Supplementary
planning document

HIGH DENSITY LIVING

Consultation draft
February 2020

Contents

SECTION 1 HIGH DENSITY LIVING

Introduction

SECTION 2 TOPIC PAPERS

SECTION 4 TYPOLOGY STUDY

Typology study

Introduction

Stand alone tower

Tower on podium

Perimeter block

Interlinked tower

Extruded block

SECTION 3 DESIGN RECOMMENDATIONS

1. Around the building

1.1 Quantity

90

1.2 Urban design

103

1.3 Public Uses

112

1.4 Systems

Contents

Contents

SECTION 5 APPENDIX

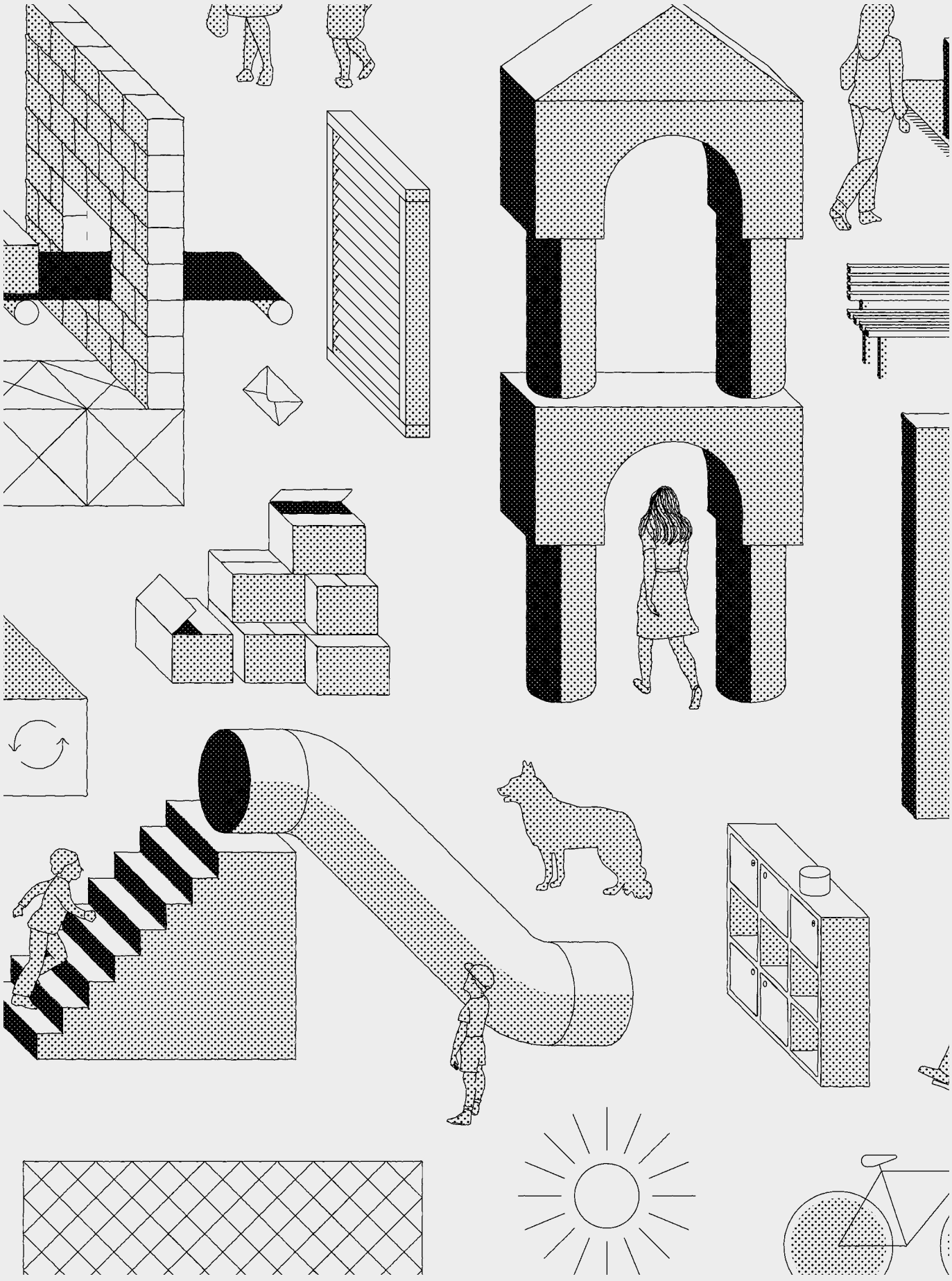
Image references

TBC

SECTION 1

HIGH DENSITY LIVING

Introduction



This Supplementary Planning Document [SPD] sets out detailed guidance on the implementation of policies in the Tower Hamlets Local Plan 2031. It seeks to support the plan to ensure that new homes and neighbourhoods are designed to provide a high quality of life for existing and future residents in the borough's high density environments.

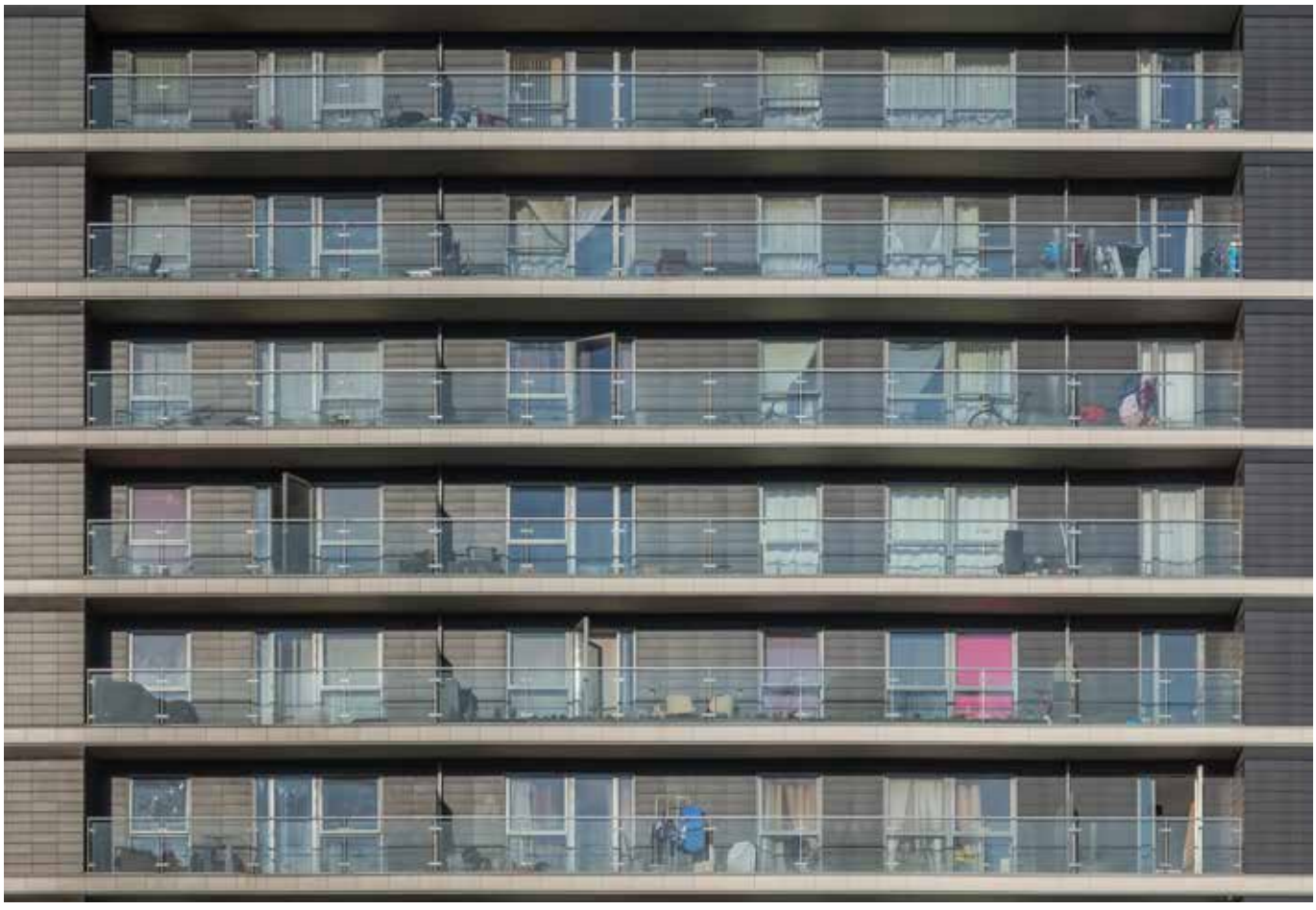
Tower Hamlets is one of the fastest growing parts of the country. By 2031, the borough's population is expected to increase to nearly 400,000 residents. As well as providing homes for its own rising population, the borough is also expected to make a significant contribution toward helping London meet its strategic housing need. To achieve this, the borough is seeking to secure the delivery of at least 58,965 new homes during this period. However, the land available for new development is decreasing. The borough has already undergone significant development in recent years, limiting the number of sites that are available for redevelopment and intensification.

The borough must also safeguard land to meet local and regional employment and industrial needs.

To meet these challenges, development is being brought forward at high densities in an evolving landscape of built form that is increasingly characterised by tall buildings, with densities in excess of 1,100 habitable rooms per hectare.

Although a common way of living in Europe and beyond, flats and high density living is relatively new in the UK. High density can be an attractive choice for diverse people and stages of life including families, the elderly and young professionals. Journeys to work and school are short, there is easy access to services and community uses and homes can be generous, airy and can evolve as needs change.

This SPD provides guidance to shape high density development so it supports good quality of life for Tower Hamlets' residents.



The SPD responds to important recent changes in national and regional policy. The new London Plan places significant emphasis on optimising density to deliver new homes but does not set out target density ranges, unlike the previous iteration. Instead, the plan leaves upper density levels open and states the higher the density of development the greater scrutiny is required of design, particularly qualitative aspects.

Both the new NPPF and new London Plan place great emphasis on design to achieve high quality buildings and places. The NPPF encourages plans and supplementary guidance to provide maximum clarity about design expectations at an early stage through visual tools such as design guidelines.

The high density living SPD seeks to provide a clear design vision and set expectations for future high density development in the borough. The document does not seek to focus just on how these buildings look but how these new forms of development can help to ensure that existing and future residents and people working in the building can enjoy a high quality of life.

It supports the vision, objective and policies of the Tower Hamlets Local Plan 2031, supporting priority 1 and 2 of the Mayor's Strategic Plan.

Priority 1
People are aspirational, independent and have equal access to opportunities

1. People access a range of education, training, and employment opportunities.
2. Children and young people are protected so they get the best start in life and can realise their potential
   People access joined-up services when they need them and feel healthier and more independent
3. Inequality is reduced and people feel that they fairly share the benefits from growth.

Priority 2
A borough that our residents are proud of and love to live in

1. People live in a borough that is clean and green.
2. People live in good quality affordable homes and well-designed neighbourhoods.
3. People feel safer in their neighbourhoods and anti-social behaviour is tackled.
4. People feel they are part of a cohesive and vibrant community.

In particular, the SPD provides detailed guidance to help the council deliver its vision to support existing communities and welcome new residents to make their home within liveable, mixed, stable, inclusive and cohesive neighbourhoods, which contribute to a high quality of life and more healthy lifestyles. To achieve this, the guidance sets out how new development can share the benefits of growth in Tower Hamlets by contributing to the creation of healthy environments, encouraging physical activity, promoting good mental and physical wellbeing and reducing environmental impacts. It also demonstrates how the benefits of growth can be shared by creating mixed and balanced communities, delivering tenure-blind development and increasing opportunities for social interaction.

The SPD highlights which specific Local Plan policies it provides guidance on the implementation of. These include:

- Policy S.DH1: Delivering high quality design
- Policy D.DH2: Attractive streets, spaces and public realm
- Policy D.DH6: Tall buildings
- Policy D.DH7: Density
- Policy D.DH8: Amenity
- Policy D.H3: Housing standards and quality
- Policy S.CF1: Supporting community facilities
- Policy D.CF3: New and enhanced community facilities
- Policy S.OWS1: Creating a network of open spaces
- Policy D.OWS3: Open space and green grid networks
- Policy S.ES1: Protecting and enhancing our environment
- Policy D.ES2: Air quality
- Policy D.ES3: Urban greening and biodiversity
- Policy D.ES5: Sustainable drainage
- Policy D.ES6: Sustainable water use and infrastructure and wastewater management
- Policy D.ES7: A zero carbon borough
- Policy D.ES9: Noise and vibration
- Policy D.ES10: Overheating
- Policy D.MW3: Waste collection facilities in new development

Status of the document
The High Density Living SPD is a material consideration to help determine planning applications for high density residential and mixed-use development. The SPD provides further guidance on how to meet existing London and Local Plan policies.

The document provides best practice recommendation on how the design of High Density environments can best support the quality of life of residents in a particular building. The SPD does not provide guidance on other considerations such as townscape, aesthetics or materials. However, it highlights the fundamental role of typologies and layouts in optimising site capacity in a way that provides the best residential environment. Accordingly this emphasises certain typologies over others.

Applications are not expected to meet all the design recommendations but to demonstrate how they have considered recommendations to meet the objectives set out in the topics and the borough wide issues.

Where the guidelines apply
The guidance will be applied to C3 residential and mixed use development across Tower Hamlets that is considered high density. High density is defined as schemes that exceeds 1,100 habitable rooms per hectare or includes an element taller than 30 metres. High density does not necessarily always imply that buildings are tall, however in the borough tall buildings are almost universally high density due to the small size of sites and the building typology pursued.

1,100 habitable rooms per hectare is used in this SPD as a threshold for high density as it was established by the previous London Plan as the highest threshold in the density matrix. The 30m threshold comes from the Tower Hamlets Local Plan definition of a tall building and the height within which a development becomes referable to the Mayor of London.

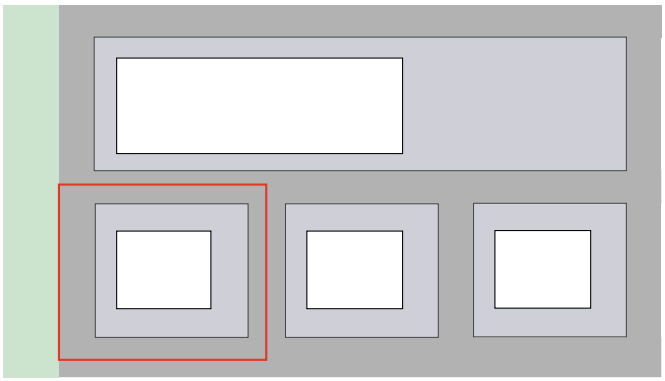
Calculating density
The previous London Plan set out target density ranges relating to location, existing building form and massing and the index of public transport accessibility (PTAL). The new London Plan does not set out target density ranges but instead places significant emphasis on optimising site capacity which means ensuring that the development takes the most appropriate form for the site and that it is consistent with relevant planning objectives and policies.

However, measures of density are still required to be provided by the applicant to assess, monitor and compare development proposals and to establish whether this supplementary planning document applies. For the purpose of this document the density is measured per building and habitable rooms per hectare the preferred measurement as it better establishes the number of residents likely occupying a building.

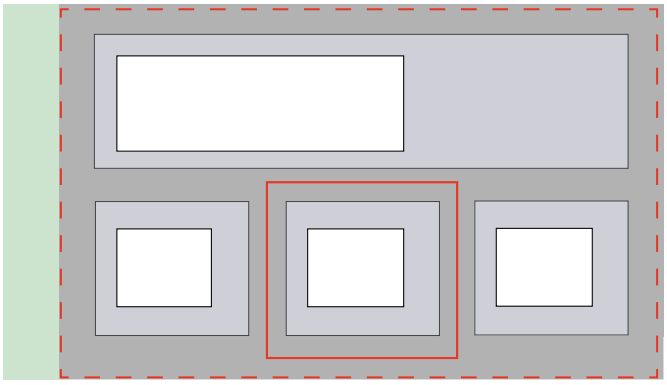
Single Building
If the development is bordered by a street serving buildings on both sides, the boundary of the site area should be established at the centre of the street. If the street only serves the development, the entirety of the street should be included within the site area. Where bordered by a building of another development, site area can follow ownership.

Multiple Buildings
In the case of applications for a masterplan or a number of buildings, density calculations are still required per building. Site areas should be established for each building, set at the mid line between each building and following the principles established above.

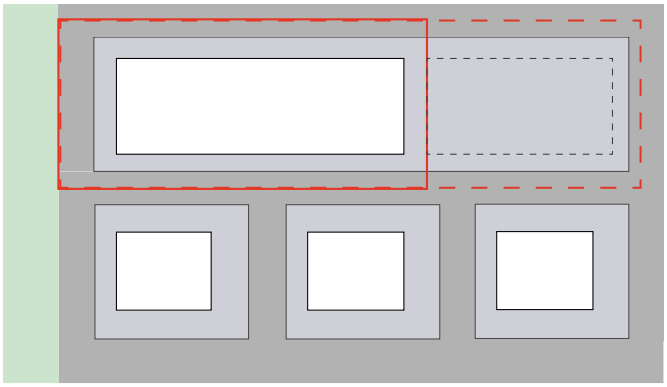
Other uses
If a site includes other designations such as public open space or transport infrastructure these should be excluded from the site area for the purpose of residential density calculations.



Gross site area calculated for a single building



Gross site area calculated for a building within a masterplan



Gross site area calculated for a building adjacent to an open space

Calculations
Residential only:

$$\frac{\text{Number of habitable rooms}}{\text{Net site area}}$$

Mixed use:

$$\frac{\text{Number of habitable rooms}}{\text{(Residential GIA/ Total GIA) x Net site area}}$$

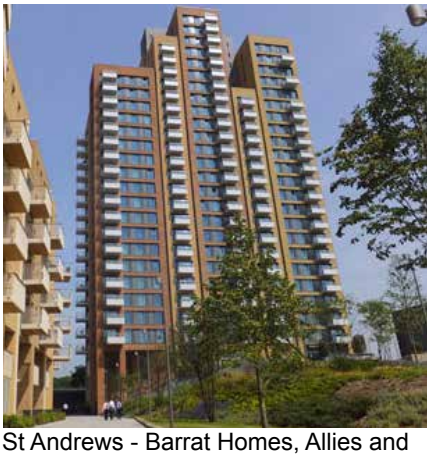
GIA = Gross Indoor Area
Net site area = 78% gross site area

Context

Despite the increasing prevalence of high density residential homes, there is limited understanding of what it is like to live there. In response to this, Tower Hamlets council conducted one of the largest and most comprehensive pieces of research into the lives of residents living in high density and tall buildings. A literature review, including studies such as LSE's Density Project, helped define the scope of the research.

Case Studies

Nine representative case studies were selected; this sought to ensure surveys captured a wide range of experiences and forms of density. The selection process included densities from 1,100 habitable rooms per hectare (h/ha) to over 3,000 h/ha, and heights from below 10 to above 30 storeys. They were located across the borough, have been occupied for a minimum of two years and featured a mix of tenures. A range of different building typologies were also selected.



St Andrews - Barrat Homes, Allies and Morrison

Goodman's Field - Berkeley Homes, Lifschutz Davidson Sandilands

Caspian Wharf - Berkley Homes, KKM Architects

Millharbour - Weston Homes, Chantrey Davis

Mastmaker - Ballymore, Brady Mallalieu

Lincoln Plaza - Galliard Homes, Hamiltons and BUJJ Architects

Landmark - Chalegrove Properties Ltd, Squire and Partners

Park Vista - Ballymore, Paul Davis Partners

Pan Peninsular - Ballymore, SOM

Residents Survey and Interviews
To begin the research process a post-occupancy evaluation was conducted with residents of each of the nine case studies. This took the form of a survey of each of the nine case studies structured around different areas of a building, elements that contribute towards a good quality of life and demographics for example experiences living with children and use of communal spaces. In order to get a fair representation of residents, tight sample quotas were used. This required a good mix of people living at different areas of the building, different flat types, different tenures, etc. as well as demographic quotas such as age and gender. A door to door survey method was chosen to meet the quotas specified above but also to get a good response rate. Through the door to door survey, a response rate of 40% was achieved surveying 560 residents. In three schemes, all of them private, access was not possible so online and postal surveys were used. The response rate for this method dropped to 4% surveying 172 people. The resulting data was analysed and crosstabulated with factors such as household size, home size, location of the home within the building, housing tenure and presence of children.

Follow up interviews were conducted with a further fifty residents and site visits conducted with building managers to explore emerging topics in more depth.

Neighbourhood Survey
To understand impact of high density development on existing communities, a neighbour survey was conducted. This spoke to resident's door to door or stopped those in the street in a 400m radius around each of the nine case studies. The survey covered impacts of the building on local services, the character and appearance of the neighbourhood, the environment and living conditions. In total, 562 people were surveyed.

Environmental Modelling
To develop a holistic understanding the experience of high density living, it was important to understand environmental and wellbeing criteria such as daylight, sunlight, overheating, building energy use, outlook, privacy and their interdependencies.

Environmental consultants Expedition were employed to develop a framework for defining metrics, targets and appraisal methods for the different criteria and model case studies to test the framework and support the development of design guidelines. The approach included a novel 'clustering and sample' method to model similar context conditions, details of which can be found in the appendices. The method and findings are grouped into context conditions, dwelling typologies and environmental design parameters as well as the overall performance of each of the nine case studies.

Further Engagement
Alongside engagement with residents, it was important to appreciate the perspective of built environment professionals working in the field of high density residential development.

A steering group was established with Developers, Architects, representatives of Housing Associations and other built environment experts to shape the scope of the project and content of the surveys. Then architects of the nine case studies were interviewed to understand the design and development process and lessons learnt. Workshops were held with housing associations and building managers to appreciate their particular challenges and needs. In addition, various departments across the Council including waste, highways and children's services fed in as guidelines were developed.

Finally, the project was presented at the Council's Developers forum and Conservation and Design Review Panel to offer further opportunities to shape the content of the design guidelines.

Development of the Design Guidelines
To develop the SPD, findings of the research process were analysed by comparing results from each of the nine case studies. These were then cross checked against the design of each case study to establish features that were more or less successful at supporting good quality of life.

These good design features were used to inform the design guidelines. Design guidelines were also informed by best practice established through further engagement and research outlined above as well as an analysis of existing policy and guidance and an extensive literature review on relevant topics such as design for dementia, the circular economy and child friendly design.

Intended users
The document provides guidance on how to design, deliver and manage high density residential development.

The document is intended to be used by various stakeholders and throughout the development process:

- The development community and designers to use in preparation of applications for residential or mixed use buildings, community infrastructure or elements of the public realm.
- The development community and designers in the preparation of management plans.
- Council case officers to use as a way to frame pre-application and application discussions.
- Council case officers to review planning applications and assess if they meet the objectives of the Local Plan and result in a high quality of life for residents.
- Council officers to inform the development of new capital projects including public realm, streets, parks and community facilities.

Topic papers
The document begins by setting out the findings of the extensive engagement and research that have been carried out. These are structured around five topic areas and resulting challenges and opportunities which manifest in high density developments:

- Children and young people
- Mixed and balanced communities
- Everyday life
- Buildings as systems
- Healthy neighbourhoods

Topic papers also outline a section of overarching design objectives for each of these issues.

Typology summary
The document then identifies the primary high density building typologies and identifies the relative benefits and challenges of each for achieving good living environments for both residents of the building and the surrounding neighbourhood.

The selection of an appropriate building typology in the early stages of the development process means objectives and design guidelines can be more easily achieved.

Design guidelines
The main body of the SPD is made up of detailed design recommendations that will help ensure new development meets the objectives of each topic. The recommendations are organised around three main elements of a development; the area around the building, communal spaces and the individual home.

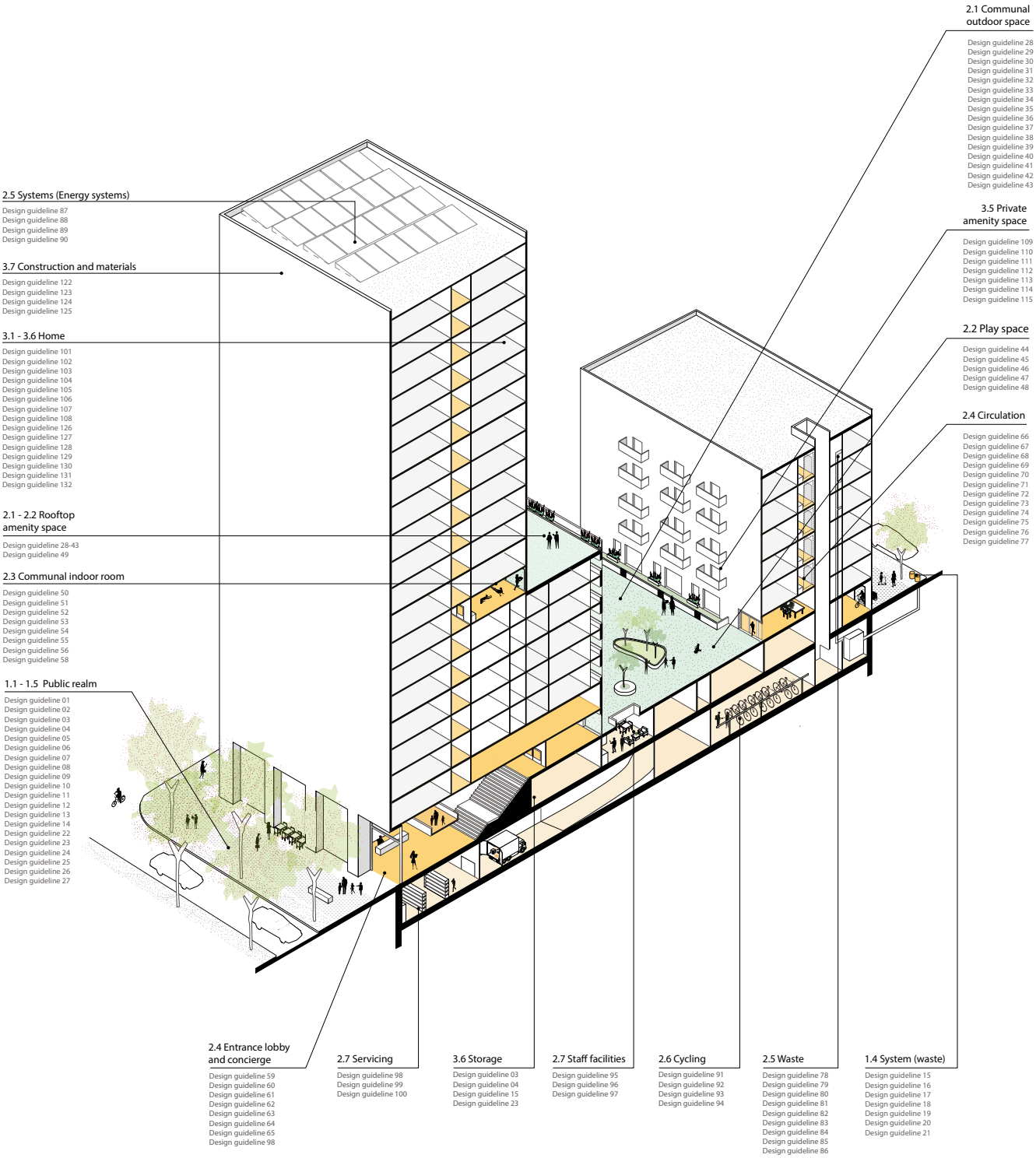
The document aims to be a comprehensive guide to the delivery and management of high density residential and mixed-use buildings. Accordingly, guidelines are broken down into three subtypes:

- Design guideline – new design recommendations that provides further detail on how to meet existing Local Plan requirements and the objectives of the SPD.
- Existing policy – the document draws together existing policy and guidance that should be reinforced when developing high density residential buildings.
- Further considerations – design features that are beyond the scope of planning but are important when creating successful high density buildings and to achieve the objectives of the SPD.

Each design recommendation includes a relevant case study and/or illustration. These are supported by findings from the extensive survey and interview process alongside established architecture, urban design and planning principles where appropriate.

Whilst the design guidelines are extensive, most can be easily achieved with the selection of an appropriate building typology.

How to use the document



Active Frontages
A building front that promotes activity and encourages cross-movement between the building at ground level and the adjacent public realm by the way the building is designed or orientated. A building provides active frontage if the ground floor avoids blank walls or obscured frontages, includes windows and openings, and provides a variety of uses all of which also contribute to natural surveillance and support the visual and physical relationship between the building and ground level.

Affordable Housing
Social rented, affordable rented and intermediate housing provided to eligible households whose needs are not met by the market. Eligibility is determined with regard to local incomes and our (the council) housing allocation policy.

Communal Amenity Space
An area within the curtilage of a residential development that can be accessed by residents of the development. It is used for recreation and provides visual amenity, e.g. gardens or landscaped space.

Building Manager
Or estate manager. A permanent member of staff who supervises the day to day running of a residential development. This includes maintenance and repair, waste, site staff management and health and safety.

Circulation space
Area of communal space from the main building entrance to the front door of a home. This covers the lobby, lift and corridor.

Community facilities
Uses such as public houses, libraries, youth facilities, meeting places, places of worship, public conveniences and other uses in use class D1 that provide a service to the local community.

Concierge
Or care taker. A permeant member of staff who is front facing, dealing with resident queries. Tasks include handling requests from residents, post and deliveries, presenting properties to potential residents and handling marketing. Concierges typically occupy a front desk so also provide a level of security and assistance to visitors.

Daylight
Natural light that enters a building.

Doorstep Play
Areas close to the home that support play for young children under 5.

Family Homes
Houses and flats which contain three or more bedrooms.

Family Rooms
Indoor communal amenity space that is suitable for use by children for a range of activities.

Habitable Room
A habitable room is any room used or intended to be used for sleeping, cooking, living or eating purposes. Enclosed spaces such as bath or toilet facilities, corridors, hallways, utility rooms or similar should not be considered habitable rooms.

High Density
Residential or mixed-use development that exceeds 1,100 habitable rooms per hectare.

Laundry Cupboard
Cupboard capable of containing a washing machine, space to dry clothes and storage of cleaning equipment.

Legibility
The degree to which a place can be easily understood and moved around in.

Multifunctional space
A multifunctional space is a ‘shared’ public space or communal space, which offers a range of leisure and recreation opportunities for users of all ages whilst including soft landscaping to improve urban greening, biodiversity and drainage.

Nature Play/ Natural Play
Play space that facilitates interaction with nature.

Neighbourhood Officer
A member of staff tasked with organising and coordinating communal events for residents. They also link residents with various services and opportunities in the wider area.

Outlook
Views out of the building.

Play Space (dedicated)
Spaces where play is identified as a prime function. These include playgrounds, playing fields, skate parks and other recreation areas.

Playable Space
A playable space is one where children's active play is a legitimate use of the space. Playable space typically includes some design elements that have 'play value': they act as a sign or signal to children and young people that the space is intended for their play. Playability is not just a matter of the physical characteristics of a space. It can also be influenced by social and cultural characteristics.

Private Rented Sector
All non-owner occupied self-contained dwellings that are being rented out as housing (not including forms of affordable housing).

Public Art
Fixed artworks which members of the public are able to access and appreciate. Works may be sited in the public, civic, communal or commercial domain, in semi-public or privately-owned public space, or within public, civic or institutional buildings. Artworks can form part of the structure or decoration of buildings, landscapes and streetscapes.

Public Realm
The space between and surrounding buildings and open spaces that are accessible to the public and include streets, pedestrianised areas, squares and water spaces.

Social Integration
The extent to which people positively interact and connect with others who are different to themselves. It is determined by the level of equality between people, the nature of their relationships, and their degree of participation in the communities in which they live.

Specialist Housing
Specialist housing refers to supported housing such as sheltered housing, residential care homes, nursing homes and dual-registered care homes.

Sunlight
Direct, non-obstructed, sunshine.

Sustainable Urban Drainage
Water management practices that integrate natural water processes.

Tall Building
Any building that is significantly taller than its local context and/or has a significant impact on the skyline. Within the borough, buildings of more than 30 metres, or those which are more than twice the prevailing height of surrounding buildings (whichever is less) will be considered to be a tall building.

Traditional waste collection
Waste is collected and stored in large bins which are regularly transported to the street or public realm to be emptied by a specialised truck.

Typology
Grouping buildings based on their form. For example, a terrace, tower or perimeter block.

Underground Waste Collection
Underground waste tanks with smaller access points integrated into the public realm. These are emptied on a regular basis by specialised collection vehicles.

Urban Greening
Urban greening describes the act of adding green infrastructure elements such as green roofs, street trees, and additional vegetation. The Urban Greening Factor is a land-use planning tool to help determine the amount of greening required in new developments.

Urban Heat Island
The height of buildings and their arrangement means that while more heat is absorbed during the day, it takes longer to escape at night. As a result, the centre of London can be up to 10°C warmer than the rural areas around the city.

Vacuum Waste Collection
Or pneumatic refuse collection. Tubes carry waste deposited into intake hatches/ portholes at speed to centralised storage areas or directly to a collection vehicle.

Window to floor area ratio
The ratio of total, unobstructed window glass area to total floor area served by the windows, expressed as a percentage.

SECTION 2

TOPIC PAPERS

Children and young people
Mixed and balanced communities
Everyday life
Buildings as systems
Healthy neighbourhoods


Children and
young people

In Tower Hamlets

Tower Hamlets is a young borough, with the largest proportion of young people compared to other inner London boroughs, and the fourth youngest population in the UK. Overcrowding is a concern with 37% of households on the council's housing waiting list living in overcrowded conditions.

43% of children in year six were overweight or obese compared with 39 % in London and 34% nationally [1].

Families are being asked to live in increasingly high density living environments, and it is essential that the needs of children and young people are given careful consideration when designing these types of development.

At high density

Across all case studies, 32% of those surveyed lived in a household with children or young people under the age of 16.

Overcrowding

These households occupied a range of home sizes, including one and two bedroom dwellings. 42% of households with children do not live in family homes (three bedrooms or more). 52% of three bedroom homes are occupied by flat sharers or other models where residents are not related.

The study found that families are occupying homes distributed throughout these developments, including in the upper levels of tall buildings. Larger families (with three or more children) tended to live on lower floors. Half of the families we spoke to said that they would prefer to live closer to the ground.

Play

21% of those surveyed did not think living in high density environments was appropriate with children, this rose to 37% when residents were asked if they thought it appropriate to live in a tall building with children. Residents told us that this was typically due to lack of green space and play space.

38% of the residents we spoke to thought that they had limited access to outdoor space, with 42% of households with children regularly playing in places away from the development they lived in. 29% of residents living around a high density building used spaces around the building often, for example for relaxing exercising or play.

Stimulating places for play and socialisation are essential for well-being, health and development.[2] This however can be a challenge in high density environments where there is competition for space.

1. Tower Hamlets Borough Profile 2018

2. GLA Play and Informal Recreation 2012

‘This is the play area... look at it, you can see “no ball games”, so what the hell are they going to do?’

Mobility and independence
Children and young people move through the city and building differently and less predictably than adults. Play can occur anywhere, it is not restricted to designated areas. In addition to the provision of stimulating play space, design of the development should acknowledge the movement of children and young people to promote independent mobility by mitigating real and or/ perceived risk.

79% of children did not play unsupervised; this was due to safety (36%), play space being too far from home (17%) and play space out of sight (12%).

Young people
Young people in high density environments can be stereotyped as contributors to anti-social behaviour but at the same time can have limited mobility and independence due to the perceived safety of public spaces.

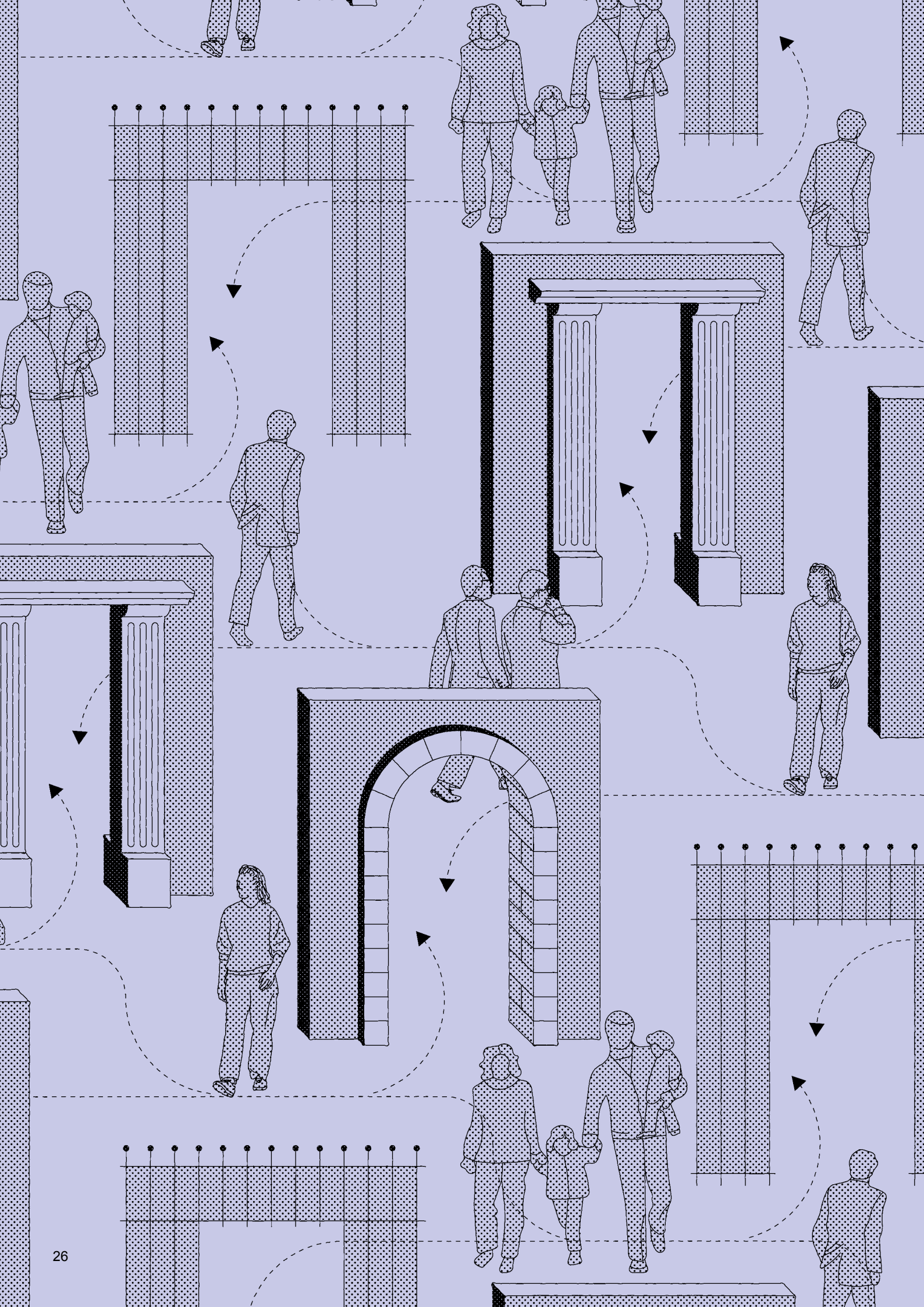
Design of high density environments should provide suitable spaces for young people to congregate and socialise. These should provide independence and freedom whilst mitigating perceived risk.

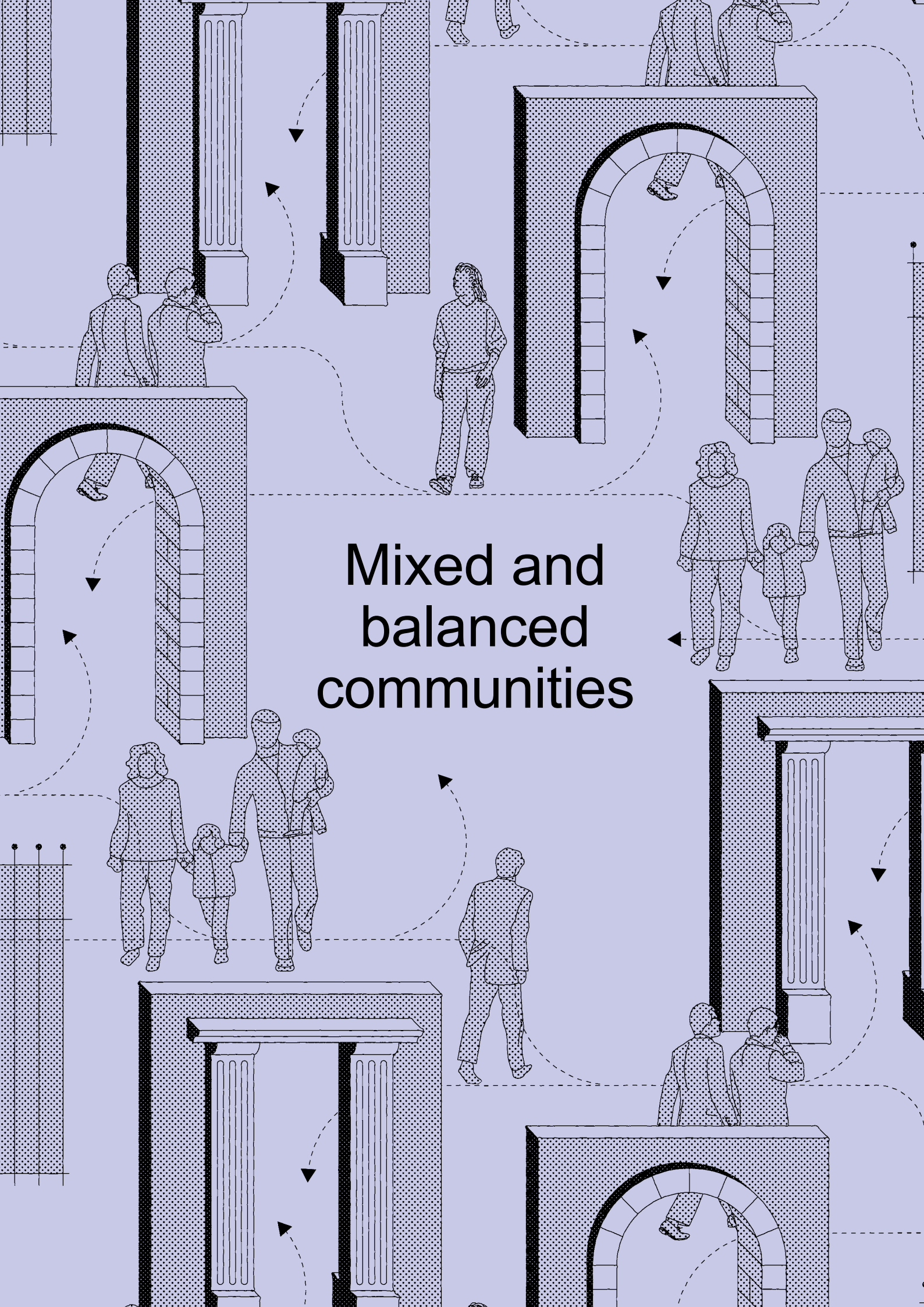
What does a child and young person friendly city look like?

- There is a good network of pedestrian routes.
- Pavements are wide and include cycle lanes and frequent pedestrian crossings.
- Public spaces are common and spaces form an integrated network.
- Key services such as schools and nurseries are in close proximity to homes.
- Work places are close to the home so parents do not have to commute far.
- Public realm is engaging and fosters a sense of belonging for example through public art, water features and mixed uses.
- There is good access to nature through integration of nature into residential areas and multi-functional, resilient green infrastructure.
- There is good access to diverse cultural and heritage spaces.
- Community uses are flexible and support imaginative play, physical activity and socialising for and between all ages.
- Facilities are conveniently and safely located to promote independence.

Objectives

- Provide sufficient and varied space for children and young people to play and socialse
- Make it easy for children to move around the building and use play spaces independently
- Integrate play space with other spaces and amenities to encourage use
- Allow play or gathering in most parts of the building - not just designated spaces
- Support play provision with facilities for adults




Mixed and
balanced
communities

In Tower Hamlets

Tower Hamlets is one of the most diverse boroughs in London and the UK in terms of its social and economic make-up. Whilst the borough has the third highest economic output in the UK, 57% of children are still living in poverty. [1]

The borough is ranked as the 16th most ethnically diverse local authority in England, with more than two thirds of residents belonging to minority ethnic groups.[2] People from all backgrounds and age groups in the borough can face challenges from inequality, loneliness and isolation. These challenges often have detrimental impacts on physical and mental health of residents.[3]

To share the benefits of growth and tackle social segregation, high density development should equally meet the needs of Tower Hamlets' diverse population and foster integration between all of its residents.

At high density

Social integration (the extent to which people positively interact and connect with others who are different to themselves) is an essential aspect of creating mixed and balanced communities. Integration is determined by the level of equality between people, the nature of their relationships, and their degree of participation in the communities in which they live. An equal, integrated, community is beneficial for health and well-being. It tackles loneliness, isolation and conflict between different individuals and groups.

Neighbourhood
The borough is already dense, with limited space available for redevelopment. High density schemes are introduced into existing neighbourhoods and communities.

On average, 67% of residents living around high density buildings did not feel that people living in the building were part of the local community. This varied significantly between case studies;

1. Trust for London Tower Hamlets 2020
2. Tower Hamlets Borough Profile 2018
3. https://www.towerhamlets.gov.uk/lgnl/health__social_care/Tackling_loneliness/Tackling_Loneliness.aspx

at one building 92% of neighbours said residents were not part of the local community whereas at another 92% found that they were. 82% of residents living around the building had never used facilities within it but 39% felt it had impacted their access to local services. This suggests factors including design, tenure and accessible uses all contribute to the integration of high density buildings and its residents into the neighbourhood.

‘So when developing anything don’t just densely populate it with people who are not going to speak to each other, try and find the connections.’
Community

High density living environments can make it difficult for residents within the building to connect and interact with each other. However, if designed and managed correctly, they can present a good opportunity to improve social integration.

Across all case studies, 38% of the people we spoke to felt their building lacked a sense of community. Lack of community was experienced the greatest by owner occupiers compared to private or social renters.

In developments where communal outdoor or communal indoor areas were provided, these were not used regularly by all residents. 37% of residents reported never using communal outdoor areas compared with 23% who said that they used these spaces regularly. In addition, 38% reported never using communal indoor areas compared with 22% who said that they used these spaces regularly.

Relationships
In developments where communal courtyards were provided, 27% of residents said that they have interacted with neighbours while using these spaces. 31% of residents reported interacting with neighbours in roof top communal spaces, where these were provided.

From speaking to residents, we found that the lobby, lift and corridor were the primary spaces where residents first interacted with their neighbours. Some residents told us that they often felt like they were living in a hotel.

‘Here it feels like we’re stuck in a hotel or something.’

Management
69% of residents we spoke to felt their building was well managed. Residents were particularly positive about the presence of a concierge. These staff members improved perceived sense of safety and supported a sense of community.

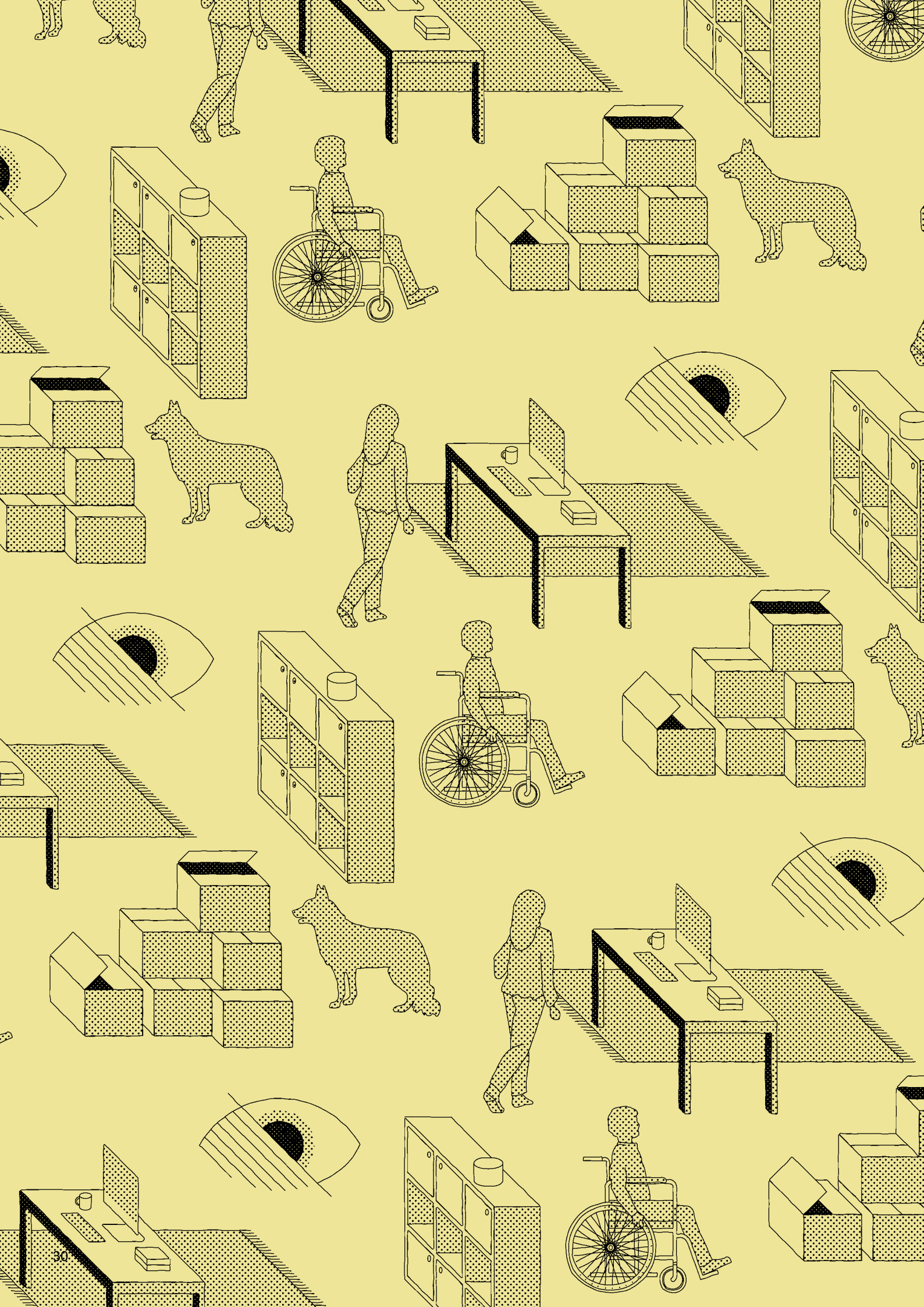
Management is essential for the good use of communal spaces. This includes surveillance of spaces as well as programming events. In case studies, communal spaces that were difficult to access, such as roof tops, were closed. Communal facilities should have good visibility from the main entrance lobby or key routes around the building to reduce management costs and the risk of anti-social behavior.

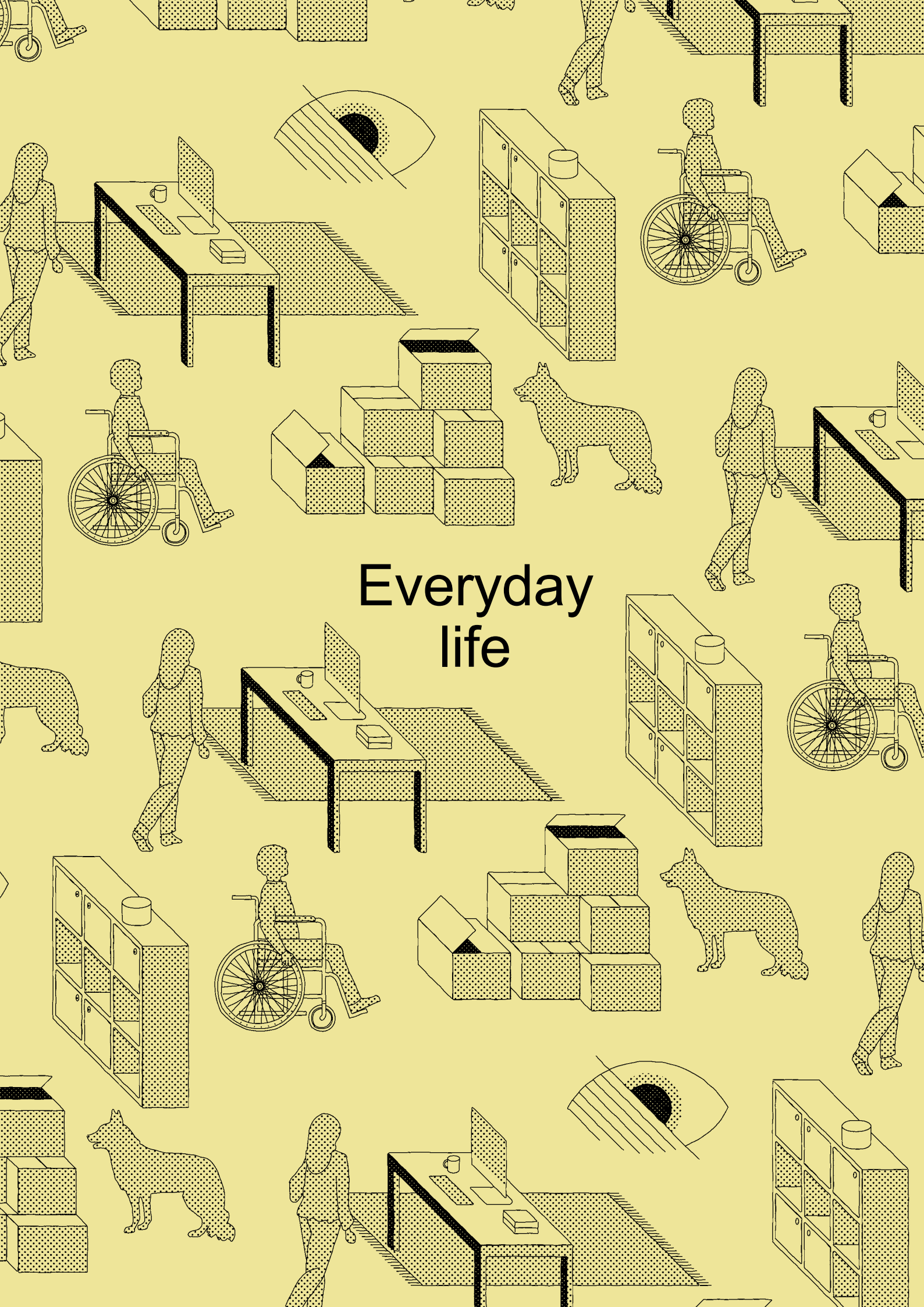
What does a mixed and balanced community look like?

- Streets and a network of public realm prioritises walking and cycling.
- Streets, public realm and the layout of buildings should be easy to navigate.
- Generous public realm and public facilities create destinations that appeal to a wide range of people, foster a sense of belonging and reduce social segregation. For example, by including public art, water features and community cafes.
- The design and management of spaces encourage people to linger.
- Flexible design of communal spaces supports a range of uses and faiths.
- Tenures are mixed, and it is not possible to distinguish between tenures by looking at the building.
- Location and design of communal amenity spaces encourage regular use.
- Circulation spaces are comfortable and enjoyable places where people linger.
- Building management encourages a sense of ownership.
- Homes are a place of rest and relaxation.

Objectives

- Provide opportunities for residents to meet and interact with residents in the neighbourhood
- Provide opportunities for residents of different tenures and blocks to cross paths regularly
- Increase sense of safety, sense of belonging, familiarity and care
- Increase opportunities for residents to share space on a regular basis

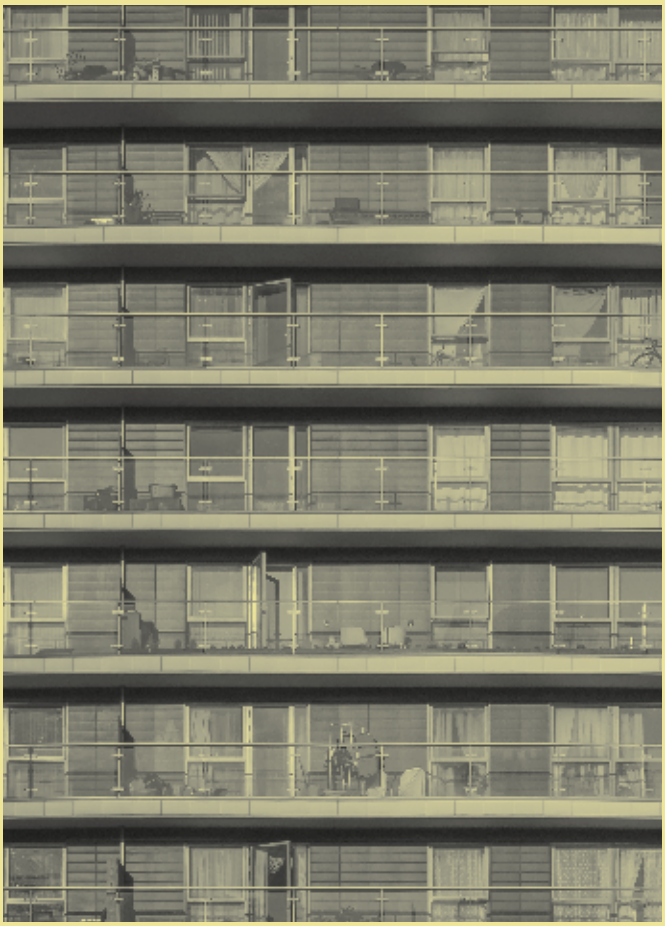



Everyday
life

In Tower Hamlets

Tower Hamlets is the fastest growing local authority in England and Wales. Since 1986 its population has doubled to 308,000 residents, and it is expected to reach 365,200 by 2027. In response to the increasing population, Tower Hamlets has delivered more homes than any other authority in England in recent years. Between 2012 and 2017 15,250 homes were built, this included the most affordable homes built in London during this period. [1]

Successfully meeting the demands arising from a rising population is not just about the number of new homes, it is also about the quality of life that they create. Residential development should combine physical space with civic and social activities to support the changing needs of individuals and families at different stages of life, and where, for whatever reason, more periods of time are spent in the home.



At high density

Everyday life covers the regular and changing needs of residents where they live.

Domestic chores

In high density development, where space is constrained, the spatial and technical requirements of everyday tasks, including laundry and cooking, are often overlooked. This can result in conflict between different ways domestic spaces are used. 17% of residents we spoke to felt they could not easily wash and dry their clothes in their home. In addition, some residents told us that sometimes they felt that the steps they had to ventilate their homes compromised their privacy.

‘they’re not building things that people find nice as homes, they’re building things that are functional’

Home based working

A quarter of the UK overall working population lives at their workplace or works at home for a minimum of eight hours a week. Most live and work in spaces and buildings that have not been designed around the dual use. This can lead to frustration, inefficiency and stress. [2]. Home based working is often more than sitting at a desk with a computer and incorporates a range of occupations with different spatial requirements. This can range from beauty therapy, catering, childminding, jewellery making and legal services.

Ageing and health

The design of homes should provide flexibility to meet resident’s different needs, which may change over time, such as from ageing, illness and impairment. The design of homes, communal spaces and the public realm should consider orientation, movement and enjoyment by the less able, including the deaf and visually impaired and those suffering from physical and mental illness.

1. Tower Hamlets Borough Profile 2018

2. F. Holiss, Home-working, London Metropolitan University

This will avoid unnecessary additional disruption and enable people to maintain independence for longer, improving life quality. If circumstances result in greater time being spent in the home, the design of high density development should foster social interaction to help counter isolation and loneliness.

Pets and plants
As the urban population, and the number of people living at high density, increases, so does the pet population. The design of high density development should consider the needs of pets and their owners, to allow people to enjoy living with their pets and to help avoid conflict between residents. Gardening is beneficial for health, wellbeing and social integration but opportunities are often very limited in high density schemes.

Flexible and adaptable
Storage was a significant concern for many residents, with 34% telling us that they did not have sufficient storage space. In particular, some residents said that unequal bedroom room sizes and awkward flat configurations restricted adaptability of the home including furniture layouts. Some also stated they would need to relocate when their family grew. Specialist interior fit outs , such as non standard materials, and confusion over building management also restricted options to adapt the home.

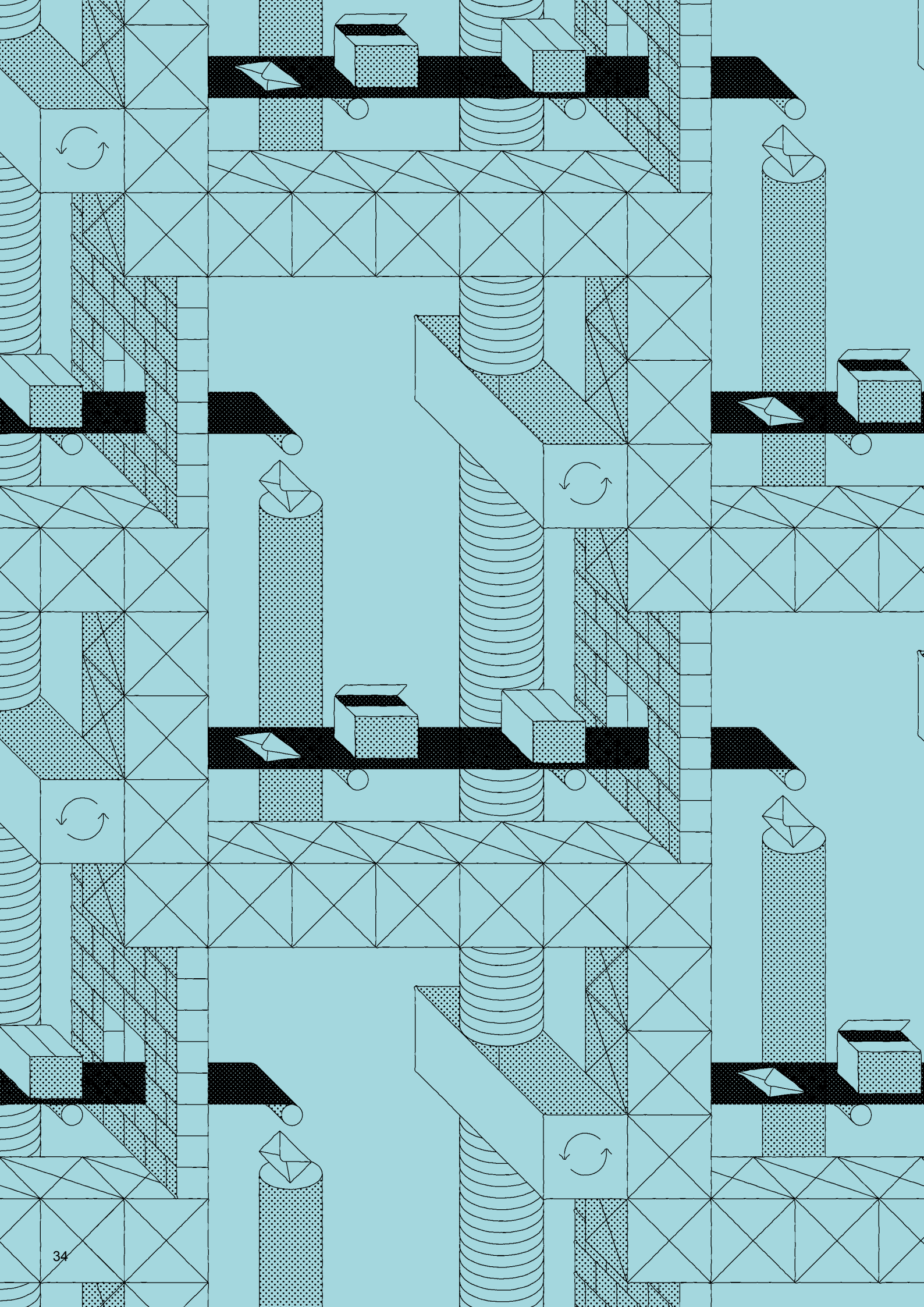
‘One of the bedrooms is a good size for us right now... I worry about it as the girls grow up.’

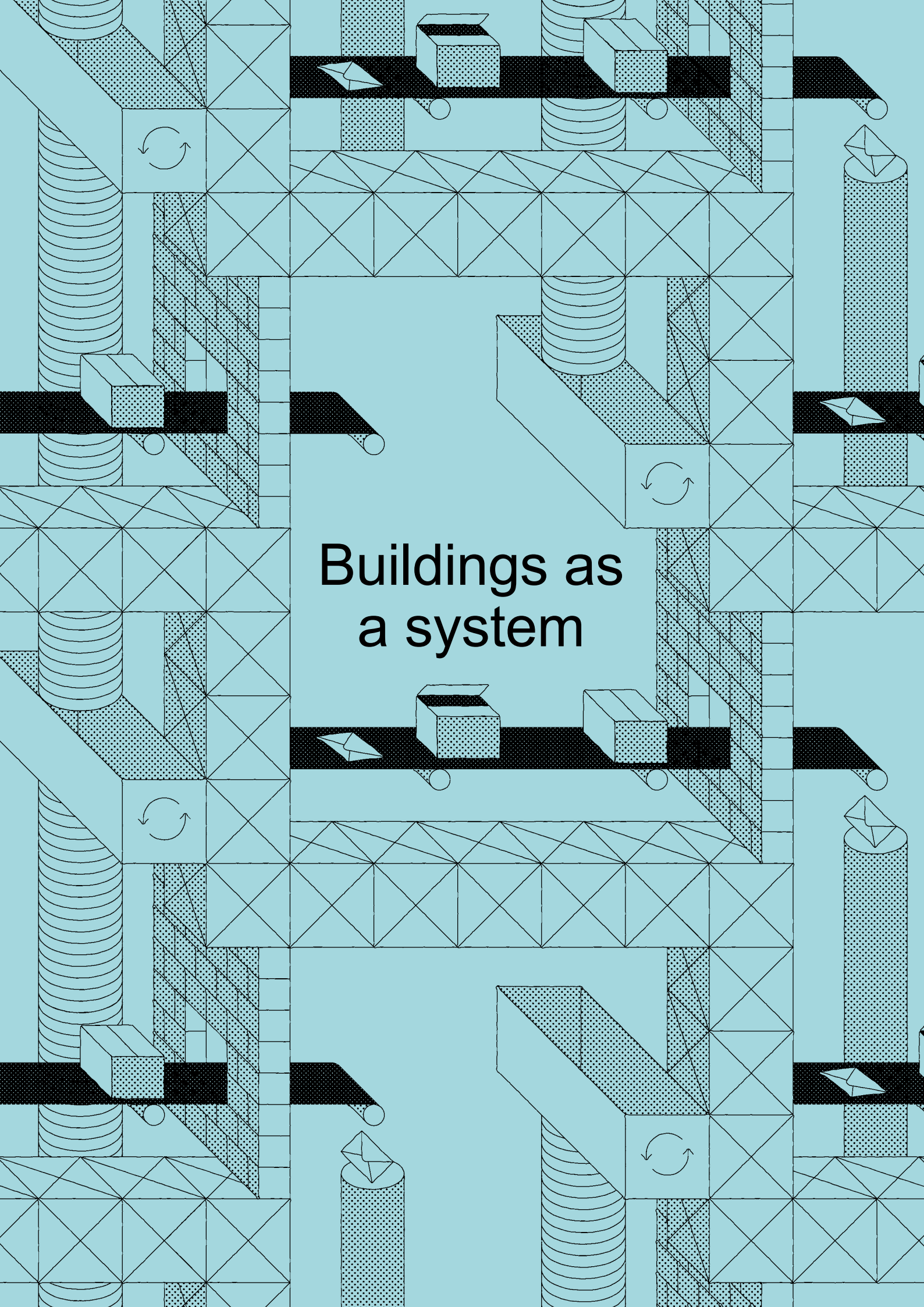
What does a city that supports all residents and their evolving needs look like?

- Legible and accessible public realm, entrances and communal facilities.
- Clear and distinctive routes around buildings, particularly leading to communal spaces that are easy to navigate for everyone.
- Circulation spaces encourage a sense of ownership and belonging.
- Indoor communal spaces are designed to be flexible, to support various types of home based work.
- Routes through outdoor communal amenity spaces and public realm are multifunctional and robustly built.
- Homes are spacious and flexible so internal layouts and fittings are easily adaptable to support changing lifestyles and everyday tasks.

Objectives

- Design to legitimise home based work addressing flexibility, isolation and nuisance
- Design should be flexible and easy to adapt to meet different needs as they change over time
- Design to consider the needs of pets and their owners
- Design should consider everyday activities and their implications on home standards
- Design standards acknowledge diverse users who experience spaces differently such as autism, dementia or those with poor eyesight.




Buildings as
a system

In Tower Hamlets

Tower Hamlets declared a climate emergency in March 2019. The borough is currently the third highest emitter of carbon dioxide in London. Although the council has introduced initiatives to try and tackle this, significant changes are still required to achieve zero-carbon and sustainable development in the borough.[1] For example, in 2018/19 only 23.2% of waste was recycled in the borough and at present only one in five residents are cyclists.[2] [3]

London has lower rainfall than the national average while having a very high population density. This has resulted in London being declared by the Environment Agency as an area of serious water stress. [4]

At high density

New homes and neighbourhoods should be designed to reduce environmental impacts, whilst improving the quality of life for residents and building managers. The design and management of buildings must move toward a low carbon circular economy to improve efficiency and reduce environmental impacts.. This involves consideration of the interconnected network of systems, such as water, energy, materials as they flow throughout the building.

Waste

Meeting recycling and composting targets requires design and management solutions that reduce waste and support recycling at the individual, building and borough scale. 66% of the residents that we asked thought that waste rooms in their developments were kept clean and were attractive. However, when we explored this in more detail residents reported a number of issues with waste recycling systems, particularly residents not using the systems correctly resulting in mess and smell. Bulky waste was a particular cause of disruption.

1. Tower Hamlets Borough Profile 2018
2. Tower Hamlets Waste Management Strategy (2018-2030)
3. Tower Hamlets Borough Profile 2018
4. Environment Agency Water Stressed Areas 2013

A number of residents also reported that they did not recycle, most often due to lack of space in the home, with 30% reporting lack of space. We also found that the collection of traditional Euro bins resulted in extra management requirements and clutter in the public realm.

‘over the weekend, you find people leave their rubbish right outside the lift because the space, itself, is so full.’

Water

Existing water stress is likely to be exacerbated by a changing climate and increasing population densities. Development must therefore be designed to be water efficient to reduce demand and wider strain on water resources.

Energy
Achieving a zero carbon city will require development to be both highly energy efficient and incorporate opportunities for renewable energy production, storage and use on site. On site electricity and heat production should be integrated into building design.

Management
69% of residents we spoke to felt their building was well managed, particularly in relation to security, repairs and dealing with deliveries. We also spoke to a number of building managers and caretakers. They told us that design issues, such as the lack of storage space and rest rooms negatively influenced the ease and efficiency of their work and their well-being.

‘The service charge is pretty high here, but then they are running a mini estate.’

Cycling
Many of the developments we looked at featured large areas of cycle storage, sometimes located in building basements. However, from speaking with residents we found that these were not well used, with 76% telling us that they never use them. 26% of residents who own a bicycle told us that they stored it in their home, instead of the communal store. This was in part due to accessibility of the stores and perceptions about their safety. Designing cycle storage that is convenient and safe will help to encourage more residents to take up cycling.

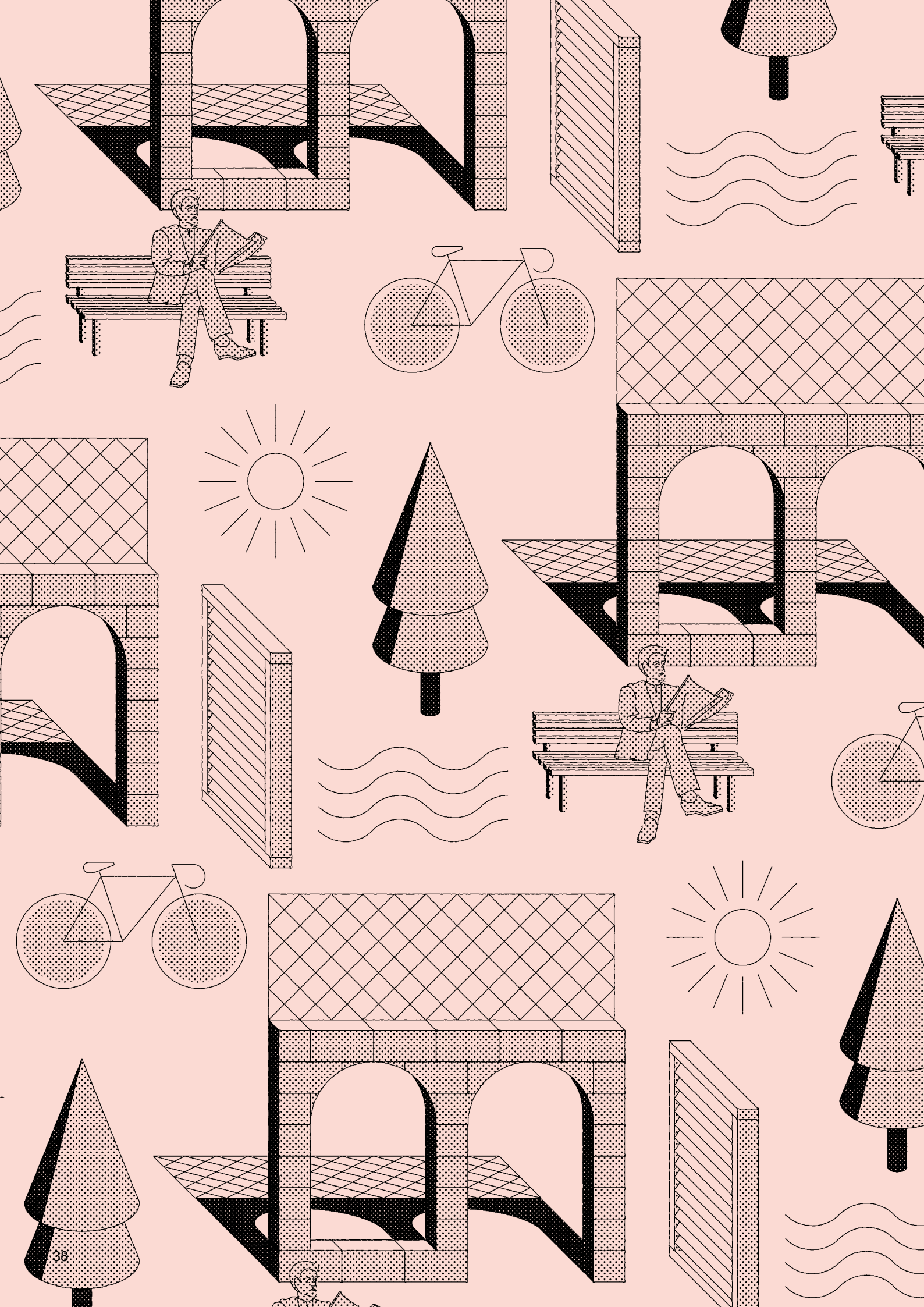
The circular economy
Buildings should be designed to help reduce waste by using efficient design and construction techniques and by encouraging the re-use of materials. They should also support the sharing economy to help reduce costs, consumption and facilitate social interaction.

What does a sustainable high density environment look like?

- Multifunctional public realm and communal amenity space that prioritises walking and cycling.
- Soft landscaping that improves biodiversity, sustainable drainage and urban greening that is robust enough to be playable.
- Waste collection methods that reduce residual waste and reduce clutter in the home and public realm.
- Buildings are flexible, adaptable, easy to repair and incorporate reused and re-usable materials.
- Buildings are efficient in their use of water and energy, and also generate their own energy where possible.
- Shared facilities are provided to reduce consumption and promote social interaction.
- There is a dedicated space for building managers with a good presence that supports their work practices.

Objectives

- Reduce waste, particularly through the ease and efficiency of waste collection
- Reduce water use and the load on the water network
- Zero carbon through efficiencies and renewable energy
- Easy and efficient building management
- Facilitate the transition to the circular economy
- Cycling is safe and convenient



Healthy neighbourhoods

High density living

In Tower Hamlets

Cities can directly shape the physical and mental health of the people living in them. Access to good quality green space and well-designed homes contribute toward a good quality of life, whereas a poor quality environment and sub-standard housing conditions can be detrimental to health and wellbeing.

Tower Hamlets has amongst the lowest life expectancy in the UK, with life expectancy linked to areas of deprivation.[1] The quality of the built environment can play an important role in improving health and wellbeing in the borough and increasing life expectancy.

New high density development must be designed to achieve excellent environmental conditions to promote health and wellbeing of residents. Buildings should also positively contribute to the surrounding neighbourhood through considerations of solar access, wind, thermal comfort and the urban heat island effect.

At high density

The design of healthy high density environments requires a holistic approach that balances a number of sometimes contradictory parameters.

Daylight and sunlight
70% of the residents that we spoke to thought that their home received enough natural light, 17% did not. Many praised the bright spacious rooms, partly due to full height windows. However, some residents told us that they lacked light due to the building form and layout. There was a lack of consistency across homes. High density buildings were more likely to be experienced as detrimental to the surrounded neighbourhood. 35% of residents we spoke to in the areas surrounding high density schemes felt the building blocks sunlight to their home.

Temperature and ventilation
For many of the residents that we spoke to, overheating was a significant problem in the summer months, 40% found their homes got too hot. Some residents told us that opening windows and balcony doors provided some relief, but pointed out that this exacerbated noise issues. 19% found their homes got too cold, with some residents telling us that this was due to difficulties with heating systems. Most residents said that they felt safe opening windows to ventilate their home but this decreased above 20 storeys. However, windows in some developments would not open or would not open sufficiently far. Some residents felt they needed to keep doors open to ventilate their home, particularly kitchens and bathrooms, resulting in privacy issues.

‘they’re boiling... you can’t open the windows that much, so you need a balcony’

Privacy

1. Annual Public Health Report 2018

24% felt they lacked privacy with 35% stating they could be seen in their homes. From interviews it was clear this was due to building typology and proximity to other buildings. Many would keep curtains permanently closed, limiting access to daylight and sunlight. 34% of those living in the neighbouring area felt high density developments were damaging to their outlook and privacy.

Noise
63% of residents told us that their homes were quiet. This was generally linked to the age of the building, with newer development being better insulated. Noise from corridors and from balconies was more of a concern than between rooms. This has implications for temperature control and ventilation. High density buildings were more likely to be detrimental to the surrounding neighbourhood. 35% of residents we spoke to in the areas surrounding high density schemes felt the building caused noise.

Wind
28% of residents that we spoke to told us that wind adversely affected their private amenity space. When we explored this in more detail we found that the wind caused furniture to move around and that fixings to keep doors open sometimes failed. 32% of those living in the neighbouring area felt high density developments caused wind in their area.

‘Your furniture moves in the wind, if you’ve got a windy night you can come out and all of your furniture’s up at one end’

What does a healthy city look like?

- Homes are near a network of green and open spaces that are comfortable and enjoyable in all conditions.
- Homes are a place of privacy; people cannot be seen by their neighbours.
- Homes are bright, spacious and well ventilated.
- Homes are quiet; there is minimal disturbance from internal and external noise sources.
- Residents have control over internal temperatures; heating is affordable and easy to control, homes do not overheat and are easy to ventilate.
- Public and private spaces are not adversely affected by wind or lack of light.
- Homes mitigate environmental impacts and are resilient to climate change.

Objectives

- The neighbourhood, communal spaces and the home are comfortable, attractive and enjoyable
- Residents have control over their environment
- Environmental parameters including daylight sunlight, overheating, energy demand, wind, outlook and noise are balanced holistically for optimal conditions
- Buildings and homes are resilient to the impacts of climate change

SECTION 4

TYPOLOGY STUDY

Isle of Dogs. Photo: Jim Stephenson.

Building typologies are a tool to understand urban morphology; how a settlement develops and evolves over time. In architecture, planning and urban design a typology is the classification of built form into subsets. It concerns formal types such as the tower or terrace rather than functional types or uses, such as residential or a school.

Building typologies can incorporate residential densities in different ways. They are informed by plot size, topography and context. In turn, each typology varies in terms of plot coverage and height, shaping the formation of streets, public spaces, the wider townscape and resident quality of life in the building.

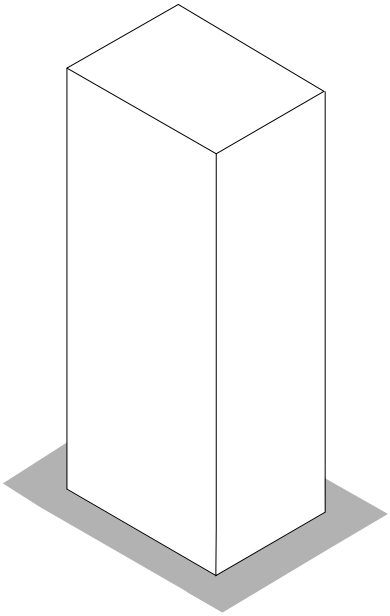
At high density

Land available for development in Tower Hamlets is decreasing. To meet the demand for housing development is being brought forward at high densities. Accordingly, this study considers building typologies that incorporate residential densities of a minimum of 1,100 habitable rooms per hectare. These densities however can be met in different ways; they are not limited to tall towers typically associated with high density development.

Each typology shapes space at different scales, with varying impacts on form and function. At the neighbourhood scale, typology impacts townscape, character and legibility. Typology shapes the network of streets and how we orientate ourselves around them. Immediately around the building, typology informs the differentiation of public and private space. It informs definition of streets and open spaces whilst the way in which the built form incorporates different uses influences public life. The form of the building including position in the plot and the relationship to neighbours shapes the environment, impacting daylight, sunlight and wind.

Within the building, the form shapes the location, quality and use of communal spaces as well as access and movement patterns. Finally, typology informs the configuration of the home including layouts, access to daylight sunlight, outlook and privacy.

The following section outlines five standard residential typologies that achieve high densities. It outlines the benefits and challenges of each of achieving the design guidelines of this SPD and identifies guidelines that need particular attention.



The stand-alone tower, or point block, is a single tall building that usually sits in the centre of the plot. Usually the footprint is extruded upwards but the form can also be more sculpted or include cut outs to provide additional roof tops.

Colville Estate, London, UK.
Chipperfield and Karakusevic Carson.

+ generous public realm accommodates increased pedestrian flows and provides opportunities for social interaction and play
+ spacious indoor ground floor spaces for residents to gather
+ deliveries are internalized minimizing disruption in the public realm.

De Architekten CIE, Almere, NL.
OMA.

+ communal amenity spaces at ground floor that are visible and accessible to the wider community
+ maximization of dual aspect units throughout the development
- lack of outddor communal amenity space

+ massing articulation creates opportunities for multiple rooftops

- Challenges

- Poor sense of enclosure and definition of the streets
- Poor deliniation of public and private spaces
- Harder to achieve a human scale at street level.
- Competition between public uses and back of house.
- The form can exacerbate wind.
- Challenge to provide sufficient and good quality outdoor amenity space and play space
- Rooftop spaces are difficult to access and manage
- It is difficult getting daylight and natural ventilation into the core.
- Hard to integrate tenures with two cores.
- Services usually located in the basement which can be unpleasant and far from the home.

+ Benefits

- It is easier to achieve good environmental parameters within the home, such as the number of dual aspect units and access to daylight- sunlight.
- Public realm around the building can be more generous.
- The number of units per core is reduced and the circulation space is more efficient.

Guidelines to be considered carefully when assessing an stand alone tower:

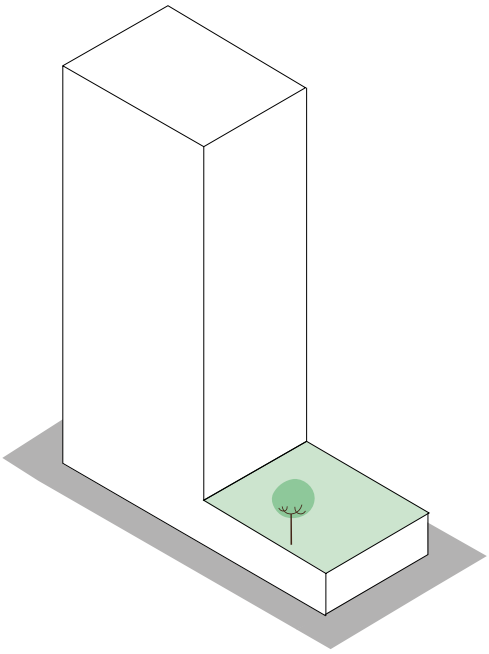
DG 1
In areas where there are multiple high density and tall buildings in the form of stand alone towers, space at street level can be constrained and unpleasent. Careful consideration of design guideline 1 is particularly important in order to provide more generous space that residents and visitors can easily access and enjoy.

DG 7
Constraints on space around tall buildings result in the obstruction of the public highway by servicing and delivery vehicles. This typology needs to carefully consider this design guideline, in particular the internalization of these activities within the building envelope to avoid excessive nuisance and obstruction of public highways.

DG 2 and DG 37
Spatial constraints of this type tend to result in the provision of communal amenity space either on rooftops or in the public realm. It is therefore important to consider these design guidelines to make sure the quality of the scheme and communal amenity areas supports the quality of life and needs of residents.

DG 12
This type does not easily contribute to a street based urbanism (DG 3 and DG 4) therefore consideration on location of entrances (DG 9) and uses (DG 8 and DG 10) is important to make it feel part of the wider neighbourhood.

DG 38, 39, 40, 41 and 42
Indoor communal amenity space tends to be the primary way of providing communal facilities in stand alone towers. It is therefore important for this type to carefully consider the above design guidelines



A podium is a platform of approximately one to three stories that usually fronts and defines the street. A tower then sits above this, set back from the edge of the podium so the tower and podium read as two distinct forms. The top of the podium typically includes outdoor communal amenity space and/ or play space.

150 Dan Leckie Way, City Place, Toronto, Canada.
KPMB Architects.

+ Large podium with good access to daylight/sunlight maximises opportunities for a variety of uses throughout the day
+ Co-location of communal spaces (laundry, indoor communal spaces) and communal amenity space maximises overlook providing opportunities for independent play and minimizing ASB

100hoog, Rotterdam, NL.
Klunder Architects.

+ Tower set back from main street reduces its prominence at street level
+ Good quality and activated communal amenity space at podium level
+ cycle parking generous, easily accessible and well integrated in the development

Challenges

- It is challenging to accommodate residential uses in the lower section of the building.
- It can be difficult to provide adequate conditions for significant planting, such as larger trees, on the podium.
- The space for public realm can be limited.

Benefits

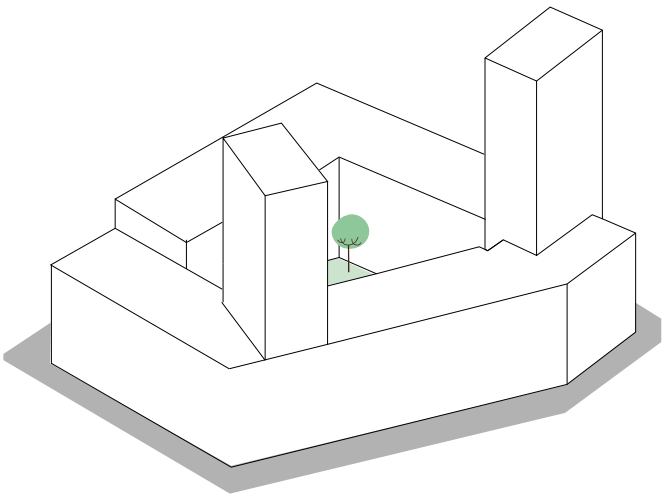
- Easier than a standalone tower to provide a sense of enclosure to streets and define the street network.
- Easier than a standalone tower to define the public realm and communal amenity spaces.
- It is easier than a standalone tower to integrate other uses such as a commercial space at the ground floor and then achieve active frontages.
- Outdoor communal amenity and play space on the podium is well overlooked.
- It can achieve good daylight and sunlight to the podium.
- The podium can mitigate wind impacts of tall buildings.
- Servicing, such as cycle stores and waste rooms, are more convenient if located in the podium.

This typology can more easily meet the design guidelines set up in this document so is encouraged. In particular **DG 3** and **DG 4** that seek to contribute to a street based urbanism. However guidelines to be considered carefully when assessing a tower on podium are:

DG 1 and 6
This typology shapes streets so it is important to consider DG 1 and DG 6 to ensure the street network is of good quality.

DG 11, 13 and 14
This typology naturally leads to deeper floorplates at lower levels which limits its capacity to accommodate certain flat types. However the podium can easily accommodate, as suggested in DG 8 and DG10, uses such as childcare facilities, community centres or cafes/restaurants for residents of the block and the wider neighbourhood. However careful consideration of the site characteristics and how to arrange active and more ancillary uses as per DG 11 is important to provide clear front and back and active groundfloors.

DG 30
The quality of the communal amenity space at podium level can easily meet most of the environemtal requirements (DG 18, 19 and 20) as well as overlooking and natural surveillance from flats onto the podium. However consideration of access to outdoor communal space at podium level and visual connection from the lobby as per DG 30 is important.



A perimeter block includes built form that wraps around the site in all directions, defining the surrounding streets with a communal courtyard in the centre. The block is not tall, less than ten stories, but can include one or more towers at different points around the

Via Verde, NY, US.
Dattner Architects in association with Grimshaw Architects.

+ massing is organized to frame the communal outdoor and indoor spaces, maximizing overlook
+ orientation maximises access to daylight sunlight
+ the design of the communal amenity spaces is playful and integrates play spaces into the wider design

Amsterdam, NL.
Hvdn Architecten.

+ courtyard on podium maximises site capacity while maintaining comfortable scale at podium level
+ pedestrians and cyclists access the internal courtyard via a bridge
+ communal facilities such as car parking, storage spaces and cycling parking is provided under the deck with access to natural light.

St. Andrews, London, UK.
Maccreanor Lavington.

+ massing articulation and reduced heigh on the southern edge maximises access to daylight sunlight into the courtyard
+ family homes at ground level allows private amenity space in the form of a terrace with direct access onto the communal courtyard.

Challenges

- The form can reduce access to daylight-sunlight in the courtyard and homes facing inwards, particularly those at the inner corners.
- There can be privacy issues, where people can be seen in their homes, particularly those at the inner corners.
- The number of homes per core can be high, with long corridors.
- It is difficult to achieve a large proportion of dual aspect homes, particularly if corridors are double loaded.

Benefits

- The perimeter block provides a sense of enclosure and defines the street network.
- Easier to integrate the building into the existing urban grain.
- Provides the opportunity to accommodate densities in a more traditional urban form.
- It can incorporate mixed uses and achieve active frontages at street level.
- Family homes can open out onto communal spaces, with a private terrace as a buffer.
- Opportunity to have residential front doors onto the street, activating the street.
- Easier to provide a central and shared communal amenity space, particularly between different tenures.
- Play space can be well overlooked and on the way from the entrance to the home.
- It can accommodate high densities without the need for great height.

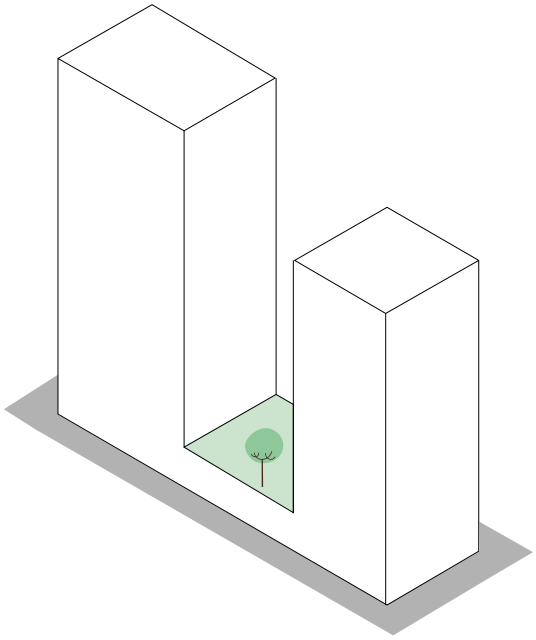
This typology can more easily meet the design guidelines set up in this document so is encourged. In particular the tower on a perimeter block typology allows for the provision of a central communal space that is well overlooked, potentially easily accessible by all tenures and easy to visually connect from entrances. These last two points are particularly important for the success of this type, therefore considerations of DG 23 and DG 24 is key. Other guidelines to be carefully considered when assessing this typology are:

DG 18
The early consideration of this design guidance is important to ensure acceptable levels of daylight/ sunlight in the courtyard.

DG 22
The use of landscape features and planting is important to protect privacy in key areas of the block both at ground floor and upper levels.

DG 52, 53, 54 and 55
Circulation spaces in the form of corridors is characterisitc of this type. It is important to consider the above design guidelines to ensure the good quality of circulation spaces.

DG 93 and 95
Applicants to look at this design guidelines in order to improve the daylight/sunlight performance of the large number of single aspect homes of this type.



The interlinked towers typology includes a minimum of two tall forms in a single plot connected by a podium or larger mass at the lower floors. The top of the form that connects the towers typically includes outdoor communal amenity space and/ or play space.

Batiment Home, Paris, France.
Comte & Vollenweider Architectes,
Hamonic + Masson & Associés.

+ towers massing is articulated to maximize daylight/sunlight access to podium level
+ home layouts and private amenity spaces are designed to minimize overlooking between units
+ access to landscaped open spaces at different floors provides a variety of well overlooked play options within the building

NXT & NXT2 at Windermere By the Lake, Toronto, Canada.
Architect Alliance.

+ element connecting towers permeable which increases legibility and visibility of spaces and activities
+ uses at ground level, including childcare and x, serve residents of this development and the wider community increasing social cohesion

Hoge Heren, Rotterdam, NL.
Wiel Arets.

+ 5 units per core to maximise dual aspect units
+ Communal amenity space in between towers well orientated improving access to daylight/ sunlight
/ ancillary uses occupies 6 of the 7 sotoreys podium. However treatment of groundfloor provides a permeable and active facade.

Challenges

- It is difficult to integrate the building into the street network.
- Access to daylight and sunlight can be poor to both outdoor communal spaces and in the home.
- There can be privacy issues, where people can be seen in their homes, due to closeness of the built form.
- The form can exacerbate wind.

Benefits

- The form has more opportunities to incorporate mixed uses and achieve active frontages at street level.
- The shared podium can result in a central communal amenity space that improves social integration.
- The form can accommodate high densities without the need for great height.

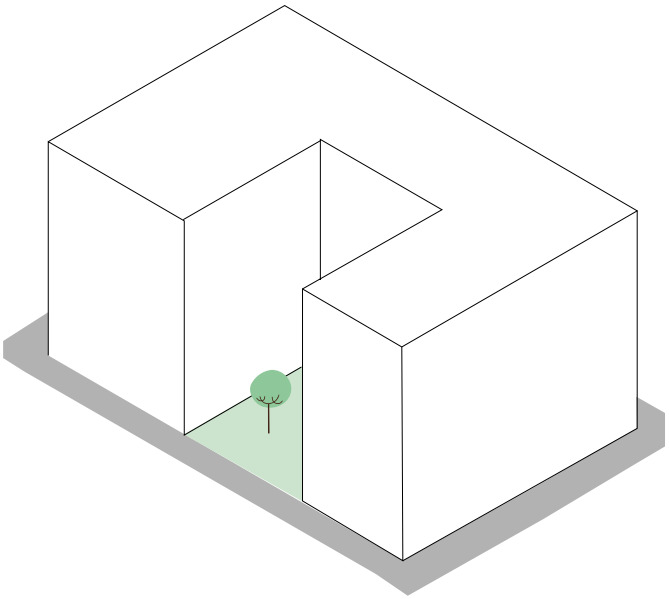
Guidelines to be considered carefully when assessing an interlinked tower:

DG 3 and 4
Given its prominent massing and scale it is important to carefully analye its integration in the street network so it feels part of the city.

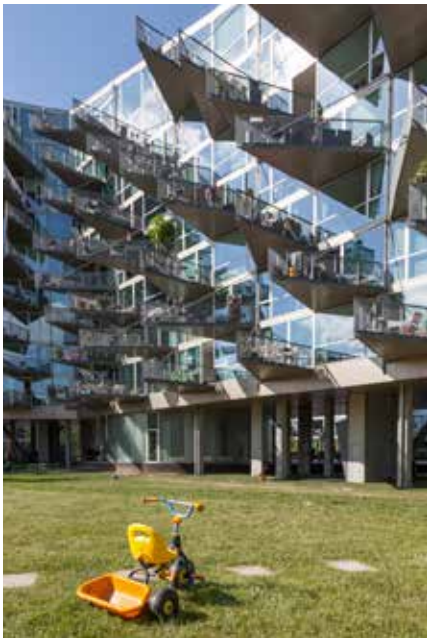
DG 18
This typology needs to carefully address the challenges of daylight sunlight access into the communal amenity spaces through the location and shaping of the taller elements

DG 23 and DG 24
It is important to locate the communal space so it is easily accessible for both taller elements as well as visible from entrances to increase usability

DG 93, 97 and 98
In this typology privacy is usually compromised by the close proximity of the taller elements. The provision of dual aspect homes is key to make sure adequate levels of privacy are achieved in key areas of the home.



The footprint of the extruded block occupies the majority of the site and typically follows the site boundary, extruding directly upwards to form the building. Articulation or outdoor communal spaces are achieved through cutaways in the footprint, creating courtyards, or at the upper floors, creating smaller rooftop spaces.



JDS, Copenhaguen, Denmark.
BIG.

+ orientation and massing secures good levels of daylight/sunlight into the central space
+ orientation of blocks minimises overlook between units and creates views
+circulation spaces have access to natural light and are generous

Abell and Cleland blocks, London, UK.
DSDHA.

+ ground level is permeable allowing views into the courtyard from the street
+ landscape and planting in the communal amenity space provides opportunities for relaxation and protects from excessive overlook
+ private amenity space are well protected from windand well integrated in the facade language

Park Hill Phase 1, Sheffield, UK.
Sheffield council. Refurbishment
Hawkins\Brown and Studio Egret West.

Challenges

- The bulky form can result in amenity impacts on surrounding areas, including loss of privacy and daylight/ sunlight.
- It can be difficult to achieve access to daylight-sunlight in courtyards and in homes at the inner corners.
- The number of homes per core can be high, with long corridors.

Benefits

- If the block includes deck access, it can provide a greater proportion of dual aspect units.
- The form can accommodate high densities without the need for great height.

Guidelines to be considered carefully when assessing a extruded block:

DG 18
To achieve acceptable levels of daylight and sunlight to internal courtyards consider the dimensions and orientation of internal courtyard.

DG 52, 53, 54 and 55
Corridors in this type can be very long. It is important to consider the above design guidelines are met to ensure the good quality of circulation spaces.

SECTION 4

DESIGN RECOMMENDATIONS

1. Around the building
2. Communal spaces
3. Home

1. Around the building

1.1 Quantity

Density implications
Amenity areas

1.2 Urban design

Make streets
Liveable streets
Accessibility

1.3 Public Uses

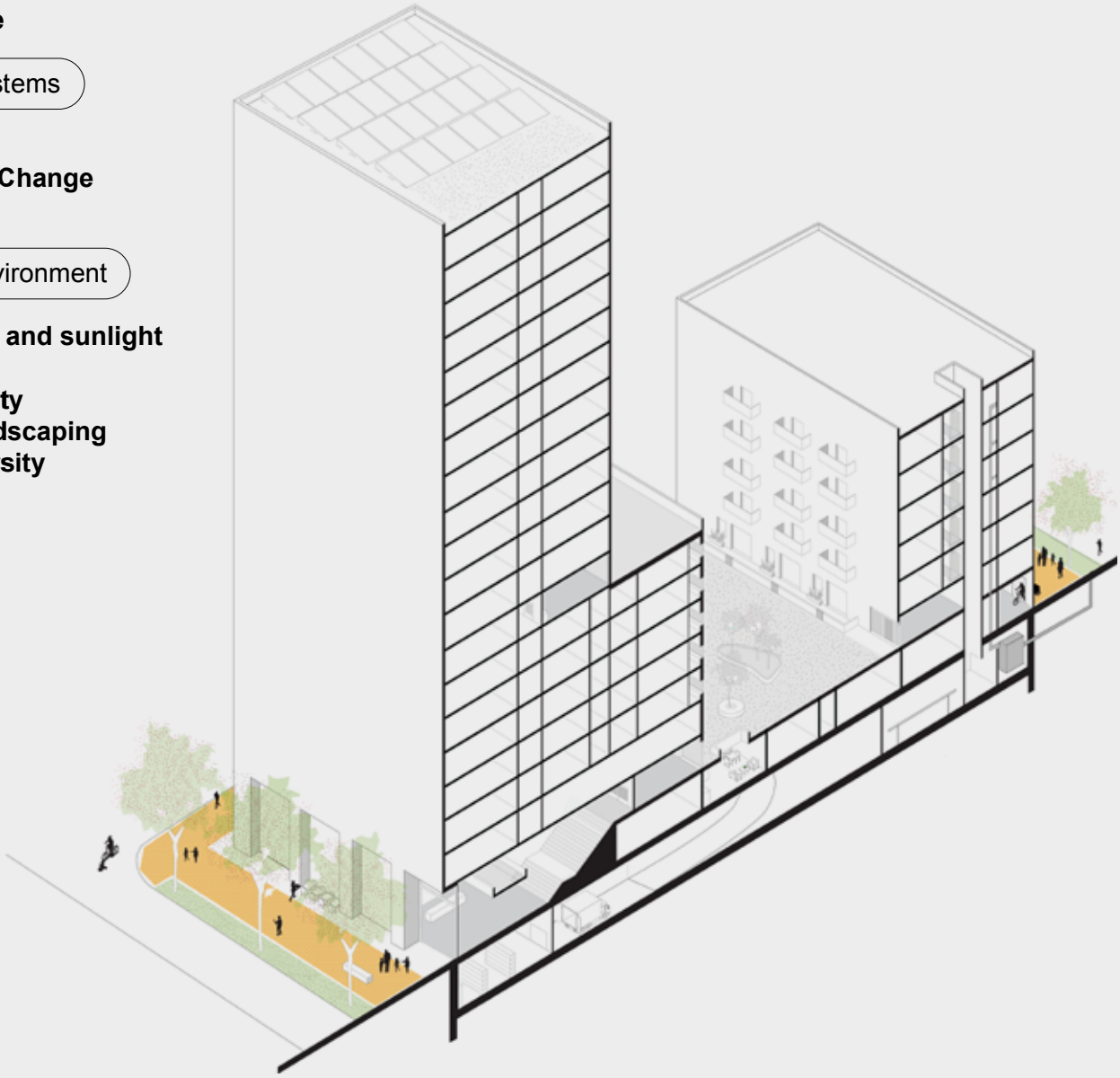
Interface

1.4 Systems

Waste
Climate Change
Water

1.5 Environment

Daylight and sunlight
Wind
Air quality
Soft landscaping
Biodiversity



The area around the building refers to the streets, spaces and uses that are accessible to both residents and people living, working and visiting around the building. It is the spaces that integrate the building and contribute to the neighbourhood.

Children and young people

Children and young people move through the public realm differently and less predictably than adults. Design of the spaces around the building should therefore acknowledge this to create a stimulating home environment and promote independent mobility by mitigating real and/or perceived risk.

Mixed and balanced communities

The design of public realm should promote inclusivity, providing opportunity for residents of new developments to meet and interact with each other as well as with residents. The building form and the network of streets and spaces will assist in the integration of residents with neighbours and the building within its urban context. This is achieved through improving the ease with which residents can navigate around the building and creating attractive welcoming spaces where people gather and cross paths.

Everyday life

Public realm design and ground floor uses need to be designed to work efficiently. Public uses offer residents and the community choice as their needs change whilst fostering social integration and contributing to physical and mental well-being.

Design and finishes of the public realm should take into consideration diverse uses to foresee challenges, for example moving house, movement of the less able and excessive wear from pets.

Buildings as systems

Development should facilitate the transition to the circular economy. Resource flows, such as water and waste, extend beyond the building through connection to existing networks. This point of connection typically occurs at the street level. Where pressures on space are high, good design can help integrate these processes. This reduces resource use, mitigates the impacts of the climate crisis and improves quality of life.

Green spaces with native plant species help adapt and mitigate to climate change through urban greening, biodiversity net gains and management of rainfall and flooding.

Healthy neighbourhoods

The scale and form of high density developments can have significant environmental impacts, including shading and wind tunnels. Orientation of communal spaces following environmental parameters and design mitigation measures can create more comfortable and enjoyable environments.

High density developments can result in a substantial increase in footfall focused around a small number of entrances. This alters and usually increases pedestrian flows in surrounding streets, and a greater demand is placed on surrounding public spaces, facilities and infrastructure.

New high density developments should create opportunities for improved public realm to reduce the impact of additional pressure on public open spaces and streets and to help blend major developments into the surrounding urban fabric. This could include new publicly accessible open spaces, wider footways and other street enhancements.

The quantity of space provided by the development should reflect on the additional pressures derived from the proposed densities. For example, fire evacuation points should be able to accommodate all residents.

Generous public spaces and public realm are multi-functional.

London Plan

Policy D8 Public realm
Development Plans and development proposals should:

A encourage and explore opportunities to create new public realm where appropriate.

B ensure the public realm is well-designed, safe, accessible, inclusive, attractive, well-connected, related to the local and historic context, and easy to understand, service and maintain. Landscape treatment, planting, street furniture and surface materials should be of good quality, fit-for-purpose, durable and sustainable. Lighting, including for advertisements, should be carefully considered and well-designed in order to minimise intrusive lighting infrastructure and reduce light pollution.

Policy D9 Tall buildings
C Development proposals should address the following impacts:

c) entrances, access routes, and ground floor uses should be designed and placed to allow for peak time use and to ensure there is no unacceptable overcrowding or isolation in the surrounding areas

d) it must be demonstrated that the capacity of the area and its transport network is capable of accommodating the quantum of development in terms of access to facilities, services, walking and cycling networks, and public transport for people living or working in the building

Policy S4 Play and Informal Recreation
2) for residential developments, incorporate good-quality, accessible play provision for all ages.

At least 10 square metres of playspace should be provided per child that:

a) provides a stimulating environment.
b) can be accessed safely from the street by children and young people independently.
c) forms an integral part of the surrounding neighbourhood.
d) incorporates trees and/or other forms of greenery.
e) is overlooked to enable passive surveillance.
f) is not segregated by tenure.

London Housing SPG 2016

Communal and Public Open Space
Standard 3 - Development proposals should demonstrate that they comply with the LPAs' open space strategies, ensuring that an audit of surrounding open space is undertaken and that where appropriate, opportunities to help address a deficiency in provision by providing new public open spaces are taken forward in the design process.

Standard 4 - Where communal open space is provided, development proposals should demonstrate that the space:
is overlooked by surrounding development;
is accessible disabled people including people who require level access and wheelchair users;
is designed to take advantage of direct sunlight;
has suitable management arrangements in place.

Tower Hamlets Local Plan

Policy D.DH2 Attractive streets, spaces and public realm
Development is required to contribute to improving and enhancing connectivity, permeability and legibility across the borough, ensuring a well-connected, joined-up and easily accessible street network and wider network of public spaces through:

a. improving connectivity to public transport hubs, town centres, open spaces, water spaces, social and community facilities and surrounding areas
b. maintaining existing public routes or appropriately re-providing access routes during the construction phases of new development, and
c. incorporating the principles of 'secured by design' to improve safety and perception of safety for pedestrians and other users.

Policy D.H3 Housing standards and quality
c. for developments with 10 or more residential units, the minimum communal amenity space (excluding circulation areas, access routes and waste or bike storage) should be 50 square metres for the first 10 units plus a further one square metre for every additional unit thereafter.

Design guideline 1

High density developments should provide good quality public realm that can accommodate increase pedestrian flows and provide spaces for residents and visitors to enjoy.

The area provided should be proportional to the scale and number of new residents.

Design should support the creation of a network of spaces and improve accessibility and legibility.

Public realm is spacious and can comfortably accommodate pedestrian flows.

Mixed and balanced communities

Children and young people

Constrained public realm in front or around high density developments results in spaces becoming a thoroughfare as opposed to a place for resident and the wider community to enjoy.

Constrained space limits movement, play and gathering of children and young people.

Everyday life

Buildings as systems

From case studies, some developments fail to provide good quality public realm that attracts residents from the neighbourhood to meet and interact.

Spaces around the building were often small and piecemeal. Many suffer from overshadowing and a lack of street furniture so are not welcoming. In some instances,activities including play in water features were restricted by building management.

Healthy neighbourhood

Neighbourhood survey results found poor environmental quality prevents them them using outdoor space as it lack appropate levels of daylight/ sunlight and is excessively windy.

Policy links

- Policy D.DH2
- Policy S.DH1
- Policy D.DH2
- Policy D.DH6
- Policy D.DH7

Design guideline 2

Public realm is a publicly accessible spaces such as streets, squares and open spaces.

Communal amenity space is a shared area for residents to foster social interaction between residents and provide opportunities for residents to externalise functions of the home such as relaxing outdoors, social events and exercise.

Play space is dedicated areas an equipment for children and young people.

Space requirements for each of these should be met independently. Location and design of these spaces should support achieving the above objectives.

Courtyards and podiums are encouraged as they clearly define each of these areas, providing a sense of ownership over the communal amenity and play spaces while being integrated into routes around the building.

If courtyards and podiums cannot be achieved and public realm and communal spaces are all provided at the ground floor, design should define these areas through soft thresholds (level change, soft landscaping, etc.) without feeling segregated.

Existing space requirements

Mixed and balanced communities

Children and young people

Everyday life

Most of the case studies show that the way in which communal amenity space was delivered has resulted in the space functioning like public realm. This resulted in fewer opportunities for residents of the building to interact and get to know each other.

Policy links
• Policy S.SG2 • Policy S.DH1

The public realm is an integral part of any neighbourhood. It contributes to a network of public facilities such as parks or the library that become an extension of the home and contribute to a good quality of life.

High density developments become more livable when the public realm is designed and planned to support the specific needs of households with children, young people and the elderly. This provides benefits for all residents. High density living can then become a more desirable and feasible option for all types of households.

Make streets
A straightforward street network with a built form that defines streets makes it easier to navigate.

Liveable streets
Children and young people move around space unpredictably, space in the city should acknowledge this. Public realm should be playable, designing in play from the start.

Accessibility
The external finish and public realm immediately adjacent to entrances should prioritise the pedestrian whilst supporting ease and efficiency of access. Location, features and finishes should consider how the space would be experienced by the less able and in emergency situations.

A car free street with space to gather and sit.

London Plan

Policy D3 Optimising site capacity through the design-led approach

B Development proposals should:
3) be street-based with clearly defined public and private environments

Policy D5 Inclusive design
B Development proposal should achieve the highest standards of accessible and inclusive design. They should:
1) be designed taking into account London's diverse population
2) provide high quality people focused spaces that are designed to facilitate social interaction and inclusion
3) be convenient and welcoming with no disabling barriers, providing independent access without additional undue effort, separation or special treatment
4) be able to be entered, used and exited safely, easily and with dignity for all

Policy D8 Public realm
Development Plans and development proposals should:
F ensure there is a mutually supportive relationship between the space, surrounding buildings and their uses, so that the public realm enhances the amenity and function of buildings and the design of buildings contributes to a vibrant public realm.
G ensure buildings are of a design that activates and defines the public realm, and provides natural surveillance. Consideration should also be given to the local microclimate created by buildings, and the impact of service entrances and facades on the public realm.
J ensure that appropriate shade, shelter, seating and, where possible, areas of direct sunlight are provided, with other microclimatic considerations, including temperature and wind, taken into account in order to encourage people to spend time in a place
L explore opportunities for innovative approaches to improving the public realm such as open street events and Play Streets.

London Housing SPG 2016

Standard 2 - Development proposals should demonstrate:
a How the scheme complements the local network of public spaces, including how it integrates with existing streets and paths.
b How public spaces and pedestrian routes are designed to be overlooked and safe, and blank elevations onto the public realm at ground floor have been avoided.
c For larger developments, how any new public spaces including streets and paths are designed on the basis of an understanding of the planned role and character of these spaces within the local movement network, and how new spaces relate to the local vision and strategy for the area.

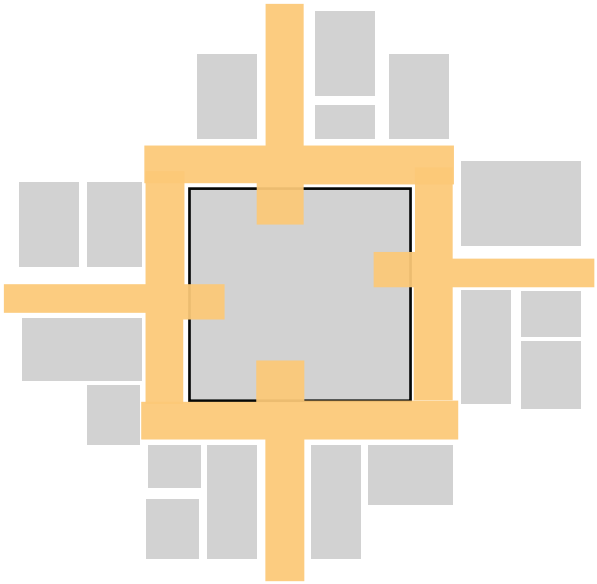
Local Plan

Policy D.DH2 Attractive streets, spaces and public realm
1. Development is required to contribute to improving and enhancing connectivity, permeability and legibility across the borough, ensuring a well-connected, joined-up and easily accessible street network and wider network of public spaces through:
a. Improved connectivity
b.Maintaining existing routes
c. Secure by design

2a. Optimise active frontages
b. Clear definitions and enclosure
c. A range of public spaces
d. Reduce visual clutter
h. High quality materials
i. Public art
j. Maximise soft landscaping
k. Locating entrances in visible, safe and accessible locations
l. Natural surveillance
m. Design out concealment points and leftover spaces
n. Clear sightlines and improving legibility and lighting

Design guideline 3

The building footprint should be informed by a range of factors including the existing street network and the need to create coherent, legible streets.



Built form defines a network of streets and open spaces

The building massing corresponds to existing streets and creates new legible routes.

Children and young people

Connecting into a regular street network makes it easier for children and young people to find their way around the building and safely access neighbouring communal outdoor space, play space and facilities.

Mixed and balanced communities

A legible street network helps tie in the development into the neighbourhood.

Residents of neighbouring areas can easily navigate around the building and access public spaces, fostering social integration.

Policy links
- Policy S.DH1
- Policy S.DH2
- Policy D.DH6

Design guideline 4

The lower part of a building should provide clear definition and enclosure to streets.

This can be achieved with podiums and/or perimeter blocks.

Further Consideration
Where delivering a large scheme with multiple buildings, a masterplan led approach should be used to create a more comprehensive network of streets and spaces.

The built form provides definition and a sense of enclosure to the street and public space.

Mixed and balanced communities

Children and young people

Everyday life

Streets are essential to navigation and public life. Defining them through massing helps create a network of spaces.

Some case studies fail to define streets around the development. This results in leftover space that is underused or uncared for.

Policy links
- Policy S.DH1
- Policy S.DH2
- Policy D.DH6

Design guideline 5

Public realm, including streets, should be designed to prioritise the pedestrians and, where appropriate, cyclists. The public realm should also encourage incidental play.

This could include:
- a connected loop of car free space around the building
- wide pavements
- a buffer zone of at least 1.5m between the road and path that could take the form of planting, SUDs, bike stands and changes in paving material or texture
- street trees
- water features
- high quality public art
- boulders, logs and benches
- security features with dual use such as planting or seating

The street is car free and is designed to encourage play. Furniture and equipment are robust and can be moved.

Children and young people

Children move around space unpredictably and play and explore beyond designated spaces.

Designing in play into the public realm, beyond designated areas, creates a safe and stimulating environment. It also helps mitigate real and/ or perceived risk associated with independent mobility.

When case studies did provide play space in publically accessible areas this was separated by fencing. In

Instances where children played outside of designated areas, such as in a water feature, was restricted by building managers.

Everyday life

Mixed and balanced communities

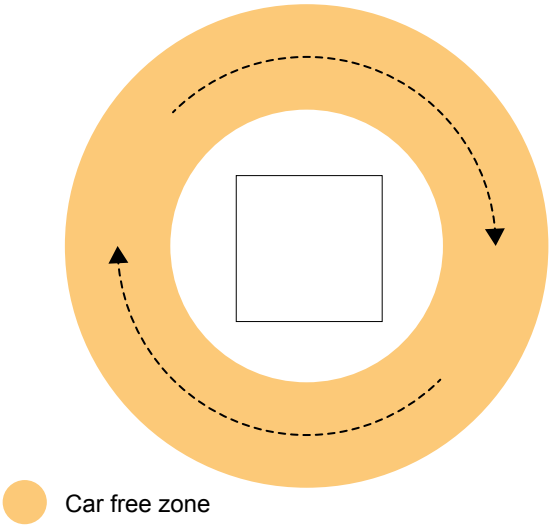
Creating safe and enjoyable public realm encourages activity and active travel.

Walking and cycling encourages residents to cross paths on a regular basis, fostering social integration.

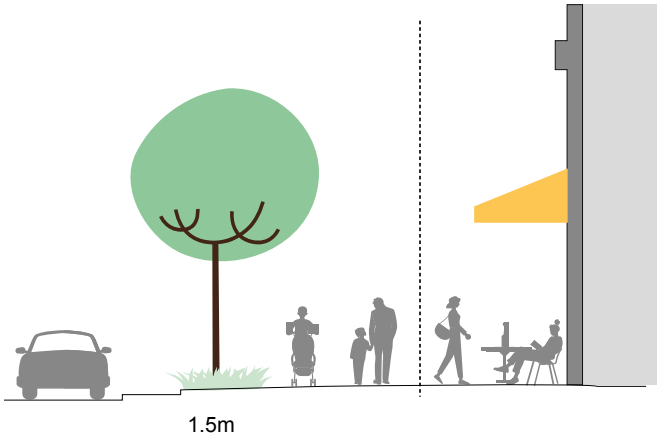
Buildings as systems

Increasing areas of landscaping improves drainage and therefore mitigates against flood risk and improves biodiversity and air quality.

No case studies included sustainable urban drainage.



Ground floor/ landscape plans should indicate a car free zone around the development.



A street section. Pavements should be generous and protected from traffic with a buffer.

Policy links
- Policy S.DH1
- Policy D.DH2
- Policy D.H3
- Policy S.SG2
- Policy D.DH6

Design guideline 6

Sites should include a drop off zone near building entrances. Ideally this should be covered to provide protection during bad weather.

Drop off zone is immediately adjacent to the main entrance and is protected from weather.

Buildings as systems

Everyday life

A drop off space would support travel of the less able by reducing walking distances to enter the building.

It would also provide sufficient space for emergency service vehicles to access the building easily.

Some case studies included a drop off but the orientation of the drop off and entrance obstructed pedestrian legibility.

Policy links
- Policy S.SG2
- Policy D.DH2
- Policy S. DH1

Design guideline 7

Servicing and deliveries should be made within the site curtilage to not obstruct the public highway or cause excessive nuisance.

Ideally in single buildings this should take place within the building envelope. In larger sites or masterplans this should be located away from main pedestrian routes and public spaces.

Further Consideration
Servicing and delivery management plans to identify opportunities for virtual consolidation of deliveries to reduce the number of trips.

Ramp to access the basement is integrated into the building design. A platform lowers to basement level to carry bins up to the street level for collection without obstruction to the public highway or causing clutter.

Buildings as systems

As trends for online shopping continue, high density developments can generate a lot of trips putting pressure on the street network and on the concierge.

Policy links
• Policy D.TR4

The ground floor or street level of a high density development is where the building contributes to public life.

Interface
It serves as the interface between the public realm and the private community within the building.

Uses at the ground floor, that are accessible to both residents and the surrounding neighbourhood, provide public benefit.

Location of public uses such food shops, a nursery or spaces for work create environments where residents of both the building and the neighbourhood cross paths on a regular basis, fostering social integration.

Space can be used by residents of the building and surrounding area. Large windows increase visibility and activate the street.

London Plan

Policy GG1 Building strong and inclusive communities

B seek to ensure changes to the physical environment to achieve an overall positive contribution to London

C provide access to good quality community spaces, services, amenities and infrastructure that accommodate, encourage and strengthen communities, increasing active participation and social integration, and addressing social isolation

Policy D3 Optimising site capacity through the design-led approach

B Development proposals should:
6) provide active frontages and positive reciprocal relationships between what happens inside the buildings and outside in the public realm to generate liveliness and interest

Policy D5 Inclusive design
B Development proposal should achieve the highest standards of accessible and inclusive design. They should:
2) provide high quality people focused spaces that are designed to facilitate social interaction and inclusion

Policy D8 Public realm
Development Plans and development proposals should:
G ensure buildings are of a design that activates and defines the public realm, and provides natural surveillance. Consideration should also be given to the local microclimate created by buildings, and the impact of service entrances and facades on the public realm.

London Housing SPG 2016

Standard 8 - All main entrances to houses, ground floor flats and communal entrance lobbies should be visible, clearly identifiable, and directly accessible from the public realm.

Standard 10 – Active frontages should be maximised and inactive frontages minimised on the ground floor of buildings facing publically accessible space, in order to provide natural surveillance and activity.

Local Plan

Policy S.SG2 Delivering sustainable growth in Tower Hamlets
1. Development will be supported and is considered to contribute towards delivering the Local Plan vision and objectives and to be sustainable where it:
b. shares the benefits of growth, through:
i. contributing to creating healthy environments - encouraging physical activity, promoting good mental and physical wellbeing and reducing environmental factors which can contribute to poor health, including poor air quality.
ii. creating mixed and balanced communities.
iii. delivering tenure-blind developments.
iv. increasing opportunities for social interaction.
v. providing local training or employment opportunities in either, or both, the construction and end use.
vi. delivering social and transport infrastructure and public realm improvements which are inclusive and accessible to all.

Policy D.DH6 Tall Buildings
1. Developments with tall buildings must demonstrate how they will:

h. present a human scale of development at street level and comprise an attractive and legible streetscape that takes into account the use of the public realm for a variety of users and includes active uses at ground floor level

Policy D.DH2 Attractive streets, spaces and public realm
2. Development is also required to positively contribute to the public realm through:
a. optimising active frontages towards public streets and spaces

Design guideline 8

When appropriate, in compliance with Local Plan designations, part of the ground floor should provide uses that are available to both residents of new development and from the surrounding neighbourhood such as shops, restaurants and community facilities.

A community centre improves the contribution of the building to the neighbourhood, activating the ground floor and improving social integration.

Mixed and balanced communities

Most case studies included some form of active use at the ground floor, these were almost all universally praised with many wishing more were available.

However, resident interviews expressed the desire for greater diversity, particularly cheaper food or specialist businesses.

Public uses at the street level including shops, childcare, cafes and community rooms, create more active engagement, vibrancy and street life.

64% of those questioned as part of the neighbourhood survey did not think residents of the neighbouring high density development was part of the community. This varied widely however, from 8-92%. Schemes that provided community uses were felt to be more part of the community.

82% of residents living around the building had never used facilities within it, although 32% of these would be interested.

54% of residents living around a high density building thought it contributed to a lively environment for example by having residential entrances with people coming and going, commercial activity and/or you can see what happens inside the building from the outside.

Policy links
- Policy S.SG2
- Policy D.DH2
- Policy D.DH6

Design guideline 9

Communal residential entrances should be located on main streets or prominent locations.

Articulation and external finishes of the residential entrance should be visually distinctive.

Tiling, signage and lighting is distinctive and creates character.

Everyday life

Children and young people

Distinctive entrances improve orientation and wayfinding around the building, particularly for children and young people, those with poor eye sight and dementia sufferers.

Everyday life

Buildings as systems

23% of residents we spoke to found that visitors and delivery people sometimes struggle to find entrances and their way into the building.

Policy links
• Policy D.DH2 • Policy D.DH6

Design guideline 10

Where appropriate incorporate childcare facilities such as a nursery or crèche at the lower floors accessible to all tenures and neighbouring residents

Design should provide appropriate learning spaces, including external play space. Flexible design should allow for easy conversion to alternative appropriate uses if demand for childcare is low.

Childcare's outdoor space is located on the first floor by taking a 'bite' out of the building.

Mixed and balanced communities

Affordable and accessible child care creates a sense of community, fostering interaction between residents of different ages across the neighbourhood.

Childcare facilities supports working parents, improving equality, productivity and health.

Children and young people

Childcare facilities near the home increase the quality of life for both parents and children.

A location near transit routes reduce commute times. Connection to a good pedestrian network allows parents with children to comfortably walk or cycle to the childcare facility.

Everyday life

Childcare facilities, particularly if co-located with other communal uses or homes for the elderly fosters intergenerational interaction and improves mental and physical wellbeing.

Policy links
• Policy S.DH1 • Policy D.CF3

Design guideline 11

The building at the street level should maximise active frontages. This can be achieved through residential entrances, public uses, and permeable facades. Ancillary uses should not result in dead facades. If these must be located at street level they should be animated through, for example, decorative screens.

Decorative panelling in front of louvres improves the contribution of the building at street level.

Mixed and balanced communities

Everyday life

Buildings as systems

Active frontages provide a more vibrant street life.

They provide overlooking and informal supervision of streets and the public realm improving sense of safety.

54% of residents living around a high density building thought it contributed to a lively environment for example by having residential entrances with people coming and going, commercial activity and/or you can see what happens inside the building from the outside.

Policy links
• Policy D.DH2

Systems refer to the resource flows around a high density development. The high population and climate crisis places significant pressure on the management of resources.

Waste
There are a variety of approaches to waste collection suitable for high density schemes. However all should support the greater separation of waste, be easy to deliver and collect, include sufficient storage to hold waste for the development for a minimum of one week and be well integrated into the building and public realm design.

Waste should not be collected from the public highway. Accordingly, there is strong preference for vacuum and underground storage systems that are better integrated into the public realm and avoid clutter.

The following provides design guidelines for potential waste management options.

Climate change
The public realm and landscaping should create multifunctional green spaces. These should operate as sustainable urban drainage to adapt and mitigate to climate change. Design must also be sufficiently robust as to be playable and encourage biodiversity.

Water
Developments should seek to minimise pressure on the water network as part of steps to adapt and mitigate against climate change.

As population numbers are high, there is scope to contribute to improved health and wellbeing and a reduction in the use of single waste plastics through the provision of public water fountains.

Rooftop design incorporates sustainable urban drainage and a range of habitats

London Plan

Table 3.2 Qualitative design aspects to be addressed in housing developments

Usability and ongoing maintenance recycling and waste disposal, storage and any on site management facilities are convenient in their operation and location, appropriately integrated, and designed to work effectively for residents, management and collection services.

Policy D8 Public realm
Development Plans and development proposals should:
I incorporate green infrastructure such as street trees and other vegetation into the public realm to support rainwater management through sustainable drainage, reduce exposure to air pollution, moderate surface and air temperature and increase biodiversity.
0 ensure the provision and future management of free drinking water at appropriate locations in the new or redeveloped public realm.

Policy SI7 Reducing waste and the circular economy
B Referable applications should promote circular economy outcomes and aim to be net zero-waste.

6) design developments with adequate, flexible, and easily accessible
storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper,
mixed plastics, metals, glass) and food.

London Housing SPG 2016

Standard 22 - Communal refuse and recycling containers, communal bin enclosures and refuse and recycling stores should be easily accessible to all residents including children and wheelchair users, and located on a hard, level surface. The location should satisfy local requirements for waste collection. Refuse and recycling stores within buildings should be located to limit the nuisance caused by noise and smells and maintained to a high hygiene standard.

Standard 23 - Storage facilities for waste and recycling containers should be provided in accordance with local authority requirements and meeting at least British Standard BS5906:2005 Code of Practice for waste management in Buildings.

Standard 34 (and Policy 5.3) - All homes should satisfy London Plan policy on sustainable design and construction and make the fullest contribution to the mitigation of and adaptation to climate change.

Local Plan

Policy D.MW3 Waste collection facilities in new development
2. New major residential developments must incorporate high quality on-site waste collection systems that do not include traditional methods of storage and collection and are compatible with our waste collection methods

Policy D.ES5 Sustainable drainage
1. Development is required to reduce the risk of surface water flooding, through demonstrating how it reduces the amount of water run-off and discharge from the site through the use of appropriate water reuse and sustainable drainage systems techniques.
2. Major development is required to submit a drainage strategy which should demonstrate that surface water will be controlled as near to its source as possible in line with the sustainable drainage systems hierarchy.

Policy D.DH2 Attractive streets, spaces and public realm
g. integrating refuse and recycling facilities within the building envelope

Design guideline 12

If underground bin systems are proposed:

- Intake hatches should be adjacent to residential entrances.
- Sufficient space should be provided surrounding containers for manoeuvre of specialist vehicles including consideration of tree canopies.
- Locate away from outdoor amenity space and outdoor play space.
- Treatment of underground store to be integrated into public realm design, the top of the underground store should be level, materials should be distinct but complementary to the public realm.
- Capacity should be based on waste capacity guidelines; there should be sufficient storage to hold waste for the development for a minimum of one week.
- Incorporate clear signage on the bins.

Underground bin system integrated into the public realm with clear signage.

Everyday life

Underground bin collection systems have already been implemented in Tower Hamlets as part of the Aberfeldy Regeneration and the retrofit of Teviot Estate.

Underground bin systems reduce clutter in the public realm, improve the ease of access to refuse stores and encourage residents to use the refuse facilities correctly reducing costs of waste management and improving recycling rates.

Underground bins are easier to use by residents in wheelchairs or young children.

Policy links
• Policy D.MW3

Design guideline 13

If a vacuum system is proposed:

- Intake hatches adjacent to residential entrances.
- Intake hatches in waste rooms at each floor
- Incorporate clear signage on the bins.
- Capacity should be based on waste capacity guidelines; there should be sufficient storage to hold waste for the development for a minimum of one week.
- Paving surrounding the intake hatches correspond with the existing public realm.

Envac System integrated into the public realm using similar material finishes.

Everyday life

Vacuum waste systems reduce clutter in the public realm, improve the ease of access to refuse stores, encourage residents to use the refuse facilities correctly, reducing costs of waste management and improving recycling rates and reduces conflict between waste collection vehicles and residents in the public realm.

Vacuum hatches are easier to use by residents in wheelchairs or young children.

Policy links
- Policy D.MW3

Design guideline 14

Traditional waste systems are not supported by the Local Plan and will be resisted. If following supporting evidence and confirmation by the Tower Hamlets Waste Team they are proposed:

- Waste collection should not obstruct the public highway.
- Specialist space should be incorporated preferably at the street level within the building envelope for temporary storage of bins for collection.

Euro Bins separate from the public highway and public realm.

Buildings as systems

8/9 of case studies use traditional waste collection systems. Here, bins are stored in the basement and carried outside the building for collection.

This results in obstruction, clutter in the public realm and untidiness.

Some interviewees identified issue with smell where many bins are placed along pedestrian routes in the neighbourhood.

Policy links
• Policy D.MW3

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Design guideline 15

Approach to landscaping and public realm should be multifunctional. It should incorporate sustainable urban drainage, increase biodiversity and urban greening and be robust enough to be playable.

Further Consideration
See GLA's Sustainable Design and Construction SPD and GLA's Play and Informal Recreation SPD.

See CIRIA guidance on the planning, design, construction, operation and maintenance of SuDS.

Public realm incorporates a biodiverse rain garden, water retention and detention features and pervious surfaces. This is integrated with playable public art.

Children and young people

Robust, multifunctional green infrastructure can create environments suitable for play, extending the playable area of a development.

Access to nature supports childhood development and increases the likelihood of other pro-environmental behaviours.

Only 29% of residents we spoke to who live around the building use spaces around the building with their children for play, rest or exercising.

Everyday life

Green infrastructure and biodiversity creates attractive environments that are beneficial for mental and physical well-being.

Buildings as systems

Sustainable urban drainage can mitigate and increase resilience to potential flood events and increase biodiversity.

Public space incorporates a basketball, skateboarding features and seating but functions as flood water collection pools in storm conditions.

SUDs detenuation basin incorporated into public realm.

Healthy neighbourhood

Water and greening can counter the urban heat island effect.

Policy links

- Policy S.DH1
- Policy S.DH2
- Policy D.OWS3
- Policy D.ES3
- Policy D.ES4
- Policy D.ES5
- Policy D.ES6

Design guideline 16

London Plan Policy SL13 Sustainable Drainage

Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:

1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)

University building collects and treats rainwater for re-use for non-potable water applications such as toilet flushing.

Buildings as systems

Use of collected rainwater reduces demand and therefore pressure on water resources.

Policy links
• Policy D.ES6

Design guideline 17

London Plan Policy D8 Public Realm

Development Plans and development proposals should:

ensure the provision and future management of free drinking water at appropriate locations in the new or redeveloped public realm.

Public water fountain

Everyday life

Drinking fountains support health and well being.

Buildings as systems

Drinking fountains reduce unnecessary plastic waste.

Policy links
• Key objective 2-8

The massing, orientation and design of the building and the location of public spaces contributes to a high quality urban microclimate promoting comfort and well-being. It should be designed to achieve good levels of solar access, wind and thermal comfort, whilst reducing exposure to areas of poor air quality. and high levels of air quality. Resilience to climate change and biodiversity improvements should also be key design drivers.

Daylight and sunlight
Direct sunlight in the spaces around buildings is important to support well-being, outdoor activities, children's play, support healthy planting, reduce humidity and dampness and generally improve the appearance of external areas.

Wind
High velocity winds in urban corridors or downdraughts generated by high rise buildings can significantly affect pedestrian comfort.

Air quality
Massing and location of outdoor spaces should prioritise the health of residents by reducing exposure to areas of poor air quality.

Urban greening and biodiversity
A significant increase in soft landscaping is necessary to adapt to the impacts of climate change including extreme temperatures, the urban heat island effect and flood events. Soft landscaping also improves improves urban spaces contribution to biodiversity and mental wellbeing.

Biodiversity net gains can be met in various ways, however tall buildings in particular can play a role in supporting specific species such as Peregrine falcons and other priority species identified in the Tower Hamlets Biodiversity Action Plan.

Rooftop with extensive biodiverse landscaping

London Plan

Policy D7 Public realm
I incorporate green infrastructure such as street trees and other vegetation into the public realm to support rainwater management through sustainable drainage, reduce exposure to air pollution, moderate surface and air temperature and increase biodiversity.

J ensure that appropriate shade, shelter, seating and, where possible, areas of direct sunlight are provided, with other microclimatic considerations, including temperature and wind, taken into account in order to encourage people to spend time in a place.

Policy D3 Optimising site capacity through the design-led approach

B Development proposals should:
9) help prevent or mitigate the impacts of noise and poor air quality
10) achieve indoor and outdoor environments that are comfortable and inviting for people to use

Policy G5 Urban greening
A Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as highquality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.

Policy G6 Biodiversity and access to nature
D Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.

London Housing SPG 2016

Standard 33 (and policy 7.14) - Minimise increased exposure to existing poor air quality and make provision to address local problems of air quality : be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as Air Quality Management Areas (AQMAs).

Standard 39 (and Policies 5.11 & 5.13) New development should incorporate Sustainable Urban Drainage Systems and green roofs where practical with the aim of achieving a Greenfield run-off rate, increasing bio-diversity and improving water quality.

Surface water run-off is to be managed as close to source as possible.
Standard 40 (and Policy 7.19) - The design and layout of new residential development should avoid areas of ecological value and seek to enhance the ecological capital of the area in accordance with GLA best practice guidance on biodiversity and nature conservation.

Local Plan

Policy D.DH6 Tall Buildings
1. Developments with tall buildings must demonstrate how they will:
j. demonstrate that the development does not adversely impact on the microclimate and amenity of the application site and the surrounding area

Policy D.ES10 Overheating
1. New development is required to ensure that buildings (both internally and externally) and the spaces around them are designed to avoid overheating and excessive heat generation, while minimising the need for internal air conditioning systems.

Policy D.ES2 Air Quality
4. New build developments which propose to provide any private, communal, publicly accessible open space or child play space in areas of sub-standard air quality are required to demonstrate that they have considered the positioning and design of the open space to reduce exposure of future users to air pollution.

Policy D.ES3 Urban greening and biodiversity

Design guideline 18

The development of typologies and massing should ensure adequate levels of daylight and sunlight to amenity spaces and public realm (Local Plan D.DH8).

Dependent on context and typology this could be achieved through:

- locating taller elements towards the north of the site or block
- stepping massing to maximise light into a courtyard
- providing sufficient distances between blocks and within courtyards

Existing standards
External areas should achieve BRE 209 guidance for solar access, with a minimum of 2 hours of sunlight over half the area on the equinox.

Healthy neighbourhoods

Tall buildings can significantly overshadow external spaces around buildings and public realm. Solar access can be improved by locating taller buildings to the north side of external spaces requiring good access to sunlight, or avoiding continuous obstructions with the inclusion of 'breaks' between buildings.

20% of residents we spoke to who live around high density buildings do not think the external environment around them is pleasant. 35% think it has blocked sunlight.

Policy links
• Policy D.DH8

Design guideline 19

Buildings over 30 metres in height and/or substantially taller than the surrounding area and/or over 150 units must be tested against the industry standard Lawson criteria in relation to wind (Local Plan D.DH6).

These might require the need for mitigation measures. Dependant on context and typology this could be achieved through:

- offset taller elements so the lower element (podium or courtyard block) serves to deflect wind
- when wind mitigation cannot be achieved through the building massing recess entrances or use canopies to deflect wind from entrances or adjacent open spaces, the design should be integrated into the building language and materiality or consider recess
- if wind cannot be deflected and impacts public realm, podiums or rooftops use trees or street furniture such as a pergola or large planter

Existing standards
Mean wind speeds pf 0-2m/s are acceptable for seating areas, 2-6 m/s for entrances to buildings and 6-8m/s for public footpaths and public spaces.

Healthy neighbourhoods

The massing of building and street should follow best practice principles defined within the BRE 380 Guidance, and supported by wind modelling studies.

Tall buildings can create significant dowdraught and localised high windspeeds at ground levels. This can significantly affect pedestrian comfort and safety. The effects must be assessed with an appropriate modelling technique and mitigated.

20% of residents we spoke to who live around high density buildings do not think the external environment around them is pleasant. 32% feel it has worsened wind.

Policy links
- Policy D.DH8
- Policy S.DH1
- Policy D.DH6

Design guideline 20

Local Plan Policy D.ES2

New build developments which propose to provide any private, communal, publicly accessible open space or child play space in areas of sub-standard air quality are required to demonstrate that they have considered the positioning and design of the open space to reduce exposure of future users to air pollution.

External cladding has anti-microbial and de-polluting properties to filter the surrounding air.

Healthy neighbourhoods

Across the borough 7% of all deaths in people over 30 are attributed to particulate air pollution.

From interviews, residents near main roads were aware of the impacts on their health and thought mitigation measures such as winter gardens and ventilation would be beneficial.

An ambient breeze can also significantly help with flushing air pollutants. This needs to be promoted through optimisation of the building massing and orientation.

Policy links
- Policy D.DH8
- Policy D.DH6
- Policy S.DH1
- Policy D.ES2

Design guideline 21

High density developments and tall buildings should encourage biodiversity through the provision of bird and bat boxes and habitat features for insects.

Bat boxes should face south or west, be above 3 meters high but not the upper floors of a tall building.
Bird boxes should generally face north or east, be above 3 meters high but not the upper floors of a tall building.
Planters or biodiverse roofs could include piles of stones, logs or specially designed insect ‘hotels’.

More specific needs require:
Swift boxes should be above 5 metres high with uncluttered airspace in front of them.
Artificial house martin nests should be located under an overhang.
Black redstart nest boxes should be located close to biodiverse roofs.
Peregrine boxes should be on the top of the tallest building around and located where access for maintenance between March and August is unlikely to be required.

Buildings as systems

Healthy neighbourhoods

Many residents were aware of biodiversity loss and complained their neighbourhoods felt like a concrete jungle.

Supporting biodiversity in the inner city requires creating a varied network of habitats. Tall building typologies in particular offer opportunities to support specific species such as Peregrine falcons that are outlined as priority species in the Tower Hamlets Biodiversity Action Plan.

Policy links
• Policy D.DH8 • Policy D.ES3

Design guideline 22

Design should maximise soft landscaping to increase biodiversity, improve green infrastructure and the urban greening factor, address the urban heat island effect and support physical and mental wellbeing.

This should include:
- Varied, climate resilient, planting with a range of nectar rich perennials that flower throughout the year.
- Drought and wind tolerant species at the upper floors.
- Biodiverse or bio-solar green roofs.
- Avoid the use of astro-turf.
- Planting selected to not obstruct winter sunlight.

Innovative approach to biodiversity and urban greening are encouraged.
This may include:
- Planters incorporated into the design of facades.
- Planters incorporated into street furniture such as seating, cycle parking and hostile vehicle mitigation measures.
- Green walls

Further Consideration
Plant species list - RHS Perfect for Pollinators London Biodiversity Partnership - Design for Biodiversity

Further Consideration
Biodiverse and green roofs - Substrate should range in depth from 80mm and 120mm to give varied topography and hence microclimates. They should be sparsely sown and/or plug-planted with appropriate wild flowers. Piles of stones or logs provide additional habitats. If a roof is overlooked, habitat features can be arranged in interesting patterns.

Further Consideration
Green walls achieved by planting climber species are easier to maintain with less irrigation requirements than modular green wall systems.

Healthy neighbourhoods

Buildings as systems

A high proportion of Tower Hamlets is deficient in access to open space and many residents interviewed complained that their neighbourhood lacked access to green spaces and wanted more greening and trees, a view now likely increased as a result of COVID-19 lockdown.

Biodiverse green spaces have wide ranging benefits including addressing species loss, adapting and mitigating to climate change such as drought and flood events and supporting the wellbeing of residents.

Policy links
• Policy D.DH8 • Policy D.ES3

Deciduous trees over seating provide shaded spaces to rest in the public realm.

Deciduous trees provide privacy and improve outlook but do not obstruct winter sunlight.

2. Communal spaces

2.1 Outdoor

Primary space
Secondary space
Design

2.2 Play

Design
Location

2.3 Indoor

Location
Design
Facilities

2.4 Circulation

Entrances
Lobbies
Lifts and stairs
Corridors
Doors

2.5 Systems

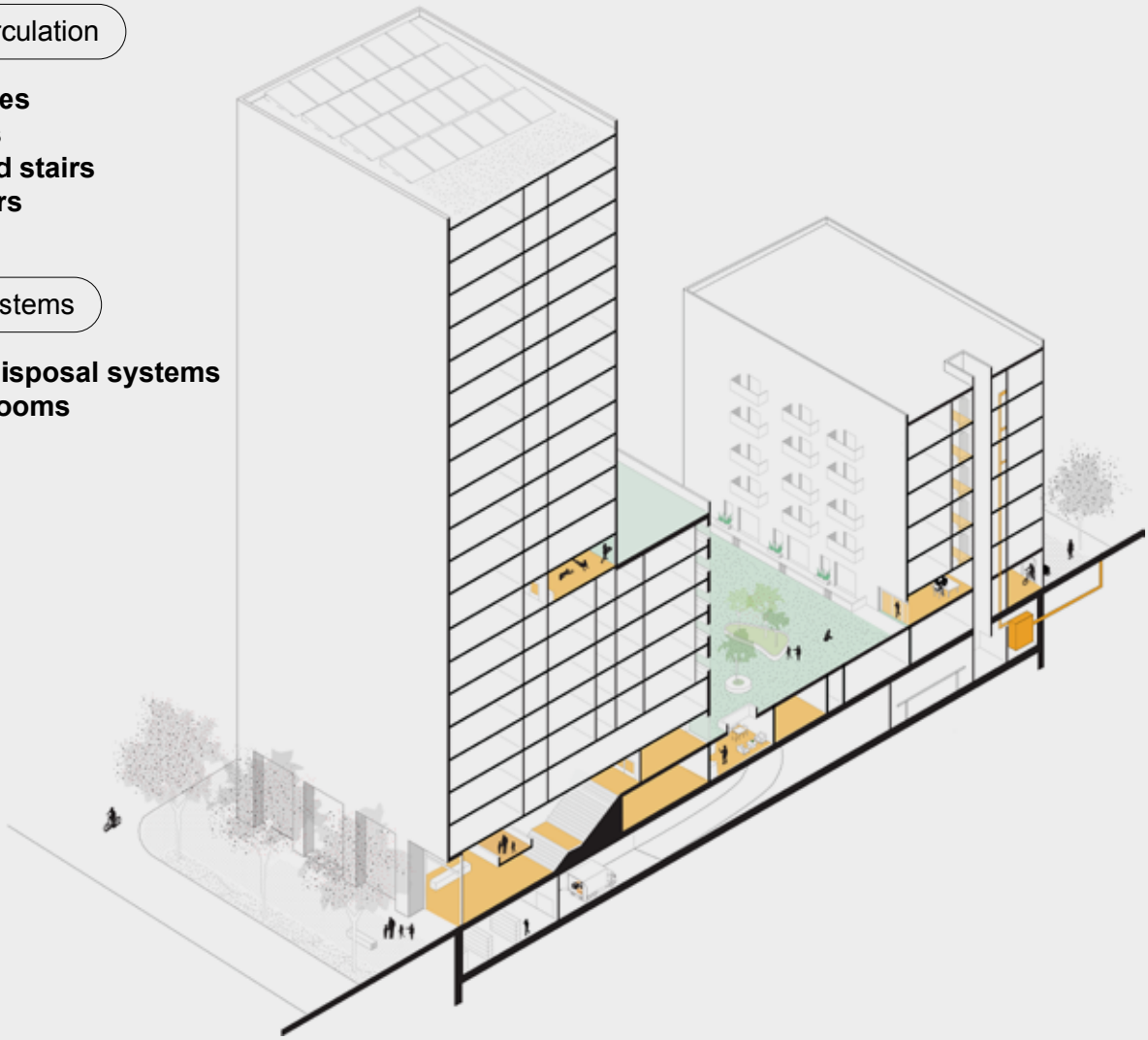
Waste disposal systems
Waste rooms
Water
Energy

2.6 Cycling

Cycle stores

2.7 Staff facilities

Staff and contractors
Deliveries



Communal space including play space, communal amenity space and building circulation are key to delivering a high quality of life at high density. As there is greater pressure on space in these environments they should be multi-functional but this should not result in double counting. For example, communal amenity space should be playable but this should not detract from the spaces primary role or count towards play space.

Children and young people

Child friendly environments are not restricted to the home, school or play space. Play occurs everywhere and is an essential part of development. Although specific play areas should be provided, the design and layout of communal and circulation spaces around the building should provide the right environment for play to occur naturally and families to move around with ease. Design should encourage independence, so independent movement and play becomes a regular feature in the lives of children living at high density.

Mixed and balanced communities

In order to facilitate integration and build balanced communities, high density development should provide spaces to meet.

These should include formal spaces such as outdoor communal amenity space and play space and programmed events. In addition, circulation spaces in and around the building should foster regular informal interaction.

Research on nine high density case studies across the borough found corridors and entrance lobbies were the primary location where residents meet and get to know each other. Design should therefore acknowledge and support this.

Everyday life

Existing London and Local Plan policies require that communal spaces support social activity and meet changing and diverse needs. Research finds that circulation spaces, particularly the lobby and corridors, have an important role in residents well-being. Access to nature is also beneficial for mental and physical well-being.

Needs of residents change over time, uses, design and specification should therefore consider potentialities from the offset to avoid later upgrade costs, resident stress or the need to move.

Buildings as systems

The design of communal spaces, particularly circulation spaces around the building can help or hinder the effective and regular use of building systems and services. In particular, waste disposal and cycling rates. The design of waste systems and cycle infrastructure should therefore be future proof and offer flexibility to support changing needs.

High Density Developments, particularly Tall Buildings, also require more extensive management to deal with the large population and their various needs. Good design to support building managers and staff will again increase efficiency, reduce costs and foster a sense of community.

Healthy neighbourhood

Indoor and outdoor communal spaces must perform to high environmental standards to support the health of residents, adapt and mitigate to climate change and to create attractive and comfortable spaces residents wish to linger. This is achieved through the orientation and massing of the building as well as the approach to landscaping and indoor spaces.

Time outside is positive for both physical and mental well-being. Development should contribute to the creation of healthy outdoor spaces.

Quantity
Quantity refers to the area of communal space and how they are distributed around the building. To foster social integration these should be shared between all residents.

Primary space
Space required for communal amenity at high density is high, meeting this should drive the development of the massing. A centralised main communal space is most well used and effective for social integration, management and maintenance. This would be the primary amenity space.

Secondary space
Smaller, secondary, communal spaces can support more regular interaction between residents, aiding familiarity and opportunities for interaction and friendship.

Design
Landscaping must be multi-functional. Design should foster social interaction but not impede on privacy. It should encourage physical activity but also serve as a place of rest.
Planting and green spaces improve biodiversity and resistance to impacts of climate change.

If high density is to become a meaningful housing option for more people it should acknowledge pet ownership. Considered design can make environments more comfortable, reduce ware and tear and avoid conflict between different residents.

Environment
Environmental policies for outdoor spaces are addressed in section 1.5.

Spacious, biodiverse, communal amenity space.

London Plan

Policy D6 Housing quality and standards
3.6.6 Housing developments should be designed to maximise tenure integration

London Housing SPG 2016

Standard 4 - Where communal open space is provided, development proposals should demonstrate that the space: is overlooked by surrounding development; is accessible disabled people including people who require level access and wheelchair users; is designed to take advantage of direct sunlight; has suitable management arrangements in place.

Standard 5 (and Policy 3.6) – For developments with an estimated occupancy of ten children or more, development proposals should make appropriate play provision in accordance with the Mayor's Play and Informal Recreation SPG.

Tower Hamlets Local Plan

Policy D.H3 Housing standards and quality
c. for developments with 10 or more residential units, the minimum communal amenity space (excluding circulation areas, access routes and waste or bike storage) should be 50 square metres for the first 10 units plus a further one square metres for every additional unit thereafter.

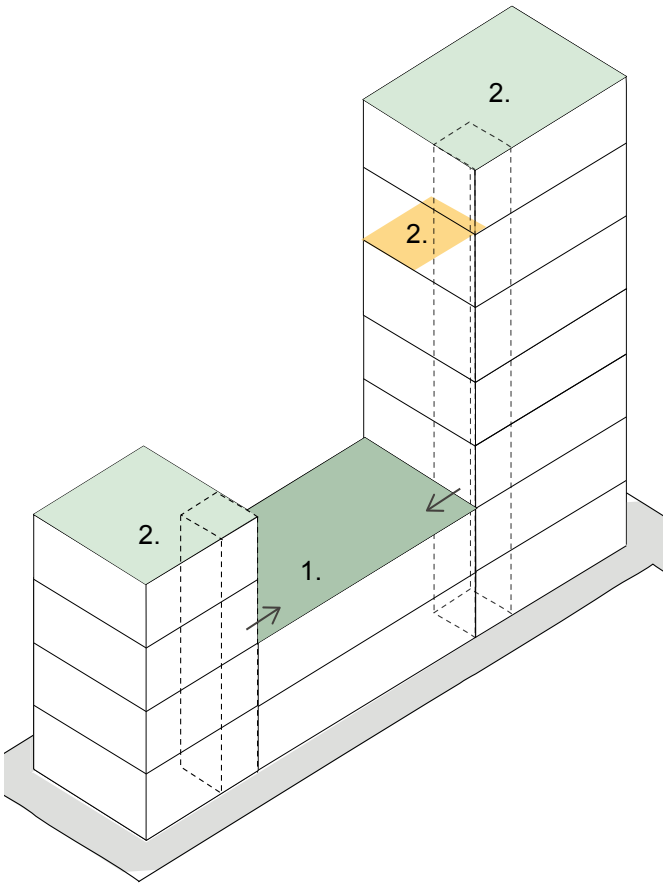
Design guideline 23

All communal amenity space should be shared between different housing tenures. Where this is not possible, the majority of communal amenity space must still be shared.

To avoid the burden of shared communal space falling on one tenure, this space should be provided proportionately to the number of homes and number of residents each space serves. It should be easily accessible by all housing tenures.

The shared space constitutes the primary communal amenity space. Other communal amenity spaces constitute the secondary communal amenity space.

Further Consideration
Events to foster the social integration of residents and create a sense of belonging should be programmed in communal amenity spaces. These must consider different faiths, cultures and finances to avoid excluding particular groups.



Breakdown of communal amenity spaces.
1. Primary communal amenity space.
2. Secondary communal amenity space.

Mixed and balanced communities

38% of residents we spoke to state their building lacks a sense of community. This rose to 53% for owner occupiers and 64% for those on higher incomes.

Interviews with residents living in the affordable section of a building particularly felt excluded when they could not access certain spaces. This reinforced inequality.

Shared facilities avoids establishing a hierarchy between residents of different tenures. They encourage residents of different tenures and blocks to cross paths on a regular basis.

Mixed and balanced communities

Programming events in communal amenity spaces increases opportunities for different residents to interact.

From interviews a number of case studies did host resident events but these could be exclusionary due to the focus on alcohol or cost.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy S. DH6

Design guideline 24

The primary communal amenity space should be accessed from main routes from residential entrances to the home. It must be well overlooked and be directly adjacent and visible from building lobbies.

Indoor and outdoor communal spaces are accessed off routes to the home.

Mixed and balanced communities

Good level overlooking provides natural surveillance and increases the sense of safety by reducing the likelihood of anti-social behaviour.

From interviews, when communal amenity space was provided it was not well used if it was difficult to access. Difficult includes convoluted routes, distance and no visibility.

Space where homes faced or opened out on the communal amenity space were more used.

Everyday life

Direct access from the lobby, rather than convoluted routes, makes accessing communal amenity space a more regular part of everyday life.

Being able to see the space and view what is going on reduces stress, particularly for dementia sufferers and those with learning difficulties.

Buildings as systems

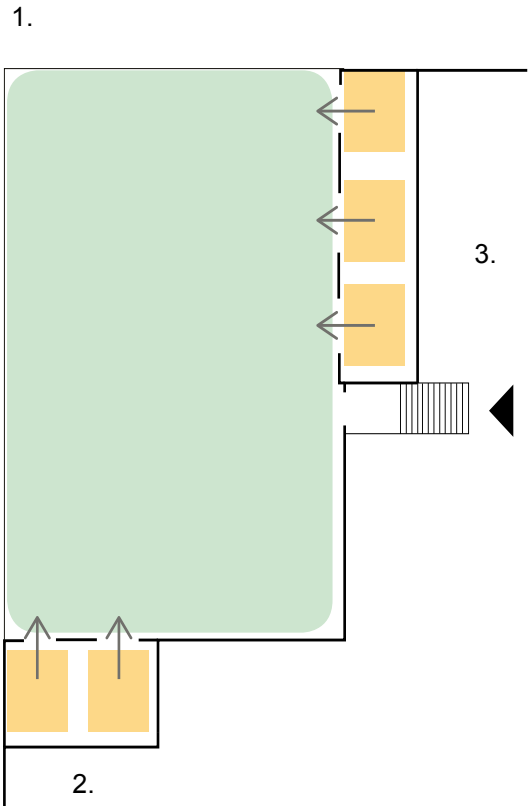
Good visibility improves ease of management, reducing management costs and instances of anti-social behaviour.

Policy links
• Policy D.H3

Design guideline 25

The majority of the primary amenity space is to be provided outdoors.

If some primary amenity space is indoors, it would be preferable that the space open out onto the outdoor primary amenity space to promote use and activation of the spaces.



Indoor communal rooms front and open out onto the outdoor primary communal space

Communal spaces are near to the building lobby for views out onto the space, overlooking and ease of management.

Mixed and balanced communities

Children and young people

Everyday life

The close proximity of a mix of uses increases opportunities for people to meet and interact.

It also increases the visibility of various activities opening up opportunities to different residents. This would be particularly beneficial if more time is spent in the home.

The flow of people and passive surveillance increases safety.

Everyday life

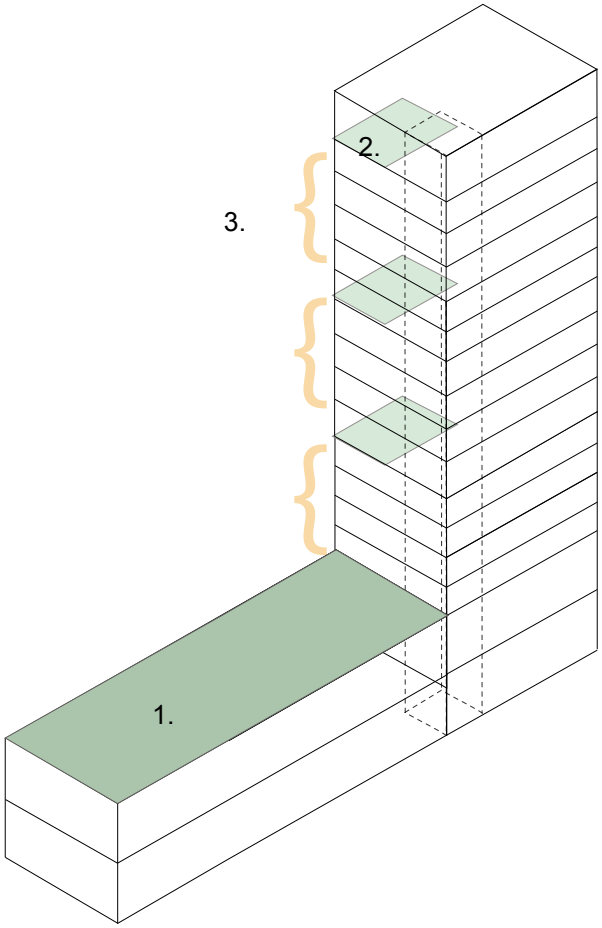
COVID-19 lockdown highlighted the importance of access to green outdoor spaces for health and wellbeng.

Policy links
• Policy D.H3

Design guideline 26

If secondary communal amenity spaces are provided these should be distributed across the building to support more regular interaction between smaller groups of residents, aiding familiarity and opportunities for interaction and friendship.

Secondary amenity spaces can be outdoor or indoor spaces.



Secondary communal amenity space are distributed around the building.
1. Primary communal amenity space.
2. Secondary communal amenity space.
3. Subdivision of floors with access to each secondary communal amenity space.

Mixed and balanced communities

Familiarity and sense of community reduces as population increases.

To ensure use and sense of belonging some communal amenity spaces and facilities could be distributed around the building.

Passive surveillance of roof top spaces reduce the likelihood of anti-social behaviour.

Policy links
• Policy D.H3

Design guideline 27

Where possible, there should be some homes directly facing outdoor amenity space and outdoor play space. These should have direct access onto the space.

Private amenity space in the form of a terrace between the communal space and the home provides privacy and forms a threshold. The boundary treatment should be permeable.

Terraces front onto communal amenity space.

Children and young people

Direct access to the communal amenity space increases the opportunities for children to play and increases independent mobility.

Only 22% of children played unsupervised across the case studies, however level of independence increased in schemes were the home opened directly onto play space.

Mixed and balanced communities

Everyday life

Communal outdoor amenity spaces with active frontages feel more vibrant and experience greater passive surveillance, improving safety.

A defensible space promotes a sense of ownership but also creates a buffer that improves the sense of privacy and retreat in the home.

Policy links
• Policy D.H3

Design guideline 28

The design of part of the outdoor amenity area should promote physical activity for example through the use of outdoor gym equipment and/or gardening.

If outdoor gym equipment is provided, this should:
- be integrated into the landscaping.
- accessible to all tenures.
- include a diverse range of equipment for all levels.
- running routes and tracks separate from other movement flows.

If communal gardening is provided, this should:
- consist of beds that are easy to install, move or remove according to demand.
- be adjacent to a water point, bin and seating. include access to designated storage space.
- be managed by residents.

Other approaches for the design of outdoor amenity areas that encourage good health will be encouraged.

Food growing in communal spaces.

Mixed and balanced communities

Multifunctional spaces encourage use by a variety of people fostering integration between residents of various ages and backgrounds.

Case studies show that areas where infrastructure such as allotments and gym equipment were provided where more frequently used.

Everyday life

In 2016/2017 22.8% of Tower Hamlets residents were classified as physically inactive.

Residents' interviews frequently raise concern over lack of space. They often would have to travel far from their home so activity was not part of their everyday life.

Gardening and regular exercise helps improve physical and mental health and fosters socialisation. It provides opportunities for contact with nature to learn about food growing and healthy diet.

Regular contact with nature is also associated with other environmentally friendly behaviour.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy D.SG3

Design guideline 29

The design of part of the outdoor amenity areas should promote rest and relaxation.

This should include:
- Seating integrated into the landscaping. Half of the seating should be suitable for those with restricted mobility.
- Native planting that includes interesting texture, colour and scent.
- Design that incorporates open spaces to encourage informal uses.
- Water features where appropriate.
- Features that provide shade in the summer months such as a pergola or planting where appropriate.

Seating and water features create an area of respite.

Mixed and balanced communities

Children and young people

Everyday life

Contact with nature serves as an educational tool, It is associated with the development of more responsible citizens who exhibit more environmentally friendly behaviour.

66% of residents we spoke to thought their courtyard was attractive with 63% stating it was pleasant to look down onto the courtyard. Rates were lower for roof terraces. These outdoor spaces serve as respite from the high density so should work harder to achieve this.

38% of residents felt there was limited access to outdoor space.

Increased time outside near blue and green infrastructure and in contact with nature improves mental and physical wellbeing

Buildings as systems

Healthy neighbourhood

Native and natural planting improves biodiversity contributions and is part of biodiversity net gain targets. Green and blue spaces counter the urban heat island effect.

Large areas of soft landscaping serves as respite during hot temperatures. This is even more essential as temperatures rise due to the impacts of the climate crisis.

Policy links
• Policy S.ES1 • Policy D.ES3

Further Consideration
Areas of more use, such as adjacent to entrances and along main pathways, should be robust and pet friendly. For example, paw friendly materal including grass and mulch and urine resistant plant species.

Materials resist showing signs of wear and tear.

Everyday life

Buildings as systems

Qualitative findings from resident interviews found that many tenancy agreements and leases do not allow for pets but that rules are circumnavigated and rarely upheld.

Considered design, particularly outside main entrances and along routes avoids wear and tear and reduces instances of conflict between different residents.

Policy links
• Policy D.DH2

Design guideline 30

Bins, with space for recycling and residual waste, should be provided and integrated into the landscape design.

The bin is integrated into the bench design, reducing clutter.

Everyday life

Buildings as systems

Bins encourage residents to clean up after themselves and their pets, reducing maintenance requirements.

Policy links
• Policy D.DH2

Design guideline 31

Outdoor space should incorporate composting. This could include:

- In vessel composting.
- Anaerobic digestors.
- Aerobic biodigestors.

Further Consideration
If possible, there could be a network of buildings that manage food waste collectively. This is more efficient, creating economies of scale.

Compost bin on residential roof top in Sydney.

Buildings as systems

Composting facilitates the transition to the circular economy, retaining nutrients in use for longer. This reduces waste sent to landfill and the release of greenhouse gas emissions at the landfill site.

Compost can be used to maintain the health of planting, reducing the need to buy in fertiliser.

Policy links

- Policy D.MW3

27% of residents surveyed across the nine case studies lived with children, defined as under 12, and/or young people, above 12. Space for stimulating play and socialisation is essential for development.

Design
Indoor environments are not a substitute for outdoor play. Play space should be stimulating and support a range of uses and ages.

Areas should be multifunctional. On top of designated play spaces, all outdoor space should be suitable for play, reflecting the diverse ways children navigate and use a space. Outdoor space can be playable whilst increasing biodiversity, urban greening and sustainable drainage.

Location
To make play a regular feature of everyday life for children at high density, spaces should be adjacent to other uses, well designed and well managed. This is particularly the case if rooftop spaces are proposed. This improves safety, ease of management and reduces instances of anti-social behaviour.

Play space is generous, stimulating and not fenced.

London Plan

Policy S4 Play and informal recreation.
"Safe and stimulating play is essential for children and young people's mental and physical health. It is not just an activity confined to playgrounds and play areas, but is something that can be done in all aspects of a child's life, in a wide variety of locations and environments. Accessing opportunities for play, and being able to be independently mobile within their neighbourhood, is important for children and young people's wellbeing and development."

B Development proposals for schemes that are likely to be used by children and young people should:

1) increase opportunities for play and informal recreation and enable children and young people to be independently mobile.

2) for residential developments, incorporate good-quality, accessible play provision for all ages. of aAt least 10 square metres of playspace should be provided per child that:

a) provides a stimulating environment.
b) can be accessed safely from the street by children and young people independently.
c) forms an integral part of the surrounding neighbourhood.
d) incorporates trees and/or other forms of greenery.
e) is overlooked to enable passive surveillance.
f) is not segregated by tenure.

3) incorporate accessible routes for children and young people to existing play provision, schools and youth centres, within the local area, that enable them to play and move around their local neighbourhood safely and independently.

4) for large-scale public realm developments, incorporate incidental play space to make the space more playable.

London Housing SPG 2016

Standard 5 (and Policy 3.6) – For developments with an estimated occupancy of ten children or more, development proposals should make appropriate play provision in accordance with the Mayor's Play and Informal Recreation SPG.

Local Plan

Policy D.DH6 Tall buildings
1. Developments with tall buildings must demonstrate how they will:
i. provide high quality private communal open space, play areas and the public realm (where residential uses are proposed) for which occupants of the building can use and where appropriate provide shared facilities at the ground floor level to encourage social cohesion.

Policy D.H3 Housing standards and quality
4. Development is required to protect or re-provide existing amenity space (private, communal and child play space). Net loss of existing amenity space will be resisted.

d. major developments should provide a minimum of 10 square metres of high quality play space for each child
e. the child yield calculator should be used to determine child numbers in a development.

Design guideline 32

All of the minimum play space requirement for children under 12 should be provided on site and outdoors. Where there are demonstrable site constraints, play space for under five year-olds must be on site and older children's play space must be within the GLA's specified recommended distances.

The design of play space should meet Play England's 10 Play Design Principles.

Play design should incorporate principles of nature play; imaginative, unstructured and encourages interaction with natural materials and native vegetation.

Play England 10 Play Design Principles
Successful play spaces:
1. are designed for their site
2. are well-located
3. make use of natural elements
4. provide a wide range of play opportunities
5. are accessible to both disabled and non-disabled children
6. meet community needs
7. can be used flexibly
8. build in opportunities to experience risk and challenge
9. are sustainable and appropriately maintained
10. allow for change and evolution

GLA Play and Informal Recreation
Play for under 5's:
- Sensory landscaping
- Climbable objects and tunnels
- Fixed equipment
- Seating
- Sand and water features

Children and young people

Child play and development experts state indoor play cannot be a substitute of outdoor play.

42% of residents we spoke to stated children played away from the development they lived in. They were not satisfied with provision in or adjacent to tthem. From interviews it was clear that this restricted regular access to play space. In case studies where play space was provided this tended to be segregated from other uses through location or fencing. It was not part of day to day life.

Children with special needs such as autism tend to prefer sensory play equipment and tunnels.

Children and young people

Mixed and balanced communities

Residents frequently raised lack of facilities and spaces for young people/ teenagers and some felt there were links between gatherings and anti-social behaviour.

Mixed and balanced communities

Everyday life

Co-location and integration of different uses fosters interaction between residents of different ages and backgrounds. Interaction between the elderly and young children can be particularly beneficial for well-being.

GLA Play and Informal Recreation

Play for under 12's:

- Natural feel including level changes
- Equipment integrated into landscaping including climbable tree trunks and swings
- Space to legitimise informal sports and ball games such as a MUGA or basketball net
- Seating

Youth Space 12+:

- Space to legitimise informal sports and ball games such as a table tennis table, MUGA or basketball net
- Seating
- Shelter
- Provide some privacy but located on well used routes around the building

Climbable objects and fixed equipment are integrated into the landscaping.

Policy links

- Policy D.H3
- Policy D.ES3
- Policy D.DH6

Design guideline 33

If a MUGA is provided, this should:
- have a flexible design for a variety of activities
- two entry/ exit points
- be well overlooked
- if appropriate incorporate seating
- where possible co-located or integrated into other outdoor communal amenity space
- consider the use coloured paving and decorative treatment to boundary fencing
- down lit to improve use and safety with minimal disruption to nearby residents

MUGA has good visibility and can support a variety of uses.

A non standard MUGA design incorporating more diverse activities.

Children and young people

Childhood obesity rates is high in Tower Hamlets at 43% compared to the national average of 34%. This is part due to a lack of physical activity.

Residents' interviews frequently raise concern over lack of space for children and young people to use. They often would have to travel far from their home so play and activity was not part of their everyday life.

Observations suggest MUGA's are most commonly used by boys. Diverse activities, multiple entry points and seating can make the MUGA more accessible to all.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy D.SG3

Design guideline 34

In addition to designated play space outdoor communal areas should be playable.

A playable space or feature is one where children and young people can legitimately use it for play and informal recreation.

This could include:
- Incidental play opportunities sych as planting, level changes, boulders and logs.
- Public art.
- Open areas.
- SUDs (swales and river channels).
- Water features.

Features, such as elevated walkways, can be played on.

Children and young people

Children and young people use and experience space differently, all spaces offer an opportunity for play.

Mixed and balanced communities

Everyday life

Co-location and integration of different uses fosters interaction between residents of different ages and backgrounds.

Interaction between the elderly and young children can be particularly beneficial for well-being.

Policy links
- Policy D.H3
- Policy D.DH2
- Policy D.ES5
- Policy D.DH6

Design guideline 35

Boundaries around play space for children under 12 years old should be low and permeable or informal. This may include landscape features such as mounds, seating or planting.

Further Consideration
Doors to external communal amenity space and play space should have an interface to call and open doors, to enable people who do not have key fobs to move around the building.

Play is integrated into the landscape, planting provides informal boundaries.

Children and young people

Hard boundaries overly delineate space and restrict flexible uses. They can also be unwelcoming.

However, disabled children and young people, such as those with autism can benefit from some recognisable boundaries and perceived impacts on safety.

Buildings as systems

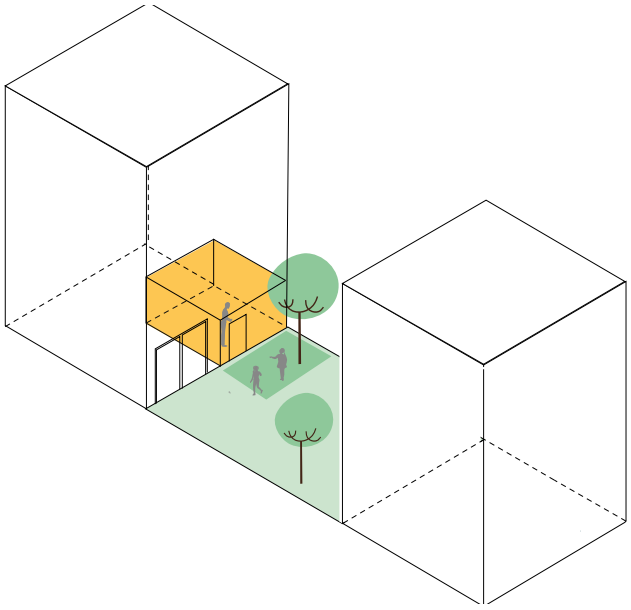
Healthy neighbourhood

Multifunctional design can meet other policy requirements including biodiversity net gain, urban greening and sustainable urban drainage.

Policy links
- Policy D.H3
- Policy D.DH6
- Policy D.ES5

Design guideline 36

New development should demonstrate how they have considered the positioning of play space adjacent to or integrated with other public uses such as communal entrances, communal amenity space, indoor community rooms or commercial uses.



Indoor communal room next to play space facilitates informal supervision

Indoor communal rooms face out onto play space.

Children and young people

79% of residents we spoke to would only let their children play out of the home when supervised by an adult. 17% said this was due to play space being too far from the home with 12% stating it was because they could not see them at play.

Parents are more likely to let their children visit the play space if it is on their way to their home when entering the building and easily visible from their home.

Co-location of facilities increases regular use. Parents could access areas such as a communal laundry or a cafe whilst children play.

In case studies, where play space was provided this tended to be segregated from other uses through location or fencing. It was not part of day to day life.

Mixed and balanced communities

Everyday life

Buildings as systems

Co-location of different uses fosters interaction between residents of different ages and backgrounds.

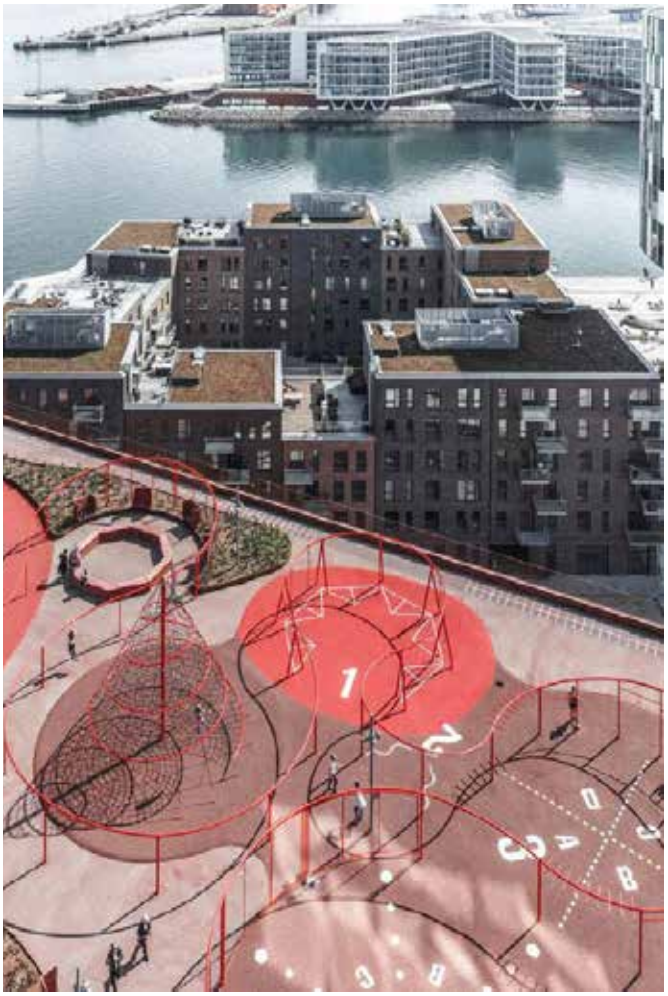
Regular use activates a space and helps develop a sense of belonging and community spirit. Regular use increases passive surveillance and therefore reduces the risk of anti-social behaviour issues.

Policy links
- Policy D.H3
- Policy D.DH6

Design guideline 37

Play space on rooftops will be resisted as they struggle to meet Play England's 10 Play Design Principles.

They will only be acceptable if:
• Development demonstrate how the play space meets Play England's 10 Play Design Principles
• Space is overlooked by enough most residential units.
• Wind assessment demonstrates lower impact levels.
• Co-located with other facilities such as indoor communal rooms, laundries and/or communal amenity space.
• Design should be safe and feel safe (parapet, balustrades above 1500mm, balustrades do not include horizontal elements that could be climbable).
• The design of boundary treatments such as fences, balustrades, parapets, etc. should be attractive and be part of the building language.
• Manage throughout the day outlined in the building's management plan. Indication of how the space will be managed in the building's management plan.



Play space includes a variety of equipment for different kinds of play and ages as well as colour and planting.

Children and young people

36% of parents we spoke to did not let their child play unsupervised due to safety concerns.

Tower Hamlets members and child play experts find rooftop play and communal amenity space tends to be inadequate and most case studies with roof top play had to close soon after opening or are underused.

To be successful, roof top play requires extensive management.

Design should seek to mitigate safety concerns.

Play space is diverse and incorporates seating. Balustrades are high and cannot be climbed.

Policy links
• Policy D.H3 • Policy D.DH6

Existing London and Local Plan policies require that communal spaces support social activity and design and use can meet diverse and changing needs.

Home working is an emerging trend. Occupations go far beyond traditional desktop work and include other activities such as family care-givers, creches, beauty therapists and craftworkers. Flexible communal rooms have scope to support a good quality of work and home life.

Location
The presence of communal space and work space on key locations and routes increases use and opportunities for socialisation.

Design
Good visibility and spacious, comfortable rooms increases quality of life.

Flexible design including partition walls and storage means spaces can adapt according to resident demands.

Facilities
Communal facilities create the opportunity to externalise some activities from the home, so the home remains a space of privacy and relaxation.

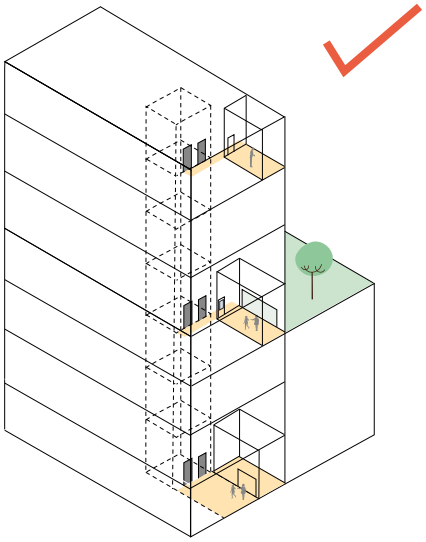
Indoor communal rooms open out onto outdoor space. Sliding doors blur the boundary between each space, providing activation.

Tower Hamlets Local Plan

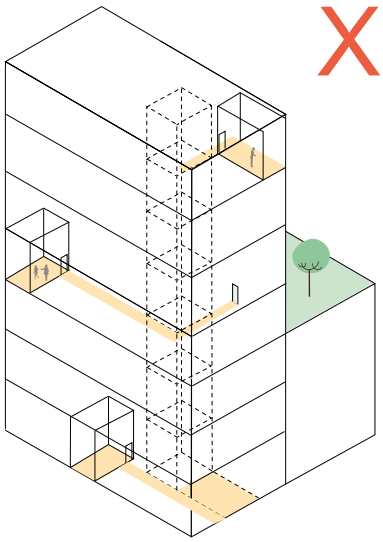
Policy D.H3 Housing standards and quality
c. for developments with 10 or more residential units, the minimum communal amenity space (excluding circulation areas, access routes and waste or bike storage) should be 50 square metres for the first 10 units plus a further one square metres for every additional unit thereafter.

Design guideline 38

If communal amenity space is provided in the form of indoor rooms, the location should be legible. They should be located off central circulation spaces such as lift lobbies and ideally be adjacent to other communal areas.



Spaces located close to lift lobbies, visible as you exit the lift, located in same area on different levels and located adjacent to other communal amenity spaces.



Rooms far from the core, scattered throughout the building or not connected with other communal amenity spaces should be avoided.

Mixed and balanced communities

39% of residents we spoke to did not regularly use the communal room, when provided. 31% however did get to know their neighbours in this space.

A prominent location on regular routes throughout the building integrates the space into everyday life.

More regular use encourages residents to meet and socialise.

Buildings as systems

Mixed and balanced communities

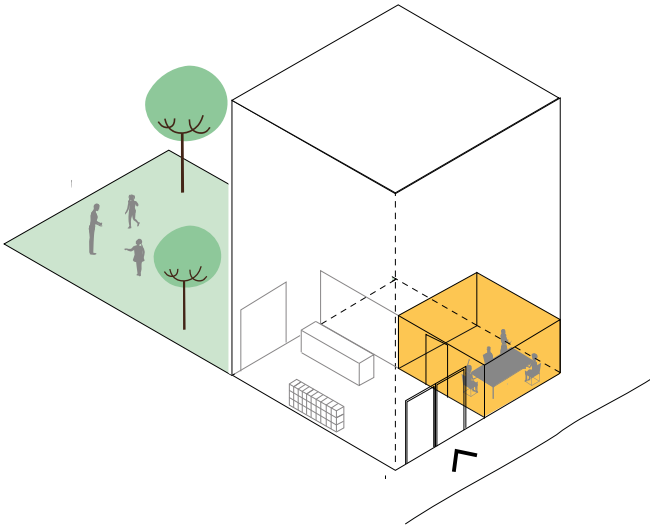
In some case studies, communal rooms were not provided. This made it difficult for Resident's Associations to organise and run events.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy S. DH1

Design guideline 39

Where possible, provide a smaller room, easily accessible from the entrance lobby, for private meetings with visitors.

Further Consideration
High density developments should support a Residents Association with representatives from all tenures.



Meeting room adjacent to the entrance lobby

A communal work space is suitable for meetings.

Everyday life

Buildings as systems

Both building managers and home workers meet with external people, often within the home. This can degrade a sense of privacy.

A meeting room functions as a space for residents to meet with visitors outside of the home and/or a space for the building manager to meet with external contractors.

Proximity to the entrance lobby increases safety by reducing the need for visitors to access the main building.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy S. DH1

Design guideline 40

Indoor communal rooms should have visual connection from corridors and other communal spaces.

Doors with glazing or windows connect the communal room with corridors and other communal spaces.

Mixed and balanced communities

Everyday life

From circulation spaces it should be clear where communal indoor spaces are located and who is inside.

Visibility reduces stress and anxiety, particularly for those with learning difficulties and dementia sufferers.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy S. DH1

Design guideline 41

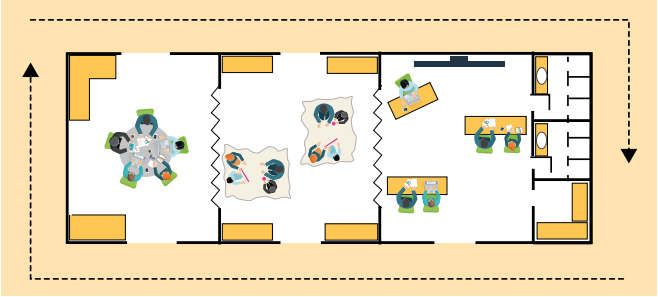
Indoor communal amenity spaces should be generous and be designed to be used flexibly to maximise use throughout the day. For example, for different faiths, various types of home working and social activities.

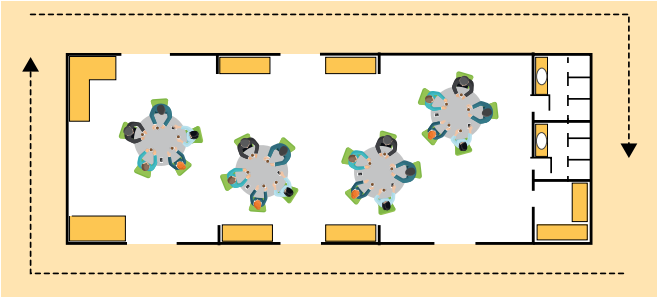
Flexibility can be achieved through the incorporation of:

- Partition walls.
- Regular placement of plugs.
- Sink.
- Storage space for equipment such as tables and chairs.

They should be naturally lit and well ventilated.

Further Consideration
Indoor communal rooms should be actively managed according to resident needs and interest and could be linked to the Residents Association. This should be addressed in a management plan.





Indoor rooms should be suitable for various types of home working but also use for social and faith based activities.

Mixed and balanced communities

Regular use and diverse activities better meets the need of a diverse population and increases opportunities for social interaction.

Everyday life

Home working is a growing trend. Provision of spaces suitable for a variety of work practices can reduce social isolation as well as clutter and conflict in the home.

Buildings as systems

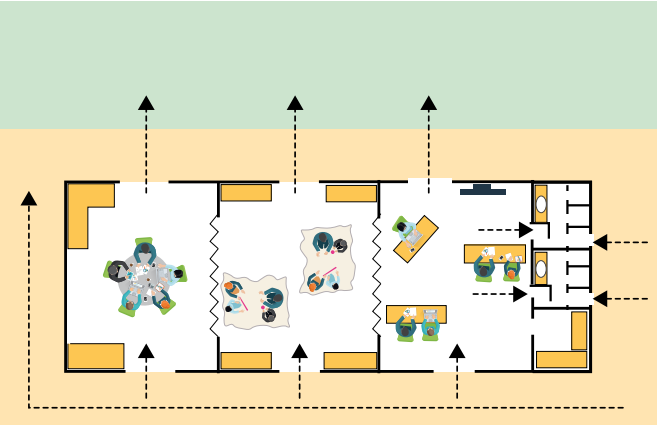
Everyday life

Over the life of the building, residents and their demands will change.

Flexible design means space can be re-purposed according to demand.

Design guideline 42

A shared toilet should be provided adjacent to communal amenity space where possible. The toilet should be accessible with provision for baby changing.



A toilet is provided and is accessible from multiple spaces and routes, increasing efficiency.

Everyday life

Provision of a toilet means residents can use spaces comfortably for extended periods of time.

Toilets and sinks can assist if activities are messy, for example children's activities or a creative work practice.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy S. DH1

Design guideline 43

A communal kitchen could be provided. This should include basic cooking facilities and be adjacent to a large space suitable for socialising.

The communal kitchen is spacious and includes a large space suitable for socialising.

Mixed and balanced communities

Sharing food brings people together. A communal kitchen creates a space where residents can organise and get together easily.

Everyday life

Small homes can make socialising difficult, for example hosting birthday parties. A specialist space can make this a more enjoyable experience and reduce conflict with neighbours.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy S. DH1

Design guideline 44

Consider providing communal laundry rooms. These should be easily accessed from lifts, well lit and ventilated.

If communal laundries are not provided, typical residential layouts should outline how laundry can be conducted with minimal disturbance to other uses in the home such as providing a laundry cupboard.

The communal laundry is bright and well ventilated.

Mixed and balanced communities

Communal laundries provide opportunities for social integration.

Everyday life

Communal laundries free up space in the home and create a more relaxing home environment by reducing noise.

Buildings as systems

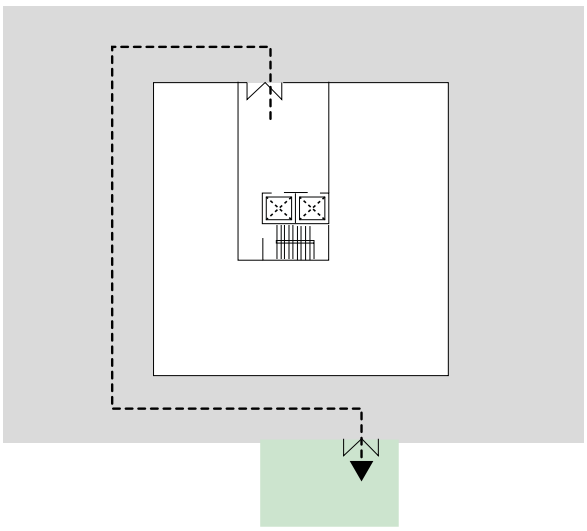
Communal laundries reduce energy and water consumption, the number of white goods in a development and risk related to the malfunctioning of white goods.

Policy links
- Policy S.SG2
- Policy S. DH1
- Policy D.H3
- Policy D.ES7

Design guideline 45

Residents should have access to outdoor and indoor communal amenity spaces without having to leave and re-enter the development.

Access should be easy and dignified for wheelchair users and those using mobility scooters.



Route to the communal amenity space is convoluted requiring residents to leave and re-enter.

Everyday life

Buildings as systems

From case studies there were instances where residents had travel outside around the building to access communal facilities. This restricted regular use.

Everyday life

Buildings as systems

23% of residents we spoke to found bike stores inconvenient. This rose to 55% of those living in the upper floors (20+). 24% found waste rooms inconvenient.

These were typically in the basement, away from lift access.

Policy links

- Policy S.SG2
- Policy D.H3
- Policy S. DH1

The transition from the door to the home, corridor, lift and lobby is an increasingly public space but these semi public/ private spaces can be unpleasant. These circulation spaces were universally identified as the spaces where residents first got to know their neighbours. Design should foster these interactions creating spaces that encourage a collective sense of belonging.

Entrances
Entrances should foster social integration between residents of different tenures and avoid visible subdivision.

Lifts and stairs
The intensity of use means lifts can become damaged easily. An additional lift with a more robust design would reduce wear and tear, particularly when moving furniture or living with pets.

Stair location and design encourages regular use when moving short distances, improving health and reducing energy use.

Corridors
Wait times for a lift can be long at rush hour. To reduce frustration and support socialising between neighbours this space should be comfortable and attractive.

At high density corridors function as streets. A more generous design and differentiation across floors creates a more comfortable and pleasant living environment, improves navigation and creates a sense of belonging.

Doors
Staggering doors creates privacy at the threshold to the home whilst personalisation can create a more neighbourly feel that also supports orientation of the building particularly by children, those with dementia or autism.

The generous design through colour and large windows means the corridor functions as a street, supporting socialisation and play.

London Plan

Policy D6 Housing quality and standards
3.6.6 Housing developments should be designed to maximise tenure integration, and affordable housing units should have the same external appearance as private housing. All entrances will need to be well integrated with the rest of the development and should be indistinguishable from each other.

GG1 Building strong and inclusive communities
Good growth is inclusive growth. To build on the city's tradition of openness, diversity and equality, and help deliver strong and inclusive communities, those involved in planning and development must:

C provide access to good quality community spaces, services, amenities and infrastructure that accommodate, encourage and strengthen communities, increasing active participation and social integration, and addressing social isolation

London Housing SPG 2016

Standard 8 - All main entrances to houses, ground floor flats and communal entrance lobbies should be visible, clearly identifiable, and directly accessible from the public realm.

Standard 12 - Each core should be accessible to generally no more than eight units on each floor.

Standard 13 - An access core serving 4 or more dwellings should provide an access control system with entry phones in all dwellings linked to a main front door with electronic lock release. Unless a 24 hour concierge is provided, additional security measures including audio-visual verification to the access control system should be provided where any of the following apply: more than 25 dwellings are served by one core, or the potential occupancy of the dwellings served by one core exceeds 100 bed spaces, or more than 8 dwellings are provided per floor.

Standard 14 - Where dwellings are accessed via an internal corridor, the corridor should receive natural light and adequate ventilation where possible.

Standard 15 - All dwellings entered at the seventh floor (eighth storey) and above should be served by at least two lifts.

Standard 16 - It is desirable that every wheelchair user dwelling is served by more than one lift.

Local Plan

Policy D.H3 Housing standards and quality

2. Affordable housing should not be externally distinguishable in quality from private housing.

3. Developments must use hard wearing, durable materials for the affordable housing elements of the development.

Design guideline 46

The form and configuration of buildings should avoid the visible distinction between different housing tenures. If tenures are accessed by different entrances they should be tenure blind.

This means:
- equal prominence along the street
- the same scale of opening
- the same material palette including hard equitable quality of material treatment for landscaping, door specification and interior design and furniture.
- explore opportunities to provide shared entrances to access separate cores

Residents access the estate through a shared archway.

Mixed and balanced communities

66% of residents we spoke to felt their building lacked a community feel.

From interviews, there was a clear subdivision between affordable and private homes.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy D.DH6
- Policy S.DH1

Design guideline 47

To support the creation of tenure blind communities, lobbies of both market and affordable homes should be of good quality finishes and spacious to allow for sufficient space for residents to wait and meet.

Further Consideration
All communal doors and gates should be easily automated.

Further Consideration
Entrance foyers should incorporate comfortable spaces to rest. The design and materials should be hardwearing and easy to clean, and seating may be built-in.

Tenure blind entrance is distinctive.

Mixed and balanced communities

From our research, residents of affordable developments were least likely to find their entrance lobby attractive and pleasant.

Interviews with residents demonstrated that the differences in lobby design and material specification made them feel aware of inequalities. Children particularly asked why this was the case.

Everyday life

Automated doors mean wheelchair users and the frail can move around the building with ease.

Buildings as systems

Similar interior finishes can provide economies of scale.

Policy links
- Policy S.SG2
- Policy D.H3
- Policy D.DH6
- Policy S.DH1

Design guideline 48

Locate stair cores directly adjacent to lift lobbies.

There should be clear visual connection through the location of doors, glazed elements and signage.

Further Consideration

Stair design and specification should be of a higher quality in areas of the building where they are used more frequently.

This includes the lowest four floors, to the basement and between communal areas.

Stairs at the lower floor are prominent to encourage use and activate the lobby.

Everyday life

Only 13% of residents we spoke to use the stairs often,the proportion was still low for residents living below the fifth floor. 41% did not think the stairs were attractive and pleasant.

Ease of access and visibility might increase stair use for those travelling short distances, for example to communal amenity spaces.

From interviews, those using the stairs tended to do so when moving between four floors or less. Design can encourage activity by promoting stair use.

Policy links
- Policy D.H3
- Policy S.DH1

Design guideline 49

High density and tall buildings should have a minimum of two lifts. One of them should be particularly robust to accommodate transportation of waste and large items.

Lift is resistant to wear and tear and will be easy to be cleaned.

Everyday life

Moving in and out, refurbishing homes and the movement of pets and waste damages lifts. This was identified by both building managers and residents as a challenge in their everyday life and work.

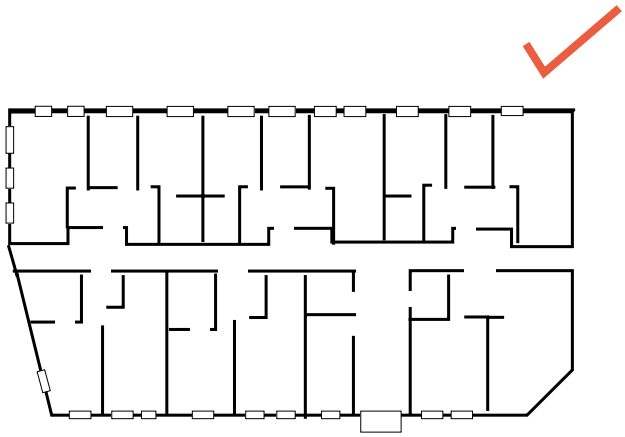
Case studies revealed that managers line lifts when requested by residents, however regular damage and subsequent repairs resulted in lifts out of service causing frustration.

Policy links
- Policy D.H3
- Policy S.DH1

Design guideline 50

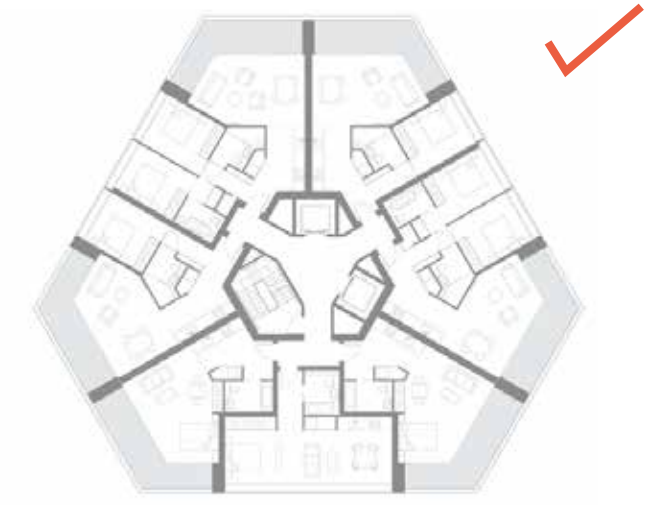
Building cores should generally serve no more than eight homes on each floor.

When cores are fifteen storeys, or 1,100 habitable rooms per hectare or more, consideration should be given to having cores serve less than eight homes.



A layout of six units per core allows for a short and straight corridor with three sources of natural light. It also reduces the number of single aspect homes.

Corridors are long and angled so there is no visibility from one end to another.



Can you please change the caption to: central core reduces circulation spaces to a minimum.

Mixed and balanced communities

At high density, residents are more likely to struggle to recognize and interact with neighbours. Fewer homes per core would encourage familiarity.

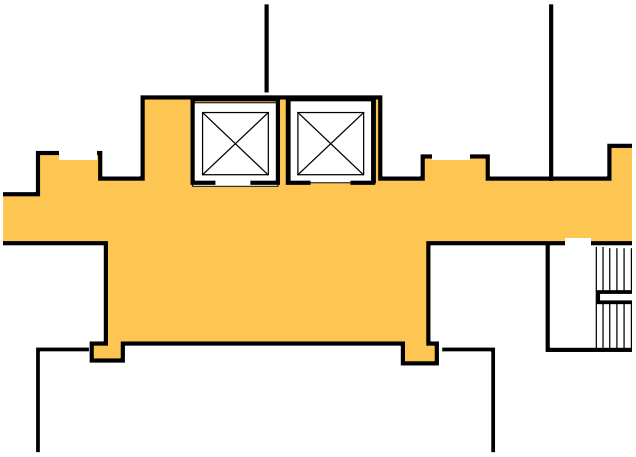
Healthy neighbourhood

Reducing the number of homes per core assists in improving internal layouts, maximising the number of dual-aspect homes.

Policy links
• Policy D.H3 • Policy S.DH1

Design guideline 51

Space at the entrance to lifts on all floors should be generous to accommodate residents of the floor waiting for the lift.



The area immediately in front of lifts is spacious to comfortably accommodate residents waiting.

Mixed and balanced communities

Residents we spoke to report having to wait for lifts for some time and that at certain times of the day the number of people waiting is particularly high. The space in front of lifts should accommodate all residents on the floor. This is also an opportunity for them to interact.

Everyday life

Residents with special needs such as wheelchair users should have sufficient space to manoeuvre and wait.

Buildings as systems

31% of residents we spoke to did not think lifts were reliable.

At peak times, waits for the lifts in some case studies could be very long resulting in frustration.

Policy links
- Policy D.H3
- Policy S.DH1

Design guideline 52

Corridors should be generous and comfortable. To achieve this, they should be naturally ventilated and have access to natural light. Where possible, windows should be orientated over outdoor communal amenity space and play space.

If this cannot be achieved, corridors widths should be more generous (1500-2000mm).

Corridors should be considered as part of overheating assessments.

Corridors are generous and with good access to natural light.

Mixed and balanced communities

Corridors are the first spaces that neighbours come into contact with each other.

Well ventilated spaces with good noise insulation make these a more comfortable environment.

Healthy neighbourhoods

35% of residents we spoke to found overheating to be a concern. This was particularly prevalent in corridors, many of which lacked means of ventilation.

Everyday life

Residents with illness, such as multiple sclerosis, found communal heating systems to be hot. Particularly communal areas with no natural ventilation.

Policy links
- Policy D.H3
- Policy S.DH1
- Policy S.SG2

Design guideline 53

Corridors or lift lobbies should include spaces to sit. Any furniture should not compromise the wider safety of the building, through obstruction and/ or flammable materials, and be easy to clean.

Seating is distributed along the corridor.

Simple robust seating is found on each floor.

Mixed and balanced communities

18% of residents we spoke to did not think the space adjacent to the lift was attractive and pleasant. These tended to be sparse and vulnerable to overheating.

A comfortable environment encourages residents to linger, increasing opportunities for socialising.

Seating and other interior design features help create a sense of ownership and community across each floor.

Buildings as systems

Space to rest, wait and socialise provides assistance and a more comfortable living environment for those with mobility issues. This helps retain independence for longer.

Policy links
- Policy D.H3
- Policy S.DH1
- Policy S.SG2

Design guideline 54

There should be visibility in corridors to all residential entrances.

Entrances to the home are visible along corridors.

Mixed and balanced communities

Visibility, for example through straight corridors, improves sense of safety and reduces anxiety. Residents can see who is in the corridor.

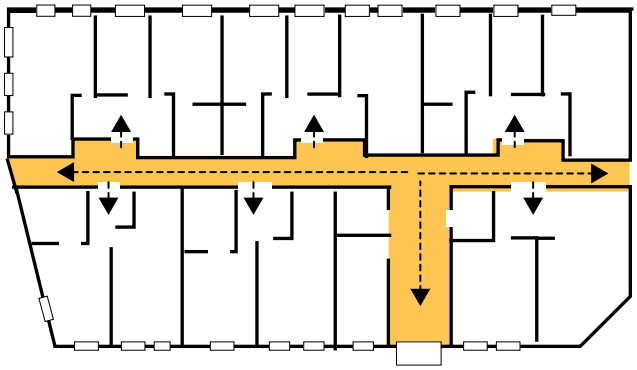
Children and young people

Visibility means children can occupy the corridor but still be seen by parents. This makes for more comfortable movement around the building but also supports the corridor as a space for doorstep play.

Policy links
- Policy D.H3
- Policy S.DH1
- Policy S.SG2

Design guideline 55

In buildings with double loaded corridors, residential doors should be staggered and recessed to define and create an interface between public and private space.



Residential doors are staggered along the corridor.

Door is staggered and colour provides personalisation and a sense of belonging.

Mixed and balanced communities

Staggered entrances increase privacy and minimise noise impacts.

Children and young people

Recessed spaces help mark the corridor as a space for doorstep play.

Everyday life

Recessed spaces create a buffer or transitional space between the private home and public corridor.

Policy links
- Policy D.H3
- Policy S.DH11

Further Consideration
Interior design, particularly the space immediate to lifts, should differ across floors. This could be achieved through different colour, print or features such as seating or plants.

Further Consideration
The finish of floors and walls should be durable and easy to clean, use colour and texture e.g. glazed brick.

Further Consideration
If indoor amenity space is distributed vertically throughout the building, the stair, lift lobbies and corridors connecting these spaces should support wayfinding with distinct finishes and incorporating clear signage.

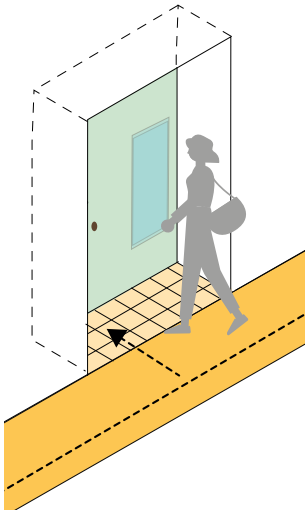
Further Consideration
Lifts and signage should incorporate braille.

Further Consideration
Entrance to flats should be celebrated through the use of colour, lighting, and the ability to personalise.

Signage is clear, well-designed and robust.

Design of corridors are distinctive and vary across floors.

Further Consideration
Doors leading to service facilities and staff rooms should be played down and blend with corridors.



Residential entrances are distinctive along the corridor with personalisation through use of colour and glazing.

Mixed and balanced communities

Residents across schemes we surveyed describe living in the building as like living in a hotel. Internal spaces do not provide a sense of identity as all floors and doors look the same.

Personalisation impacts creates a sense of belonging and ownership.

Children and young people

Everyday life

Repetitive interiors across floors and between doors can cause disorientation and confusion, particularly for the young, the visually impaired, those with learning difficulties and dementia.

Distinctive entrances to the home or opportunities for personalisation can help residents find their way around.

Policy links
- Policy D.H3
- Policy S.DH11

Adapting and mitigating to the climate crisis and facilitating the transition to the circular economy requires a holistic approach to building systems, including waste, water and energy.

Mechanisms should support the borough's aims to be zero carbon and reduce consumption and waste.

Where processes require resident action, the design of routes and rooms can help or hinder the effective and regular use of building systems and services. It should be clear and convenient to participate in environmentally friendly behaviours.

Waste
Across case studies various methods of resident delivery of waste to waste rooms were seen. The pros and cons of each system are outlined in the appendix. In any case, methods should support the separation of waste, be easy for all residents and reduce demands on building management.

The document first outlines guidance of resident transportation of waste to disposal points. It then provides design guidance on waste collection methods. As outlined in the Local Plan, traditional waste collection methods will be resisted, with preference given to underground and vacuum waste systems.

Water
London has been declared by the Environment Agency as an area of serious water stress and this trend is likely to be exacerbated by climate change. Design and layouts should support water recycling methods.

Energy
Development requires the integration of renewable energy strategies. This should be integrated into design for greater effectiveness and reduce impact on resident amenity.

Rooftops incorporate solar energy and biodiversity.

London Plan

Policy SI 2 Minimising greenhouse gas emissions
A Major development should be net zero-carbon. This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand

F Development proposals referable to the Mayor should 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.

Policy SL 5 Water Management
C Development proposals should:
1) through the use of Planning Conditions minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)

3) incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future-proofing.

Policy SI 7 Reducing waste and supporting the circular economy

B Referable applications should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted, to demonstrate:
1) how all materials arising from demolition and remediation works will be re-used and/or recycled
2) 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
3) opportunities for managing as much waste as possible on site
4) adequate and easily accessible storage space and collection systems to support recycling and re-use
5) how much waste the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy
6) how performance will be monitored and reported.

Local Plan

Policy D.MW3: Waste collection facilities in new development
1. All new development must include sufficient accessible space to separate and store dry recyclables, organics and residual waste for collection, both within individual units and for the building as a whole.

2. New major residential developments must incorporate high quality on-site waste collection systems that do not include traditional methods of storage and collection.

10.37 – Such systems could include compactors, underground storage containers, vacuum systems and automated waste collection systems. Preference should be given to systems that can provide a weekly collection service as a minimum.

Policy D.ES7: A zero carbon borough
4.c seek to provide up to 20% reduction of carbon dioxide emissions through on-site renewable energy generation.

Policy D.ES6 Sustainable water and wastewater management
1. Development is required to reduce water consumption.
2. New development is required to minimise the pressure on the combined sewer network.

Design guideline 56

If waste chutes are proposed to transport waste from homes to a disposal point:

- chutes should be located within a specialised waste room at each floor.
- access should be clear and straightforward.
- doors should be automated so chutes can be accessed without putting waste down.
- there should be sufficient space around the chute to manouvre wheelchairs.
- materials should be robust and easy to clean.
- chutes should include the capacity to sort into three categories.

Further Consideration
All waste systems should incorporate robust signage (metal or hard plastic). Signage should be distinctive using icons, to be understood by all.

Further Consideration
Freehold/ leasehold and rental conditions should include clear obligations on the correct way to use waste management facilities.

An ineffective waste chute. It is not located in a special room, signage is unclear, the area lacks ventilation and the surrounding area would be easily damaged if waste was left on the floor.

Children and young people

From interviews children often were tasked with taking waste to the chutes.

Chutes could be scary, particularly when they broke down and rooms fill up with waste.

Buildings as systems

1/9 of case studies had waste chutes.

Although convenient for residents they resulted in some management issues. The mechanism for separating waste in the basement frequently broke down. Blocked chutes resulted in residents leaving waste in chute rooms on each floor creating smell and requiring additional maintenance.

Policy links
- Policy D.MW3

Design guideline 57

If waste is collected by staff and carried to a disposal point:

- corridors to be at least 1.5m wide so buggies and the ‘collection vehicle’ can pass with ease.
- collection vehicle to support collection of a minimum three categories.
- corridor materials should be robust and easy to clean.
- a management plan should outline collection times. These times should be varied to meet resident needs.
- there should be staff storage rooms with a sink on every five to eight floors.

Buildings as systems

1/9 case studies had flat collection.

This was very convenient for residents and good for separation of waste but was management intensive.

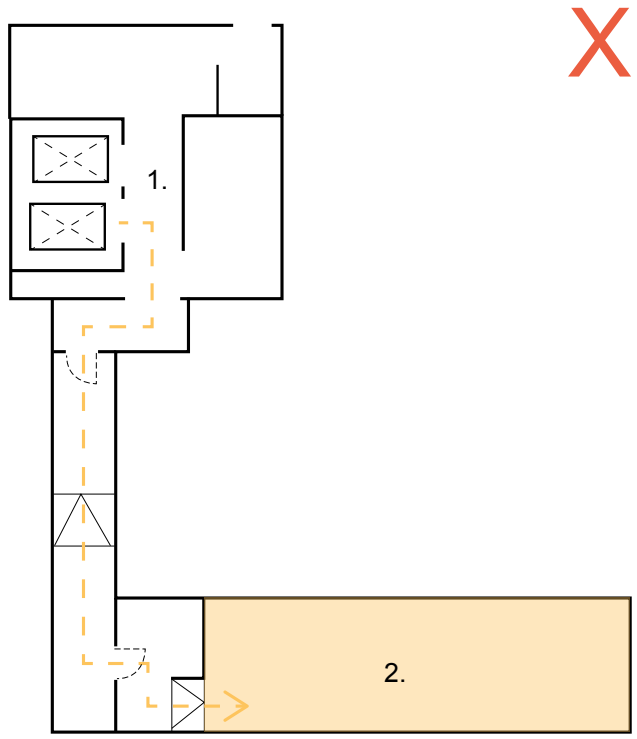
Policy links

- Policy D.MW3

Design guideline 58

If waste is transported by the resident from the home to the disposal point:

- disposal points should be close to lift cores, within five to ten meters.
- disposal points and access to disposal points should be well lit and well ventilated.
- materials should be robust and easy to clean.
- access should be clear and straightforward.
- disposal points should be well signposted.
- doors should be automated so rooms can be accessed without putting waste down.
- there should be sufficient space around the disposal point to manouvre wheelchairs.



Distance from core to refuse room long, convoluted

Buildings as systems

7/9 or 78% of case studies required residents to carry waste to basement rooms.

74% found this system convenient however convenience was worse for residents at the upper floors.

Resident delivery requires minimal management.

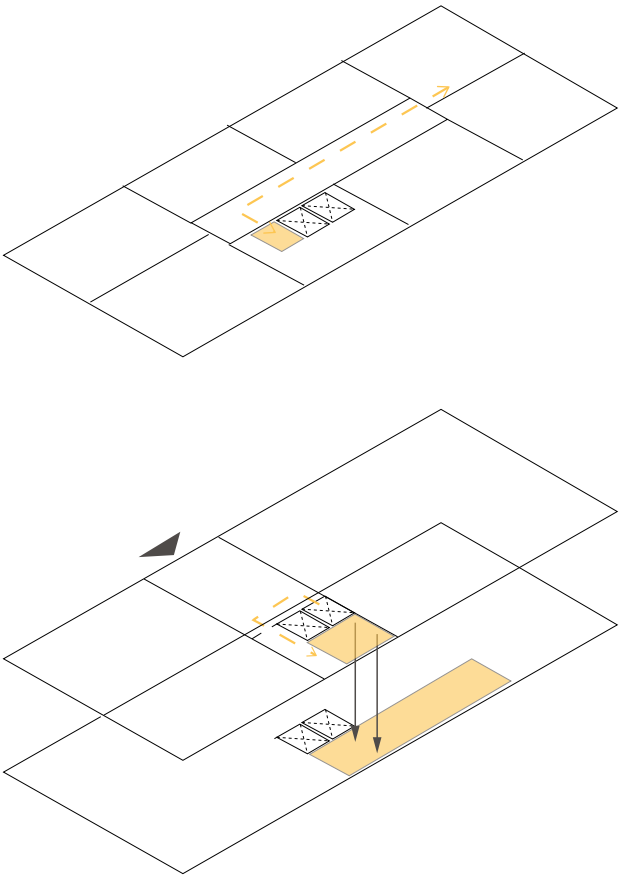
Policy links

- Policy D.MW3

Design guideline 59

If waste is transported by the resident from the home to a disposal point on each floor which is then transported by staff to central disposal point:

- disposal points and access to disposal points should be well lit and well ventilated.
- materials should be robust and easy to clean.
- access should be clear and straightforward.
- disposal points should be well signposted.
- doors should be automated so rooms can be accessed without putting waste down.
- there should be sufficient space around the disposal point to manouvre wheelchairs.



Model A. There is a waste disposal room on each floor. This is convenient for residents but requires more intense management.

Model B. There is a waste disposal room at the ground floor. This has better supervision than basement rooms and is easier to maintain than waste disposal rooms on each floor.

Buildings as systems

The hybrid model was not implemented any case study.

The model maximises convenience for residents with less management than collection models.

The waste rooms can be combined with services for cleaners, such as a tap and storage.

Policy links

- Policy D.MW3

Design guideline 60

Traditional waste systems are not supported by the Local Plan and will be resisted. However, If following supporting evidence and confirmation by the Tower Hamlets Waste Team they are proposed layout should promote ease of management and separation of waste.

This can be achieved through:
- equidistant placement and prominence of each bin from the entrance.
- clear and robust signage on each bin.
- sufficient space to easily reorganise bins when some become full (outline bin circulation factors).
- be easy to reach by children and wheelchair users.

A traditional waste room with large Euro Bins. Bins are well located but difficult to open by wheelchair users and young children.

Everyday life

Buildings as systems

From interviews, 2/9 case studies did not separate waste. This caused frustration with some residents.

Interviews also found that for ease, residents would dump waste in the nearest bins. This reduced rates of separation, caused contamination and mess and restricted wheelchair access.

Traditional euro bins are very difficult to reach by wheelchair users and young children.

Policy links
- Policy D.MW3

Design guideline 61

Traditional waste systems are not supported by the Local Plan and will be resisted. However, If following supporting evidence and confirmation by the Tower Hamlets Waste Team they are proposed compactors are required.

These should be:
- linked to primary waste rooms.
- access limited to building management.
- compactors to support collection and sorting of a minimum of three waste streams.

Compactor example

Buildings as systems

From case studies, bins could become full particularly at the end of the weekend or public holiday.

Compaction would reduce the volume of waste and number of collection trips.

Policy links
- Policy D.MW3

Design guideline 62

A specialist room or area of the main waste room should be provided for the storage and collection of bulky goods and construction waste.

The bulky waste room should:
- be located in close proximity to communal refuse stores and lift cores.
- include a skip as required for construction waste (material from home refurbishment).
- the location and access should be well lit and well ventilated.
- materials should be robust and easy to clean.
- access should be clear and straightforward.
- refuse stores should be well signposted.
- doors should be hands free and push inward so rooms can be accessed without putting waste down.

Store has room for bulky waste and specialised items including lightbulbs and batteries.

Buildings as systems

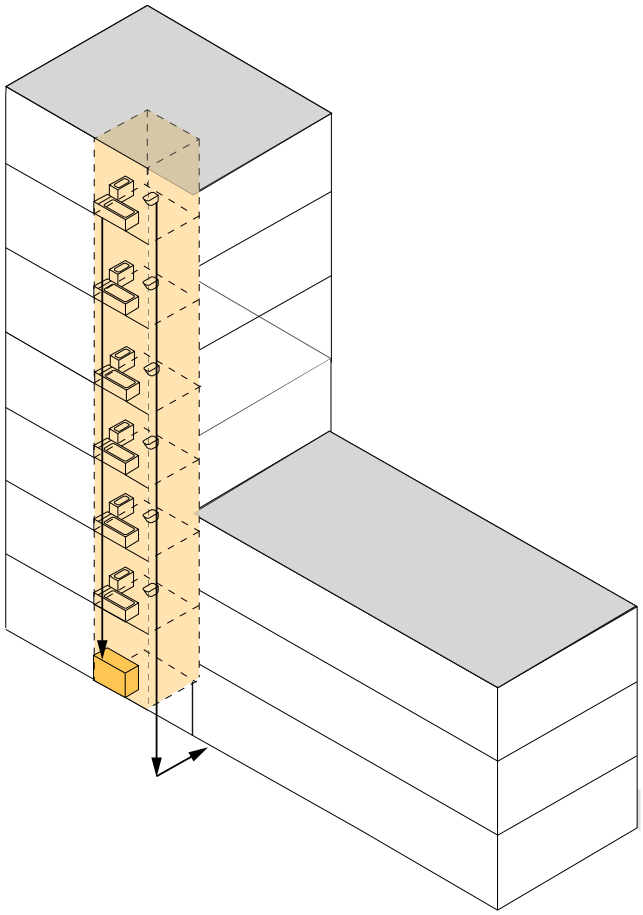
Interviews highlighted that bulky waste caused bins to fill up, resulting in mess and additional collection trips.

A specialised room would avoid disruption to standard residential waste collection.

Policy links
- Policy D.MW3

Design guideline 63

Install greywater reuse strategies to reduce water consumption. To support this, toilet should be stacked as much as possible with an extra riser and tank room.



Toilets are stacked and there is sufficient space in basements/ plant rooms for the circulation of greywater.

Buildings as systems

No case studies included water saving mechanisms such as greywater reuse.

Reuse reduces water consumption and pressure on local sewer systems.

Stacking increases efficiency and allows for potential retrofit in the future.

Policy links

- Policy D.ES6

Design guideline 64

Air source heat pumps

Design Considerations:
- locate on upper roofs that are not overlooked, particularly those less suitable for communal amenity space.
- set aside 15sqm as a minimum plus space for access and energy storage if required.
- acoustic insulation.
- heat insulation.

Further Consideration

Ground source heat pumps
Design Considerations:
- suitable for larger masterplans or the retrofit of existing areas.
- a sufficient space at the ground floor or in the public realm required for the regular distribution of boreholes approximately 200m deep.
- space should be allocated for a central plant room within the building or small heat pumps within each dwelling.

Air source heat pumps can be located on the topmost rooftops.

Buildings as systems

Healthy neighbourhood

Beyond roof top solar thermal or solar PV panels on roof tops, case studies do not incorporate significant renewable energy generation.

Air source heat pumps are a cost effective zero carbon source of heating.

Ground source heat pumps are a cost effective zero carbon source of heating when implemented at the neighbourhood scale.

Policy links
- Policy D.ES7

Design guideline 65

Solar - PV and/ or Solar thermal

Design Considerations:
- locate on upper roofs that are not overlooked, particularly those less suitable for communal amenity space.
- integrate panels on south facing elevations at the upper floors
- integrate panels into the design of the facade and roof treatment.
- combine with a biodiverse roof for more efficient and attractive space.

Further Consideration
Hydrogen fuel cell

Design Considerations:
- Scope to replace CHP facilities in basement plant rooms

Solar panels are integrated into the design of the building, located on the roof and the cladding of the top floors.

Buildings as systems

Healthy neighbourhood

Solar thermal and photovoltaic panels are the most straightforward renewable energy source to integrate into high density development.

Hydrogen fuel cells can be an effective source of zero carbon energy but use is currently limited in residential developments.

Policy links
- Policy D.ES7

Active travel, including walking and cycling, improves health, lowers emissions, reduces congestion and promotes social integration.

Cycle stores
Existing policy on residential buildings promotes cycling through the provision of cycle parking spaces. From the study of case studies this can result in very large basement storage rooms that are underoccupied. This is part due to safety and convenience.

Bike stores distributed around the building and in more convenient and prominent locations would support different types of cycling and make it more of a regular part of everyday life.

Cycle stores in areas of regular use to improve percieved sense of safety.

London Plan

Policy D3 Optimising site capacity through the design-led approach

2) encourage and facilitate active travel with convenient and inclusive pedestrian and cycling routes, crossing points, cycle parking, and legible entrances to buildings, that are aligned with peoples' movement patterns and desire lines in the area

Policy T5 Cycling
A Development Plans and development proposals should help remove barriers to cycling and create a healthy environment in which people choose to cycle. This will be achieved through:

1) supporting the delivery of a London-wide network of cycle routes, with new routes and improved infrastructure
2) securing the provision of appropriate levels of cycle parking which should be fit for purpose, secure and well-located. Developments should provide cycle parking at least in accordance with the minimum standards set out in Table 10.2 and Figure 10.2, ensuring that a minimum of two short-stay and two long-stay cycle parking spaces are provided where the application of the minimum standards would result in a lower provision.

B Cycle parking should be designed and laid out in accordance with the guidance contained in the London Cycling Design Standards. Development proposals should demonstrate how cycle parking facilities will cater for larger cycles, including adapted cycles for disabled people.

London Housing SPG 2016

Standard 20 (Policy 6.9)- All developments should provide dedicated storage space for cycles at the following level:
1 per studio and one bed
2 per all other dwellings.

In addition, one short stay cycle parking space should be provided per 40 units.

Standard 21 - Individual or communal cycle storage outside the home should be secure, sheltered and adequately lit, with convenient access to the street. Where cycle storage is provided within the home, it should be in addition to the minimum GIA and minimum storage and circulation space requirements. Cycle storage identified in habitable rooms or on balconies will not be considered acceptable

Local Plan

Policy S.TR1 Sustainable travel

1. Travel choice (including connectivity and affordability) and sustainable travel will be improved within the borough and to other parts of London, and beyond. Development will therefore be expected to:
a. prioritise the needs of pedestrians and cyclists as well as access to public transport, including river transport, before vehicular modes of transport

Policy D.TR3 Parking and permit-free

3. Development is required to prioritise sustainable approaches to any parking through ensuring:
a. Priority is given to space for cycle parking

Design guideline 66

To increase cycle uptake by offering greater flexibility for residents, minimum cycle storage requirements should be provided in different locations.

This could include a mix of:
- cycle storage at home.
- cycle storage at street level.
- cycle storage in courtyards.
- cycle storage in basement rooms.
- bike hangars in the public realm.

Further Consideration
Cycle storage should be actively managed with spaces in more prominent locations retained for those that use their cycles most often.

Cycle stores at the street level.

Everyday life

Buildings as systems

15% of those surveyed had bikes. Of these, 26% stored their bike in the home and 70% in the designated bike store.

Some bike stores were difficult to access, requiring residents to pass through more than two doors or to leave and re-enter the building.

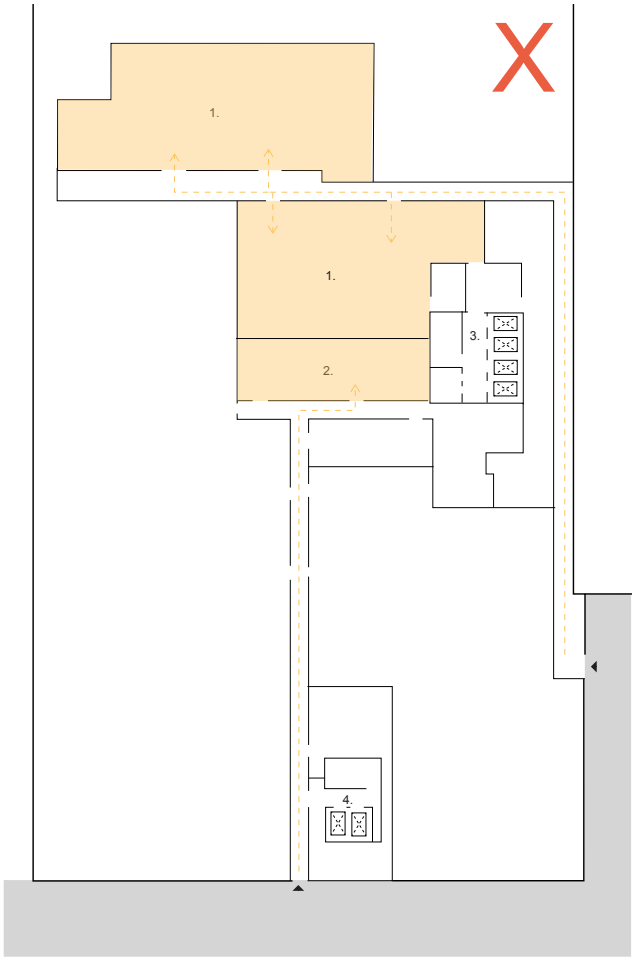
Street level stores are most convenient. Bike hangars offer greatest security.

Policy links
- Policy S.TR1

Design guideline 67

If cycle storage is provided in the basement, access should be quick, straightforward and step-free via a ramp or direct lift. Access should avoid staircases and more than two doors.

A separate lift is provided directly down into cycle stores.



Routes into cycle stores from the public realm are very convoluted and stores are hidden from other uses.

Everyday life

Buildings as systems

23% found cycle stores difficult to access.

These tended to be in basements and away from the main entrance or lift access to homes.

Policy links

- Policy S.TR1

Design guideline 68

Cycle storage should be co-located with clear visual connection to more active spaces such as the street, lobby or adjacent well used space.

Cycle stores have visibility from the street and other spaces in the basement.

Everyday life

Buildings as systems

24% found cycle stores to be unsafe.

Stores were often in basements, out of site and away from areas of regular footfall.

Policy links
• Policy S.TR1

Further Consideration

Provide space for cycle repair and washing at the ground floor or within cycle stores. Spaces should include a sink, low level tap and drainage.

Bike repair room is attractive, well lit and includes a sink.

Everyday life

Buildings as systems

Interviews with residents that cycled regularly found that cycle stores were locations where they got to know their neighbours.

Facilities in a cycle store support good quality of life by making maintenance and repair more convenient. It also extends the role of the store as a place where people linger.

Policy links

• Policy S.TR1

High Density Developments, particularly Tall Buildings, require more extensive management and are harder to maintain. This is in part due to the large population and their various needs.

Residents interviewed felt positive towards building management and service charges if post and security were managed efficiently and there was a quick response to repairs.

Staff and Contractors
Regular upkeep of a high density building requires full time staff. In addition, repair work and refurbishing of homes involves additional contractors. Their duties have spatial requirements, such as access to water points on each floor, places to store equipment and places to rest.

Deliveries
The trend for home deliveries is set to continue. Specialist post rooms provide an efficient service for residents and reduce pressure on the concierge.

Staff room incorporates many uses of the space, including storage and rest but is undersized.

London Plan

D3 Optimising site capacity through the design-led approach
4) facilitate efficient servicing and maintenance of buildings and the public realm, as well as deliveries, that minimise negative impacts on the environment, public realm and vulnerable road users

3.3.17 New developments should be designed and managed so that deliveries can be received outside of peak hours and if necessary in the evening or night-time without causing unacceptable nuisance to residents. Appropriate facilities will be required to minimise additional freight trips arising from missed deliveries.

Policy D4 Delivering Good Design
Higher density residential developments should demonstrate their ongoing sustainability in terms of servicing, maintenance and management. Specifically, details should be provided of day-to-day servicing and deliveries, longer-term maintenance implications and the long-term affordability of running costs and service charges (by different types of occupiers).

Table 3.2 Qualitative design aspects to be addressed in housing developments
Usability and ongoing maintenance
- sufficient levels of secure, covered and conveniently located externally accessible storage is provided for deliveries and other bulky items

Local Plan

Policy D.TR4 Sustainable delivery and servicing
1. Development that generates a significant number of vehicle trips for goods or materials during its construction and/or operational phases is required to demonstrate how:

b. delivery of goods and servicing will be provided within the site to encourage shared arrangements and timing of deliveries, unless demonstrated it can take place on-street without affecting highway safety or traffic flow.

d. deliveries to sites will be reduced through suitable accommodation and management.

Design guideline 69

Building management requirements should be considered early on in the planning process. This should include staff facilities and their requirements.

If required staff rooms should be:
- generous and well laid out with space for tables and chairs.
- well ventilated and well lit.
- include toilets and a shower
- include storage lockers for personal items.
- include worktops with space provided for
- equipment including a sink, kettle, fridge and
- microwave.

Consider requirements for contractors whose activities might be at odds with permanent staff.

Buildings as systems

If space was provided for permanent staff this was usually in the basement with no windows or ventilation and away from areas where their passive surveillance would be beneficial.

Policy links
- Policy D.H3
- Policy D.DH6

Design guideline 70

Building management requirements should be considered early on in the planning process including facilities required for cleaning and maintenance.

This should include:
- a primary store located in the basement,
- adjacent to the lift core.
- a smaller storage space located in residential
- corridors at every five to eight storeys.
- shelving and a tap.
- if flat collection is the proposed waste collection
- method, storage should include space for the
- trolley/ vehicle.

Small facilities for maintenance and cleaning in a corridor

Buildings as systems

From case studies, staff would frequently need to travel to the basement and back to access items. This was an inefficient use of their time.

There was a lack of provision of space for hazardous cleaning products.

Policy links
- Policy D.H3
- Policy D.DH6

Design guideline 71

Presence of building management should be maximised to create sense of belonging, improve efficiency of day to day management and maintenance and reduce ASB. Building management requirements can have service charges implications. Design through location of spaces and facilities can support these benefits without putting strain on affordable tenures.

This could take the form of:

- Concierge desk within building lobbies oriented to have ease of access to communal spaces.
- Concierge/building management facilities with clear visibility to multiple entrances.
- Care taker/building management facilities close to communal spaces and/or entrances.
- In larger sites with multiple buildings one central contact point with a concierge.

The concierge desk is prominent, with views into communal amenity space.

Mixed and balanced communities

The concierge played a key role in the sense of community in the building by creating familiarity.

There was greater satisfaction and efficiency when both affordable and private elements of the building were managed by one company/ provider.

Everyday life

Buildings as systems

From interviews, the regular presence of a concierge or building manager made residents feel more secure and satisfied with the building.

The presence of staff increased passive surveillance and safety.

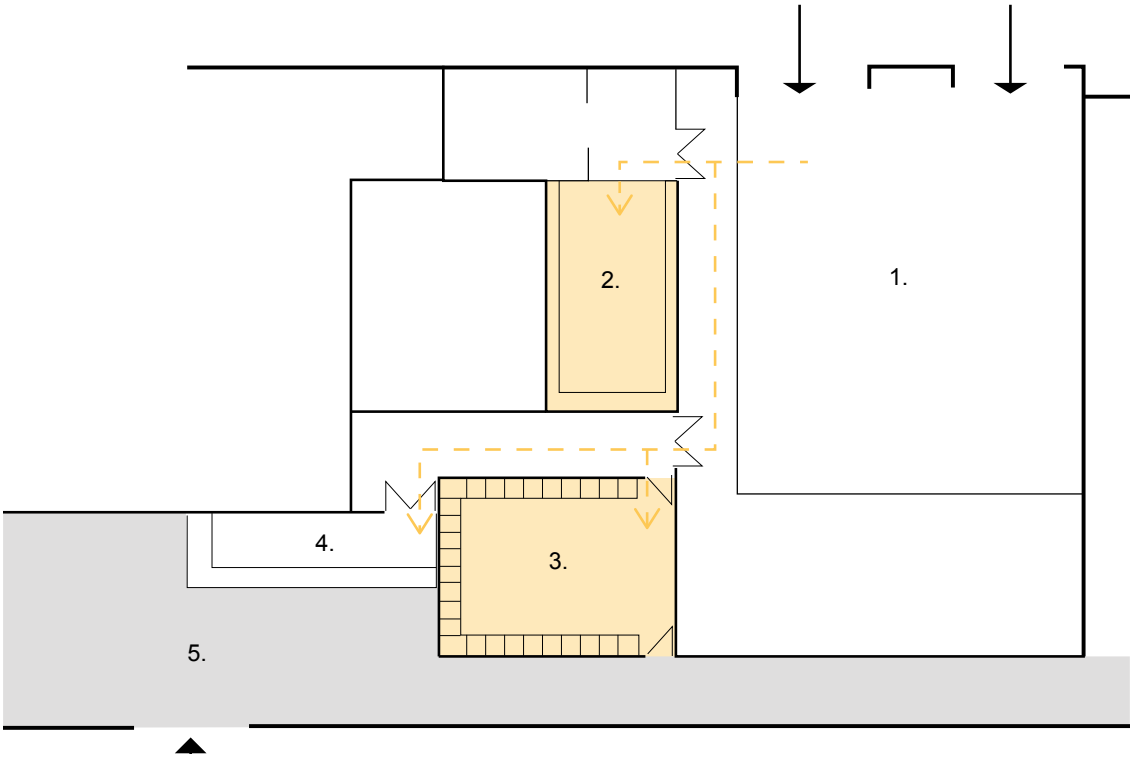
Policy links

- Policy D.H3
- Policy D.DH6

Design guideline 72

If the scheme is a larger masterplan, provide a dedicated room for collecting, storing and returning deliveries. This should be located on a main street and near to the concierge.

Further Consideration
Consider the virtual consolidation of deliveries to reduce the number of trips.



The delivery bay and delivery room are in close proximity and close to the concierge for ease of management.

Everyday life

Buildings as systems

A consolidated location for deliveries can provide greater efficiency, reducing the number of trips.

Policy links
• Policy D.TR4

Design guideline 73

If the scheme is a single building, post boxes for each dwelling for letters and small non valuable items should be provided securely in the lobby or doors to the home.

An additional secure post room should be managed by the concierge for larger parcels and items to be signed for.

Postboxes activate the lobby and are integrated into the design of the space. More secure options include post boxes in a room off the lobby with fob access.

Everyday life

Buildings as systems

When available, residents found the collection of parcels to be a significant benefit of living in contemporary high density buildings.

Policy links

• Policy D.TR4

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3. Home

3.1 Internal layouts

Entrance
Living, kitchen and dining
Bathrooms
Bedrooms

3.2 Private amenity space

Orientation
Type

3.3 Adaptability

Layout
Laundry
Storage

3.4 Construction and materials

Zero carbon and the circular economy

3.5 Environment

Existing standards
Flat layouts
Mitigation
Noise
Overlooking and privacy

The home should be a space of rest and retreat. It should be comfortable, support the ease of daily activities and chores and be able to adapt to changing needs.

Children and young people

Families occupy a range of dwelling sizes, not just larger three bed homes. All layouts should be designed for future flexibility and consider the use, movement patterns and needs of residents of all ages.

The layout of the unit should be able to respond to the changing special needs of a family, so they can invest in the home for the long term.

Mixed and balanced communities

The design of outdoor and communal space in high density development should help to foster the social integration of residents through regular interaction and opportunities for socialising. To support this, the home should be a space of retreat, rest and privacy.

Everyday life

High density and tall buildings can be a desirable living environment for all types of people. To create places where people can call home and live long term there should be the capacity to adapt the home and sufficient storage.

Consideration of domestic tasks and home working in the design of layouts can make life easier for residents and reduce conflict between different uses of the home.

Buildings as systems

The design of the home should support environmentally friendly behaviours and the transition to the circular economy. This includes flexibility and initial fit our with furnishings and goods that are made from reusable and recyclable materials, and that are easy to maintain and repair. In addition, there should be sufficient space to sort and store waste into a minimum of three streams in accordance with the waste strategy for the wider building.

Healthy neighbourhoods

The home is where people spend the majority of their time, accordingly it should optimise environmental conditions to promote occupant's health and well-being. Buildings should achieve excellent levels of daylight and sunlight internally, mitigate the risk of overheating, be energy efficient and achieve good views out and good levels of privacy. This requires an holistic approach that effectively balances the sometimes contradictory parameters.

Whilst minimum space standards for homes are prescribed nationally how this is met and rooms and uses organised has significant impact on liveability. Creating flexible and adaptable layouts creates homes where people live long term, supporting the creation of stable communities. COVID -19 has brought this to greater attention where limited space and overcrowding means rooms must serve a multitude of functions.

Entrances
Entrances function as the transitional space between private home and shared corridor.

With the corridor functioning as a street, acoustic and visual privacy require consideration.
They are also a functional spaces where people get ready to go out or unload items that might be large, required daily or messy.

Kitchen and living rooms
Kitchens and living spaces are the social hub where families or sharers gather.

due to local need and preference, family homes in affordable development should have separate kitchens and living rooms.

There should be sufficient storage space to make waste separation easy without excessive clutter in the home.

Bathrooms
The volume of people in high density environments places further pressure on the water network. Tall buildings generate challenges over water pressure. Steps to improve efficient water use is therefore essential to mitigate the impacts of high density and tall buildings.

Bedrooms
With COVID-19 and the rise of flat sharers, the bedroom is typically a multifunctional space where a resident can spend a great deal of time. Particularly in the common instance where living rooms are converted into an additional bedroom.

A spacious entrance, larger items such as a buggy do not obstruct movement.

London Plan

Policy GG1 Building strong and inclusive communities
E ensure that new buildings and the spaces they create are designed to reinforce or enhance the identity, legibility, permeability, and inclusivity of neighbourhoods, and are resilient and adaptable to changing community requirements.

F support and promote the creation of a London where all Londoners, including children and young people, older people, disabled people, and people with young children, as well as people with other protected characteristics, can move around with ease and enjoy the opportunities the city provides, creating a welcoming environment that everyone can use confidently, independently, and with choice and dignity, avoiding separation or segregation.

Policy D4 Housing quality and standards

Policy D6 Housing quality and standards
A Housing development should be of high quality design and provide adequately-sized rooms (see Table 3.1) with comfortable and functional layouts which are fit for purpose and meet the needs of Londoners without differentiating between tenures.
B Qualitative aspects of a development are key to ensuring successful sustainable housing. Table 3.2 sets out key qualitative aspects which should be addressed in the design of housing developments.

E 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.
F Housing developments are required to meet the minimum standards below which apply to all tenures and all residential accommodation that is self-contained.

Local Plan

Policy S.H1 Meeting Housing Needs
3. All housing must be well-designed, sustainable and take appropriate account of cumulative development. Developments are strongly encouraged to demonstrate this through meeting the Home Quality Mark standard.

4. Development will be supported which seeks to meet the needs of specific communities, including:
a. Older people
b. Disabled and vulnerable people
c. Students
d. Gypsies and travellers

Policy D.H3 Housing standards and quality
1. Development is required to demonstrate that, as a minimum, it meets with the most up-to-date London Plan space and accessibility standards, in particular:
a. it provides a minimum of 2.5 metres floor-to-ceiling heights, and
b. at least 10% of dwellings are built to the 'wheelchair user dwellings' accessible housing standard M4 (3) and the remainder of dwellings are built to the 'accessible and adaptable dwellings' accessible housing standard M4 (2) both contained within part M (volume 1) of the building regulations.

Building Regulations- Accessible and Adaptable Dwellings

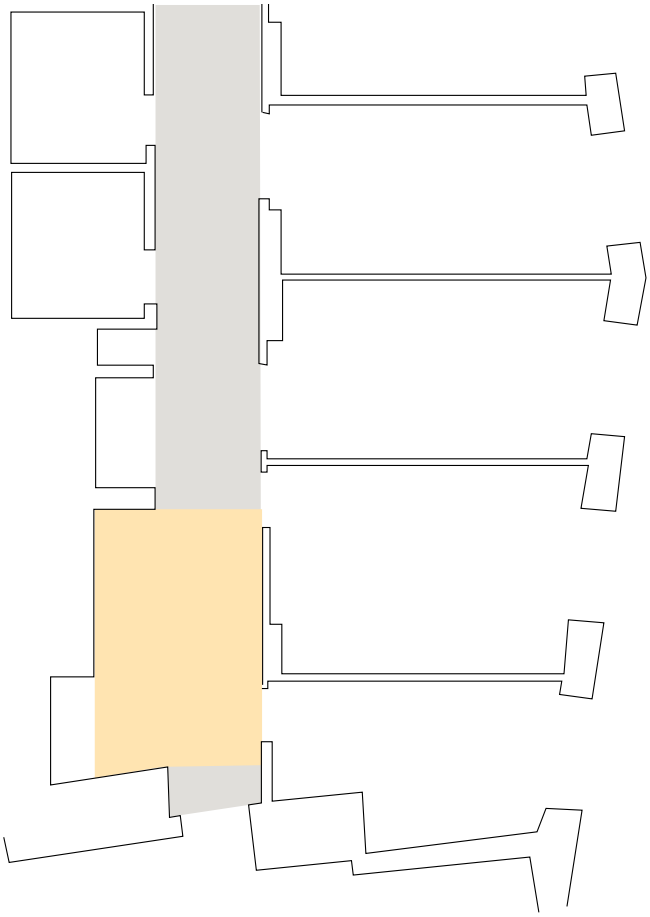
2.20 The principal private entrance, or the alternative private entrance where step-free access cannot be achieved to the principal private entrance, should comply with all of the following:
a. There is a level external landing with a minim width and depth of 1200mm.
b. The landing is covered for a minimum width of 900mm and a minimum depth of 600mm.
c. Lighting is provided which uses fully diffused luminaires activated automatically by a dusk to dawn timer or by detecting motion.
d. The door has a minimum clear opening width of 850mm.
e. Where there are double doors, the main (or leading) leaf provides the minimum clear opening width.
f. A minimum 300m dib is provided to the leading edge of the door and the extra width created by this nib is maintained for a minimum distance of 1200mm beyond it.
g. The depth of the reveal on the leading side of the door (usually the inside) is a maximum of 200mm.
h. The threshold is an accessible threshold.
i. Where there is a lobby or porch, the doors are a minimum of 1500mm apart and there is at least 1500mm between door swings.

Design guideline 74

Entrances to the home should be spacious, proportional to the home size.

The entrance space should not be obstructed by the inward swing of the front door or any internal doors.

The entrance area should provide a dedicated storage space for items like coats and shoes.



Flat layout provides a generous entrance lobby which allows for people to dress and undress from outdoor wear and reduce significantly the extent of the internal corridor.

Mixed and balanced communities

Everyday life

A spacious entrance creates a welcoming space where transition from outdoors to indoors attire can be done, guests can be greeted and deliveries can be received.

Children and young people

Everyday life

Storage for items of everyday use adjacent to the entrance reduces clutter and congestion in the home. This is particularly important for those regularly using large items such as wheelchairs, a buggy or mobility scooters.

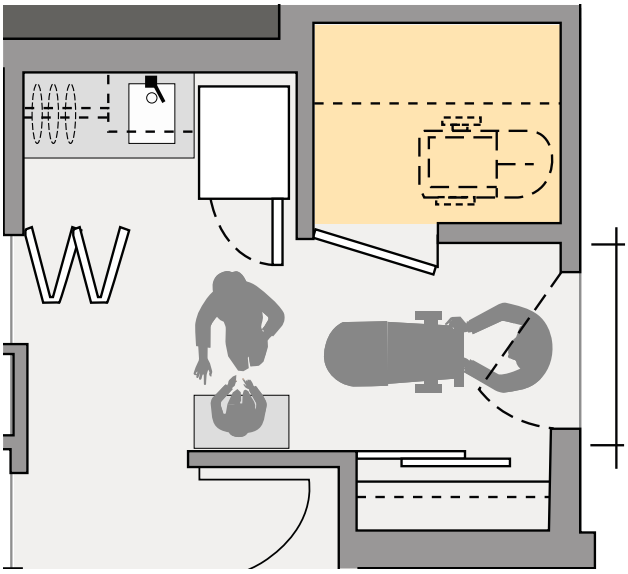
From interviews, trying to accommodate these in existing cupboards takes up all the space so they are commonly kept in the corridor. This conflicts with other uses and causes fire risk,

Everyday life

Lack of storage space results in clutter and awkward layouts can restrict movement. This is exacerbated for the elderly or less mobile.

Policy links

- Policy S.H1
- Policy D.H3



Storage space is provided immediately adjacent to the entrance.

Design guideline 75

The design of kitchens and living spaces should be flexible to allow rooms to be separated or open plan.

Ideally open plan living/kitchen/dinning should be dual aspect. There should be windows to both spaces.

If a wall separates kitchens and living rooms, this should be non-structural to allow for removal or refurbishing with sliding doors as required.

If kitchens and living spaces are separate, layout and design should ensure visibility and ease of access between each room.

Opportunities to open or divide rooms easily

Children and young people

Separate kitchens and living rooms are a cultural preference for many of Tower Hamlets' residents.

When living rooms are visually connected to kitchens, caregivers can supervise children at play.

Everyday life

Flexibility means homes can be adapted to residents needs as they change over time.

Visibility supports connection and socialisation between occupiers of each room.

Policy links

- Policy S.H1
- Policy D.H3

Design guideline 76

Dwellings should provide built in storage space within or adjacent to kitchens for a minimum of three containers to separate waste. Separation should include:

- Mixed dry recycling
- Food waste
- Residual waste

Waste stored within cabinets

Everyday life

Buildings as systems

48% of residents we spoke to did not feel they had sufficient space to keep different kinds of waste. From interviews when waste was separated it usually had to be kept in containers on the kitchen floor. This was particularly disruptive for studios and smaller flats.

Sufficient storage space would improve rates of recycling and reduce residual waste.

Storage would also reduce clutter within residential dwellings.

Policy links

- Policy S.H1
- Policy D.H3
- Policy D.MW3

Design guideline 77

Install efficient water fittings and plumbing. This should include:
- low and dual flush toilets;
- low flow taps and shower heads;
- low water consuming washing machines and dishwashers

Further Consideration
Bathroom finishes, fixtures and fittings should be easy to adapt to personalise and meet changing needs as a result of health and ageing.

Everyday life

From some interviews, high specification of some bathrooms caused difficulties with maintenance. Residents were not allowed to adapt their homes as consistency was desired across the whole building.

Buildings as systems

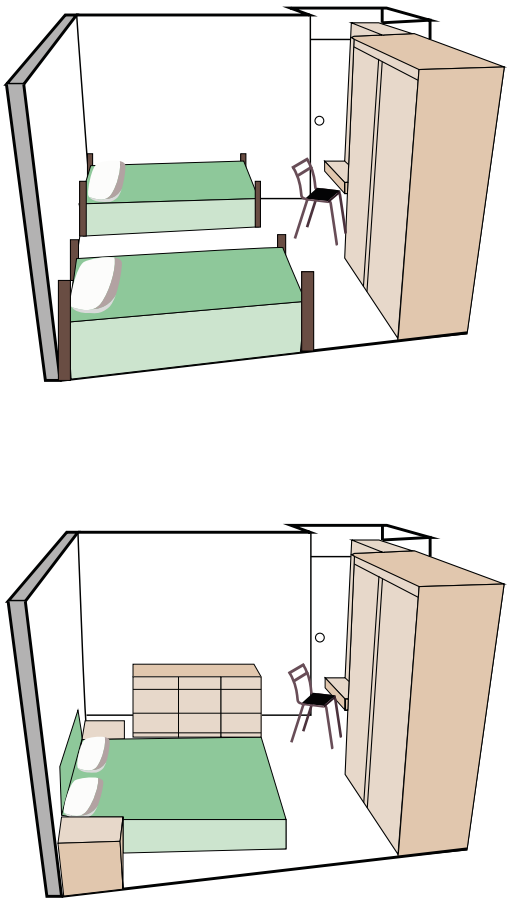
Water efficient fixtures and fittings reduce consumption and pressure on the water network.

Policy links
- Policy S.H1
- Policy D.H3
- Policy DES6

Design guideline 78

Two bedroom four person homes should be maximised where possible as they provide greater flexibility.

In two bedroon three person homes, second bedrooms should be oversized if they are a non standard layout (rooms that are not rectangular or square).



Different bedroom layouts.

Children and young people

Families in private developments occupied a range of home sizes, not just 3 bedroom and above. 39% of families did not live in family homes. 17% of families with up to two children lived in studios and one bedroom homes.

From case studies it is evident that two and three bed homes typically have one master bedroom, second and third bedrooms are typically smaller. This, and non standard layouts, restricted flexibility. On some occasions residents stated they would need to leave as their family grew.

Everyday life

20% of residents we spoke to shared their home with adults who were not related to them and 14% were students.

With the rise of home-working and the number of students living in these buildings bedrooms become places of work and socialising as well as rest. Adequate storage and spacious layouts are therefore key for comfortable environments for those spending more time in their room.

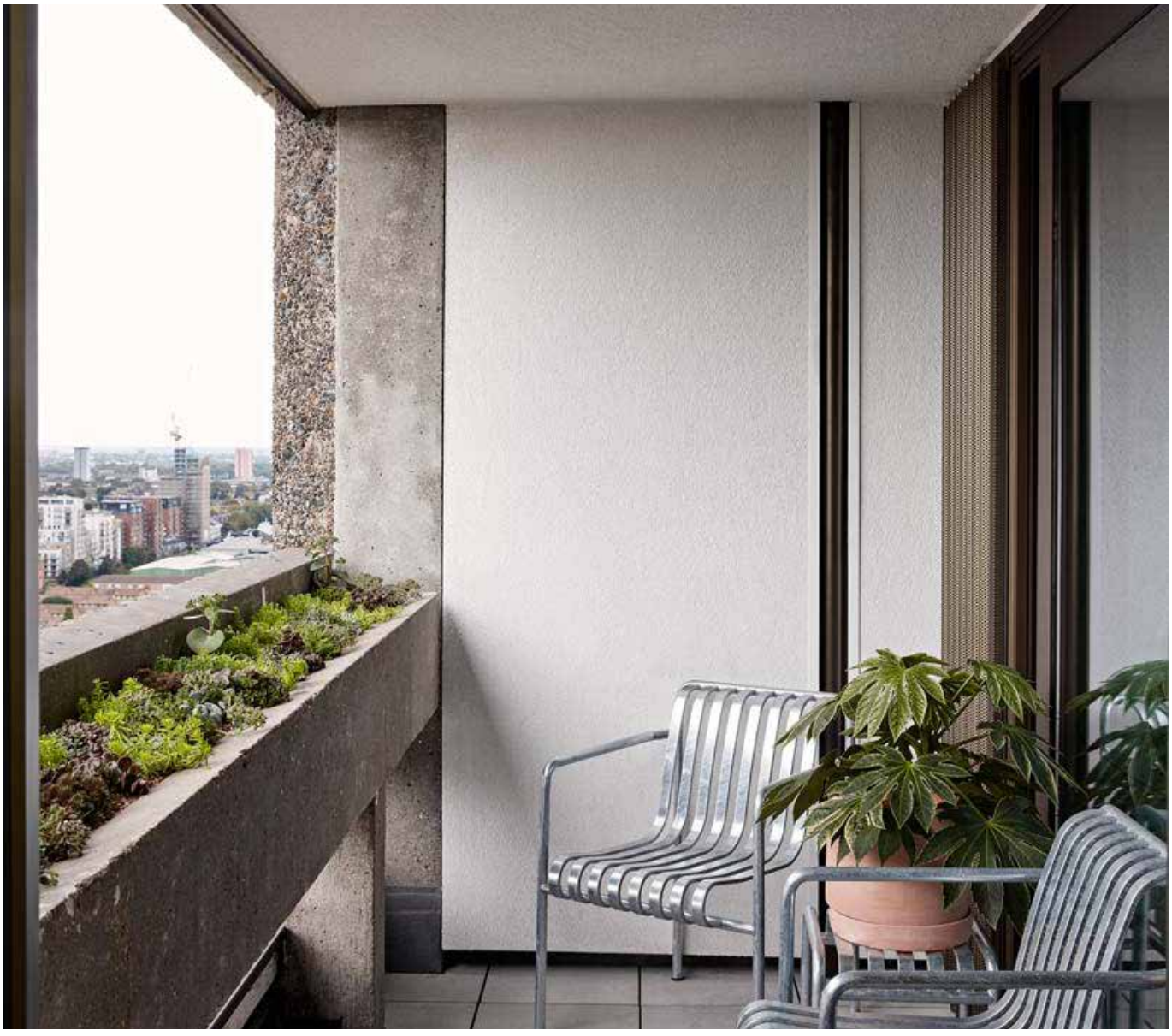
Policy links

- Policy S.H1
- Policy D.H3

Outdoor private amenity space is beneficial for well-being. It can contribute to a sense of space and openness in the home and can provide opportunity for relaxation and leisure.

Orientation
Orientation refers to the position of private amenity spaces in relation to its surrounding context. Orientation can influence the quality of an amenity space in terms of; access to daylight, sunlight and outlook, and the impacts from noise and air quality. Orientation also determines the relationship of private amenity spaces to other outdoor spaces, influencing the degree to which they contribute to the passive surveillance or compromise privacy.

Type
Private amenity space can take many forms, from a ground floor garden, a roof top terrace or a balcony. These follow building typology but have significant impacts on the quality and usability of the space.



Inset balcony incorporates space for planting.

London Plan

Policy D6 Housing quality and standards

Private outside space
9) A 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 1-2 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. This does not count towards the minimum Gross Internal Area space standards required in Table 3.1.

Table 3.2 Qualitative design aspects to be addressed in housing developments

v Private amenity space for each dwelling should be usable and have a balance of openness and protection, appropriate for its outlook and orientation.

London Housing SPG 2016

Standard 26 - A minimum of 5sqm of private outdoor space should be provided for 1-2 person dwellings and an extra 1sqm should be provided for each additional occupant.

Standard 27 - The minimum depth and width for all balconies and other private external spaces should be 1500mm.

Local Plan

Policy D.H3 Housing standards and quality

5. Development will need to demonstrate how they will meet the following minimum amenity space (private, communal and child play space) standards on site:

a. a minimum of five square metres of private outdoor space should be provided for 1-2 person dwellings and an extra one square metres should be provided for each additional occupant.

b. balconies and other private external spaces should have a minimum width and depth of 1500 mm.

9.48 In considering the design and layout of private amenity space, it is important that the space meets the minimum standards set out in the policy (see Part 5) to ensure that residents have sufficient space to carry out activities such as drying clothes or eating a meal outside. In relevant areas, developments should also be guided by Policies D.ES2 (Air quality) and D.ES9 (Noise and vibration) in relation to the layout and design of amenity space.

Policy D.DH2 Attractive streets, spaces and public realm

2. Development is also required to positively contribute to the public realm through:
e. ensuring balconies do not over-hang on the public highway or onto neighbouring properties, civic spaces and public buildings, such as schools.

Design guideline 79

Outlook and orientation of private amenity space should avoid facing out onto areas of poor air quality and unacceptable noise.

If this cannot be avoided, private amenity space should be provided in the form of an inset balcony or winter garden.

Wintergardens offer good protection.

Everyday life

Buildings as systems

Healthy neighbourhood

Private amenity space is intended to improve the quality of residents lives. High noise levels and air quality counter these aims by creating stress and detrimental health impacts.

From interviews, some residents expressed preference for a winter garden when their home faced a main road.

From interviews, private amenity space provided essential ventilation and cooling in the summer months. When the building was near a noise source this disrupted the sleep of some residents causing stress and discomfort.

Policy links

- Policy S.H1
- Policy D.H3
- Policy D.DH8
- Policy D.ES2

Design guideline 80

Ideally, family homes should be located on the lower floors with private amenity space in the form of a terrace or garden. If private amenity space for family homes at upper levels are only in the form of balconies, these should feature improved safety and security measures such as higher balustrades.

Generous inset balcony.

Children and young people

Outdoor play is essential for childhood development. Balconies, particularly those at the upper floor can can feel unsafe for children. More considered design supports balconies as places for play.

Policy links

- Policy S.H1
- Policy D.H3

Design guideline 81

Where a wind assessment is required this should assess balcony design. Depending on findings design strategies include:

- Solid balustrades
- Semi-recessed balconies
- Inset balconies
- Winter gardens

Semi-recessed balconies with distinctive balustrades.

Everyday life

Buildings as systems

Healthy neighbourhood

29% of the residents we spoke to did not feel their private amenity space was protected from wind.

From interviews, some residents could not keep outdoor furniture and struggled to keep windows and doors open during windier periods.

Policy links

- Policy S.H1
- Policy D.H3
- Policy D.DH8
- Policy D.DH6

Design guideline 82

If winter gardens are provided they should:
- majority glazing to walls.
- be openable up to at least 30% of the wall area.
- not contain radiators/ heating.
- provide effective enclosure from wind, noise and
- pollution.

The environment of the wintergarden is easy to control by opening or closing large windows and doors.

Everyday life

Buildings as systems

Healthy neighbourhood

Private amenity space is intended to improve the quality of residents lives. High noise levels and air quality counter these aims by creating stress and detrimental health impacts.

From interviews, some residents expressed preference for a winter garden when their home faced a main road.

Policy links

- Policy S.H1
- Policy D.H3
- Policy D.DH8
- Policy D.ES2

Design guideline 83

Private amenity space should be positively drained.

Everyday life

When balcony floors are slatted, it is difficult to water plants, conduct dirty activities or clean without impacting residents below. Activities that can be conducted in the outside space are limited.

Mixed and balanced communities

Poor drainage can cause conflict between residents of different floors.

Policy links

- Policy S.H1
- Policy D.H3
- Policy D.DH8
- Policy D.DH6

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Building regulations require homes to feature a degree of accessibility and adaptability, so that they can be changed to respond to occupants requirements. However, these statutory requirements only go so far, and further design consideration should be addressed to create a truly flexible and long-term home. If people are able to remain living in their homes and neighbourhoods for a long time, there are greater opportunities to create a strong community.

Layout
Rational configurations of rooms enable residents to add or remove walls so the home can adapt if needs change.

Spacious, regular shaped home layouts allows residents to accommodate different furniture configurations.

Laundry
Small homes can make domestic chores a challenge and can make it difficult to enjoy the home. A separate laundry cupboard frees up space and maintains the living space as one for rest and relaxation.

Storage
Excessive clutter due to lack of storage can be detrimental to well-being and resident enjoyment of the home. Storage can be a particular challenge for flat sharers, families and those with certain illnesses.

Spacious living spaces with regular internal layouts mean furniture can be accommodated in different ways.

London Plan

Policy GG1 Building strong and inclusive communities

Policy D6 Housing quality and standards

5) Any area with a headroom of less than 1.5m is not counted within the Gross Internal Area unless used solely for storage (If the area under the stairs is to be used for storage, assume a general floor area of 1 sqm within the Gross Internal Area).
6) Any other area that is used solely for storage and has a headroom of 0.9-1.5m (such as under eaves) can only be counted up to 50 per cent of its floor area, and any area lower than 0.9m is not counted at all.
7) A built-in wardrobe counts towards the Gross Internal Area and bedroom floor area requirements, but should not reduce the effective width of the room below the minimum widths set out above. Any built-in area in excess of 0.72 sqm in a double bedroom and 0.36 sqm in a single bedroom counts towards the built-in storage requirement.

Policy D7 Accessible housing

London Housing SPG 2016

Standard 24 All new dwellings should meet the nationally described space standard.

Standard 25- Dwelling plans should demonstrate that dwellings will accommodate the furniture, access and activity space requirements relating to the declared level of occupancy and the furniture schedule set out in Approved Document Part M.

Local Plan

Policy D.H3 Housing standards and quality

1. Development is required to demonstrate that, as a minimum, it meets with the most up-to-date London Plan space and accessibility standards, in particular:
a. it provides a minimum of 2.5 metres floor-to-ceiling heights, and
b. at least 10% of dwellings are built to the 'wheelchair user dwellings' accessible housing standard M4 (3) and the remainder of dwellings are built to the 'accessible and adaptable dwellings' accessible housing standard M4 (2) both contained within part M (volume 1) of the building regulations

Design guideline 84

Kitchens and bathrooms should be stacked across floors as much as possible.

Everyday life

Buildings as systems

Stacking kitchens and bathrooms increases efficiency, minimises disruption when repairs are required and reduces the risk of water leakage related accidents.

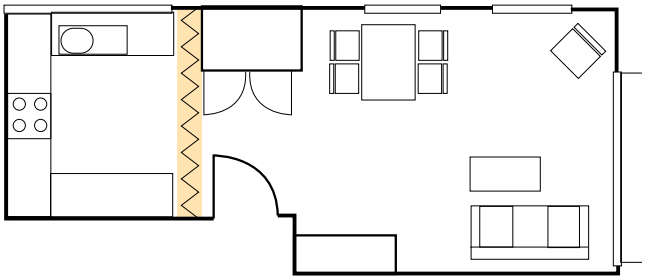
Policy links

- Policy S.H1
- Policy D.H3

Design guideline 85

Partition walls within the flat should not be load bearing where possible. .

There should be scope to add or remove walls according to needs.



Partition walls can be easily added or removed.

Location of windows allows for future division.

Mixed and balanced communities

Children and young people

Everyday life

Flexibility through increasing or decreasing the number of rooms means residents can adapt the home as their needs change. For example a new family member or need for a specific office space.

Buildings as systems

Flexibility and ease of adaptation can extend the lifespan of a development.

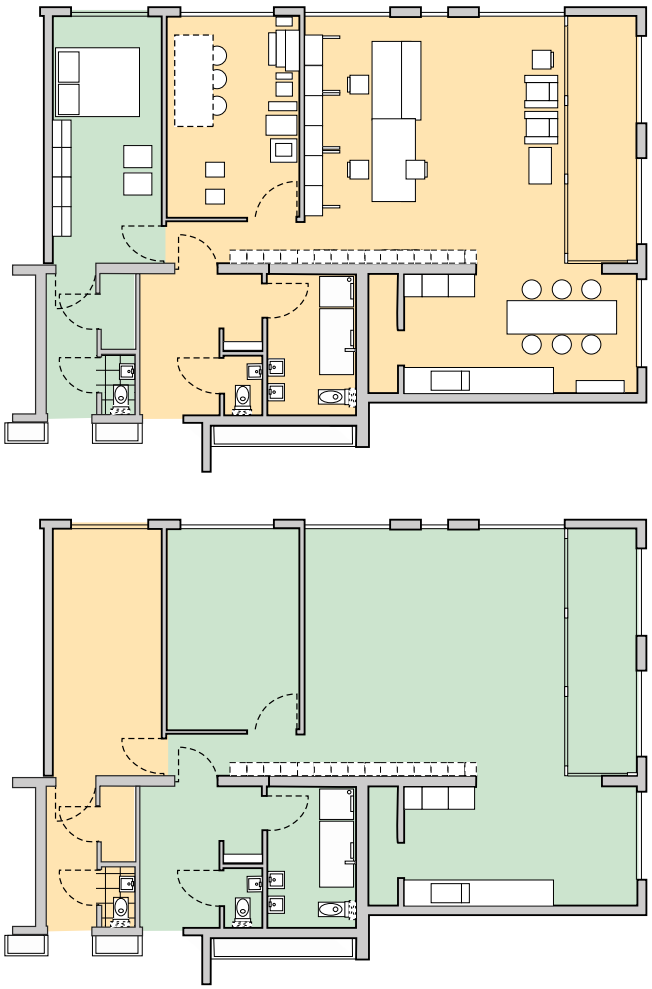
Policy links

- Policy S.H1
- Policy D.H3

Design guideline 86

Planning applications should indicate how typical home layouts can accommodate a range of functions, such as sleeping, eating, relaxing and working from home, with minimal conflict.

Further Consideration
The location and form of radiators and electrical sockets should be carefully considered. They should support flexibility of interior arrangements and take into account potential future reposition of some partition walls and built-in furniture.



Flat layout allows for different functions to take place at the same time with minimal conflict. The project provides a second front door entrance which allows a home working area to be accessed without the need to go through the living area.

Everyday life

Case studies have found that non standard typologies result in difficult internal layouts where it can be hard to accommodate different furniture configurations.

This caused frustration for some residents we interviewed. They wanted open flexible living spaces which could be restricted by non standard room shapes and the location of plug sockets and radiators. Difficulties orientating furniture can be a particular challenge for home workers where workspace and private space such as the bedroom do not function well when co-located.

Children and young people

Everyday life

From case studies it is evident that two and three bed homes typically have one master bedroom, second and third bedrooms are typically smaller.

From interviews, this was difficult for flat sharers and restricted flexibility for families. On some occasions residents stated they would need to leave as their family grew.

Policy links
- Policy S.H1
- Policy D.H3

Design guideline 87

Windows should be above 80cm to accommodate furniture below.

If full height windows are essential to meet daylight sunlight requirements, or a part of façade design, layouts should demonstrate that furniture can be accommodated without blocking the window.

Furniture can comfortably fit underneath window sills.

Everyday life

Healthy neighbourhoods

Windows can restrict the orientation of furniture. This reduces flexibility, can result in a lack of privacy and has daylight/ sunlight implications.

Policy links

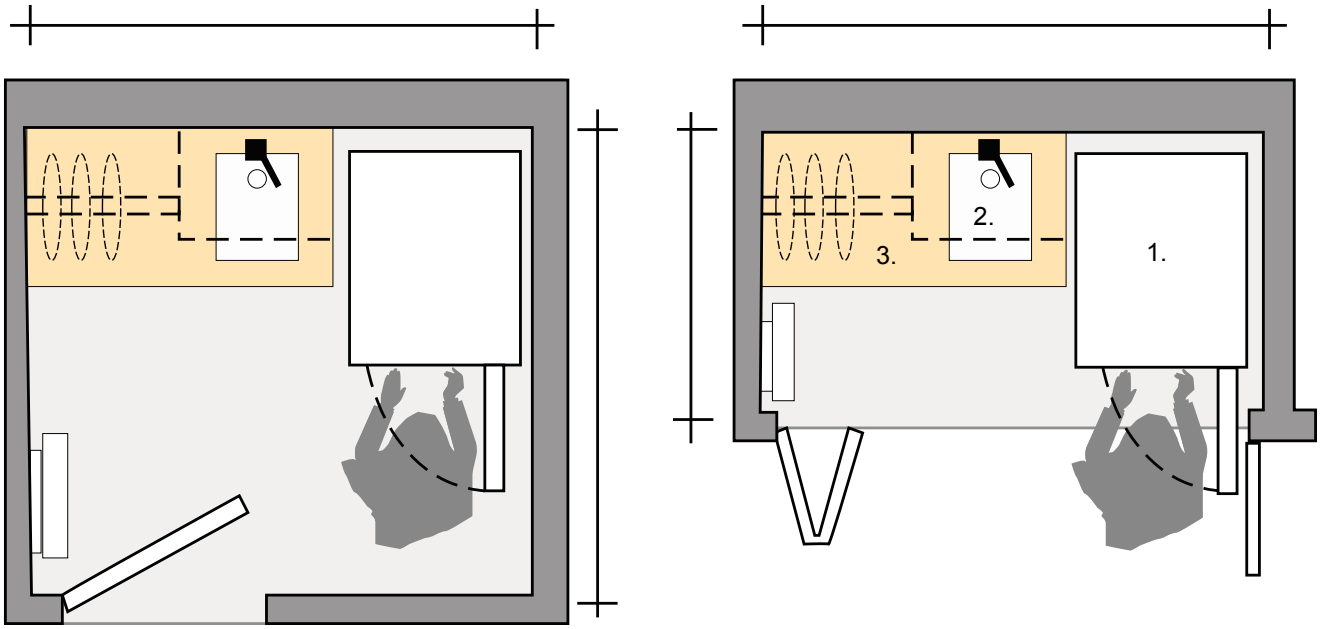
- Policy S.H1
- Policy D.H3

Design guideline 88

If a laundry cupboard is proposed this should:

- have sufficient space for a standard sized washing machine and space to dry clothes.
- be well ventilated.
- include an outlet for an iron or steamer.
- maximize vertical space for storage and to hang-dry items.
- provide space for a folding table, hamper, ironing board and a high shelf or cabinet for safe detergent storage.

If this cannot be achieved, typical home layouts should identify how laundry can be conducted with minimal conflict to other uses.



Laundry closet layout

Children and young people

Everyday life

Due to small homes and overcrowding everyday activities and chores can be more difficult, particularly washing and drying clothes.

A number of schemes forbid the drying of clothes on private amenity space. Clothes must then be dried in the living room or bedroom. This takes up a lot of space, causes damp and can be unpleasant or ineffective if ventilation is poor.

A separate well insulated and ventilated laundry closet ensures chores can be conducted easily and the home remains a calm and relaxing space. This is particularly essential for families, the hard of hearing and dementia sufferers.

Policy links

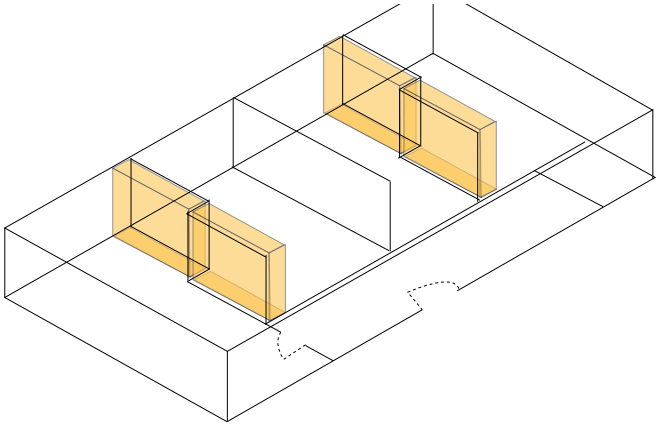
• Policy S.H1 • Policy D.H3

Design guideline 89

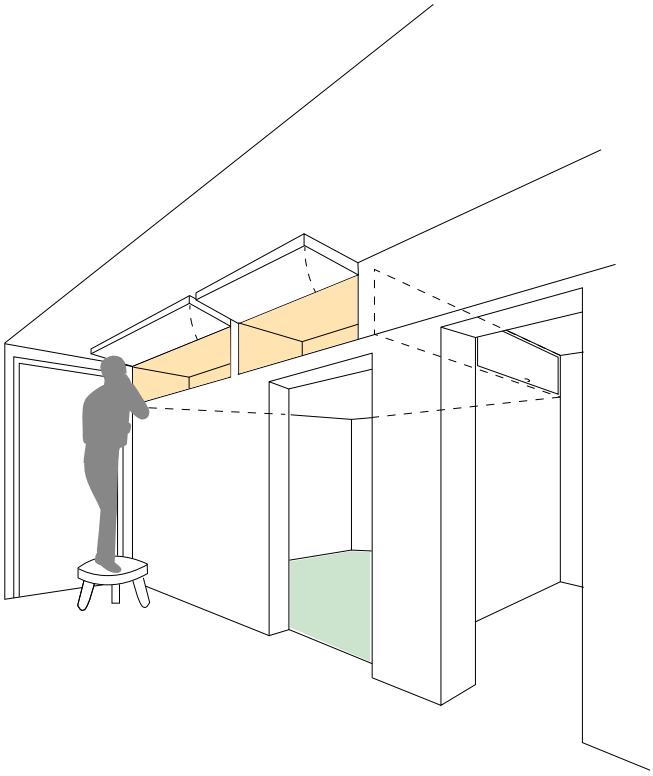
Layout and design of the home should maximize opportunities for storage.

This could include built in features and spaces to accommodate furniture:

- Full height cupboards and/ or cabinets.
- Raised cupboards.
- Staggered partition walls.
- Walk in pantry or wardrobe.



Staggered walls can tidily fit furniture on either side.



Extra storage space can be provided at high level above service spaces such as bathrooms where lowered ceilings are acceptable.

Children and young people

Everyday life

64% of residents we spoke to found there to be a lack of storage. This resulted in clutter in the home and a less comfortable living environment.

From interviews, some residents kept belongings in boxes or in the homes of their friends and family. They would need to travel seasonally to swap items.

Policy links

• Policy S.H1 • Policy D.H3

Design guideline 90

Lockable stores could be provided elsewhere in the building for example within residential corridors or in basements. Location and materials should be fire safe.

Secure basement storage lockers.

Children and young people

Everyday life

Sufficient storage is essential to support residents needs as they change over time, particularly for families and those with illness.

Buildings as systems

Storage in the basement can make efficient use of space that could not accommodate other uses.

Policy links

- Policy S.H1
- Policy D.H3

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The circular economy is one that keeps products,components and materials at their highest use and value at all times. It is an alternative to the current linear economy, where we make, use and then dispose of products, components and materials.

Construction and Materials
Building design and construction is key to embedding circular economy principles and achieving a zero carbon development. Design should reduce waste through salvage, use of recycled materials, modularity, ease of repair and re-use and a plan for disassembly.

From inception, design should also incorporate appropriate measures for the efficient and low carbon management of water, waste and energy resources, integrating these into the initial design to increase effectiveness and reduce conflict.

This is particularly relevant for high density development due to the volume of construction and number of residents. Tall buildings are traditionally harder to maintain and repair, so consideration at the offset reduces costs over the building's lifespan. The neighbourhood within which most high density and tall buildings are located are also highly constrained, restricting demolition methods at the end of the building's life.

Construction materials are made up of waste from decommissioned buildings.

London Plan

Policy GG6 Increasing efficiency and resilience

To help London become a more efficient and resilient city, those involved in planning and development must:

A seek to improve energy efficiency and support the move towards a low carbon circular economy, contributing towards London becoming a zero carbon city by 2050.
B ensure buildings and infrastructure are designed to adapt to a changing climate, making efficient use of water, reducing impacts from natural hazards like flooding and heatwaves, while mitigating against and avoiding contributing to the urban heat island effect.

Policy SI7 Reducing waste and supporting the circular economy

B. Referable applications should promote circular economy outcomes and aim to be net-zero waste. A circular economy statement should be submitted, to demonstrate:
1.How all materials arising from demolition and remediation works will be re-used and/ or recycled
2.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.

Local Plan

Policy S.DH1 Delivering high quality design

Development is required to:
e. use high quality design, materials and finishes to ensure buildings are robust, efficient and fit for the life of the development.

Policy S.MW1 Managing our waste

8. New development will be expected to reuse and recycle construction, demolition and excavation waste on or close to the site where it arises.

Design guideline 91

The embodied carbon of a development should be minimised wherever possible. This could be achieved through:

- Modularisation and product standardisation
- Consideration of how the building will be deconstructed to maximise reuse, salvage or recyclability of components.
- Maximise use of recycled and recyclable materials.

Upcycled materials reduce construction waste and create an interesting facade.

Everyday life

Standardised components across the build reduce costs, complexity of construction and waste.

Standardisation makes for easier maintenance by reducing the range of parts required and replicating repair processes. This in turn can extend the lifespan of the development and individual building elements.

Buildings as systems

Extending the lifespan of the building and individual elements reduces the demand for raw materials.

Modular construction can increase opportunities for off site construction, reducing construction programmes and disturbance to existing residents.

Policy links

- Policy S.DH1
- Policy D.ES7
- Policy S.MW1

Design guideline 92

Establish with building operations teams areas or items with excessive wear or regular replacement. These should be particularly robust and easy to access.

Items may include:
- Lifts.
- Lighting.
- Filters for heating and ventilation.
- Water pumps and valves.
- Water and waste piping.

Lighting at Schiphol airport is rented from and managed by Philips, reducing energy consumption and waste.

Everyday life

Buildings as systems

From interviews, regular damage to lifts and waste chutes occurred in some case studies. This caused frustration for residents and resulted in additional strain on building managers, For example, waste would be left in bags adjacent to lift chutes on every floor. Some residents were frustrated by signs of wear and tear in communal spaces, particularly stains and marks on communal corridors and carpets. Finishes such as glazed brick and tiling would take longer to show signs of wear and would be easier to clean. This reduces building maintenance costs and improves resident experience.

Policy links
- Policy S.DH1
- Policy S.DH3
- Policy S.MW1
- Policy D.ES7

High density development should achieve the best possible environmental conditions to promote resident's health and well-being. This must be achieved alongside meeting the sustainable construction and energy efficiency objectives for new buildings. A holistic approach is required to balance environmental parameters, and this requires consideration from the offset to shape massing and internal layouts.

The guidance has been developed following modelling of nine high density case studies across the borough to understand the balance of environmental parameters and provide a more integrated approach to optimise design trade-offs.

Flat layouts
Massing and internal layouts should priorities dual aspect and shallow single aspect homes achieve more enjoyable internal spaces, particularly access to daylight and sunlight and cross ventilation.

Daylight in buildings has been considered an important aspect of the built environment for centuries for its influence on occupant health, wellbeing and productivity. Direct sunlight can contribute to making an indoor space pleasant and enjoyable. Sunlight also provides direct solar gains which can passively heat a space during the winter but could also contribute to overheating in summer.

Mitigation measures
Mitigation measures outlined in the guidance can vary in response to layout and context.

Varied floor to ceiling heights and increased glazing can improve access to daylight and sunlight. Greater glazing in particular is a common design feature of tall buildings however summer solar gains can significantly contribute to overheating in homes, an issue likely to be exacerbated by climate change. Greater glazing also needs to be balanced against potential increase in building fabric losses and implications on energy use and carbon emissions. For example larger windows will potentially reduce the overall thermal performance of the building envelope. This can be mitigated with higher specification glazing, but with an increase in construction costs.

Noise
Building regulations on noise insulation has increased in recent years. Provided this is adequately installed, noise between homes can cause fewer disturbances than residential corridors or external sources such as a road. Proximity to major noise sources can restrict the ability to ventilate the home.

Outlook and privacy
Alongside daylight and sunlight, outlook plays an important part in occupant's wellbeing in residential buildings. In some circumstances, good views out can effectively mitigate reduced levels of daylight and sunlight. Privacy is also an important aspect in residential dwellings, where occupants value having their own private space, without overlooking from neighbours. Poor privacy may result in curtains being regularly drawn and loss of daylight, sunlight and views out.

London Plan

Policy D6 Housing quality and standards

D The design of development should provide sufficient 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.

D3 Optimising housing density site capacity through the design-led approach

7) deliver appropriate outlook, privacy and amenity
9) help prevent or mitigate the impacts of noise and poor air quality
10) achieve indoor and outdoor environments that are comfortable and inviting for people to use

London Housing SPG 2016

Standard 28 - Design proposals should demonstrate how habitable rooms within each dwelling are provided with an adequate level of privacy in relation to neighbouring property, the street and other public spaces.

Standard 29 - Developments should minimise the number of single aspect dwellings.
Single aspect dwellings that are north facing, or exposed to noise levels above which significant adverse effects on health and quality of life occur, or which contain three or more bedrooms should be avoided.

Standard 30 - The layout of adjacent dwellings and the location of lifts and circulation spaces should seek to limit the transmission of noise to sound sensitive rooms within dwellings.

Standard 32 - All homes should provide for direct sunlight to enter at least one habitable room for part of the day. Living areas and kitchen dining spaces should preferably receive direct sunlight.

Standard 33 - Minimise increased exposure to existing poor air quality and make provision to address local problems of air quality : be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality.

Standard 36 - Development proposals should demonstrate how the design of dwellings will avoid overheating without reliance on energy intensive mechanical cooling systems.

Local Plan

Policy D.H3 Housing standards and quality

Policy D.DH8 Amenity
1. Development is required to protect and where possible enhance or increase the extent of the amenity development must:
a. maintain good levels of privacy and avoiding an unreasonable level of overlooking or unacceptable increase in the sense of enclosure.
b. ensure new and existing habitable rooms have an acceptable outlook.
c. ensure adequate levels of daylight and sunlight for new residential developments, including amenity spaces within the development.
d. not result in an unacceptable material deterioration of the sunlight and daylight conditions of surrounding development and not resulting in an unacceptable level of overshadowing to surrounding open space and private outdoor space.
e. not create unacceptable levels of artificial light, odour, noise, fume or dust pollution during the construction and life of the development.

Policy D.ES10 Overheating
1. New development is required to ensure that buildings (both internally and externally) and the spaces around them are designed to avoid overheating and excessive heat generation, while minimising the need for internal air conditioning systems.

Design guideline 93

Development proposals should maximize the number of dual aspect homes (dual aspect through and dual aspect corner). If single aspects homes are proposed these should not be deeper than 7.5m.

Further Consideration

Changing the window to floor area ratio can balance daylight and sunlight with overheating. The following ratios are advised.

Through homes – window to floor area ratio 0.13-0.23
Corner homes – window to floor area ratio below 0.28
Single aspect - window to floor area ratio 0.18-0.28

Healthy neighbourhoods

Daylight in buildings has been considered an important aspect of the built environment for centuries for its influence on occupant health, wellbeing and productivity.

Environmental modelling of high density case studies can be found in the appendix.

Policy links

- Policy D.H3
- Policy D.DH8
- Policy D.ES10

Design guideline 94

Glazing specification should be considered as part of energy efficiency targets.

Further Consideration

Glazing at 72% VLT and above can improve daylight and sunlight levels to shallow single aspects homes (7.5m deep or less) and shallower though homes (11m deep or less).

Changes to glazing specification has limited improvements in deeper layouts.

Glass with a low U-Value can reduce heat loss, this tends to be most needed on dual aspect units or when window to floor area rations are high.

Full ceiling height windows are at risk of overheating in summer and heat loss in winter.

Healthy neighbourhood

Direct sunlight can contribute to making an indoor space pleasant and enjoyable. Sunlight also provides direct solar gains which can passively heat a space during the winter but could also contribute to overheating in summer.

Environmental modelling of high density case studies can be found in the appendix.

Policy links

- Policy D.H3
- Policy D.DH8
- Policy D.ES10
- Policy D.ES7

Design guideline 95

Floor to ceiling height should be generous. Consider varying floor to ceiling height across the building to optimize daylight/sunlight requirements. Homes at the lowest floors particularly if in close proximity to other buildings would benefit from an increased floor to ceiling height.

Further Consideration

Increasing floor to ceiling height has limited impact on single aspect homes deeper than 7.5m and dual aspect through homes deeper than 11m.

Healthy neighbourhood

46% of residents we spoke to did not feel they had good levels of daylight and sunlight in the home. This was seen in interviews where there was disparity in light levels even within a building. Some felt there was not enough light to keep plants in the home.

Environmental modelling of high density case studies can be found in the appendix.

Policy links

- Policy D.H3
- Policy D.DH8
- Policy D.ES10

Design guideline 96

Natural ventilation should be maximised.

Windows and wintergardens can open wide for natural ventilation.

Healthy neighbourhood

The proportion of residents we spoke to who felt safe opening windows to ventilate their flat was consistent across ground to 20th floor, around 80%. This dropped from the 21st floor and above with approximately 34% feeling unsafe.

From interviews, balconies were appreciated as a way to ventilate the home. Ventilation and overheating was particularly difficult for residents we spoke to with no private amenity space and window restrictors.

Policy links

- Policy D.H3
- Policy D.ES7
- Policy D.DH8

Design guideline 97

Single aspect homes facing towards a major noise source should be avoided. Bedrooms of dual aspect homes should be orientated away from the source.

Homes should be sufficiently insulated from noise, including noise that comes from corridors and communal amenity spaces

Movement in corridors was a greater source of noise than between homes.

Healthy neighbourhood

The response to noise varied significantly between buildings. On average, 57% did not feel they could hear their neighbour inside their flats.

More recent completions were better insulated than older buildings. From interviews, noise from the corridor and private amenity space was more of an issue.

Some residents we spoke who lived near a main road and/or train line had difficulty sleeping in summer months when windows had to be open to ventilate their home.

Mixed and balanced communities

Everyday life

Good noise insulation reduces stress and conflict between residents.

Policy links

• Policy D.ES9 • Policy D.DH8

Design guideline 98

Separation distances of a minimum of 18m between habitable rooms should be achieved to maintain good levels of privacy and avoid unreasonable overlooking. This should consider existing and future neighbours as well as between windows of the same building.

The application should demonstrate steps to improve privacy and outlook if separation distances fall below 18m. This could include staggering windows and/ or locating circulation space and communal rooms in tight locations.

Tall buildings and tight separation distances is detrimental for privacy.

Healthy neighbourhood

Alongside daylight and sunlight, outlook plays an important part in occupant's wellbeing in residential buildings. In some circumstances, good views out can effectively mitigate reduced levels of light.

54% of residents we spoke to did not feel they had good privacy. From interviews, some kept their curtains closed impacting access to daylight sunlight. Poor privacy also limited regular use of private amenity spaces.

34% of residents we spoke to living around high density buildings felt that the building impacted their privacy and outlook.

Policy links

- Policy D.H3
- Policy D.DH8

SECTION 5

APPENDIX

TBC

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