RAF145/2122

Understanding Mixed Tenure in English Social Housing

Quantitative Report

IFF Research (2023)

Views expressed in this report are from the relevant research agencies, based on data collected from research participants and other evidence, and not necessarily those of the UK government.

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Executive Summary

Background

Buildings, developments and estates with social housing dwellings often include non-social housing dwellings (i.e. private rented or owner-occupied dwellings). The presence of such dwellings within social housing developments is known as 'mixed tenure'. This has been identified as a potential source of issues for implementing decarbonisation measures within social housing developments, because private homeowners might either oppose upgrades or refuse to contribute to costs. However, the extent of the problem has not been explored or quantified at the national level. This report sets out to use existing datasets to estimate how extensive mixed tenure housing is, as well as providing insight into the locations, types of properties, size of properties and income brackets of the households involved in mixed tenure developments.

Method

We used data from the National Energy Efficiency Data Framework (NEED) and His Majesty's Land Registry (HMLR) to identify social housing developments in England. We combined tenure data on individual dwellings from NEED with HMLR boundaries[1], which contain the locations of freehold registered property in England. Each HMLR boundary polygon containing multiple dwellings, of which at least one was a social housing dwelling, was classified as a social housing development for the purposes of this project.

We tested this method for identifying social housing developments by comparing the results with a single local authority for which we held detailed records on social housing dwellings and social tenant ratios. This enabled us to test and calibrate the methods used with NEED/HMLR against a known local authority dataset. The tests showed that there was a correlation coefficient of 0.55 suggesting a moderate, positive correlation between the method and known local authority data at the individual 'social housing development' level. This meant we were confident that our method was sufficiently robust to apply to the national NEED dataset.

To determine the percentage of dwellings in social housing developments which are socially owned vs non-socially owned, we calculated the proportion of socially and non-socially rented dwellings within the identified developments, and aggregated these findings. We refer to this as the 'social tenant ratio'. To determine the average household income of non-socially rented dwellings in social housing developments, we aggregated household income of these dwelling within the identified development. This research identifies that 79% of the 4.21[2] million social

[1] HM Land Registry (HMLR) registers ownership of land and property in England and Wales. Each registered title with HMLR contains a title plan, a register and at least one index polygon. The title plan and register record the general position of the boundaries of a registered title. The index polygon shows the indicative location of a registered title in vector format and mapped against Ordnance Survey (OS) large scale data, MasterMap.
[2] Live Tables on Dwelling Stock, LT100 2021, (12 May 2022) downloaded from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1074203/LT_100.ods

housing dwellings are in multi-dwelling clusters which, for the purposes of this research, we define as social developments. The dwellings in these developments either are, or could become, mixed tenure developments. Purpose built flats represent more than half of all of these social developments identified in this report, while social developments in Greater London make up one quarter of these social developments.

Mixed tenure findings

In this report, the 'social tenant ratio' describes the ratio of social housing dwellings to all dwellings within a social housing development. The higher the social tenant ratio, the lower the level of mixed tenure. The key findings are:

- There are 459,262 developments in England which are, or have the potential to be, mixed tenure. These developments contain a total of 3.33 million social dwellings.
- The mean social tenant ratio across social housing developments in England is 80%, and the median social tenant ratio is 97%. This suggests that the social tenant ratio can vary a great deal between developments.
- Converted flats have a higher level of mixed tenure (i.e. a lower social tenant ratio) than purpose-built flats. Purpose-built flats have a median social tenant ratio of 91%, while converted flats have a median social tenant ratio of 50%. Purpose-built flats represent more than half (54%) of all 'multi-dwelling developments' identified as being, or having the potential to be, mixed tenure.
- London has higher levels of mixed tenure than the rest of England. London also displays greater variation in the degree of mixed tenure across social housing developments. The median social tenant ratio is 79% for outer London, and 76% for inner London. Outside of London, the median social tenant ratio is close to 100%.
- Properties built between 1919 and 1999 tend to have lower levels of mixed tenure compared to those built either side of this period. The median social tenant ratio for properties built between 1919 and 1999 is close to 100%, while pre-1919 and post-1999 properties have lower social tenant ratios and larger ranges.
- Low rise buildings have the lowest level of mixed tenure, followed by high rise and then medium rise buildings. The median social tenant ratio is 100% in low rise social housing developments, followed by 85% in high rise developments and 70% in medium rise developments.
- The median social tenant ratio drops as the council tax band increases. For example, the median social tenant ratio for council tax band A is 100% whilst for band H it is 50%.
- Developments with higher average household income brackets tend to have a greater degree of mixed tenure.

Household income findings

We used the modelled household income data from Experian (which is linked to dwellings in NEED) to analyse household income in social developments.

Figure 1 shows that 22% of non-social housing dwellings in social developments have a household income over £50,000. Less than 0.1% of social dwellings have an income of over £50,000. 39% of non-social housing dwellings have an income below £30,000 whilst 95% of social dwellings have an income below £30,000.

Figure 1 Household income (NEED) for non-social housing dwellings in social developments

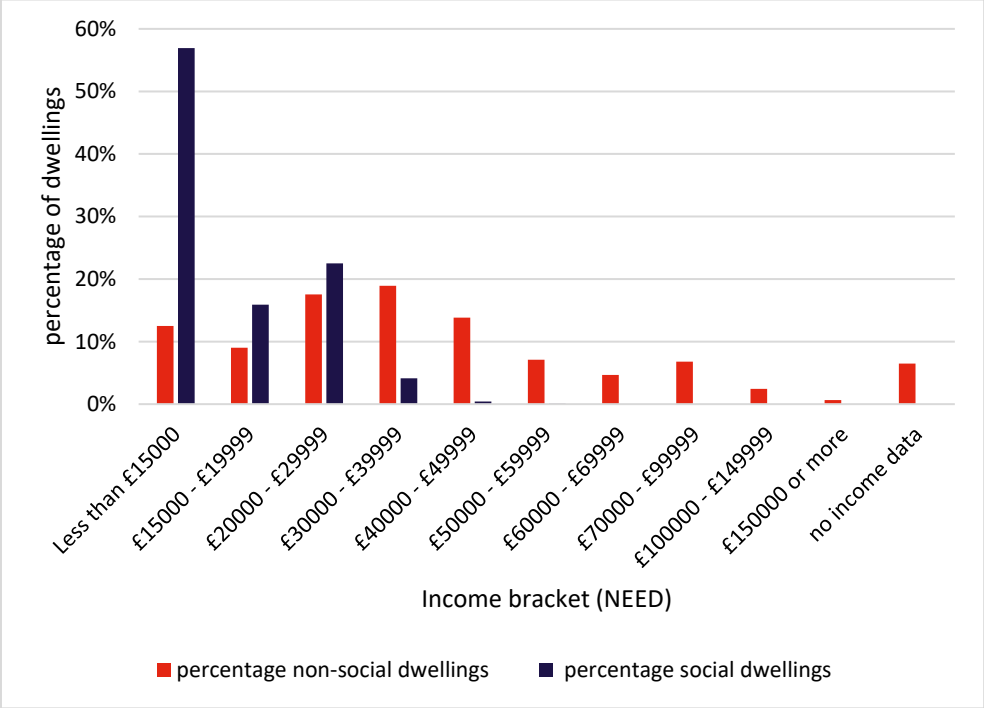
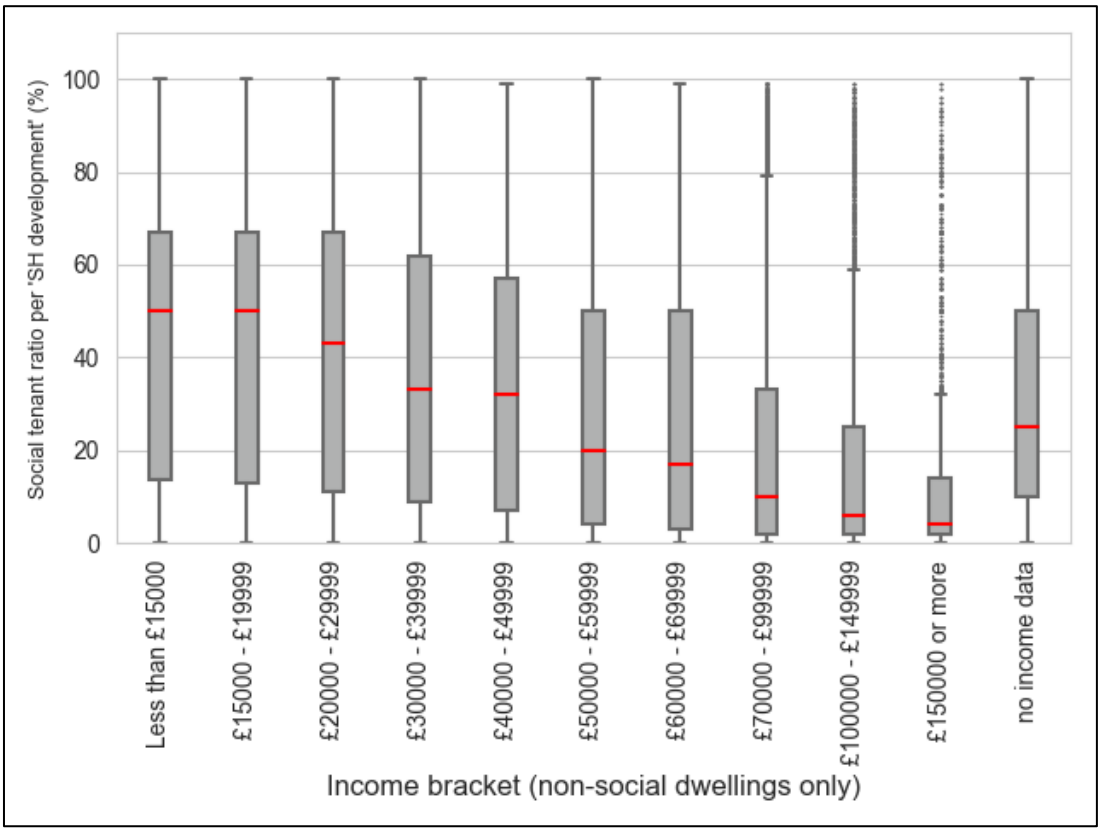


Figure 2 shows the social tenant ratios for developments by the income of non-socially rented dwellings in the development. This particular aggregation of the data excludes developments where the social tenant ratio is 100% (since there would be no non-social housing dwellings to report on within these blocks). The findings show that median social tenant ratio drops steadily as non-social household income increases. This means developments with a lower level of mixed tenure are associated with private residencies with higher levels of household income.

Figure 2 shows box and whisker plot showing social tenant ratio for each social development by household income bracket of non-social dwellings (NEED)



Introduction

There are 1.6m local authority dwellings and 2.4m housing association homes in England[3], accounting for 7% and 10% (respectively) of all dwellings. Mixed tenure refers to residential developments which combine different types of occupancy. This might be local authority/housing association owned alongside private rented/owner occupied. These types of developments are of particular importance when there is a target to decarbonise the energy use of these blocks since this cannot always be achieved without treating social housing dwellings alongside privately owned or rented dwellings in the same block. For example, works may need to be undertaken on a whole development, regardless of tenure, for planning or logistical reasons. Private owners within a development could oppose whole development plans or refuse to cover their contribution of costs. In simple terms, this could be an obstacle to achieving Net Zero targets in these types of developments.

This report explores this issue quantitatively and has been carried out in parallel with interviews and investigations into specific examples of social housing to better understand some of the issues involved.

For the quantitative side of reporting, the data to explore these types of developments is not currently recorded. Whilst some housing associations and local authorities record the details of tenure, the numbers and distribution of these mixed tenure blocks are not consistently recorded at a national level. An evidence base is required to inform the Social Housing Decarbonisation Fund (SHDF) policy for future waves of the scheme. This report aims to measure the levels of mixed tenure to form this evidence base, addressing the following research objectives:

1. Assess the scale and distribution:
    a. Provide an estimate for the prevalence of privately-owned dwellings in social housing developments, and
    b. Understand the types/location of social housing developments where there is a higher proportion of privately-owned dwellings.
2. Understand the characteristics of non-socially rented households in social housing developments, including household income.
    a. What are the characteristics of non-socially rented households within mixed tenure social housing developments, including household income?

[3] English Housing Survey EHS Headline Report. Households_figures (Fig 1.2) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1039234/2020-21_EHS_Headline_Report_Section_1_Households_Figures.xlsx Accessed 9/01/2023

Methodology

A working definition of social housing developments

For the purposes of this research, a social housing development has been defined by DESNZ as:

> *"… a group of individual dwellings built together at the same time, usually by a single developer, usually within the same building complex, with the intention of being primarily or in part inhabited by socially rented tenants"*

Whilst this is not an official definition, it is essential that there is a clear description of what is considered to be in scope before conducting any quantitative analyses of large datasets. Whilst this definition is clear and concise and could easily be applied on a case by case basis with human interpretation, there are no national datasets that contain all of these variables in a way that would meet this definition. For example, there is no consistent data on the 'developers' who built dwellings or the intention of the use of the dwellings. More importantly, grouping dwellings or identifying boundaries that can be used to 'group' dwellings can be problematic for many reasons, including historical reasons relating to conveyancing law in England[4] and a lack of consistent data on the boundaries of social housing developments held by each local authority or housing association provider.

If this definition is broken down, then there are a few key words that do have datasets that align with certain parts of this definition. These are outlined in Table 1.

Table 1 Datasets that might be used to identify social housing developments

Dataset (…*definition*)	Data source	Comments about suitability
Dwellings *(…individual dwellings)*	Ordnance Survey (OS) AddressBase (OSAB)	Geospatial, National Gazetteer with all addresses (split into dwellings, non-domestic etc). Covers all addresses
	National Energy Efficiency Data framework (NEED)	Not geospatial at the dwelling level.
Dwelling age (…*built together at the same time*)	VOA data within NEED (property age)	+ Covers all addresses
	EPC data	- Incomplete coverage

[4] Map based 'outlines' of property boundaries are not legal requirements, unlike in many countries in Europe where a 'cadastral' mapping system is maintained through this legal requirement. For more information see Grover, R, 2008 'Why the United Kingdom does not have a cadastre – and does it matter?'

Building (*…building*)	OS Mastermap	+ Detailed data - Might be too detailed for National analysis
	OS Open Local buildings	- Generalised data.
Building 'complex' *(… building complex*)	OS Mastermap	+ Good for individual buildings - Not good for capturing estates or groups of buildings
	HMLR Inspire polygons	+ legal boundary often aligns with a 'single development' - Multiple boundaries can overlap and correct assignment is not always ensured
	Postcodes	+ Good for simple cases - Postcdes can 'stack' vertically for multi occupancy
	Output Areas (ONS)	+ useful statistical boundary - Don't align with estate boundary
	Address clusters	+ can work well in simple cases - Not viable at a National level
Tenure (*…inhabited by socially rented tenants*)	Tenure from the Experian part of NEED	+ Covers all addresses - the data is derived from Experian and is modelled.
	EPC data	+ tenure is available - Incomplete coverage (not all dwellings have an EPC)
	NROSH	+ detailed data on social housing - Ceased being updated around 2013 or earlier

Implementing the definition using the data sources

We carried out an assessment phase where we used the sources of national data listed in Table 1 to produce different groupings to proxy social housing developments in line with the definition listed above. We assessed these proxies by comparing their results to detailed data on both tenant and leasehold dwellings in a trusted local authority.

The assessment stage covered three processes:

1. Assemble dwelling data so that both 'Council/Housing Association' (referred to henceforth as a 'social dwelling') and other dwellings can be identified spatially

We linked the data held in the NEED data framework to Ordnance Survey AddressBase (OSAB) data to provide geospatial (location) data which could then be used for any further spatial analysis (for example working out which NEED records fall within a specific HMLR polygon boundary). This process is shown in Figure 3.

2. Aggregate dwellings using a consistent, national boundary that best represents 'a group of individual dwellings…' in the 'same building complex'

This process involved aggregating the data in point 1 using different spatial boundaries in an attempt to create a realistic proxy for a social housing development. These aggregates are listed in Table 1. Each boundary that contained *at least one social dwelling* and a *total of two or more dwellings* was considered to be a social housing development (referred to as a 'social development' from here onwards in this report).

By excluding cases where there is only one dwelling this enforced the rule that these should be "*… a group of individual dwellings…*" (as set out in the initial definition of what was in scope). As a result, this will exclude many houses where the boundary goes around just that one building with a single dwelling. However, it should be stressed that these 'developments' could not be mixed tenure because there is only a single dwelling. These single dwelling cases should be less of a concern from a policy / logistical perspective, but there may be some single dwelling cases that are difficult to retrofit alongside other buildings. However, this is beyond the scope of this analysis

3. Test the product of point 2 against a trusted dataset for a subset of the national data

For point three the different methods produced different aggregations (in other words different boundaries to the social housing developments). The results of these were compared to detailed data on social housing dwellings (and leaseholder dwellings) from a local authority. The comparison between the tested method and the local authority data produced a correlation coefficient. These statistical tests showed that some of the methods were very poorly correlated. The best three methods identified used the following datasets to aggregate NEEDs Experian tenure data into social housing developments:

- Ordnance Survey Mastermap (correlation coefficient 0.71)
- HMLR polygons (land registry boundaries) (correlation coefficient 0.55)
- Ordnance Survey AddressBase (using the parent UPRN to cluster records) (correlation coefficient 0.32)

After careful assessment, it was considered that HMLR Land registry polygons provided the most robust method for identifying social housing developments using boundaries that were large enough to also identify larger developments which might cover multiple buildings.

The two other methods (Ordnance Survey Mastermap and Ordnance Survey Addressbase) were strong alternatives but were rejected. Whilst they provided good aggregations at the building level; this was at the expense of the ability to identify *groups* of buildings. Figure 4 is a

good example of such a case where there are a number of terrace houses, some of which are listed as social dwellings. In this case, these are houses (with a single household per address). If the data were analysed at the building level then each of these would be treated as 24 different (individual) developments. Using the HMLR polygons means that (in this case) the legal boundary for the land encompasses all 24 dwellings and can be dealt with as one social development.

Figure 3 The flow process for identifying social housing developments

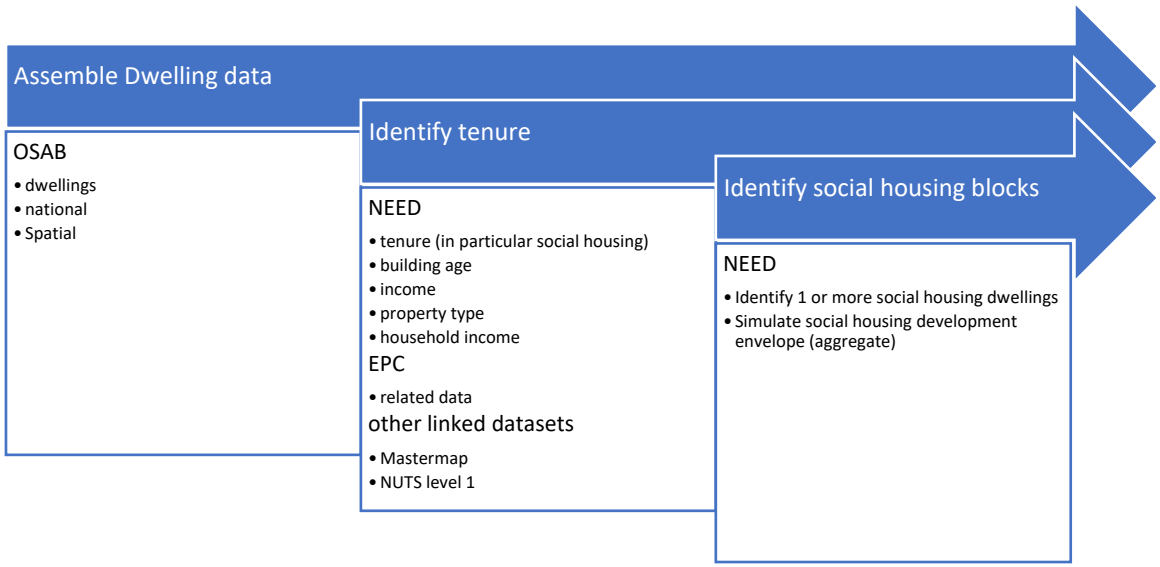


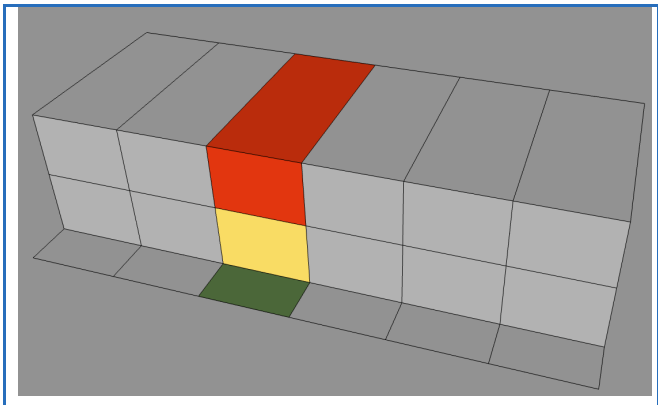
Figure 4 An example of how social dwellings for individual buildings within an HMLR polygon boundary (highlighted in red) might be selected. In this example, dwellings within the (red highlighted) HMLR polygon boundary would be considered to represent a single social development. Crown copyright and database rights 2023 OS License Number: 0100037028

Note that by using the HMLR polygon (shown highlighted in Figure 4) there are some mid-terrace properties *in-between* social housing dwellings that are not included in this selection (because their legal boundary is independent). There are other methods that could be used to identify clusters of social housing and *small numbers* of similar, non-social housing (such as the mid-terrace dwellings that are *not* part of the social housing freehold boundary shown in Figure 4), but these would require a clear definition of what would be considered in scope and what would be considered out of scope. For this analysis, these cases are considered out of scope.

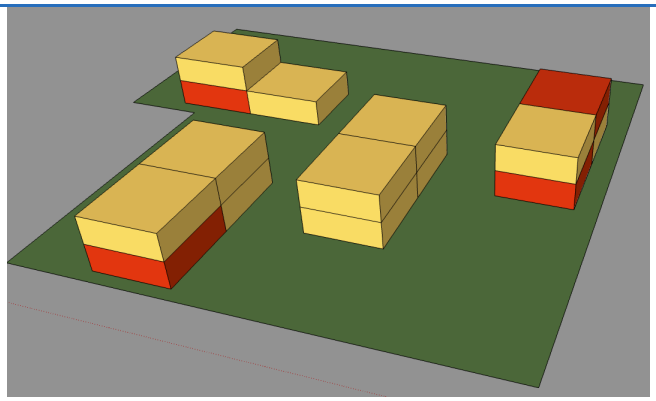
Processing the data in this way means that there are many different potential combinations of mixed tenure developments that can occur. Some simple theoretical examples of these are shown in Figure 5 which shows that the mixing can occur both vertically (for example flats) and / or horizontally (for example multiple low-rise blocks or even bungalows on a land parcel that

encompasses multiple dwellings). A mixture of these examples might occur on the same HMLR polygon.

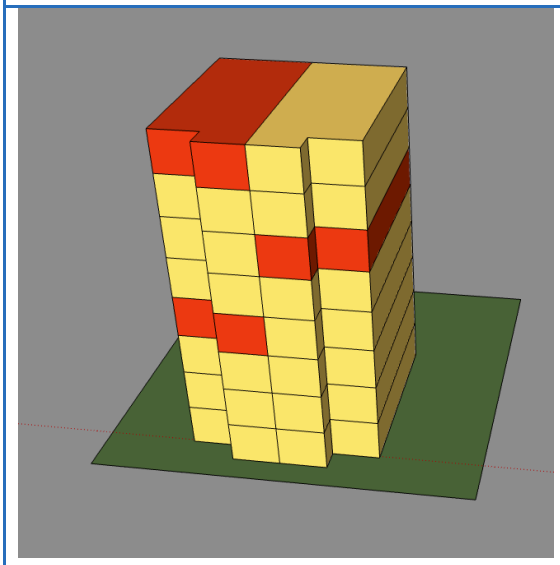
Figure 5 Simplified examples of different combinations of mixed tenure developments that can occur. Green indicates the HMLR polygon, Yellow represents social dwelling whilst red indicates non-social housing dwellings.



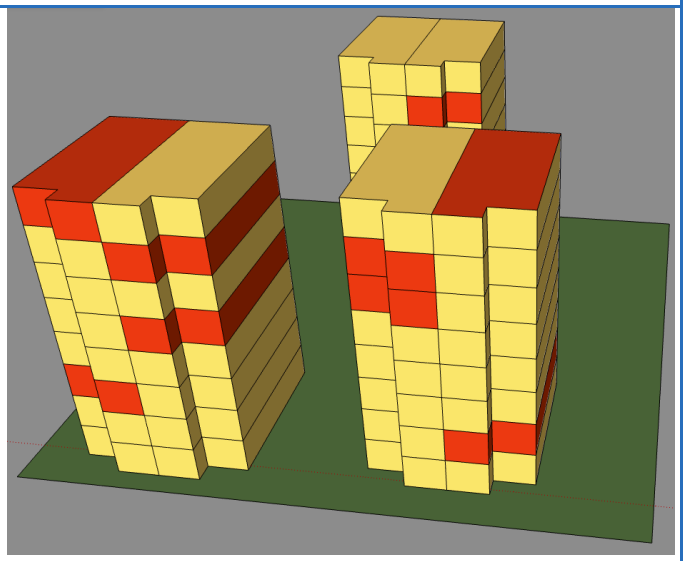
a. Mid-terrace house (possibly purpose built, but more likely converted flats)



b. Multiple Low-Rise flats in multiple buildings on one single HMLR land parcel



c. High-Rise block on a single HMLR land parcel



d. Multiple High-Rise blocks on a single HMLR land parcel

Other significant facts about the data sources

- The method excluded any single dwelling developments (houses) if the HMLR polygon boundary did not include other dwellings. This is because the definition of social housing developments states that these are *"… a group of individual dwellings…"*. This is for the simple reason that **these 'developments' cannot be mixed tenure**. They are either social housing or they are some other form of ownership and were hence treated as out of scope.

- Social housing can be local authority owned or housing association owned. Ideally it would be possible to single out these two forms of ownership. The NEED data has the field for 'Value Significant Codes'[5] (VSC) from the VOA which is a code to help identify the ownership of dwellings. However, the VOA data held in NEED **is insufficiently granular**, meaning it is not possible to identify local authority owned social housing (which should be code 'ZL') from Housing Association owned ('ZH', 'ZI' or 'ZJ').
- **Whilst income is listed in NEED it should be noted that this is as a nominal** (e.g. £20,000 - £29,999) rather than discrete value (e.g. £22,350). This means that producing aggregate statistics on income (e.g. average income for a development) is not possible.
- Another important point to note is that 'household income' data was complete for all NEED dwellings listed as social, but the same was not the case for records that are *not* social dwellings. In total **6% had an income of 'Not matched' or 'Unknown'** recorded.

Analytical approach

For research question one, analysis was carried out to calculate a key variable: the social tenant ratio. This is the tenanted social housing as a percentage of all dwellings in the social development (or HMLR polygon identified as containing more than 1 dwelling, of which at least one dwelling must be classified as social).

For example, if a polygon grouped 10 dwellings and 8 of them were listed in NEED as being social then the social tenant ratio for that social development would be 0.8 or 80%. On the other hand, a house that has been converted into two flats with only one of the flats listed as social would result in a social tenant ratio of 0.5 or 50% (for example see Figure 5 example (a)).

The lower the social tenant ratio, the more 'mixed' the development will be with a value of 10% indicating that the development is only 10% occupied by social dwellings. Lower social tenant ratios are potentially more problematic than higher social tenant ratios (in terms of owner occupiers / private rental dwellings resisting moves to decarbonise the whole development).

For research question 2, using the same methods we selected just the **non**-social dwellings contained in social developments and explored these records to better understand the nature of these dwellings. Whilst this section will refer to 'non-social dwellings' as a description for this group, it actually consists of all NEED dwellings which are not social (which includes, 'Owner-occupied', 'Privately rented', 'Not matched' and 'Unknown'). The main metric we explore for research question 2 is the average household income of non-social housing.

Since the household income in NEED is stored as a nominal value (income brackets) and some of the comparisons would involve comparisons between two lots of nominal values (e.g. household income against Council Tax band), in these cases the household income has been converted to a 'middle' income value so that aggregate statistics can be carried out. For

[5] Value Significant codes are described here: https://www.ons.gov.uk/aboutus/whatwedo/programmesandprojects/censusanddatacollectiontransformationprogramme/futureofpopulationandsocialstatistics/datasourceoverviews/valuationofficeagencydata

example, the household income of '£20,000-£29,999' has been converted to £25,000 and the income of '£30,000-£39,999' has been converted to £35,000. For the cases where the data has a discrete value (for example EPC floor area in m²), the data is presented with household income as a nominal value, as per the original NEED data.

When appropriate, we present the average (mean), median, interquartile range and 10th/90th percentiles in box and whisker plots (e.g. Figure 6 below). The box (which encapsulates the middle 50% of data points) represents the interquartile range and can be used as an indication as to how concentrated the data is. A longer (taller) box suggests a larger spread of the data points (in this case the tenant mixing ratio). The median value is shown as a red line within the box.

Findings

Primary analysis of mixed tenure in social housing developments

This section shows 'social tenant ratio' statistics in England overall, and across a range of different spatial and building characteristic variables as aggregates, to describe the nature of mixed tenure across the social housing stock of England. The higher the social tenant ratio, the lower the level of mixed tenure.

Overall results

Table 2 shows that 459,262 social developments were identified in England using these methods. This comprised of 3.33 million social dwellings which represents 79% of the 4.21 million social housing dwellings identified in Government statistics.[6] The missing 21% are mostly cases where the method identified and excluded individual dwellings.

Table 2 Overall social housing statistics for England (social dwellings in social developments)

Number social developments'	Number C/HA dwellings in social developments	Average social tenant ratio	Median social tenant ratio
459,262	3,331,676	80	97

The overall average social tenant ratio was 80% for all of England and the median value was 97%. The average social tenant ratio can be interpreted in the context of the current SHDF mixed tenure policy, in which an overall application to the SHDF must consist of a minimum of 70% social homes that meet SHDF eligibility criteria.[7]

Closer inspection of the tables and charts that follow will show that this overall ratio can vary considerably when it is aggregated by other data. Alongside the findings presented below, further data tables are provided in the annex at the end of this document, including analysis of additional aggregation characteristics (dwelling floorspace and number of habitable rooms).

[6] Live Tables on Dwelling Stock, LT100 2021, (12 May 2022) downloaded from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1074203/LT_100.ods

[7] Social Housing Decarbonisation Fund: questions and answers (October 2021) https://www.gov.uk/government/publications/social-housing-decarbonisation-fund/social-housing-decarbonisation-fund-questions-and-answers

Property type

Table 3 Social housing statistics by property type for England

Property type	Number social developments	% share social developments	Number C/HA dwellings in social developments	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
Bungalow	32,020	7%	326,645	10%	93	100
Converted flat	32,479	7%	91,499	3%	55	50
Detached	1,942	0%	6,810	0%	34	17
End terrace	32,344	7%	164,193	5%	92	100
Mid terrace	47,736	10%	461,027	14%	89	100
Purpose built flat	249,230	54%	1,736,325	52%	76	91
Semi detached	59,899	13%	516,333	15%	86	100

Table 3 shows that of all the SH developments identified, 'Purpose built flats' are the most common property type at 54%, followed by 'Semi-detached' (13%) 'Mid-terrace' (10%) and then 'Converted flat', 'End terrace' and 'Bungalow' (all at 7%). When compared to the English Housing Survey,[8] the proportion of purpose-built flats in the developments identified in this research is substantially higher. However, this probably reflects the exclusion of single dwelling buildings from this analysis. If single dwelling social developments were included then it is likely that the number of terraced house dwellings would increase significantly. The number of dwellings in each social development classified by NEED as having a tenure of social is also listed in Table 3.

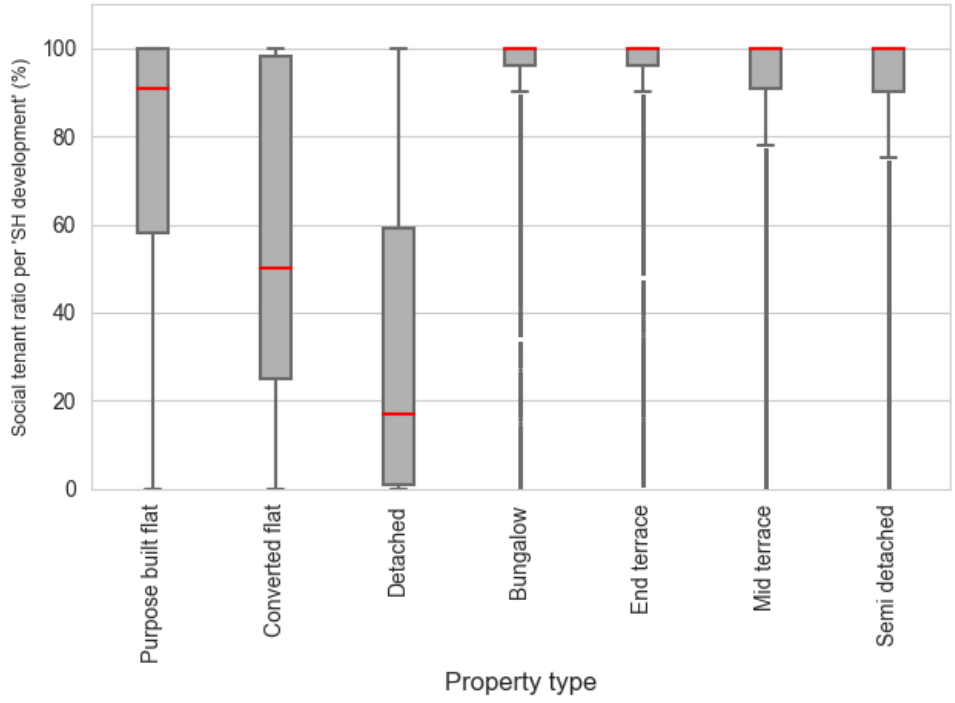
The social tenant ratio also varies across the property type aggregations. Figure 6[9] shows that the median tenant mixing ratio is close to 100% for most property types apart from 'Converted flat' and 'Detached'. For the property types that make up the largest percentage of social developments, 'Purpose built flats' have a median of over 90% whilst 'Converted flats' have a median of 50% and a far greater interquartile range (73) than 'Purpose built flats' which has an interquartile range of 42. This shows that 'converted flats' are much more likely to have a high degree of mixed tenure compared to 'purpose built' flats. Flats (both 'Purpose built' and

[8] English Housing Survey: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1123625/2020-21_EHS_Headline_Report_Section_2_Stock_Annex_Table_revised_V2.ods

[9] The box (which encapsulates the middle 50% of data points) represents the interquartile range and can be used as an indication as to how concentrated the data is. A longer (taller) box suggests a larger spread of the data points (in this case the tenant mixing ratio). The median value is shown as a red line within the box.

'Converted') have a larger interquartile range than the houses (apart from 'Detached' which are based upon a very low percentage of social housing dwellings overall). For this figure and any other subsequent figures, the larger interquartile range means that there are likely to be larger numbers of developments with higher proportions of leaseholders.

Figure 6 box and whisker plot showing social tenant ratios for each social development by Property type (NEED)



Region[10]

Table 4 shows that the largest percentage of social developments occur in London (outer) (14%), South East (13%), London (Inner) (12%) and the North West (12%). The East Midlands (7%) and the North East (5%) have the lowest percentage of all social developments. When the two (subdivided) London areas are combined, then London has the largest share (26%) of all social developments in England.

[10] We use NUTS level 1 boundaries (or 'Regions') to spatially aggregate the data into the different regions of England. For London, due to the large numbers of social dwellings, the region was further subdivided into Inner London and Outer London

Table 4 Social housing statistics by NUTS 1 regions with London split into two regions (Inner and Outer) for England

Region	Number social developments	% share social developments	Number C/HA dwellings in social developments	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
East Midlands	32,025	7%	251,532	8%	88	100
East of England	48,078	10%	313,538	9%	82	97
London (inner)	53,729	12%	322,428	10%	66	76
London (outer)	64,042	14%	346,118	10%	67	79
North East	25,023	5%	231,952	7%	88	100
North West	56,072	12%	467,821	14%	84	99
South East	61,622	13%	438,605	13%	81	97
South West	37,237	8%	267,458	8%	83	99
West Midlands	44,913	10%	336,053	10%	85	98
Yorkshire and The Humber	36,515	8%	356,145	11%	89	100
unassigned region	6	0%	26	0%	33	20
All cases	**459,262**	**100%**	**3,331,676**	**100%**		

Figure 7 box and whisker plot showing social tenant ratios for each social development by NUTS 1 regions with London split into two regions (Inner and Outer)

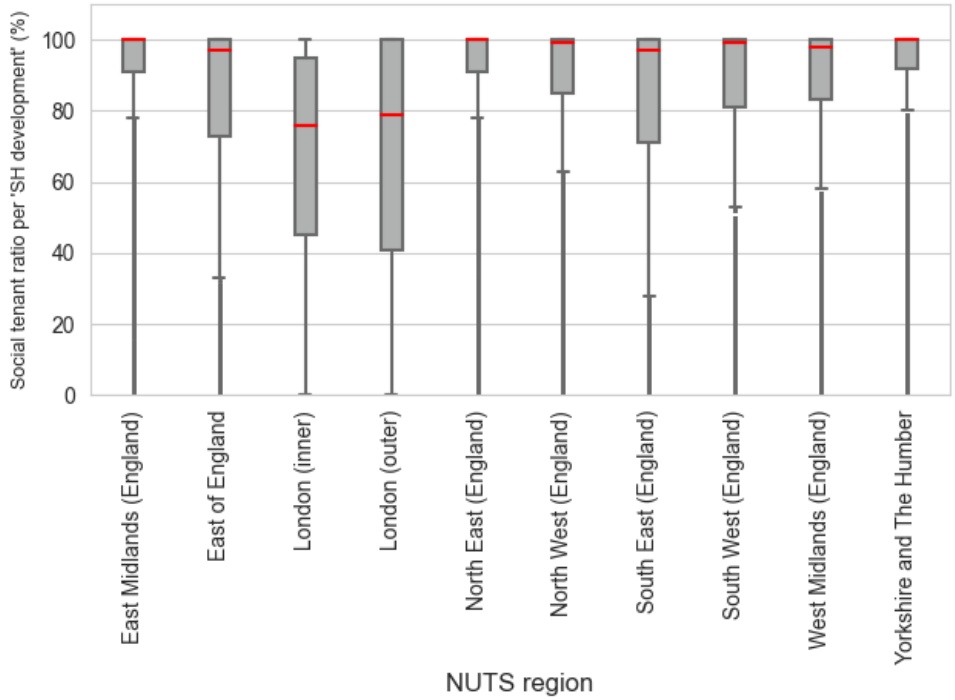


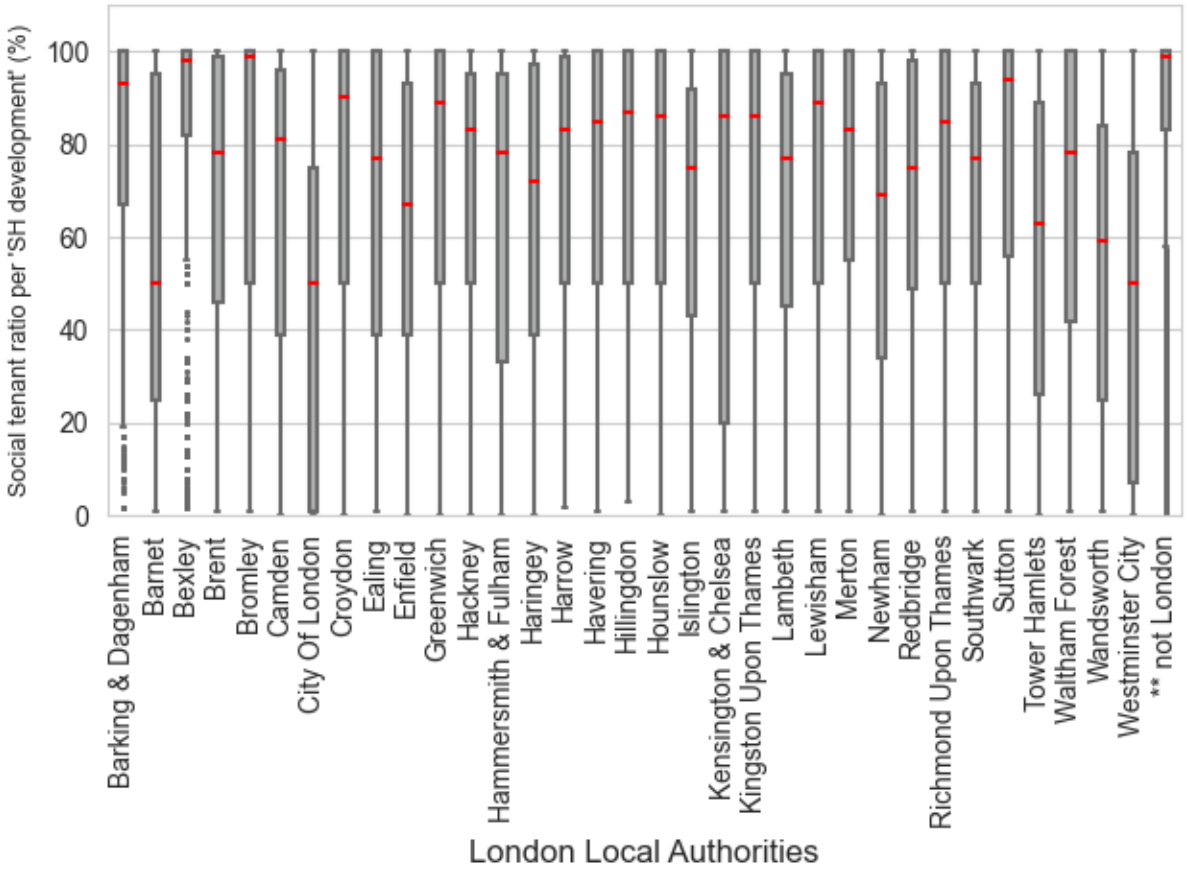
Table 4 and Figure 7 show that median social tenant ratios are close to 100% for almost all regions. ‘East of England’ and ‘South East (England)’ have slightly lower median values (97% each) and larger interquartile ranges than the other non-London regions. Both London (inner) and London (outer) have the lower median social tenant ratios compared to all regions with 76% and 79% respectively. They also have the largest interquartile ranges (50 for London (inner) and 59 for London (outer)). This suggests that the social tenant ratio in social developments in London, East of England and the South East is more likely to be lower than in all other regions.

London Boroughs

For the 33 London Boroughs, Southwark has the largest share of London social developments (7%) followed by Lambeth (6%), Tower Hamlets (6%), Lewisham (5%), Hackney (5%) and Islington (5%). City of London and Harrow have the lowest (see Table 13 in the annex for the full descriptive table).

The median social tenant ratios are shown in both Figure 8 and Table 13 (annex) and these vary considerably amongst the London Boroughs, especially when these are compared to the value for the ‘not London’ aggregation (99). Bromley, Bexley, Sutton and ‘Barking and Dagenham’ are highest with values of 99, 98, 94 and 93 respectively. The lowest values are found in Barnet, City of London, Westminster City, and Wandsworth with values of 50, 50, 50 and 59 respectively. Almost all the boroughs show relatively large interquartile ranges compared to the non-London data which has an interquartile range of 17. For example, Kensington & Chelsea has an interquartile range of 80 whilst City of London, Westminster City and Barnet have interquartile ranges of 74, 71 and 71 respectively. This suggests that London Boroughs have lower median social tenant ratios and a much wider range of the middle 50% of data points for the social tenant ratio compared to the rest of England.

Figure 8 box and whisker plot showing social tenant ratios for each 'SH development' by London Boroughs, alongside all non-London local authorities



Property age[11]

The property age group with the largest percentage of social developments is the '1945-64' age bracket (30%) followed by the '1965-82' bracket (27%). These percentage shares are similar but slightly different if the percentage of social *dwellings* are calculated with 28% of these falling in the '1945-64' bracket and 30% falling in the '1965-82' bracket (see Table 7 in the annex for descriptive statistics in full). This can be compared to the latest English Housing Survey[12] report where 30% of social housing dwellings are in the 1945-64 age bracket and 27% are in the 1965-1980 age bracket. It should be noted that the English Housing Survey figures are for all social housing - including single-dwelling buildings - and not mixed tenure developments only, as is the concern of this report.

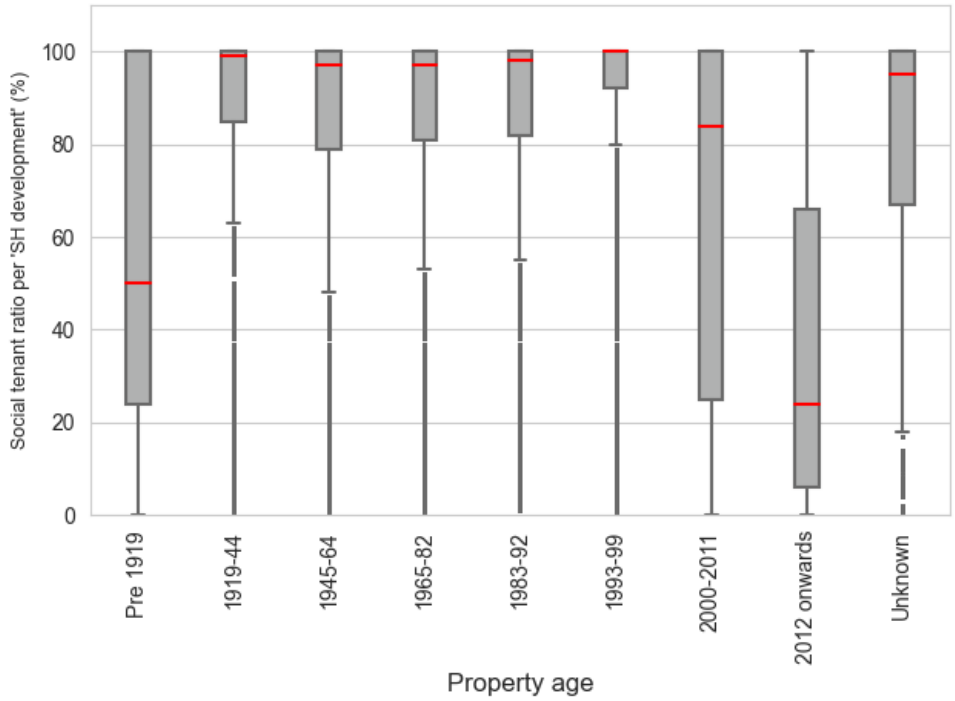
Figure 9 shows the statistics for the social tenant ratios for dwellings in each age bracket (whilst the average and median values are shown in Table 7). Median social tenant ratios for the age brackets from 1919 through to 1999 tend to be highest (closest to 100%) whilst the periods either side of this ('pre-1919' median social tenant ratio of 50; '2000-2011' median

[11] We use Valuation Office Agency (VOA) data on the age of property and stored within NEED to aggregate the data by property age. Around 0.9% of NEED dwellings have a property age recorded as 'Unknown'
[12] English Housing Survey, Section 2 Housing Stock Annex tables: https://www.gov.uk/government/statistics/english-housing-survey-2020-to-2021-headline-report downloaded 27 March 2023

social tenant ratio of 84; and '2012 onwards' median social tenant ratio of 24) have lower social tenant ratios and larger interquartile ranges.

This suggest that mixed tenure 'SH developments' are more likely to be found in older (pre-1919) properties or newer (post 2000) properties (in particular '2012 onwards').

Figure 9 box and whisker plot showing social tenant ratios for each social development by property age (NEED)



Council tax band[13]

Close to half of SH developments (48%) have a dominant Council tax band of 'A' and 55% of all social dwellings have a council tax band of 'A'. The percentage share of both social development and of social dwellings drops in each subsequent council tax band. Very few social dwellings occur in band E or higher (property valued at £88,000 or higher in the year 1991) (see table 8 in the annex for descriptive statistics in full).

[13] We use Valuation Office Agency (VOA) data on the council tax band, stored within NEED, to aggregate the data by council tax band. Council Tax band assessments are based on a number of factors including size, layout, character, location, change in use, value on 1 April 1991

Figure 10 box and whisker plot showing social tenant ratios for each social development by Council Tax band (NEED)

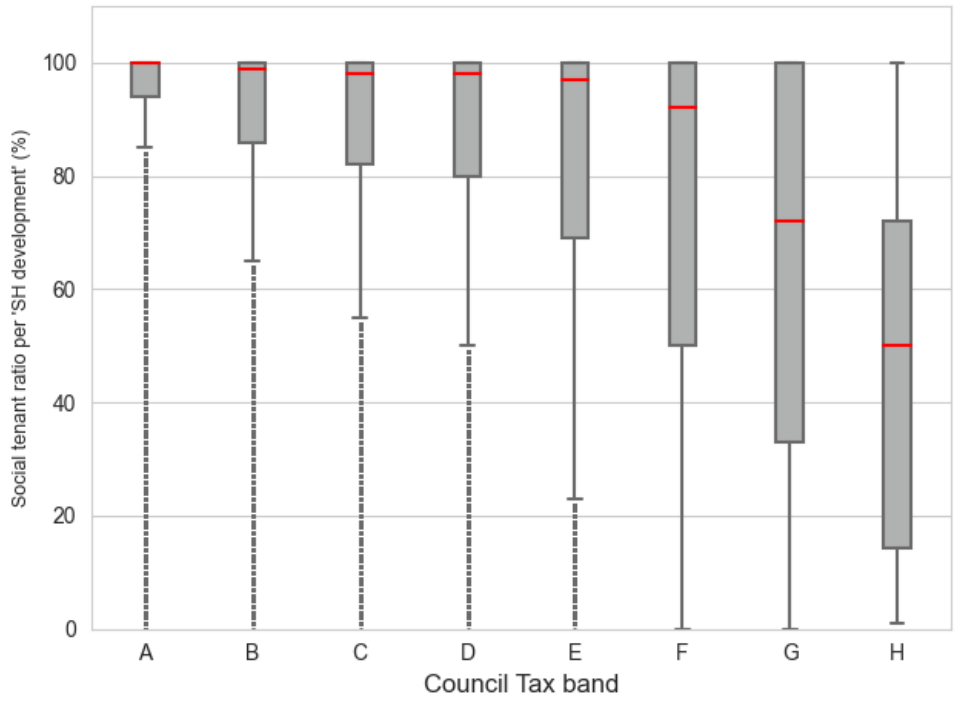


Figure 10 shows the box and whisker plots for social tenant ratios aggregated by council tax bands for all social dwellings inside a social development. This shows that the median social tenant ratio drops as the council tax band increases. For example, the median social tenant ratio for council tax band A is 100% whilst for band H it is 50%. The interquartile ranges also increase as Council Tax band rises.

Whilst Table 8 (annex) and Figure 10 represent Council Tax band, this can be thought of as a proxy for property value. This suggests that as property value increases, social tenant ratios decrease.

Energy efficiency[14]

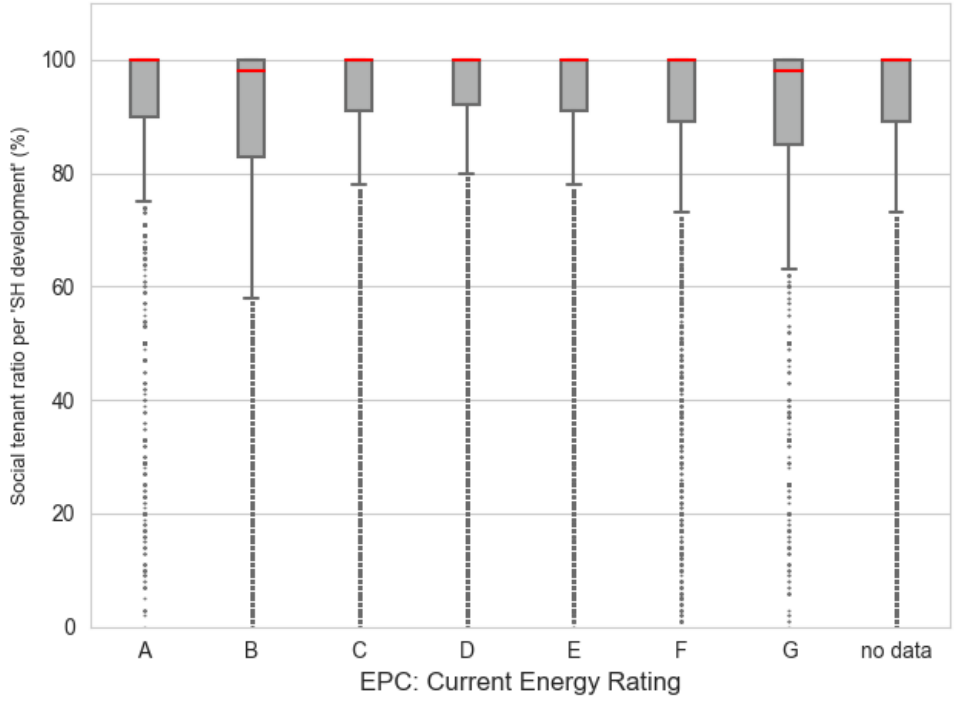
The largest grouping of average EPC rating for social developments is grade ‘C’ where 45% of all social developments have this grade, followed by grade ‘D’ (34%). For a large number of records there is no EPC recorded and this ‘no data’ category makes up 13% of all social developments and 30% of all social dwellings (see Table 9 in the annex for descriptive statistics in full). Figure 11 (and Table 9 in the annex) shows that there is very little difference in the median social tenant ratio when aggregated by EPC rating since all ratings are 100% or else are very close to 100%.

This can be confirmed by grouping the social tenant ratios into four groupings as is shown in Figure 12 and then plotting the current Energy Efficiency as a (discrete) value for each grouping. In all five groupings, the median current Energy Efficiency is between 70 and 75

[14] We use publicly available EPC data to aggregate the data by energy efficiency rating. This measure is recorded as discrete values (Energy Efficiency) as well as nominal values (Energy Efficiency rating). We therefore carry out this analysis in different ways

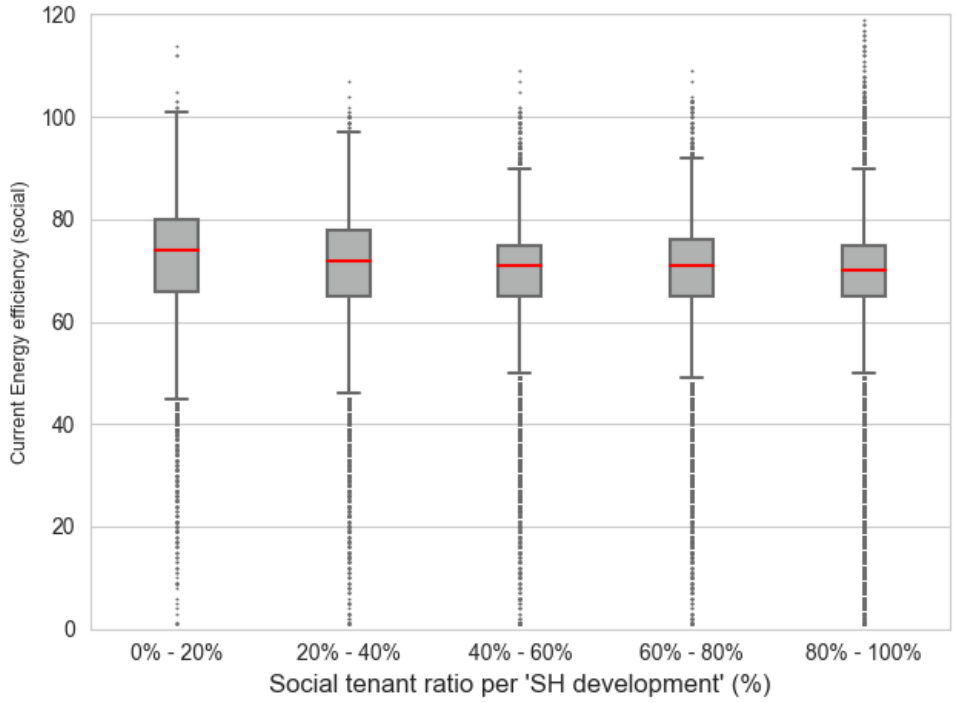
putting it firmly in the ‘C’ rating (a C rated Energy Efficiency rating[15] has a current Energy Efficiency value of between 69 and 80).

Figure 11 box and whisker plot showing social tenant ratios for each social development by Current Energy Efficiency rating (EPC)



[15] Current Energy Efficiency
92 or higher = 'A'
81 – 91 = ‘B’
69 – 80 = ‘C’
55 – 68 = ‘D’
39 – 54 = ‘E’
21 – 38 = ‘F’
1 – 20 = ‘G’

Figure 12 box and whisker plot showing Current Energy Efficiency for just social dwellings for different categories of social tenant ratio (social housing dwellings as percentage of all dwellings)



Building height[16]

More than 99% of social developments and 99% of social dwellings were assigned a building height. 91% of all social developments and 88% of dwellings were categorised as ‘Low Rise’. Medium Rise was the second highest category with 7% of social developments and 6% of social dwellings being allocated this building height. High Rise was the lowest percentage with 2% of all ‘SH developments and 6% of social dwellings allocated (see Table 12 in the annex for descriptive statistics in full).

The median social tenant ratio is shown in Figure 13 and Table 12 (in the annex). This shows that the median social tenant ratio is highest in Low Rise social dwellings (100). Median social tenant ratios are lowest (70) in Medium Rise suggesting that mixed tenure is more likely to be found in Medium Rise buildings than Low Rise. High Rise has a median social tenant ratio of 85. All three categories have an interquartile range of 50.

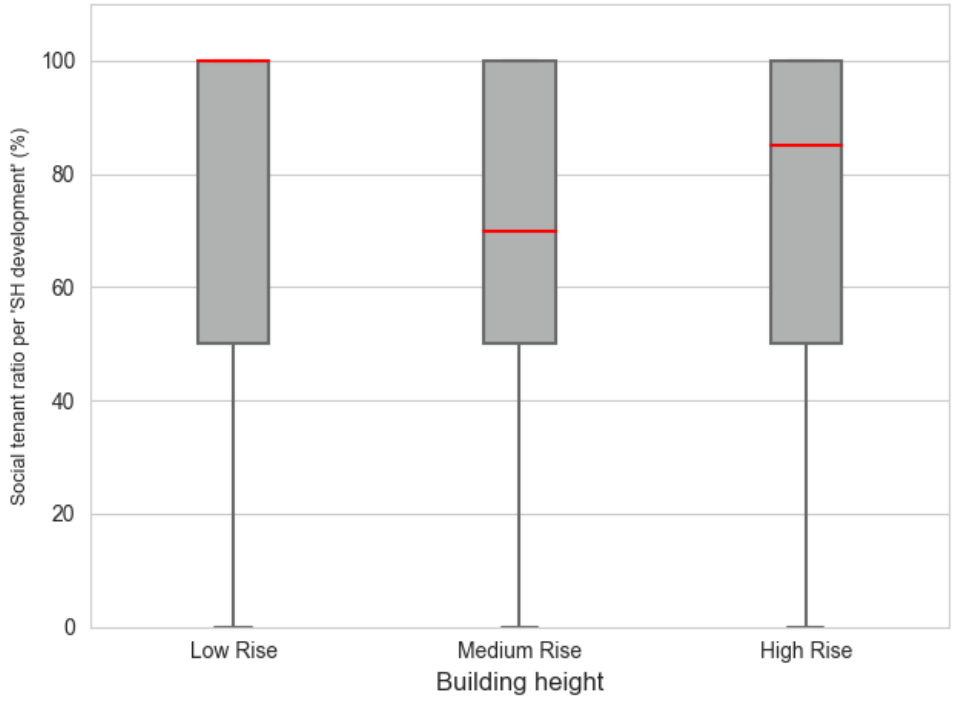
We note that the median social tenant ratio for High Rise (85), is higher than the value presented by DLUHC estimates[17] (based upon the English Housing Survey, which itself is based upon very few blocks of flats) where they estimate that the social tenant ratio is 72 (for

[16] We use EPCs and to OS Mastermap polygon data to aggregate the data by building height. We calculated either the EPC ‘flat storey count’ or the building height in meters (or both). From this it was possible to assign a height category to the social development as follows: Low Rise: storey count of 0 – 4 or building height of less than 11.0 meters; Medium Rise: storey count of 5 – 6 or building height of 11.0 to 18.0 meters; High Rise: storey count of 7 or more or building height of more than 18.0 meters

[17] Data Release: Building Safety Programme Monthly, England: 31 October 2021 p. 13 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1032640/Building_Safety_Data_Release_October_2021.pdf

High Rise). Medium Rise is identical in these findings as is presented in the DLUHC estimates (70 for both). Note that the DLUHC method also appears to use Mastermap polygons rather than HMLR boundaries which would identify buildings, rather than the social developments used in the methodology described in this report.

Figure 13 box and whisker plot showing social tenant ratios for each social development by building height



Household Income[18]

Table 5 displays the results split by the average household income of the development. This was calculated by converting the nominal values into discrete values to produce an aggregate and then converting that aggregate back into a nominal range. This process means that these results represent indications (of average household income). This shows that 79% of all 'SH developments' have a mean household income (for social dwellings) of less than £19,999 and nearly 100% have a mean household income of less than £39,999 at an aggregate level.

When the social dwellings are considered individually then 57% have an income below £15,000 followed by 16% with household income in the £15,000 – £19,999 category and 23% in the £20,000 - £29,999 category. 95% of social dwellings have an income below £30,000 whilst close to 100% of all social dwellings have an income below £39,999.

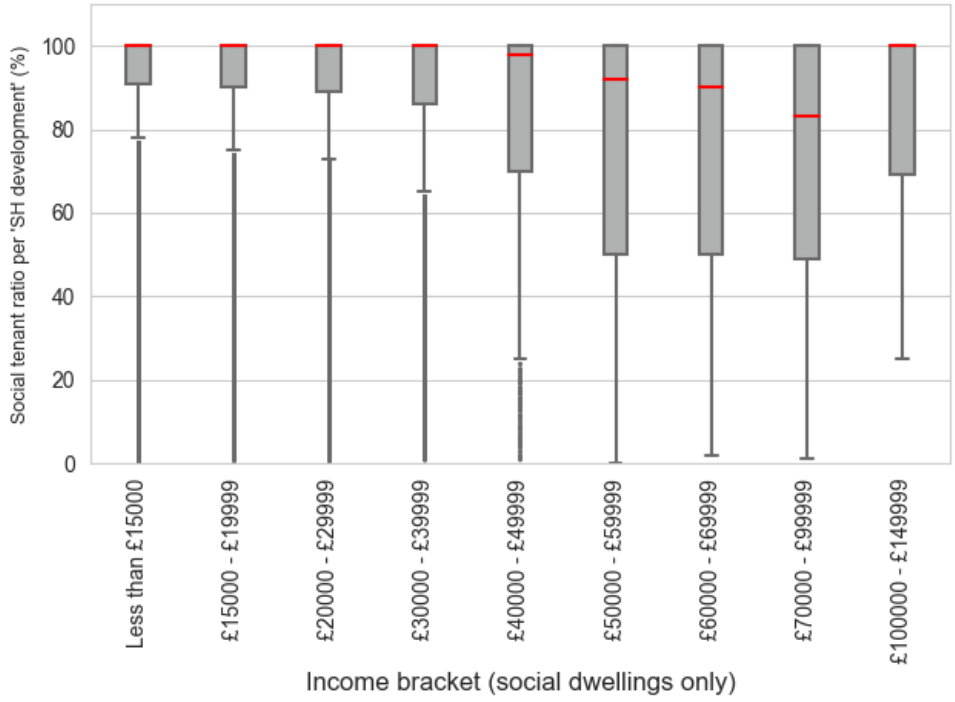
[18] We use Experian data, held within NEED, to aggregate the data the data by household income. The Experian model derives these variables for each address using data from a range of sources including Census outputs and Experian's consumer survey. Around 6% of NEED dwellings have a household income recorded as 'Not matched' or 'Unknown'

Table 5 Social housing statistics by household income (NEED), for England

Social mean income	Numb. 'SH devs.'	% share 'SH devs.'	Numb. C/HA dwellings in 'SH devs.'	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
Less than £15,000	178,226	39%	1,896,384	57%	92	100
£15,000 - £19,999	181,872	40%	529,865	16%	91	100
£20,000 - £29,999	82,056	18%	750,132	23%	90	100
£30,000 - £39,999	14,436	3%	137,960	4%	88	100
£40,000 - £49,999	1,950	0%	13,999	0%	82	98
£50,000 - £59,999	441	0%	2,071	0%	76	92
£60,000 - £69,999	181	0%	766	0%	74	90
£70,000 - £99,999	98	0%	477	0%	70	83
All cases	**459,262**	**100%**	**3,331,676**	**100%**		

Table 5 and Figure 14 show that median social tenant ratios (aggregated by the household income category) are 100 for the income categories below £40,000 and that this ratio then drops as household income rises above £40,000. The interquartile range also expands as household income increases. From this it is possible to infer that social developments with social dwellings with higher household incomes are more likely to be in mixed tenure with lower social tenant ratios.

Figure 14 box and whisker plot showing social tenant ratios for each social development by household income (NEED)



Non-social housing dwellings

Overall results

Table 6 shows the overall household income figures for the whole of England for non-social housing dwellings that are within social developments. This shows that there are 824,535 dwellings identified. These are spread across all the income brackets with the largest percentages falling in the £20,000 - £29,999 bracket (18%), the £30,000 - £39,999 bracket (19%) the £40,000 - 49,999 bracket (14%) followed by the 'less than £15,000' bracket (13%). When the brackets above £50,000 are combined then 22% of non-social dwellings have a household income of over £50K. This contrasts with social dwellings (Table 5) where less than 0.1% have an income of over £50,000. 39% of non-social housing dwellings have an income below £30,000 whilst 95% of social dwellings have an income below £30,000. It is important to also note that a significant percentage (13%) have an income of less than £15,000.

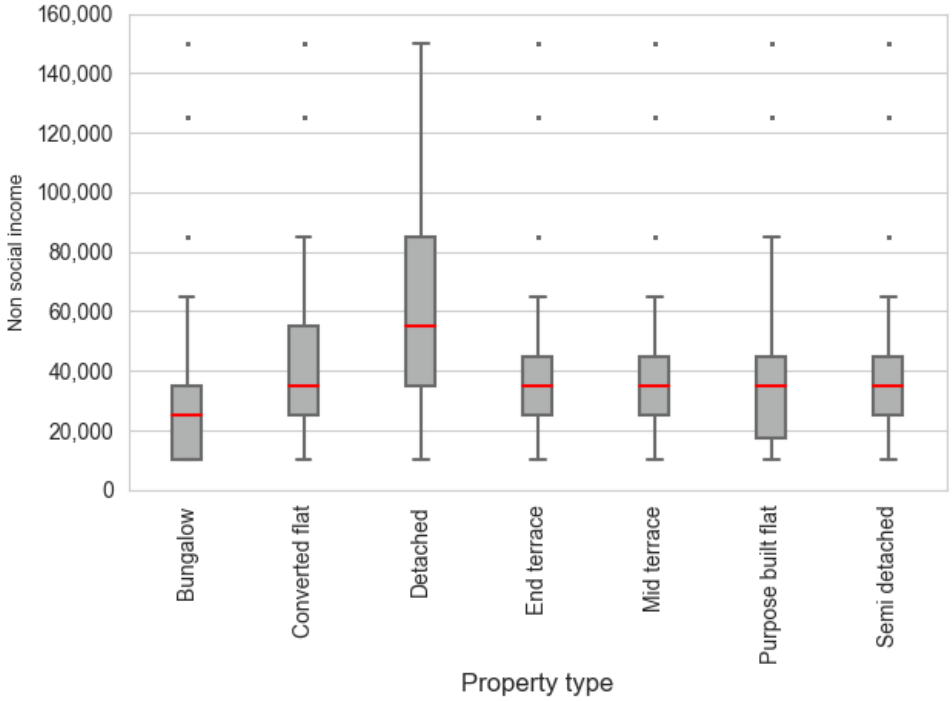
Table 6 Overall statistics for England (non-social housing dwellings in 'Social Housing developments') by household income

Household income (non-social housing)	Number dwellings	percentage
Less than £15000	103,083	13%
£15000 - £19999	74,288	9%
£20000 - £29999	144,747	18%
£30000 - £39999	156,007	19%
£40000 - £49999	114,060	14%
£50000 - £59999	58,519	7%
£60000 - £69999	38,576	5%
£70000 - £99999	56,069	7%
£100000 - £149999	20,152	2%
£150000 or more	5,457	1%
no income data	53,577	6%
Total (all cases)	**824,535**	**100%**

Property type

Figure 15 shows the household income for non-socially rented households, by property type. Income for non-social housing dwellings in social developments is highest in Detached housing. Median income is fairly stable at just below £40K for Converted flats, End terrace, Mid terrace, Purpose built flats and Semi-detached property types. Since Table 3 showed that 54% of all SH development were purpose built flats and 7% were in converted flats it is useful to note that the middle income value interquartile ranges from around £20K and £40K for purpose built flats whilst the range appears to be slightly higher for converted flats.

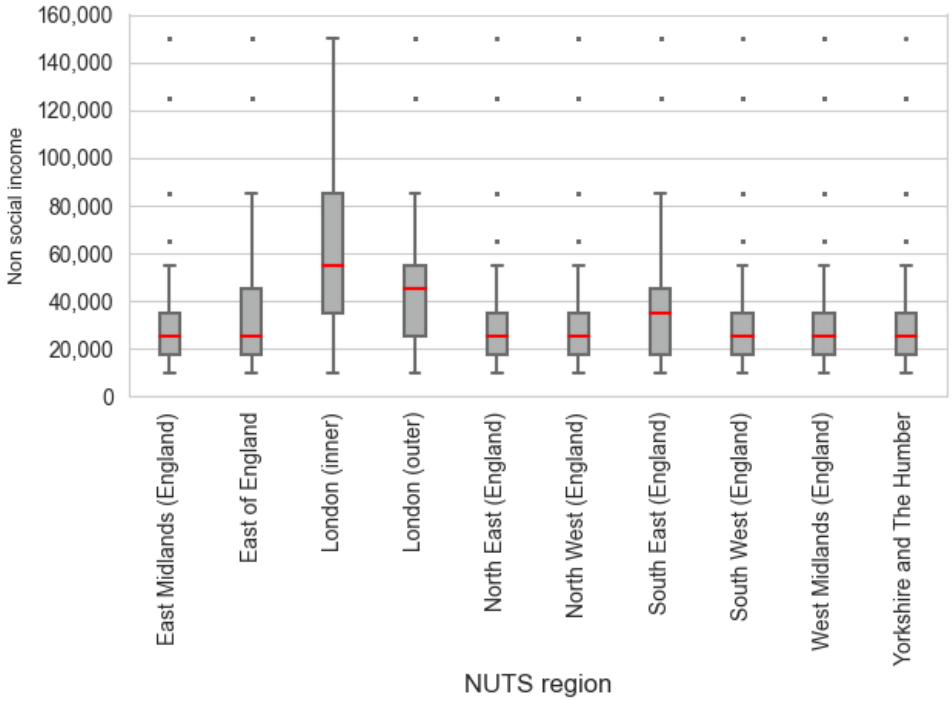
Figure 15 box and whisker plot showing middle income values of non-social housing dwellings in social developments aggregated by property type (NEED)



Region

Figure 16 shows that income for non-social household dwellings is highest in London (inner), followed by London (outer). For the rest of the country the interquartile income ranges from around £20K to under £40K apart from the East of England and the South East where the 75th percentile is slightly above £40K

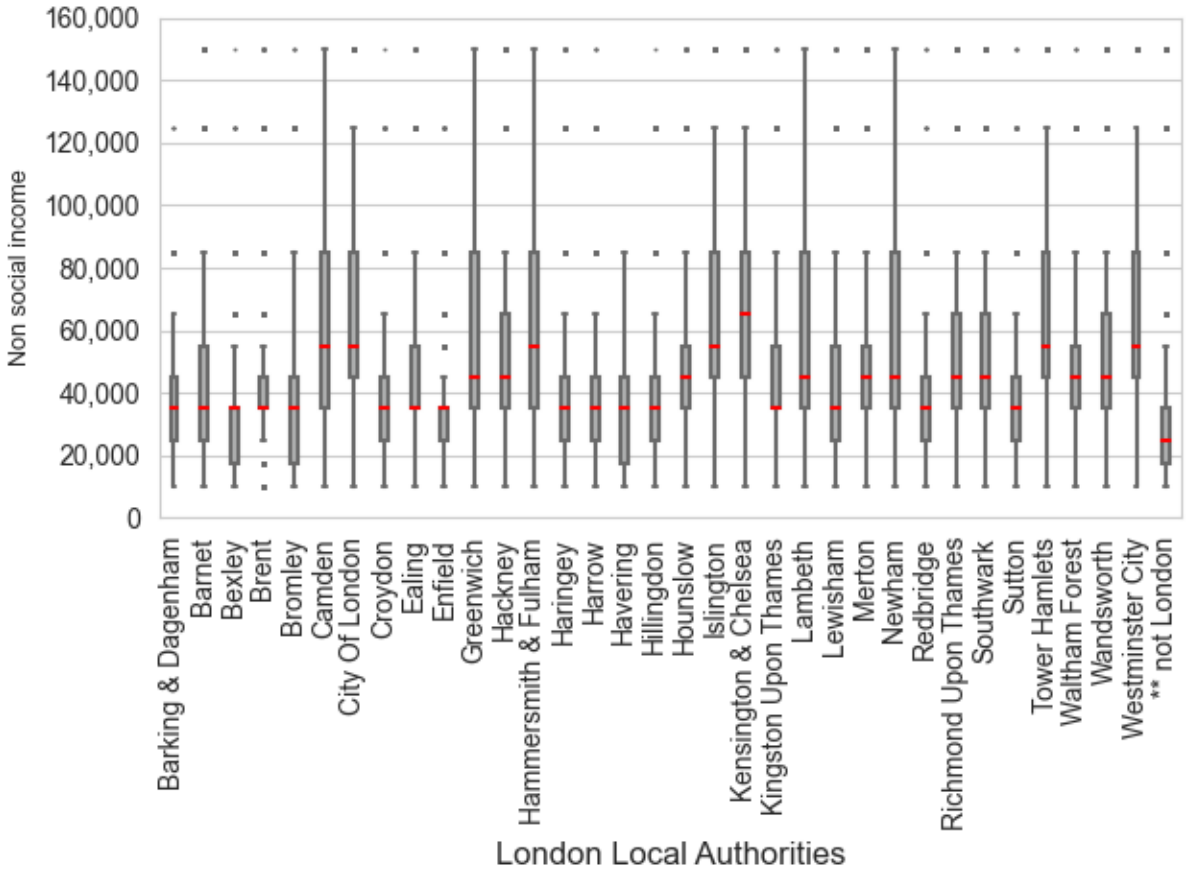
Figure 16 is a box and whisker plot showing middle income values of non-social housing dwellings in social developments aggregated by NUTS 1 region (with London divided into inner and outer London)



London Boroughs

Figure 17 shows income for non-social household dwellings (in social developments) by London Borough. The rest of the country (not London) has also been aggregated for comparison. The first thing that is apparent is that (apart from Bexley) the ‘not London’ median income is much lower than any of the London Boroughs. This is not surprising since this has already been seen in Figure 16 where London, and in particular inner London stood out compared to the other regions. Within London some of the highest median household income values are seen in a few key Boroughs, such as City of Westminster, Kensington & Chelsea, Camden, City of London and Islington.

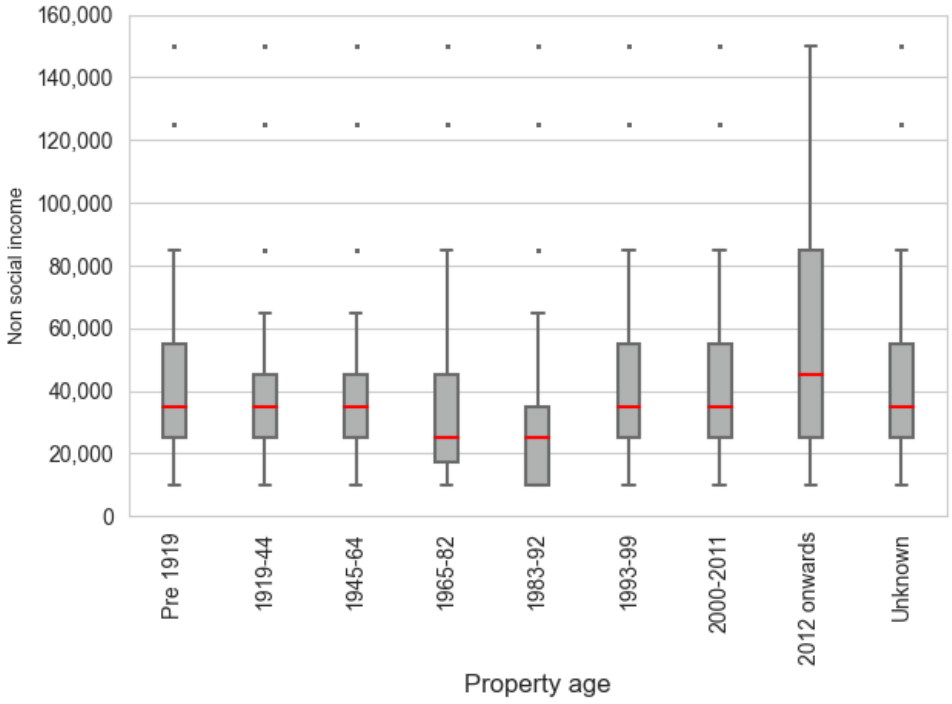
Figure 17 box and whisker plot showing middle income values of non-social housing dwellings in social developments aggregated by London Boroughs



Property age

Figure 18 shows that income is higher for dwellings where the property age is '2012 onwards'. For the rest of the age brackets there is no clear pattern.

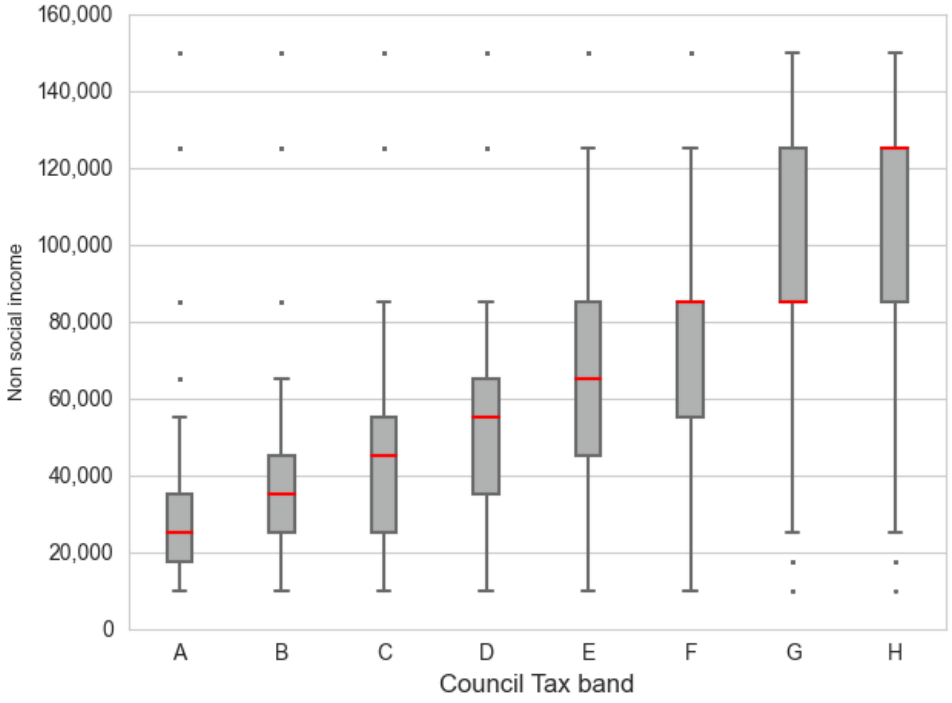
Figure 18 box and whisker plot showing middle income values of non-social housing dwellings in social developments aggregated by property age (NEED)



Council tax band

Figure 19 shows a very clear pattern suggesting that as Council tax band increases (from A to G), the income of non-social housing dwellings increases.

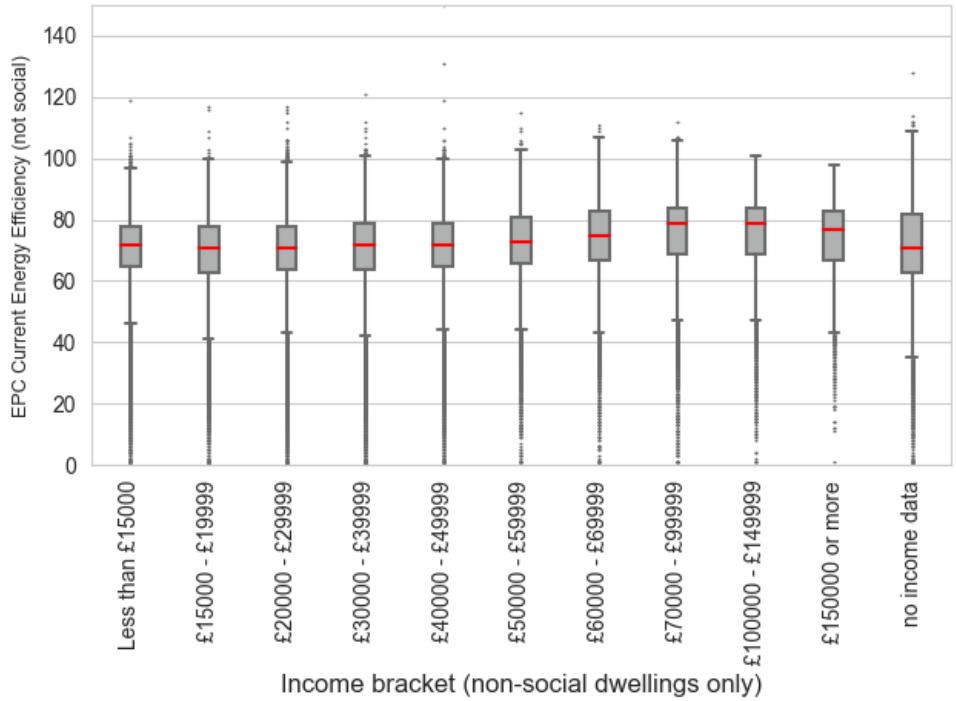
Figure 19 box and whisker plot showing middle income values of non-social housing dwellings in social developments aggregated by council tax band (NEED)



Energy efficiency

Figure 20 shows that for the dwellings that have EPCs, the median Energy Efficiency appears to increase as income increases from values around 70 (the bottom of a grade C EPC rating) for the incomes below £40K to around 80 (the top of a grade C EPC rating) for the incomes above £70K. This suggests that at an aggregate level, households with higher income brackets occupy dwellings with slightly better Current Energy Efficiency values.

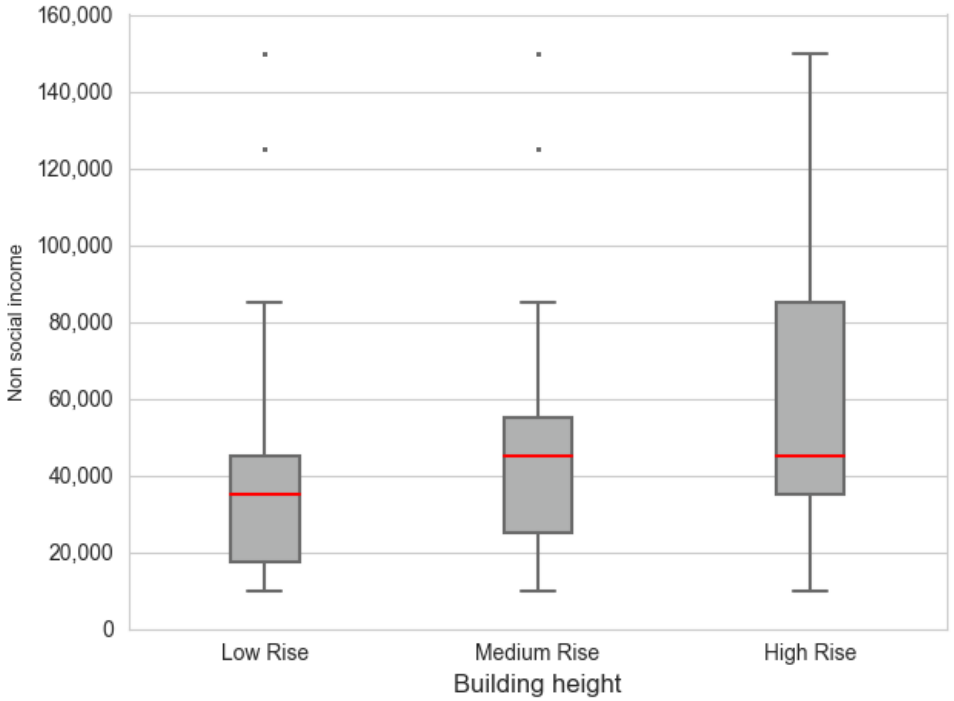
Figure 20 box and whisker plot showing Current Energy Efficiency (EPC) for non-social housing dwellings in social developments aggregated by household income (non-social dwellings) (NEED)



Building height

Figure 21 shows that median household income is lowest in low-rise buildings (below £40K) and rises above £40K for medium-rise and high-rise buildings. Non-social dwellings in high-rise buildings have the largest interquartile range of the three categories suggesting that there are more higher incomes in this category than the other two. However, the median income position in the boxplot for High-rise suggests that the income values are skewed with the median income being closer to the lower quartile (bottom of the boxplot) than the upper quartile (top of the boxplot) suggesting that there are more household incomes towards the lower quartile (bottom of the boxplot) than the upper quartile (top of the boxplot).

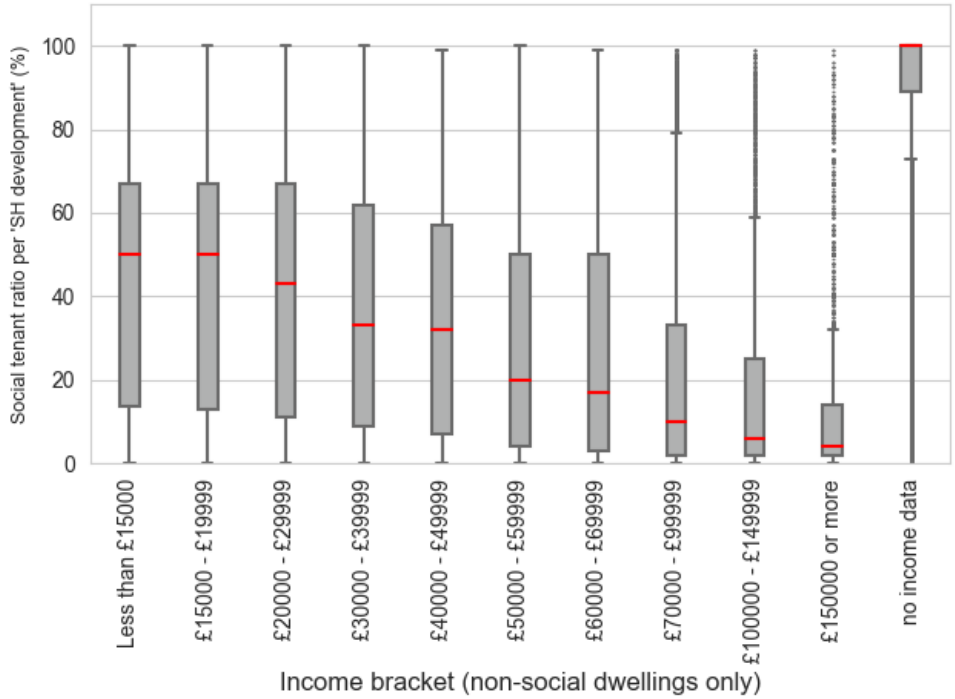
Figure 21 box and whisker plot showing middle income values of non-social housing dwellings in social developments aggregated by Building height (multiple sources)



Social tenant ratio

Figure 22 shows the income of non-social household dwellings by social tenant ratio of the social development. This aggregation of the data, by the nature of the query excludes social developments where the social tenant ratio is 100% (since there would be no non-social housing dwellings to report on within these blocks). In other words, any social developments with one or more non-social housing dwelling will be reported here). This shows that median social tenant ratio drops steadily as non-social household income increases. This suggests that (on aggregate) social developments with higher household incomes are more prevalent in social developments with lower social tenant ratios (fewer social dwellings compared to the overall number of dwellings).

Figure 22 box and whisker plot showing social tenant ratio for non-social housing dwellings in social developments aggregated by household income (non-social dwellings) (NEED)



Limitations

NEED limitations

The data presented is entirely dependent upon using data held in the NEED data framework, in particular the tenure data (which is derived from the household characteristics data which is itself derived from Experian and is therefore modelled). In short, the classification of each dwelling into ‘Council/Housing Association’ (social) or another tenure category may have errors. Household income is also derived from Experian, meaning that any of the results showing household income statistics should be treated as estimates. Nonetheless, the results are national (England) and as such are based upon a very large population of dwellings.

Calibration with only one Local Authority

Whilst the methods and outputs have been checked and tested, there are no known statistics to compare mixed tenure social housing developments with the current results. Tests were run to compare the results using NEED against data supplied by a single local authority and these results showed that NEED produced very similar social tenant ratios to the data supplied by the local authority. However, this ‘calibration’ process was limited to just a single local authority. Comparing the NEED results to further local authorities would provide stronger evidence regarding the suitability of the method adopted.

Producing a National dataset

Ideally a national dataset would exist that would provide social housing boundaries and allow simple, yet accurate analysis of the issues outlined in this report. This would require every local authority to submit data to a national repository. This would be challenging and costly to implement.

Single dwelling buildings

Single dwelling buildings were considered out of scope since there can be no mixed tenure when the total number of dwellings is 1. These buildings will need to be retrofitted if Net Zero targets are to be achieved. A separate investigation into these types of buildings is recommended to fully quantify the nature of these cases.

Strengths

The method has used national datasets from reliable and trusted sources (VOA, Ordnance Survey, HMLR, Experian, ONS) to produce a national estimate of mixed tenure in social housing developments. Whilst this method has reported the data at fairly high-level aggregations, the underpinning data is at dwelling level with 3.33 million social housing dwellings forming the basis of this approach.

Conclusions

There is no single dataset that allows us to accurately query the presence and attributes of mixed tenure social housing. Instead, it is necessary to draw together different datasets and link them using a mixture of address matching and spatial aggregation. The National Energy Efficiency Data-Framework (NEED) was linked to Ordnance Survey AddressBase data to provide detailed coordinates (map-based locations) to all dwellings such that it could be analysed alongside other spatial data (e.g building footprints, property boundaries). Following this, several different methods were attempted to aggregate the NEED data into 'social housing developments'. HMLR polygons (delineating freehold tenure) appear to offer the best method to logically cluster social housing developments, although it is recognised that there are limitations associated with this method. Using this method, it was possible to produce social tenant ratios or the percentage of social dwellings relative to all dwellings in the HMLR polygon which included at least one socially-rented dwelling (used as a proxy for 'social housing developments').

This data was further linked to a range of other publicly accessible datasets such as Energy Performance Certificates (EPCs), regional data and building height data in order to provide a detailed analysis of mixed tenure. Some of the key findings that this analysis has produced are as follows:

- There are 459,262 developments in England which are, or have the potential to be, mixed tenure. These developments contain a total of 3.33 million social dwellings..
- The mean social tenant ratio across social housing developments in England is 80%, and the median social tenant ratio is 97%. This suggests that the social tenant ratio can vary a great deal between developments.
- Purpose built flats represent more than half of all social developments according to this study.
- London based social developments make up a large percentage of all cases with 26% of all social developments observed in England and 20% of all social dwellings.
- Converted flats have a higher level of mixed tenure (i.e. a lower social tenant ratio) than purpose-built flats. Purpose-built flats have a median social tenant ratio of 91%, while converted flats have a median social tenant ratio of 50%.
- London has higher levels of mixed tenure than the rest of England. London also displays greater variation in the degree of mixed tenure across social housing developments. The median social tenant ratio is 79% for outer London, and 76% for inner London. Outside of London, the median social tenant ratio is close to 100%.
    - Non-social household income is higher (on aggregate) in London and is higher still in a certain number of Boroughs (e.g. Kensington and Chelsea, Westminster, Camden).
- Property age appears to have an influence on social tenant ratios with the oldest and the newest properties seeing the greater tendency to have mixed tenure:

    - There is not a clear relationship between property age and non-social household income aggregates, *apart* from in the newer properties (in particular the '2012 onwards' group) where median income is higher.

- As council tax band increases, the social tenant ratio decreases. This is not unexpected because council tax band is generally associated with both property value and larger properties:
    - As council tax band increases, non-social household income increases. The trend is very clear in this analysis.
- The bulk of social dwellings have an EPC band of C or D:
    - As non-social household income increases, current energy efficiency gently increases (improves) with median values moving from a lower 'C' grade to a higher 'C' grade (nearly a 'B' grade).
- Low rise buildings have the lowest level of mixed tenure, followed by high rise and then medium rise buildings. The median social tenant ratio is 100% in low rise social housing developments, followed by 85% in high rise developments and 70% in medium rise developments.
    - Non-social household income seems to rise as the data moves from Low-rise to Medium rise and then to High Rise blocks.
- Increasing household income bracket appears to result in lower social tenant ratios (more mixed tenure) on both the social dwellings and the non-social household income. In short, higher household income is associated with more mixed tenure, although it is not apparent if this is cause or effect.
- It may be that the difference in household income is simply a difference between London based dwellings and dwellings outside of London. Further research might look to confirm this theory.

Appendices

Table 7 Social housing statistics by Property age (NEED) for England

Property age	Number social developments	% share social developments	Number C/HA dwellings in social developments	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
Pre 1919	42,472	9%	124,499	4%	57	50
1919-44	59,400	13%	434,710	13%	85	99
1945-64	137,494	30%	932,330	28%	85	97
1965-82	122,448	27%	1,014,851	30%	85	97
1983-92	29,469	6%	252,733	8%	84	98
1993-99	21,725	5%	229,009	7%	88	100
2000-2011	37,085	8%	267,993	8%	65	84
2012 onwards	6,441	1%	52,879	2%	38	24
Unknown	2,728	1%	22,672	1%	78	95
All cases	**459,262**	**100%**	**3,331,676**	**100%**		

Table 8 Social housing statistics by Council tax band (NEED) for England

Council tax band (mode)	Number social developments	% share social developments	Number C/HA dwellings in social developments	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
A	221,393	48%	1,818,605	55%	94	100
B	116,855	25%	756,371	23%	90	99
C	85,398	19%	518,497	16%	87	98
D	26,093	6%	182,216	5%	86	98
E	6,704	1%	42,500	1%	81	97
F	1,765	0%	10,120	0%	75	92
G	833	0%	2,929	0%	65	72
H	221	0%	438	0%	47	50
All bands	**459,262**	**100%**	**3,331,676**	**100%**		

Table 9 Social housing statistics by Current Energy Efficiency rating (EPC), for England

EPC Current Energy rating	Number social developments	% share social developments	Number C/HA dwellings in social developments	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
A	212	0%	2,943	0%	90	100
B	17,046	4%	175,266	5%	86	98
C	207,353	45%	1,261,104	38%	91	100
D	154,178	34%	752,783	23%	92	100
E	20,099	4%	134,147	4%	91	100
F	2,290	0%	18,787	1%	90	100
G	379	0%	3,233	0%	88	98
no data	57,705	13%	983,388	30%	66	81
All data	**459,262**	**100%**	**3,331,651**	**100%**		

Table 10 Social housing statistics by floorspace (grouped) (EPC), for England

EPC floorspace (grouped)	Numb. of 'SH devs'	% share 'SH devs'	Numb. C/HA dwellings in 'SH devs'	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
less than 50 m²	95,354	21%	756,782	23%	91	100
50 – 75 m²	205,922	45%	962,103	29%	91	100
75 – 100 m²	90,163	20%	526,395	16%	92	100
100 – 125 m²	7,656	2%	52,935	2%	89	100
125 – 150 m²	1,501	0%	9,306	0%	82	99
150 – 175 m²	437	0%	2,021	0%	78	95
greater than 175 m²	524	0%	1,662	0%	76	96
no floor area data	57,705	13%	983,388	30%	91	100
All cases	**459,262**	**100%**	**3,294,592**	**100%**		

Table 11 Social housing statistics by number habitable rooms (grouped) (EPC), for England

Number habitable rooms (grouped)	Number social developments	% share social developments	Number C/HA dwellings in social developments	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
less than 2	5,132	1%	62,706	2%	88	96
2 - 3	243,384	53%	1,428,332	43%	91	100
4 - 5	139,660	30%	724,089	22%	93	100
6 -7	5,769	1%	40,505	1%	91	100
greater than 7	482	0%	2,598	0%	87	98
no room data	64,835	14%	1,073,446	32%	91	99
All cases	**459,262**	**100%**	**3,331,676**	**100%**		

Table 12 Social housing statistics by building height, England

Building height	Numb. social developments	% share social developments	Numb. C/HA dwellings in social developments	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
Low Rise	416,924	91%	2,913,771	88%	81	100
Medium Rise	30,471	7%	214,425	6%	68	70
High Rise	9,746	2%	184,026	6%	73	85
no height data	2,121	0%	19,454	1%	67	78
All cases	**459,262**	**100%**	**3,331,676**	**100%**		

Table 13 Social housing statistics by London Boroughs and all non-London local authorities, England

London Borough	Numb. 'SH devs'	% share 'SH devs'	Numb. C/HA dwellings in 'SH devs'	% share C/HA dwellings	Average social tenant ratio	Median social tenant ratio
Barking & Dagenham	3,566	3%	18,461	3%	80	93
Barnet	3,014	3%	14,371	2%	57	50
Bexley	1,843	2%	11,635	2%	84	98
Brent	4,002	3%	20,214	3%	68	78
Bromley	3,539	3%	15,743	2%	76	99
Camden	4,239	4%	27,797	4%	67	81
City of London	78	0%	754	0%	41	50
Croydon	3,322	3%	19,825	3%	74	90
Ealing	3,930	3%	18,974	3%	67	77
Enfield	2,618	2%	13,988	2%	63	67
Greenwich	4,753	4%	30,970	5%	73	89
Hackney	5,947	5%	39,613	6%	70	83
Hammersmith & Fulham	2,722	2%	19,674	3%	65	78
Haringey	3,488	3%	18,837	3%	64	72

Harrow	1,300	1%	7,686	1%	71	83
Havering	2,242	2%	11,805	2%	74	85
Hillingdon	2,879	2%	14,818	2%	74	87
Hounslow	3,780	3%	20,937	3%	71	86
Islington	5,418	5%	33,490	5%	65	75
Kensington & Chelsea	1,746	1%	14,286	2%	63	86
Kingston Upon Thames	1,346	1%	6,192	1%	70	86
Lambeth	7,004	6%	41,336	6%	66	77
Lewisham	6,109	5%	30,992	5%	75	89
Merton	1,804	2%	9,723	1%	74	83
Newham	5,176	4%	25,175	4%	62	69
Redbridge	1,572	1%	7,571	1%	67	75
Richmond Upon Thames	1,831	2%	8,649	1%	73	85
Southwark	8,333	7%	52,295	8%	69	77
Sutton	1,737	1%	10,842	2%	78	94
Tower Hamlets	6,931	6%	42,998	6%	57	63
Waltham Forest	3,406	3%	16,113	2%	67	78
Wandsworth	4,987	4%	22,503	3%	55	59
Westminster City	3,108	3%	20,266	3%	46	50
** not London	341,491	0%	2,663,130		85	99
All Greater London cases	**117,770**	**100%**	**668,533**	**100%**		

Dwelling floorspace

By linking NEED data to the EPC data it was possible to reveal attributes other than just the EPC rating shown in previous sections. One attribute was floorspace of the dwelling as recorded by the EPC. Using this it was possible to look at variations in floorspace for those records that matched to an EPC. The floorspace values have been aggregated into groups as shown in Table 10 (annex). This shows that when floorspace is aggregated for each block then the top grouping is the average floorspace of '50 -75m²' (45%) followed by 'less than 50m²' (21%) and then '75–100m²' (20%). 13% of all social developments do not link to any EPC at all and hence cannot be classified.

At the dwelling level the largest percentage (30%) is for the dwellings which have no floor area data due to a lack of linkage to an EPC. The next largest is the of '50 -75m²' category which has 29% of all of social dwellings followed by the 'less than 50m²' (23%).

Table 10 (annex) also shows the average and median social tenant ratios for each floorspace grouping and can be used along with Figure 23 to look at the statistics for the social tenant ratios for each floorspace group. Whilst the median social tenant ratio doesn't change greatly across the different floorspace groups, it is clear that it drops slightly as floorspace increases and the interquartile range (the spread of the middle 50% of values) also increases with increasing floorspace. This suggests that smaller dwellings are likely to have larger social tenant ratios whilst dwellings with larger floorspace are more likely to exist in mixed tenure social developments.

Figure 24 shows that across the different aggregations of social tenant ratios, median floorspace (according to the social dwellings that match to EPCs) is slightly higher in the bottom two social tenant ratio groupings (0%-20% and 20%-40%) compared to the other three social tenant ratio groupings (40%-60%, 60%-80% and 80%-100%) where the median floorspace is closer to 60m².

Figure 23 box and whisker plot showing social tenant ratios for each social development by floorspace (grouped) (derived from EPC)

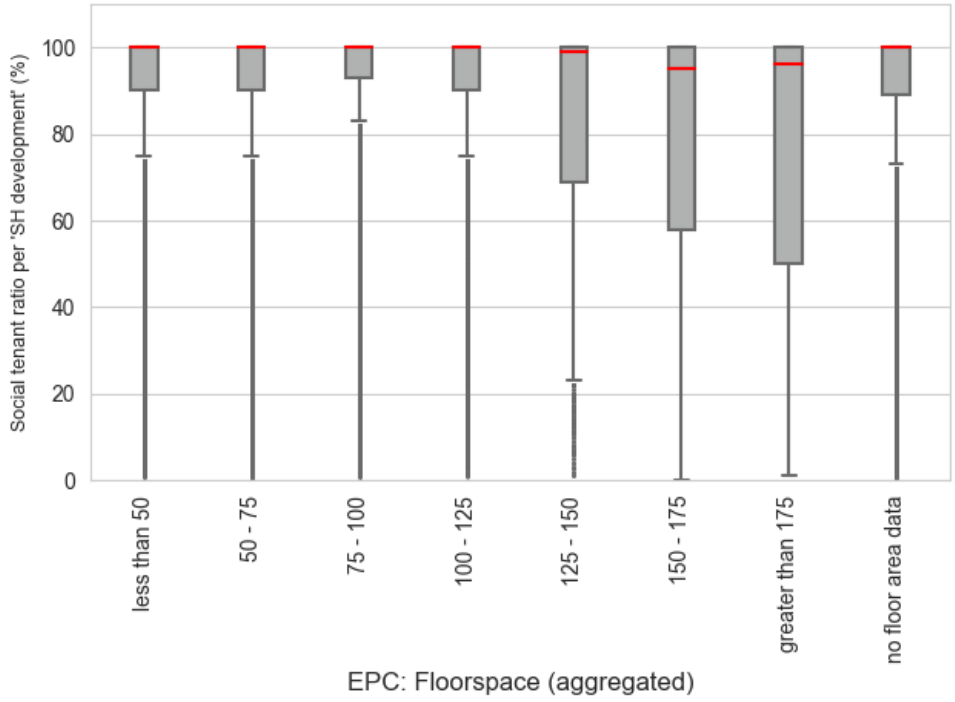
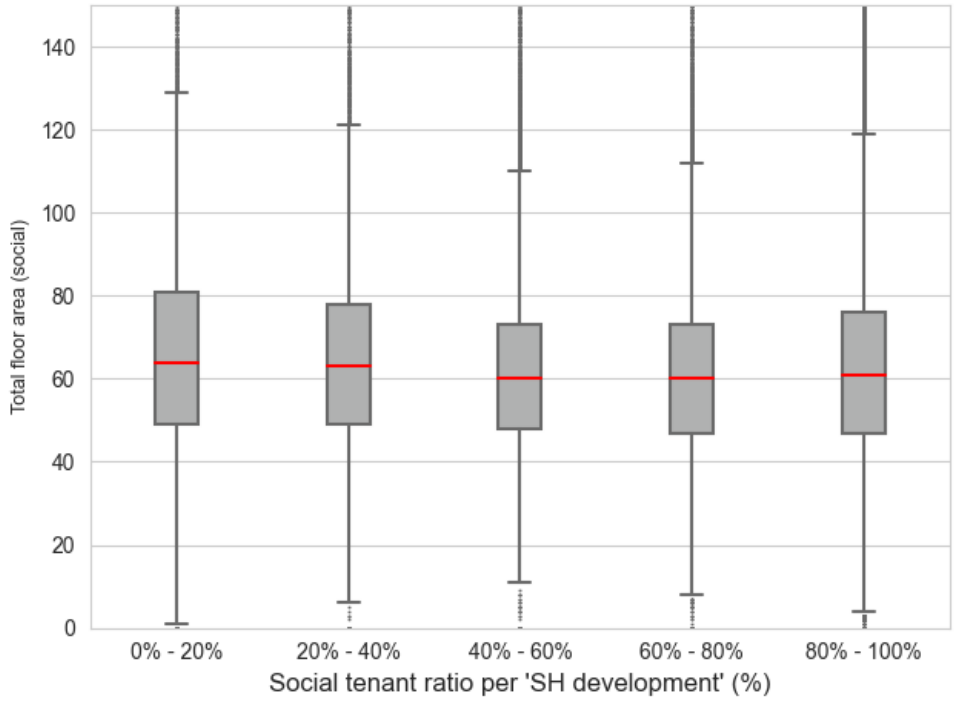


Figure 24 box and whisker plot showing floor area for just social dwellings for different categories of social tenant ratio (social housing dwellings as percentage of all dwellings)

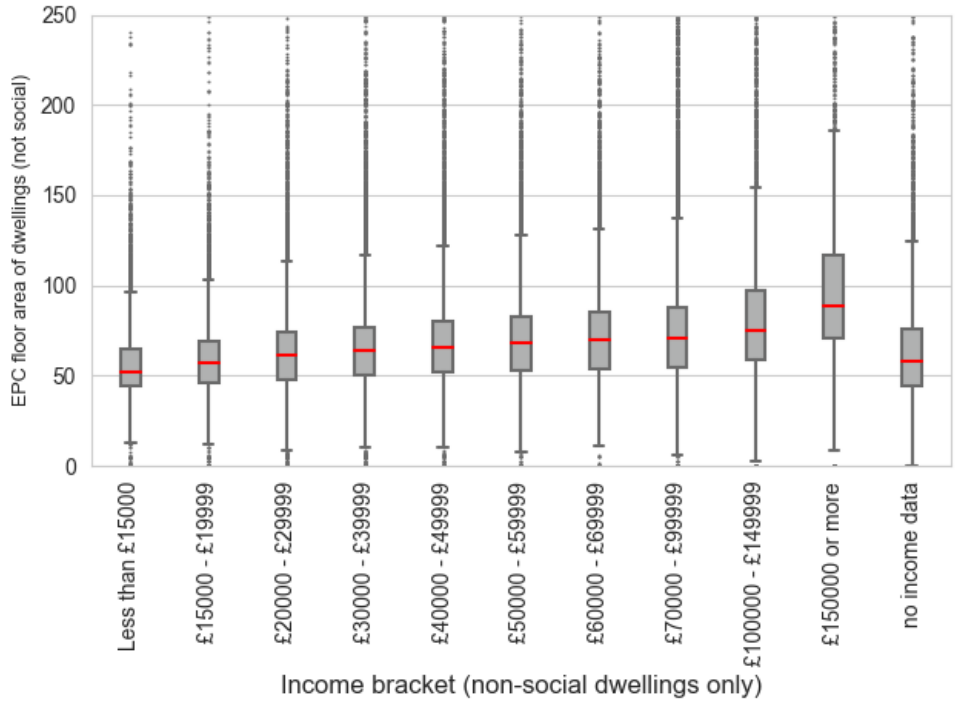


Dwelling floorspace – income of non-socially rented dwellings

Figure 25 shows the floorspace of non-social household dwellings (in social developments) by income bracket. This shows a fairly clear pattern, in that as household income increases, the

aggregate dwelling floorspace values increase as well. Non-social housing dwellings with a household income of below £15K have a median floorspace of around 50m² whilst those with a household income of over £100K have a median floorspace of around 75m² or higher with median floorspace gradually increasing across the intervening income brackets.

Figure 25 box and whisker plot showing dwelling floorspace (EPC) for non-social housing dwellings in social developments aggregated by household income (non-social dwellings) (NEED)



Number of habitable rooms

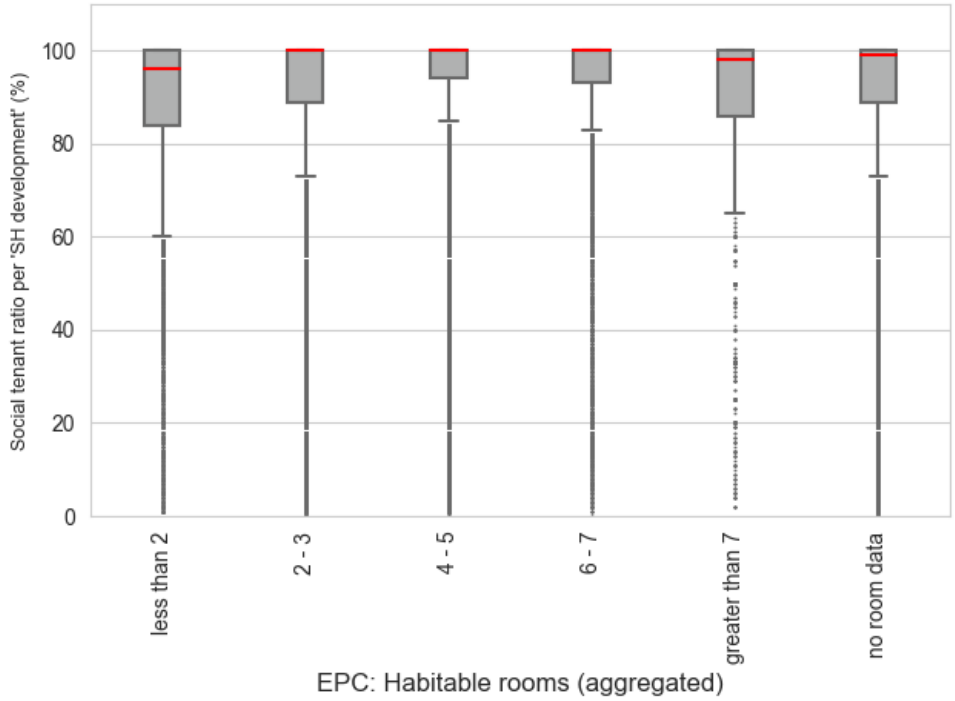
Table 11 (annex) shows the data on the number of habitable rooms, derived from the EPC data that matched successfully to NEED dwellings which fall inside social developments. The number of habitable rooms has been grouped into aggregates (for example ‘less than 2 rooms’) to simplify the results. The table shows that more than half (53%) of social developments have an average number of habitable rooms (for social dwellings inside) of 2-3 (rooms). 30% of social developments have 4-5 habitable rooms whilst 14% of social developments do not match to any EPC data and hence cannot be allocated an average number of habitable rooms.

When the data is analysed at the individual dwelling level, then the percentages are somewhat different; 43% of social dwellings in social developments have 2-3 habitable rooms. However, 32% have no habitable room data. The third largest group is the 4-5 habitable room category which represents 22% of all social dwellings.

Median social tenant ratios for all the different habitable room categories are close to 100 as is shown in Figure 26, with the interquartile range being slightly larger in the ‘less than 2’ habitable rooms category (where the interquartile range is 16) and the ‘greater than 7’ category

(where the interquartile range is 14). This suggests that mixed tenure ratios are likely to be slightly lower in dwellings with relatively few rooms or dwellings with greater than 7 rooms.

Figure 26 box and whisker plot showing social tenant ratios for each social development by number of habitable rooms (grouped) (derived from EPC)



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