methods of Construction**
The GLA is seeking a more resilient, more sustainable and more innovative approach to homebuilding by encouraging greater uptake of Modern Methods of Construction (MMC). Those seeking funding under the Affordable Homes Programme 2021-2026 will have to demonstrate that they have maximised the use of MMC.

5.2.3 References

- **Good Growth by Design** https://www.london.gov.uk/sites/default/files/good_growth_web.pdf
- **Good Quality Homes for all Londoners** – <https://consult.london.gov.uk/good-quality-homes-for-all-londoners>
- **Public London Charter** – <https://consult.london.gov.uk/public-london-charter>
- **Circular Economy Statements** – <https://consult.london.gov.uk/circular-economy-statements>
- **Whole Life-Cycle Carbon Assessments** – <https://consult.london.gov.uk/whole-life-cycle-carbon-assessments>
- **'Be Seen' Energy Monitoring Statements** – <https://consult.london.gov.uk/be-seen-energy-monitoring>
- **Living with beauty** Building Better Building Beautiful Commission, 30 January 2020.



A photograph of a modern university campus. The scene features several multi-story buildings with a mix of brick and light-colored concrete or stone facades. Large windows and balconies are visible. In the foreground, a wide, paved walkway leads through a landscaped area with young trees and greenery. A group of people is sitting on a long, low wooden slat bench. The sky is bright with some clouds. The overall atmosphere is bright and open.

This design guide should be used to communicate our aims and standards to prospective development partners.

Requirements

Section 106 schemes and package deals requirements

5.3



5.3 Section 106 schemes

On Section 106 sites the concept has usually been established and many design decisions taken. There is often limited scope for change, but we need to understand the background, question it where appropriate and make sure that we are happy with the opportunity provided.

Although we have less control, we have no lesser duty to our residents, the community or the environment. We will be assessing not just the site, but also the design proposals we inherit, and need to be satisfied that our baseline standards can be met and do more where we can.

This design guide should be used to help to communicate our aims and standards to prospective development partners and it provides us with a tool with which to negotiate where we feel that this is necessary. At the end of this chapter we provide a list of baseline standards to help us evaluate potential Section 106 involvements more objectively.

We aim to participate in developments which fit our key design principles and which we feel our residents will be pleased to live in. Ideally therefore, the sites will be close to shops and other amenities and well served by public transport. They must not suffer unduly from traffic noise, pollution or other nuisance. Developments must be designed to make a positive contribution to the neighbourhood and community, show a sound understanding of urban design principles, create a sense of place and be designed and specified to high standards.



We aim to participate in developments which fit our key design principles.



5.3 Section 106 schemes and package deals requirements

Our specific requirements are concerned with the design and quality of the homes and spaces for which we take responsibility and with the ongoing management arrangements and the service charge implications for our residents. This checklist deals with design issues but also touches on management issues where these are design related.

- **Minimum number of homes:** We usually require at least 25 affordable dwellings in S106 schemes or 50 homes in land/ package deals.
- **General amenity:** Our dwellings must not be marginalised to the least desirable parts of the site or confined to areas considered unsuitable for other tenures. Good levels of general amenity are required (this must include the right to privacy, in terms of sound and overlooking) and pleasant outlook and orientation. We will be especially concerned to provide good access and adequate privacy to homes in mixed use developments.
- **Tenure integration and external appearance:** We prefer single tenure cores but will accept mixed tenure arrangements where we are satisfied about the management implications. We also require our homes to be comparable to those of other tenures in the development, in terms of general style and appearance as well as quality.
- **Access and security:** Our residents must feel safe and secure in and around their home environment so we need to be satisfied that all external routes will be well used and are well-lit and overlooked. This includes routes to car and cycle parking areas, and refuse and re-cycling stores as well as entrances to homes.
- **Accessibility standards:** We prefer all our dwellings for affordable rent to meet Lifetime Homes Standards and Approved Document M4 (2) and for 10% to be full wheelchair standard. We will only accept a lower proportion of accessible homes where this is acceptable to the local authority. In line with our own developments, we expect lift access for dwellings on or above the third floor (ie at four storeys or higher) and two lifts for dwellings on or above the sixth floor (ie at seven storeys or higher).
- **Car parking provision:** This will vary on a site by site basis, but we usually require a reasonable provision unless the local authority requires a car free scheme. Spaces must be located close to homes, especially those for wheelchair users. We prefer to avoid underground and undercroft arrangements and will only consider these where we are satisfied with the management and service charge implications. We expect comprehensive cycle storage provision, especially where car parking is low.



5.3 Section 106 schemes and package deals requirements continued

- **Play provision:** This too will vary for individual schemes but as a guide, we expect dedicated play areas to be provided in all developments with a total of 50 units or more (or fewer where large numbers of family units are provided). Play spaces should be tenure blind if separate.
- **Dwelling space standards:** Should comply with the GLA or local authority requirements or the Nationally Described Space Standards.
- **Building for Life:** Wherever possible, we require these 12 features:
 - Some private outdoor space
 - Private rear gardens of at least 30m² where houses are provided
 - Direct sunlight to some part of the garden or other outdoor space, and to at least one principle living space, ie living room or kitchen/diner
 - Access to a well landscaped shared outdoor space for all units which have less than 15m² of private amenity space, unless there is a good quality, green public open space nearby (typically within 200m of the development)
 - Pleasant views out from the principle living space and a reasonable outlook from all other habitable rooms
 - No dwellings to be north facing single aspect, and all homes for five people or more, to be dual aspect to achieve variety of outlook and cross ventilation.
 - Separate kitchen/dining and living spaces in homes for five people or more
 - Living rooms not less than 3.0m wide for up to four people and not less than 3.3m for five people or more
 - Double and twin bedrooms at least 11.5m²; principle double bedroom to be not less 2.75m wide and second twin/ double 2.55m wide.
 - Single bedrooms at least 7.5m² and not less than 2.2m wide
 - Fully furnished layouts have been provided and are workable
 - Heating and power systems which use energy responsibly and are simple and economic to run.



Requirements

Capacity and feasibility studies 5.4

- > 5.4.1 The Project Brief
- > 5.4.2 Site assessment and neighbourhood context
- > 5.4.3 Capacity testing
- > 5.4.4 Feasibility studies



5.4.1 The Project Brief

One of our primary responsibilities as a client is to produce a site-specific brief for every project or development opportunity, including feasibility work or capacity studies.

As the client, we need to decide what we want to achieve and communicate this to the consultants we appoint. Formalising the brief avoids confusion and sets a useful benchmark against which scheme development can be measured.

The brief needs to open the way for a design which will be capable of delivering our own core principles. The initial brief issued at Stage 0 will usually be a combination of theoretical targets, based, for example, on maximum permissible density related to the PTAL index in the Greater London area and to local authority (LA) requirements elsewhere. Within Greater London, targets in relation to mix and tenure also apply.

Most LAs have specific requirements for the amount of affordable housing, parking, cycle storage and amenity space which need to be met. We must ensure that the specific targets we set in the Project Brief meet at least these minimum standards and that they have also been considered in relation to the site and its context. They also need to reflect local need and demand and reflect

available funding, prices in the local property market and the cost of the site. By making our requirements part of a formal brief, we clarify our priorities and allow the space and cost implications to be factored in at the earliest stage.

In practice, the feasibility options or capacity studies often demonstrate that it is difficult to achieve the maximum theoretical planning density because sites are rarely perfectly shaped or orientated and each has particular constraints which tend to mean that the realistic or appropriate density will be below the maximum permitted. Sometimes we may therefore need to reduce our initial targets, but we will make good arguments for pushing density where we feel that this is appropriate.

Where there are no shops or other facilities within a comfortable walking radius of a site, our residents will need some form of transport. Even where public transport is very good, sites which are not close to local amenities will normally require more parking and our briefs will reflect this.

A template for a standard project brief is included at the end of this chapter





Ridgeway development, Ware, Herts.

5.4.2 Site assessment and neighbourhood context

In line with the guiding design principle of context and community, good place making begins with a thorough understanding of the site in its broader context. Research and site visits are essential to gather information about the local context. Topographical survey information, plans of existing buildings and a tree survey are also important at the early stage.

At this very early stage the site appraisal should determine the high-level fire safety suitability of the site against the client requirements including high level spatial requirements, particularly in relation to access and facilities for the fire service and means of escape.

The site appraisal should be communicated through annotated diagrams and text showing the impact that the new development may have on the site its surroundings and its ecology. A site appraisal checklist is included in the relevant section of this guide.

One of our core design principles is to ensure our developments respond to their context and create places that are distinctive, and that people are proud to live in.

The design of external spaces and built form grow out of a thorough understanding and analysis of the existing site: its location, orientation, climate, neighbours and adjacent landscape and buildings, its history and neighbours. The scale and density should reflect the context of the site, the local character and constraints and opportunities of its location.

Location has a major impact on occupants and the long-term desirability and sustainability of housing, so it is essential to look beyond the site boundary and get a feel for the local area.

Consideration should be given to:

- the general physical and socio-economic character of the local area
- local landmarks or other features which could help to give the site a sense of place and distinct identity
- the proximity to local amenities including shops, healthcare, play, leisure and other facilities
- the distance from undesirable features such as busy roads, flight paths, overhead cables etc.
- the potential nuisance which might be caused by nearby commercial or industrial facilities
- the extent of road, cycle and pedestrian routes within the site and the connections to the wider area

- the availability of public transport and, for sites in London, the public transport accessibility level (PTAL index)
- the orientation of the site, potential for views in or out, minimising overheating and passive solar design
- the current use of the site and its planning history
- the topographical characteristics of the site and notable building or landscape features
- the legal situation in respect of restrictive covenants, Section 106 obligations, rights of way, boundary issues etc.
- details of any buildings or trees which must be retained through listing or Tree Protection Orders, (TPOs) and unprotected features worthy of retention
- geotechnical investigations into soil type, possible contamination, load bearing capacity etc.
- the extent and capacity of any above and below ground services with a view to establishing which we can usefully connect into, which must remain in-situ and which could be diverted cost effectively if necessary
- details of the ecology of the area and the impact that the site is likely to have on the immediate environment
- the potential for the site to be improved or enhanced, for example by land exchange or further acquisition.



5.4.3 Capacity testing

Testing the capacity of a site through a series of sketch site layout options is the key to making the best use of land and ultimately delivering good value for money.

This exercise will test the initial brief targets and reflect the unique qualities of the site. At the same time, we and our consultants carry out a desktop study which establishes theoretical maximum density and other constraints imposed by the local authority (LA) or others. Our cost consultants then carry out a financial appraisal to assess the viability/profitability of the design solution or solutions, against the initial assumptions. This three-part process allows what fits to be tested against what has been assumed and what is financially viable.

5.4.4 Feasibility studies

Feasibility Studies are required in order to tease out the full range of briefing considerations and to demonstrate that our spatial requirements can be accommodated on the site. In some instances, several options might be prepared, but these options should not be vetted and appraised at this stage.

Masterplan visions might be prepared in order to determine and shape the brief, and to tease out decisions that will be required on certain topics, but they are not part of the design process itself.

The feasibility study should be sufficiently site specific to respond to level changes features and constraints of the site the scale and character of adjoining buildings and neighbourhood.

While it is tempting to focus primarily on dwelling numbers, it is essential to consider the height, density and massing of the blocks in context, and take account of landscape amenity, play and other aspects of the scheme design that will ensure our core design principles are adhered to.

Even at an early stage, the design assumptions should allow enough space for plant rooms, circulation areas, service cores and risers and wall thicknesses to comply with higher thermal insulations standards. Critically, consideration must be given to a preliminary Fire Strategy to ensure compliant routes for emergency vehicles required under Gateway 1.

A 3D massing model generated using BIM software will be a valuable tool to assess the impact of the proposals in relation to the neighbourhood.



Requirements

Placemaking and the public realm

5.5

- > 5.5.1 Site layout and master plan
- > 5.5.2 Site appraisal
- > 5.5.3 Routes and connections
- > 5.5.4 Hierarchy of open space
- > 5.5.5 Vistas and focal points
- > 5.5.6 Defining streets and enclosing spaces
- > 5.5.7 Terrace housing
- > 5.5.8 Street corners
- > 5.5.9 Roofscapes
- > 5.5.10 Building form and composition
- > 5.5.11 Flatted blocks
- > 5.5.12 Building heights
- > 5.5.13 Entrances
- > 5.5.14 Landscape strategy
- > 5.5.15 Parking
- > 5.5.16 Open spaces and play
- > 5.5.17 Security



5.5.1 Site layout and master plan

Resolving the site layout and defining the urban design strategy is the basis for developing the detailed design and is, in many ways, the most important part of any project.

There are a wide range of issues to consider at a strategic level and this requires consultation with many local authority departments, other statutory bodies and interest groups as well as residents.

While this section focuses on requirements to do with site planning, reference should also be made to the sections on Context and Security where broader design principles are addressed. There is also a Checklist at the end of this Guide to assess schemes at this stage, typically pre-planning Stage 2-3.

Our general requirements can be summarised as follows:

- A clear and logical site layout which integrates the site with its surroundings and helps residents to feel secure and become established in the neighbourhood
- Safe routes which cater for pedestrians, cyclists and motorists and take people where they want to go
- A hierarchy of streets and open spaces which create a focus for the scheme and give people opportunities to relax and meet with friends and neighbour.
- An approach to play which provides a range of formal and informal opportunities and caters for children of different ages
- A landscape strategy which helps a scheme to feel part of its surroundings
- Buildings which are well organised and which relate well to the routes and spaces which they define
- A tenure blind approach which means that buildings and spaces are not distinguishable by tenure and that tenures are fairly distributed across the site
- A mix of dwelling types which cater for a wide range of household size, religious and cultural needs, mobility and lifestyle changes
- An approach to dealing with cars which reflects the amount of parking required and locates it close to homes without dominating the streetscape
- Simple, effective environmental design solutions which concentrate on passive measures to achieve comfortable internal conditions and reductions in fuel and water costs to our residents
- Practical and convenient arrangements for the storage and collection of refuse and segregated recycling
- Secure cycle storage, car clubs and other ways in which to reduce car-dependency.



5.5.2 Site appraisal

It's assumed that a thorough site analysis has been carried out at Stage 0-1.

Capacity studies should include research study and site visits gathering information from local residents interest groups and other stakeholders obtaining top graphical survey information and developing site analysis diagrams to explain the opportunities and constraints to the team.

5.5.3 Routes and connections

How well developments are integrated into their surroundings, affects their long-term sustainability.

Physical connections are achieved by linking new streets into the surrounding street network. Social connections are made as people get to know their neighbours, use local amenities like shops and schools and get involved with clubs and local activities. Good physical connections make it easier for residents to become socially integrated and without this, they may feel isolated, or even stigmatised by others in the wider community

'Permeability' and 'legibility' are important characteristics of a well-connected layout. A permeable layout is one which has a number of "open-ended" ways in, out and through the site. This provides choice, and if the routes are also legible (direct and easy to follow) also tends to increase security and cut down on travel time. Permeable layouts often provide much easier access for emergency services and large delivery vehicles or refuse vehicles too. In contrast, cul-de-sac layouts are less connected and permeable; they can be difficult to find your way around, awkward for larger vehicles to gain access and often feel less safe. Convoluted street layouts also tend to increase car usage, cut down views and lead to disorientation.

New routes should follow "desire lines" by taking people conveniently to where they want to go. They must cater for people, cyclists and cars. A multi-purpose route is often the most logical and economic, but throughout residential areas, vehicle speed should be restricted, and streets designed to give priority to pedestrians and cyclists. Separate cycle paths can be useful, especially when connecting into an existing cycle network, but pedestrian only routes are usually less successful and may feel insecure or suffer from anti-social behaviour unless we can be sure that they will be well used at all times of day.



5.5.4 Hierarchy of open space

In larger developments, creating a hierarchy of open spaces will give a site shape and meaning by creating areas of different scale and character within an overall framework.

The main public open space should be in a central location, where it will become a focus for the new community in the same way as village greens have traditionally been the heart of rural settlements. Spaces like this will be geared towards play and general amenity and provide opportunities for local events and community social gatherings, especially if associated with a small community building.

Where there are other uses (shops or larger community facilities) on or near the site, these will naturally become a focus for activity. This often provides the best location for a significant open space and the design of this should reflect adjacent activities by being robust and perhaps more civic in quality.

In larger developments, additional, smaller open spaces are usually dispersed across the site. These “pocket parks” spread benefit to other groups of residents and encourage mini neighbourhoods to develop and provide excellent play opportunities for young children.

The hierarchy of routes and spaces should be related to the hierarchy of buildings and respond to uses, massing, entrances and circulation patterns. It makes sense when main routes, which are often wider, tree-lined and with generous pavements, lead to the larger open spaces and when bigger buildings line these routes and the spaces themselves. This reinforces the idea that streets are also public open spaces. In all developments, but particularly those in high density urban areas, we are missing a valuable opportunity if the streets aren't enjoyable open spaces.

5.5.5 Vistas and focal points

Routes also provide the opportunities to open up views or vistas. These may be directed towards an existing significant building or tree within, or just outside of, the site, or they may focus on new parts of the scheme.

Community facilities make obvious landmarks, but even in purely residential schemes, focal points can be created by increasing the height of a building or stepping forward, by forming a gap between two similar buildings to create a gateway, or by changing colour or materials. Alternatively, views may be channelled towards an open space or landscape feature. Vistas and focal points make a valuable contribution to place-making and character and improve legibility by helping people to recognise and describe where they are.



5.5.6 Defining streets and enclosing spaces

As a general principle, lining the edges of streets and the sides of public spaces with buildings is a tried and tested strategy which remains desirable because it:

- Gives people good access to their homes
- Encloses open spaces and gives them scale and character.
- Defines street edges and allows the street to become a place in its own right.
- Encourages a sense of belonging and pride into a neighbourhood.
- Creates opportunities for social interaction
- Increases safety through overlooking and passive surveillance.

Increasingly, we need to consider the orientation of streets as part of our response to climate change. Streets which run north/south result in dwellings which face east/west. These are generally considered to be the most desirable in terms of capturing morning and afternoon sun and reducing overshadowing, but key to a well-connected and permeable layout is the need to have interconnecting routes. In order to address this potential conflict, building forms must be adapted to suit the orientation of individual streets and spaces.

5.5.7 Terrace housing

The housing terrace has a public front – a face which can express character, provides a visible door for easy access and windows which overlook the street, and it has a private back – which gives safe access to rear gardens where people can play, relax, grow plants and vegetables and dry washing.

The dual aspect nature of traditional terrace housing makes it easy to light and ventilate naturally and means that at least some of the principal rooms will receive direct sunlight for a good part of the day and a choice of view or outlook. The roof form can be articulated, or shaped to provide south or west facing slopes which can take advantage of passive solar gain through photo-voltaic (PV) or solar panels.

A terrace of housing also provides very good, secure definition between the public and private realm. The pavement is a public space for everyone, and that the home is a private space for members of one household. The front garden is a transitional space or buffer, part of the home, but somewhere that can be shared with people passing by, provides a waiting space for visitors and takes care of practical issues like refuse and recycling storage.



5.5.8 Street corners

Not every residential street corner needs an iconic or eye-catching building, but corners should always be viewed as a design opportunity.

They are prominent markers in the streetscape, defining two edges not just one, and always visible from different directions. They also tend to be social gathering places and make good places for shops or community facilities.

Housing on street corners needs special attention. Views out will usually be much better than in mid-terrace locations and corner windows and balconies help to accentuate corners and make the most of the views and sun at different times of day. Upper floor corner units are often the nicest units in a scheme and the extra breathing space makes them good for families, but privacy and outdoor amenity space will be difficult to achieve for homes at ground and first floor and these are often better as smaller units.

The inside of a corner is often very tight and in shade for much of the day when hemmed in by taller buildings. The privacy issues which arise when windows face each other across a corner, are much easier to deal

with when the windows on each side belong to one dwelling. This can be difficult to achieve in practice, so another way of handling it is to ensure that the rooms on at least one side of the corner are secondary spaces and need only small windows and limited outlook.

Locating cores in corners is very good in terms of efficient circulation as dwellings can be more easily clustered. The difficulty arises when access from the rear of the core is needed to bring people out to a shared courtyard. In a corner, the route out is often 'pinched'. Getting people out and into the centre of the space, needs a diagonal route and passes close to the windows and patios of the homes each side which can compromise privacy so pulling cores to one side often works better.



5.5.9 Roofscapes

Many roofscapes are a combination of pitched roofs and flat roofs. When carefully designed and articulated they can make a valuable contribution to the feel and character of a place, but too often the design of roofs as an element, is overlooked.

Flat roofs can provide excellent private or shared amenity space, create habitats for birds and urban wildlife and absorb rainfall as green and brown roofs. With the right orientation, pitched or flat roofs are the best locations for solar and photo-voltaic (PV) panels but usually have to accommodate lift overruns, plant, tanks, satellite dishes and aerals too.

Many upper floor homes look out over roofs and they are often visible from the street as well. It is therefore crucial that the opportunities which they provide are maximised but that the visual effect is controlled. Balustrading to amenity terraces must be sensitively designed (kept fairly light and preferably set back) and plant, lift over-runs and other installations or equipment must be carefully located – and safe, convenient and discreet access provided for maintenance and servicing.

5.5.10 Building form and composition

The Project Brief defines the amount of accommodation required and this generates the volume of building needed on the site. This will be heavily influenced by the density which the local planners feel that the site can sustain and will have to be reconciled with the number of dwellings needed to make the development financially viable, the characteristics of the site itself and local need.

The starting point for deciding on the building form and composition is the site in its local context and the application of the urban design strategy for the site. Some areas have a distinctive local vernacular: a distinct pattern of buildings, and features or materials that are intrinsic to the local character. We would not expect our designers to mimic the vernacular but instead interpret it in a more contemporary way.

Residential buildings are limited as to scope for variety in their form so detail is more important: entrances, windows and balconies need to be well-proportioned and arranged within the façade. Buildings generally look better if they have some articulation without being too fussy, expensive and difficult to build.

It is very important for designers to work from the inside out to avoid clashes of fenestration with internal layouts. While the rigour of standardisation is essential in flatted blocks, this should not be at the expense of creating lively facades which reflects the function of the building as a collection of homes and not offices.

The orientation of the buildings is particularly critical in designing out overheating which is a growing problem especially in London. This is discussed at length in other sections of this guide.



5.5.11 Flatted blocks

Increasingly Network Homes is building high density flatted blocks, particularly in London where land values are high and land is scarce.

The relationship between homes and the street is much less direct in higher density developments of flats and they are less suitable for families as a result. For five person households and larger we still try to provide houses wherever possible, but at higher densities some three bedroom and larger flats and maisonettes are inevitable. We try to retain as many of the benefits of traditional housing as we can by locating the larger units either at street level where they can have front doors and gardens, or at podium level where they can have patios.

In general, linear forms of flats are less efficient in terms of footprint and circulation systems than clustered layouts and in order to increase the number of dwellings per core in mid-terrace situations, corridors or access galleries are needed. This tends to create

single aspect flats in which all rooms share the same orientation. We are concerned to limit the number of single aspect homes which we provide because they often rely on artificial light and ventilation to create good internal environmental conditions and this works against the need to conserve energy.

We are particularly keen to avoid solely North facing homes and will not generally accept any 3 bedroom or larger single aspect units the form and massing of flat blocks therefore has to be very carefully considered not only in relation to mix, tenure and urban design requirements like relative scale and pace place making but also in relation to aspect and solar orientation.

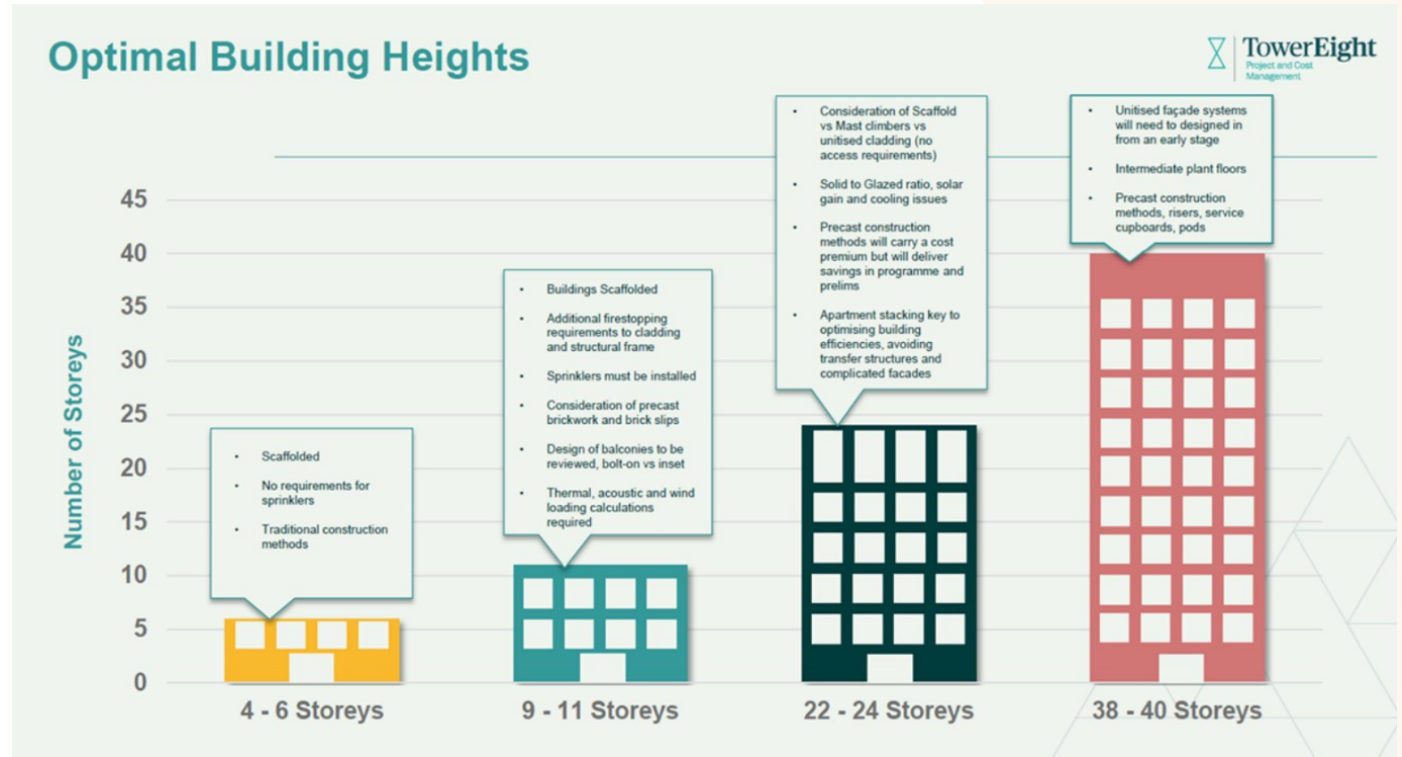


5.5.12 Building heights

The height of the block will be determined by the local context including overshadowing and overlooking, controlled in the main by local authority requirements.

Designers need to assess the pros and cons of varying building heights against criteria including build efficiency, fire strategy and maintenance and cleaning issues.

The diagram to the right gives a summary of issues with various building heights.



5.5.13 Entrances

Well-designed shared and private entrances make the difference between a place which feels inviting and a place which feels off-putting. They should be the most obvious part of both the front boundary treatment and the building façade.

They are an opportunity to express style and character and there are many examples of inappropriate design which either fails to express any character or which have front doors or porches which are out of character with the overall style of the building.

Entrances should be “tenure blind” i.e the same quality even if the internal cores contain different tenures.

5.5.14 Landscape strategy

We value landscape as an integral part of our schemes and a vital way to settle our new developments into the neighbourhood.

The form and type of planting and the design of streets and spaces should reflect the character of the local area and contribute to the overall feel of the scheme. We look for imaginative solutions which soften urban environments, enhance biodiversity, provide amenity

and add value. We seek a balance of hard and soft treatments which complement the built environment, and which will weather well.

A landscape strategy should be prepared at the earliest stages, preferably in conjunction with the design of the site layout. It should consider any existing trees and other vegetation worthy of retention, especially those which are protected by Tree Preservation Orders (TPOs). The strategy helps to inform the design of routes and orientation of open space, to make best use of microclimate and create a strong relationship with the buildings. It will not be limited to planting but will also consider hard surfaces, boundary treatments including fences, walls and railings and fixtures and fittings such as seats, signage and lighting. Levels and drainage are integral to the design of the landscape and need to be resolved, in principle, early on in the design process. This is particularly important in relation to accessibility in order to minimise the use of steps or ramps.

Where applicable, schemes will need to comply with the London Plan policies G5 Urban Greening and G6 Biodiversity and Access to Nature together require developments to make urban greening a fundamental element of design and to deliver net gains for biodiversity. In practice this means thinking about how buildings and landscape function as well as look, and ensuring a development leaves nature in a better state

than before it happened.

Opportunities for ‘Sustainable Urban Drainage Schemes’ (SUDS) should be addressed at this stage to identify where it may be possible to drain paved and built areas into specially designed systems set within the landscape.

The landscape strategy will inform the planning process and lead on into detailed design so it is important that the level of information given at this stage gives a really good idea of the design intentions and what is expected when the scheme is built out.

Future management and maintenance also need to be considered from the start. It is critical that the aspirations of the landscape design strategy are matched with an appropriate maintenance plan. The dispiriting sight of a failing planting scheme has a negative impact upon resident’s lives and their environment. Landscape management and maintenance is a dynamic process and consideration should be given to monitoring its success over time and modifying approaches as necessary.



5.5.15 Parking

Cars take up a lot of space and are increasingly frowned upon by Planners, especially in London.

At outline design or masterplanning stage, designers should consider:

- Reducing car-parking to a practical minimum (by providing maximum access to public transport, designing in secure cycle storage and looking at the viability of car-clubs)
- Making good, sensible provision for the amount of parking which is realistically needed for the site in question, bearing in mind the mix and tenure of units.

By making good, sensible provision we allow for enough parking to cope with demand in a way that does not overwhelm the appearance and amenity value of the public realm.

Because of the huge spatial and visual impact of parking, it is essential to decide early on not just how many spaces are needed, but also, how and where they should be provided. There are a number of options of arranging parking including:

- On street parking, either controlled or uncontrolled
- Parking courts, at the front or rear of the dwellings, although the latter may have security risks. Remote parking courts are inconvenient and at risk of anti-social behaviour.
- Undercroft parking, but with surveillance or shielding to minimise the risk of unauthorised access and antisocial behaviour
- Underground parking. This can be an expensive option and is usually only cost effective where land values and density are so high that they rule out other cheaper option.



< Start this section again

Next section >



Bilton Road development, Periyale.

5.5.16 Open spaces and play

Open space is vital to mental health and physical well-being and is especially important in dense urban areas.

The open spaces which exist outside of the site and which will have been identified in the site analysis must form part of the overall strategy. Improving access to existing parks and play areas can reduce the need for new provision and this principle is usually accepted by local authorities who often define the minimum amount of public open space which must be provided in a new development.

Deciding where and how to provide the space or spaces, how big they should be, and what they are for, is one of the most important parts of the masterplan or urban design framework.

Designers should ensure that:

- An open space strategy including a play strategy forms part of the overall masterplan for all but the smallest sites and is informed by existing and planned local provision and the views of local people used public open space to give it a scheme its identity
- It is designed for everyone and is multi-functional.
- The space is overlooked and designed for year-round.

use, a large proportion of the space is green and where appropriate it is enclosed .

- A long-term management plan is in place and provide an appropriate range of play spaces based on the guidelines in tables and pages featuring pictures play.

Play spaces should be:

- Designed in accordance with RoSPA Play Safety advice and guidance.
- Located where children would want to play (ie places that are not secluded but are not entirely overlooked).
- Designed to enhance the local setting.
- Include natural play features such as mounds, logs and boulders which stimulate children's imagination whilst adding to biodiversity.
- Multi-functional spaces which can be enjoyed by adults as well as children of all ages without undue segregation.
- Sufficiently challenging to hold children's interest and be places which they choose to visit again and again.
- Flexible and can evolve as children evolve.





Rectory Park development, Northolt.

5.5.17 Security

Security is one of Network Homes' core design principles and is covered in that section of this Guide.

Apart from complying with the security requirements of Building Regulation Part Q, Secured by Design remains the standard for provision of security on the homes, and we require our designers to consult with the local Design Out Crime Officer (DOCO) at the early stage of the design development.

The following checklist is taken from Secured by Design Homes 2019, version 2.

- Vehicular and pedestrian routes should be designed to ensure they are visually open, direct, well used and should not undermine the defensible space of neighbourhoods.
- “Excessive permeability” is to be avoided, for instance by allowing the criminal legitimate access to the rear or side boundaries of dwellings, or by providing too many or unnecessary segregated footpaths.
- Public footpaths should not run to the rear of, and provide access to gardens, rear yards or dwellings.
- Planting next to a footpath should be arranged with the lowest growing specimens adjacent to the path, and larger shrubs and trees planted towards the rear. Planting immediately abutting the path should be avoided as shrubs and trees may grow over the path, creating pinch points, places of concealment and unnecessary maintenance.
- Trees should be planted at least 5 metres away from any light source to avoid the growing canopy obscuring light.
- Communal areas, such as playgrounds, toddler play areas, seating facilities should be designed to allow natural surveillance from nearby dwellings with safe and accessible routes for users to come and go.
- Play areas should be designed so that they can be secured at night to minimise the amount of damage and graffiti that can occur after dark.
- Consideration should be given to a single dedicated entry and exit point to enable parental/guardian control and supervision. Fencing at a minimum height of 1200mm can often discourage casual entry, provide a safe clean play area and reduce damage to the equipment.
- Boundaries between public and private space should be clearly defined and open spaces must have features which prevent unauthorised vehicular access.
- Boundary walls, bins and fuel stores, street furniture, trees, low flat roofs, car ports or balconies should be designed to remove climbing aids to gain access into the property.
- Parking bays should ideally benefit from good natural surveillance; for example, being overlooked by the clear windows of public buildings and private dwellings. A location with good footfall is also desirable, to ensure there are enough people nearby who may notice suspicious activity and contact police. A bay in a secluded area or even one situated on its own within a traffic island site can be targeted heavily as there are no passing pedestrians who may notice a theft taking place.
- Parking areas should be well lit with vandal resistant light fittings and not mounted below 2.5 metres from the ground and out of reach for those wishing to cause interference
- Attention to position and location of lighting to improve illuminance at ground level can avoid user casting shadows onto the surface whilst minimising light pollution.
- Bollard lighting is to be avoided apart from wayfinding as it can be easily obscured and does not project enough light at the right height making it difficult to recognise facial features.



5.5.17 Security continued

- Planting should not impede the opportunity for natural surveillance and wayfinding and must avoid the creation of potential hiding places. Shrubs should be selected to have a mature growth height no higher than 1 metre, and trees should have no foliage, epicormic growth or lower branches below 2 metres, thereby allowing a 1 metre clear field of vision.
- Walls and hedges should be located so that they do not obscure doors or windows, and the position of trees that may become climbing aids into property or obscure lights or CCTV cameras.
- Seating next to a footpath should be located to minimise the risk of inappropriate loiterers. Consider the use of single seats or stools set apart to deter loitering.
- Entrance/driveway gates should be inward opening, of substantial framed construction and employ galvanised adjustable hinges and fixings mounted behind the attack face. Hinge systems must not allow the gate to be lifted off.
- Automated gates supplied and installed must meet the relevant statutory safety standards and be CE marked accordingly. Installations should be carried out by specialists in accordance with:
 - Door Hardware Federation Code of Practice (DHFTS 011)
 - Gate Safe good practice guidance.
- Access to the building via the use of a security encrypted electronic key (e.g. fob, card, mobile device, key etc.)
- Audio visual entryphones are to have vandal resistant external door entry panel with a linked camera. They must be able to recover from power failure instantaneously; and provide unrestricted egress from the building in the event of an emergency or power failure. Tradesperson release mechanisms are not permitted as they have been proven to be the cause of anti-social behaviour and unlawful access to communal developments.
- Mail delivery should via a secure external letter box into a secure area of the dwelling meeting the requirements of the Door and Hardware Federation standard Technical Standard 009 (TS 009). The letterboxes should be easily accessible i.e. at a suitable height for a range of users.



Requirements

Shared spaces

5.6



5.6 Shared spaces

Shared spaces are an inevitable consequence of rising density and the urban shift from houses to flats. They are the parts of a scheme which are the most intensively used and are often more prone to careless or anti-social behaviour. These are also the areas which require the most active management and the highest levels of maintenance.

The main types of shared space are entrances and circulation areas, which take people from the street to their front door, outdoor amenity areas, which compensate for the lack of private gardens, ancillary and storage areas to take care of everyday practicalities like refuse and recycling, and secure parking areas which may be needed where on street provision is inadequate.

These spaces may be internal – most parts of the circulation system, external – most amenity areas and podia, or semi-enclosed – refuse, recycling and cycle stores and parking areas. All need to have controlled access and be managed and maintained for the lifetime of the building.



Shared spaces are an inevitable consequence of rising density and the urban shift from houses to flats.



5.6.1 What our residents say

External communal areas

- Consider community gardens, communal spaces to bring residents together and help with youth anti-social behaviour.
- Use CCTV to improve safety and security.
- Parking: consider compact spaces for small cars as well as larger vehicles to increase availability of parking.

Internal communal areas

- Entrances should be “Tenure Blind” but mixed tenure within blocks needs to be considered carefully.
- Overheating/ lack of ventilation need attention. Should consider introducing light wells as ventilation shafts as used in Europe and hot climate.

5.6.2 Entrances and lobbies

The extended arrival process is an important part of our residents’ perception of home and all parts of the circulation system must be:

- safe and secure
- welcoming and attractive
- provide shelter from rain and wind
- simple to follow when arriving and leaving
- easy to access with shopping or items of furniture
- suitable for buggies or wheelchairs
- able to withstand wear and tear
- easy and economical to manage and maintain.

The main entrance to a flatted block needs to be clearly signposted and obvious, welcoming, well-lit, provide shelter and confirmation to visitors that they are in the right place.

The door entry system is the single most critical part of the overall security strategy. Audio visual digital systems are required and fully detailed in the Employer’s requirements in this guide.

Entrance doors set the tone for the rest of the building and should be robust, but not too heavy to pull and high quality without looking institutional. They should include some glazing for visibility, but fully glazed doors are expensive and potentially vulnerable. It is crucial for the security of residents that entrance doors close themselves safely and reliably. Single doors are more

secure than double, and timber is rarely appropriate for shared entrance doors unless there is a steel or aluminium core.

Our preference is for every individual home to have their own tamper proof letter box in the front door. In flats individual, secure boxes should be located on the external wall, close to the entrance doors, to allow mail to be deposited from outside and collected from inside. Letter boxes within the entrance lobby are also acceptable alternative.

Bulky deliveries are problematic, and residents usually have to arrange for goods to be delivered when they can be at home, unless there is a concierge. Provision of lock box parcel storage for deliveries should be considered in the layout of entrance lobbies.

First impressions are important; the entrance area should look and feel good, be large enough to accommodate a group of at least 6–8 people and have a generous floor to ceiling height of at least 2.5m. Finishes should be hard-wearing and easy to clean.

Some form of dirt resistant matting is needed inside the entrance door. Good lighting and signage are crucial and it should be clear how to proceed to every dwelling from the entrance area. Entrance lobbies also provide good opportunities for artwork.



5.6.3 Lift and stair cores

Choosing whether to provide lift access is a key decision with significant implications.

We normally require a lift to serve homes on the third floor (ie in four storey buildings) and two lifts in seven storey buildings. Where a lift is provided, it must be big enough for a wheelchair user and additional person, where required an evacuation lift should be provided. The minimum dimension is a standard eight person lift with an internal car size of 1100 x 1400mm, but larger lifts, capable of taking a stretcher, are desirable.

In all but very large cores, only one lift will be affordable, so we look for a maintenance agreement which provides for rapid call-out in the event of break-down. In every case, the lift specification and details of the maintenance policy must be agreed in advance with our housing managers. We will not usually accept wheelchair homes on upper floors unless two lifts are provided within the core. This is rarely viable, except in buildings of 7 storeys or more, so we generally prefer wheelchair homes to be at ground level.

Natural light and ventilation add immensely to the quality of cores and other circulation areas and the temptation to push these deep into the plan and retain the external wall for habitable space should be resisted. In urban design terms, locating the cores on the outside wall can provide useful vertical breaks in street elevation.

5.6.4 Corridors

Our general aim is to keep them as short and straight as possible but wide enough to feel comfortable. 1500mm is a practical minimum width and will allow a wheelchair user to turn on the spot.

Locating the core centrally amongst a group of units breaks the corridor into two more manageable legs and allows for secondary control at the head of each corridor, at every floor level, which restricts access to a small group of residents.

Keeping corridor length within the permissible distance for escape in a single direction reduces the number of automatic opening vents (AOVs) which are required, means that secondary escape stairs are not needed, and creates a less institutional environment. Fire engineered solutions can increase the normal maximum distance for escape in a single direction from 7.5m to 18m but this is to be avoided wherever possible in our larger developments.

Corridors can also be noisy and whilst carpets effectively absorb sound, they can be difficult to clean and maintain satisfactorily so acoustic wall and ceiling finishes can be a better alternative. As described in earlier chapters, we prefer to avoid corridors with dwellings on both sides, because they need to be

artificially lit, offer no views out and create single aspect home. These corridors can also exacerbate overheating when there are communal heating pipes and no natural ventilation.



5.6.5 Deck access galleries

Deck access to flats can create dual aspect dwellings providing cross ventilation and light. They can also provide space for individual service cupboards containing mechanical and electrical equipment that require communal access for landlords' maintenance e.g HIUs and MVHRs. Residents' external storage can also be located on access decks.

Access decks need to be designed to minimise security, privacy and noise problems. We accept access galleries where they are short and not linked together to provide high level 'rat-runs'. A maximum of six dwellings should be served from each length of deck, ideally fewer where larger dwellings are involved, and child density is higher.

Privacy is an issue as people necessarily pass close to windows and living spaces and main bedrooms should not normally be located on the gallery side of the plan. Kitchen/dining rooms and single bedrooms are acceptable where galleries are pulled away from windows and linked to entrances with short 'bridges' and this also creates useful light wells.

Noise transmission, particularly caused by foot-falls at night, is a potential nuisance which must be mitigated by providing sound resilient flooring. Access to each stretch of gallery can be controlled in a similar way to corridors; by providing doors or gates as you move from the core to the gallery.

5.6.6 Shared amenity spaces generally

Shared amenity space is generally a requirement of the local authority Planners. Designers should aim to provide every flat with secure access to communal space that is overlooked by the surrounding development, is accessible to all residents of the block, is designed to take advantage of direct sunlight and has suitable management and maintenance plans in place.

Provision needs to be made for access for maintenance at ground and upper level landscaped areas. Landscaping should be grass and informal low maintenance planting rather than formal elements such as hedges that rely on intensive maintenance.

Layouts should include places to sit with furniture in materials that are robust, vandal proof and preferably non-combustible.



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5.6.7 Ground level courtyards

Shared ground level courtyards partially or fully surrounded by buildings are a good substitute for the private gardens which are lost as density rises. The overlooking increases security and fosters a sense of ownership and belonging and the enclosure provided by the buildings creates a safe environment with a sense of place.

Controlled access is usually provided for upper floor units via the shared cores, and for ground floor units via small private patio gardens. At ground level, there are significant opportunities for planting, including mature trees where there is enough space, and drainage and other practical issues are relatively straightforward. Noise can be an issue especially in fully enclosed situations although planting can help considerably with sound absorption as well as with greening the space and cleaning the air.

Visual privacy between windows and balconies across corners needs careful handling and is easier with a single corner unit than with two abutting dwellings. The three-dimensional proportions of the courtyard are critical as natural light levels can be quite low when building height increases without corresponding increases in the width and depth of the space.

Overshadowing is also a factor; sun and shadow studies are essential and will inform the preferred building height on each side of the space.

Leaving one side of the landscaped courtyard open to the street can make a valuable contribution to the streetscape and increase light and sun penetration into the space. The boundary treatment should be railings rather than a solid wall or fence to combine visibility with an appropriate level of security and should include a lockable gate for maintenance access. In fully enclosed situations, separate maintenance access is also desirable rather than reliance on the residential cores.

Dedicated play areas can be successfully incorporated into large courtyards but in most situations, 'playable space', multi-purpose areas which have a focus towards play are more useful to a wider range of users. These typically use mounding, boulders and other less formal elements rather than fixed items of standard play equipment.

Watering points and possibly water butts should be included but we prefer not to have irrigation systems for communal amenity spaces.

5.6.8 Raised courtyards / podia

Raised courtyards are usually podia above non-residential buildings or roof decks above undercroft parking areas.

Surrounded by dwellings, they function in the same way as ground level courtyards in many respects but raise a number of additional issues. Sustaining planting is much more difficult above ground, and weathering, drainage and maintenance access are also more complicated.

The perimeter of upper level landscaped areas should have planting as well as balustrading 2.1m high.





CGI of proposed rooftop communal amenity spaces at St John's Road, Wembley, by LBA.

5.6.9 Roof terraces

Shared roof-top terraces are becoming more common and can provide a pleasant retreat for residents.

However, roof terraces should have dwellings at the same level and access via a shared corridor. Although noise and nuisance are less of a problem, if there are no dwellings on the same level they tend to be less well used and without overlooking, anti-social behaviour will go un-noticed. Also, access can only be achieved by extending the cores through an additional floor level and this is particularly costly where lifts are involved, especially as each core is affected if all residents are included.

The perimeter of roof terraces should have planting as well as balustrading to be 2.1m high.

5.6.10 Cycle stores

There a number of options for cycle storage:

- Front or rear gardens or in porches.
- Hoops and stands at ground level.
- Groups of individual lockers.
- Shared street level stores.

The amount of cycles required by local authority is increasing but we prefer not to have double stacked storage. Where feasible, consider providing storage for other equipment, such as buggies.

Most flatted schemes now have cycle stores incorporated in the ground floor area, easily accessed either within or externally. There are security issues that should be addressed in consultation with Secured by Design DOCO. Doors must be robust and vandal resistant, and the space must be well lit and ventilated

5.6.11 Refuse and recycling stores

Refuse and recycling storage can be in the form of:

- Segregated storage within front or rear gardens.
- Shared free standing external stores.
- Shared stores integrated into the building footprint, with or without refuse chutes.
- Underground storage.

Integral stores and refuse chutes have proved particularly problematic in the past and the important need to recycle means that many different containers and separate chutes are needed if segregation is to be achieved as waste is deposited by our residents.

Smells and noise from refuse stores are common, and often very legitimate, causes of complaint. Our housing managers have extensive experience of dealing with refuse and recycling and must be involved in the decision about which option to pursue.

If integral stores are unavoidable, they should be located away from main entrances and private dwellings. As with cycle stores security issues should be addressed in consultation with Secured by Design DOCO. Doors must be robust and vandal resistant, and the space must be well lit and ventilated with a water point and gully for cleaning out.



5.6.12 Undercroft and basement parking

Undercroft parking typically arises in a courtyard arrangement where the central parking area is decked over to provide a raised amenity courtyard.

The parking area must be ventilated but this is much easier to achieve than with underground situations and can be incorporated into the landscape design of the courtyard. The carpark should be secured, usually gated at the point of entry, and monitored by CCTV. Car park gates are a potential source of nuisance to our residents as well as a high maintenance item. They must be quiet to operate, self-closing, easy to repair and to remove and replace if necessary.

Except in small schemes it is usually more convenient to provide direct access to the circulation cores from the parking area. These must not replace entrances on the street side which are essential for residents who are not driving, visitors, trades people and emergency services – and are crucial in maintaining an active street frontage. Early discussion with Police Crime Prevention design teams is advisable where this is proposed.

Basement Parking

This is the most expensive solution and the design of the housing above is inevitably more complicated where there is basement parking. Avoiding a transfer structure requires a very rigorous approach to planning in order to find an efficient parking grid which is compatible with a residential grid. Similarly, services need to be extremely carefully co-ordinated with the structure. The ramp needs to be carefully sited to be safe and accessible but as unobtrusive as possible.

As with undercroft parking, direct access to cores from the basement car park is much more convenient for our residents but security and fire protection issues are considerable and more difficult to achieve in basement situations. Numerous alternative means of escape are usually required and these, too, should be covered by the CCTV and need ongoing management. Police Crime Prevention design teams should be consulted about all aspects of the design of basement parking.



5.6.13 Fire safety in flatted blocks

The fire strategy for flatted blocks should be an integral part of the design development and will be required for compliance with the Building Safety Gateways described elsewhere. In all but the simplest of blocks we require a qualified fire engineer to provide the fire strategy.

For high risk blocks (i.e. over 18m) a Fire Statement will be required to pass Gateway 1.

The following is a checklist guide:

- Front doors to flats to be fire-resisting and self-closing.
- Corridors leading to stairways need to be enclosed in fire-resisting construction.
- Where there is only escape in one direction along a corridor, the extent of travel in such 'dead ends' needs to be limited.
- Open decks and balconies need to be limited in extent if escape is only possible in one direction, with fire-resisting construction to protect people passing other flats to reach a stairway.
- Stairways need to be enclosed in fire-resisting construction, with fire-resisting, self-closing doors.
- Any external stairways need to be suitably separated from the building by fire-resisting construction and doors.
- Any areas, rooms or risers opening onto communal escape corridors and stairways need to be fitted with fire-resisting doors that are self-closing or kept locked shut.
- Arrangements for maintaining stairways clear of smoke need to be provided (through means such as openable windows and vents).
- Additional protection is needed where there is only a single stairway for normal access and for egress in an emergency, normally comprising lobby approach and permanent openings or automatically opening vents for clearing smoke.



5.6.14 Mixed use developments

Except for corner shops or small tenant or community facilities, we usually only develop mixed use schemes in urban areas and where this is a planning requirement.

Although there are some advantages, there also tends to be increased complexity and it is often more challenging to create a good and manageable residential environment than in a purely residential scheme.

The main challenges include:

- Managing the access and security issues of different uses
- Controlling the nuisance caused by noise, smells, litter and anti-social behaviour
- Creating safe and welcoming street level entrances, ensuring that residential entrances remain prominent with dedicated residential parking, bike and bins stores
- Keeping the overall access and circulation system clear and simple
- Dealing with refuse, recycling, cycle storage and other things which are usually accommodated at street level

- Finding affordable and workable parking solutions; the absence of street parking often requires parking an underground or remote parking solution
- Keeping the structural and services interface as separate, simple and cost effective as possible
- Ensuring that the more complex design and specification issues which arise, particularly the design and waterproofing of podia and properly considered and manageable.

To respond properly to these demands, the space must be designed and specified to an exceptionally high standard. The services strategy will need to be thoroughly worked out to ensure separation between residential and non-residential uses, but good maintenance access to each.

Mixed use schemes will invariably have a podium from which the residential development rises. In the urban context of most mixed-use schemes, the public side of the building may be very noisy and busy or provide a poor outlook for dwellings. As well as providing access, the podium should therefore create a more private, quieter place, with a residential scale and character, at the rear or on the inside of the building.

Some visual connection with the street is still useful as it helps to avoid a feeling of isolation, provides passive surveillance by allowing people to keep an eye on the street and makes the façade looking more animated and lived in. But it may be that kitchens are the best spaces to locate on the public side of the building, where there are high levels of noise; allowing living rooms bedrooms and balconies to be on the podium side.

Homes at podium level may be given their own front doors onto the podium or may be accessed via the smaller cores. They may need a different internal layout and treatment from the homes on higher levels to ensure good access and privacy, and without balconies, will need some outdoor amenity space of their own.

A good landscape design for the podium is essential and must include the special measures needed to achieve and maintain healthy planting above ground, whilst achieving completely water-tight construction. There should be thorough consultation with development staff to explore the design, aesthetic and practical implications, and with housing managers to ensure that the space and the systems can be managed over time. Ideally, there will also be consultation with future residents; particularly about the amenity and play facilities they wish to see on the podium.



Requirements

The home

5.7

- > 5.7.1 What our residents say
- > 5.7.2 GLA London Housing Design Standards
- > 5.7.3 Aspect and orientation
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- > 5.7.16 Kitchen, living and dining spaces
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- > 5.7.18 Bathrooms, WCs and shower rooms:
- > 5.7.19 Storage
- > 5.7.20 Recycling
- > 5.7.21 Utility cupboards





Kilburn Quarter, Kilburn

5.7.1 What our residents say

- Space standards need to be increased.
- Storage space is too limited, so people use balconies for storage.
- Less mobile or people with health issues need more space for medical equipment.
- Where do kids go to get away? Open plan doesn't provide enough separate spaces for more private activities.
- We should consider large-sized residents. Bathrooms etc can be too small. Wall-hung WCs can be impractical with larger residents.
- Soundproofing within and between dwellings is very important. Timber floor finishes can be problematic for noise transference.
- Flexibility of internal layouts is desirable.
- Preference expressed for separate kitchen dining and living spaces rather than open-plan.

5.7.2 GLA Good Quality Homes for all Londoners

In 2020 the GLA published Good Quality Homes for All Londoners, Housing Design Supplementary Guidance (SPG), comprising four separate guidance documents aimed to embed quality into housing delivery in London.

Many of these requirements are already included in Network Homes standards. However, there are significant variations as follows:

- The number of homes accessed from a single core must not exceed 8 homes per floor.
- All homes with three bedrooms or more must be dual aspect. Any single aspect one-bedroom or two-bedroom dwellings must not be north-facing.
- All homes must provide for direct sunlight to enter at least one habitable room for part of the day.



5.7.3 Aspect and Orientation

The aspect and orientation of a dwelling have significant bearing on the quality of the home and the wellbeing of its occupants.

These include:

- The view and outlook from within the home and garden.
- The amount of daylight and sunlight the home and garden receive.
- Warmth from solar gain and vulnerability to overheating.
- Exposure to wind and rain.
- Security of external space achieved by overlooking.
- Privacy of the occupants and their neighbours.
- Exposure of the home to external sources of noise or pollution.
- Opportunities for renewable energy.

These factors must be balanced against urban planning and street patterns which may be dictated by other considerations.

Whilst the main living space is the highest priority, eating areas are also important. Many children spend a good deal of time in their bedrooms; playing or studying, and the increasing tendency to work from home means that most parts of many dwellings are heavily used and benefit from good views out and some direct sunlight. Ideally, the outlook from every home should include trees or planting.

In London, the GLA Affordable Homes Programme requirements stipulate that all homes with three bedrooms or more must be dual aspect. Any single aspect one-bedroom or two-bedroom dwellings must not be north-facing. All homes must provide for direct sunlight to enter at least one habitable room for part of the day.

Orientation can have a significant impact on the internal temperature of the home depending on the size and location of windows and where rooms are located. Schemes should maximise the provision of dual aspect dwellings with a main facade facing within 30 degrees either side of South. A single aspect dwelling should only be provided where it can be demonstrated that it will have adequate passive ventilation, daylight and privacy, and avoid overheating.

North facing living rooms should be avoided where possible and south facing rooms should be protected from summer over-heating by tree canopies, overhangs, fixed or movable screens or other shading devices.

Where rooftop photo voltaic panels are planned the best results would be obtained from South facing orientation



5.7.4 Privacy from overlooking

Overlooking should be minimised by site layouts which provide reasonable privacy distances and careful design and location of windows and balconies. Minimum privacy distances are often set by local planning policies.

Good arguments for reducing privacy distances can also be made where the design has avoided direct overlooking from one principle room to another or from one balcony to another. Providing small openings to secondary rooms such as kitchens, directional bay windows to larger rooms or screening to balconies can effectively increase privacy across tight spaces.

Layouts should avoid placing bedrooms and bathrooms at ground level on street-facing facades, or where they face courtyards or other shared spaces.

Designers should try to avoid large, full height windows to bedrooms and living spaces where there is a risk of overlooking unless protected by deep gardens or fitted with privacy screens or shutters. Consider the use of obscure glazing for lower windowpanes and balcony balustrades unless where glass is specified.

5.7.5 Daylight and sunlight

The design of development should provide enough daylight and sunlight to new and surrounding housing that is appropriate for its context, whilst avoiding overheating, minimising overshadowing and maximising the usability of outside amenity space.

Natural light is vitally important but the drive for density means that dwelling frontages are often squeezed with the result that many new homes suffer from lack of daylight. We want to reduce the requirement for artificial light during daylight hours by providing windows, roof-lights or sun-pipes to as many rooms as possible. Where spaces cannot be naturally lit, low energy fittings which simulate daylight conditions are required.

Bathrooms and circulation areas should receive daylight wherever possible. Gardens, balconies and external communal space should be oriented to receive some sunlight in Spring and Autumn to make them more inviting and therefore used more often. Aim to ensure that at least 50% of the area of a private outdoor space receives at least two hours of sunlight in these periods.

5.7.6 Ventilation and air quality

Effective ventilation is vital for ensuring good indoor air quality, reducing heat build-up and removing excess moisture. Natural ventilation is always preferable as it provides residents with an easy to operate maintenance free system has no associated energy bills and can be extremely effective in removing heat and improving indoor air quality.

The increasing requirement to achieve high levels of air tightness to minimise heat loss introduces the need for more efficient mechanical ventilation systems.

Natural ventilation, achieved by opening windows or passive stack systems is also required for as many rooms, and for as much of the year as possible. Where necessary to eliminate the risk of condensation, we will provide local extract fans or whole house ventilation systems.

Single aspect dwellings are problematic in each of these respects. From room to room, they offer little or no variation in outlook or sunlight, and usually suffer from poor natural light levels at the back of the plan and inadequate ventilation as this relies on a through-draft to be effective. The likelihood of over-heating is significantly higher in single aspect dwellings which face south or west.

The GLA London Plan requires all developments of 10+ homes to be at least Air Quality Neutral.



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5.7.7 Overheating

The GLA London Plan requires all developments of 10+ homes must demonstrate through an Energy Strategy how they will reduce the potential for internal overheating in accordance with the cooling hierarchy in accordance with the London Plan.

We require an Overheating Analysis to be carried out pre-Planning in accordance with CIBSE TM59.

5.7.8 Accessibility

New homes should be accessible to a diverse range of residents from an increasingly ageing population, disabled people and families with young children.

Requirements for accessibility are set by the local planning authority and are incorporated in Building Regulations Part M, reflecting the standards of the now defunct Lifetime Homes standards and the widely accepted Habinteg Wheelchair Housing Design Guide .

Building Regulations Part M sets out three categories of accessibility provision:

- **Category 1:** M(4) 1 VISIBLE Dwellings
- **Category 2:** M4(2) Accessible and Adaptable Dwellings (Category 2)
- **Category 3:** M 4(3) Wheelchair User Dwellings (Category 3)

For planning purposes, both Category 1 and Category 2 are optional, while Category 1 is the baseline requirement which is applied by default where no other standard is required.

In London the GLA requires all new homes to comply with Category 2 Accessible and Adaptable and at least 10% of all new homes to comply with Category 3 Wheelchair User Dwelling.

Category 2 varies from Lifetime Homes in one key feature: step free access is required to the private entrance of all dwellings, however if the block of flats is low rise (4story or less) and does not have a lift then the default will be Category 1, VISIBLE Dwellings.

Where parts of the approach route including vertical circulation in common parts for a block of flats is shared between dwellings of different categories the design provisions of the highest number category of dwelling served should be applied to ensure that people can visit their neighbours with ease and are not limited by the design of communal areas. These standards should apply to all tenures including shared ownership and other forms of tenure.

Category 3 Wheelchair User Dwellings distinguishes between wheelchair accessible i.e homes that are readily usable by a wheelchair user at the point of completion, and wheelchair adaptable, a home that can be easily adapted to meet the needs of a wheelchair user. Policies for wheelchair accessible homes should only be applied to those dwellings where the local authority is responsible for allocating or nominating persons to live in that dwelling otherwise Category 3 dwellings should be wheelchair adaptable.



5.7.9 Soundproofing

Good soundproofing is essential. We believe that residents have the right to enjoy peace and quiet inside their homes. With windows shut, it should not be possible to hear neighbours, lifts or other activity in communal areas and levels of traffic, aircraft or other external noise should not be high enough to be a nuisance.

In locations under flight paths, very close to major roads or other locations where we are not confident that we can contain noise to an acceptable level, we will not build new homes.

In flats it is critical to ensure flats stack so that habitable rooms are above each other to minimise sound transmission. Soil and vent pipes should stack uniformly to an external space, preferably the roof. This is to avoid offsets in the pipework which can create noise problem as well as minimising the need for air admittance valves on stub stacks which need to be accessible for regular maintenance.

Separating walls and floors between flats, and between flats and corridors/ stairwells and other shared spaces should receive additional sound insulation. Designers should aim to achieve airborne sound insulation values at least five dB better than (above) Building Regulations Part A and impact sound insulation values at least 5 dB better (lower).

Within the home, noise should also be controlled both within rooms and from space to space. Additional acoustic insulation should be provided between bedrooms and kitchen/ living/ dining rooms. Mechanical ventilation should be carefully specified and located, especially in open plan living rooms to minimise noise nuisance and lessen the risk of residents turning it off. Boilers, pumps, heat exchangers, washing machines and tumble driers should be located in separate utility spaces or stores wherever possible.



5.7.10 Thermal comfort

Always be the first step in creating a cost effective thermally comfortable home while reducing residents' energy bills. Fabric energy efficiency can be improved through a combination of enhanced insulation within building in elements (improved u-values) reduced heat loss at element junctions (thermal bridging) and an overall improvement in air leakage (air tightness).

Building Regulations determine minimum standards and at the time of writing Approved Document Part L1A 2013 is being revised in anticipation of a new Future Homes Standards that delivers the Government's carbon reduction target.

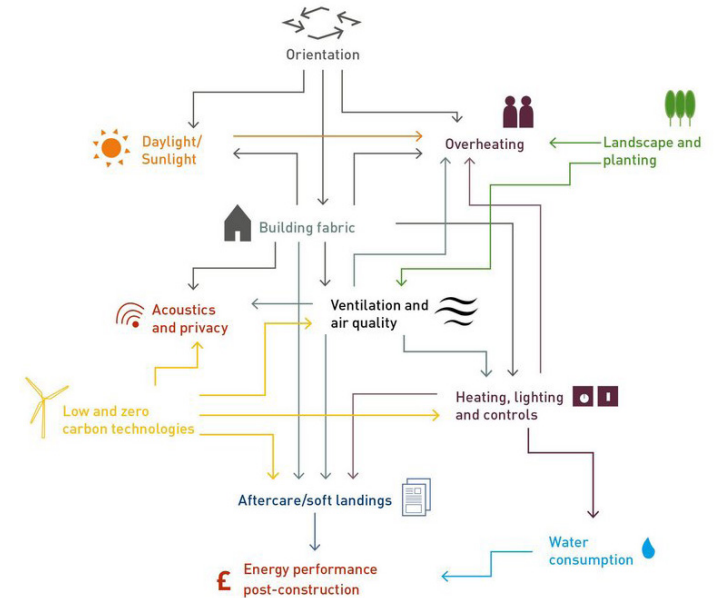
Thermal comfort and energy consumption are controlled and determined by a number of environmental factors which are interlinked. When considered together they can have a positive impact on each other making the difference between homes are environmentally comfortable with low energy and maintenance bills and homes that are gloomy, prone to overheating or complicated control.

Thermal comfort is affected by the amount of natural ventilation, which in turn is affected by security, sound insulation and air quality requirements.

The diagram to the right, taken from **NHF and Levitt Bernstein's Housing Standards Handbook**, illustrates the complex interconnection of environmental issues.

The best heating systems are efficient to run, easy to control and with low maintenance requirements. Fuel poverty should be addressed through reduced heating demand and efficient system selection. Incorporating good levels of thermal insulation reduces and sometimes can eliminate the need for space heating but it doesn't reduce the need for hot water. This is in line with the move away from individual gas boilers to individual or communal air source heat pumps with heating and cooling such as an ambient coil system.

Space should always be set aside for services including a hot water cylinder mechanical ventilation with heat recovery or heat interface units. The means of heat distribution for space heating together with types and numbers of controls must also be factored in. This also means considering the positions of radiators and controls and taking count of furniture layouts, window types and locations and accessibility requirements under floor heating is becoming more common is installed in conjunction with low temperature as soon as he pumps systems and provides efficient low cost heating.



Environmental cross connections, p90, NHF and Levitt Bernstein Housing Standards Handbook



5.7.11 Water efficiency

Water efficiency is controlled by Building Regulations Part G which now includes a more onerous optional requirement of 110 litres per person per day in addition to the retained baseline requirement of 125 litres per person per day. This target has been a requirement of the GLA since 2011.

Water consumption can be determined by the individual fittings and appliances such as WCs, taps, showers, washing machines etc. Flow rates need to be considered however to avoid residents tampering with installations or using more water to carry out the same task for example flushing the toilet twice. Grey water and rainwater harvesting technologies can be very effective water saving systems however the pump and equipment consume energy and this has to be weighed against water saving benefits.



5.7.12 Space standards

The Nationally Described Space standards are advisory minimum area requirements that should be applied unless superseded by local Planning Authority space standards.

In London, the GLA has its own requirements included in the design guidance associated with The London Plan Special Planning Guidance (SPG) and Affordable Homes Programme grant requirements. The latest guidance in the London Plan now harmonises with the Nationally Described Space standards so apply to all new London developments as follows:

Number of bedrooms	Number of bed spaces	1 Storey dwelling	2 Storey dwelling	3 Storey dwelling	built in storage (m)
1 bed	1p	39 (37*)			1.0
2 bed	2p	50	58		1.5
	3p	61	70		2.0
	4p	70	79		
3 bed	4p	74	84	90	2.5
	5p	86	93	99	
	6p	95	102	108	
4 bed	5p	90	97	103	3.0
	6p	99	106	112	
	7p	108	115	121	
	8p	117	124	130	
5 bed	6p	103	110	116	3.5
	7p	112	119	125	
	8p	121	128	134	
6 bed	7p	116	123	129	4.0
	8p	125	132	138	

*Where a studio/ one single bedroom one-person dwelling has a shower room instead of a bathroom, the floor area may be reduced from 39 square metres to 37 square metres as shown bracketed.

- The Gross Internal Area (GIA) of a dwelling is defined as the total floor space measured between the internal faces of perimeter walls that enclose a dwelling. This includes partitions, structural elements, cupboards, flights of stairs and voids above stairs. GIA should be measured and a noted in square meters (sqm).
- Built in storage areas are included within the overall GIA and include an allowance of 0.5 square metres for fixed services or equipment such as hot water cylinder, boiler or heat exchanger.
- Any area with a headroom of less than 1.5 metres is not counted within the gross internal area unless it's used solely for storage.
- A built-in wardrobe counts towards the GIA area and bedroom floor area requirements but should not reduce the effective width of the room below the minimum widths set out below. Any built-in area in excess of 0.72 sqm in a double bedroom 0.36 sqm in a single bedroom counts towards a built in storage requirement



5.7.13 Individual room space and dimensional requirements

- The main living space should be at least 2.8 metres wide in homes for up to four people and at least 3.2 metres wide in larger family homes.
- The combined floor area of living, dining and kitchen space it set out below and aims to ensure that the living space equates to approximately 55% of the total living/ kitchen/ dining space floor area:

2p	3p	4p	5p	6p
22m2	24m2	26m2	28m2	30m2

- A dwelling with two or more bed spaces should have at least one double or twin bedroom that is at least 2.75 metres wide. Every other additional double or twin bedroom must be at least 2.55 metres wide.
- A one bedspace single bedroom must have a floor area of at least 7.5 square metres and be at least 2.15m wide.
- A two-bed space double or twin bedroom must have a floor area of at least 11.5 sqm.
- In London the minimum ceiling height is 2.5 metres.

5.7.14 Internal layout

The layout of the home, the relationship between the rooms and the distribution of space are just as important as the space provided.

Layouts need to provide a good balance of social space and private space. Family life can create a conflict between these needs, so care needs to be given to allowing space for individuals to retreat from the family particularly in layouts with open plan kitchen/ dining / living spaces.

Layouts should reflect the lifestyles of the occupants. For example, a couple may be happy to have an open plan living/ kitchen/ dining space which is accessed directly from the entrance, whilst larger families might prefer a separation of circulation, kitchen and living space.

5.7.15 Building in flexibility

Well-designed homes can provide flexibility in very simple and practical ways. Spacious, well-proportioned rooms allow for different types of furniture and different ways of arranging it.

The opportunity to personalise and adapt spaces within the home is very important to our residents, most of whom occupy their homes to their full capacity. As mentioned in the Principles: Health and Wellbeing section, flexibility in the use of the home supports mental wellbeing. This is echoed in our consultation with residents who are sometimes frustrated by the lack of choice over where they can locate their furniture.

Consideration should be given to allowing adaptation of spaces over time:

- Providing windows that will allow twin rooms to be divided into two singles or a separate home work/ study space
- Internal partitions removed to create an open plan living/kitchen/ dining space
- A large hallway that can accommodate a buggy or wheelchair, or home workspace

The location of doors and windows should accommodate alternative arrangements of key furniture e.g dining tables, beds, wardrobes, TVs, and sofas.



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Typical open plan living/ dining/ kitchen

5.7.16 Kitchen, living and dining spaces

Research tells us that families (five or more people) prefer a separate living room to the kitchen and dining space. It is particularly important in larger family homes for five or more people to provide a space where individual can retreat from the bustle of family life.

Aim to ensure that all homes with three or more bedrooms have the potential to provide two living spaces and that some two-bedroom homes also achieve this.

In fully open plan living areas, the kitchen should occupy a discreet part of the room, preferably an alcove with natural light. Aimed to out locate the washing machine outside this living space preferably in a dedicated utility cupboard.

5.7.17 Working from home

The growing trend to work from home should be accommodated with spaces that are set aside from the main living to allow for quiet working as well as homework. The area should allow for a desk and chair with power points and lighting.

5.7.18 Bathrooms, WCs and shower rooms

A second WC and basin are required in homes for five or more people.

A shower should be installed over the bath and a second bathroom or shower room provided in a home of seven or more people. This may be the entrance level WC in a house provided that the shower is adored from the start. Where the shower is the floor gully the floor should be laid to falls and the room designed as a wet room from the outset.

Bathrooms should have natural light and ventilation wherever possible, but windows should not be placed above the bath unless this is the only practical option.



In flats private outdoor space should be provided and be large enough to accommodate outdoor seating and dining.



5.7.19 Storage

Storage is vitally important for our residents. Many different types of items need to be stored within the home and it is useful to have at least one large, full height cupboard of 1m² or more

Provide at least two separate storage cupboards in every home, preferably accessible from a circulation area. Aim to provide some built-in storage on every floor but ensure that no more than 50% of the total storage is within bedrooms. A linen cupboard with slatted shelves is desirable in all homes and essential in larger family homes. Bathroom storage is also useful.

5.7.20 Recycling

Considerable space is needed for the safe, convenient, short-term storage of waste and recyclables within the dwelling. Kitchens should have concealed segregated containers which reflect the local waste management policy and these are essential if we are to help people take individual responsibility for their refuse and recycling.

Housing should be designed with adequate and easily accessible storage space that supports the separate collection of dry recyclables (for at least card, paper, mixed plastics, metals, glass) and food waste as well as residual waste.

5.7.21 Utility cupboards

Provision should be made for a separate cupboard accessible from the circulation space to conveniently locate the washing machine, ventilation and heating equipment. Consideration should be given to this being fabricated of site factory-fitted service connections and ducts etc.



5.7.22 Dwelling plans

Architects should provide plans of each dwelling that contain enough information to determine whether they comply with our requirements.

Dwelling plans should provide the following information

- Dwelling type i.e number of bedrooms and bed spaces
- Accessibility category that the plan is designed to meet (Category 1, 2 or 3)
- The function of each space with the principle bedroom identified
- Overall internal floor area (GIA)
- Total floor area of built in storage
- Total floor area of every habitable room
- Dimensions of all rooms including the width of bedrooms and living spaces
- Relevant furniture layouts, with indicative alternatives,
- Kitchen layout with sink, appliances, wall cupboards, and overall length of kitchen worktop
- Accessibility requirements from Regulation M4(1), M4(2) and M(4)3
- Location of any boiler, cylinder and/ or heat exchanger, radiators, ducting and SVPs
- Written and drawn scale
- North Point

5.7.23 Private outdoor space

Private outside space is an extension to the home and gives people the chance to take a break, sit outside or play without having to lock-up or make a journey.

It takes pressure off inside space and off family members. It is useful for messy play or other activities like cleaning shoes, as well as for storage and it is another opportunity for people to express their own lifestyle choices.

In London, where there are no higher local standards in the borough Development Plan documents, a minimum of 5 sqm of private outdoor space should be provided for one to two person dwellings and an extra 1 sqm should be provided for each additional occupant, and it must achieve a minimum depth and width of 1.5m.

5.7.24 Balconies and terraces

In blocks of flats, private outdoor space will most often be provided by balconies and terraces rather than ground level gardens.

We aim to provide a usable balcony or roof terrace to all upper floor homes. Size should be related to occupancy and provide enough space for all members of the household to sit together around a small table. This means that balconies should be not less than 1.5m deep and that Juliette balconies are not generally acceptable.

All balustrading must prevent climbing and withstand being leant on, but, especially where balconies are on the fronts of the dwelling, the design and materials should complement the character of the buildings. We avoid clear glass balustrades not just due to safety issues, as these provide insufficient privacy, and require solid flooring to prevent nuisance to residents on lower floors.

Individual roof terraces can provide excellent amenity to top floor dwellings and add considerable value. As with balconies, safety and weather-proofing issues are paramount and the visual impact on the streetscape must be considered





5.7.25 Gardens

Where gardens are provided, boundaries should provide privacy between adjoining neighbours, especially in the areas closet to the dwelling. Increasingly, rear gardens are overlooked by taller buildings.

Inevitably this compromises privacy but also means that conventional close-boarded timber fencing and cheap ‘garden centre’ sheds are inappropriate.

Front gardens in street and terrace arrangements are inevitably small but must serve a number of practical purposes including storage of refuse and recycling and accommodating utility meters. They provide a privacy buffer between the home and the pavement, mark the transition from public to private realm and contribute to first impressions. Planting can make a positive contribution to the streetscape, but beds need to be 700–900mm wide to support healthy plant life without a heavy reliance on irrigation. Front garden boundary walls are very important components of the streetscape and part of what brings character to a place

5.7.26 External storage

Integrated storage solutions are often needed to provide secure space for general external items and bikes.

This is particularly relevant in courtyard situations where small, private, rear patio gardens back on to a shared garden area. In these situations, which are again increasingly common, more creative design solutions are needed to the rear garden as a whole and outdoor drying clothes may not be realistic – making tumble drying inevitable.

5.7.27 Pet friendly homes

Londoners who live in the homes delivered through the GLA Affordable Homes programme are expected to benefit from flexible policies on pet ownership.

The Mayor expects investment partners to manage all homes delivered through this programme in line with a presumption in favour of pet ownership for their residents.



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Requirements

Designing for an ageing population

5.8



5.8 Designing for an ageing population

Where the project brief requires that the scheme accommodates the active elderly, we would support the 10 HAPPI design principles wherever possible.

This includes:

- Car free and safe external circulation areas.
- Communal spaces which encourage interaction such as shared balconies and walkways.
- A multipurpose communal space.
- Flexible internal layouts e.g. allowing overnight guests in a screened off area in the living room.
- Adaptable to enable care via new technologies.



Communal lounge at the Active Elderly block, Rumsey Road, Brixton.



Requirements

Homes for sale and London Living Rent

5.9



5.9 Additional requirements for homes for sale and London Living Rent

We will confirm special requirements for shared ownership and market sale homes, and London Living Rent or similar market rent tenures for each project, but our general preferences include:

- Open plan living/dining/kitchens layouts to 1 and 2 bed
- Fully fitted kitchens with integrated appliances including dishwashers (may be 450mm for 1b flats)
- Integrated fridge freezers or separate under-counter fridges and freezers to suit overall kitchen layout
- En suite shower rooms to 2b and larger flats
- All bathroom plumbing and WC cisterns fully concealed within accessible ductwork
- Floor finishes provided throughout
- Fitted wardrobes in bedrooms where possible
- Washing/ machine dryers in separate utility cupboards



The general guidance in this section and most of the specific requirements apply to homes of all tenures.





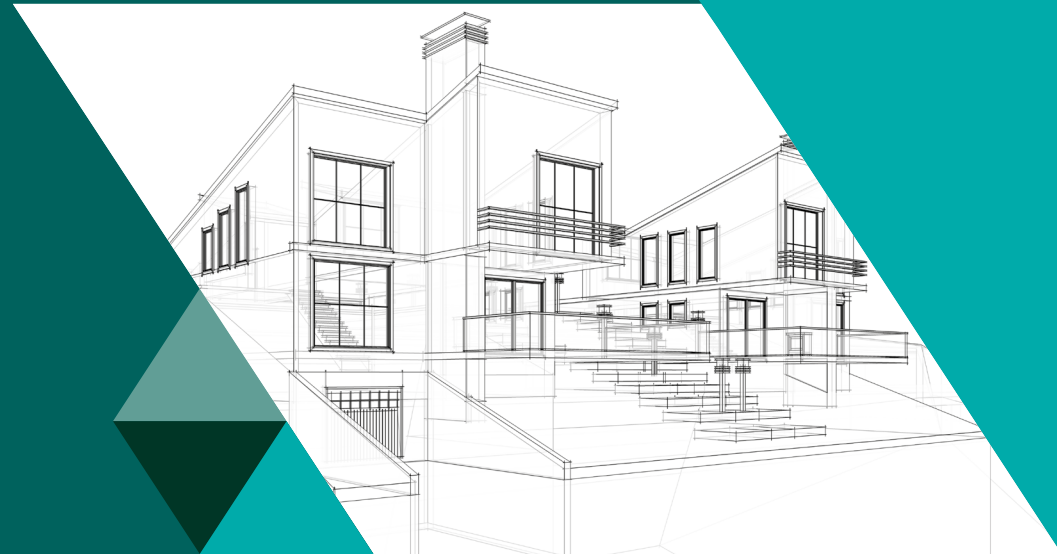
Site specific Project Brief template

6



6 Site specific Project Brief template

Network Homes' Development Manager should draft the specific brief at project inception. A brief will be further developed once the architect/designer has produced a capacity study and gathered appropriate planning or other information. It will then be subject to a joint review and final amendments by the client and the architect/designer, which will be 'signed off' by the client as the definitive briefing document for the design development stage.



6 Site specific Project Brief template

These lists are not exhaustive and can be amended to reflect the requirements of individual projects.

Site

- Description
- Location
- Local Planning Authority
- Regional Planning Authority (where relevant)
- Known and suspected environmental risks
- Known and suspected legal encumbrances
- Development potential and opportunities (eg adjoining site)
- Any other relevant information emerging from legal/land searches etc

Applicable client procedures and standards

- Standard procedures (eg reference to development procedure stages)
- Masterplan and design code or design approach requirements
- Community consultation strategy
- Technical guidance
- Space standards to be applied

Programme and budget

- Initial targets and key dates
- Preliminary budget

Housing component

- Target housing mix and numbers
- Target housing tenure(s)
- Target housing density
- Target parking standard
- Target PTAL index

Other components

- Mixed use
- Employment
- Community
- Retained buildings

Known Local Authority/statutory requirements

- Housing policy implications
- Wider regeneration implications
- Planning background if known and/or planning brief
- Regional planning (eg GLA)

Approach and aspirations

- How the client envisages the site being developed
- Good precedents, either by client organisation or other provider
- Project 'status' (eg 'routine development'; 'demonstration project'; 'landmark project') etc
- Site-specific design aspirations and guidance
- Higher sustainability standards e.g Passivhaus
- MMC

Procurement route

- Design and Build single stage
- Design and Build Two stage
- Design and Build Negotiated
- Construction Management
- Joint Venture

BIM Requirements

- BIM Execution Plan
- EIRs
- Scope of Services



Checklists

7

- > 7.1 Site Appraisal RIBA Stage 0-1
- > 7.2 Design Review 1 RIBA Stage 2
- > 7.3 Design Review 2 RIBA Stage 3
- > 7.4 Design Review 3 RIBA Stage 4



7.1 Site Appraisal

RIBA Stage 0-1

These lists are not exhaustive and can be amended to reflect the requirements of individual projects.

Support services

- Is there a healthcare facility or GP practice very near or fairly near?
- Is there a public house, restaurant or cafe within 1km?
- Is there a place of worship or community hall or centre within 1km?

Retail

- Is there local retail outlets – e.g. food or newsagent – very near or fairly near?
- Is there a post office very near or fairly near?
- Is there a cash-point/bank very near?
- Is there a major commercial centre or ‘high street’ within 2 km?

Schools (excluding fee paying)

- Is there a pre-school/nursery very near?
- Is there a primary school very near or fairly near?
- Is there a secondary school near or fairly near?

Play and leisure

- Are there toddler play areas within sight of family houses?
- Are there play facilities for 5 – 12s very near or fairly near?
- Are there play facilities for over 12s very near or fairly near?
- Is there a park/public open space within 1 km?
- Is there a leisure/sports facility (eg pool or gym or playing fields etc.) within 1 km?

Public transport

- Is there a bus or tram stop very near or fairly near?
- Is there a train or underground station very near or fairly near?

Liabilities – how close are they?

- Is there a refuse tip and/or ground contamination within 500m?
- Is there an industry generating smells or potential health hazards within 500m?
- Is there a derelict site – institutional/industrial/ other within 500m?
- Are there high voltage overhead power lines within 500m?
- Are there polluted waterways within 250m?
- Is the site in a sea or river flood plain, within 3m (vertical) from high water level?

Noise sources – how close are they?

- Is there a bus route or major road within 20m?
- Is there a major road within 50m?
- Is there a motorway within 150m?
- Is there a railway within 150m?
- Is the site within the 69 Leq noise contour line of an airport?
- Is there industry generating noise within 150m?
- Is there an outdoor leisure facility (playing field pool etc.) within 150m?





7.2 Design Review

1 RIBA Stage 2

Checklist:

- Does the design concept meet the specific targets of the brief?
- Is the design concept based on sound urban design principles?
- A well connected layout with good links to the surrounding area?
- A permeable layout with a number of ways into, out of and through the site?
- Convenient routes which take people where they will want to go?
- A hierarchy of routes which caters for pedestrians, cyclists and motorists?
- Good general vehicular access to all parts of the site?
- Adequate access for fire and emergency vehicles and refuse lorries?
- Active, overlooked street frontages throughout?
- Streets which give priority to pedestrians and where traffic speed is controlled?
- A range of spaces which are overlooked, will be well used and are therefore safe?
- A principle open space which provides a focus for the scheme?
- Areas where young children can play, within 100–150m of each home?
- Provision for older children and teenagers?
- Buildings which address the streets and open spaces?
- Buildings which are appropriate to the local area and which relate well to the hierarchy of routes and open spaces in terms of scale and massing?
- Buildings which respond in principle to the orientation of streets and spaces?
- Well placed entrances which are safe and visible?
- Efficient internal circulation layouts which achieve appropriate numbers of users per core?
- Block layouts which maximise the number of dual aspect homes?
- Block layouts which avoid solely north facing homes?
- A good balance of different tenures?
- A good distribution of tenure across the site; indistinguishable from outside?
- A good mix of dwelling types?
- Wide-spread accessibility to buildings and spaces and incorporation of lifetime homes principles as required by the brief?
- Larger dwellings for wheelchair units at ground level or served by 2 lifts?
- Proposals for accommodating the religious and cultural requirements of the expected user group?
- Appropriate locations and good levels of private amenity space for larger family dwellings?
- Enough parking to meet residents' needs?
- Parking provided in a way which doesn't dominate the streets?
- Design code being produced for larger schemes?



7.2 Design Review

1 RIBA Stage 2

Sustainability review

- Does the design concept demonstrate sound environmental protection measures ie does it provide:
- A passive approach to design?
- Measures to reduce fuel and water consumption?
- Measures to reduce car dependency including cycle storage?
- A strategy for storage and collection of refuse and re-cycling?
- Appropriate use of renewable technology?
- A sustainable urban drainage scheme (SUDS)?
- Preservation of wildlife habitats and creation of new ones?

Consultation:

Has the scheme been discussed with housing managers and is it considered appropriate and manageable over time, particularly in respect of:

- Tenure balance and distribution?

- Public open space, including streets and play areas?
- Building layouts; especially entrances, circulation areas and units/users per core?
- Car parking?
- Cycle storage?
- Refuse and recycling?
- Security strategy agreed ie extent of CCTV, concierge or caretaking?
- Future maintenance and lifecycle costing?

Project Brief Review

- Has the brief been updated to reflect the current aspirations?
- Are all additional briefing requirements in place, in preparation for design development?
- Have housing managers been consulted and has a Housing Management Plan been drawn up where appropriate?
- Have all the necessary consultants been appointed?

- Is the design progressing on budget?
- Have the relevant Local Authority departments, including the planners, been consulted about the proposals?
- Have Police Design Out Crime Officers been consulted in principle?
- Have local interest groups been kept informed and is there a consultation strategy in place?
- Has the use of MMC/ prefabricated elements been considered?
- Has the procurement route been discussed and agreed in principle?

General review:

- Do any aspects of the project feel unresolved – are any areas perceived as high risk?
- Are the design concept proposals adequate for outline planning approval where this is required?
- Are the design concept proposals approved as the basis for detailed design development?
- Is BIM being employed as required?



7.3 Design Review

2 RIBA Stage 3

Checklist:

- Do the detailed design proposals meet all aspects of the brief?
- Do the detailed design proposals show a clear approach to place- making and streetscape design? i.e does it provide:
 - A distinctive style and overall identity?
 - Each of the streets and open spaces, together with the buildings which surround them has a recognisable character?
 - Streets have appropriate scale, materials and surface treatments?
 - Trees and planting contribute to the identity of streets and spaces?
 - Street and pavement planting co-ordinated with new and existing services?
 - All planting specified to maximise seasonal impact, texture, colour & scent?
 - Private entrances to as many ground floor homes as possible?
- Active frontages with windows and balconies overlooking the streets?
- Energy efficient lighting scheme in place for all public areas?
- CCTV and other agreed security measures in place?
- Opportunities for public art considered?
- Street furniture and signage subtle and well-integrated?
- Front garden or other appropriate buffer/privacy zone provided to ground floor dwellings?
- Front boundary treatments, including materials and planting appropriate to streetscape?
- Building entrances obvious and welcoming?
- Appropriate balance of variety and consistency in architectural treatment?
- Scheme exploits and creates views into, out from and within the site?
- Buildings and spaces work together in 3 dimensions in terms of scale, massing and proportion?



7.3 Design Review

2 RIBA Stage 3

- Practical and aesthetic aspects of roofscape fully considered?
- Buildings and spaces designed to reduce overshadowing?
- Design makes the most of street corners as focal points?
- Ground and upper level dwellings in corners have adequate privacy and amenity?
- All dwellings designed to make the most of views and orientation?
- Dwellings at ground or podium level have direct or easy access to shared external space?
- Cores provide convenient access for all upper floor homes to shared external space?
- Vehicular access provided to within 20m of all entrances?
- Parking areas located close to homes and broken up by trees or other design features? (not more than 5 perpendicular or 3 parallel spaces without breaks or 15 spaces in visible parking courts)
- In-curtilage parking avoided except in very low density schemes?
- Rear parking courts avoided except where very small and overlooked by car owners?
- Proposals for secure undercroft or underground parking areas carefully integrated into the streetscape?
- Individual cycle stores provided to ground floor dwellings where possible?
- Shared cycle stores carefully located and well designed and integrated into the streetscape?
- Individual refuse and recycling stores provided to ground floor dwellings where possible?
- Shared refuse and recycling stores carefully located and well designed and integrated into the streetscape?
- Are the materials selected in keeping with requirements i.e robust, attractive and low maintenance?
- Are the project specific sustainability targets agreed?



7.3 Design Review

2 RIBA Stage 3

- Have the detailed design proposals been subject to a final design review and have any issues raised, been addressed?
- Have the detailed design proposals been agreed with housing managers?
- Are the design proposals fully developed to detailed planning stage?
- Do they include BIM/ 3D computer or physical models and perspective drawings or CGIs (computer generated images)?

The Project Brief Review

Is the brief finalised in all respects and does it accord with the detailed design proposals?

Project management issues

- Has the full design and access statement been prepared together with all accompanying reports and supporting information?
- Is the design still on budget?
- Are the Police Design Out Crime Officers happy with the proposals?
- Is all other pre-application consultation complete and are consultees happy with the proposals?
- Has the procurement route and form of contract been finalised?



7.4 Design Review

3 RIBA Stage 4

Sound transmission:

- Dwellings stacked like over like?
- SVPs rationalised and stacked?
- Bedrooms away from party walls and communal areas?

Private entrance area and circulation

- Entrance door well located near the centre of the place
- Inside the entrance, 'meeting and greeting area' of at least 1200mm x 1200mm?
- Space feels welcoming and receives some natural light?
- General circulation efficient?
- Easy access to main living room?
- Complies with Network's room area requirements.
- Dual Aspect?
- If single aspect dwelling faces east, west or south?
- If living room or bedrooms south or west facing, measures in place to combat overheating?
- Overlooking minimised by adequate privacy distances and good design?
- Adequate protection against external noise?
- Overall layout looks simple and efficient?
- Living, eating and cooking spaces closely related to each other?

- Bedrooms and bathroom conveniently related to each other?
- Storage areas well located and required area?
- Services well designed and integrated and boilers, radiators etc indicated on drawings?
- Low energy lights and other fittings provided?
- Where supplied, appliances 'A' rated?

Main living space

- Floor area complies with required room areas?
- Window faces east, west or south
- Good view from principal window?
- If layout is open plan, distinct areas are provided for living, eating and cooking?
- If dwelling is on an upper floor, living room has access to balcony or roof terrace?
- Furniture layout practical with alternatives

Dining Area

- Floor area complied with required room areas?
- If not combined with kitchen, dining area is directly linked or very closely associated?
- If combined with living room, is not part of main seating area?
- View out possible from dining area when seated?
- Furniture layout practical with alternatives shown?

Kitchen

- If dwelling is three bedrooms or more, separate kitchen/ diner?
- Floor area complies with required room areas?
- Natural light and ventilation provided?
- Adequate space for segregated re-cycling?
- Washing machine located outside of the kitchen area where layout is open plan with living?
- Space for tumble drier in all dwellings without outdoor drying facilities?
- Space for dishwasher (may be 450mm for homes for 4p or less)
- Direct access to rear garden possible from kitchen or circulation?

Each bedroom

- Floor area complies with required room areas?
- Reasonable view from window?
- Solar shading provided if south or west facing?
- Furniture layout practical with alternatives shown?
- In twin bedrooms, room can be laid out to provide a zone for each child?



7.4 Design Review

3 RIBA Stage 4

Internal storage

- Total area complies with requirements?
- Utility cupboard to WM, MVHR, heating etc provided?
- Stores well located and accessible with at least one accessed from circulation?
- Combination of shelved space and tall, open space provided?

External storage

- Total area complies with requirements?
- Enclosure is appropriately designed and located in relation to the design of the scheme?

Rear gardens

- Large enough for external storage, sitting out, play and drying washing?
- Privacy screening between adjoining gardens appropriately designed and effective?
- Outside tap provided for watering?
- Mowing strip around perimeter of building?

Front gardens

- Provides effective buffer between street and dwelling, especially in front of windows?
- Includes screened enclosures for refuse and recycling?
- Views out from dwelling not compromised by bin stores?
- Space for planting?

Balconies and private roof terraces

- Minimum depth 1.5m?
- Enough space for all occupants to sit out around small table?
- Balustrading designed to prevent climbing and withstand being leant on?
- Outside tap for watering provided to larger roof terraces?

Additional requirements for homes for sale and London Living Rent

- Open-plan living/dining/kitchens layouts to 1 and 2 bed flats (requirements for 3b flats to be confirmed)
- Fully fitted kitchens with integrated appliances including dishwashers (may be 450mm for 1b flats)
- Integrated fridge freezers or separate under-counter fridges and freezers to suit overall kitchen layout
- En suite shower rooms to 2b and larger flats (requirements for houses to be confirmed)
- All bathroom plumbing and WC cisterns fully concealed within accessible ductwork
- Fitted floor provide throughout (specification to be confirmed)
- Fitted wardrobes to bedrooms where possible.



Appendix A:

Sustainability

8



8 Appendix A: Sustainability

Sustainable outcome	Target	Measurement	How?
Net zero operational carbon	<p>NET ZERO OPERATIONAL CARBON DIOXIDE EMISSIONS, (kWh/m²/y and kgCO₂e/m²/year)</p> <p>Reduce at least 75% before offsetting then in increments to net zero by 2030, 2040 and 2050.</p>	<p>CARBON DIOXIDE EMISSIONS (kWh/m²/y and kgCO₂e/m²/year)</p> <p>The carbon dioxide produced as a result of the production and use of the energy from fossil fuels consumed for the day-to-day operation of the building or structure, including low/zero carbon renewable energy technologies both on and off-site, plus recognised offset schemes where essential.</p> <p>As principally defined by CIBSE TM 54 Evaluating Operational Energy Use of Buildings at Design Stage, 2013, or Passivhaus PPHP.</p>	<ul style="list-style-type: none"> • Prioritise fabric first principles for building form and envelope • Use efficient mechanical systems for internal environment e.g MVHR • Provide responsive local controls for internal environment i.e heating and ventilation • Specify ultra low energy appliances and IT • Use optimum on-site renewables appropriate to context e.g PV panels • offset remaining carbon through recognised schemes e.g GLA carbon levy
Net zero embodied carbon	<p>NET ZERO EMBODIED CARBON DIOXIDE (kWh/m²/y and kgCO₂e/floor area m²)</p> <p>Reducing embodied carbon by 50-70% before offsite renewables offsetting</p> <p>Then reduce in increments by 2030, 2040 and 2050.</p>	<p>EMBODIED CARBON DIOXIDE (kWh/m²/y and kgCO₂e/floor area m²)</p> <p>The carbon dioxide produced from the energy used in the extraction, fabrication and transportation from place of origin of the materials used in the construction, including recognised carbon offset schemes.</p> <p>As principally defined by RICS Whole Life Carbon Assessment for Built Environment, Ed 1 2017.</p>	<ul style="list-style-type: none"> • Prioritise building reuse • Carry out whole life carbon analysis of building elements • Prioritise ethical and responsible sourcing of all materials • Prioritise low embodied carbon and healthy materials • Minimise materials with high embodied energy impacts • Target zero construction waste devoted to infill • Promote use of local natural materials • Consider modular off-site manufacture • Detailing to be long life and robust • Design building for disassembly and circular economy • Offset remaining carbon emissions through recognised schemes e.g GLA Carbon levy



8 Appendix A: Sustainability continued

Sustainable outcome	Target	Measurement	How?
Net zero embodied carbon	Whole life carbon+ Operational carbon + Embodied carbon	A whole life carbon approach identifies the overall best combined opportunities for reducing lifetime emissions, and also helps to avoid any unintended consequences of focusing on operational emissions alone. For example, the embodied carbon burden of installing triple glazing rather than double can be greater than the operational benefit resulting from the additional pane. Therefore, whole life carbon needs to be effectively integrated into the sustainability agenda in order to achieve a lower carbon future.	<ul style="list-style-type: none"> • Prioritise fabric first principles for building form and envelope • Use efficient mechanical systems for internal environment e.g MVHR • Provide responsive local controls for internal environment i.e heating and ventilation • Specify ultra low energy appliances and IT • Use optimum on-site renewables appropriate to context e.g PV panels • Offset remaining carbon through recognised schemes e.g GLA carbon levy
Sustainable water cycle	SUSTAINABLE WATER CYCLE (m3/person/year) To achieve 40% reduction in potable water use per person per day	SUSTAINABLE WATER CYCLE (m3/ person/year) Analogous to operational carbon dioxide, the amount of mains water used in the operation of the building including the offset by use of greywater or recycled water to reduce mains water consumption. As principally modelled by England and Wales building regulations water calculator.	<ul style="list-style-type: none"> • Provide low flow fittings and appliances • Provide waterless appliances where possible • Provide leak detection • Provide rainwater and grey water recycling and attenuation but consider operational implications of complex systems • Provide onsite blackwater cleansing and recycling if viable • Create sustainable urban drainage that supports natural aquatic habitats and human immunity verification



8 Appendix A: Sustainability continued

Sustainable outcome	Target	Measurement	How?
Sustainable connectivity and transport	<p>SUSTAINABLE CONNECTIVITY AND TRANSPORT (kgCO2e per km per person per annum)</p> <p>To achieve net zero carbon emissions per person per day</p>	<p>CONNECTIVITY AND TRANSPORT (kgCO2e per km per person per annum)</p> <p>Measure the resultant carbon impact of the travel of occupants and visitors to and from site or building to a local transport hub or local retail and community facilities.</p> <p>As principally defined by BREEAM 2018 Transport Credits.</p>	<ul style="list-style-type: none"> • Create comprehensive green transport plan including digital connectivity • Prioritise high quality digital connectivity to avoid need for unnecessary travel and encourage home working • Prioritise site selection with good proximity to public transport • Provide high quality pedestrian links to local amenities • Provide infrastructure for electric vehicles provide car sharing spaces • Provide suitable on-site personal storage
Sustainable land use and ecology	<p>SUSTAINABLE LAND USE AND BIO-DIVERSITY</p> <p>To achieve net positive species impact and 0.3-0.4 urban green factor on all new sites and 10% Biodiversity Net Gain</p>	<p>LAND USE AND BIO-DIVERSITY (increase in new flora or fauna species on site)</p> <p>Measure actions taken to maintain, protect and improving the flora and fauna on site.</p> <p>As principally defined by BREEAM 2018 bio-diversity credits, Urban Green Factor, London Plan and Biodiversity Metric 3.0</p>	<ul style="list-style-type: none"> • Leave a site in better regenerative ecological condition than before development • Prioritise building and site reuse • Prioritise brownfield site selection • Carry out sustainable remediation of site pollution • Retain existing natural features • Create mixed use development with density appropriate to local context • Create a range of green spaces including green roofs, pocket parks etc • Create habitats that enhance biodiversity • Create productive landscapes for urban food production e.g allotments • Zero pollution from the development



8 Appendix A: Sustainability continued

Sustainable outcome	Target	Measurement	How?
Sustainable communities and social value	Improve ESG rating	<p>Measure Social value Social Return on Investment S.R.O.I</p> <p>As defined in the Guide to Social Return on Investment 2015</p>	<ul style="list-style-type: none"> • Prioritise placemaking that expresses identity in territory • Create secure places privacy • Creates places for social interaction • Create vibrant mixtures places • Provide high quality permeable links to social amenities • Provide high quality pedestrian public realm • Create inclusive places for community interaction • Create secure places with overlooking views
Sustainable life cycle cost	<p>LIFE CYCLE COST (£/m2)</p> <p>Balance economic sustainability over life of building</p>	<p>SUSTAINABLE LIFE CYCLE COST (£/m2)</p> <p>Use Government Soft Landings requirement for measuring operational costs of buildings.</p> <p>As principally defined by ICMS Global Consistency in Presenting Construction and Other Life Cycle Costs, 2019.</p>	<ul style="list-style-type: none"> • Carry out whole life cycle analysis of key building systems • Carry out soft landings graduated to handover and aftercare • Measure energy costs • Measure overall running costs • Measure added value of occupant health and well being • Measure added value of sustainable outcomes of buildings



Appendix B:

Design review and Bim process

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8 Appendix: BIM Implementation Plan

RIBA Stage	RIBA Stage description	Focus of review	BIM Consideration
STAGE 0	BID STAGE/ PRE ACQUISITION	Baseline information Site analysis Planning policy Outline business case Outline Project Brief	Refer to Network's Organisational Information Requirements (OIR)
STAGE 1 FEASIBILITY and OPTION APPRAISALS	POST ACQUISITION FEASIBILITY	Project Brief Feasibility design and option appraisals Capacity study Initial Local Authority requirements Initial build cost and viability Initial Fire strategy/ Fire Statement Initial Energy and Sustainability strategy Initial management strategy	Refer to Network's Asset Information Requirements (AIR)



8 Appendix: BIM Implementation Plan

RIBA Stage	RIBA Stage description	Focus of review	BIM Consideration
STAGE 2 SKETCH DESIGN	PRE-PLANNING	Design proposals Landscape strategies Energy and Sustainability strategies Management strategy Fire Strategy / Fire Statement Planning compliance Cost plan	Refer to Project Information Requirements (PIR) Appoint an Information Manager to tailor the PIRs and Exchange Information Requirements (EIR) Ensure preferred design services have BIM capability and can adhere to the PIR and EIR.
	CLIENT SIGN OFF DESIGN REVIEW 1	STAGE 2 SIGN OFF AGREE SKETCH DESIGN TO PROCEED TO PLANNING See checklist Stage 2-3	
STAGE 3 DETAILED DESIGN		Design frozen Cost plan finalised	Ensure Information Exchanges are occurring within the Common Data Environment (CDE) and the Design Team BIM models are being coordinated. Ensure the Information Manager is validating information being received.
	CLIENT SIGN OFF DESIGN REVIEW 2	STAGE 3 SIGN OFF AGREE PLANNING APPLICATION STAGE 3	
	PLANNING APPLICATION SUBMISSION	Planning application compiled and submitted	

8 Appendix: BIM Implementation Plan

RIBA Stage	RIBA Stage description	Focus of review	BIM Consideration
	GATEWAY 1	BUILDING SAFETY GATEWAY 1 PLANNING APPROVAL	
STAGE 3- 4 TECHNICAL DESIGN	TENDER	Design developed from planning to RIBA Stage 3+/ 4 Detailed plans, sections and elevations plus critical construction details, wall types, balconies etc	Procure Contractor Ensure tendering contractors have BIM capability and can adhere to the Project Information Requirements (PIR) and Exchange Information Requirements (EIR)
		Scheme ERs and EIRs SE and ME design and performance spec	
	TENDER	Design developed from planning to RIBA Stage 3+/ 4 Detailed plans, sections and elevations plus critical construction details, wall types, balconies etc	
	CLIENT SIGN OFF	DESIGN REVIEW 3 STAGE 4 SIGN OFF	
		INVITE TENDERS	
	CONTRACT	ENTER INTO DESIGN AND BUILD CONTRACT	



8 Appendix: BIM Implementation Plan

RIBA Stage	RIBA Stage description	Focus of review	BIM Consideration
	POST CONTRACT DESIGN DEVELOPMENT (by Contractor)	Building Regulations and Building Safety Regulations applications (drawings, calculations, Building Safety Case information) Further detailed design Confirm Contractor's Proposals and ERs	Ensure regular BIM coordination and validation at Information Exchanges
	GATEWAY 2	BUILDING SAFETY GATEWAY 2 START ON SITE	
STAGE 5 CONSTRUCTION	CONSTRUCTION	Further detailed design Specialist design procurement Final specifications Outstanding Planning, Building Regs and Building Safety Regs conditions	Contractor to utilise BIM tools for construction and continue agreed information exchanges. Ensure the Information Manager is validating information being received.
	PRACTICAL COMPLETION	Compilation of COBie, Building Safety Case, H and S file etc	
	GATEWAY 3	BUILDING SAFETY GATEWAY 3 OCCUPATION	
STAGE 6 HANDOVER	HANDED OVER	All parties sign off as compliant Snagging/ de-snagging Moving in management	Verify BIM Handover Validate the handover of information and BIM model



8 Appendix: BIM Implementation Plan

RIBA Stage	RIBA Stage description	Focus of review	BIM Consideration
	GATEWAY 3	BUILDING SAFETY GATEWAY 3	OCCUPATION
STAGE 7 IN USE	OCCUPATION		Finalise BIM Handover information Access and update information in a single source truth, use BIM models for decision making
	POST COMPLETION SCHEME EVALUATION	Post project review Resident satisfaction Energy usage metrics	
	FEEEDBACK		





References

9



9 References

- Network Homes “Principles into Practice”, Design Guide 2009

This document remains relevant in many parts today, so we have relied heavily on the text.

- Levitt Bernstein “Housing Standards Handbook,” National Housing Federation 2016

This excellent publication sets out standards in detail, including a comprehensive Bibliography which we recommend is read in conjunction with this Guide.

- Ben Channon “Happy by Design A Guide to Architecture and Wellbeing”, RIBA Publishing 2018
- Building Better Building Beautiful Commission Report “Living with Beauty “2020
- RIBA Sustainable Outcomes Guide 2019
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