WINDSOR AND MAIDENHEAD

CAPACITY ASSESSMENT

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Prepared for The Royal Borough of Windsor and Maidenhead

studio REAL
architects + urban planners

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ROYAL BOROUGH OF WINDSOR AND MAIDENHEAD

INTRODUCTION

The Royal Borough of Windsor and Maidenhead (RBWM) is preparing a new Borough Local Plan and, as such, is assessing a number of potential sites which may be allocated for housing. Studio REAL (REAL) has been commissioned to help inform the approach that may be taken towards potential allocations. This is to ensure the most effective and efficient use of land, whilst ensuring that any potential developments will not have a detrimental impact upon the location, or setting of surrounding areas.

This first report reviews the desk-based pattern book approach which RBWM has undertaken to assess potential site capacities and provides comments on the appropriateness of the Council's existing approach to density assumptions.

The second report considers 10 sample sites, selected by the Council, to test whether RBWM's approach towards density assumptions is appropriate. The report also provides a creative and innovative design solution for each of these sites, which seeks to ensure the most efficient and effective use of potential housing development land.

1 DEVELOPMENT DENSITIES

1.1 Family houses

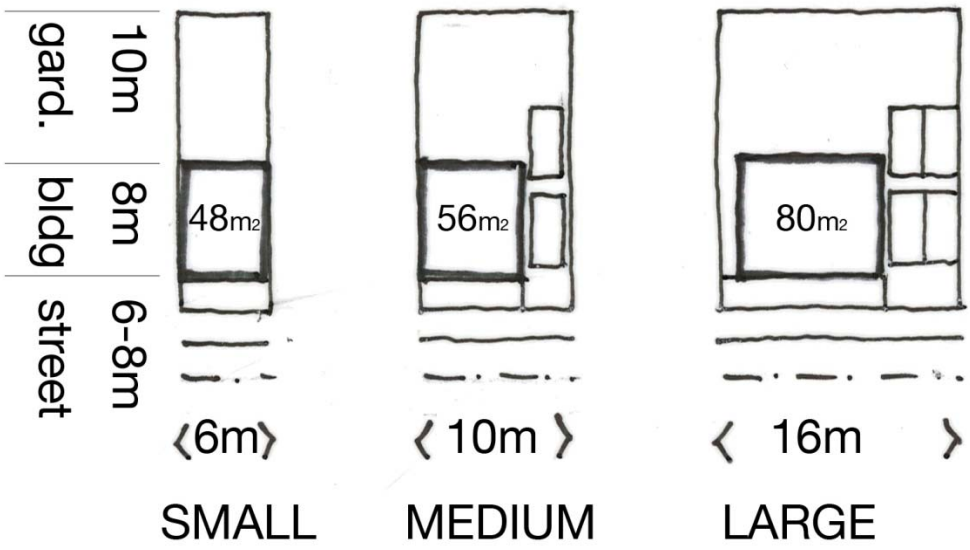
1.1.1 We are considering three basic typologies for which, from our experience, the key parameters are:

Table 1: typologies and plot width

	Basic typology	Parking	Typical plot width
Higher density	Terraced	Shared in courts and on street	6 metres
Medium density	Linked / semi detached	On plot and in courts	10 metres
Lower density	Detached	On plot	16 metres

1.1.2 The diagram overleaf shows the key characteristics for each type of plot and how dwelling size typically has more affect on plot width than on plot depth. Please note that all housing footprints are sufficient to ensure Lifetime Homes compliance.

Figure 1: typical plot layouts for houses, not to scale



1.1.3 The factors that affect plot depth are less variable:

- Minimum garden length of 10 metres
  10 metres is based on an assumed minimum acceptable distance of 20 metres between facing windows back to back. Shorter lengths can provide acceptable outdoor amenity space for dwellings where there is no direct view to or from windows of other dwellings, but an equivalent area is desirable.
- Depth of ground floor plan
  Generally varies little between smaller and medium dwelling types, where width is the main difference. Best practice is to keep building depths below 8 metres and achieve larger floor plans through the addition of subsidiary elements and roofs;

- Front set-backs
  Generally 1 – 3 metres, depending on the street scene, exceptionally up to 5 metres;
- Street width: Footway and half the carriageway, typically 5 metres.

1.1.4 Space for car parking has a considerable land take whether on plot or in shared / public areas. An area of 25 m^2 per space is advisable to allow for both the space and access to it, and a minimum 2 spaces per house is assumed. Car parking for the small units shown above would have to be off plot, so that a further 50 m^2 is required in addition to the plot and street space of 150 m^2 (ref table 2). Lower density detached houses can generally accommodate more parking than this (including garages if required) on plot, but generally at the expense of garden space. Where parking is on plot, best practice is to avoid siting parking spaces in front of houses where parked cars can dominate the street scene, and to place them between houses and behind the building frontage line. This factor and the larger ground floor plan contribute to significantly wider plots in medium and lower density houses.

1.1.5 As a result, we can deduce a range of plot areas and densities for each typology. In addition designs need to incorporate open space, and the amount to be provided may vary depending on the type of development, proximity to other public open space, etc. We have referred to the Open Space Study carried out on behalf of the Borough in 2008. This study recommends a total of roughly 10 hectares per population of 1,000, or 10 m^2 per head of population. This produces results around 15% by area and covers the full spectrum of open space typologies. It is however, unlikely that all open space typologies will be provided on-site so this percentage figure can therefore be considered a maximum provision. The study sheets in Part 2 of this study indicate the percentage of open space in each example.

Table 2: typical densities

	Net plot area per dwelling	Density: dwellings per hectare	Density: inc up to 15% POS, based on Open Space Study recommendations
Higher density	200 m^2: 150 m^2 + 50 m^2 off-site for parking	50 dph	43 dph
Medium density	250 m^2: parking on plot	40 dph	35 dph
Lower density	400 m^2: parking on plot	25 dph	22 dph

1.2 Flats

1.2.1 As with family houses, the need to accommodate car parking has a significant effect. Assuming all parking at ground level, the area required increases in proportion to the number of units, while the building footprint is the same regardless of storey height. There is consequently a diminishing return on density as storey heights increase, unless basement or multi-storey parking is considered.

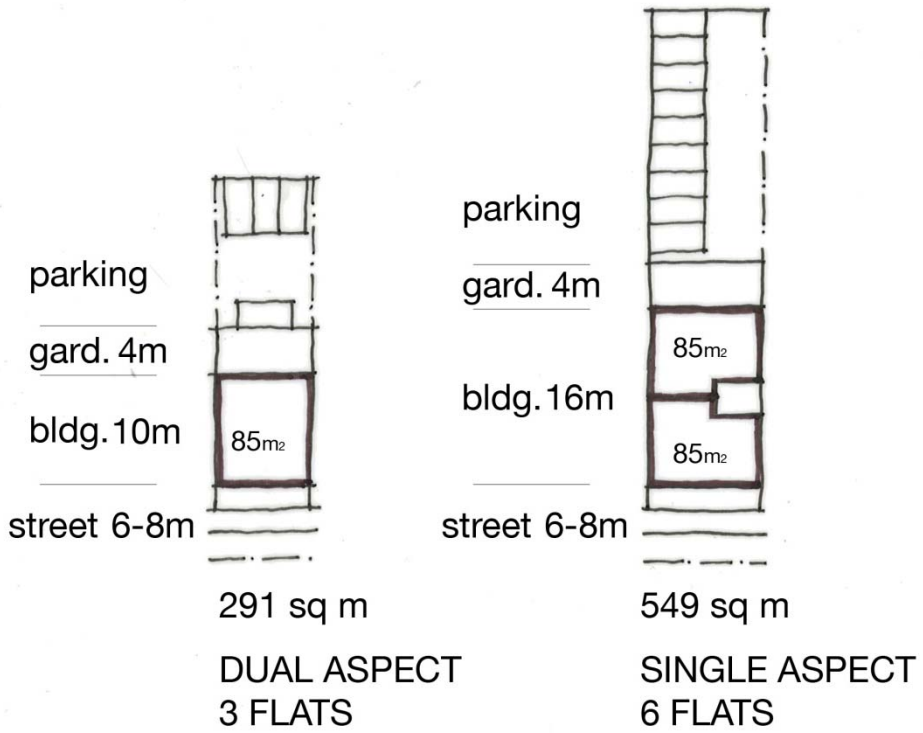
1.2.2 There are two basic typologies:

Table 3: typologies for flats

	Basic typology	Building form	Conditions
Dual aspect	Flats arranged with rooms on both sides of the building.	Generally a shallower building section, but offers layout flexibility.	Sunny aspect always possible. Potential for larger units.
Single aspect	Flats arranged with rooms on one side of the building.	Deeper building section in back-to back layouts.	Less desirable for north facing situations. Suits studios / 1 bed units.

1.2.3 The diagram below shows the key plot characteristics for both dual and single aspect flats. The plans show the relative areas for parking, building footprint and street space for a three storey building. For more than three storeys, the parking area increases proportionately, but the other elements remain constant.

Figure 2: typical plot layouts for flats, not to scale



1.2.4 Dual aspect flats might typically range between 7.5 and 10 metres in depth – sufficient to give two room depths back to back. Single aspect flats tend to be deeper and incorporate communal circulation and non-habitable rooms like bathrooms in the centre. These might range from 12 to 16 metres in depth. Dual aspect flats will typically have just two flats per floor off a staircase whereas single aspect can have four, or more if there is a central corridor.

1.2.5 Regarding the external form a 16 metre wide building can present a bulky mass, whereas the smaller depth of the dual aspect typology may be more sympathetic to the scale of the urban context. At street level, single aspect flats where many units are served by a single staircase will have fewer entrances, which may give a more institutional feel to the building. It is important in residential development that streets have a relatively active edge and that there are as many windows as possible overlooking without compromising internal privacy.

1.2.6 Key parameters for flats assuming a mix of one and two bedroom units:

- Average internal area of unit + circulation: 75 m^2
- Average no. of parking spaces: 1.5 per unit
- Landscape areas front / rear: generally 1 – 3 metres, totally roughly 6 metres front and rear

Table 4: typical densities for flats of differing storey heights

	Net plot area per unit Dual aspect	Net plot area per unit Single aspect	Density: dwellings per hectare	Density: inc up to 15% POS, based on Open Space Study recommendations
3 storeys	97 m^2	92 m^2	103 -109 dph	90 - 93 dph
4 storeys	82 m^2	78 m^2	122 -128 dph	104 -109 dph
5 storeys	73 m^2	70 m^2	137 -143 dph	116 -122 dph
6 storeys	67 m^2	65 m^2	149 -154 dph	127 -131 dph

Please note, the lower end of the density range relates to dual aspect flats, while the upper end of the density range relates to single aspect flats.

2 CONCLUSIONS

2.1.1 The densities described above allow a good standard of design solutions with adequate parking, to ensure efficient use of sites but avoid "cramming". They vary from the standards used by RBWM as follows:

Table 5: comparative densities

	RBWM dph assumption	Studio|REAL dph advice	Observations
Smaller style houses (higher density terraced typology, as per table 1)	35 – 60	43 – 50	Higher end of the range may be difficult to achieve a comfortable environment and accommodate necessary car parking
Larger style houses (linked / semi - detached and detached typologies, as per table 1)	30 – 35	22- 40	We would see 30 – 35 dph as very much a medium range. Larger style houses of the kind we have seen in the Royal Borough would be well below this.
Low rise flats (town)	45 – 120	90 – 109	Falls mid-range
Medium rise flats	70 – 130	116 –122	Falls mid-range
High rise flats	120 – 140	127-131	Falls mid-range

2.1.2 Overall, we consider that the densities assumed by RBWM for flats are reliable in numerical terms for the densest (town centre) developments, and therefore achievable for less intense schemes outside the town centres. We believe, however, that some of the family housing schemes are ambitious in density terms, potentially creating a "crammed" environment if extended over large areas at the higher densities. Developers would not see densities above 30 dph as typical of larger style houses, and they are generally looking to build below 25 dph at this end of the market.

2.1.3 The second report of this short commission has considered whether the kind of development proposed on sample sites is appropriate in terms of architectural form and urban context. It demonstrates that the contents of this first report and the standardised density approach are a very useful starting point and that, as predicted, specific site contexts, features and configurations strongly affect possible outcomes. It also confirms that density assumptions for family houses have tended to be higher than feasible, but that densities for flats can match and even exceed assumptions.

2.1.4 An important factor is also the level of public open space provided. In the town centre examples, it is not generally in character with the urban context to include extensive green space within small sites. Existing features like Bachelor Acre in Windsor or new landscape framework schemes like the York Stream in Maidenhead provide more effective amenities for the wider neighbourhood. Smaller, well designed incidental spaces may be more appropriate, as illustrated in the Peascod Street Post Office site. The study sheets indicate how numbers might change if a 15% POS provision, as recommended in existing Local Plan, is included.