Birmingham Local Plan Issues and Options (Reg 18)

Background Paper: Housing Density

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BE BOLD BE BIRMINGHAM

Birmingham City Council

Contents

1. Introduction

1.1. The Issues and Options consultation on the new Birmingham Local Plan identifies increasing housing densities as one of the options for delivering housing growth.

1.2. The purpose of this background paper is to provide additional detail on the concept of housing density and to review the current data available on densities in Birmingham. Case studies are presented to illustrate different housing densities.

2. What is housing density and how can it be measured?

2.1. Density measures the intensity of built development within a defined area. There are several different measures of density:

Dwellings per hectare (dph) this is the most commonly used measure of density in the English planning system. It measures the number of selfcontained dwellings within a specific area, usually the development site edged red. It tells us the number of dwellings within the area, but not the size of those dwellings. It does not tell us anything about building form.

Habitable rooms per hectare measures the number of rooms that are not kitchens or bathrooms, within a specified area. It provides a better indication of the overall intensity of development than dph, but similarly does not tell us about building form.

Bedrooms or bed spaces per hectare measure either the number of bed spaces (e.g. a double or single bedroom) or the number of bedrooms. As with habitable rooms per hectare, this more accurately reflects the intensity of development and the likely number of future residents. It does not tell us about building form.

Floor Area Ratio (FAR) (sometimes called plot ratio) is a measure of the ratio of the floor area of the building (usually gross floor area) to the area of the site. This measure is a mainstay of most planning systems internationally (for example in the United States, Japan and Germany) but is seldom used in planning in England. It is, however, commonly used by developers. This measure does not tell us the number of dwellings, nor their size, but gives a much better indication of the size of the buildings on site. This measure can also be used for mixed-use and non-residential buildings.

Building Coverage Ratio (BCR) (sometimes called building site coverage) is a measure of the area of the footprint of buildings as a proportion of the total area of the site. It tells us how much of the site is developed. This is sometimes used in planning systems alongside FAR to control the intensity of development of a site.

Building height and setback controls these are not measures of density. However, across the world they are frequently used to control the intensity of development and built form. These controls are very seldom used in the English planning system.

3. What determines housing density?

3.1. The intensity of the development of a site is largely determined by development viability. The optimal density will be that which realises the best residual land value. This is determined by sales and rental values and build costs.

3.2. Put simply, it will only be economic to build at higher densities where the additional returns (in sales or rental revenue) offset the increased build costs of doing so. The optimal density will be the one at which the value of the development exceeds the cost of building it by the greatest amount. Building at the optimal density will allow developers to make the highest bids for land and thereby secure development land in a competitive market.

3.3. In areas with lower sales and rental values, the optimal density will almost always be low-rise as this density minimises build costs.

3.4. In England's discretionary planning system, market forces, rather than planning policies, tend to be the principal drivers of housing density.

4. What is the purpose of planning policy on housing density?

4.1. The main purpose of density policy in the English planning system is to encourage the efficient use of land. The objective seeks, in particular, to maximise the capacity of brownfield land and land in town and city centres to accommodate new housing, thereby reducing the need to develop greenfield land. This objective is set out in the government's National Planning Policy Framework, which at paragraph 125 states:

"Area-based character assessments, design guides and codes and masterplans can be used to help ensure that land is used efficiently while also creating beautiful and sustainable places. Where there is an existing or anticipated shortage of land for meeting identified housing needs, it is especially important that planning policies and decisions avoid homes being built at low densities, and ensure that developments make optimal use of the potential of each site. In these circumstances:

a) plans should contain policies to optimise the use of land in their area and meet as much of the identified need for housing as possible. This will be tested robustly at examination, and should include the use of minimum density standards for city and town centres and other

locations that are well served by public transport. These standards should seek a significant uplift in the average density of residential development within these areas, unless it can be shown that there are strong reasons why this would be inappropriate;

b) the use of minimum density standards should also be considered for other parts of the plan area. It may be appropriate to set out a range of densities that reflect the accessibility and potential of different areas, rather than one broad density range; (…)"

4.2. Another potential purpose of density policy is to influence or preserve the character of an area. This purpose is alluded to in the references to characterassessments, design codes and beautiful places in the above extract from national policy. This is a more common objective of density policies in planning systems in other countries. For example, many planning systems in Europe require mid-rise development in cities, while restricting tall buildings to defined areas.

5. What is the current Birmingham City Council policy on housing density?

5.1. Birmingham Development Plan Policy TP30 (The type, size and density of new housing) states as follows:

"New housing should be provided at a target density responding to the site, its context and the housing need with densities of at least:
• 100 dwellings per ha within the City Centre.
• 50 dwellings per ha in areas well served by public transport.
• 40 dwellings per ha elsewhere.

In assessing the suitability of new residential development full consideration will need to be given to the site and its context. There may be occasions when a lower density would be appropriate in order to preserve the character of the locality, for instance, within a conservation area or mature suburb, or where a proposal would make a significant contribution to the creation of mixed and balanced communities, for instance, through the provision of family housing in appropriate locations within the City Centre. Where the density falls below those specified above, the applicant will be expected to provide supporting information justifying the density proposed."

5.2. This policy supports the objective of making efficient use of land, but also refers to the character impact of density. This latter consideration is developed further in the Birmingham Design Guide SPD Principles Document Design Principle 11 (increasing densities). Design Principle 11 states:

"Proposals seeking to increase the density of buildings, resulting in a scale, height and/ or mass above those that positively characterise the surrounding

area, are unlikely to be supported, unless the proposal will not result in a negative impact on the surrounding character area.

Where a change in character is supported or promoted by the City Council within an area or site specific policy or guidance, designs must deliver coherent outcomes that establish a justified scale and environment that can help redefine and enhance the character of a given area; and acknowledge the role of the development site in this wider context.

The density of a proposal must not impact on the quality of residential amenity or place. Architects must create innovative designs that enhance their surroundings and deliver quality, functional internal and external environments that support health and wellbeing.

Further guidance on increasing densities, whilst retaining quality is detailed in City Notes LW-1 and LW-2 of the Healthy Living and Working Manual."

5.3. City Notes LW-1 and LW-2 provide advice on building layouts and the relationship between street widths and building heights.

6. What densities are dwellings in Birmingham being built at?

6.1. The council has collected data on the density in dwellings per hectare of new dwellings completed in Birmingham between 2017 and 2020. This data was published within the Draft Housing and Economic Land Availability Assessment Methodology (July 2021) and is reproduced as Appendix 1 to this report.

6.2. The findings of that research are that the average density of dwellings completed in the city centre was 358 dwellings per hectare (dph), in and around urban centres the average density was 91 dph and elsewhere in the city it was 42 dph. The HELAA Methodology also provided densities for planning permissions granted in the period 2017-2021 but not yet completed. Unimplemented planning permissions need to be viewed with more caution because of the potential for landowners to seek to obtain planning permission to enhance the value of their land, without the intention of implementing the consent.

6.3. More detailed case studies of the densities of recent housing sites in the city, which have either been completed or under construction, are presented in Appendix 2. The case studies presented in Appendix 2 are generally larger developments as these provide a clearer indication of what a particular density could look like if reproduced across a larger area.

6.4. Appendix 2 presents the densities of the schemes in dwellings per hectare, bedrooms per hectare and floor area ratio. The parking ratio of

the schemes (ratio of number of parking spaces to number of dwellings) and mix of dwelling sizes is also recorded. Street side and aerial images are provided to show built form.

7. What does the research on existing densities show us?

7.1. The research and case studies show:

7.1.1. Outside of the city centre densities averaged 42dph. The median density of the schemes reviewed was 36dph. The case studies show schemes of around 40dph have a floor area ratio of less than 0.5 and a bedrooms per hectare density of 100 to 130. On these sites 1.5 to 2 parking spaces per dwelling were generally provided. In the case study examples, most dwellings were 2-bed or 3-bed with a lower proportion of 4-beds. Most dwellings were 2 storey and semi-detached or in short terraces with a smaller number of detached dwellings.

7.1.2. Within the city centre the average density was 358 dph. The median density was 170dph, however when schemes for minor developments (9 or fewer dwellings) are excluded the median scheme density increases to 267dph. Larger schemes tended to have higher densities, pulling up the average density and anecdotally there seems to be a growing trend for higher density schemes including towers. Lower density schemes were seen in Jewellery Quarter, perhaps because of heritage constraints. The case studies indicate that a density of 400dph and above will equate to a floor area ratio of greater than 3, and bedrooms per hectare densities in excess of 500. The case studies show parking ratios of under 0.5 parking spaces per dwelling. The case studies indicate that a density of 150400dph is likely to have a lesser floor area ratio of 1-2 and is likely to be compatible with a greater level of greenspace/landscaping provision on site. In all of the case studies, dwellings were predominantly 1-bed and 2bedroom apartments in buildings of 5 storeys and more in height.

7.1.3. The case studies show some edge of city centre locations where schemes of a similar character to those in the city centre are being built, namely at Soho Loop in Winson Green/Ladywood, at Edgbaston Cricket Ground and at New Garden Square on Hagley Road.

7.1.4. It is more difficult to generalise about schemes in and around urban centres. These displayed a large range of net densities from 20dph to 342dph. The median density was 67dph and the mean 91dph. The case studies indicate that schemes of around 70-150dph can take the form of 3-4 storey apartment buildings or rows of terraced houses. Floor area ratios are likely to range from 0.5-1 and bedrooms per hectare from perhaps 150 to 300.

7.1.5. Birmingham City Council wishes to thank Claridge Architects, CallisonRTK and Glancy Nicholls Architects for use of their images in this document.

Appendix 1: Average densities research

City Centre completed sites 2017-20

	1-9 dwellings	10-49 dwellings	50-199 dwellings	200+ dwellings	All sites
Number of sites	5	6	3	2	16
Total dwellings	78	134	282	437	931
Site size range (dwellings)	1 - 65	14 – 40	92 – 113	220 - 217	1 - 217
Average site size (dwellings)	15	22	94	219	58
Total gross site Area (ha)	0.29	0.69	0.91	0.7	2.59
Site size range (ha)	0.01 - 0.12	0.08 – 0.14	0.2 – 0.47	0.1 - 0.6	0.01 - 0.6
Average gross site Area (ha)	0.06	0.12	0.3	0.35	0.16
Gross density range (dph)	50 – 542	108 – 500	196 – 471	367 - 2170	50 – 2170
Average gross density (dph)	174	212	351	1,268	358
Total discounts (ha)	0	0	0	0	0
Average discount per site	0	0	0	0	0
Total net developable area (ha)	0.29	0.69	0.91	0.7	2.59
Average net developable Area (ha)	0.06	0.12	0.3	0.35	0.16
Average gross to net ratio	100%	100%	100%	100%	100%
Average net density	**174**	**212**	**351**	**1,268**	**358**

Completed sites in/around urban centres 2017-20

	1-9 dwellings	10-49 dwellings	50-199 dwellings	200+ dwellings	All sites
Number of sites	25	12	2	1	40
Total dwellings	92	263	245	110	710
Site size range (dwellings)	1 – 15	4 – 43	92 – 153	110	1 – 153

	1-9 dwellings	10-49 dwellings	50-199 dwellings	200+ dwellings	All sites
Average site size (dwellings)	4	22	123	110	18
Total gross site area (ha)	1.92	3.97	2.38	8.25	16.52
Site size range (ha)	0.01 – 0.26	0.05 – 1.53	0.46 – 1.92	8.25	0.01 – 8.25
Average gross site area (ha)	0.08	0.33	1.19	8.25	0.41
Gross density range (dph)	20 – 200	25 – 342	48 – 333	13	13 – 342
Average gross density (dph)	69	117	191	13	88
Total discounts (ha)*	0	1.34	0	3.51	4.85
Average discount per site	0	0.11	0	3.51	0.12
Total net developable area (ha)	1.92	2.63	2.38	4.73	11.66
Average net developable area (ha)	0.08	0.22	1.19	4.73	0.29
Average gross to net ratio	100%	91%	100%	57%	96%
Average net density	**69**	**125**	**191**	**23**	**91**

Completed sites elsewhere 2017-20

	1-9 dwellings	10 -49 dwellings	50-199 dwellings	200+ dwellings	All sites
Number of sites	157	31	8	8	204
Total dwellings	391	583	824	1,416	3,214
Site size range (dwellings)	1 – 9	10 – 43	63 – 146	64 – 402	1 – 402
Average site size (dwellings)	2.5	19	103	177	16
Total gross site area (ha)	14.48	14.8	28.51	42.37	100.16
Site size range (ha)	0.01 – 0.56	0.11 – 1.15	1.24 – 5.54	1.4 – 12.16	0.01 – 12.16
Average gross site area (ha)	0.09	0.48	3.56	5.3	0.5
Gross density range (dph)	2 – 150	15 – 154	14 – 52	24 – 54	2 – 154
Average gross density (dph)	40	47	33	36	40
Total discounts (ha)*	0.62	0.4	6.48	5.9	13.4
Average discount per site	<0.01	0.01	0.81	0.74	0.07

	1-9 dwellings	10 -49 dwellings	50-199 dwellings	200+ dwellings	All sites
Total net developable area (ha)	13.86	14.4	22.03	36.47	86.76
Average net developable area (ha)	0.09	0.47	2.75	4.56	0.43
Average gross to net ratio	98%	98%	79%	86%	97%
Average net density	**40**	**48**	**47**	**42**	**42**

Appendix 2: Detailed density examples

Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
34dph	107	0.3		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Land fronting City Road and Rotton Park Road, Edgbaston. 116 dwellings. 28% 2 beds, 28% 3-beds, 43% 4-beds. Parking ratio: 2.57 Semi-detached houses predominate, some detached houses. 2 and 3 storeys.

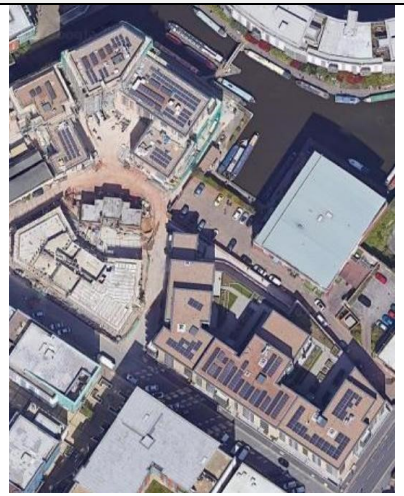
Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
38dph	107	0.3		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Land at Redditch Road, Green Lane, Foyle Road and Teviot Grove, Kings Norton. 290 dwellings including 44% 2beds, 33% 3-beds, 22% 4-beds, 1% 5beds. Parking ratio: 1.72 Houses predominantly semi-detached and short terraces, 2-2.5 storeys, a small number of flats. Parking on plot.

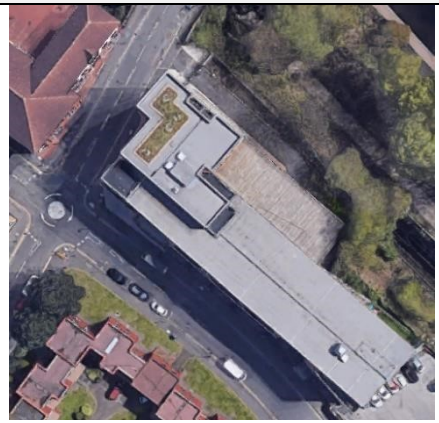
Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
42dph	111	0.3		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Land at 33-141 Reddings Lane, Tyseley. 24 dwellings (100% affordable). 46% 2beds, 46% 3-beds, 8% 4-beds. Completed 2018-19. Parking ratio: 2 A mix of two-storey semi-detached and detached houses. Parking provided on frontage.
43dph	132	0.4		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Hurdlow Avenue, Hockley. 26 dwellings (100% affordable). 35% 2-beds, 35% 1beds, 30% 4/5-beds. Completed 2017-18. Parking ratio: 1.46 A mix of detached, semi-detached and short terraces of houses. 2 storeys. Parking on-plot on frontage and in carports.

Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
52dph	118	0.4		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Sheldon Hall Avenue, Shard End. 64 dwellings. 22% 1-bed flats, 38% 2-beds, 31% 3-beds, 9% 4-beds. Parking ratio: 1.47 Mostly semi-detached and short terraces. Parking in front of houses or to side.
68dph	132	Circa 0.6		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	23-25 Baldwins Lane, Hall Green. 13 dwellings. 92% 2-beds, 8% 1-beds. Parking ratio: 1.15 3 storey blocks of flats with communal surface parking/gardens.

Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
120dph	275	Not available		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Crocodile Works, Alma Street, New Town. 168 dwellings (100% affordable) comprising 126 apartments and 42 town houses. 24% 1-beds, 46% 2-beds, 15% 3beds, 7% 4-beds, 8% 5-beds. Completed 2011. Parking ratio: 0.8 Building heights 3-8 storeys. Retained façade of former factory building. Rear gardens for town houses plus shared communal garden.
140dph	270	Circa 1		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	BS5 development, Bristol Road, St Luke's Road, city centre. 778 dwellings comprising 76% apartments and 24% houses. 26% 1-beds, 55% 2-beds, 19% 3beds Parking ratio: 0.7 2-15 storeys, but predominantly 2-4 storeys.

Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
170dph	277	Circa 1.4		 © Claridge Architects 2022	Soho Loop, Dudley Road, Winson Green. 752 dwellings comprising 650 apartments and 102 town houses. 47.5% 1-beds, 41.5% 2-beds, 1% 3-beds. Under construction. Parking ratio: 0.4 986sqm of ground floor retail floor space included, increasing the FAR. 2 storey townhouses and 6-14 storey apartment blocks.
241dph	375	Circa 1.7		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Park Central, Zone 11. 339 dwellings. 34% 1-beds, 60% 2-beds, 6% 3-beds. Parking ratio: 0.8 Some commercial on ground floor. Podium car park. 6, 8 and 10 storey apartment blocks set in landscaped grounds.

Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
268dph	448	Circa 1.9		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Sherborne Place/Pemberton House/Parton House, Sherborne Street, city centre. Currently under construction. 233 dwellings. 33% 1-beds, 66% 2-beds, 1% 3-beds. Parking ratio: 0.7 Basement car park. Apartment buildings ranging in height from 3-10 storeys.
408dph	628	Circa 3	 © 2022 CallisonRTK	 © 2022 CallisonRTK	Corkfield, Edgbaston Rd/Pershore Rd. Under construction. 375 units. 25% studios, 25% 1-beds, 45% 2-beds, 5% 3beds. 1,805sqm of ground floor commercial. Parking ratio: 0.3 5 to 18 storey courtyard block and tower. Car park with podium and residents' garden above.

Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
471dph	675	3.2		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Land at corner of Granville Street and Holliday Street, City Centre. Completed 2018-19. 113 units. 54% 1-bed, 46% 2-beds. Parking ratio: 0.46 Double-loaded slab block of apartments, 7 storeys in height. Parking provided underground beneath the building footprint. No or limited external greenspace/ communal gardens.
524dph	763	3	 © 2022 Glancy Nicholl Architects	 © 2022 Glancy Nicholls Architects	New Garden Square residential phase, Hagley Road, Edgbaston. 398 dwellings. 54.5% 1-beds, 43% 2-beds and 2.5% 3-beds. Parking ratio: 0.1 Apartment buildings of 9-13 storeys set around communal garden.
Units per ha.	**Bedrooms per ha.**	**FAR**	**View from street**	**Aerial**	**Details**

Units per ha.	Bedrooms per ha.	FAR	View from street	Aerial	Details
861dph	1,281	6.2		 Imagery ©2022 Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2022	Exchange Square phase 1, James Watt Queensway, city centre. Includes 2,653sqm retail and commercial floorspace. 603 dwellings comprising 7.6% studios, 46.3% 1-beds, 43.4% 2-beds, 2.7% 3-beds. Parking ratio: 0.3 Three residential buildings of 27, 16 and 9 storeys above a 2-level podium car park wrapped in retail and residential entrances.