

SPD Background Paper

Housing Space Standards

Audit 2018



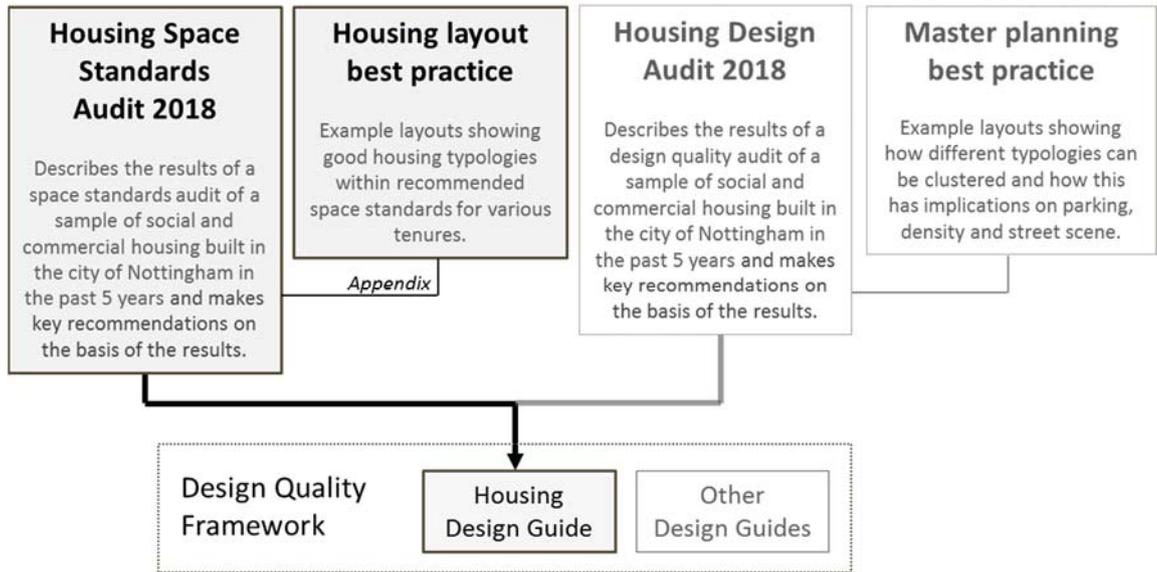
Nottingham
City Council

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1. Introduction

1.1 The Housing Space Standards Audit 2018 (HSSA) is a background paper to the Housing Design Guide (HDG) and the Space Standards Guide (SSG), documents that sit under the umbrella of the Design Quality Framework (DQF) for Nottingham City. The DQF is aligned with the Local Plan. The DQF is a flexible, evolving document that will continue to grow and adapt periodically in response to latest evidence and sound research on areas concerning the quality of design.



- 1.2 The HDG applies to all schemes with a residential component that are located within the boundaries of the city of Nottingham.
- 1.3 An audit of a sample of residential schemes built between 2013 and 2018 informed the recommendations included in section 7 of this background paper. Section 5 explains the study in more detail.
- 1.4 The purpose of this Background Paper is to describe how the space standards for housing provision in the Nottingham City area has been arrived at and to show that the space standards included in the HDG and SSG of the DQF are considered to be the most appropriate level to plan for across the area.

2. Policy background

2.1 The National Planning Policy Framework (NPPF) states that optional planning standards and recommendations can be set by Local Authorities in response to the objectives of their Local Plan. This background paper provides evidence to support the recommendations that informed the HDG Supplementary Planning Document (SPD).

2.2 The recommendations of this HSSA are in line with: the NPPF (2012), Planning Policy Guidance (PPG, 2014), Nottingham Aligned Core Strategy (2014), the Local Plan (2017) and Local Strategies.

3. Housing Space Standards Audit 2018 objectives

3.1 The aim of the Space Standards Audit 2018 was to provide evidence to inform decision taking regarding space standards that are adequate for Nottingham in terms of health and wellbeing, efficient use of land and commercial viability.

3.2 The objectives of the Space Standards Audit 2018 were:

3.2.1 **Comparing what has been built in Nottingham recently with the Nationally Described Space Standard (NDSS)** to understand local trend and to identify potential areas of poor design quality.

3.2.2 Establishing **adequate space standards** for housing schemes on the basis of the current local market and considering the health and wellbeing of occupiers.

3.3 Providing clear **design guidance** regarding architectural layouts and critical space dimensions considered to be adequate and feasible for Nottingham City.

3.4 **Supporting the HDG** by providing information to simplify and accelerate the planning process for residential schemes.

4. Space Standards Audit 2018 methodology

4.1 The audit looked at the Gross Internal Floor Area in square metres (GIFA m²) and the layout design of a random sample of housing built in Nottingham by various developers in the last 5 years¹.

4.2 The sample included both commercial schemes built by seven different developers and social housing built by five different developers, and it encompassed 13 different typologies and 67 typology/layout variations.

¹ Data source: Nottingham City Council planning applications 2013 to 2018.

4.3 The GIFA m² per house typology was compared against the Nationally Described Space Standard (NDSS). The difference between the sample GIFA and the NDSS was calculated and the results were organised according to dominating trends into categories as follows:

0% to 10% above National Standards

0% to 10% below National Standards

> 10% above National Standards

> 10% below National Standards

Total number above National Standards

Total number below National Standards

4.4 The layouts were scrutinised in detail to understand how the GIFA and room dimensions resulted in a variety of architectural layouts. The analysis also looked at how different age groups and abilities might occupy the home and how daily routines could take place in each layout. This part of the study aimed at establishing a benchmark for what would be considered acceptable as a good quality of life, avoiding overcrowding, stress and potential family tensions.

5. Space Standards Audit 2018 results

5.1 Due to trends found during data analysis regarding the use of spare rooms, the results are shown for the whole sample (6.1), for commercial development (6.2) and for social housing (6.3). This is explained later on in more detail.

5.2 All Housing

5.2.1 58% of the typologies analysed were below the NDSS benchmark and 42% were above the NDSS (see Figure 1). Only 22% of the typologies differed more than 10% with NDSS.

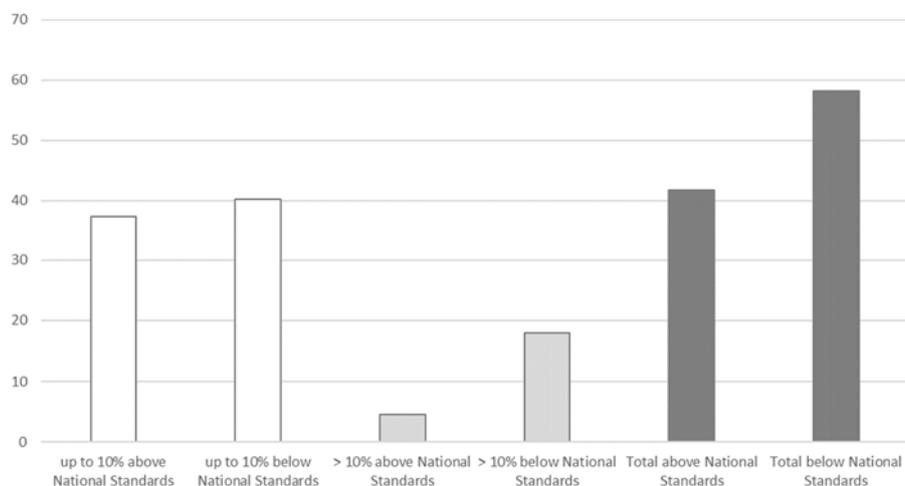


Figure 1: Study sample compared against the NDSS (GIFA variance in %)

5.2.2 Properties with three double bedrooms exceeded the NDSS by larger margins whilst properties with two double bedrooms were the ones further below the mark. The variance between social housing and the NDSS was more moderate than the variance between commercially led developments and the benchmark (see Figure 2).

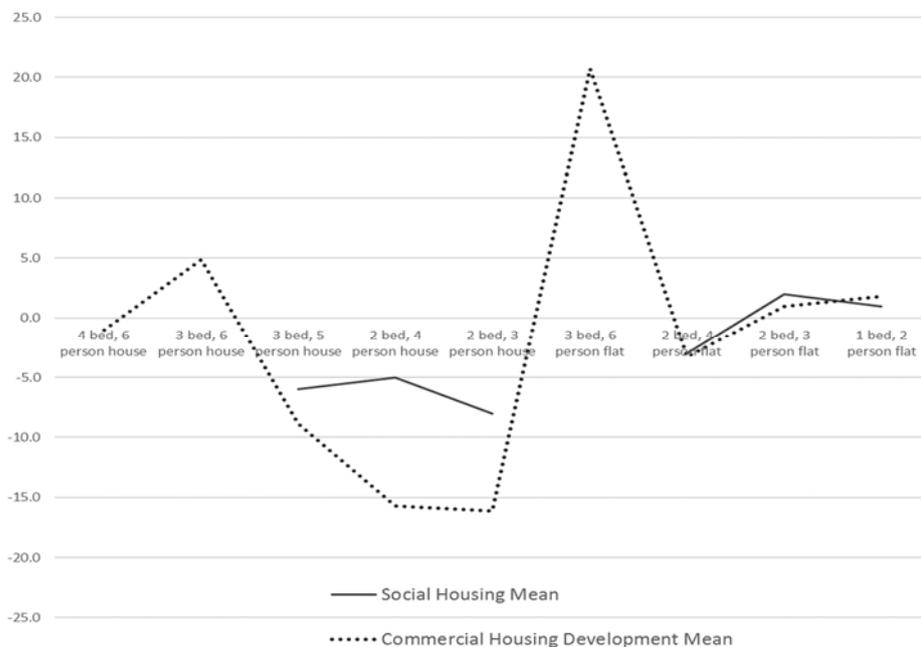


Figure 2: GIFA of social and commercial housing compared against the NDSS (variance in m²)

5.2.3 The difference in trends between social housing and commercial properties show a large discrepancy in the range of housing types built, which is likely to be determined by demand. Another big variance was the size of 2 bedroom units and 3 bedroom flats. This is analysed in more detail below.

5.3 Commercial Housing

5.3.1 65% of the commercial market sample were below the NDSS and 35% were above the benchmark (see Figure 3).

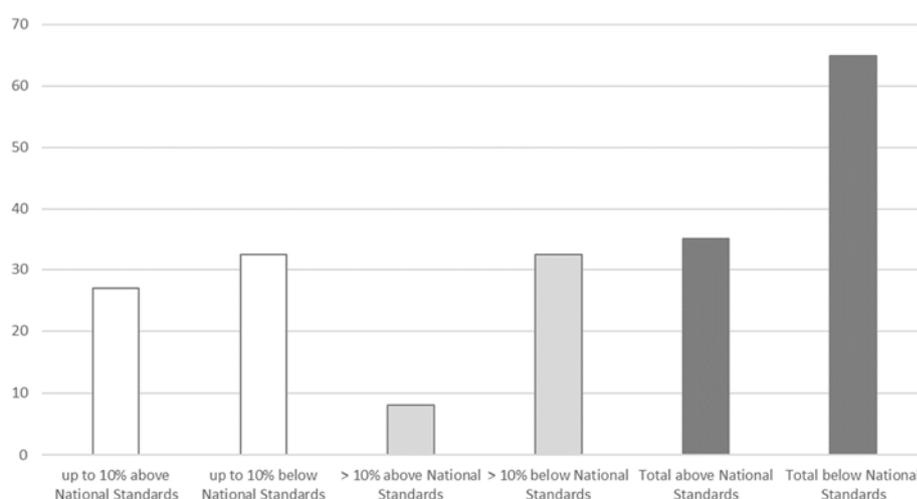


Figure 3: Commercial homes compared against the NDSS (GIFA variance in %)

5.3.2 32% of the cases had a GIFA of more than 10% below NDSS (see Table 1). The layout analysis² confirmed that these units were designed with spare bedrooms and for a market of under occupancy, such as the case of young professional couples or retired downsizers buying 2 and 3 bedroom homes. For example, kitchens, living rooms and dining rooms were designed for 2 people when the home provided 2 or 3 double bedrooms.

Table 1: Typologies with GIFA >10% below NDSS (mean values shown in m²)

| GIFA <10% below NDSS | Developer 1 | Developer 2 | Developer 3 | Developer 4 | Developer 5 | Developer 6 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 3 bed, 5 person house | -15.8 | | | -21.1 | -12.7 | |
| 2 bed, 4 person house | -24.8 | -15.0 | -12.9 | -21.6 | | -13.2 |
| 2 bed, 3 person house | | -18.1 | | -18.5 | -11.7 | |
| 2 bed, 4 person flat | -14.7 | | | | | |

² The layout analysis involved a study of critical dimensions, furniture arrangement and ratio of the GIFA of private rooms (bedrooms and bathroom) and family areas (kitchens, living rooms, etc.).

5.3.3 8% of the cases had a GIFA of more than 10% above NDSS (see Table 2). The layout analysis and the location of these homes confirmed that these units were luxury homes.

Table 2: Typologies with GIFA >10% above NDSS (mean values shown in m²)

| GIFA >10% above NDSS | Developer 3 | Developer 5 | Developer 7 |
|-----------------------|-------------|-------------|-------------|
| 4 bed, 7 person house | | 11.0 | |
| 3 bed, 6 person house | | | 18.9 |
| 3 bed, 6 person flat | 20.7 | | |

5.3.4 The prototypes were analysed in detail. The layouts with space standards more than 10% below the NDSS did not support healthy and harmonious lifestyles and could potentially result in increased stress levels on a daily basis. Particular areas that suffered lack of space were kitchens, dining rooms and living rooms. There was also insufficient storage space for long-term accommodation. Figures 4 and 5 below show examples of these poorly resolved layouts. The critical findings were:

- Two bedroom houses that had very little storage and no space for walking frames, push chairs, toys and other household items, could be suitable for temporary accommodation only but mainly for young adults, due to the small storage space available. The kitchens were so compact that the occupiers would have had to close the door in order to cook or open the fridge. Access to the dining table was also very limited and accessible to fully abled bodies only. An example is shown below.

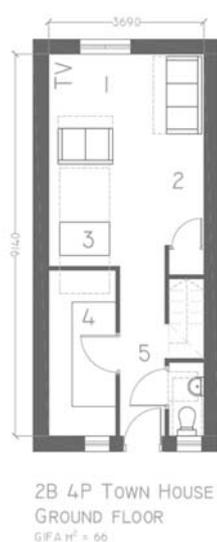
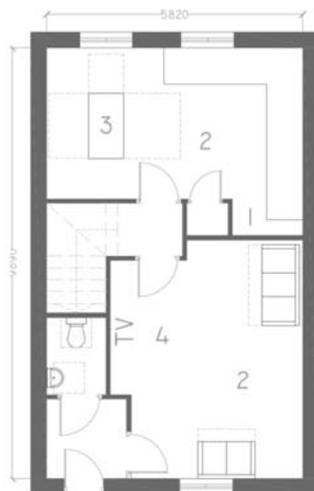


Figure 4: Layout previously submitted as part of a planning application for a housing development, 2 bedrooms 4 people, 2 storey, GIFA 66 m².

- Some layouts were not well proportioned. For example in three-bedroom homes that were wider and shallower than the norm, the ground floors were very compact or awkward to arrange. This resulted in uncomfortable solutions like small living rooms with the main circulation to the kitchen and dining areas running in front of the television. Additionally, the kitchen areas occupied disproportionately large spaces in comparison with dining areas, which were too compact for comfort. This meant that the rooms provided were not fit for purpose and highly inefficient in terms of use of space. An example is shown below.



3B 5P TOWN HOUSE
GROUND FLOOR
GIFA M² = 115

Figure 5: Layout previously submitted as part of a planning application for a housing development, 3 bedrooms 5 people, 2 storey, GIFA 115m².

The layouts discussed above were submitted as part of planning applications for housing developments. These were below the space standards considered acceptable for Nottingham and in future, schemes that do not provide liveable units will not be permitted

5.4 Social Housing

- 5.4.1 50% of the social housing sample was above the NDSS and 33% was below the benchmark but variances did not exceed the 10% margin either side of the NDSS (see Figure 3).

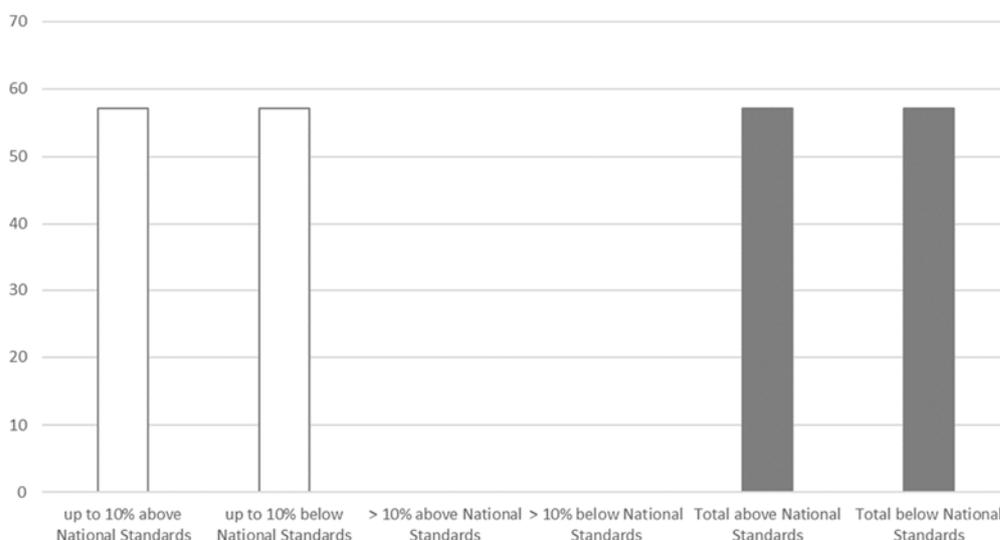


Figure 6: Social housing compared against the NDSS (GIFA variance in %)

5.4.2 50% of the cases had a GIFA of 0% to 10% below NDSS (see Table 3). Properties with two bedroom homes were consistently below the NDSS.

Table 3: Typologies with GIFA 0% to 10% below NDSS (mean variance values shown in m²)

| GIFA 0-10% below NDSS | Mean values |
|-----------------------|-------------|
| 3 bed, 5 person house | -6 |
| 2 bed, 4 person house | -5 |
| 2 bed, 3 person house | -8 |
| 2 bed, 4 person flat | -3 |

5.4.3 43% of the cases had a GIFA of 0% to 10% above NDSS: these units were mainly flats and bungalows (see Table 4).

Table 4: Typologies with GIFA 0% to 10% above NDSS (mean variance values shown in m²)

| GIFA 0-10% above NDSS | Mean values |
|--------------------------|-------------|
| 4 bed, 6 person house | 3 |
| 2 bed, 3 person flat | 2 |
| 1 bed, 2 person flat | 1 |
| 2 bed, 3 person bungalow | 2 |

6 Conclusions

- 6.2 58% of the sample housing stock was below the NDSS.
- 6.3 18% of the sample housing stock was more than 10% below the NDSS benchmark and these were within the commercial sector. The most sub-standard types were properties with two double bedrooms, which tend to be under occupied³ (1-2 persons).
- 6.4 Detailed architectural layout analysis of housing typologies demonstrated that GIFA below -10% of the NDSS mark is not fit for long term habitation at full occupancy, as it does not permit healthy living/good quality of life.
- 6.5 42% of the sample housing stock was above the NDSS.
- 6.6 Only 4% of the sample housing stock was more than 10% above the benchmark and these were within the commercial sector. The most excessive types were properties with three double bedrooms, highly in demand and marketed as luxury homes⁴.
- 6.7 Detailed architectural layout analysis demonstrated that housing that falls within the -/+10% margin (either side of the NDSS) is suitable for full occupancy.
- 6.8 100% of the social housing sample remained within the -/+10% range (either side of the NDSS).

7 Recommendations

- 7.2 The National Described Space Standards benchmark largely permits adoption of Accessibility Level 2 (as illustrated in the Appendix of this document) and therefore **adherence to the NDSS is strongly recommended.**
- 7.3 **A deviation of -/+10% from the NDSS is considered to be acceptable** as long as architectural layouts demonstrate that a good quality of life for occupiers is being delivered by design.
- 7.4 At present, certain socioeconomic groups with access to commercially led development might choose to under occupy their homes. However, building housing stock with insufficient daytime space does not secure a flexible and sound home provision for future generations; therefore, it does not constitute sustainable development. For this reason,

³ Harrison B, 2014. The bedroom tax one year on. Wythenshaw Community Housing Group.

⁴ Stones D., 2017. Three-bedroom homes: Most in-demand property in Britain. The conversation Last accessed 11.06.18: <https://www.express.co.uk/life-style/property/880819/Three-bedroom-homes-most-in-demand-property-in-Britain>

residential proposals of GIFA (m²) that are more than 10% below the NDSS should not be permitted.

7.5 Commercial residential development with GIFAs that are more than 10% above the NDSS **should be permitted** when detailed architectural analysis and commercial viability appraisals demonstrate the need for the oversized development.

Table 5: Housing Space Standards for Nottingham City

| SPACE STANDARD in relation to NDSS | COMMERCIAL DEVELOPMENT | SOCIAL HOUSING DEVELOPMENT | CONDITION |
|---------------------------------------|-----------------------------|-------------------------------|---|
| > 10% above | N/A | Not permitted | |
| 0% to 10% above | N/A | Conditioned | Detailed layout* and commercial viability appraisal |
| NDSS (DCLG, 2015) | Strongly recommended | Strongly recommended | N/A |
| 0% to 10% below | Conditioned | Conditioned | Detailed layout appraisal* |
| > 10% below | Not permitted | Not permitted | N/A |

* Detailed layout appraisal involved the submission of furnished and dimensioned layouts to Nottingham City Council as a component part of the planning application (see 7.6)

7.6 Accessibility

- Although partially incorporated within the Building Regulations (Part M), Lifetime Homes is still a useful detailed guidance for producing purpose built accessible buildings when these are required, and it is recommend to maintain its validity as a design tool where fully accessible homes are required.
- Considering houses as products, it is recommended to endorse the application of the Inclusive Design, Design for All and Universal Design principles for housing design to take into consideration the broad range of users' needs.

7.7 This HSSA contains an Appendix with illustrations that demonstrate how the adoption of the standards listed above can result in well-designed internal layouts also giving an example of the level of detail required for conditioned planning applications.

7.8 The Housing Design Audit 2018 Appendix illustrates how housing units can be clustered to achieve good Placemaking standards and an efficient use of land.

Table 6: Housing Space Standards for Nottingham City

| Gross internal floor areas and storage (m ²) - Commercial housing: (CH) - Social housing: (SH) | | | | | | | |
|--|--------|---------|-----------|-----------|-----------|------|--------|
| Nottingham Space Standards | | | | | | | |
| Bedrooms | People | Storeys | <-10% | -10% | NDSS | +10% | > +10% |
| (b) | (p) | (st) | (CH & SH) | (CH & SH) | (CH & SH) | (SH) | (SH) |
| 1 | 1 | 1 | | 35 | 39 | 43 | |
| | 2 | 1 | | 45 | 50 | 55 | |
| | 2 | 2 | | 52 | 58 | 64 | |
| 2 | 3 | 1 | | 55 | 61 | 67 | |
| | 4 | 1 | | 63 | 70 | 77 | |
| | 3 | 2 | | 63 | 70 | 77 | |
| | 4 | 2 | | 71 | 79 | 87 | |
| 3 | 4 | 1 | | 67 | 74 | 81 | |
| | 5 | 1 | | 77 | 86 | 95 | |
| | 6 | 1 | | 86 | 95 | 105 | |
| | 4 | 2 | | 76 | 84 | 92 | |
| | 5 | 2 | | 84 | 93 | 102 | |
| | 6 | 2 | | 92 | 102 | 112 | |
| | 4 | 3 | | 81 | 90 | 99 | |
| | 5 | 3 | | 89 | 99 | 109 | |
| 4 | 6 | 3 | | 97 | 108 | 119 | |
| | 5 | 1 | | 81 | 90 | 99 | |
| | 6 | 1 | | 89 | 99 | 109 | |
| | 7 | 1 | | 97 | 108 | 119 | |
| | 8 | 1 | | 105 | 117 | 129 | |
| | 5 | 2 | | 87 | 97 | 107 | |
| | 6 | 2 | | 95 | 106 | 117 | |
| | 7 | 2 | | 104 | 115 | 127 | |
| | 8 | 2 | | 112 | 124 | 136 | |
| | 5 | 3 | | 93 | 103 | 113 | |
| | 6 | 3 | | 101 | 112 | 123 | |
| 5 | 7 | 3 | | 109 | 121 | 133 | |
| | 8 | 3 | | 117 | 130 | 143 | |
| | 6 | 1 | | 93 | 103 | 113 | |
| | 7 | 1 | | 101 | 112 | 123 | |
| | 8 | 1 | | 109 | 121 | 133 | |
| | 6 | 2 | | 99 | 110 | 121 | |
| | 7 | 2 | | 107 | 119 | 131 | |
| | 8 | 2 | | 115 | 128 | 141 | |
| 6 | 6 | 3 | | 104 | 116 | 128 | |
| | 7 | 3 | | 113 | 125 | 138 | |
| | 8 | 3 | | 121 | 134 | 147 | |
| | 7 | 1 | | 104 | 116 | 128 | |
| | 8 | 1 | | 113 | 125 | 138 | |
| | 7 | 2 | | 111 | 123 | 135 | |
| 6 | 8 | 2 | | 119 | 132 | 145 | |
| | 7 | 3 | | 116 | 129 | 142 | |
| | 8 | 3 | | 124 | 138 | 152 | |

| KEY | |
|-----|---|
| | Standard planning application requirements |
| | GIFA (m ²) and furnished layouts required (use NDSS furniture dimensions) |
| | GIFA (m ²) and furnished layouts required (use NDSS furniture dimensions) plus commercial viability appraisal |
| | Not permitted |

8 Acronyms

DQF: Design Quality Framework (Nottingham City)

GIFA (m²): Gross Internal Floor Area in square metres

HDG: Housing Design Guide (Nottingham City)

HSSA: Housing Space Standards Audit 2018 (Nottingham City)

NDSS: Technical Housing Standards – nationally described space standards (DCLG, 2015)

NACS: Nottingham Aligned Core Strategy (2014)

NPPF: National Planning Policy Framework (2012)

PPG: Planning Policy Guidance (2014)

SPD: Supplementary Planning Document

9 Glossary

Accessibility Level 2: as defined by the Housing Standards Review: Illustrative technical standards developed by the working groups (DCLG, 2013).

Architectural layouts: arrangement of rooms and spaces within a house in plan view.

Benchmark: a standard or point of reference against which things may be compared (in this case NDSS)

Critical space dimensions: minimum dimensions necessary for the functioning of a room or area.

Deviation: the amount by which a single measurement differs from a fixed value (in this case NDSS benchmark).

Efficient use of land: arrangement of houses in a way that optimises the land use without leaving leftover spaces and gaps.

Excessive types: typologies in the sample with GIFA below NDSS.

Full occupancy: when the number of persons living in a house equals the number of bed spaces provided.

Luxury homes: homes providing a state of greater comfort or elegance than the norm.

Random sample: subset of a statistical population in which each member of the subset has an equal probability of being chosen. An example of a simple random sample would be the names of 25 employees being chosen out of a hat from a company of 250 employees.

Sub-standard types: typologies in the sample with GIFA below NDSS.

Typology: type of housing arrangement (e.g. cottage style, terrace, bungalow, etc.)

Tenures: refers to the financial arrangements under which someone has the right to live in a house or apartment (rental, mortgaged, etc.)

Under occupancy: when the number of persons living in a house is lower than the number of bed spaces provided.

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12 Appendix: *Best practice: layouts compliant with NDSS*

This section shows a series of typical layouts that demonstrate how the NDSS can be applied to produce broadly used housing layouts. These examples demonstrate the minimum design quality expected for Nottingham, designers are encouraged to produce site-specific layouts in response to contextual conditions such as urban and historic context and microclimate.



Figure 7: 1 Bed 2 People Flat, GIFA 50m2

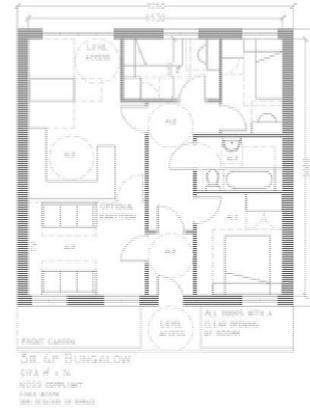


Figure 8: 3 Bed 4 People Bungalow, GIFA 74m2



Figure 9: 2 Bed 4 People Left: Cottage – Right: Town House, GIFA 79m2



Figure 10: 3 Bed 5 People Left: Town House – Right: Cottage, GIFA 93m²



Figure 11: 5 Bed 8 People Cottage, GIFA 134m²