

# URBAN LIVING SPD

Making successful places at higher densities



# Foreword



**We are committed to make the most of the development land available in the city to support the significant increase in new-and-affordable homes and infrastructure we desperately need.**

**In the last 20 years, there has been a dramatic shift with people returning to live in or close to the city centre. This urban renaissance has led to apartment living being commonplace in Bristol. The more successful schemes combine homes with cafes, shops, community uses and workplaces to create vibrant spaces with a high quality public realm.**

**With this renewed appetite amongst developers to build at higher densities, including tall buildings, it is important that we strengthen our planning guidance to ensure that we learn from successful places and don't repeat any mistakes from the past. We want to ensure that future development of the city is inclusive by design, where neighbourhoods are not isolated but interconnected so that varied social, economic and cultural opportunities are accessible to all. Whilst tall buildings are one way of potentially optimising densities, they aren't the only way, and aren't appropriate in all circumstances.**

**I'd like to thank the citizens, business professionals, community representatives, planning agents, and architects who have helped shape this Urban Living Supplementary Planning Document (SPD). The document has sought to reconcile the sometimes polarised views expressed through consultation, providing positive guidance on how to optimise densities in the City. This planning guidance will sit alongside policies established in our Local Plan to ensure we have quality places and homes people want to, and can afford, to live in.**

**The SPD sets out a range of questions that applicants of higher density schemes will need to consider when designing their development and preparing their planning submission. Part 1 relates to all major developments, Part 2 provides additional guidance for residential schemes, and Part 3 provides additional guidance for tall buildings.**

**The aim of this SPD is not just about how we might increase densities, but how we also raise design quality. I am particularly keen that high quality homes are built in this City; good places to live for the young and old, including families. I'll leave you with a very pertinent quote from renowned health minister Nye Bevan which sums up the spirit of this document: 'We shall be judged for a year or two by the number of houses we build. We shall be judged in ten years' time by the type of houses we build.'**

**Cllr Nicola Beech, Cabinet Member for Spatial Planning and City Design, November 2018**

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# Preface

## What is Urban Living?

**Urban living** is all about the creation of compact, characterful and healthy urban areas where people can live, work and play with good access to high quality walking and cycling linkages and public transport. Such an approach looks to making the best use of urban land and building at optimal densities, adopting creative approaches to mixing land uses, and delivering a high quality public realm. Densities are optimised by balancing the efficient and effective use of land, with aspirations for a positive response to context, successful placemaking, and making quality homes

## Purpose and status of the SPD

The Urban Living Supplementary Planning Document (SPD) adds further guidance to the policies contained within the Bristol Local Plan. On adoption, the Urban Living SPD will be a material consideration in the determination of planning applications.

The Bristol Local Plan was under review at the time this SPD was adopted. The SPD will be updated following the examination and adoption of the new Local Plan, adding further guidance to the policies in the new Local Plan.

The SPD should also be read alongside the Council's other guidance aimed at securing quality developments

Figure 1: Policy Context



# Preface

## Balancing the objectives

For the purpose of this Urban Living SPD, an optimal density in new development is considered to be one that balances the efficient and effective use of land, with aspirations for a positive response to context, successful placemaking and liveability.



### Land

**The efficient and effective use of land** -We need to make the best use of the city's limited land supply in order to meet the need for new homes, jobs and infrastructure required by the City's growing population. The highest densities should be located at the most accessible and sustainable locations. All developments should look to optimise their development footprint; accommodating access, servicing and parking in the most efficient ways possible. Where possible, different land uses should be mixed together; residential above businesses and community uses should become common place.



### Context

**A positive response to context** – New development should contribute positively to an area's character and identity, creating or reinforcing local distinctiveness. Bristol has a rich and unique context, shaped by its topography, open spaces and water courses. It is a city of distinct and diverse communities, each with its own character of place, each presenting different opportunities for optimising densities. Understanding the existing or evolving character and context of individual areas is essential in determining how different places may develop in the future.



### Place

**Successful placemaking** – We need to harness the investment in new homes and jobs, to repair and reinvigorate existing neighbourhoods, strengthening physical connections between areas, creating vibrant, resilient and healthy communities. Intensification can help support thriving high streets and local centres, ensuring that for local trips, walking and cycling become the most convenient option, and for trips further afield, public transport becomes a viable option. People-friendly, human-scaled streets should be a joy to walk along. Public and private spaces should be clearly defined, accessible, well managed and safe.



### Liveability

**Making liveable buildings** - We need to create quality buildings, which support the health and well-being of their occupants, and are responsive to the changing way we live, work and spend our leisure time. There is a particular need to build a good quality housing stock which supports the creation of mixed and balanced communities. Private communal space should be safe, accessible, inviting and well used, without the fear of crime. Individual dwellings should provide sufficient comfort, natural light, privacy and quiet so that they become a place of escape from the hubbub of urban life.

# Introduction



## 0.1 The need to optimise densities

Bristol is a growing city and we are ambitious for its future. By 2036, it will need to deliver at least 33,500 new homes and all the employment, community and transport infrastructure that goes along with that. As it continues to change and grow, the City is keen to direct this growth to deliver Urban Living, providing a context-led approach to urban intensification. This will involve focussing growth on transport hubs and district centres, as well as the city centre, in order to better relate housing to employment locations, reduce travel, create more mixed and balanced communities, provide greater lifestyle choices and enhance the overall performance of the urban area.

## 0.2 How to measure density

Density is a way of measuring the intensity of development on a particular site. On its own it does not indicate whether a proposal is good or bad. However, an unusually high or low density for the location should suggest further consideration of the brief and the aim of the scheme, together with additional scrutiny of elements that are made more complex by higher density. It is important to remember that whilst understanding density levels is useful, ultimately it's the design outcome that is key rather than the density.

Density can be expressed in a variety of ways:

**Use intensity:** This is related to people and activities rather than buildings. It can be measured in terms of resident population per hectare, workers per hectare, or visitors/clients/shoppers per hectare, also in terms of flows of pedestrians ('footfall' in retail centres) or traffic.

**Residential density:** Residential densities are predominantly expressed as dwellings per hectare, although this takes no account of the size of dwelling. Habitable rooms per hectare or bed spaces per hectare both give a much better indication of the intensity of development and the likely numbers of occupants.

**Non-residential density:** This is usually expressed as plot ratios or Floor Area Ratios (FAR) and is Total Gross Internal Area of all floors divided by site area. A higher ratio is more likely to indicate a dense, more urban form of development.

**For the purposes of this SPD, densities are expressed as net dwellings per hectare.**

The methodology advocated for calculating residential densities is set out in Appendix A.

### Mixed use schemes:

Often, the key to optimising density on a site is to provide a mix of compatible uses. It is important that non-residential space is taken into account as part of calculating residential density in mixed-use schemes. Appendix A sets out the methodology advocated for measuring residential densities within mixed use schemes.

The companion document 'Urban Living- Learning from recent higher density schemes in Bristol' (BCC, 2018) provides a number of worked examples using the methodologies advocated in Appendix A.

## 0.3 What is an 'Optimal Density' for new development?

What is an 'optimal density'? This is the most favourable density at which a development has a positive impact on the local community and the environment. A successful development would create a vibrant neighbourhood which supports the retail and social needs of the residents. The architecture should allow sun to penetrate to street level and let people walk and cycle in comfort. It should be dense enough to build a sense of community, but not so dense that it fails to produce a liveable place.

Many factors determine what an appropriate density for a development site may be, including:

- The characteristics of the site, and any development constraints;
- The local context, and its prevailing character;
- The scope for departing from the area's prevailing character (more easily achieved on larger development sites where a transition of scale is possible);
- The sites proximity to a range of employment, services and facilities;
- The availability of good walking, cycling and public transport infrastructure which in turn can reduce the need to own a car, and hence the need to provide car parking;
- The proposed development mix.

## 0.4 A design-led approach to optimising density

To accommodate growth in an inclusive and responsible way, every new development needs to make the most efficient use of land. This will often mean developing at densities above those of the surrounding area on most sites. A design-led approach to optimising density is advocated which should be based on an evaluation of the site's attributes, its surrounding context and capacity for growth and the most appropriate development form.

We recommend that a Masterplan should be prepared at the outset for any significant scheme seeking to increase densities. A Masterplan provides a planning and design framework to guide the incremental development of large or complex areas. The Masterplan should provide a vision for the development of the entire site area, including how new buildings, streets, blocks, pedestrian and cycling routes, parks, and publically accessible and private open spaces will fit within the existing and planned context.

A Masterplan will normally be required for developments having any one or more of the following characteristics, with exceptions to this to be agreed through the pre-application process:

- containing two or more construction phases;
- covering a site area larger than 2.0 hectares;
- proposing additions or alterations to the primary pedestrian or vehicular route network;
- proposing one or more tall buildings (defined as 30m high and over).

Masterplans accompanied by a Public Realm Plan and Buildings Parameters Plans setting out the quality expectations for the detailed application, should be submitted for outline planning approval.

## 0.5 Residential density and the Development Management process

All schemes are assessed through the Development Management process to ensure compliance with national and local plan policies and guidance.

The Local Plan seeks a **minimum indicative net density of 50 dwellings per hectare**. Residential densities below this figure should only occur where it is essential to safeguard the special interest and character of the area.

This SPD does not set a maximum residential threshold, instead it promotes an optimum density on all sites, in all locations. In some cases a site might have an optimum density that is much higher than the prevailing density.

In a Bristol context, a review of recent schemes (Urban Living- Learning from recent higher density developments) have demonstrated optimum densities in new development schemes as as:

- **200 units/ha in a city centre setting (i.e. Wapping Wharf);**
- **120 units/ha in an urban setting (i.e. Paintworks or Junction 3); or**
- **100 units/ha in an outer urban setting (i.e. Gainsborough Square, Lockleaze).**

Recent research (Superdensity- HTA et al 2015) has shown that very high density can challenge positive response to context, successful placemaking and liveability aspirations, sometimes resulting in poor quality development.

Therefore while the SPD does not set an upper limit to density, schemes which propose densities significantly higher than those set out opposite, will require earlier engagement and a more collaborative approach with the Local Planning Authority to ensure all urban living objectives and other policy considerations are met, together with a commitment to do the following through the Development Management Process:

- undertake effective pre-application community involvement through adherence with Bristol's Statement of Community Involvement;
- prepare development envelope studies early on in the design process to allow for the early testing of open space quantum (Appendix A), sunlight, daylight (Appendix B), visual impact (Appendix C) and wind effects (Appendix D), using this to inform further design development;
- submit to design review by the Bristol Urban Design Forum (BUDF) at the earliest pre-application stage possible followed by a further desk-top review of the submitted planning application by the BUDF; and
- provide a detailed assessment of the schemes future maintenance and management plans (further details of this will be set out in a Planning Guidance Note)

It will be at the Local Planning Authority's discretion as to whether schemes below this threshold should make a similar commitment. The Local Planning Authority will advise on whether an EIA Screening Opinion should be sought.

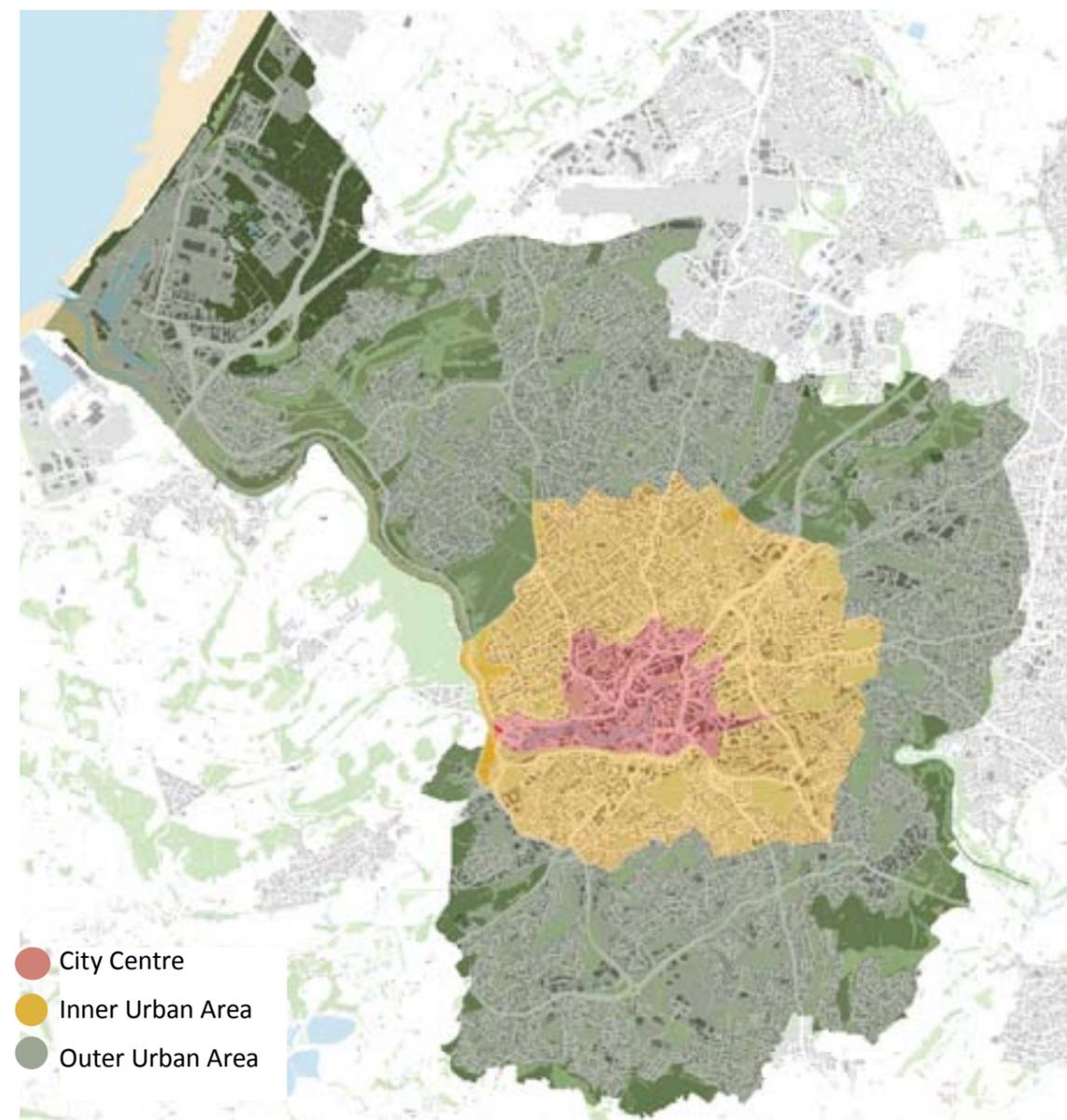


Figure 2: Bristol density setting map

# Introduction



- 1 Invicta, Harbourside
- 2 Castle Park View (consented scheme), Broadmead (photo: Bouygues uk)
- 3 Bedminster, south Bristol
- 4 Paintwork, Brislington (photo: Verve Property)Gainsborough Square, Lockleaze
- 5 Southmead Hospital, Southmead

## 0.6 Optimising density- the opportunities across the city

Optimising density focuses growth on transport hubs, district centres, and the city centre, as well as areas of underused land and low-density developments with good access to services and facilities. The Local Plan sets out those areas in the city considered capable of accommodating a more intensive form of development. The opportunity to optimise density varies between the City Centre, Inner Urban and Outer Urban areas, and from street to street, and is very much influenced by the areas character.

### 0.6.1 Bristol City Centre

Bristol City Centre has been the focus of significant growth and investment in recent years. The Urban Living approach is exemplified in the regenerated Harbourside area, where the residential community lives in apartments with easy access by foot to workplaces shops, services and leisure opportunities, all supported by a high quality public realm. Some of the more recent developments such as Wapping Wharf and Invicta have been particularly successful in terms of placemaking.

Bristol City Centre, including Temple Quarter will continue to be a focus for Urban Living as it is the most accessible part of the city served by mainline rail services and bus routes. It has much of the necessary physical infrastructure required to support a more intensive use of land for a mix of uses. The opportunities for development are greater in the eastern half of the central area – areas such as Temple Quarter, Redcliffe and Bristol’s shopping quarter. Development in these areas is being guided by adopted and emerging spatial frameworks which set out a clear three-dimensional vision for these areas.

The remodelling of road infrastructure offers the opportunity to optimise densities on a number of key city centre sites, e.g. the Western Harbour proposals at Cumberland Basin. Remodelling these spaces to give more space to allow pedestrians, cyclists and public transport, together with play and green space in streets, creating pleasant places to be, and the focus for new, higher density forms of development. Such an approach is currently being implemented at Temple Circus.

### 0.6.2 Inner Urban Area

The Inner Urban Area broadly comprises the city’s Georgian and Victorian neighbourhoods, most of which fall within a 20 minute walk of the city centre in either a northerly, easterly or southerly direction. The area also comprises industrial estates, urban parks and road and rail corridors. In recent years, there has been growing interest in delivering higher density, mixed-use development in the inner Urban Area, notable schemes being J3 (Easton), and Paintworks (Brislington).

There is a common misconception that higher density development equates to poorer quality homes and neighbourhoods. However, some of Bristol’s most desirable neighbourhoods, such as Clifton and Southville, are actually some of the most densely developed areas. As the sample studies show in the accompanying ‘Urban Living – Learning from recent high density schemes in Bristol’ (BCC, 2018), typical gross densities in Clifton are over 90dph, compared with gross densities of around 65dph on post-war high rise estates.

The areas with potential for optimising densities are centred on local train stations (Lawrence Hill, Parson Street and Bedminster). Considerable investment is expected in both Bristol Temple Meads Station and its local stations (MetroWest). There is therefore a tremendous opportunity to increase and encourage the use of public transport through an Urban Living approach which focuses new development on these existing stations, as well as Ashley Down, Filton and Henbury.

Whilst it is envisaged that the established residential areas will remain largely unchanged, there are opportunities to optimise densities in the transition areas in between the established character areas. As with Bristol City Centre, opportunities exist to release development opportunities through the remodelling of road infrastructure in a number of locations, for example Lawrence Hill.

### 0.6.3 Outer Urban Area

In the 20th century, Bristol expanded beyond its Victorian suburbs, creating the Outer Urban Area, which is heavily influenced by Garden City principles. Residential densities are low (typically 30dwellings per hectare). These low densities have significantly undermined the ability of the area to deliver a range of services within a reasonable walking distance of the home, resulting in high reliance on the car. In poorer areas, geographic isolation and lack of access to employment and services are compounded by low densities which fail to reach the required level to justify a regular bus service.

There are signs that new, higher density building typologies are beginning to be built in the Outer Urban area with small scale apartment blocks, terrace housing, and urban infill schemes emerging in areas like Lockleaze and Southmead. Schemes like Gainsborough Square demonstrate the potential of focussing small-scale, but higher than the prevailing density developments at the focal points in a community, providing a catalyst for wider regeneration. These early schemes demonstrate the advantages of diversifying the housing stock, enabling the community to better meet its changing housing needs

A key success factor in such housing schemes has been early and sustained community engagement. Programmes like ‘We Can Make’ in Knowle hint at what might be possible more widely in such areas, empowering low-density, high-disadvantage estates to deliver affordable housing at the ‘point of need’ on micro-sites distributed across the neighbourhood

Encouragingly, it is also clear that large institutional land owners in the Outer Urban Area such as the hospital and university are proactively seeking to use their land more intensively, as is the City Council (Hengrove Park and Filwood Business Park). Campus style developments (buildings laid out in a park-like setting) such as Southmead Hospital are incrementally being transformed into fully integrated urban areas, which use land more efficiently, and are more integrated into the surrounding neighbourhood.

# When and How to use this guidance

The SPD sets out a series of questions that applicants are encouraged to consider throughout the design development of a scheme. Questions are designed to be used at all stages of the development process, guiding design related discussions with the local community, local authority and other stakeholders.

Applicants are encouraged to participate in early pre-application discussions using the relevant questions as a prompt for discussions with the Local Planning Authority.

A traffic light system will be used to assess the scheme.

Through this process, all parties should understand what needs to be done in local circumstances to achieve as many green lights as possible, minimise ambers and avoid reds. Any ambers and reds should be identified early so that a suitable solution can be found as part of the design process.

Applicants should show evidence of how their development performs against each question. Any ambers should be those where sub-optimal solutions are unavoidable because of the particular circumstances of the scheme beyond the control of the applicant (and where there is evidence to support this).

It is important that applicants score their schemes robustly.

The purpose of the questions is to enable a conversation about the design of new schemes between the applicant and the local planning authority and thereby arrive at a mutually supported result.

Each question has supplementary information and pointers on how to approach an assessment.

We recommend that these questions are used throughout the pre-application process, with a summary of the responses being set out in the Design and Access Statement.



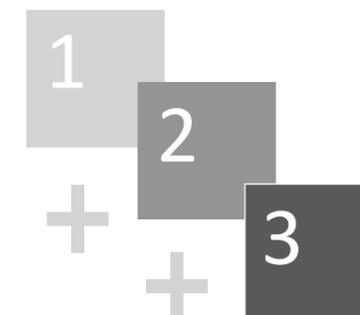
Red elements identify aspects of proposals that need to be changed and where the scheme design at the time of assessment fails to respond to the question positively.

Amber is used where there is clear evidence of local constraints on the scheme, beyond the control of the design team, prevent it from achieving a green.

Green shows the design of the scheme has responded positively to the questions

1	<b>Major Developments</b> = Development of 10+ residential units or 1000 square metres of commercial floor space
2	<b>Residential Development</b> = all schemes which incorporate residential use
3	<b>Tall Building</b> = schemes which are 30m or higher, (or 10+ storeys)

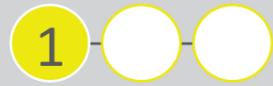
e.g. A major residential development over 10 storeys=



# 1

## Major Developments

Guidance/ questions relevant to all major schemes, regardless of land use.



### City

Q1.1 Has the scheme adopted an approach to urban intensification which is broadly consistent with its setting?

### Neighbourhood

Q1.2 Does the scheme contribute towards creating a vibrant and equitable neighbourhood?

Q1.3 Does the scheme respond positively to either the existing context, or in areas undergoing significant change, an emerging context?

### Block & Street

Q1.4 Does the scheme provide people-friendly streets and spaces?

Q1.5 Does the scheme deliver a comfortable micro-climate for its occupants, neighbours and passers by?

Q1.6 Has access, car parking and servicing been efficiently and creatively integrated into the scheme?

# 2

## Residential Development

Guidance/ questions relevant to all schemes which incorporate residential use.



### Shared access and internal spaces

Q2.1 Does the scheme make building entrances welcoming, attractive and easy to use?

Q2.2 Are the scheme's internal spaces convivial, comfortable and user-friendly?

### Private outdoor space

Q2.3 Does the scheme provide sufficient private outdoor space?

Q2.4 Does the scheme create attractive, well designed and well maintained private outdoor spaces?

Q2.5 Does the scheme creatively integrate children's play?

### Individual homes

Q2.6 Are internal layouts ergonomic and adaptable?

Q2.7 Does the scheme safeguard privacy and minimise noise transfer between homes?

Q2.8 Does the scheme maximise opportunities for daylight and sunlight of internal spaces; avoiding single aspect homes?

# 3

## Tall Building

Guidance/ questions relevant to schemes which are 30m high and above (or 10+storeys).



### Visual quality

Q3.1 Is the tall building well located?

Q3.2 Does the scheme make a positive contribution to the long range, mid range and immediate views to it?

Q3.3 Does the scheme demonstrate design excellence?

### Functional quality

Q3.4 Does the scheme ensure the safety of occupants and passers by?

Q3.5 Does the scheme interfere with aviation, navigation or telecommunication, and does it have a detrimental effect on solar energy generation on adjoining buildings?

Q3.6 Has the scheme's future servicing, maintenance and management been well considered?

### Environmental quality

Q3.7 Does the scheme create a pleasant, healthy environment for future occupants?

Q3.8 Is the scheme sustainably designed?

Q3.9 Will the scheme be neighbourly, both at the construction phase and following occupation?

# Part 1:

# Guidance for all major developments

Part 1 of the SPD provides advice for applicants of major development schemes (10 or more residential units or 1000 square metres of commercial floor space). It sets out best practice in relation to urban design and place making at a city, neighbourhood, block and street level.

The following questions are designed to be prompts for use in pre-application discussions for all major schemes, regardless of land use mix. For schemes with a residential component, these prompts should be used in combination with the prompts set out in Part 2. For tall building schemes that are 30m in height or more, these prompts should be used in combination with prompts set out in Part 3..

Design and Access statements should include evidence of how each question has been responded to.

The planning of density needs to be considered from the scale of the whole city through to the design of the individual building if Urban Living is to be successfully delivered. Some parts of the city will lend themselves to intensification more than others. The Local Plan Review will provide further information on the spatial strategy for the City.

## City

Q1.1 Has the scheme adopted an approach to urban intensification which is broadly consistent with its setting?



BCS20 Efficient and effective use of land  
 BCS7 Centres and Retailing  
 BCS8 Delivering a thriving economy  
 BCS9 Green Infrastructure  
 BCS18 Housing Type  
 BCS21 Quality Urban Design  
 BCS22 Conservation and the Historic Environment  
 DM26 Local character and distinctiveness'  
 DM27 Layout and Form  
 DM28 Public realm  
 BCS10 Transport and Access Improvements  
 Bristol Central Area Plan

## Neighbourhood

Q1.2 Does the scheme contribute towards creating a vibrant and equitable neighbourhood?



Q1.3 Does the scheme respond positively to either the existing context, or in areas undergoing significant change, an emerging context?



BCS7 Centres and Retailing  
 BCS8 Delivering a thriving economy  
 BCS9 Green Infrastructure  
 BCS12 Community Facilities  
 BCS17 Affordable Housing  
 BCS18 Housing Type  
 BCS20 Efficient and effective use of land  
 BCS21 Quality Urban Design  
 BCS22 Conservation and the Historic Environment  
 DM26 Local character and distinctiveness'  
 DM27 Layout and Form  
 DM28 Public realm  
 BCS10 Transport and Access Improvements  
 BCS11 Infrastructure and Development Contributions  
 DM2-17 suite of policies

## Block & Street

Q1.4 Does the scheme provide people-friendly streets and spaces?



Q1.5 Does the scheme deliver a comfortable micro-climate for its occupants, neighbours and passers by?



Q1.6 Has access, car parking and servicing been efficiently and creatively integrated into the scheme?



BCS10 Transport and Access Improvements  
 BCS11 Infrastructure and Development Contributions  
 BCS20 Efficient and effective use of land  
 BCS21 Quality Urban Design  
 DM27 Layout and Form  
 DM28 Public realm  
 DM29 Design of new buildings  
 DM23 Parking  
 DM32 Recycling and Refuse Provision  
 Transport Development Management Guide

# City

Development proposals should make the most efficient use of land by delivering an optimum density for its site and location i.e. developing land to the fullest amount consistent with all relevant planning objectives. Some parts of the city will lend themselves to intensification more than others. Further details can be found in the spatial policies of the Local Plan.

## Q1.1 Has the scheme adopted an approach to urban intensification which is broadly consistent with its setting?

Most parts of the city offer opportunities for modestly increasing densities, through sensitive urban infill schemes, informed by a clear understanding of context.

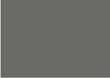
Some parts of the city offer opportunities for more significant increases in density. These areas are identified in the Local Plan and tend to be the more sustainably located areas such as the district/town centres and transport hubs (see Fig 2), areas with fewer contextual constraints (see Fig 3) and the larger development sites (greater than 2ha) where there is potential for new development to define their own setting. Some of these areas already have adopted spatial plans in place to guide development e.g. Temple Quarter Spatial Framework. To fully realise the potential of areas which do not currently have an adopted spatial plan in place, we recommend key stakeholders come together to prepare such a plan.

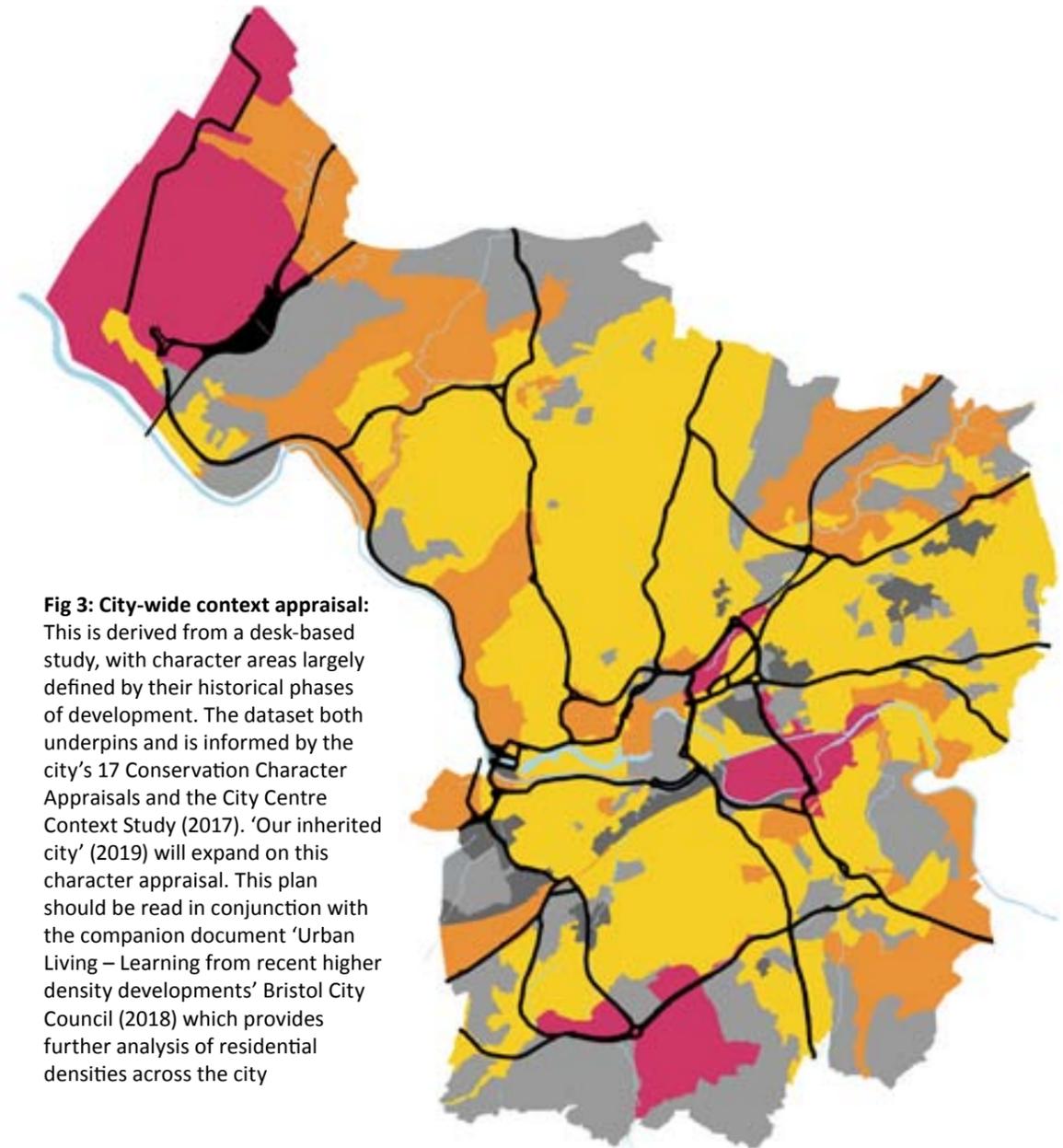
We recommend

- a All sites should adopt a design-led approach to establishing site capacity. Early contact with the Local Planning Authority provides an opportunity to agree an appropriate development envelope prior to detailed design work being undertaken.

- b Residential schemes should provide a minimum level of density appropriate to the site's setting, as set out in the Local Plan. Residential densities below this figure should only occur where it is essential to safeguard the special interest and character of the area.
- c Working in partnership with adjoining properties and land owners to maximise development potential and land efficiency, while also safeguarding future development on neighbouring land.

## Part 1- Major development: City

-  Areas of strong townscape and/or landscape character with intrinsic value (low potential for significant intensification)- e.g. protected open space, significant character areas within Conservation areas
-  Areas of a dominant townscape character, and high intensity usage e.g. Victorian suburbs. Modest potential for infill on small sites through new build, infill development, conversions, demolition and redevelopment or extension of existing buildings
-  Areas of dominant townscape character, and low intensity usage e.g. post-war housing estates (Lawrence Hill, Southmead, Lockleaze, Knowle West). Community-led intensification could provide opportunities to diversify housing stock, increase patronage for public transport and support local centres
-  Areas of varied townscape character, contextual constraints, and varied patterns of usage e.g. City Centre, Temple Quarter, Western Harbour, Central Fishponds, Central Bedminster & Parson Street, Brislington. Significant potential for intensification subject to the preparation of a 3D area-wide spatial framework informed by detailed context appraisal
-  Areas of weaker townscape character, fewer contextual constraints and low intensity usage e.g. Hengrove Park & Hartcliffe Campus, and industrial and warehousing areas. Significant potential for intensification (albeit in some areas, this will depend on the future planning designation for the area, which is currently under review through the Local Plan process).



**Fig 3: City-wide context appraisal:** This is derived from a desk-based study, with character areas largely defined by their historical phases of development. The dataset both underpins and is informed by the city's 17 Conservation Character Appraisals and the City Centre Context Study (2017). 'Our inherited city' (2019) will expand on this character appraisal. This plan should be read in conjunction with the companion document 'Urban Living – Learning from recent higher density developments' Bristol City Council (2018) which provides further analysis of residential densities across the city

# Neighbourhood

Proposals seeking to optimise densities need to demonstrate how they assist in delivering a vibrant and equitable neighbourhood - walkable, compact, green, accessible, mixed and balanced - responding positively to the existing or emerging context.

'Higher density housing in existing urban areas creates vibrant, successful neighbourhoods, and the number and variety of people who live there support local shops, transport and community facilities.'

*CABE, Better Neighbourhoods*

## Part 1- Major development Neighbourhood



### Q1.2 Does the scheme contribute towards creating a vibrant and equitable neighbourhood?

We recommend

- a Early and sustained community consultation to establish local aspirations, needs and priorities for the area, using this information to inform the brief for the scheme, and its design evolution. Such an approach can build community support for a more intense form of development, if time is taken to show the wider benefits, and dispel fears about higher densities (Gainsborough Square in Lockleaze being a good example)
- b Undertaking research to better understand local need, where possible, using the scheme to help address any deficits identified (housing mix, facilities and services, open space, transport).
- c Creating compact, walkable neighbourhoods that are sufficiently dense to support local services such as a convenience shop and bus stop within a reasonable walking distance (see Fig 4). This may involve making off-site contributions to enhance walking and cycling routes
- d Strengthening the neighbourhood's green and blue infrastructure network, with high quality green walking and cycling routes linking doorstep play areas with pocket parks, larger parks and green space.
- e Creating vibrant, mixed and balanced neighbourhoods by introducing new building types and tenures that complement the existing offer (e.g. small apartment blocks can work well in an area of predominantly family housing)

- f Designing buildings which can be easily adapted to accommodate new uses over time. For example, the Georgian terraces have proved very adaptable over the years with houses being successfully converted into offices or apartments.
- g The vertical mixing of compatible uses, for example, residential uses above commercial or community uses
- h For larger developments, locating new facilities (if provided) where the greatest number of people can access them easily, recognising that this may be at the edge of a new development or on a through route (as has successfully been achieved at Wapping Wharf). However, it is worth considering whether existing facilities can be enhanced before proposing new ones.
- i Where possible, integrating complementary uses within a development where people can meet each other such as public spaces, community buildings, cafes and co-working spaces (an approach taken successfully at J3, the Paintworks and Gainsborough Square). Aim to get these delivered as early as possible. Think carefully about how spaces could be used and design them with flexibility in mind, considering where more active spaces should be located so as to avoid creating potential conflict between users and adjacent occupants
- j Higher density residential developments need to incorporate a variety of accommodation to meet the needs of families, elderly, co-living and those with specific accessibility needs, as well as young professionals to help create stable communities where people want to live over the long term.

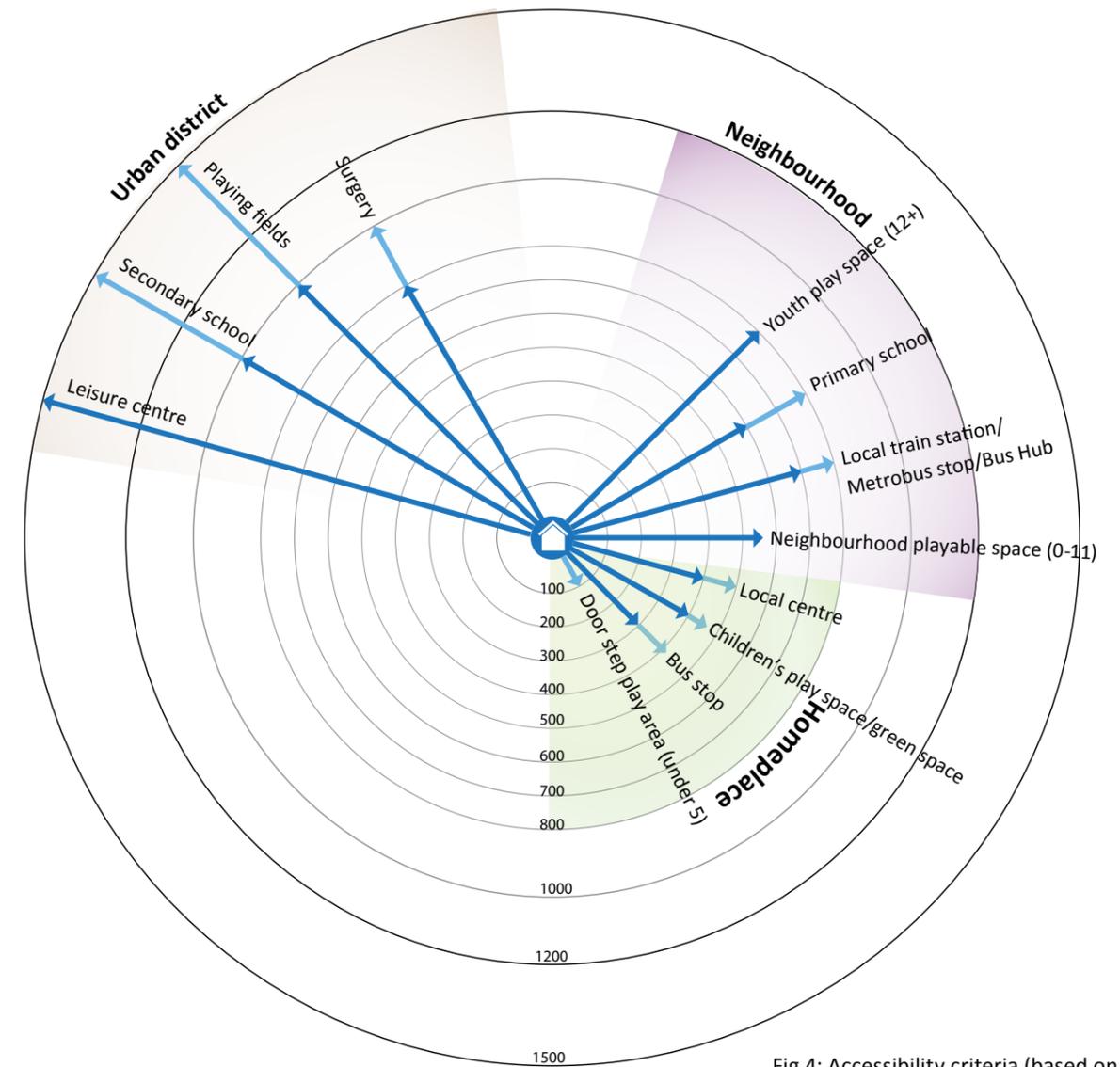


Fig 4: Accessibility criteria (based on Shaping Neighbourhoods, Barton et al, 2003)

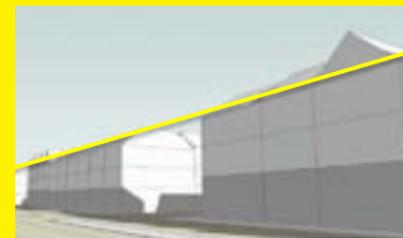
# Neighbourhood

## Q1.3 Does the scheme respond positively to either the existing context, or in areas undergoing significant change, an emerging context?

We recommend

- a Meeting with the Local Planning Authority at the earliest opportunity to establish whether the scheme should respond positively to the existing context or a new and emerging context as expressed through an adopted spatial framework, neighbourhood plan, or masterplan.
- b Where it's determined that a scheme should respond positively to the existing context, a thorough context appraisal of the neighbourhood should be undertaken, with a particular focus on the immediate streets and spaces adjoining the scheme. This should identify the prevailing height, scale and mass of surrounding buildings, streets and spaces. Areas of strong character and form offer only limited opportunities for deviation. Other transitional areas of lower or more varied character, offer greater opportunities for reinvention in terms of increasing densities, or varying form and character, including amplifying building heights, or in strategically located areas, creating a contextually high building;
- c Increasing building heights where it can be demonstrated that this helps reinforce the spatial hierarchy of the local and wider context and aid legibility and way-finding.

- d Identifying the positive characteristics of the local context that can help inform the design of the scheme. For example, are there any good examples of higher density development that have been successfully incorporated into the local townscape, and if so, are there similar design approaches that could be adopted?
- e Undertaking an assessment of whether there are any views into and from the site that merit a design response at the outset of the design process. For schemes that are either particularly prominent in their setting (e.g. proposals for a contextually tall building), or located in a particularly sensitive setting, a full visual impact assessment may be required (see Appendix C for more details).
- f Assessing the potential of any designated and non-designated heritage assets for conversion. Retained buildings or structures can become instant focal points within a development.
- g Working with contours of the land rather than against them, exploring how built form can creatively respond to the topographical character; thinking carefully about the roofscape
- h Incorporating existing trees into the overall design and layout, setting buildings back sufficiently to allow for growth.
- i Exploring how a holistic approach can be taken to the design of sustainable urban drainage by exploiting the topography and geology. Carefully consider opportunities for rainwater attenuation both on plot and off.



**Prevailing building heights:**  
The most commonly occurring height of buildings within an area of common character



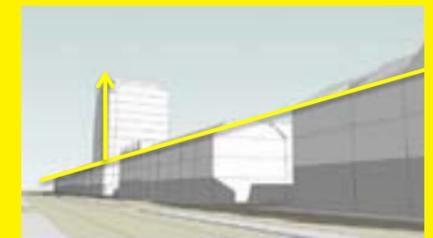
1 East Street, Bedminster (uniform prevailing building height)



**Amplified height:**  
Buildings that are modestly higher than the prevailing building height  
up to 1.5 x prevailing height in areas of uniform height  
up to 2 x prevailing height in areas of varied height



3 King Street (varied prevailing building height)



**Contextual Tall building:**  
Buildings that are significantly taller than the prevailing height  
more than 1.5 x prevailing height in areas of uniform height  
more than 2 x prevailing height in areas of varied height

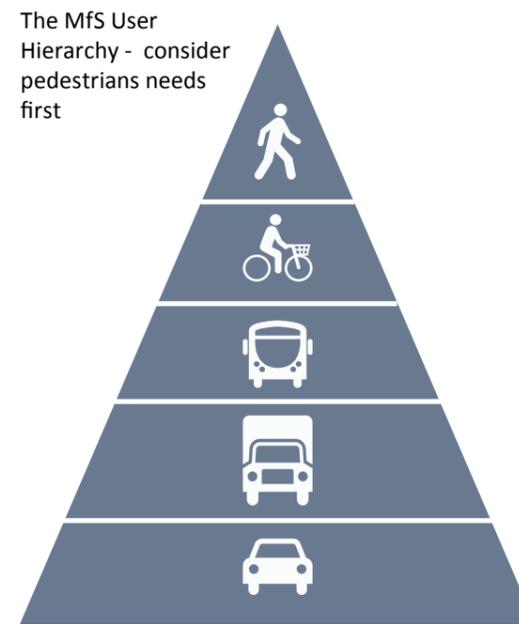


2 Wills Memorial (uniform prevailing building height with landmark building)

Fig 5: Definition of prevailing height, amplified height and tall buildings

# Block and Street

Our buildings and streets set the backdrop to daily life for the people who live, work and visit the city. As the city continues to grow, development at higher densities offers the potential to repair and reinforce the existing block and street structure that characterises the city.



'In streets and city spaces of poor quality, only the bare minimum of activity takes place. People hurry home. In a good environment, a completely different, broad spectrum of human activities is possible.'

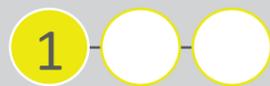
*Jan Gehl, Life Between Buildings: Using Public Space*

## Q1.4 Does the scheme provide people-friendly streets and spaces?

We recommend

- a Acknowledging that as densities increase, the need to invest in a high quality public realm grows. Increasingly streets are not simply movement corridors but also the outdoor rooms of the city, and an expression of civic identity.
- b Designing streets and spaces where the needs of pedestrians, cyclists and public transport are given priority over the needs of through traffic and vehicular access.
- c Thinking about where connections can and should be made; and about how best the new development can integrate into the existing neighbourhood and potential future developments.
- d Remembering that the schemes occupants' and occupants of neighbouring buildings may want to walk through the development to get somewhere else, so carefully consider how a development can contribute towards creating a more walkable neighbourhood, connecting places where people want to go.
- e Thinking carefully before blocking or redirecting existing routes, particularly where these are well used.
- f Creating connections that are attractive, well lit, direct, easy to navigate, well overlooked and safe.
- g Ensuring that all streets and pedestrian/cycle only routes pass in front of buildings, rather than to the rear of them.
- h Adopting a comfortable scale of enclosure that is appropriate to the existing character and function of the street. Streets with a higher footfall, should have wider pavements. Streets that need to be wide to accommodate traffic could benefit from extensive tree planting to reduce the perceived scale of the street.
- i Providing regular building entrances to provide activity and visual interest along the street. The design of entrances should reflect their intensity of use – entrances with the most use should be the most legible in an elevation. High quality materials and architectural detailing are expected as this is the part of the built environment most intensively used.
- j Integrating green and blue infrastructure within the street to help improve the pedestrian environment and to support rainwater management through sustainable drainage, reduce exposure to air pollution, manage heat and increase biodiversity. Sufficient space should be allowed in the street for trees to thrive, providing sufficient soil depth and high quality growing material for planting.





# Block and Street

## Q1.5 Does the scheme deliver a comfortable micro-climate for its occupants, neighbours and passers by?

We recommend

- a Taking advantage of a site's orientation to take advantage of sunlight and reduce the over-shadowing caused. For example, a south facing slope would lend itself more to a higher density scheme than would a north facing slope.
- b Providing a fair and equitable share of sunlight and daylight between existing occupants in neighbouring buildings and the future occupants of the scheme (see Appendix B for further details)
- c Lowering building heights along the south side of a block to allow for sunlight/daylight penetration into any private space within a block, using reflective cladding materials and larger windows to ground floor accommodation to improve lighting levels of units facing into the block
- d Adopting a shallow plan to allow for natural lighting and cross ventilation
- e Creating generous communal and circulation spaces, with natural light and air being provided to them via openable windows, top-lit atria and winter-gardens
- f Planting deciduous trees or incorporating architectural features such as brise-soleil along a south facing elevation to provide shading in the summer whilst permitting sun to penetrate at low winter angles.

- g Locating active ground floor uses e.g. cafes and community facilities, where uses can spill out onto generously scaled pavements, and take advantage of direct sunlight (see Appendix B)
- h Locating bus stops in sunny spots, but considering orientation to also shield passengers from the elements during more inclement weather.
- i Limiting overshadowing along pedestrian priority routes
- j Locating less sensitive land uses/activities in streets that do not receive much sunlight e.g. parking and servicing
- k Thinking about the prevailing wind direction, ensuring that building entrances, gathering spaces, and balconies are designed to be sheltered from it. Consider tree planting and boundary treatments and arcades to promote sheltering.



**Fig 6: Illustrative masterplan demonstrating key design principles**

Development arranged within perimeter blocks which clearly define public realm (streets) from private realm (space within blocks). The starting point for design development was to create a scheme which delivers a good micro-climate for its inhabitants, with sunlight/daylight penetrating into all dwellings, private open space and the public realm.

The scheme has a residential density of 250dph. Careful positioning of cores, and the extensive use of deck access has ensured that all dwellings are dual aspect. This is particularly important due to the site's proximity to a busy road, and the need to ensure that single aspect flats are not positioned onto this aspect.

The scale of buildings are dictated by both the sunlight path and the scale of the adjoining streets. A human scale street has been created along the river frontage. Taller buildings are located along the wider road.

- 1 Lower height buildings accommodating stacked maisonettes and town houses located along the southern elevation
- 2 Taller buildings located along the northern elevation, with generous balconies and deck access along their southern elevation
- 3 Generous public realm around main entrance to the building, proportionate to the intensity of use
- 4 Set back building line to accommodate spill out space and active uses, on sunny side of street.
- 5 Pocket park
- 6 Private communal open space positioned above a parking podium
- 7 Loading bay and servicing areas in shaded area of secondary street



# Block and Street

As we use land more efficiently we need to be creative in how we manage the competing demands on space, particularly at street level. Further advice on parking and servicing is provided in the Local Plan and Transport Development Management Guide

## Q1.6 Has access, car parking and servicing been efficiently and creatively integrated into the scheme?

When considering car parking, we recommend

- a Providing a level of parking that is appropriate to the wider accessibility of the site, in accordance with the requirements set out in the local plan, and that supports sustainable and active transport modes.
- b Designing streets to accommodate on street parking, allowing for plenty of trees and planting to balance the visual impact of parked cars and reinforce the spatial enclosure of the street. On street parking has the potential to be both space efficient and can also help to create a vibrant street, where neighbours have more opportunity to see and meet other people.
- c Designing out opportunities for anti-social, informal parking. People are more likely to park in the correct place, when street design uses pavement build outs or landscape features to clearly define the locations of parking spaces
- d For any additional parking requirement that cannot be accommodated in the street, adopting a parking solution appropriate to the context/setting and the types of use proposed (see Fig 7).
- e Where rows of narrow terraces are proposed, consider positioning parking within the street scene, for example a central reservation of parking.
- f Implementation of well-integrated electric vehicle charging points through both active and passive (future-proofed) provision, in accordance with the minimum requirements set out in the Local Plan.

- g Prioritising alternatives to traditional car ownership and storage such as car clubs
- h Providing a proportion of unallocated parking suitable for communal, delivery, servicing and visitor parking
- i Providing an appropriate level of accessible parking for wheelchair user dwellings consistent with the Bristol Local Plan parking standards
- j Consideration of restrictive parking measures on a site-by-site basis to mitigate the potential knock-on impacts of overspill parking. Measures may include additional waiting restrictions, prohibition of residents' parking permits, or where locally supported an extension of existing residents' parking schemes

When considering car parking, we recommend you avoid...

- k Multi-storey car parks or in structure parking unless parking can be sleeved by development to conceal it from the public realm
- l Rear parking courts or parking that is not overlooked as they offer greater opportunity for anti-social behaviour. If options for on-street parking and front of plot have been exhausted within a suburban context, rear courts will be considered to support higher density apartment elements of development schemes. Rear courts should provide up to a maximum of 10 parking spaces and be clearly enclosed as private spaces with a single, secure point of access. Courts should incorporate high quality landscape treatments, electric vehicle charging points, lighting and means of enclosure and should look to use permeable paving.

	Central	Inner Urban	Outer Urban
<b>Off plot</b>			
Underground	●	●	●
Podium	●	●	●
Rear court	●	●	●
<b>On-street</b>	●	●	●
<b>On-plot</b>			
Front of plot	●	●	●

**Fig 7: Parking - What works where**

- On-street parking is an efficient way of accommodating parking in most parts of the city
- **City Centre/Urban area** – basement or podium parking can work well, with a landscaped deck above, and 'sleeving' to hide the parking from the public realm
- **Outer Urban area** – position parking to the front of the property, ensuring that at least an equal amount of the frontage is allocated to an enclosed, landscaped front garden as it is for parking to reduce vehicle domination.

- m Private garages, as these are often used for storage rather than parking.
- n Access to parking areas which is either visually obtrusive or obstructive to pedestrians and cyclists.
- o Street layouts that encourage (or do little to discourage) indiscriminate parking on the footway and in other locations where this could give rise to unacceptable conditions, including obstruction to visibility, pedestrians, disabled users, public transport and emergency vehicles.

1 Discrete access to basement car park (Hammarby Sjostad, Stockholm)

2 Parking that has been well integrated into the streetscene, East London

3 Car parking successfully integrated into the streetscene in Clifton (unallocated parking serving both residential flats and office)



# Block and Street

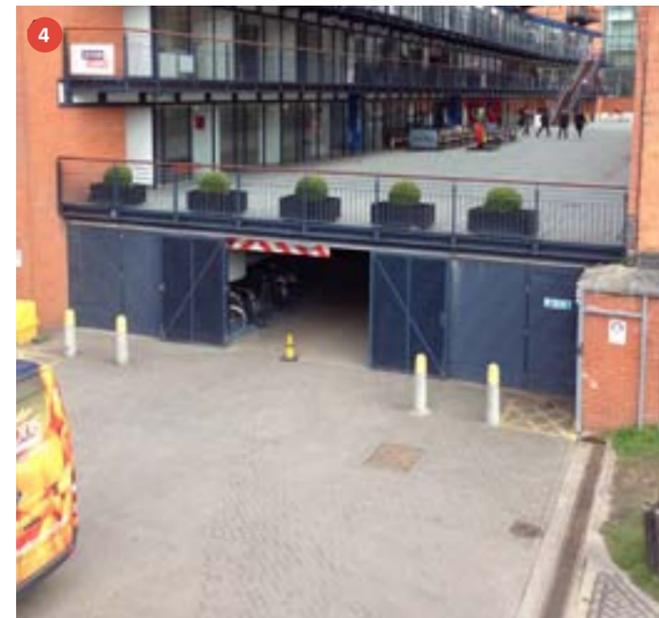
## Q1.6 continued...

When considering cycle storage we recommend...

- a Providing secure cycle storage that people can use with confidence.
- b Providing storage areas at ground floor level next to individual building lobbies/entrances and core accesses.
- c Maximising opportunities for naturally lit storage areas which are visible from the street and make a feature of cycle parking provision.
- d Including a range of storage types including a proportion of Sheffield stands, stands for over-sized bikes, cargo bikes and prams.
- e Only providing cycle storage within the dwelling, if that dwelling is served by step-free access or a suitably sized lift. Cycle storage within the dwelling should be provided in addition to the minimum storage requirements as set out in the Nationally Described Space Standards.
- f The provision of cycle parking in line with Local Plan standards that is accessible and secure with visitor cycle parking benefitting from adequate natural surveillance.

We recommend you avoid...

- g Providing large storage areas which serve the entire development in a single facility and which dominate street frontages or communal areas.
- h Vertical (hanging) or 45 degree cycle storage.
- i Relegating cycle parking to out-of-the-way locations that make them unlikely to be used.
- j For residential schemes, providing cycle storage in habitable rooms and balcony areas.



When considering servicing, we recommend...

- a Ensuring that deliveries to any non-residential parts of the scheme can be received outside of peak hours and if necessary in the evening or night-time without causing unacceptable nuisance to residents.
- b Minimising the need for large turning heads and service yards by providing on-street servicing where constraints allow i.e. there is space to create lay-bys
- c Where on-street servicing is not possible, service yards or basements should be designed discretely, and whenever possible service areas should be shared by neighbouring buildings
- d Locating service lay-bys and access to service yards on quieter, less sunny secondary streets.
- e If servicing from a busy pedestrian area is unavoidable, the servicing area should be well integrated into the streetscene, and designed with high quality materials
- f Providing integrated high quality landscape and architectural elements to screen less attractive 'back of house' uses to reduce the negative impact on the public realm and cumulative impact on the public realm.
- g Undertaking a vehicle swept-path analysis to demonstrate the ability of service and emergency vehicles to access the development.
- h On larger schemes, providing shared service facilities where possible e.g. consolidated freight and waste hubs serving a number of buildings having regard to the maximum distances over which refuse / recycling can be transported by occupants between the building and collection point.



When considering waste storage we recommend...

- i Meeting the local requirements for waste collection as outlined within the Bristol Waste Guidelines.
- j The inclusion of sufficient areas within the building curtilage for bin storage to avoid containers / wheeled bins causing physical and visual obstruction to the footway / street scene.
- k Rationalising storage and collection areas for commercial uses to minimise multiple bin stores and associated loading facilities.
- l Locating waste storage areas so that they are easily accessible to a building's occupants (including children and the elderly), while not having an adverse impact upon visual and residential amenity.
- m Where refuse and recycling stores are accommodated within buildings, they should be located to limit the nuisance caused by noise and smells and maintained to a high hygiene standard.
- n Where shared storage and collection is not possible, integrated waste storage should be designed into the front of properties.
- o All flatted developments of 10+ residential units should incorporate recycling containers/mini recycling centres.

1 Naturally lit, high quality cycle parking area

2 Pram storage designed into a lobby area

3 Storage required for over-sized bikes

4 Shared servicing facility discretely located underneath a podium Oxo Tower, London

5 On-street loading bay which is also used regularly by market stalls, Keynsham Civic Centre

# Part 2: Guidance for major residential developments

Part 2 of the SPD provides advice for applicants of major residential schemes. It draws on recent best practice and research to guide development proposals through a design process which places health and wellbeing considerations at its core and proactively creates good places to live.

The following questions are designed to be prompts for use in pre-application discussions for all major schemes with a residential component. These prompts should be used in combination with the prompts set out in Part 1.

The prompts should be used for all residential tenures, including Build for Rent and student accommodation. The prompts should also be used when assessing building conversion schemes, although the specific constraints of individual sites will need to be considered.

Design and Access statements should include evidence of how each question has been responded to.

There is fine balance to be struck between the drive to use land more intensively, delivering the numbers of much needed new housing, while still creating successful places where people can live healthy lives. The design of the built environment and physical structures where we spend the majority of our time has a significant impact on our mental and physical health and wellbeing.

City living and living at higher densities can make us happy and promote physical activity. For example, a stress-free commute that brings us into contact with green space, trees, water, flowers and beautiful public art, or a short walk to thriving local amenities providing a choice of fresh produce and places to gather and socialise.

Living in poor quality accommodation at higher densities can also make us sad and affect our physical health. For example intense urban environments can exacerbate mental illness and represent threatening environments to vulnerable users, or negatively affect our physical health through exposure to air and noise pollution. The physical constraints of living in densely developed environments can also be felt in the home. Access to daylight and sunlight is often restricted, privacy from neighbours and external activity can be reduced and access to open space can be limited.

## Shared access and internal spaces

Q2.1 Does the scheme make building entrances and shared internal spaces welcoming, attractive and easy to use?

Q2.2 Does the scheme provide practical, attractive and easily accessible communal amenity space that meets the needs of its target resident profile?



BCS20 Efficient and effective use of land

BCS21 Quality Urban Design

DM14 Health impact of development

DM27 Layout and Form

DM28 Public realm

## Private outdoor space

Q2.3 Does the scheme provide sufficient private outdoor space?

Q2.4 Does the scheme create attractive, well designed and well maintained private outdoor spaces?

Q2.5 Does the scheme creatively integrate children's play?



BCS9 Green Infrastructure

BCS18 Housing Type

DM2-17

BCS21 Quality Urban Design

DM14 Health impact of development

DM27 Layout and Form

DM28 Public realm

## Individual homes

Q2.6 Are internal layouts ergonomic and adaptable?

Q2.7 Does the scheme safeguard privacy and minimise noise transfer between homes?

Q2.8 Does the scheme maximise opportunities for daylight and sunlight of internal spaces; avoiding single aspect homes?



BCS21 Quality Urban Design

DM27 Layout and Form

DM28 Public realm

DM29 Design of new buildings

DM4 Wheelchair accessible housing

DM14 Health impact of development

DM35 Noise mitigation

Transport Development

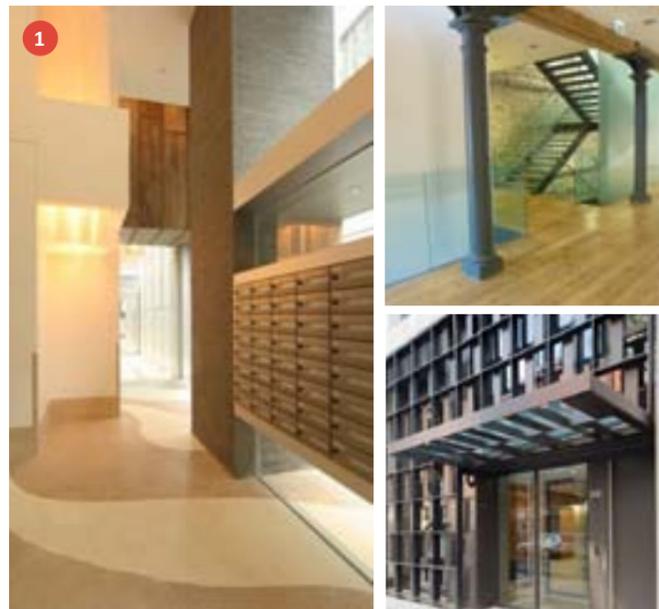
# Shared access and internal spaces

The 'arrival' at a building, the design of shared circulation and lift access, are important factors in making housing safe and secure, welcoming and accessible for all. Many of the new homes built in Bristol will be flats - the design of the shared circulation areas will be critical to their success.

## Q2.1 Does the scheme make building entrances welcoming, attractive and easy to use?

We recommend

- a Providing main entrances to houses, ground floor flats and communal entrance lobbies, wherever possible, directly from the public realm.
- b Incorporating a proportion of terrace housing and maisonettes into higher density apartment schemes to both increase the quality of urban design and decrease the pressure on shared access arrangements.
- c Celebrating entrances within the design to improve legibility and add interest at street level. The more intensely used entrances should have drop off spaces for vehicles/taxis, canopied entrance doors, and double height lobbies.
- d Creating tenure blind entrances i.e. entrances that are identical, regardless of whether you have bought, rent at full market rate, or are a council or housing association tenant. Apartments that share characteristics with houses should present to the street in exactly the same way, the only clue being the number of bells to the front door.
- e The avoidance of complicated or costly access arrangements, a compelling choice for all tenures. Can a scheme's management costs be kept down by avoiding the need for a lift or using robust materials to avoid the regular repainting of shared spaces?
- f Providing entrances that serve as small a number of units as possible to help foster a sense of community and familiarity with neighbours. Where access cores serve 4 or more dwellings, an access control system with entry phones linked to a main front door with electronic lock release should be provided in all dwellings.



## Part 2- Residential Shared access and internal spaces

### Q2.2 Are the scheme's internal spaces convivial, comfortable and user-friendly?

We recommend

- a Ensuring all internal circulation spaces are wide enough to enable comfortable movement of building users especially at peak hours, and allow the easy removal of large items of furniture.
- b Creating opportunities to introduce natural light and ventilation into circulation areas, such as recent good examples of deck access being used to access apartments.
- c Avoiding long, narrow internal corridors - each core should be accessible to generally no more than six dwellings on each floor. Where numbers exceed this, 'dwell' spaces should be designed in which are naturally lit, perhaps with bay window seating, access to a communal balcony or enlarged areas of circulation with the introduction of daylight and views.
- d Designing communal amenity space with the target resident in mind.
- e Considering whether there is a need to shift the emphasis from providing all amenities within a dwelling to that of more shared amenities and facilities. This shift can generate opportunities for more social interaction between residents, and is a key feature of Build for Rent and student accommodation
- f Providing a broad range of amenities, recognising that this will be significantly influenced by the schemes size, setting and resident profile.
- g Designing communal amenity space to be 'child-friendly'. The likely child yield within a development should be established using the online Child Yield Calculator.
- h Providing well thought out and legible delivery arrangements with adequate and safe storage facilities for post and deliveries should the recipient be absent.
- i Providing a safe, secure and accessible communal storage area for bulky items (prams, mobility scooters, leisure equipment etc) i.e. the types of things that are usually accommodated in an attic or shed in a traditional house.

1 Entrance lobby and post area. The emerging Build for Rent sector is raising the benchmark in respect to the provision of communal facilities with concierge, cinema rooms, gyms, cycle maintenance workshop/bench, BBQ areas, crèche and pet facilities increasingly featuring in higher density schemes

2 Ely Court - A new London housing vernacular based on a reworking of a Georgian terrace successfully illustrates a tenure blind solution. It is impossible to tell from the street whether behind the front door there is a pair of stacked maisonettes for social rent, market-sale flats over 4 storeys, or a market sale townhouse with roof terrace hidden behind its parapet wall. Architect: Alison Brookes Architects. Photo: Paul Riddle

3 Deck access apartments designed to provide dual aspect apartments with integrated garden space Architect: KCAP Architects&Planners, Photo: a+t / César San Millán



# Outdoor spaces

Private open space can make an important contribution to quality and liveability of new housing developments. Private and communal open space should be designed to be safe, accessible, inviting and well used, without the fear of crime. It should encourage an appropriate sense of ownership and should be managed to ensure that it remains useful and welcoming to all residents



1 Apartment block providing a range of communal and private outdoor spaces (balconies, wintergardens, and courtyard space above a parking podium). Trees are allowed to grow up through a slot in the podium. Architect: KCAP Architects&Planners, Photo: a+t / César San Millán

2 Roof top garden (London)

3 Wintergarden (Stockholm)

4 Apartments that extend across the whole apartment frontage (Kibrooke, London)

5 Private threshold space to ground floor apartments, combined with communal play provision (Stockholm)

## Q2.3 Does the scheme provide sufficient outdoor space?

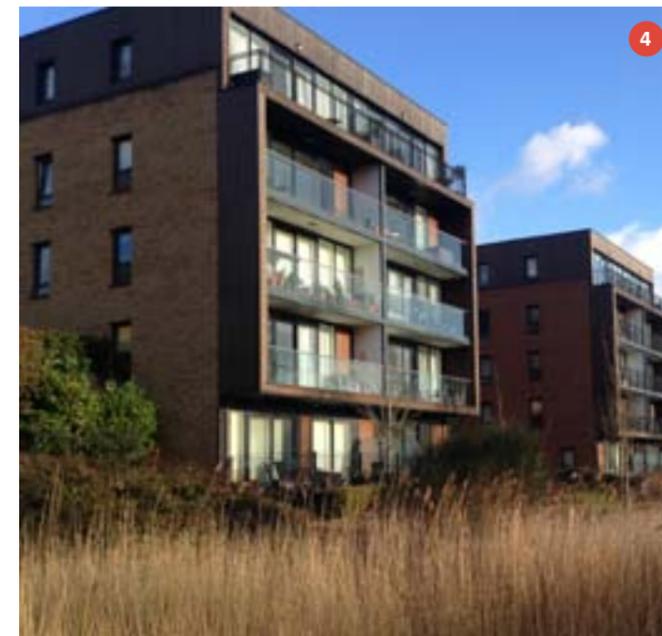
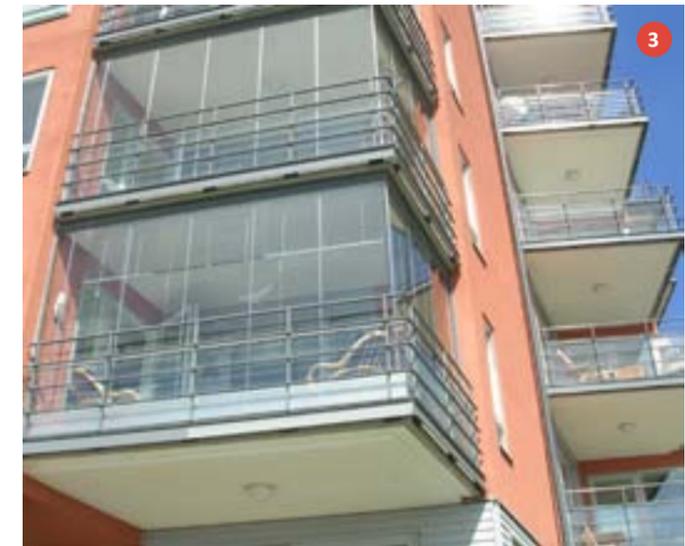
We recommend:

- a Providing a minimum of 5sq m of private outdoor space for a 1-2 person dwellings and an extra 1sq m should be provided for each additional occupant. This can be provided as private balconies or gardens, or as communal gardens and roof terraces. The private open space guidelines are based on the space required for furniture, access and activities in relation to the number of occupants. It is anticipated that family housing will provide space in excess of the minimums stated here, to allow for future adaptability of the home and provide outdoor space for play and food growing
- b Designing private communal space to take account of a variety of uses such as integrated children's play, areas for growing and quiet areas for relaxation.
- c Providing directly accessible private outdoor space to individual dwellings wherever possible.
- d Providing directly accessible private outdoor space to all family units, either at ground floor/ podium level or roof terraces, mimicking the qualities of a traditional family garden as far as possible.
- e Providing access to communal space to all residents, regardless of tenure or mobility.

## Q2.4 Does the scheme create attractive, well designed and maintained outdoor spaces?

We recommend:

- a Where private communal space is provided it should have a clear purpose and be designed to be safe and easily managed; be clearly demarcated from the public realm; be overlooked by surrounding development; be designed to take advantage of direct sunlight; have suitable management arrangements in place; be accessible to all residents regardless of tenure or mobility and; provide a suitable threshold treatment to ground floor flats. Opportunities for green and blue infrastructure should be explored, as well as opportunities for external clothes drying.
- b Where private space is provided it should be of practical shape and utility.
- c The minimum depth and width for all balconies and other private external spaces should be 1500mm. Balconies should be designed and orientated to be sunny, sheltered and secluded from neighbouring premises.
- d Considering the use of glazed, ventilated winter gardens as an alternative to open balconies where noise or air pollution levels are unacceptably high.
- e Where communal private space is provided on a deck above a parking podium, opportunities should be explored of planting trees directly in the ground



# Outdoor spaces

“We are living in an ever increasingly urban world, with more children growing up in cities than ever before. It is therefore imperative that we design and build cities that meet the needs of children: seeking their input during the design process, providing them with access to play and education, and facilitating their social and cultural interactions.”  
*World Economic Forum*

## Q2.5 Does the scheme creatively integrate children’s play?

We recommend:

- a Residential schemes that are likely to accommodate children and young people should facilitate opportunities for play and informal recreation and enable children and young people to be independently mobile. Under 5s should be within 100m of a suitable play facility/area, and all other children should be within 400m of a suitable play space
- b Providing 10sqm of play space for each child that is expected to live in a scheme. This should normally be integrated into the scheme. However, off-site provision, including the creation of new facilities or improvements to existing provision, secured by an appropriate financial contribution, may be acceptable where it can be demonstrated that it addresses the needs of the development whilst continuing to meet the needs of existing residents. This is likely to be more appropriate for the provision of play facilities for older children, who can travel further to access it, but should still usually be within 400 metres of the development and be accessible via a safe route from children’s homes.

- c Incorporating good-quality, accessible play provision into a scheme that: provides a stimulating environment; can be accessed safely from the home by children and young people independently; forms an integral part of the surrounding neighbourhood; incorporates trees and/or other forms of greenery.
- d Careful consideration of the location and detailed design of play areas to minimise noise outbreak and nuisance to neighbours.

**The estimated number of children living in a scheme should be calculated using Bristol’s on-line population yield calculator (see Appendix A for further details)**



Playable street, Temple Quay, Bristol



Playable street furniture, Royal Fort Gardens, Bristol

**128%**  
 increase in children living in the city centre between 2002 and 2015

# Individual homes

Whilst living in a vibrant, higher density, neighbourhood can be exciting, convenient and sustainable, it is important that the home can provide somewhere to escape the noise and activity of daily life.

## Q2.6 Are internal layouts ergonomic and adaptable?

We recommend:

- a All new homes should meet or exceed the nationally described space standard.
- b Internal layouts that are ergonomic and adaptable to facilitate flexible use of space, increase living choices, enable home working and make life easier for wheelchair users.
- c Carefully considering the location of doors, windows and built-in furniture to maximise potential use of a space.
- d Providing flexibility in floor plates and location of structural supports to allow new openings in internal walls, or by creating easily demountable partitions which are clear of services.
- e 90 per cent of new build housing meet Building Regulation requirement M4(2) 'accessible and adaptable dwellings' with the remaining 10 per cent meeting Building Regulation M4(3) 'wheelchair user dwellings'.
- f Marginally higher ceilings in the main living spaces (2.5m minimum) with standard height ceilings to kitchens, bathrooms and circulation areas to accommodate services. This can positively impact how spacious, light and comfortable the dwelling is and improve the amount and quality of natural light and ventilation, as well as providing flexibility in the use of a room.

## Q2.7 Does the scheme safeguard privacy and minimise noise transfer between homes?

We recommend:

- a Demonstrating how habitable rooms and bedrooms within each home are provided with an adequate level of privacy in relation to neighbouring property, the street and other public spaces.
- b Carefully considering the location of lifts and circulation spaces to limit noise transmission.
- c Configuring living rooms next to living rooms and bedrooms next to bedrooms in vertical and horizontal arrangement.
- d Locating habitable rooms at the front of the building to provide natural overlooking and sense of activity to the street and more sensitive uses such as bedrooms to the rear of the building relating to private space.
- e Where residential uses are proposed at ground floor, raising the internal floor level of units above street level can improve privacy.
- f Carefully considering the location of windows and balcony spaces to reduce direct overlooking.
- g Providing ground level maisonettes, thus ensuring that bedrooms can be more privately located at first floor level rather than ground floor.



Fig 8: Copper Building, Lakeshore, Bristol. Developer: Urban Splash. Architect: Ferguson Mann Architects. (© Uniform) Higher ceilings to the main living spaces - 2.7-2.8m in the duplexes

# Individual homes

## Q2.8 Does the scheme maximise opportunities for natural illumination of internal spaces; avoiding single aspect homes?

We recommend:

- a Maximising opportunities to provide dual aspect units, which improve access to natural light, choice of views and cross ventilation through units providing greater capacity to address overheating.
  - b Adopting building typologies which minimise single aspect units, such as well-designed deck-access or mansion block typologies.
  - c All homes should provide for direct sunlight to enter at least one habitable room for part of the day (see Appendix B for further details).
  - d Living areas and kitchen spaces should wherever possible receive direct sunlight.
  - e Considering the risk of overheating when designing for sunlight, together with the need to ensure appropriate levels of privacy.
  - f Demonstrating how daylight standards proposed within a scheme and individual units will achieve good amenity for residents where direct sunlight cannot be achieved.
  - g Utilising additional design features such as bay windows and greater floor to ceiling heights to improve access to daylight/ sunlight in dwellings.
  - h Creating living rooms that are fully 'openable' with a full height glazed balconette if no balcony or direct access to other private open space is provided.
  - i Consideration of potential future development on adjacent or nearby sites to ensure appropriate levels of daylight/ sunlight will be maintained, without prejudicing future development opportunities.
  - j If single aspect dwellings are unavoidable, the design will need to demonstrate that all habitable rooms and the kitchen are provided with adequate ventilation, privacy and daylight and the orientation enhances amenity, including views.
  - k Utilising integrated design solutions to provide solar shading to exposed glazing
  - l Optimising internal configuration to allow for natural cross ventilation
  - m Exploring emerging technologies which provide cooling in less energy intensive ways.
- We recommend you avoid:
- n North facing single aspect dwellings.
  - o Single aspect dwellings exposed to noise levels above which significant adverse effects on health and quality of life.
  - p Single aspect dwellings that contain three or more bedrooms.

## Part 2- Residential Individual homes

- 1 Lower block of terrace houses to the southern side of the perimeter block allows sunlight into the courtyard and units on the north side
- 2 Shallow plan blocks allow dual aspect units and more generous internal courtyard space
- 3 Ground floor maisonettes allow direct access to both the street and communal space within the block, with the opportunity for private outdoor space, replicating the configuration of a traditional family house
- 4 Double height ground floor provides opportunity for commercial use at street level, such as retail or workshops. Vertically stacked mixed use, with office levels between retail and residential acting as a buffer to noise outbreak from servicing and traffic noise from primary street.
- 5 Generous sized balconies utilising direct sunlight and provides overlooking to communal space
- 6 Corner units provide dual aspect, with views out of the block. Single aspect units overlooking internal courtyards should be avoided
- 7 Podium and basement levels discretely accommodates parking requirements so that it does not dominate the street. Tree planting accommodated within internal courtyard at ground level allowing natural ventilation to podium parking areas.
- 8 Reflective cladding materials together with larger windows in ground floor units can improve daylight levels within units facing into the block.

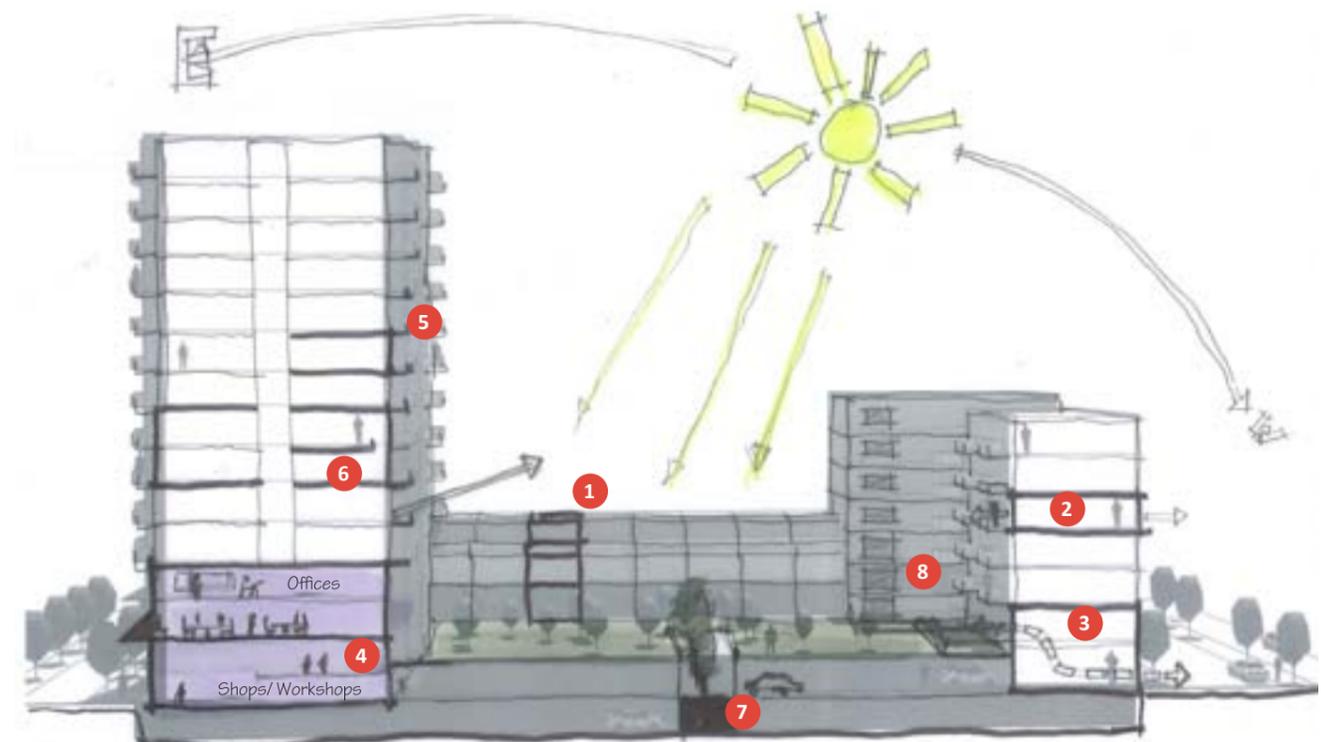


Fig 9: Indicative east-west section through city centre perimeter block with a tall building

# Part 3: Guidance for tall buildings

## Part 3 of the SPD provides advice for applicants of tall buildings defined as 30m or higher.

The following questions are designed to be prompts for use in pre-application discussions for all tall buildings. These prompts should be used in combination with the prompts set out in Part 1 (and Part 2 if relevant).

It will be at the discretion of the planning officer whether a proposal for a tall building below 30m (as defined by the prevailing building height in Part 1) should be assessed against these questions. Equally, it will be at the discretion of the planning officer if proposals for roof top extensions, including significant plant should be assessed via these questions.

When assessing a tall building, it is important to understand the cumulative impacts of the proposals, if there are other tall buildings (either existing or proposed) in the vicinity.

The impacts set out in Part 3 are not exhaustive and other impacts may need to be taken into consideration.

**Design and Access statements should include evidence of how each question has been responded to.**

As with other high-density building forms:

- A well-located, well-designed tall building can be a positive feature of a successful walkable, compact neighbourhood and can help the City accommodate its growth targets.

- Tall buildings can be an effective counter-measure to urban sprawl, focussing growth on the more accessible parts of the City thus encouraging a healthy, pedestrian-oriented lifestyle and promoting better use of public transport.

Unlike other high-density building forms,

- Tall buildings can provide memorable landmarks which help people navigate their way around the city.
- Some people like living in tall buildings referring to them affectionately as ‘bungalows in the sky’, with people paying a premium for an apartment with a good view.

As with other high-density building forms:

- A poorly located, poorly designed tall building can have a detrimental impact on the, historic townscape of a city like Bristol.
- Tall buildings can put a strain on local transport and social infrastructure.

Unlike other high-density building forms:

- A poorly located, poorly designed tall building can have a detrimental impact on the topography and skyline of a city like Bristol
- Tall buildings can be poor neighbours, overshadowing surrounding development and open spaces, and putting a strain on local transport and social infrastructure.
- Critics cite the high costs involved in their initial build and subsequent maintenance and management, including their higher energy usage compared to mid-rise buildings.
- They are widely considered unsuitable to live in for many groups of people but particularly families with children.

## Visual quality

Q3.1 Is the tall building well located?

Q3.2 Does the scheme make a positive contribution to the long-range, mid-range and immediate views to it?

Q3.3 Does the scheme demonstrate design excellence?



BCS20 Efficient and effective use of land  
BCS21 Quality Urban Design  
BCS22 Conservation and the Historic Environment  
DM26 Local character and distinctiveness'  
DM27 Layout and Form  
DM28 Public realm  
DM29 Design of new buildings  
DM31 Heritage assets  
DM36 Telecommunications  
Bristol Central Area Action Plan  
Adopted spatial frameworks/  
neighbourhood plans

## Functional quality

Q3.4 Does the scheme ensure the safety of occupants and passers-by?

Q3.5 Does the scheme interfere with aviation, navigation or telecommunication, and does it have a detrimental effect on solar energy generation on adjoining buildings?

Q3.6 Has the scheme's future servicing, maintenance and management been well considered?



BCS21 Quality Urban Design  
BCS10 Transport and Access Improvements  
DM14 Health impact of development  
DM23 Parking  
DM32 Recycling and Refuse Provision  
DM36 Telecommunications

## Environmental quality

Q3.7 Does the scheme create a pleasant, healthy environment for future occupants?

Q3.8 Is the scheme sustainably designed?

Q3.9 Will the scheme be neighbourly, both at the construction phase and following occupation?



BCS13 Climate Change  
BCS14 Sustainable Energy  
BCS15 Sustainable Design and Construction  
BCS23 Pollution  
DM14 Health impact of development  
DM27 Layout and Form  
DM28 Public Realm  
DM29 Design of new buildings  
DM33 Pollution control, Air and Water Quality  
DM35 Noise mitigation

# Visual Quality

Tall buildings can have an important civic role in defining the image of Bristol. It is therefore important that they are positioned well and demonstrate design excellence. Buildings that are taller than the prevailing context are likely to be more visible. Therefore additional scrutiny of key views, architectural quality of the building and associated public realm together with the quality of materials specified is required.

## Q3.1 Is the tall building well located?

We recommend

- a That proposals for tall buildings should come forward as part of a spatial strategy for the wider area, as advocated by Historic England 'Tall Buildings-Advice Note 4' (2015). The preparation of spatial strategies (or spatial frameworks) should be informed by techniques such as urban characterisation studies and building height studies to provide evidence to support a local height definition for tall buildings and the identification of appropriate locations for tall buildings.
- b In the absence of such a spatial strategy, the onus is on the applicant to demonstrate that the site is appropriate for a tall building. This will involve undertaking a thorough context and urban design analysis that establishes the scheme meets the criteria set out in Fig 12.
- c The impact of tall buildings proposed in sensitive locations should be given particular consideration. Such areas might include conservation areas, listed buildings and their settings, scheduled monuments and registered historic parks and gardens.
- d The capacity of an area to accommodate a tall building is heavily influenced by an area's underlying character. This should be understood at the scale of the city, neighbourhood, and street. Often the greater the existing variety of character within an area, the greater capacity for future change in terms of introducing higher densities, and new building typologies including tall buildings.
- e Generally speaking, larger sites (2ha and over) offer the greater potential for taller buildings, as these sites are more able to set their own context than smaller sites. Larger sites provide the opportunity to site tall buildings away from existing buildings, and thus protect them from over-shadowing and adverse wind effects.
- f Tall buildings will be encouraged where they can be integrated into a wider development block, with lower level buildings assisting the transition in scale from the tall building down to the surrounding context (place-shielding).
- g Tall buildings will generally be discouraged on physically constrained sites within existing built up areas, where a tall building is likely to have a negative impact on the daylight and sunlight penetration into the habitable rooms of existing buildings, or onto well used parts of the public realm.
- h Stand-alone tall buildings (i.e. buildings that do not form part of a block and street structure) will also be discouraged.
- i Where a cluster of tall buildings are proposed, it will be important that adequate separation distances are provided in between towers, both to limit the likely cumulative impact of the towers on the micro-climate at ground level, and to avoid the negative visual impacts of a perceived 'wall of development'

## Part 3- Tall Buildings visual quality

**Fig 10: Temple Quarter Spatial Framework** - a three dimensional model was used to test different scale and massing approaches for sites across the enterprise zone. This enabled the identification of a number of sites considered suitable for tall buildings.

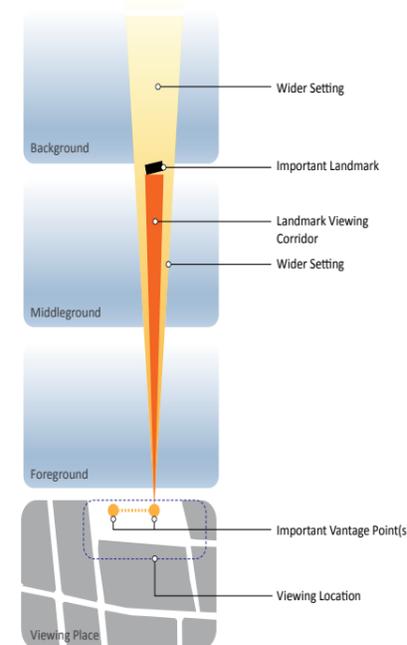
**Fig 11: Viewing corridor** - diagram to show the important features of a viewing corridor



## Q3.2 Does the scheme make a positive contribution to the long-range, mid-range and immediate views to it?

We recommend

- a When siting a tall building, it will be important early on to test out a range of long-range, medium-range and local viewpoints to understand the suitability of a site to accommodate a tall building. This should be undertaken in line with guidance from both Historic England and the Landscape Institute. Further guidance is set out in Appendix C.



**Fig 12. Locational criteria**

**Tall buildings are more likely to be supported in locations:**

- where they are likely to have a positive impact on the socio-economic health of the wider neighbourhood
- within reasonable walking distance of a range of local facilities and public transport (see Neighbourhood section)
- where they can help support patronage to proposed new public transport infrastructure
- close to other tall residential or commercial clusters of tall buildings where it can be demonstrated that a new tall building serves to raise the quality and coherence of the cluster, without creating adverse impacts on the micro-climate
- at locations where the provision of a landmark building would clearly improve the legibility of the city.

**A tall building should not be located where:**

- it hides or masks the topography of the city
- it harms valued views from key vantage-points
- it has a detrimental impact on the city's historic environment (see Appendix C)
- it has a significant negative impact on the amenity of nearby occupiers or on the public realm
- it has a negative impact on existing nearby renewable energy systems
- there is insufficient transport, utilities or community infrastructure to support a more intensive form of development.

# Visual Quality



The development model, design aesthetic and technology informing the current era of tall buildings is very different to the post war period.

Castle Park View is the tallest proposals approved recently in Bristol (26 storeys). The focus for developer interest for tall buildings is likely to continue to be the city centre, as viability decreases away from the centre. Typically tall building proposals no longer sit isolated in space like the towers from the post war era, but are part of wider developments which also include mid rise buildings.

## Q3.3 Does the scheme demonstrate design excellence?

We recommend:

- a Making a commitment to design quality at the brief-writing stage, setting out the aspirations for:
  - architectural quality;
  - the effective use of resources;
  - high-quality materials;
  - innovative and sustainable building design and construction;
  - a high quality public realm; and
  - a sensitive and thoughtful response to the impacts that tall buildings place upon the urban landscape.
- b Recognising that this can be a highly emotive and subjective issue, and that considerable public debate should be both expected and encouraged.
- c Providing sufficient design detail in approved drawings and other visual material, as well as in the wording of planning permissions to ensure clarity over what design has been approved, and to avoid future amendments and value engineering resulting in changes that would be detrimental to the design quality. Outline planning applications are not considered appropriate for tall buildings and decisions about the landscaping and building façade treatments should not be deferred.
- d Retaining the same design team from concept design through to detailed design and construction to ensure that the design integrity of the scheme is retained
- e Supplying design details at 1:20 showing all typical external treatments and building elements
- f Carefully integrating the building's base, middle, and top.



**Fig 13:** The three parts to a tall building: base, middle and top

### Top

The top of the building should be designed to make an appropriate contribution to the city's skyline. Most tall buildings will be part of the urban backdrop which frames existing viewpoints and open spaces. In these instances, the top should reinforce the supporting role of the building and subtly integrate with the overall tower design. A minority of tall building by virtue of their location will warrant a more memorable top which can help people navigating themselves around the city. This might be achieved by utilising a unique shape or silhouette or by locating the most visible compositional elements at the top of the building.

In particular, there is a need to consider the visual impact of telecommunications apparatus and plant rooms at a high level. These can be extremely damaging to the appearance of a building but also, if integral to the original design, something of a feature. In general tops of buildings work best if they are lightweight and transparent in appearance. The introduction of alternative accommodation on upper floors, such as a duplex apartment or rooftop restaurant, can provide a successful design solution.

### Middle (tower)

The middle of a tall building has an important effect on how much sky is visible from surrounding streets and buildings, as well as on wind flow, privacy and the amount of sunlight and shading that is experienced in the public realm and by surrounding properties. Big, boxy, dominant massing should be avoided, as should large elongated or slab-like floor plates. When adequately separated, a slender point form tower with compact floor plates will cast smaller, faster moving shadows, than a bulkier tower. A slender tower can also improve access to sky view, permit better views

between buildings and through sites, and contribute to a more attractive skyline.

The reflectivity and transparency of the building is an important consideration. A highly reflective and transparent building material such as glass can sometimes cause obtrusive daytime glare. However, transparent materials have often been used to great effect to create significant landmark features at night. Proposals should consider how to exploit exciting advances in lighting, whilst limiting light trespass, and sky glow.

### Base

A key failing of tall buildings is the way they meet the ground and therefore how they are perceived/ experienced at the short distance.

Ultimately the aim should be to create a public realm with a human scale. Human scale need not necessarily be prejudiced by high buildings, provided that these are carefully located, and have regard to the effects on the microclimate. This often involves the following:

- stepping down a large mass to its neighbours;
- ensuring that the ground level most relevant to the pedestrian experience is as active and interesting as possible;
- ensuring that the public realm is naturally surveilled;
- providing legible and accessible entrances;
- providing a richness to the detailing and high quality materials;
- mitigating against the adverse impacts a tall building can often make on the microclimate;
- providing a continuity of frontage, thus providing definition and enclosure to the public realm.

# Functional Quality

Buildings that are taller are likely to result in the more intensive use of the shared circulation areas, surrounding public realm and transport infrastructure prompting the need for additional scrutiny.

## Q3.4 Does the scheme ensure the safety of occupants and passers-by?

We recommend:

- Considering issues of fire safety at the outset, planning developments, their floor layouts and cores around issues of fire safety and a robust strategy for evacuation
- Careful consideration of public realm and landscape design around the base of tall buildings to ensure access by emergency vehicles and easy evacuation and muster points.
- The preparation of a Fire Statements/strategy produced by a third-party independent suitably qualified competent professional for consideration by Building Control or, should the recommendations of the Hackitt Review be adopted, by the Joint Combined Authority (JCA)
- Undertaking peak time modelling of the building's critical access and movement points
- Careful consideration in the design of the stair and lift cores to allow for both fire fighting and evacuation.
- Designing lift lobbies and stair cores to allow natural lighting and ventilation (subject to any fire safety requirements)
- Erecting on site sample reference panels of external facing materials and construction details for review by the LPA and JCA

## Q3.5 Does the scheme interfere with aviation, navigation or telecommunication, and how will it affect the solar energy generation on adjoining buildings?

We recommend

- Consulting early on with the Civil Aviation Authority to assess whether the scheme will have any impact on aviation and the requirement for aircraft warning lights.
- Considering the orientation and profile of the building to take into account the potential impact on broadcast and wireless services within the surrounding area. Further guidance can be found through OFCOM.
- Considering the effect the scheme may have on the solar energy generation of neighbouring buildings.

## Part 3- Tall Buildings Functional quality

### Building Safely; planning gateway one

After the Grenfell fire of June 2017, the Government commissioned an independent review of Building Regulations and Fire Safety (The Hackett Review 2018). The report concluded that the existing legislative system in relation to fire safety was not fit for purpose when considering complex or high rise buildings. The Government consulted on a number of reforms in June 2019 in 'Building a safer future: proposals for reform of the building safety regulatory system'. This proposed creating a planning gateway with three gateway points to ensure early and ongoing consideration of fire safety.

Planning gateway one came into effect from 1 August 2021. This makes provision for the Health and Safety Executive (HSE) to be a statutory consultee before permission is granted; requires relevant applications to submit a fire statement and will help inform effective decision-making by local planning authorities.

Relevant buildings contain two or more dwellings or educational accommodation and meet the height condition (18m or more in height, or 7 or more storeys whichever is reached first).

## Q3.6 Has the scheme's future servicing, maintenance and management been well considered?

We recommend....

- Considering maintenance issues during the design process to facilitate the management of the long term maintenance of the building with minimum disturbance to occupants and the surrounding public realm.
- Considering the full life-cycle costs during the design process including design details and finishes especially in communal circulation areas.
- Consideration should also be given to the running and repair cost implications for leaseholders and tenants through service charges.
- Setting out a management of any communal private outdoor space, as well as the public realm and landscape associated with the development.
- All future maintenance information should be held securely and openly using BIM systems
- Consider providing a concierge-manned entrance for all tenures
- Installing smart meters during construction particularly for residential buildings of multiple occupancy
- Ensuring there is on-going engagement between the buildings responsible person (identified as the 'Dutyholder' in the Hackitt Report) and the buildings residents/occupants.



Off-site construction for bathroom and kitchens is more likely in a tall building. Ensure lifts and corridors are wide enough to enable new pods to be installed over time without too much disruption

# Environmental Quality

Buildings that are taller are likely to have potential environmental impacts which can be experienced during construction and once built, in the vicinity of the proposed building(s) and within the proposed buildings.

## Q3.7 Does the scheme create a pleasant, healthy environment for future occupants?

We recommend

- a Designing towers with smaller, shallower floor plates, as these can make interior climate control within a building more responsive and energy efficient, as well as increasing daylight— an important contributor to sustainability, residential liveability, and workplace productivity. Where a larger floor plate is proposed, atria or shafts can also be used to allow the introduction of natural light and fresh air into the building
- b Minimising excess solar gain that could lead to overheating risk through use of external shading and careful consideration of facade design. Thermal Comfort Assessments (following CIBSE guidance or similar) should be prepared to demonstrate that the building will not overheat in current or future climate change scenarios, accounting for the urban heat island effect where relevant
- c Recognising that whilst the core temperatures of fully glazed tall buildings are typically quite stable and comfortable with very low energy consumption, the incorporation of balconies can create highly dynamic thermal conditions within the first two metres of the perimeter of a tall building. Consideration should therefore be given to providing winter gardens as an alternative to balconies in some locations (i.e. covered balconies, which can be opened up on a sunny day).
- d Providing communal amenity spaces on the upper floors to enable all building occupants to enjoy the views afforded by tall buildings, whenever possible, making areas also accessible for the public
- e That with good daylight and views, a higher proportion of single aspect dwellings may be acceptable within the upper storeys of a tall building. Larger dwellings for families are best located at the lower levels (for example in a base building that relates to the street), with the intermediate levels composed of 1 and 2-bed apartments for smaller households

## Part 3- Tall Buildings Environmental quality

## Q3.8 Is the scheme sustainably designed?

We recommend

- a Tall buildings should be designed to be adaptable and flexible to ensure that these buildings remain functional and capable of addressing any shifts in demographics and market demands over the long term. Future adaptability can be optimised through careful consideration of floor plate solutions, and the positioning of service cores.
- b Thorough consideration is given to the technical performance of the building, its materials and construction methods, water management, landscape elements and the quality of the internal environment.
- c Energy performance should be evaluated as the design evolves, thus informing glazing ratios, positioning of buildings, massing, orientation and articulation, balcony design, materials and construction methods. Fig 14 sets out a number of possible approaches to optimising energy efficiency in tall buildings
- d Reducing the environmental impact of building materials through the use of an environmental preference or profiling system e.g. the BRE's Green Guide to Construction. The selection of materials will need to take into account the unique structural engineering requirements of tall buildings.

### Fig 14: Optimising energy efficiency

- Selection of a more efficient perimeter system.
- Adoption of appropriate building form & fabric e.g. through passive means such as increasing the availability of thermal mass (which acts as a heat sink or source of cooler temperature);
- Specification of an energy efficient services solution e.g. through double facades which allow natural ventilation of spaces and access to openable windows and daylight integrated lighting systems;
- Sub-metering of major plant and equipment;
- Use of energy efficient vertical transportation solutions e.g. energy recovery from lifts;
- Optimising solar design, utilising a shallow plan, atria or shafts to allow the introduction of natural light and fresh air, whilst minimising excess solar gain that could lead to overheating risk through use of external shading and careful consideration of facade design;
- Ensure heating and hot water systems are future-proofed for connection to district heat where required by planning policy, including location of plant room, sizing, loading and access designed in accordance with requirements of the heat network operator;
- Use of renewable energy e.g. BIPV (building integrated photovoltaics), heat pumps and wind power

# Environmental Quality

## Q3.9 Will the scheme be neighbourly, both at the construction phase and following occupation?

We recommend

- a Ensuring that a comfortable micro-climate is provided at the base of the building, recognising that as urban densities rise, the value of the public realm as somewhere to dwell also increases.
- b Assessing daylight and sunlight penetration, wind effects, temperature changes (urban heat island effect), dispersion of air pollution, glare and noise, utilising integrated design solutions to mitigate potential impacts.
- c Undertaking a sunlight and daylight assessment at the outset of the design process, in line with the guidance in Appendix B. By adopting a slender point form tower with compact floor plates, the building will cast smaller, faster moving shadows, than a bulkier tower. A slender tower can also improve access to sky view, and permit better views between buildings and through sites
- d Assessing likely wind turbulence at the base of the building in line with guidance in Appendix D. Wind turbulence will depend on the local grouping of buildings and their orientation to the prevailing wind. Seek to avoid bolt-on solutions post-completion to deal with negative environmental impact e.g. wind effects.
- e Spacing towers apart to avoid the likely cumulative environmental impact of towers on the micro-climate at the base of the towers
- f Preparing a Construction and Environmental Management Plan outlining the strategy for dealing with the operational construction phase impacts such as air quality, dust, noise, vibration, traffic, water quality. This is particularly critical for constrained sites, where access is limited and neighbours are close.
- g Considering the impacts on tunnels, sewers and settlement around the site, as a tall building generally requires deep foundations. Consider also the impact on the loading of adjacent foundations, including party walls, and how the settlement of the tower will affect surrounding roads and buildings. A podium deck can help to resist lateral loads.



# Guidance for measuring density, open space and play space

Whilst ultimately it's the design outcome that is key, rather than the density figure, understanding density levels is useful. An unusually high or low density for the location should suggest further consideration of the brief and the aim of the scheme, together with additional scrutiny of elements that are made more complex by higher density.

In order to compare density with any accuracy a robust and consistent methodology for the measurement is required, as a slight variation in the methodology used can result in wildly different density numbers for a development. A significant amount of work has been undertaken on measuring densities to inform the London Local Plan and this has informed the methodology set out here.

## Residential density: Net v gross

**Net density:** The assumption behind 'dwellings per hectare', unless specifically stated otherwise, tends to be net density. Net site density includes only those areas that will be developed for housing and directly associated uses, this includes:

- access roads within the site
- private garden space
- car parking areas
- incidental open space and landscaping
- children's play areas

It excludes:

- major distributor roads
- primary schools
- open spaces serving a wider area
- significant landscape buffer strips

**Gross density:** This includes the schools, distributor roads, parks, playing fields and community facilities as well as housing. It can be used to refer to the average density of a whole neighbourhood or town.

## Measuring site areas for net density calculations:

To enable the Planning Authority to compare densities with any accuracy and cross-reference back to schemes in the companion document '*Urban Living – Learning from recent higher density developments*', the site area needs to be measured in a consistent way. This can be complex on large schemes and may involve an element of judgement about whether open spaces, roads, parking and non-residential uses are an integral part of the development or serve a wider neighbourhood role. For net density calculations on a tightly defined site (i.e. a single city block bound by streets), the site should be measured from the centre line of those surrounding roads that provide access and servicing to the development. Back of pavement or the building line could result in an artificially high net density. Figure 20 illustrates this with reference to the recently consented scheme for the Ambulance Station in Central Bristol.

For larger sites, which include new streets or areas of public realm within the site, the red-line/ ownership boundary can generally be used.

When supplying information in Checklist 1, the applicant is encouraged to provide a plan similar to Figure 15, indicating the site area that has been used to calculate densities.



Figure 15: Measuring site areas (worked example using the recently consented Ambulance Station development)

- Site boundary including proposed public realm works
- Site ownership boundary (used for density calculation in DAS) 0.674 hectares = 556 units per hectare
- Site area taken from the middle of the road 0.9 hectares = 416 units per hectare

## Bedspaces (or people)per hectare (bsph)

While dwellings per hectare tells us the number of homes built upon a site, it does not indicate the potential population of a scheme.

Bedspaces or people per hectare measures how many people a house/ flat can accommodate, for example a 3 bedroom house with two double bedrooms and one single bedroom sleeps up to five people. This method offers an estimate of the likely population of a scheme. However it may overestimate this as some dwellings, particularly in private for-sale units, may be under occupied.

The amount of open space recommended by Question 2.3 is calculated using bedspaces.

## Mixed use schemes:

It is important that non-residential space is taken into account as part of calculating residential density in mixed-use schemes. There are a number of approaches that can be taken towards calculating densities in mixed-use schemes. The approach advocated here is based a methodology developed by architects Maccreanor Lavington to inform the London Local Plan.

The method takes into account the impact of vertically stacked mixed use development (i.e where housing is on top of non-residential use) by reducing the size of the site area by an amount that is equivalent to the proportion of total non-residential floorspace. The remaining site area is used to calculate net residential density. This will produce a higher density than the unadjusted version.

## Fig 16 Quakers Friars-worked example:

### Mixed use scheme

Net site area: 1.6ha

Number of dwellings: 230

Residential GIA: 15875sqm + 4284sqm basement car parking = 20159sqm (55%)

Non-residential GIA: 16600sqm (45%)

Density calculation based on 55% of the site area: 0.88ha

**Net Density: 230/0.88 = 261dph (using Maccreanor Lavington method)**

\*A standard density calculation, which does not take account of the non-residential uses produces a density of 144dph (230/1.6)

**Plot Ratio= Total GIA (36,759qm) / Site area (1.6) = 2.3**

### Number of bedspaces

Number of dwellings: 230

1b 2p: 112 (112x 2) = 224

2b 4p: 116 (116x 4) = 464

3b 5p: 2 (2x 5)= 10

**Total number of bedspaces= 688 / 0.88**

**Bedspaces per hectare= 782**

# Guidance for measuring density, open space and play space

## Private open space provision:

Private open space is highly valued and should be provided in all new housing developments. DM27 Layout and Form of the adopted Site Allocations and Development Management Plan requires development to “enable the provision of adequate appropriate and usable private or communal amenity space”.

To ensure appropriate provision of private open space in higher density residential schemes, the SPD introduces a private open space requirement.

### Open Space

Q2.3 recommends providing a minimum of 5sqm of private outdoor space for a 1-2 person dwellings and an extra 1sq m should be provided for each additional occupant. This can be provided as private balconies or gardens, or as communal gardens and roof terraces.

The likely resident population should be calculated using the guidance in Fig 16.

This minimum private open space recommendation is based on the open space requirement in the London Plan, which is established in the same way as the internal space standards, by considering the space required for furniture, access and activities in relation to the number of occupants.

It is anticipated that standard family housing will provide space in excess of the minimums stated here, to allow for future adaptability of the home and provide outdoor space for play and food growing etc.

Where sufficient private open space cannot be accommodated on site, due to identified constraints, proximity to existing open space may be considered.

Where specialist housing is proposed, such as Purpose Built Student Accommodation (PBSA) and Private Rented Sector (PRS) the space requirement may be met through a combination of internal and external amenity spaces, providing that the internal amenity space is for the exclusive use of the residents, is available to all residents and is free to use. Internal amenity space excludes entrance lobbies, corridors and communal storage e.g. bikes.

## Play space provision:

Evidence suggests that a growing number of children are living in higher density ‘flatted’ schemes in Bristol. In anticipation that this trend is likely to continue, it is important that new residential flats are designed to be child or family friendly.

Ensuring ‘everyday freedoms’ through higher levels of independent mobility around a neighbourhood and ‘children’s infrastructure’- the network of spaces, streets and nature which provide space for play and socialising should become key considerations of the design process.

### Play Space

Q2.5 recommends providing 10sqm per child. This is based on the estimated child yield of a development, which can be established using the online child yield calculator.

For children aged between 0-4years this should be incorporated within the development as part of the provision of private open space, or as doorstep play integrated within the public realm immediately adjacent to the development. For older children, the open space provision could either be provided on site or as an off site contribution. This will depend on the size of the development, and the sites accessibility on foot to existing play provision (see Fig 4 for guidelines)

Children’s play can be integrated into a wider landscape scheme; it does not have to be formal play equipment where integrated within a site.

In some cases, for example schemes with a high proportion of social rented dwellings, the play space requirement will sometimes be greater than the overall open space requirement.

## Child Yield Calculator

A Child Yield Calculator for Bristol has been created to estimate the likely number of children in a development. This is based on the numbers of children living in households in Bristol by type, tenure and number of bedrooms. The calculator estimates the number of children from a development broken down into 0-4, 5-11 and 12-15 year olds.

The yields are based on the proportions of children living in households using 2011 Census data. This will be periodically reviewed as new data becomes available.

## Fig 17. Quakers Friars-worked example continued:

### Private Open space

Total number of units: 230

1bed 2 person units: 112 (112 x 5 sqm)

2bed 4 person units: 116 (116 x 7 sqm)

3bed 5 person units: 2 (2 x 8 sqm)

**Total amount of open space required= 1388 sqm.**

### Play Space:

Estimated child yield age 0-15 year olds (using number of units as above):

$(0.05 \times 112) + (0.18 \times 116) + (0.24 \times 2) = 28$

(Age 0-4= 17 Age 5-11= 8 Age 12-15=3)

**28 x 10 = 280 sqm of play space.**

# Guidance for assessing sunlight/ daylight

Achieving adequate levels of daylight and sunlight into the buildings and external spaces where we spend most of our time contributes to our health and wellbeing.

The most commonly used guidance on daylight and sunlight is 'BRE BR 209- Site Layout and Planning for Daylight and Sunlight: A guide to good practice 2nd Edition' (Building Research Establishment, 2011). It contains nationally applicable best practice guidelines on the levels of daylight and sunlight that existing and new development should follow, together with other guidelines including BS 8206-2 Code of Practice for daylighting.

In accordance with the BRE guidance, this SPD aims to:

- Ensure new development is designed to provide good daylighting and sunlighting.
- Protect the daylighting sunlighting of existing buildings.
- Ensure good daylighting and sunlighting of adjoining development sites.
- Ensure good daylighting and sunlighting of public and private open space (including public realm).

One of the key factors in achieving more intensive forms of development, particularly in city centre and urban areas, is a more flexible approach to achieving daylight and sunlight standards for dense urban environments, while still maintaining liveable environments.

A number of assessment criteria set out targets for daylight and sunlight such as BREEAM, Home Quality Mark, WELL standard and LEED. The Local Planning Authority encourages applicants to consider this issue in conjunction with the other design implications set out in such assessments.

## Comparative Context Analysis:

The SPD advocates an approach which allows an assessment of daylight and sunlight targets to be informed by comparative contextual analysis. This approach provides flexibility to the application of targets set in the BRE guidance in dense urban environments in line with NPPF paragraph 123 (c).

Where alternative target values are set using a comparative context, it is important that these are self-consistent (i.e. all values are taken from the same scenario). Applicants are advised to refer to Appendix F of BRE BR209- Site layout and Planning for daylight and sunlight.

In determining a comparative context, physical and environmental characteristics should be considered together with other context considerations. For example, the amenity of living in a city centre location, such as the Old City, where its central location, high quality of urban environment and access to public open space compensates for a lesser standard of daylight than may be appropriate in other areas of the city. The appropriateness of a comparative context should be determined through early dialogue with the Local Planning Authority.

## Adjoining development land:

Development proposals should have regard to the future potential of adjoining sites, and demonstrate that an appropriate level of daylight and sunlight can be achieved.

Development should be located within the site boundary to ensure a fair share of light to adjoining development sites.

Typically if the 43° method of assessment is satisfied, this will be sufficient to show that future development sites will not be adversely affected with regard to daylighting.

## Daylight

### Average daylight factor (ADF):

A room with an ADF of 2% is 'partly day lit', a room with greater than 5% ADF is 'well day lit'. However over 6% can result in glare concerns and problems with over heating during the summer months.

### No-sky line (NSL)

The point at which working plane sees the sky. Areas beyond NSL tend to look gloomy irrespective of external brightness. The Home Quality Mark requires 80% of the working plane in each habitable room to receive direct light from the sky.

### Vertical Sky Component (VSC):

VSC is a 'spot' measure of skylight reaching the mid-point of a window from an overcast sky. Expressed as a percentage, BRE guideline reference;

- VSC of at least 27% will usually give reasonable daylight with conventional window design.
- VSC of between 15% and 27% usually requires special design measures (larger windows, changes to room layout) to provide adequate daylight.

## Sunlight

### Annual Probable Sunshine Hours (APSH) (internal spaces)

Represents the total number of hours during a year in which sunlight reaches the unobstructed ground. Habitable rooms should achieve 25% APSH in summer and 5% in winter

### Sunlight exposure (external spaces)

An appropriately sunlit space will achieve greater than or equal to 2 hours sunlight on 21st March across at least 50% of the space.

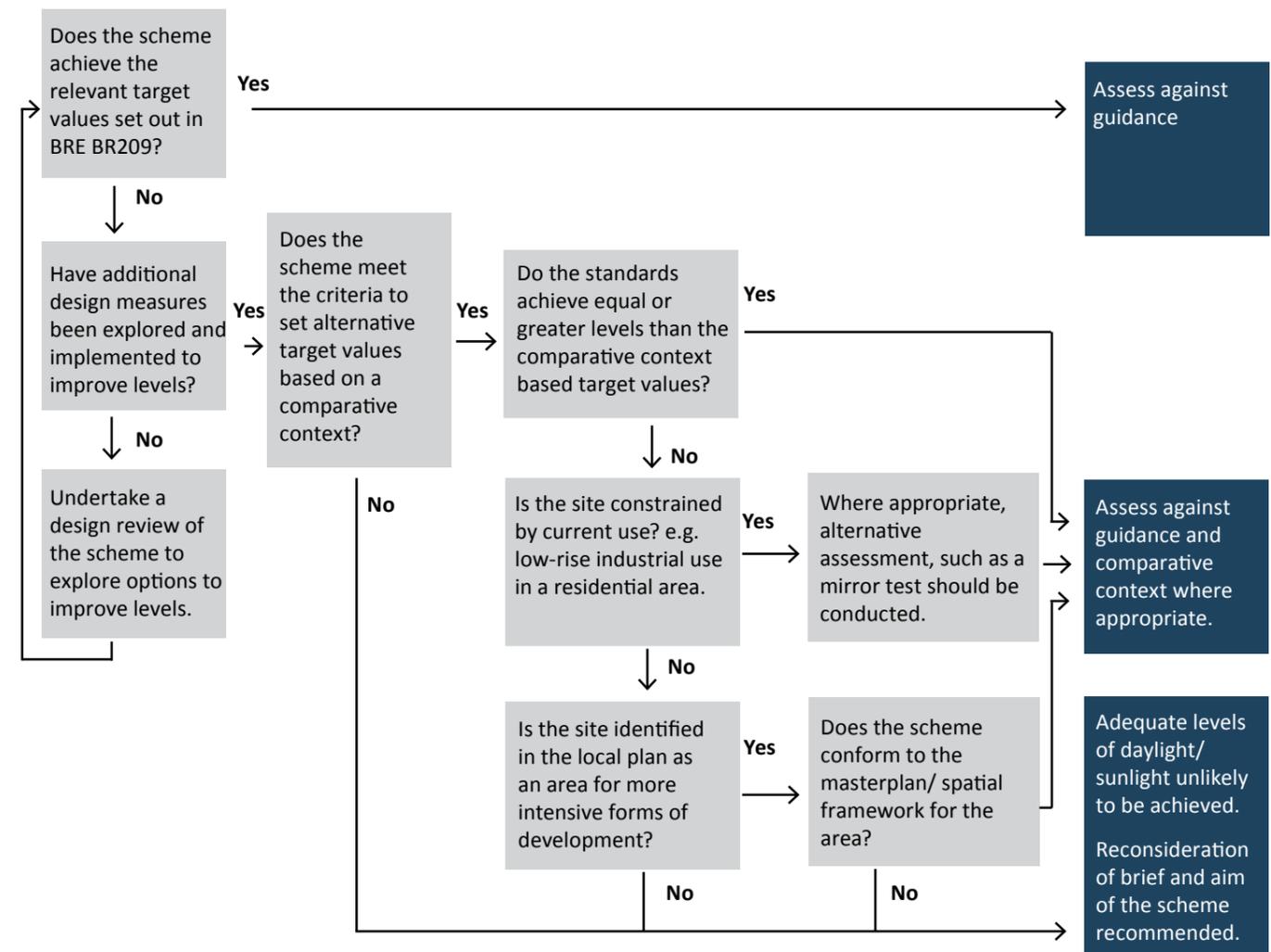


Figure 18: Daylight sunlight flow chart sets out the process for assessing applications which may not meet BRE target values.

The chart should be used for all measures of daylight and sunlight for both existing and proposed development as well as sunlighting public and private open space (including public realm). Design and Access statements should show how proposals respond to each question and provide a clear methodology where design revisions, alternative target values and assessment is proposed.

# Guidance for undertaking visual impact assessments

## Production of Photographic images for Planning Submissions

The use of single frame and panoramic photographs illustrating key viewing points and the methods by which they are developed into fully rendered representations are essential to understanding the visual effects of development proposals. Two guidance processes have been produced to advise on the production of images for planning submissions: -

- Guidance for Landscape and Visual Impact Assessments (GLVIA) is currently provided by IEMA/LI (GLVIA3rd Edition 2013)
- Visual impact assessment guidance with specific respect to Heritage Assets, assessed through Heritage Impact Assessment(HIA), principally set out in 'History in View' (Historic England) although 'The Setting of Heritage Assets, 2nd Edition GPA3 is also relevant.

The heritage asset documents relate more specifically to impacts upon heritage assets including listed buildings and historic parks and gardens though the methodology for capturing photographic information for assessment would be the same as that used for sites having a non- heritage related landscape impact.

With reference to the LVIA referred to above the methodology includes discussion of appropriate equipment and its use, photographic techniques for the minimisation of distortion, the placing of images within GPS modelling software to provide accurate location of sites within representative views and how images should be presented for the purposes of submission.

The following recommendations are a distillation of the principles into a series of bullet points in order to assist developers in the provision of accurate and relevant images in support of their planning applications; the principle for seeking compliance with guidance is that, in the case of doubt, the submitted images should be reproducible enabling verification by planning case officers and their advisors.

## Agreeing the Image locations

The process resulting in the production of acceptable images is as follows: -

- The developer's design team submits to the council a list of locations likely to be affected by proposals; particular regard should be had to designated areas within policy documents, the setting, curtilage or context of listed buildings or structures designated within policy documents.
- Agreement is reached on which views are incorporated into the assessment process as representative images or verifiable images; the number and type of verified views – wire frame, block view or fully rendered should be clarified at this stage. Treatment of views subject to a high degree of seasonality, the requirement for night time images and the likelihood of a cumulative assessment for specific views should also be agreed at this point.
- Photographs are then inserted into 3D modelling software to produce a final image according to the methodology below.



Fig 19:View shed.

These can be prepared using freely available software (in this case Google Earth) to provide a simple but effective way of identifying vantage points and viewing corridors, simply by extruding a point (or series of points for large sites) to the proposed height of the scheme. The green colour illustrates all the points from which the building or structure can be seen. Once the shed is produced, vantage points can be identified. These should be publicly accessible and well used for either recreational or movement purposes. The city's parks, public spaces, pedestrian priority routes and bridges are considered to be particularly important vantage points.

Source: Map data: Google, DigitalGlobe

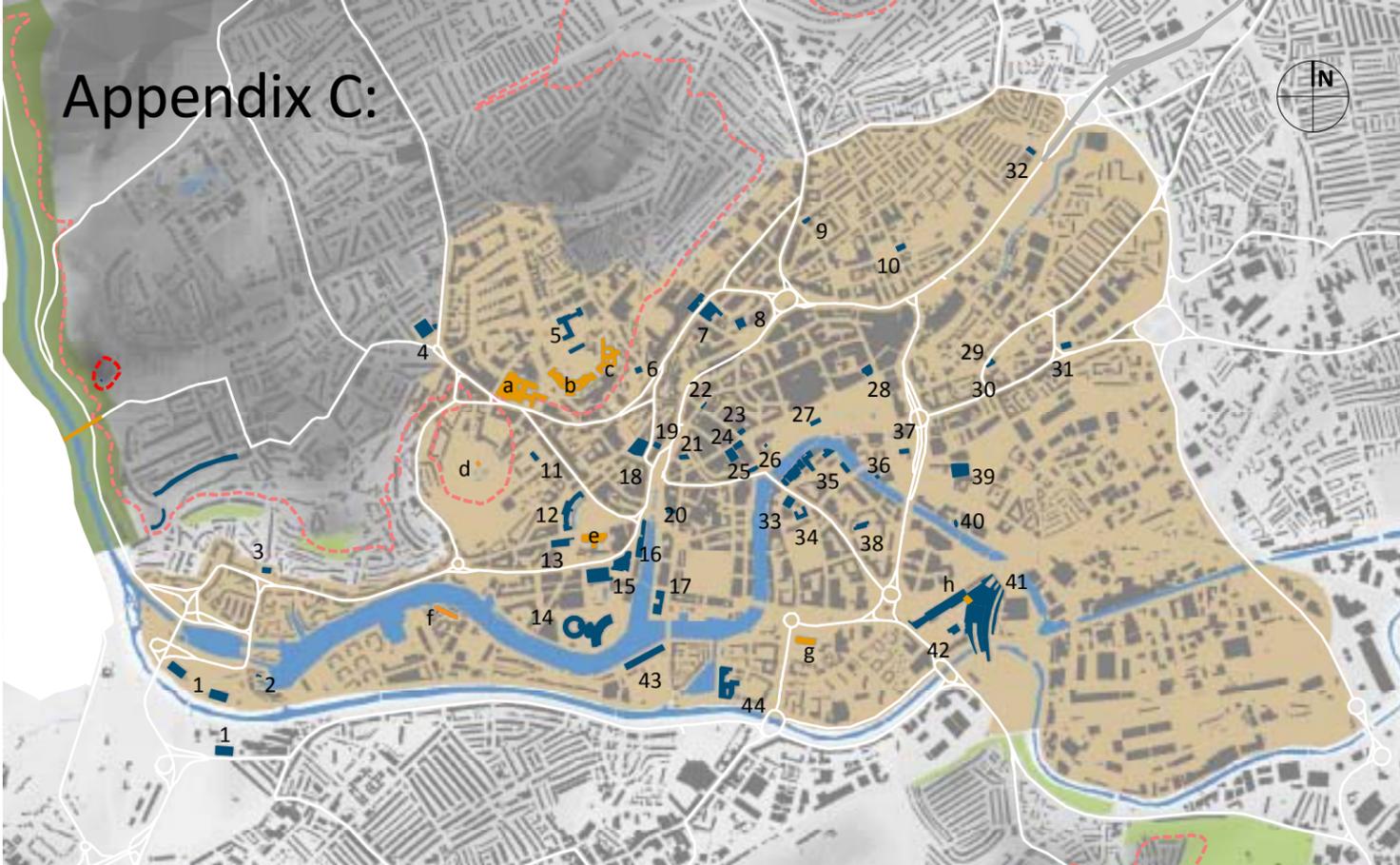
## Production and presentation of images

The methodology set out below recognises that the number and complexity photographic images should be proportional to the size, nature and perceived importance of the application; as a rule more prominent proposals - those having greater scale, part of or affect the setting of a listed building or likely to affect sensitive landscapes - will require a different degree of technical methodology in their production and presentation methods , in particular where panorama views have been agreed.

- Written description of the equipment and technical methodology used in the compilation of images, preferably as a separate bulleted note rather than incorporated into the image sheet.
- Full frame sensor, 50mm fixed lens – 24mm acceptable for close, dense urban environments and portrait orientated images for tall buildings though use of tilt lens is not acceptable.
- Camera tripod mounted and levelled.
- Camera location accurately recorded - a fixed survey pin with accompanying photograph is adequate.
- The whole site photographed and centrally located within the frame with the horizon line mid-way in the image. Where panoramas are required, the methodology should set out the means by which overlapping 2D images have been 'stitched' into a cylindrical projection to omit distortions and then taken back to a 2D planar view for incorporation into 3D modelling software – e.g. LiDAR - to ensure accurate lateral and vertical extent of the proposals.

- Presentation of images at A3, 390mm wide x 260mm high; uncropped 3:2 proportions, correctly set up camera work should print out at this size. With regard to panorama images, in most cases presentation in A3 formats in a ratio of 3:2 proportions will be acceptable, but for schemes of city wide significance affecting a large sector of the Bristol landscape (e.g. powerline applications, or those having significant impacts upon large historic assets such as heritage parkland) panoramas may be required to be presented on A1 width paper in planar projection, image size 260mm high, 820mm wide.
- Night views as required presented as a regularly timed sequence of images from dusk through to full darkness.

# Appendix C:



## Prominent City Centre Landmarks

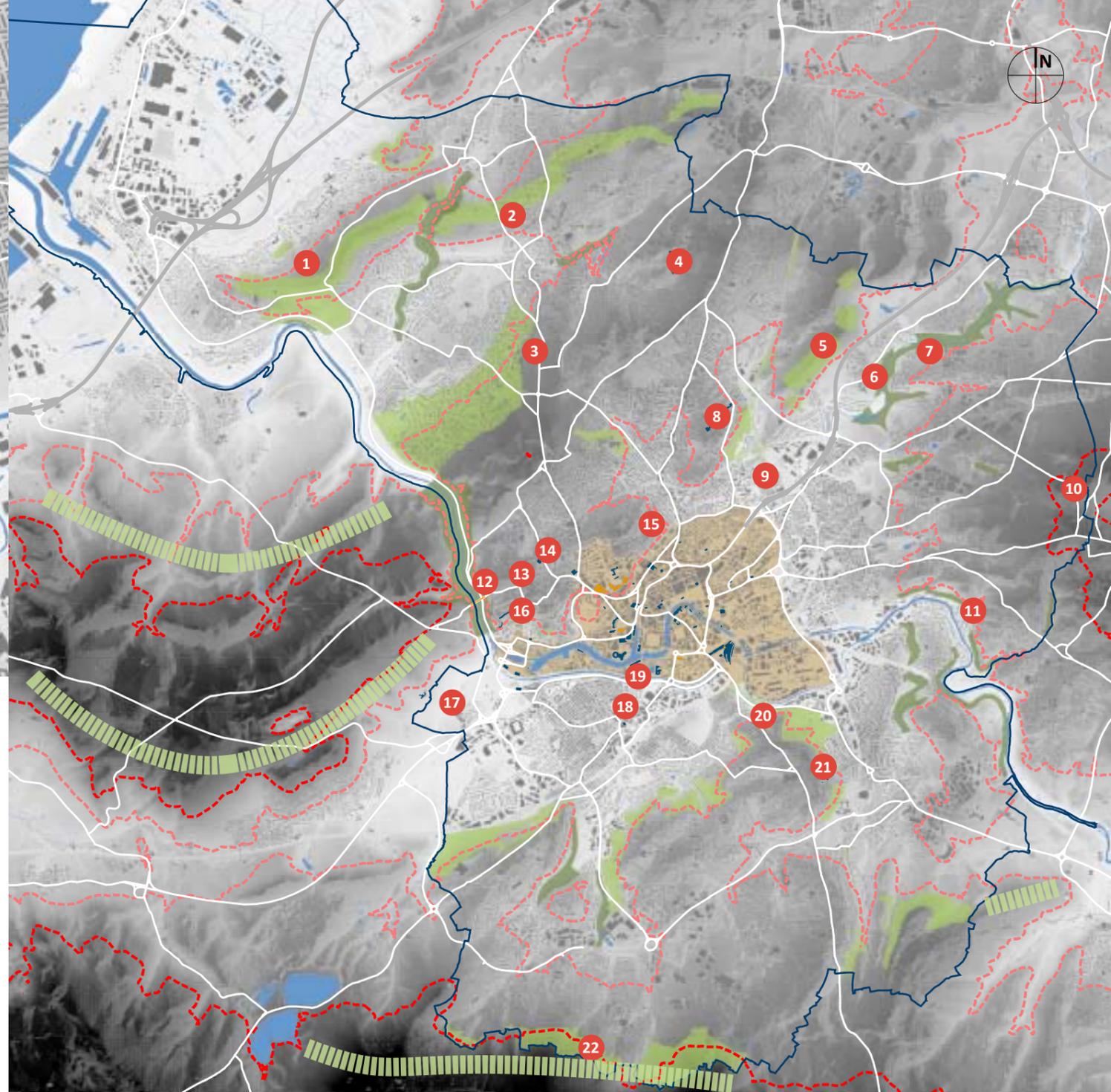
- a Wills Memorial Building
- b University of Bristol Engineering Building
- c University of Bristol Medical School
- d Cabot Tower
- e Bristol Cathedral
- f SS Great Britain
- g St Mary Redcliffe
- h Temple Meads Station Clock Tower

## Secondary City Centre Landmarks

- 1 A Bond, B Bond and C Bond
- 2 Underfall Yard chimney
- 3 Church of Holy Trinity, Hotwell Road
- 4 Victoria Rooms
- 5 Wills Physics Laboratory, Tyndall Avenue
- 6 St Michael on the Mount
- 7 Bristol Royal Infirmary
- 8 St James Priory
- 9 City Road Baptist Church
- 10 St Pauls Church
- 11 St Georges
- 12 City Hall
- 13 Bristol Library
- 14 We the Curious & Bristol Aquarium
- 15 Watershed, Anchor Road
- 16 Lloyds TSB Building
- 17 Arnolfini
- 18 Colston Hall
- 19 Colston Tower
- 20 Radisson Blu Hotel (Former Bristol and West Tower)
- 21 St Stephens Church
- 22 Church of St John the Baptist
- 23 Christ Church with St Ewen, Corn Street
- 24 All Saints Court, Corn Street
- 25 St Nicholas Church
- 26 Tower of St Mary-le-Port
- 27 St Peters Church, Castle Park
- 28 Eclipse Tower, Harvey Nichols
- 29 Church of St Jude the Apostle
- 30 Palace Hotel
- 31 Holy Trinity Church, Trinity Road
- 32 St Agnes Church
- 33 One Redcliffe Street
- 34 Church of St Thomas the Martyr
- 35 Bristol Brewery Buildings @ Finzels Reach
- 36 Leadshot Tower
- 37 St Peter and St James
- 38 Temple Church
- 39 Gardiner Haskins
- 40 The Eye, Temple Quay
- 41 Temple Meads Station
- 42 Bristol and Exeter House
- 43 M Shed & L Shed. Harbourside Cranes

## Key

- City Centre
- Prominent Landmarks
- Secondary Landmarks
- Prominent Green Hillside
- Gorges
- Steep Sided Valleys
- Ridges
- Water
- 50m contour
- 100m contour



## Key

- City Boundary
- City Centre
- Prominent Green Hillside
- Gorges
- Steep Sided Valleys
- Ridges
- Water
- 50m contour
- 100m contour
- Prominent green hillside beyond city boundary

## Key landmarks within wider city

- 1 Kingsweston House
- 2 Wesley College, Henbury
- 3 St Monica's, Cote
- 4 Southmead Hospital
- 5 Dower House and Telecoms Tower, Stoke Park
- 6 Holy Trinity Church, Stapleton
- 7 Clock Tower, Blackberry Hill Hospital
- 8 Muller Orphanage Buildings
- 9 Chimney, Brooks Dye Works
- 10 Cossham Hospital, Lodge Road
- 11 Troopers Hill chimney
- 12 Clifton Suspension Bridge and Observatory
- 13 Christ Church Clifton
- 14 Clifton Cathedral Church
- 15 St Matthew's Church, Cotham
- 16 The Paragon and Royal York Crescent
- 17 Ashton Court Mansion
- 18 Robinson Building, Bedminster
- 19 Tower of the Church of St Paul
- 20 Church of the Holy Nativity, Wells Road
- 21 Water Tower & St Gerard Majella, Talbot Road
- 22 Dundry Church

# Guidance for understanding pedestrian level wind effects

Wind turbulence, can be affected by the local grouping of buildings and their orientation to the prevailing wind. Isolated buildings (of whatever height) and the open spaces between buildings can be affected by wind patterns especially in transitional seasons, making the spaces unusable. It can also be exacerbated by raising the building on stilts or pilotis. Conversely, a highly integrated street pattern encourages wind to move over the tops of densely built up areas, resulting in a more pleasant microclimate.

Context is key for building massing and wind microclimate effects. Height differential and density grading principles should be considered before active strategies to protect pedestrians at street level are adopted, such as podiums and canopies. These will then help reduce the impact from wind related impacts, in particular downwash and wake.

As a general rule of thumb, a tall building might have an impact on wind patterns in an area with a radius of five times the height of the building. In particular wind speeds should be considered during the design process around the entrances into both proposed and adjacent buildings, along key pedestrian routes and in spaces designed for passive recreation. Where the assessment indicates high wind speeds are likely at any given location for prolonged periods such as to restrict the space, the applicant will be expected to demonstrate how modifications to the siting of the building or modifications to the design (e.g. canopies and windbreaks) would reduce the impact.

## When to carry out wind assessments

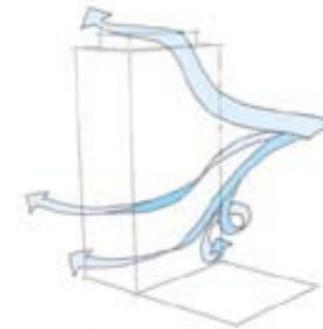
Buildings proposed on exposed sites with large frontages to southwest or northeast tend to be the ones that are most sensitive to wind issues. Also, building near frequently used areas (e.g. train stations) or those that may be used by vulnerable pedestrians (e.g. hospitals and schools) require careful attention. Therefore a degree of judgement has to be exercised, but the following general advice (derived from the City of London's Planning Advice Note: Wind Effects and Tall Buildings, 2017) can provide a guideline for typical office or residential buildings. At the early stage of developing a scheme, bulk, height and massing options for the site need to be thoroughly assessed to avoid the need for retrospective mitigation measures.

10 to 14 Storeys	Desk-Based Assessment
14 to 20 Storeys	Desk-Based Assessment + Computational (CFD) Simulations*
Above 20 Storeys	More Detailed CFD and/or Testing in Detailed Design*

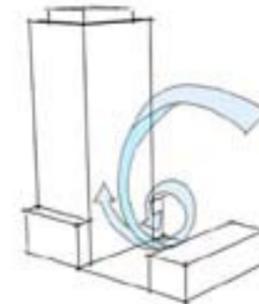
(\* If the Computational Fluid Dynamics (CFD) study indicates the possibility of safety conditions, wind tunnel tests may need to be carried out to quantify and confirm the effectiveness of mitigation measures.

These guidelines need to be read in conjunction with prevailing building heights; where the protruding building is more than twice the average height of surroundings then the risk of building related wind effects may be more pronounced. It will be at the discretion of the Local Planning Authority whether such a building (i.e. a contextually tall building) will require an assessment. Public spaces at high levels (e.g. terraces) fall into the same guidelines as above. Intelligent parapet and landscape design could be used to improve wind conditions on terraces.

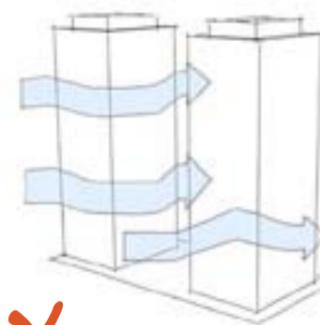
## Issues



- Wind flowing down the building face causes accelerated wind speeds near the windward corners.
- Tall and wide facades that face the prevailing winds are often undesirable.

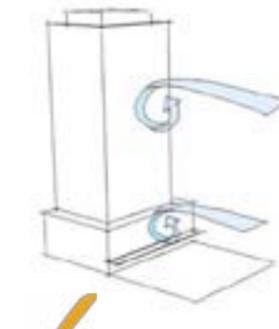


- Buildings create a low wind pressure area immediately downwind.
- A low building upwind of a tall building increases the downward flow of wind, causing accelerated wind near the windward corners.

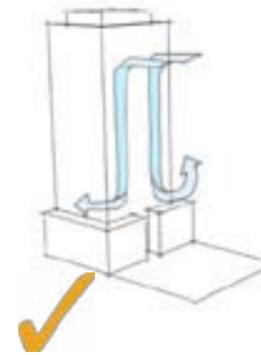


- Wind is funnelled between two buildings causing accelerated winds (wind canyon effect).
- The height, spacing and orientation of the buildings affect intensity of wind acceleration.

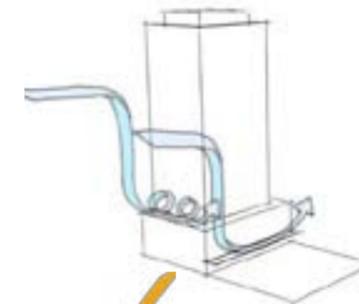
## Solutions



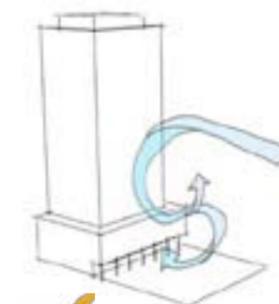
- Towers that step back from base buildings can be used to reduce undesirable downward wind flows.
- The proportions of base building setbacks and their influence on the wind is affected by the height of the surroundings.



- Base building roof areas that are inaccessible to pedestrians can be used to mitigate against downward wind flows and improve conditions at grade.
- Landscaped base building roof areas can further reduce wind speed at grade.



- The use of horizontal canopies on the windward face of base buildings is beneficial.
- Parapet walls can increase the canopy's effectiveness.
- Sloped canopies only partially deflect downward wind conditions.



- Colonnaded base buildings can be used on windward facades to control downward wind flows.
- Colonnades provide pedestrians a choice of calm or windy areas (breezes are welcome on hot days).

Fig 20: Pedestrian level wind effects (based on the Toronto Tall Buildings Guidelines)

## Urban Living Monitoring Data

Applicants should use their Design and Access Statements to set out how their scheme optimises densities - balancing the efficient and effective use of land, with aspirations for successful placemaking, liveable buildings, and a positive response to context. The applicant should demonstrate how this can be successfully achieved, setting out how the scheme addresses this at a city, neighbourhood, street and building level.

Applicants should use the Design and Access Statement to demonstrate that the proposed scheme is a suitable response to the site and its setting, and that it can be adequately accessed by prospective users

Applicants are encouraged to respond positively to the design considerations set out in Part 1, 2 and 3.

The Design and Access Statement should be used to explain the design evolution, showing alternative options that have been considered and setting out the reasons for the selection of the preferred option. The Design and Access Statement should evolve alongside the evolution of the scheme, and should be used for a tool to communicate the vision for the site throughout the pre-application process.

The Design and Access Statements should be designed to be a concise and user-friendly document,. It should aid decision-making by enabling local planning authorities and third parties to better understand the analysis that has underpinned the design of a development proposal. It should comprise graphics and text.

The Design and Access Statement should provide the following quantitative information to enable the scheme to be properly assessed. Density calculations should adopt the methodology set out in Appendix A, with reference being made to worked examples in the companion 'Urban Living – Learning from recent higher density developments (Bristol City Council, 2018)

All schemes (Key facts and figures: Monitoring information)	To be completed by applicant
Site area (hectares)	
Number of separate buildings covered in the scheme	
Proposed number of phases for scheme delivery	
Total number of non-residential units	
Estimated number of non-residential building occupants (peak period)	
Total building footprint i.e. Gross external area (GEA) (sqm)	
Residential gross internal floor area (GIA) (sqm)	
Non-residential GIA (sqm)	
Total GIA (sqm)	
Floor Area Ratio (total Gross Internal Area of all floors / site area)	
Site Coverage Ratio (Gross External Area of ground floors /site area)	
Maximum height in metres above ground level of each building and at Above Ordinance Datum (above sea level)	

For residential schemes	To be completed by applicant
Total number of dwellings	
Number of units per hectare	
Number of bedspaces per hectare	
Number of private and intermediate dwellings: <ul style="list-style-type: none"> <li>— 1 bedroom/1 bedspace</li> <li>— 1 bedroom/2 bedspaces</li> <li>— 2 bedroom/3 bedspaces</li> <li>— 2 bedroom/4 bedspaces</li> <li>— 3 bedroom/4 bedspaces</li> <li>— 3 bedroom/5 bedspaces</li> <li>— 3 bedroom/6 bedspaces</li> <li>— 4 or more bedrooms (please specify number of bedspaces)</li> </ul>	
Number of socially rented dwellings: <ul style="list-style-type: none"> <li>— 1 bedroom/1 bedspace</li> <li>— 1 bedroom/2 bedspaces</li> <li>— 2 bedroom/3 bedspaces</li> <li>— 2 bedroom/4 bedspaces</li> <li>— 3 bedroom/4 bedspaces</li> <li>— 3 bedroom/5 bedspaces</li> <li>— 3 bedroom/6 bedspaces</li> <li>— 4 or more bedrooms (please specify number of bedspaces)</li> </ul>	
Total number of bedspaces	
Number of units per hectare	
Walking distance to children's play space	
Walking distance to primary school	
Walking distance to GP surgery	

Parking	To be completed by applicant
Total number of car parking spaces provided	
Number of allocated parking spaces (residential/ non-residential)	
Number of unallocated parking spaces	
Number of on-street parking spaces provided	
Number of parking spaces provided within basements, podiums or multi-storey arrangements	
Number of parking spaces provided in private garages or driveways	
Number of parking spaces provided in open areas of surface parking	

Accessibility	To be completed by applicant
Walking distance to bus stop	
Walking distance to Metrobus stop or train station (which ever is closest)	
Walking distance to local, district or town centre (whichever is closest)	

## Appendix F:

# Glossary

**Base buildings:** the section of a taller building which relates directly to the street, typically up to 4 storeys, which serves to frame the public realm and articulate entrances while defining a comfortable human scale. These are sometimes referred to as ‘podium’ building.

**Build for Rent:** managed large-scale housing for private rent. Build to Rent relies on income through rent over a number of years, rather than an upfront return on sales through a Build for Sale development model. Its promoters argue that its communities have different needs and priorities to those looking to buy a home and this should be recognised when being assessed by the Planning Authority

**Corridor Access:** extended internal common parts with apartments on one side (single-banked) or both sides (double-banked)

**Maisonette:** apartment on two levels (alternatively called a duplex)

**Deck access:** open-air sheltered access walkway serving upper level apartments (alternatively called gallery-access)

**Hyperdensity:** a term coined by the architects behind the publication ‘Super-Density - The Sequel’ to describe very high densities, over 350 homes or dwellings per hectare - derived, not from UK distinctive and popular urban forms, but from global development patterns

**Masterplan:** describes how a proposal will be implemented, and set out the costs, phasing and timing of development. A masterplan will usually be prepared by or on behalf of an organisation that owns the site. The masterplan sets out key design principles, and how the principles are to be implemented. It is usually submitted in support of an outline planning application for a site.

**Place shaping:** how a new development contributes to and alters an existing place on a neighbourhood scale. It entails the use of wider planning, housing, economic development and management tools to create a successful place, including the management of uses and the shaping of massing, building height and the layout of routes and urban spaces at a neighbourhood scale.

**Place shielding:** entails managing the interface between different places where new buildings on the edge of a site can buffer the surrounding area from larger scale buildings within the site or protect the buildings within the site from larger scale buildings or non-residential uses around its edge.

**Space Standards:** nationally described space standard were published by the DCLG in 2015 and replace a number of existing different space standards used by local authorities. It is not a building regulation and remains solely within the planning system as a new form of technical planning standard.

**Spatial framework:** prepared for areas where there is a particular need to control, guide and promote change; the area is likely to be in multiple ownership, and developed in multiple stages by multiple developers over many years. Spatial frameworks integrate planning, transport and design thinking. Spatial frameworks are prepared in three dimensions, thus allowing the testing of key view points throughout the design process, and the identification of target development quantum and populations which in turn can assist in identifying future infrastructure requirements (transport, open space, community etc). Spatial frameworks are used to co-ordinate more detailed development briefs, masterplans, public realm plans and design codes. Spatial frameworks should be prepared in consultation with the public, and ideally formally adopted by the council to give them weight in the planning process.

**Supplementary Planning Document:** build upon and provide more detailed advice or guidance on the policies in the Local Plan.

## Appendix G:

# Further resources

The following documents have informed the preparation of this SPD and provide useful further reading.

## Local Bristol context

**Bristol City Council (2018)** ‘Urban Living – Learning from recent higher density developments’ (companion report)

**Bristol City Council (2018)** Local Plan Review

**Bristol City Council (2011)** The Bristol Planning Protocol

**Bristol City Council (2000-onwards)** Bristol Conservation Area Character Appraisals

**Bristol City Council (2018)** Transport Development Management Guide (in production)

**West of England Joint Spatial Plan (2018)**

## Wider context

**Arup (2017)** ‘Cities Alive: Designing for Urban Childhoods’

**Barton, Grant and Guise (2003)** ‘Shaping Neighbourhoods – A guide for health, sustainability and vitality’

**CIBSE (2017)** TM59 Design methodology for the assessment of overheating risk in homes

**English Partnerships, The Housing Corporation, (2000)** ‘Urban Design Compendium’

**English Partnerships (2006)** ‘Car Parking - ‘What Works Where?’

**DCLG (2015)** ‘Technical housing standards – nationally described space standard’

**DCLG (2017)** ‘Housing White Paper, Fixing our Broken Housing Market’

**Historic England (2015)** Tall Buildings - Advice Note 4

**Historic England (2011)** Seeing the history in the view: A method for assessing heritage significance within views

**Landscape Institute (2013)** Guideline for Landscape and Visual Impact Assessments

**Landscape Institute (2017)** Townscape Character Assessment

**Mayor of London (2016)** Housing Supplementary Planning Guide

**Mayor of London (2017)** Draft new London Plan - The Spatial Development Strategy for Greater London Draft for Public Consultation

**Gordon et al (2016)** Defining, Measuring and Implementing Density Standards in London – London Plan Density Research Project 1

**hta, Levitt Bernstein, Pollard Thomas Edwards, PRP (2007 & 2015)** ‘Recommendations for Living at Superdensity’ & ‘Superdensity – The sequel’

**Maccreeanor Lavington et al for the GLA (2012)** ‘Housing density study’

**Norman (2017)** The Savills/CoStar logistics debate - Beds and Sheds and the need for industrial led mixed use

**Three Dragons et al for the GLA (2016)** ‘Lessons from higher density development – A report to the GLA’

**ULI UK Residential Council (2016)** ‘Build to rent – A best practice guide’

**Urban Task Force (1999)** ‘Towards an urban renaissance’

**UWE and LGMB (1995)** ‘Sustainable Settlements: A guide for planners, designers and developers’



## Growth and Regeneration

