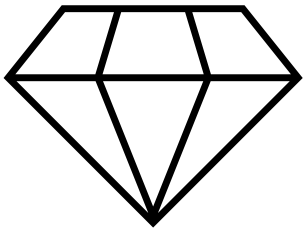
Cambridgeshire, Peterborough & West Suffolk

Diamond affordability analysis update 2022

Methodology



Published July 2023

Cambridgeshire, Peterborough & West Suffolk: Diamond affordability analysis update 2022 methodology

Background

In 2022, a range of data was collated to help visualize how housing markets work across Cambridgeshire, Peterborough and West Suffolk, their household income distribution, weekly housing cost, pay scales for local workers, and supply of dwellings through turnover and new build.

The data has been converted to a series of tables and diagrams for each district. The centrepiece is a diamond-shaped diagram we have called a 'diamond-o-gram' which shows number and percentage of households in different income groups.

This is presented in a diamond shape which can be visually aligned with other data to show the sizes, types and tenures of housing those households may be able to access locally.

In this summary, thumbnails of various charts are presented to give the idea of the layouts and how they have been used. To see larger versions of the charts, please look at the slides or the compendium.

Contents

1 Introduction

This note outlines the methodology behind the diamond affordability analysis across Cambridgeshire, Peterborough and West Suffolk. To see

- The executive summary
- A report covering the whole study area and a slide deck for the whole study area
- Individual district summaries and a slide deck for each district
- A methodology note
- The compendium of data behind these documents (in excel format)

…please follow this link https://cambridgeshireinsight.org.uk/housing/local-housing-knowledge/our-housing-market/affordability-analysis/

Each section of this area-wide summary starts with some summary points, followed by graphs and charts setting out totals and comparisons across the study area. The summary points have been used to form the executive summary.

The methodology used will be outlined one by one, including and our approach, notes on the data, and source / dates. Where needed, an example of the data is included to help explain the methodology, however the outcomes for each area covered are published separately in the district summaries and the 'whole study area' report.

2 Context

To compare housing markets and to understand the supply of homes in each district, the Diamond Analysis provides a profile of dwellings and household types, as well as some insight into the number of households "likely to move" in a year.

2.1 Use of Census 2011 data

To help put this all into context, Census 2011 has been used. Although Census 2021 results have started being released, at time of publication there was not enough detailed data published to make use of in the diamond analysis.

Census data is used mainly as background to provide some context for the rest of the diamonds report but can be updated as and when Census 2021 detail is released. This can be fed in as soon as it becomes available, we anticipate late in 2023.

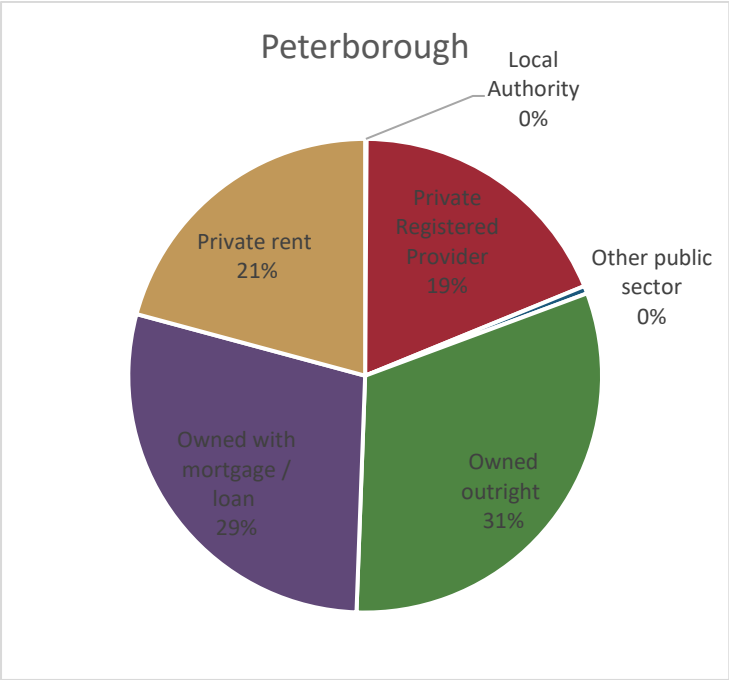
2.2 Tenure of dwellings

Combines data from CLG table 100 (blue text) and ONS estimates (green text) to provide an estimate of dwellings by tenure, up to CLG: 31 March 2020 and ONS annual estimates, 2012 to 2020 (we have used 2020 data)

Table 1. Combining CLG table 100 (blue) and ONS estimates (green), 2020

Dwellings	Local Authority	Private Registered Provider	Other public sector	Owned outright	Owned with MG / loan	Private rent	All
Cambridge	7,105	5,310	104	16,656	11,304	15,192	55,671
East Cambridgeshire	9	5,316	126	14,565	11,937	6,352	38,305
Fenland	34	5,785	0	18,757	13,046	8,021	45,643
Huntingdonshire	65	10,153	570	29,290	25,412	12,411	77,901
Peterborough	88	16,011	448	26,722	24,474	17,799	85,542
South Cambridgeshire	5,787	4,085	0	27,742	21,285	9,819	68,718
West Suffolk	54	12,354	0	29,593	21,729	16,719	80,449
Greater Cambridge	12,892	9,395	104	44,398	32,589	25,011	124,389
All	13,142	59,014	1,248	163,325	129,187	86,313	452,229

Graph 1. Dwelling stock by tenure (Peterborough as example)

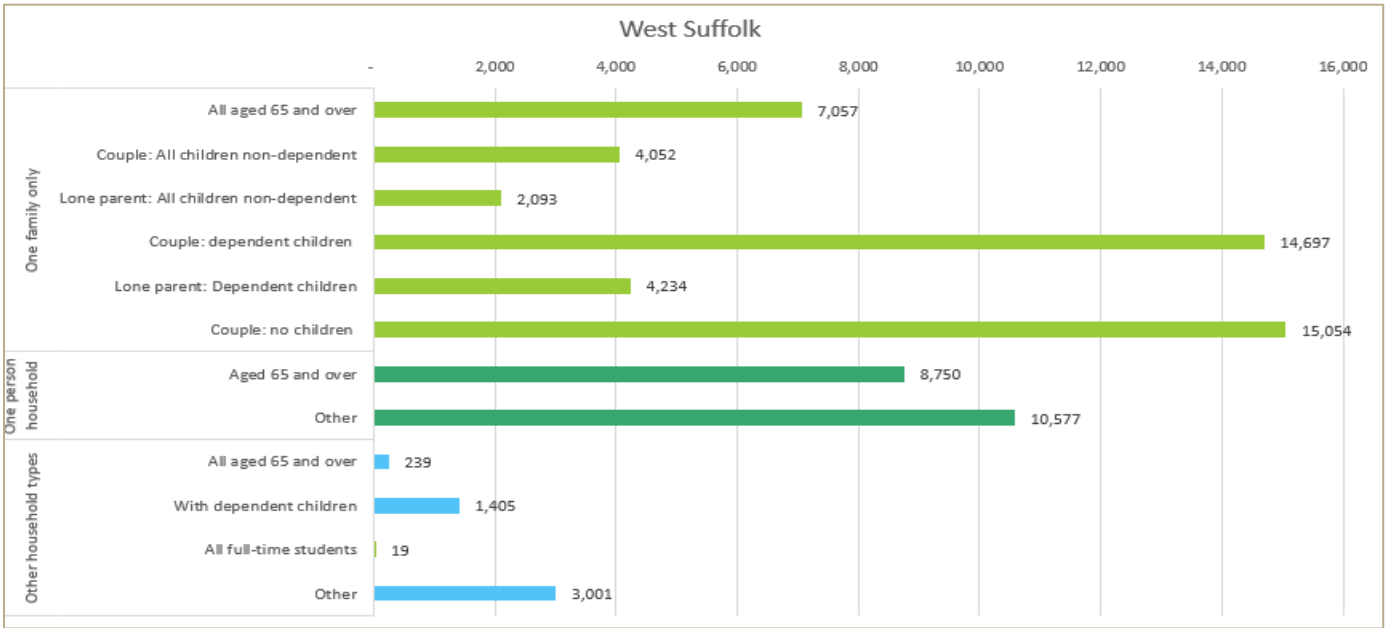


2.3 Household and family types

Number of households broken into household type and then family type.

Provides context for other informaiton presented including number of student,s older people, families etc, from Census 2011.

Graph 2. Household and family type (using West Suffolk as an example)

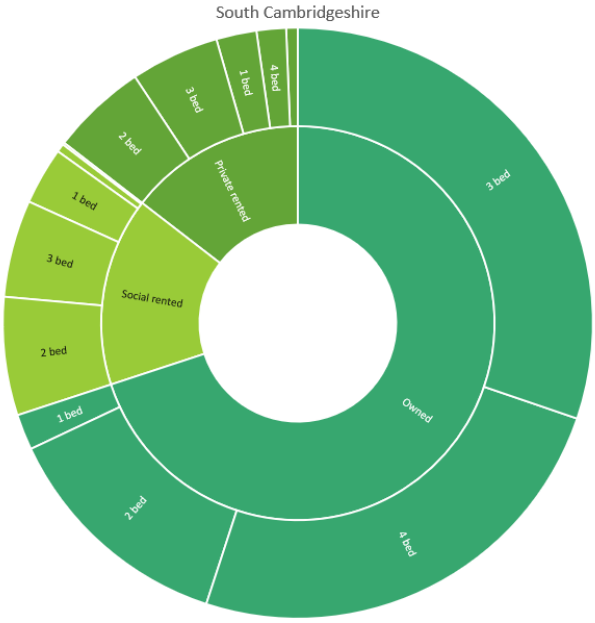


2.4 Household tenure and number of bedrooms

Number of households living in different property sizes i.e. number of bedrooms, grouped by broad tenure from Census 2011, presented in a pinwheel chart to assist with comparison of both tenure and size.

Please bear in mind this is household, not dwellings data.

Graph 3. Tenure and size of homes (South Cambridgeshire as example)



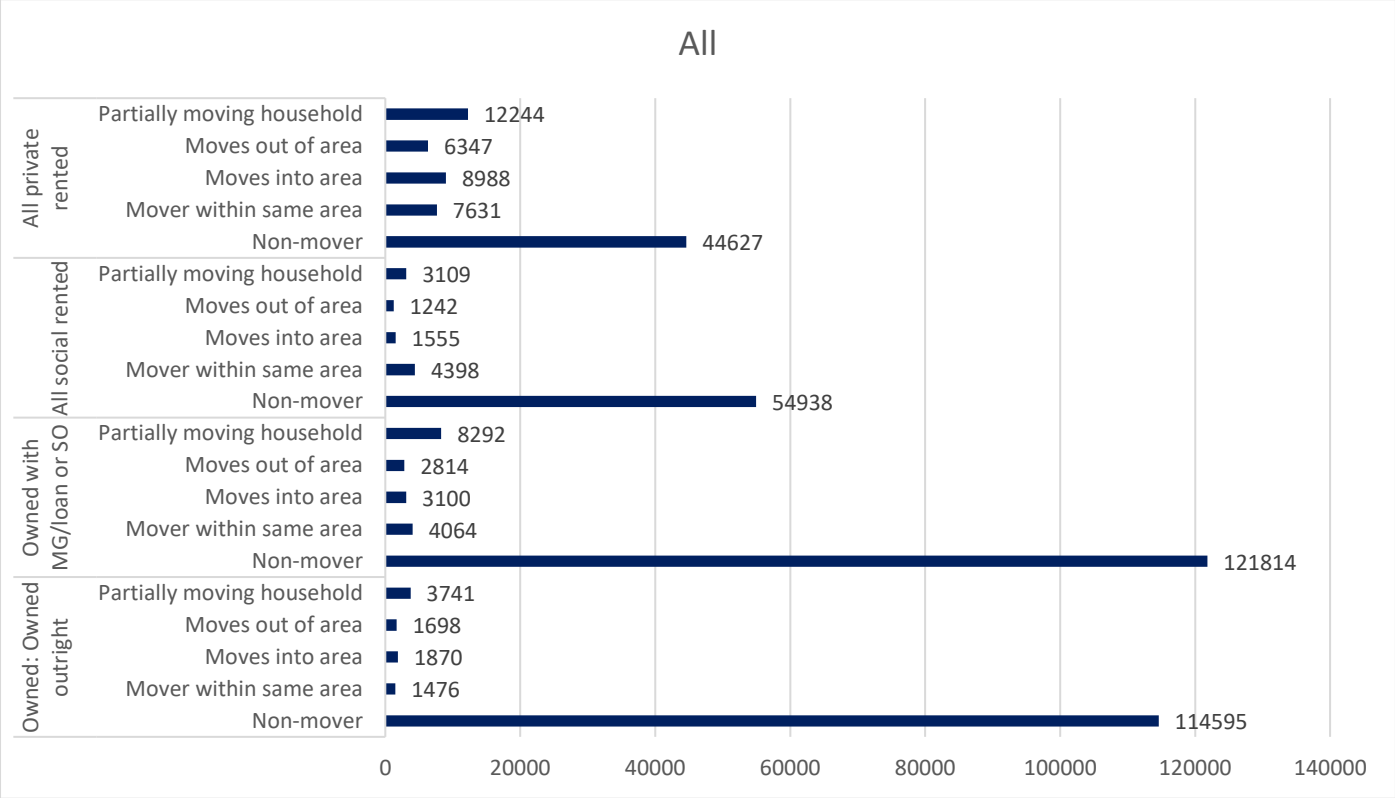
2.5 How many households might move in a year?

Sets out data from Census 2011 which analysed movers into and out of each area, during the year before Census Night (Census 2011, table UKMIG011)
Of the moves within a district in a year, what proportion are non-movers, in / out and of each tenure?
Please bear in mind this is MOVERS WITHIN ONE YEAR. It is not a guarantee of repeated moving patterns in future but helps understand who may be more, and less, likely to move.

Table 2. Household moves, whole area

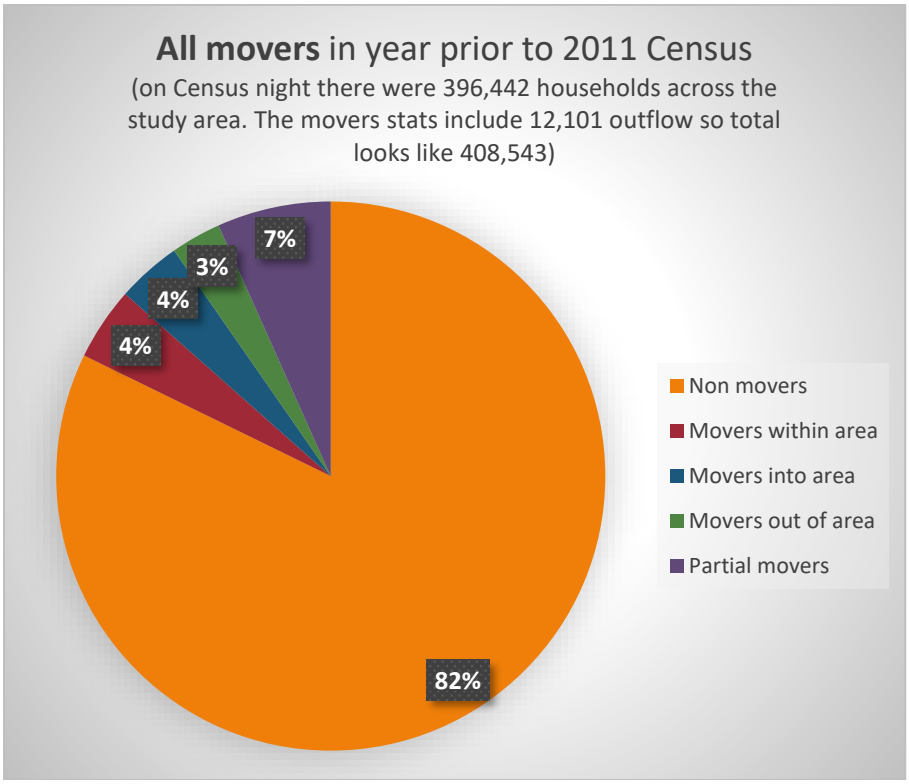
Migration	Whole household lived at same address one year ago	Wholly moving household: Total	Wholly moving household: Inflow: Total	Wholly moving household: Outflow: Total	Partially moving household	All households	Census Hholds table	Difference = outflow
Cambridge	35,435	7,935	2,691	2,787	6,131	49,501	46,714	2,787
East Cambridgeshire	29,980	3,759	1,454	990	1,865	35,604	34,614	990
Fenland	35,627	3,757	1,087	894	2,130	41,514	40,620	894
Huntingdonshire	59,894	7,043	2,394	1,671	4,067	71,004	69,333	1,671
Peterborough	62,442	8,054	1,953	1,737	5,264	75,760	74,023	1,737
South Cambridgeshire	52,116	6,629	2,637	2,215	3,430	62,175	59,960	2,215
West Suffolk	60,480	8,006	3,297	1,807	4,499	72,985	71,178	1,807
All	335,974	45,183	15,513	12,101	27,386	408,543		
Greater Cambridge	87,551	14,564	5,328	5,002	9,561	111,676		

Graph 4. Likelihood of moving (using whole study area as an example)



This is presented also as a pie chart to show the breaksdown of “types” of move:

Graph 5. Types of move



Using these figures we can work out, based on the total households in the same tenure groups as the "movers" data using Census 2011 household data, that across the whole area, likelihood of whole or partial household moves might be…

Tenure	Likely to move	Less likely to move
Outright owners	9%	91%
Owners with a mortgage of shared ownership	15%	85%
Social renters	18%	82%
Private renters	50%	50%

This is useful to highlight that in any housing market analysis around affordability and availabilty there is no need to consider moves for all current occupants of the area; on the whole, only those likely to move.

2.6 Data notes

- Using the 2011 Census: CLG/ONS data is produced between the 10 yearly Census dates and estimates total dwelling stock at the national and regional levels using the Census count as a baseline and project this forward using information on annual net supply of housing, such as the annual LAHS return (about council owned dwellings), the Regulator of Social Housing Statistical Data Return (SDR) (about housing association dwellings). For other tenures, sources are the Annual Population Survey (2011 Census) and Live tables of dwelling stock, English Housing Survey (Department for Levelling Up, Housing and Communities).
- Census 2011 data on tenure depends on respondent accuracy, so in stock transfer areas some residents may think of themselves as 'council'.
- Definition of Census moves: In summary: a 'wholly moving household' is one where all members of the household have moved from the same address. A 'partly moving household' is where one or more members of the household have moved in the last year but not all members have moved from the same address. This includes only those partly moving households which were resident in the area on Census Day. Link *https://www.nomisweb.co.uk/census/2011/ukmig009* Date: 2011

- Household types: “Other” households are classified by the number of people, the number of dependent children, or whether the household consists only of students or only of people aged 65 and over. Households not falling into these categories is classed as “other”

2.7 Data sources

- Office for National Statistics (ONS) Subnational estimates of dwellings by tenure, England: Table 1b Counts of dwelling stock by tenure in each local authority, England and sources feeding into Table 1b are Annual Population Survey, 2011 Census - ONS, Live tables of dwelling stock, English Housing Survey - Department for Levelling Up, Housing and Communities Link: Subnational estimates of dwellings by tenure, England - Office for National Statistics (ons.gov.uk) Date: Covers 2012-2020, we use 2020
- Dwellings CLG Table 100 Dwelling stock: Number of Dwellings by Tenure and district: England (CLG now known as DLUHC) Link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1074203/LT_100.ods Date:31-Mar-2020
- Census household types: Household Composition – Households Ref QS113EW. Links: Cambridgeshire_and_Peterborough - Population - District | South Cambridgeshire | InstantAtlas Reports (cambridgeshireinsight.org.uk); Forest Heath - UK Census Data 2011; St Edmundsbury - UK Census Data 2011 Date: 2011
- Tenure by household size by number of bedrooms Ref DC4405EW Link: https://www.nomisweb.co.uk/census/2011/ Date: 2011
- Household migration by tenure Ref UKMIG011 Link https://www.nomisweb.co.uk/census/2011/ Date: 2011
- Census: Migration including students Link: https://www.nomisweb.co.uk/census/2011/ukmig009 Date: 2011

3 Income

3.1 Income distribution

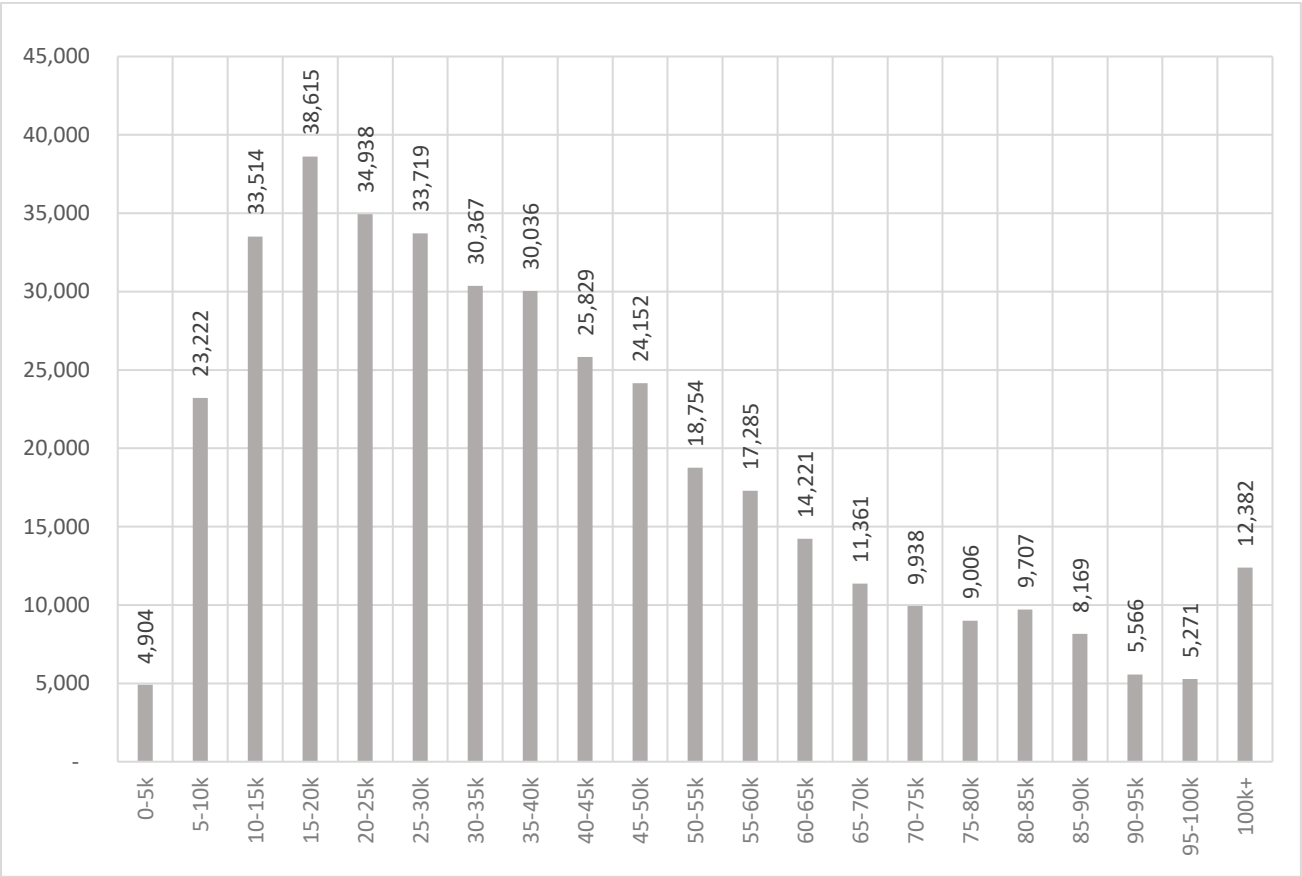
When looking at housing affordability, household incomes and housing costs are the two key issues to assess in relation to each other. Affordability ratios are often quoted and used which express housing income to housing cost as a ratio, often using median or lower quartile measures.

Using CACI data we can look into more detail at the distribution of households into £5,000 income bands, so rather than looking at an average across a geographical area, we can see the number of households in each income band, which means more subtle patterns and comparisons can be identified.

Income distribution and change in income. CACI developed its ‘Paycheck’ product to provide consistent and reliable household income estimates at full postcode level across the UK. It uses information from CACI's lifestyle database, in conjunction with data from the ONS’s Average Weekly Earnings and Living Costs & Food Survey to build a consistent and statistically reliable model. Income reflected by Paycheck is **gross** household income from **all** sources including earnings, benefits and investments. As well as providing the mean, median and mode income, it also breaks down into £5,000 bands.

There are a number of households in the lowest income bands, who we would expect should be supported by the benefit system so no-one would be on an income of less than £5K per year. However there are typically students and adults of pensionable age and some disadvantaged families in this banding. It is also important to note that benefits are claimed by people higher up the income spectrum, it is not the sole preserve of the poorest households; these benefits help many households on modest and middling incomes make ends meet.

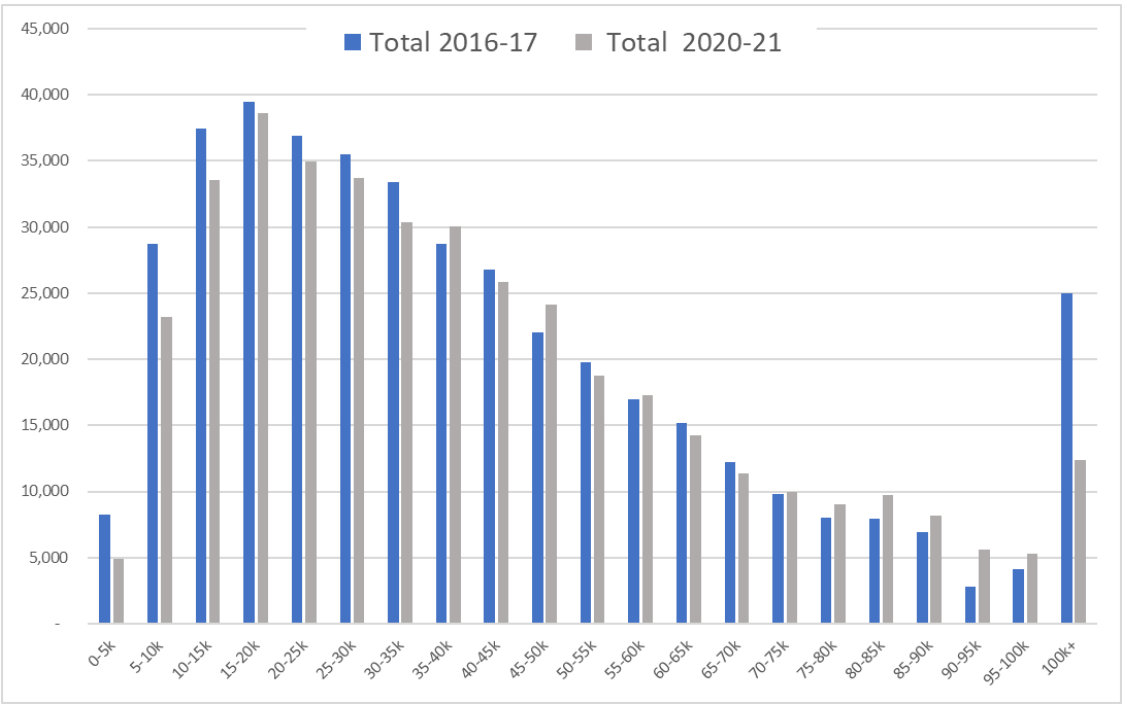
Graph 6. Income distribution (whole study area)



3.2 Change in income distribution

Here we can compare the first Diamond Affordability Analysis with this update, as the two sets of CACI data are broken down in the same way.

Graph 7. Whole study area:



3.3 Data notes

- About CACI data: A firm called CACI developed away to provide consistent and reliable household income estimates at postcode level across the UK. It uses information from CACI's lifestyle database, ONS average weekly earnings and living costs & food survey to build a consistent and statistically reliable model.
- Income is gross household income from all sources including earnings, benefits and investments.
- The data is provided as mean, median and mode income, and also breaks down into £5,000 bands.
- There are a number of households in the lowest income bands, who we would expect should be supported by the benefit system so no-one would be on an income of less than £5k per year. However there are typically students and adults of pensionable age and some disadvantaged families in this banding.
- It is also important to note that benefits are claimed by people higher up the income spectrum, it is not the sole preserve of the poorest households; these benefits help many households on modest and middling incomes make ends meet.
- CACI data is provided on a subscription basis, there is no web link to the source data. Local access comes via our subscription to Hometrack.
- CACI stands for Consolidated Analysis Centre Incorporated.

3.4 Data sources

- CACI via Hometrack subscription Link: None (not open data) Date: Jan 2020 – Jan 2021 (updated May 2021)
- 2020-21 data compared to 2018 diamonds, which used January 2016 to December 2016 CACI data published April 2017 (link https://cambridgeshireinsight.org.uk/wp-content/uploads/2018/07/diamonds-report-17-july.pdf

4 Housing costs

Housing costs are needed in consistent format to align to the income diamond-o-gram. The idea is to create a visual tool so we can read "up and down" between (a) the income diamond showing household income distribution and (b) the cost of a wide range of housing tenures and sizes.

Many housing costs come from the Cambridgeshire, Peterborough and West Suffolk Housing Market Bulletin, which are weekly costs, and convert them to annual housing costs which can be compared to annual income distribution by multiplying the housing costs by 3.5 (representing 35% affordability ratio) and also by the % affordability ratio suggested by G.L. Hearn in their report (**add title**).

The major assumption here is that we are aiming for housing costs to represent no more than 35% of income. This does not reflect the current reality - however without a multiplier we cannot relate the number of households in a certain income to the weekly cost of housing they might afford, so we need to make an assumption.

The housing costs used exclude certain charges e.g. deposits and service charges; so we judged that using a reasonably low multiplier would help negate the effect of the weekly costs being likely to be an underestimate of the real cost of housing.

About Hometrack: All seven authorities across the study area purchase Hometrack data under an annual subscription. Hometrack is not open data as it is provided under a licence agreement and is not freely shareable. However you can find the local Housing Market Bulletins over time here http://cambridgeshireinsight.org.uk/housingmarketbulletin

The costs used in the diamond analysis refer to a four quarters' data (July 2020, Sept 2020, Dec 2020, and March 2021).

Table 3. Converting weekly to annual to "income needed to afford" (example is West Suffolk)

Tenure	Area	Beds	Bulletin Edition				Price to use (avg)	annual = x 52
			Ed 46 July '20 data	Ed 47 Sept '20 data	Ed 48 Dec '20 data	Ed 49 March '21 data		
HA social rent	Former Forest Heath & Former St Ed's	1	£ 79	£ 79	£ 79	£ 79	£79	£4,083
		2	£ 91	£ 91	£ 91	£ 91	£91	£4,731
		3	£ 101	£ 101	£ 101	£ 101	£101	£5,235
HA affordable rent	Former Forest Heath & Former St Ed's	1	£ 110	£ 110	£ 110	£ 110	£110	£5,718
		2	£ 129	£ 129	£ 129	£ 129	£129	£6,714
		3	£ 149	£ 149	£ 149	£ 149	£149	£7,734
Intermediate rent	Former Forest Heath	1	£ 115	£ 115	£ 120	£ 120	£118	£6,110
		2	£ 147	£ 151	£ 152	£ 166	£154	£8,008
		3	£ 186	£ 199	£ 194	£ 198	£194	£10,101
	Former St Ed's	1	£ 120	£ 120	£ 121	£ 124	£121	£6,305
		2	£ 146	£ 146	£ 147	£ 154	£148	£7,709
		3	£ 180	£ 182	£ 186	£ 202	£188	£9,750
Median private rent	Former Forest Heath	1	£ 144	£ 144	£ 150	£ 150	£147	£7,644
		2	£ 184	£ 189	£ 190	£ 207	£193	£10,010
		3	£ 233	£ 249	£ 242	£ 248	£243	£12,636
	Former St Ed's	1	£ 150	£ 150	£ 151	£ 155	£152	£7,878
		2	£ 182	£ 183	£ 184	£ 193	£186	£9,646
		3	£ 225	£ 228	£ 232	£ 253	£235	£12,194
LQ resale	Former Forest Heath	1	£ 115	£ 113	£ 112	£ 114	£114	£5,902
		2	£ 140	£ 143	£ 156	£ 160	£150	£7,787
		3	£ 214	£ 210	£ 218	£ 223	£216	£11,245
	Former St Ed's	1	£ 144	£ 142	£ 144	£ 138	£142	£7,384
		2	£ 162	£ 158	£ 160	£ 160	£160	£8,320

Tenure	Area	Beds	Bulletin Edition				Price to use (avg)	annual = x 52
			Ed 46 July '20 data	Ed 47 Sept '20 data	Ed 48 Dec '20 data	Ed 49 March '21 data		
		3	£ 235	£ 234	£ 239	£ 241	£237	£12,337
Avg resale	Former Forest Heath	1	£ 128	£ 127	£ 129	£ 133	£129	£6,721
		2	£ 163	£ 167	£ 184	£ 179	£173	£9,009
		3	£ 251	£ 247	£ 251	£ 255	£251	£13,052
	Former St Ed's	1	£ 160	£ 158	£ 160	£ 157	£159	£8,255
		2	£ 188	£ 184	£ 186	£ 185	£186	£9,659
		3	£ 278	£ 273	£ 282	£ 287	£280	£14,560
Homebuy	Former Forest Heath	1	£ 122	£ 119	£ 118	£ 115	£119	£6,162
		2	£ 171	£ 171	£ 175	£ 175	£173	£8,996
		3	£ 217	£ 217	£ 217	£ 221	£218	£11,336
	Former St Ed's	1	£ 148	£ 148	£ 147	£ 143	£147	£7,618
		2	£ 194	£ 194	£ 194	£ 198	£195	£10,140
		3	£ 240	£ 240	£ 244	£ 249	£243	£12,649
LQ new build	Former Forest Heath	1	£ 283	£ 278	£ 282	NA	£281	£14,612
		2	£ 288	NA	NA	£ 280	£284	£14,768
		3	£ 240	£ 240	£ 238	£ 279	£249	£12,961
	Former St Ed's	1	£ 135	£ 132	NA	NA	£134	£6,942
		2	£ 247	£ 243	£ 183	£ 224	£224	£11,661
		3	£ 339	£ 333	£ 337	£ 318	£332	£17,251
Avg newbuild	Former Forest Heath	1	£ 283	£ 278	£ 282	NA	£281	£14,612
		2	£ 288	£ 115	NA	£ 280	£228	£11,839
		3	£ 255	£ 251	£ 255	£ 331	£273	£14,196
	Former St Ed's	1bed	£ 135	£ 132	NA	NA	£134	£6,942
		2bed	£ 362	£ 356	£ 186	£ 269	£293	£15,249
		3bed	£ 347	£ 336	£ 370	£ 346	£350	£18,187

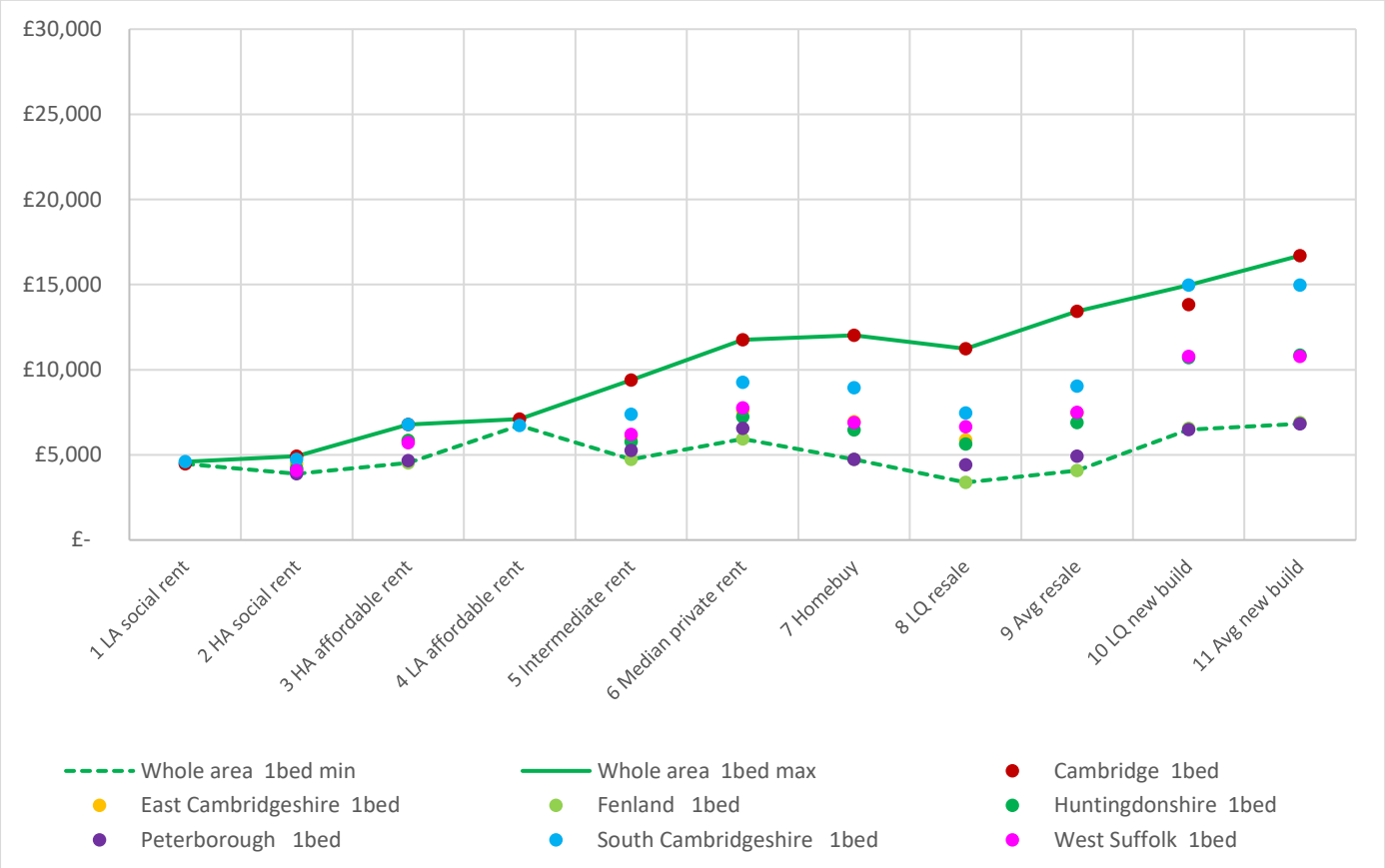
Table 4. Workings for housing costs: weekly costs from HMB annualized (x 52) and x 3.5 to represent "income needed to afford" (West Suffolk as example)

	Weekly cost annualized			x 3.5 to give income needed to afford		
	1bed	2bed	3bed	1bed	2bed	3bed
1 LA social rent	N/A	N/A	N/A	N/A	N/A	N/A
2 HA social rent	£4,084	£4,730	£5,232	£14,293	£16,556	£18,312
3 HA affordable rent	£5,718	£6,714	£7,734	£20,013	£23,500	£27,071
4 LA affordable rent	N/A	N/A	N/A	N/A	N/A	N/A
5 Intermediate rent	£6,208	£7,859	£9,926	£21,726	£27,505	£34,739
6 Median private rent	£7,761	£9,828	£12,415	£27,164	£34,398	£43,453
7 Homebuy	£6,890	£9,568	£11,993	£24,115	£33,488	£41,974
8 LQ resale	£6,643	£8,054	£11,791	£23,251	£28,187	£41,269
9 Avg resale	£7,488	£9,334	£13,806	£26,208	£32,669	£48,321
10 LQ new build	£10,777	£13,215	£15,106	£37,720	£46,251	£52,871
11 Avg new build	£10,777	£13,544	£16,192	£37,720	£47,403	£56,670

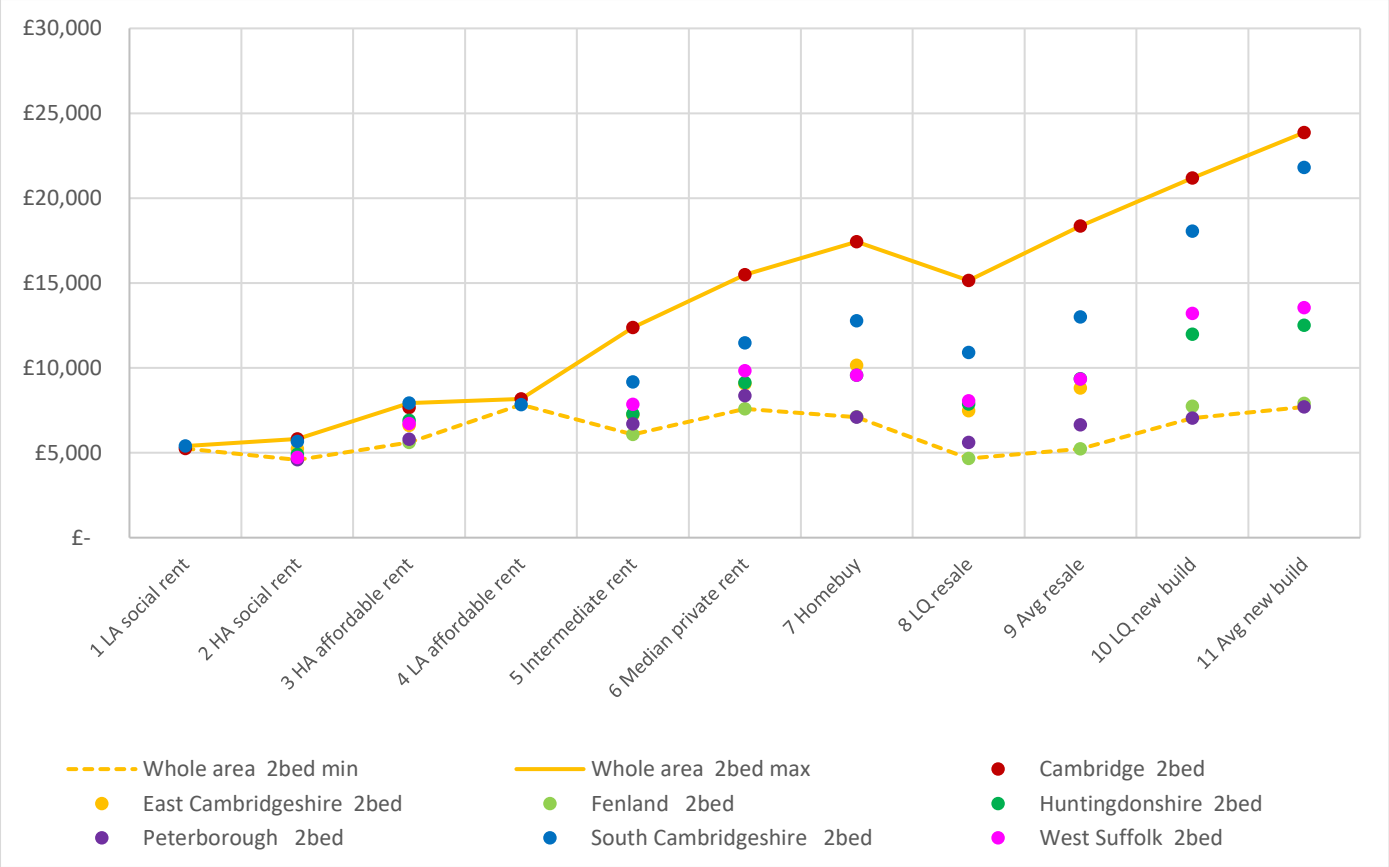
Graphs

To summarize across the area the average housing cost data over the year 2020-2021 is set out for each district. The solid green line highlights the highest costs across the study area (max) and the dotted green line highlights the lowest (min). This helps us see a spectrum of housing costs locally

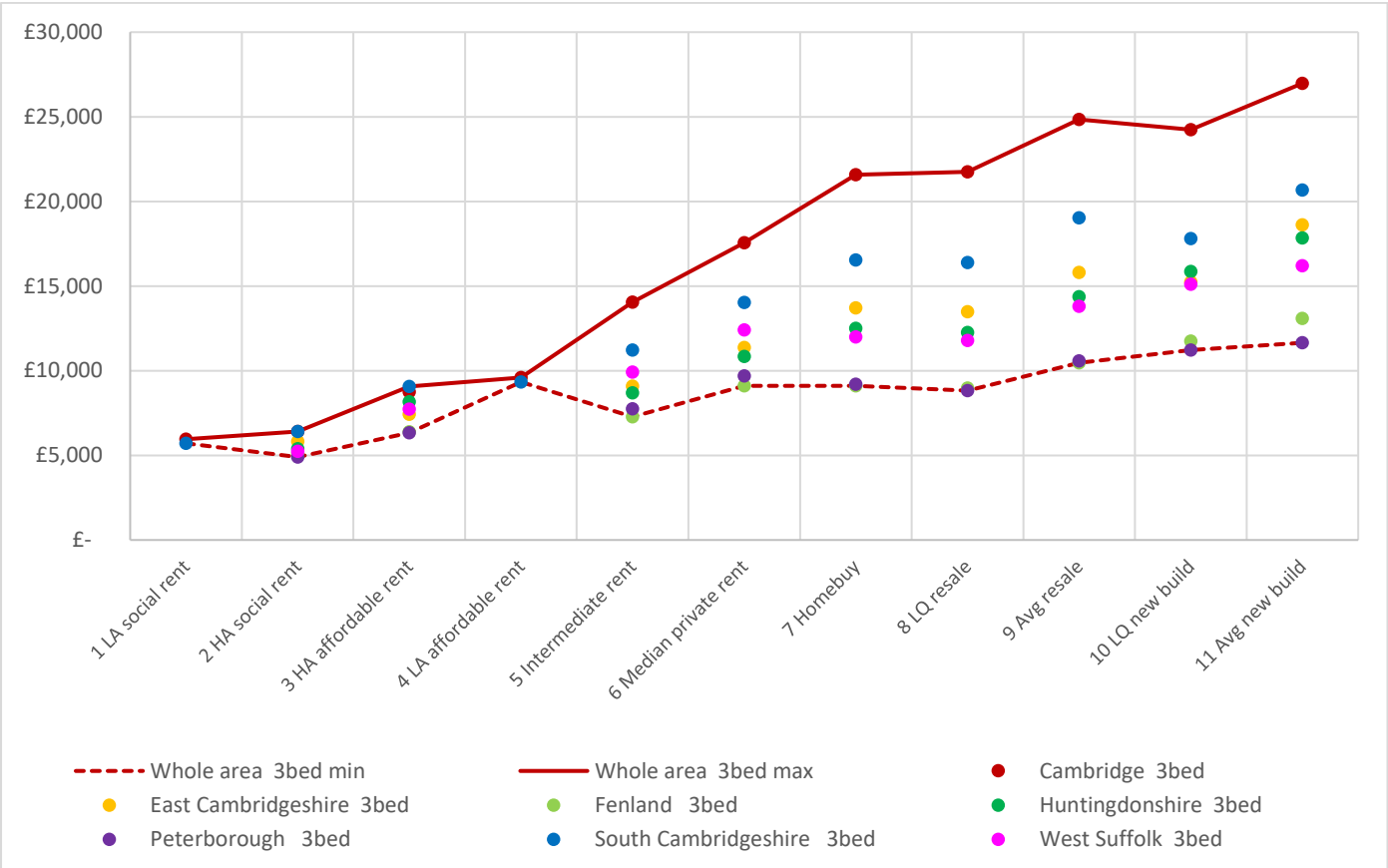
Graph 8. 1 bed



Graph 9. 2 bed



Graph 10. 3 bed



4.1 Data notes

- The term Private Registered Provider has been used in places; this can be taken to also mean Housing Associations (HA) in this section.
- Costs are set out for each tenure of home, and for 1 2 and 3+ beds.
- For home purchase, prices relate to the purchase price of a home but exclude payments made to secure the home such as deposits and legal fees. This enables us to compare the annual cost of a mortgage, with the annual cost of rented housing. However, it is important to remember that deposits, legal fees etc. are required and will form an additional expense, a possible barrier especially for first time buyers. Costs are annual even if sources quote weekly or monthly amounts, to compare costs at a later stage to annual income.
- Intermediate rents are calculated by Hometrack based on 80% of the current median private rent. Since housing associations / PRPs set their affordable rent at no more than 80% of the median private rent, you might imagine the two values would be similar. the housing cost for intermediate rent and HA affordable rent may well differ. This can be because the HA rents were set some time ago so relied on private rent levels at that time, private rent level swill have changed since then, and HAs are restricted on the rent changes they can make each year.

4.2 Data sources

- Average Local Authority social and 'affordable' rents: Local Authority Data Return (LADR). Only available in Cambridge and South Cambs. Link: About the LADR return: https://nroshplus.regulatorofsocialhousing.org.uk/Help/NROSHGuideLADR.pdf Date: 2020-2021.
- Data used in Mar 2021 edition from new LAPR tool at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/963098/LARP_TOOL_2020_FINAL.xlsx. Source LAPR 2019-20: avg social & avg affordable rent for 2 districts & region

- Average Housing Association social and 'affordable' rents: Average rent reported in Homes England's PRPR data return using social rent and affordable rent. General needs housing only, no service charges included, "net rent" figure used. District-wide averages come from Homes England's "geographic look-up" tool. Link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1027082/2021_RP_Lookup_tool.xlsx Date: 2020-2021
- Intermediate rent and median private rent: The weekly cost of private renting is the median rent for advertised properties in local area. The weekly cost of Intermediate Rent represents 80% of the median rent for advertised private properties in the local area. Source Hometrack Link: https://cambridgeshireinsight.org.uk/housing/local-housing-knowledge/our-housing-market/housing-market-bulletins/ Date: July 2020 to March 2021 (quarterly). Hometrack rents were also compared to Valuation Office Agency rents from the Private Rental Market Statistics Link: https://www.ons.gov.uk/methodology/geography/ukgeographies/administrativegeography/england Date: 2020-21 (at 31 March 2021)
- Median cost of buying a 40% new build HomeBuy: The weekly cost is derived from Hometrack's median house price data. The cost excludes ground rent and service charges. The rent element is assumed at 2.75% and mortgages payments derived from average building society rates (currently 7.2%). Loan-to-value is assumed at 90% i.e. the buyer makes a 10% deposit on the portion of the property they are buying and it is a 25-year mortgage term. Source Hometrack https://cambridgeshireinsight.org.uk/housing/local-housing-knowledge/our-housing-market/housing-market-bulletins/ Date: July 2020 to March 2021 (quarterly)
- Buying a lower quartile new build / resale: The cost of buying with a mortgage is based on the capital and interest cost of servicing a mortgage for 85% of the median value of a property in the area, based on a 25-year mortgage term and the average prevailing mortgage rate. Values are based on Hometrack lower quartile and median values. Source Hometrack Link: https://cambridgeshireinsight.org.uk/housing/local-housing-knowledge/our-housing-market/housing-market-bulletins/ Date: July 2020 to March 2021 (quarterly)
- Median cost of buying a new build / resale: "New build" sales are counted when a property was sold in the same year it was built. Values are based on Hometrack data - only where the surveyor provides "year built" date to Land Registry. This may not always happen, and there are sometimes delays so new build values are reported late. Source Hometrack. Link: https://cambridgeshireinsight.org.uk/housing/local-housing-knowledge/our-housing-market/housing-market-bulletins/ Date: July 2020 to March 2021 (quarterly)

5 The diamond-o-gram

5.1 Creating the diamond-o-gram

The income needed to afford weekly housing costs has been used to compare housing costs with income distribution, and then to other factors such as pay scales. We describe the process of bulding the daimond-o-gramin steps, below:

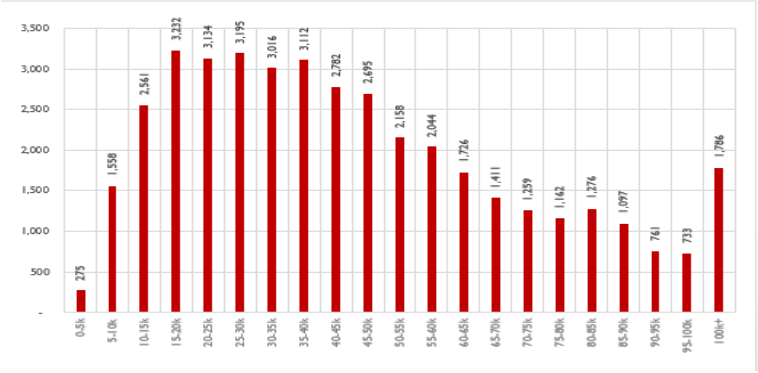
Step 1 Identify the CACI income distribution data via our Hometrack subscription for each district and format as a bar chart for the local area showing number of households in each £5K income band from £0 to £100K+. Convert the number of households to "percentage of all households" in that district and present on a column chart, with each "square" representing 0.5%.

Table 5. Data for diamond-o-gram for whole study area

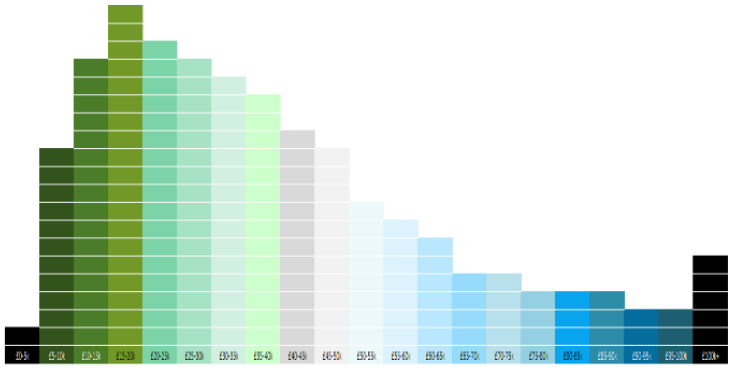
Colour scale	£0-5k	£5-10k	£10-15k	£15-20k	£20-25k	£25-30k	£30-35k	£35-40k	£40-45k	£45-50k	£50-55k	£55-60k	£60-65k	£65-70k	£70-75k	£75-80k	£80-85k	£85-90k	£90-95k	£95-100k	£100k+
# households	4904	23222	33514	38615	34938	33719	30367	30036	25829	24152	18754	17285	14221	11361	9938	9006	9707	8169	5566	5271	12382

% households	1.2%	5.8%	8.4%	9.6%	8.7%	8.4%	7.6%	7.5%	6.4%	6.0%	4.7%	4.3%	3.5%	2.8%	2.5%	2.2%	2.4%	2.0%	1.4%	1.3%	3.1%
Cumulative %	1%	7%	15%	25%	34%	42%	50%	57%	64%	70%	74%	79%	82%	85%	88%	90%	92%	94%	96%	97%	100%

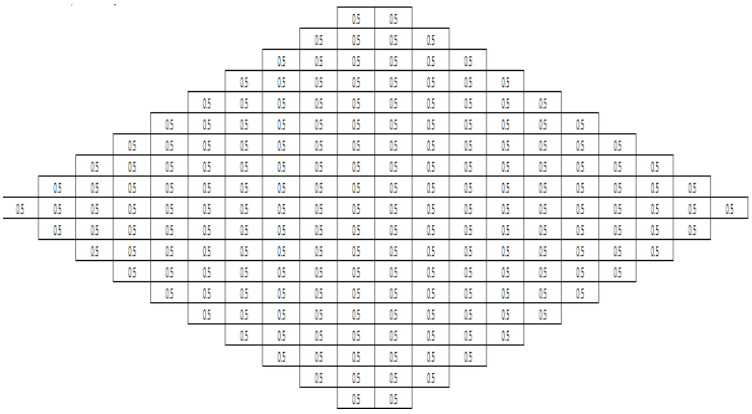
Graph 11. Income data, Cambridge used as example



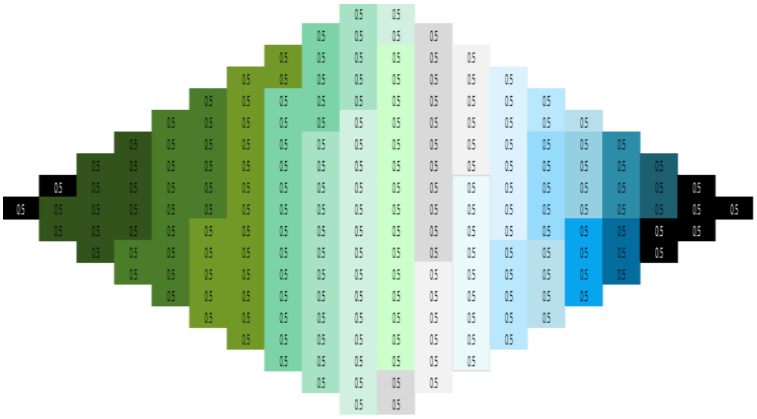
Step 2: Shade the bar chart according to £5K income bands



Step 3: Set out a diamond template in excel, each square represents 0.5% of households



Step 4: move the step 2 bar chart onto the diamond template.

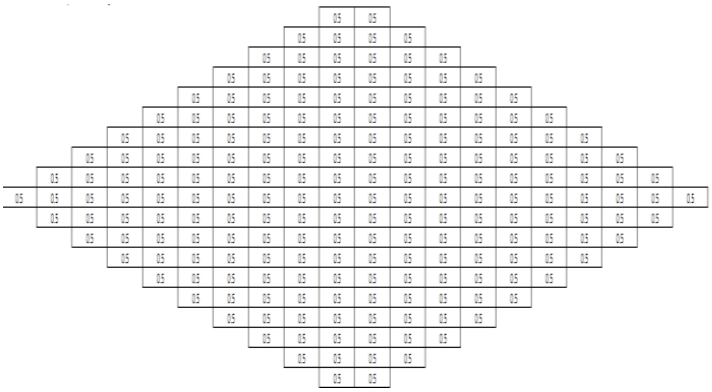


Step 5: Remove the 0.5 labels on each square. Add the “start point” for each change in shading e.g. £0-5K, £5-10K. This is the area’s ‘diamond-o-gram’

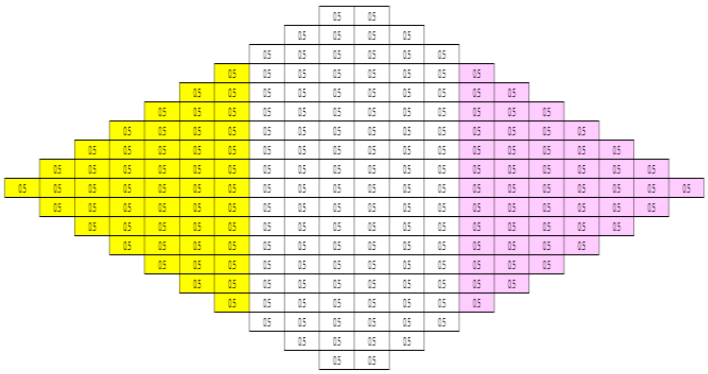
5.2 Shading around the diamond-o-gram

Each diamond-o-gram represents 100% of the households in that district. As each “box” in the diamond represents 0.5% of households, we can shade the lowest 25%, (the yellow zone), the top 25% (the pink zone) & the remaining 50% in the white zone.

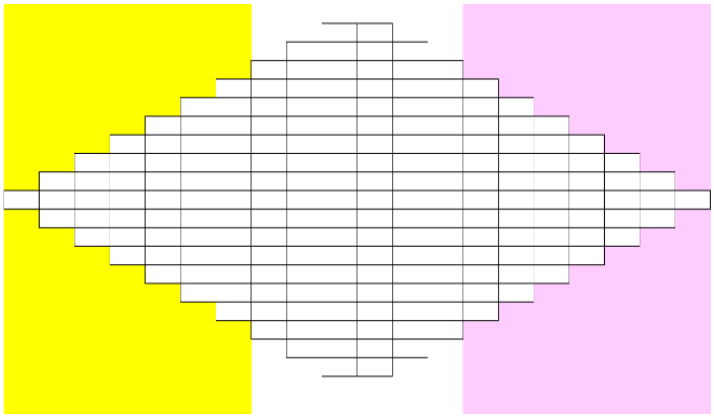
Step 1: Start with blank diamond template



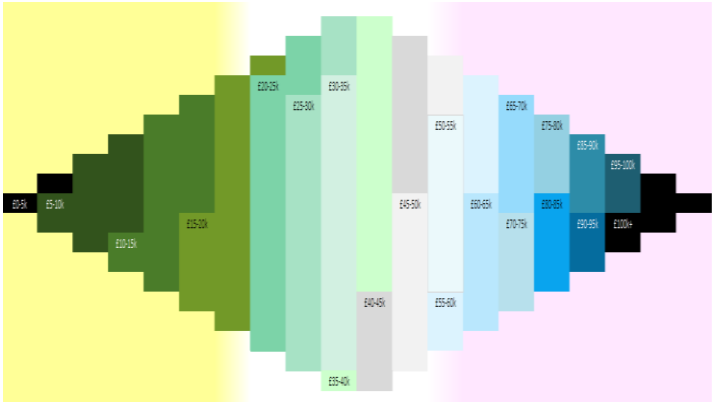
Step 2: Shade the blocks so lowest 25% are yellow, top 25% are pink, leave middle 50% white



Step 3: Transfer the shading to “outside” the diamond, as we need the interior of the diamond to show the income band shading

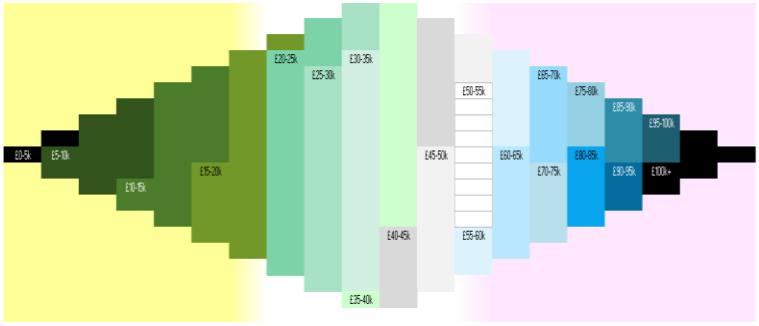


Step 4: Apply the income band shading to the interior of the diamond-o-gram, so the yellow white and pink shading simply emphasises the proportion of households covered in three “zones” around the diamond.



In 2022 an updated diamond-o-gram was produced for each district in the local area, including Greater Cambridge and “all”. Here is an example which covers the whole study area:

Graph 12. Diamond-o-gram for whole study area, 2022



So across the whole study are:

- 25% of households in the lower ‘yellow’ zone, or **100,255** households. Covers incomes up to c£20K
- 50% of households in the middle ‘white’ zone, or **197,795** households. Covers incomes from £20K to £60K
- 25% of households in the upper ‘pink’ zone, or **102,906** households. Covers incomes over c.£60K

5.3 Change in diamonds over time

The diamonds were first produced in 2018, and 2022 brought our first update to all the data needed. The two diamonds are placed side by side, and “broad” income bands are compared to see what has changed over this period of time, The 2018 diamond is based on 2016-17 income data, and the 2022 diamond is based on 2020-21 data.

Looking at the two diamonds below, it appears

- Income distribution has not changed hugely between the first and second "diamond" reports. Most districts saw a similar distribution, the exception being the £100K+ income band, which has reduced everywhere.
- There is a slight tendency for fewer households in the lower income bands and slightly more on the middle income bands.

However it must be highlighted that the diamond format is not the best format to compare change in income groups, graph x is much more effective for this purpose enabling a clearer comparison of households in each of the £5K income bands. The diamonds are really designed to help compare income distribution with other factors, such as housing cost, and are best kept for that purpose.

Graph 13. Comparing 2018 and 2022 diamonds, whole study area

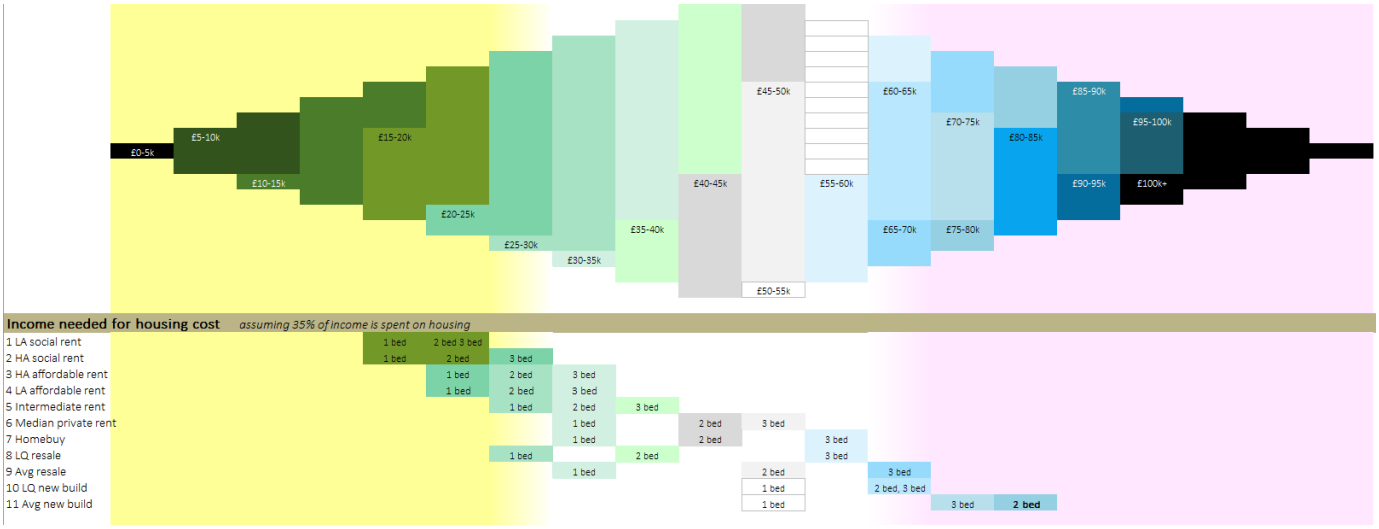
5.4 Comparing incomes in the diamond-o-gram to weekly housing cost

The housing costs are aligned to the diamond, in order to compare the weekly cost of a 1, 2 and 3 beds of each tenure to the income needed. Again, highlighting here that this is a diagrammatic analysis so in some cases, a judgement was made as to which income 'column' to place a housing cost against.

For clarity, instead of presenting the housing costs using average prices for each size of home, price data was replaced with labels "1 bed", "2 bed" and "3 bed". The housing cost boxes were then shaded to highlight which income column that particular cost most closely aligned with.)

Graph 14 shows South Cambridgeshire's income diamond, aligned with South Cambridgeshire's housing costs in the "boxes" below.

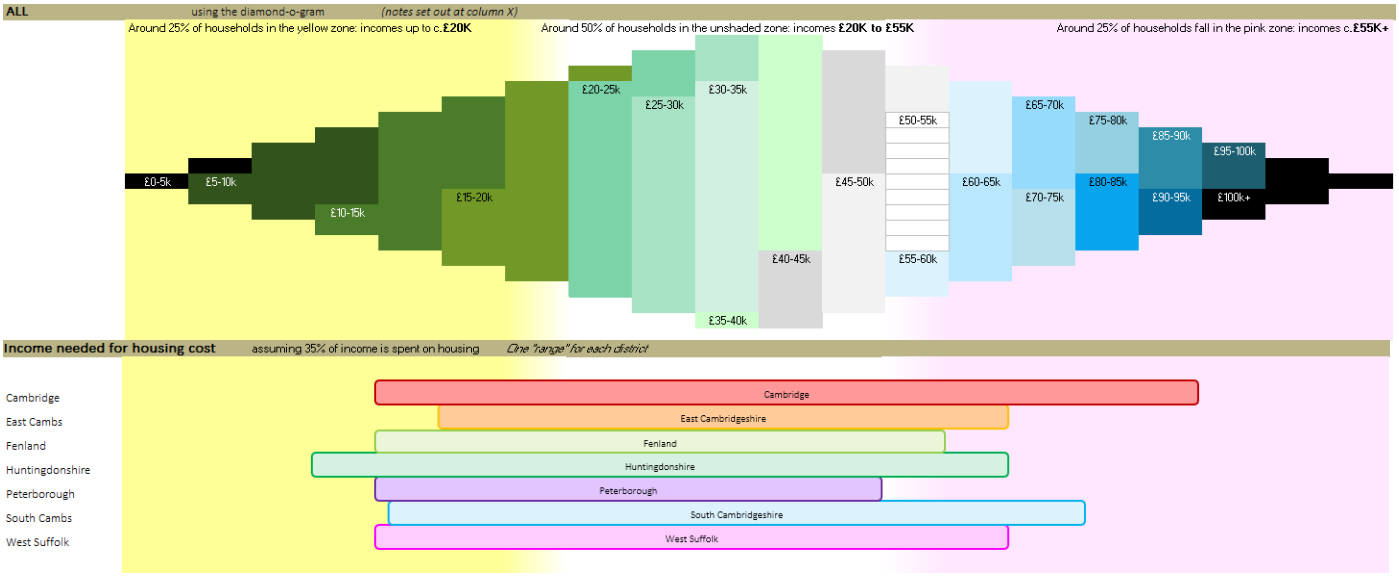
Graph 14. Diamond and housing costs for South Cambridgeshire



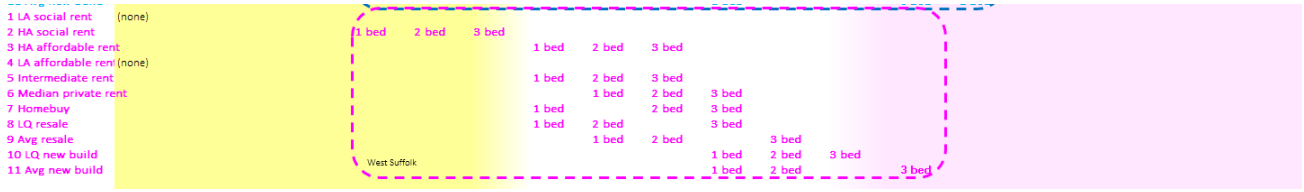
5.4.1 By district

This chart shows the range of incomes needed to afford weekly housing costs with one "bar" showing for each area. The bars are "placed" in relation to the diamond-o-gram for total incomes across the study area by £5K band (see Graph 15). The bars are created to summarize the weekly cost data for every size and tenure of housing in each area covered.

Graph 15. Diamond-o-gram for "all" with income needed for housing at 35%, for each district



Graph 16. Example of detail behind the district summary diagram in Graph 15, using West Suffolk as example

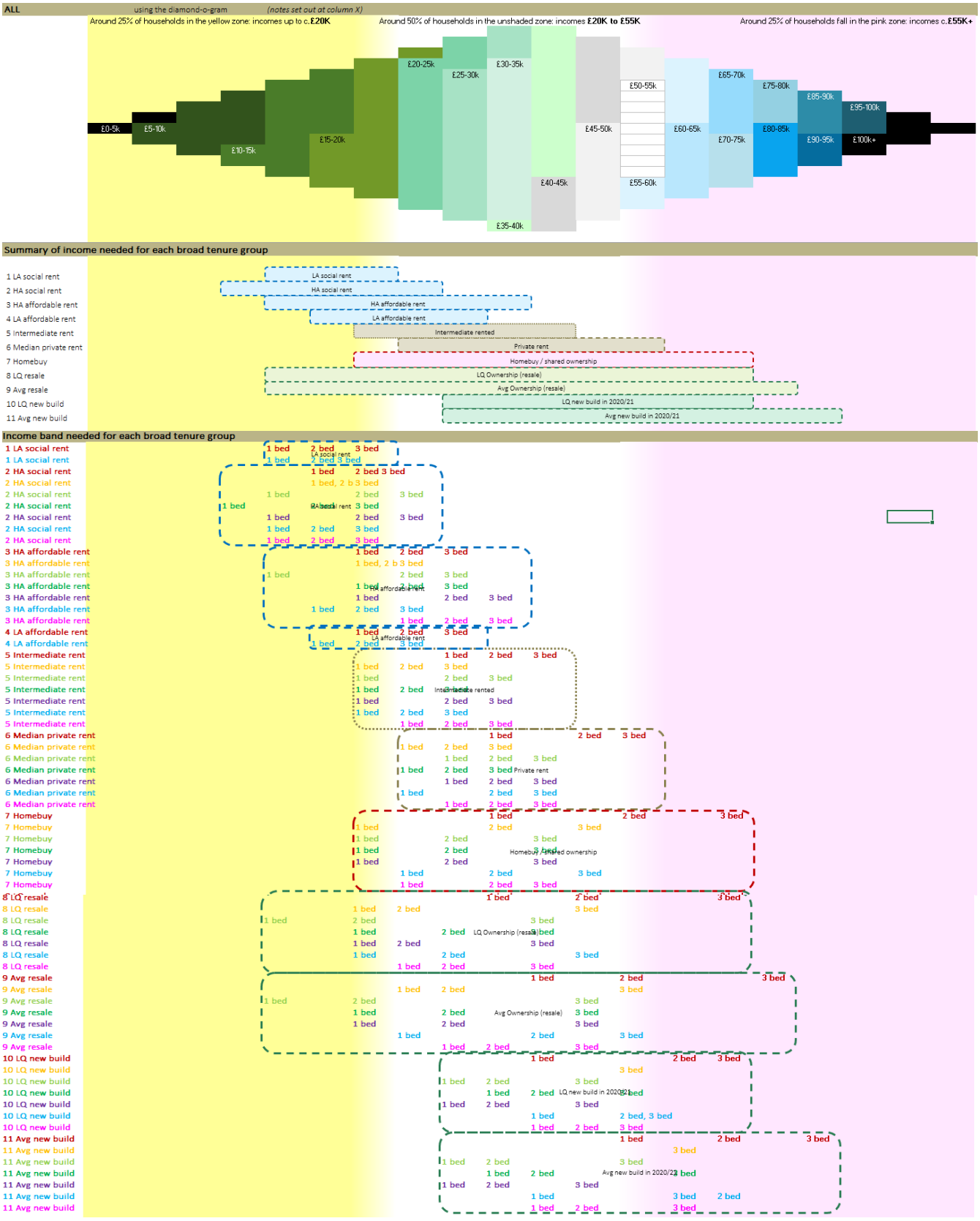


The summary diagram shows that the income needed at 35% affordability covers a range of income bands, reaching highest in Cambridge. More than £10K annual income is needed as a minimum in all areas, for all tenures including social / affordable. However there are benefits to support housing cost which will support people on the lowest income groups, who may not currently be claiming.

This aspect of the market does not lead us to be able to generalize about income needed for housing costs when looking at all tenures, so the issue is broken down further below, by tenure and size; see the following paragraphs “by tenure” and “by size”.

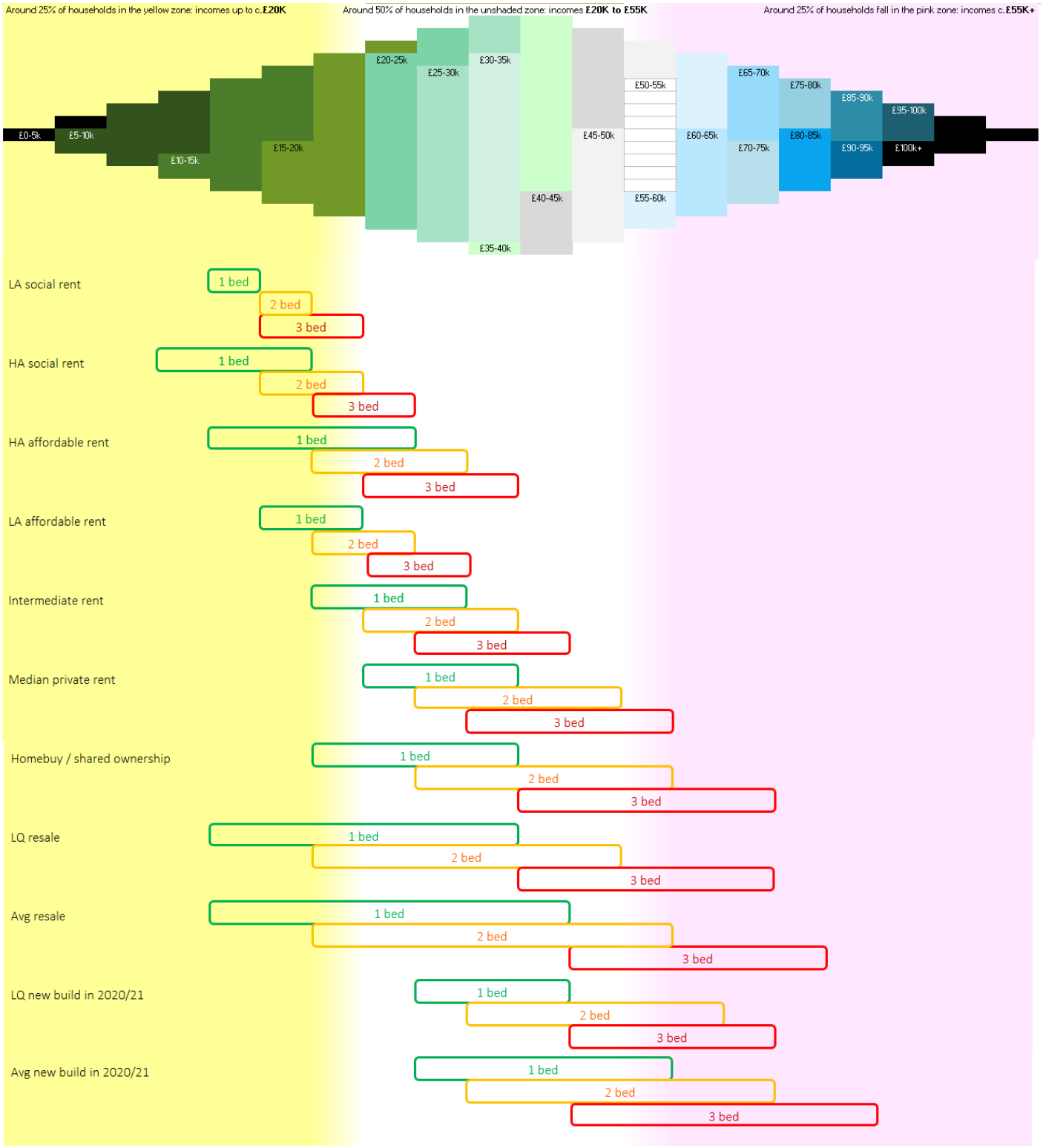
5.4.2 By tenure

Graph 17. Tenure groups (whole study area)

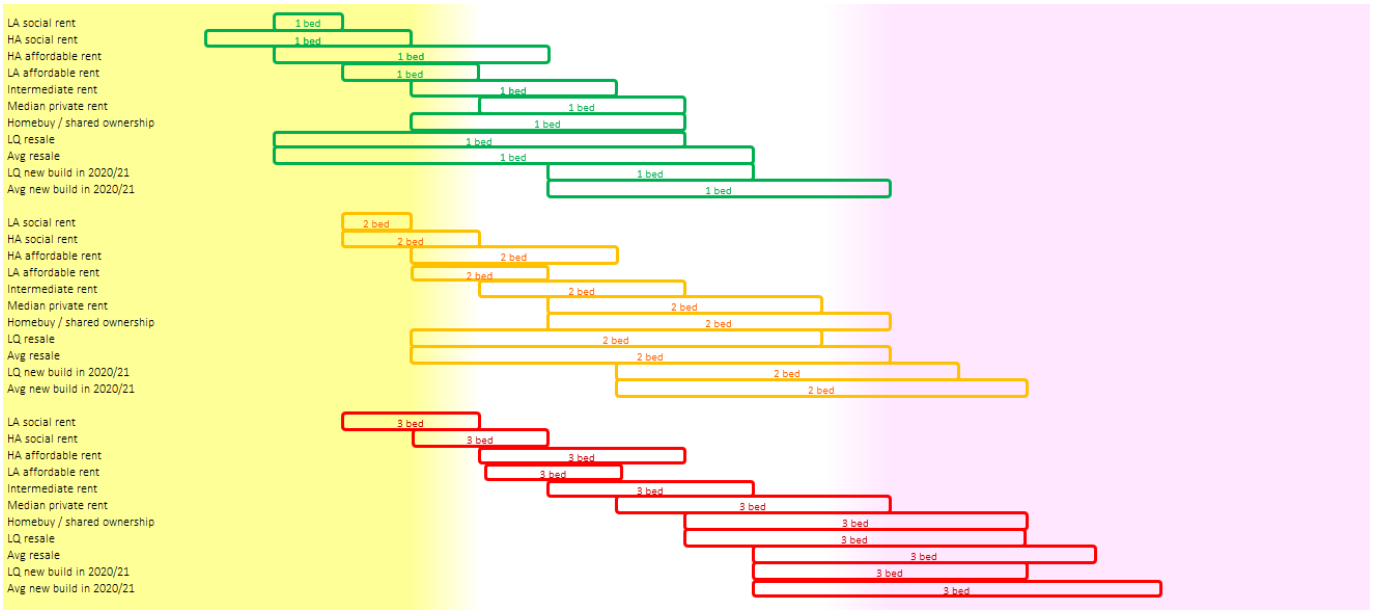


5.4.3 By size

Graph 18. Dwelling size and affordability at 35%



Graph 19. Comparison of income needed for 1 bed, 2 bed and 3 bed (at 35%)



5.5 Data notes

- The term Private Registered Provider was used in the context section, this can be taken to also mean Housing Associations (HA) in this section
- The diamond o gram is intended to help us compare income distribution with other factors, particularly housing costs. To do this we apply a % of income it is reasonable to spend on housing in this district, our standard being 35%. We also apply the affordability percentage identified in GLHearn's report (which varies from district to district) in the source spreadsheet. Then we line up each box, representing the cost of 1 2 and 3 bed homes, with the income bands in the diamond-o-gram, to indicate the income needed for each and what percentage of households might be able to afford that at 35% of gross income.

5.6 Data sources

- Incomes from CACI: see section 3, date: Jan 2020 – Jan 2021
- Housing costs: see section 4, date: 2020-2021
- Affordability used in the slides are set at 35% of income to enable comparison between districts.
- In the full compendium of data, multipliers provided by the GLHearn study and Peterborough's housing needs survey are also used: See section 8.

6 Using the diamond-o-gram to look at other aspects of the housing market

6.1 The scale and cost of housing

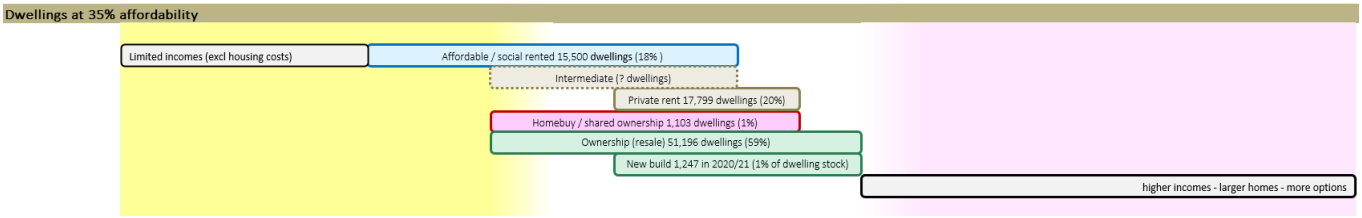
Using dwelling numbers, the housing cost summary (Graph 14) was combined with an idea of the supply of homes in each of the broad tenure groups. As before, the position of each box from left to right gives an indication of the income needed to afford it (based on the diamond-o-gram) and the now the "height" of the boxes indicates the quantity of dwellings of that tenure group, in that district / city / area.

The height of the boxes represents the estimated % of dwellings of this tenure group (1% = 0.1cm height). If unknown stock or less than 5%, the height was set at 0.5cm.

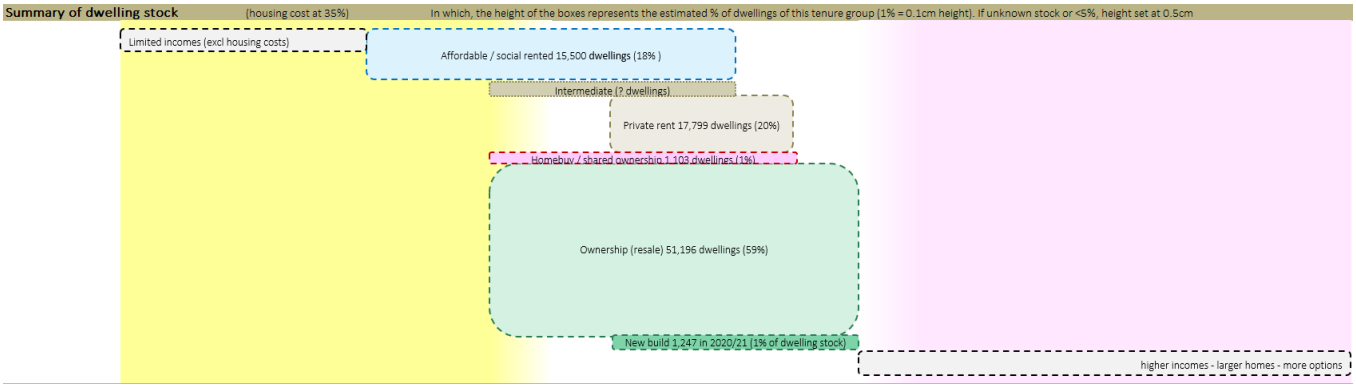
Table 6. Source of dwelling numbers (Peterborough as example)

	Number of dwellings	% of dwellings	Height of box	Source
LA social rent & affordable rent	0	0	0	*LAHS*
HA social rent & affordable rent	15,500	18%	1.8cm	*SDR*
Private rent	17,799	20%	2cm	*ONS estimates*
Homebuy / LCHO	1,103	1%	0.5cm (fixed)	*SDR*
Ownership	51,196	59%	5.9cm	*ONS estimates*
New build	1,247	1.4%	0.5cm (fixed)	*Local AMR*

Graph 20. Income needed at 35% affordability and indication of number of dwellings (Peterborough as example)



Graph 21. Summary of dwelling stock (using Peterborough, housing costs again 35%)



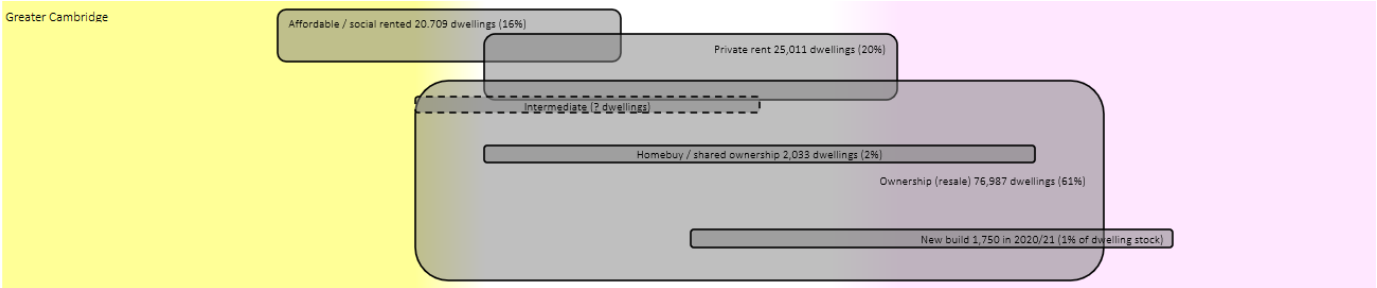
6.2 Comparing stock visualization diagrams

To compare these "scaled" boxes representing different tenures in each district with each other, it was necessary to use the "whole area" diamond-o-gram.

The individual diagrams for each district, presented in the compendium, will be more meaningful locally when considering local incomes and local costs.

However there is some point to being able to compare, even if the income data is more generalized, because comparison helps us visualise in general terms, how each area's housing costs differ overall. To do this, one example chart is presented below. To see and compare all the charts, please refer to the "whole area" report.

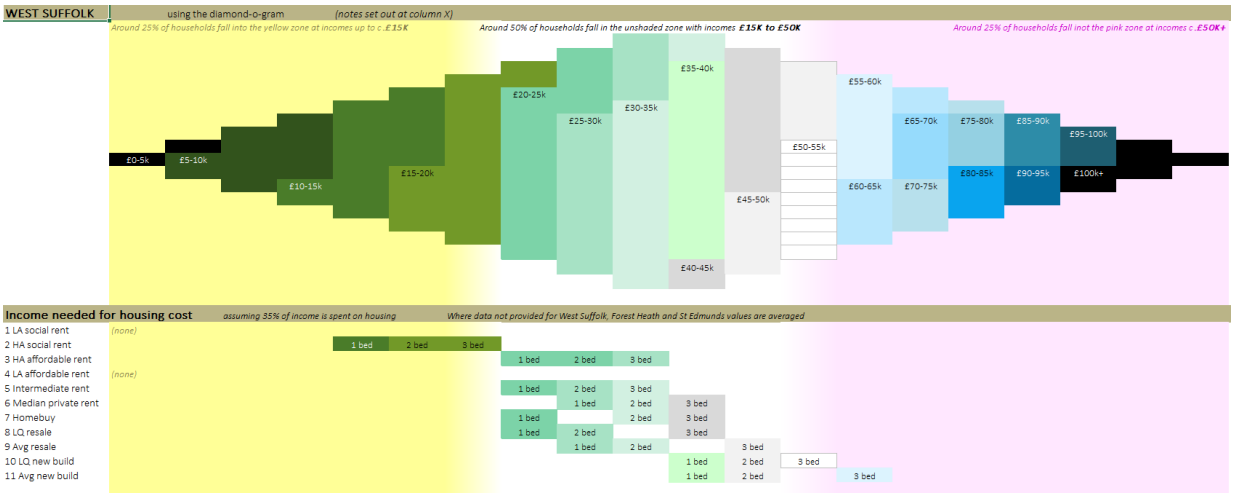
Graph 22. Visual representation of "overlapping" tenures by income needed



6.3 Staircases

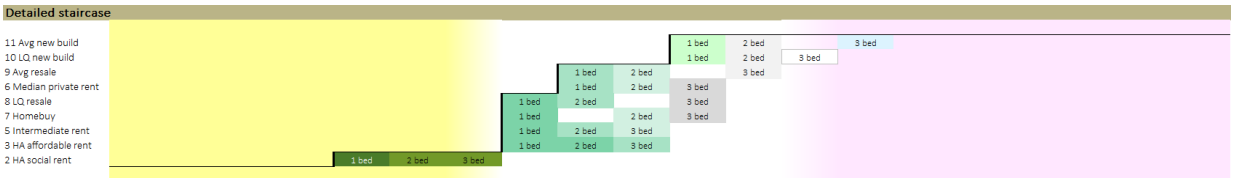
The staircase is built using the boxes created when looking at the "minimum income needed if housing takes up 35%" diagram.

Graph 23. Diamond-o-gram and income needed to afford at 35% - West Suffolk



The boxes representing each tenure and size of home are arranged to form a staircase with the lowest income needed for 1 beds making the first step. The rows of boxes are arranged so next step 'up' is the tenure requiring a little more income. Some tenures need roughly the same incomes, so these steps are "taller". In other places there is a gap in the incomes needed between tenures, which leads to a long "tread" on our staircase. A tall step demonstrates a number of products at the same income level, a long step indicates a gap between prices of tenures.

Graph 24. A staircase with 1, 2, 3 bed labels (using West Suffolk as an example)



Up till this point, we have kept the order of the list of tenures uniform and have numbered them to emphasise that we have the same 11 tenure groups in most charts. However for the staircase, the order of list of tenures will vary, a tenure may be moved "up or down" the flight of stairs because they are placed in order of lowest income needed at the bottom of the flight of stairs, ending with highest income needed as the top step.

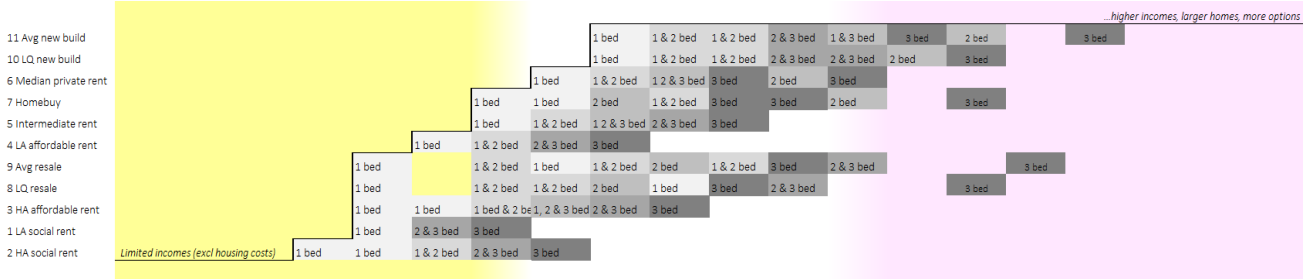
We are presenting the data this way with the idea that a spread of prices across a housing market is a good thing (particularly homes affordable to those on lower incomes). Also that it helps to be able to visualize moves "up and down" in size, whatever the tenure.

Whole area staircase

Again, the diamond-o-gram for incomes across the study area is used, to enable comparison between the districts.

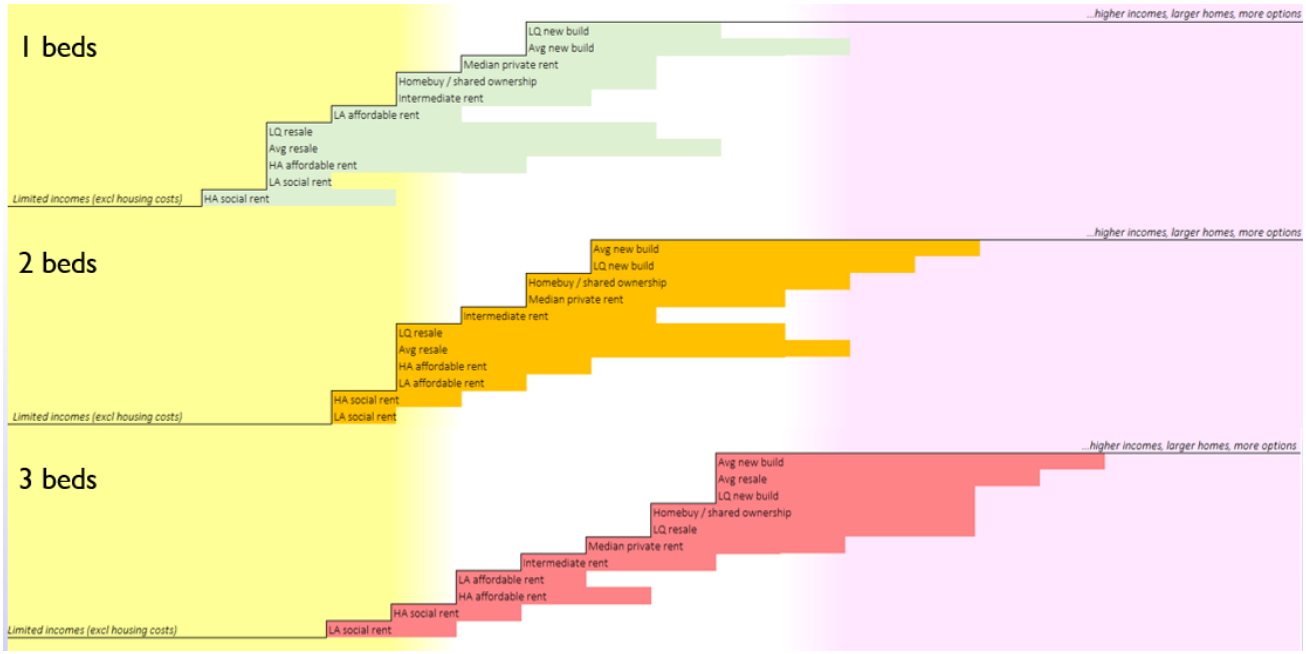
The first staircase sets out all sizes of homes across the study area, just labelling the grey boxes where any district has a home of that size and tenure, which is affordable to that income band.

Graph 25. Staircase for the whole study area



The second staircase aims to be a little easier to read, splitting the information into three separate staircases, by size.

Graph 26. Staircases separated into 1, 2 and 3+ beds, whole study area



6.4 Broad tenure and pay scales

Please note the income needed for housing cost is based on CACI income data, so payscales (quoted salaries) and not strictly comparable. So this diagram can only give an indication of how national and local pay rates compare to housing costs; but we hope help to indicate pressures.

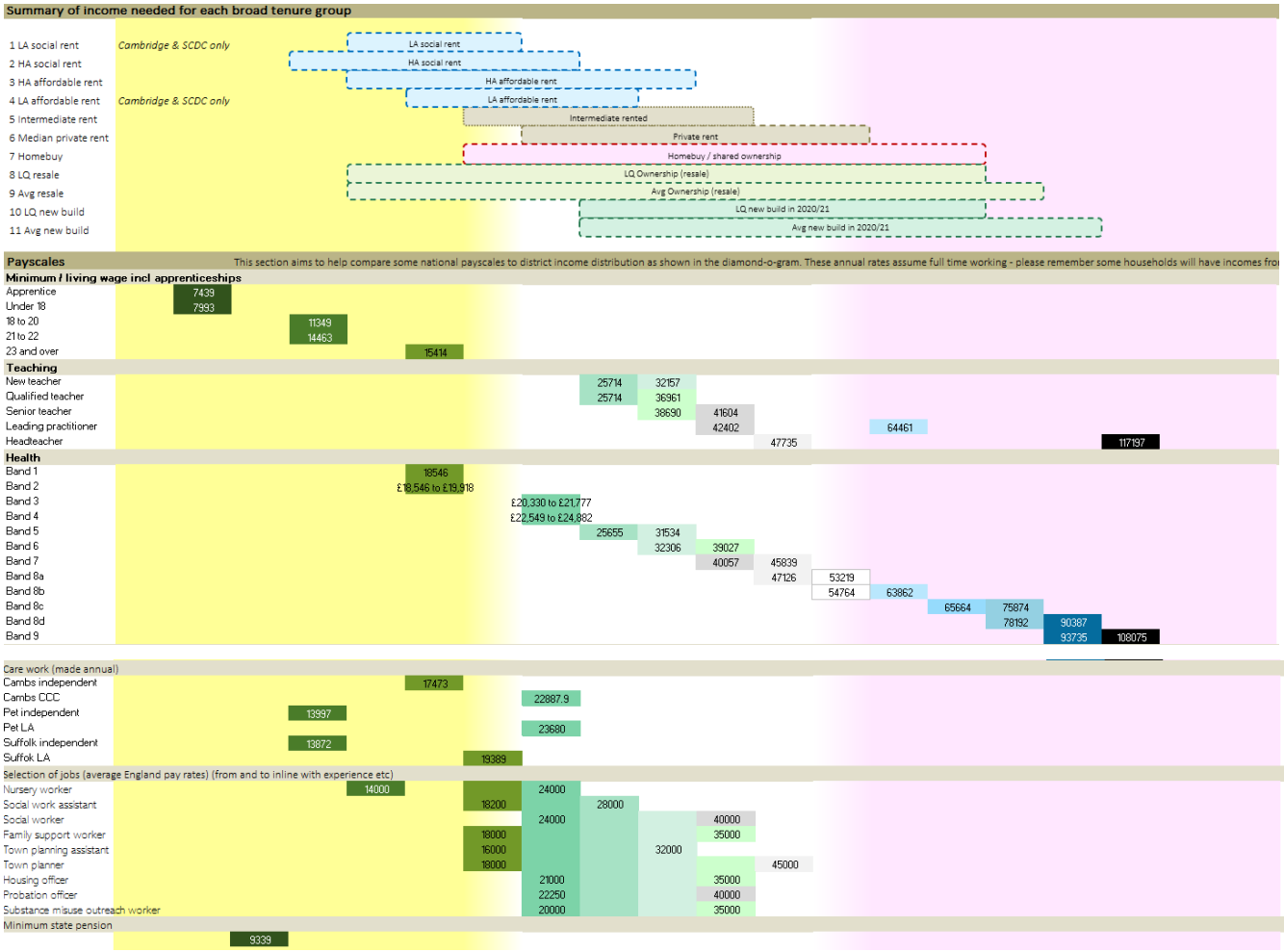
To help with the comprison (given the above note of caution) a summary graphic was devised giving an outline of which tenure nd size of homes might be accessible to which income levels (as in Graph 14).

Following that, using the same approach, the pay scale data identified was set out to compare to the income needed to afford the cost of housing of different types and sizes.

These include teachers,health service “agenda for change” rates, minimum and living wage rates, minimum state pension, a selection of public sector salaries and care workers.

The layout of Graph 27 helps compare the general pattern of tenures and the income needed to afford them, with the pay scales in various services based on national and local pay rates.

Graph 27. Tenure groups and pay bands



6.5 Data notes

- Note about payscales: Annual pay rates are based on quoted salary levels (so may not compare well with CACI income data). We assume full time working although some households will have incomes from more than one earner, and some will have income from one or more part time jobs.

6.6 Data sources

- The diamond-o-grams: see section 5, date: 2020-21
- Payscales:
    - Teachers Link: https://getintoteaching.education.gov.uk/salaries-and-benefits Date: April 2021+
    - Health service "agenda for change" Link: Agenda for change - pay rates | Health Careers Date: 2022
    - Minimum and living wage rates Link: https://www.gov.uk/national-minimum-wage-rates Date: 2021/22
    - State pension Link: The new State Pension amount - What you'll get | Age UK Date: Mar-2022
    - Selection of public sector salaries Link: Explore careers | National Careers Service Date: 2020/21
    - Care workers Link: https://www.skillsforcare.org.uk/Adult-Social-Care-Workforce-Data/Workforce-intelligence/publications/local-information/My-local-authority-area.aspx Date: 2021/22
    - Working hours Link: https://clockify.me/working-hours Date: 2021

7 Dwelling stock, turnover and new build

7.1 Dwelling stock, turnover and new build

One of the unique aspects of the diamond affordability analysis is that, having looked at income distribution compared to a wide array of tenure products, we then look at the availability of housing in the main tenure groups.

The data available somewhat restricts how much detail we can go into at this stage; however we have sought as much information as we can from public and open sources for this purpose. There is certainly more data available in 2022 than there was in 2018.

There are three aspects to housing supply we are particularly interested in: the overall housing stock; housing turnover (relts and resales) and the contribution made by new build each year. Some assumptions have been made, and in places we have been forced to use national data where there was nothing available at district level.

The broad tenure categories we used in this section are:

- Ownership
- Homebuy / low cost home ownership (LCHO)
- Private rent
- Housing association social and affordable rent
- Local authority social and affordable rent

For all three aspects, Data comes from a combination of data sources, listed in section 7.3.

7.1.1 Stock

We wanted to highlight the proportion of homes which are neither re-sold nor re-let in the course of a year; i.e. homes which are occupied and are not changing hands. The majority of homes fall into this category, and it is important in our understanding of the housing market to acknowledge that many homes remain occupied by the same households who are settled and are not seeking to move. We talk about housing as a resource, but it is one which may not “circulate” very much. Changes in tenant or owner may represent only a small proportion of the housing stock in each tenure group; and a different proportion depending on the tenure in question. Our main sources for housing stock were

- Local Authority Housing Statistics dataset, England: Section A - Dwelling Stock
- Homes England PRP look-up tables
- CLG Table 100 Dwelling stock: Number of Dwellings by Tenure and district (see section 2.2)
- ONS Subnational estimates of dwellings by tenure, England, 2012 to 2020 (we used latest 2020 data)

7.1.2 Turnover

Relets of rented housing and resales of owned homes can indicate the “heat” of a housing market, and/or its stability. Our main data sources were

- CORE reported new social housing lettings
- Local Authority Housing Statistics (LAHS) dataset, England: Lettings and Nominations
- Excerpt from English Housing Survey on private rented supply 2020-21
- SDR 2020-21

7.1.3 New build

Across the study area, we were particularly interested to identify the supply of housing coming from new build.

New build has a very important role to play in the housing market and we continue to see reasonably good level of new build locally. However we are also keen to show how the supply from new build compares to supply from relets and re-sales of existing homes.

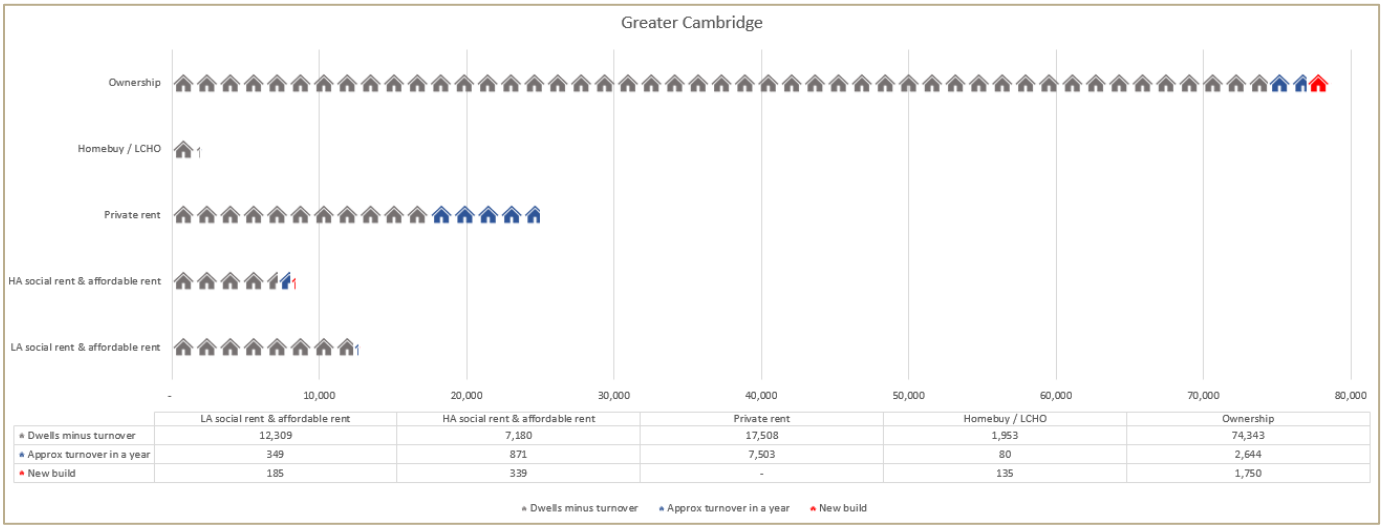
Identifying the number of new built homes is complex and there are a variety of data sources. In summary, the figures used in the diamond affordability analysis came mainly from

- Affordable Housing Supply Statistics (AHS) by district. Provides CLG completions data for Social rent, Affordable rent, Intermediate rent, Shared ownership and Affordable home ownership where Homes England funded.
- CLG completions data for social rent, affordable rent, intermediate rent, shared ownership, affordable home ownership (non-Homes England funded)
- CLG Table 253 Housebuilding: permanent dwellings started and completed, by tenure and district
- (At the time unpublished) Annual Monitoring Report Cambridgeshire and Peterborough unpublished AMR
- Hometrack new vs 2nd hand prices and count Link: Land Registry via Hometrack

In pictograms we set out the three figures, identifying

- Total stock (grey) and within that, how many homes might have been re-let or resold in the year (blue).
- Add to that the number of homes we believe have been newly built in the following year (red).
- Where possible use the highest estimates of new build, so as not to underestimate the contribution but still highlighting the relatively small proportion of market moves, new build accounts for, in most areas.

Graph 28. Dwellings pictogram (using Greater Cambridge as an example)



	LA social rent & affordable rent	HA social rent & affordable rent	Private rent	Homebuy / LCHO	Ownership
Dwells minus turnover	12,309	7,180	17,508	1,953	74,343
Approx turnover in a year	349	871	7,503	80	2,644
New build	185	339	-	135	1,750

Because this chart sets everything in the context of the entire dwelling stock of the area being looked at, it's hard to get an idea of how each tenure group is growing, so we have added **Error! Reference source not found.** to show how new build contribute to the stock of dwellings in each broad tenure group, in percentage terms (where data is available).

This highlights how some tenures are growing more than others.

Graph 29. Dwellings bar chart (using Greater Cambridge as an example)

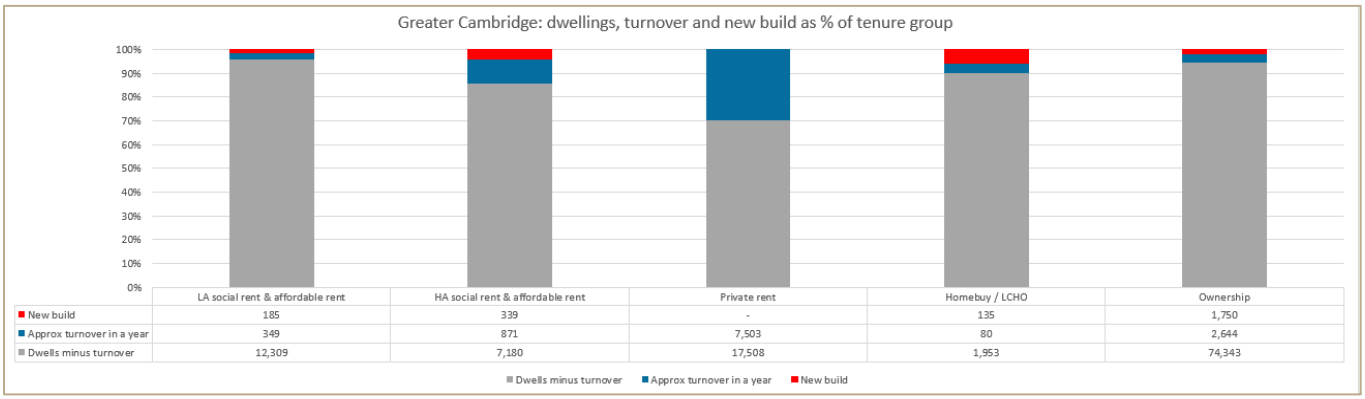


Table 7. Dwellings, turnover and new build data

	Total dwellings	Dwells minus turnover	Turnover	New build
LA social rent & affordable rent	12,658	12,309	349	185
HA social rent & affordable rent	56,796	52,987	3,809	1,015
Private rent	86,313	60,419	25,894	52
Homebuy / LCHO	5,584	5,446	138	698
Ownership	292,512	281,581	10,931	5,642
Total	453,863	412,742	41,121	7,592
Percentages				
LA social rent & affordable rent	100%	97.2%	2.8%	1.5%
HA social rent & affordable rent	100%	93.3%	6.7%	1.8%
Private rent	100%	70.0%	30.0%	0.1%
Homebuy / LCHO	100%	97.5%	2.5%	12.5%
Ownership	100%	96.3%	3.7%	1.9%
Total %'s	100%	90.9%	8.9%	1.7%

7.2 Data notes

- These charts bring together several data sources which may not be directly comparable. So the graphics are intentionally pictorial and are intended to illustrate the scale of dwelling stock, turnover & newbuild.

7.3 Data sources

- Stock of dwellings: see section 2.2.
- Affordable Housing Supply Statistics (AHS) by district. Provides CLG completions data for Social rent, Affordable rent, Intermediate rent, Shared ownership and Affordable home ownership Link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1034087/Live_Tables_1006-1009.ods Date: 2020-2021
- PRP (housing association) and LA (council) housing stock Link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/963104/RP_COMBINED_TOOL_2020_FINAL.xlsx Date: 2019-20 and https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1027082/2021_RP_Lookup_tool.xlsx Date: 2020-21
- CLG Table 253 Housebuilding: permanent dwellings started and completed, by tenure and district Link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1084086/LiveTable253.ods Date: 2020-21

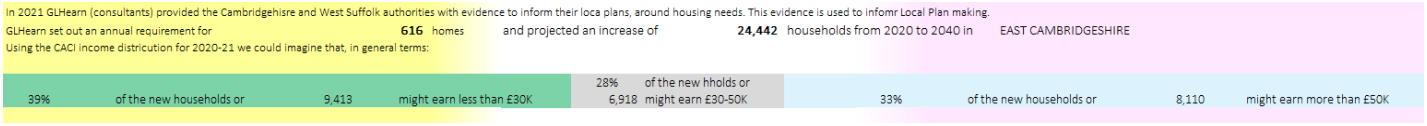
- (At the time unpublished) Annual Monitoring Report Cambridgeshire and Peterborough unpublished AMR, Email of 26/5/22 confirmed new build figure for West Suffolk (842) Date: 2020-21
- Hometrack new vs 2nd hand prices and count Link: Land Registry via Hometrack (no link as not public data in this format) Date: Jan to Dec 2020
- Turnover: CORE Table 1d: Reported new social housing lettings by local authority area location of property Link: CORE website: https://core.communities.gov.uk Date: 2017/18 to 2019/20 & 2019/20 to 2020/21 (Apr to Sept)
- Housing stock: Local Authority Housing Statistics dataset, England: Section A - Dwelling Stock Link: https://www.gov.uk/government/collections/local-authority-housing-data Date: 2020-21
- Lettings: Local Authority Housing Statistics dataset, England: Section D - Lettings and Nominations Link: https://www.gov.uk/government/collections/local-authority-housing-data Date: 2020-21
- EHS 2020-21 Excerpt from English Housing Survey on private rented supply Link: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1060141/2020-21_EHS_Headline_Report_revised.pdf Date: 2020-21

8 Applying CACI income to Local Plan housing figures

8.1 Income distribution related to housing need figures used in Local Plans

The housing numbers used as evidence behind Local Plans were then compared to income distribution, to show what proportion of households in newly build homes might fall into the three broadest income bands:

Graph 30. Applying the broadest income bands to housing local plan evidence (using East Cambridgeshire)



8.2 Data sources

- Cambridgeshire and West Suffolk: G.L. Hearn (consultants) provided the Cambridgeshire and West Suffolk authorities with evidence to inform their local plans, around housing needs. This evidence is used to inform Local Plan making. Link: https://cambridgeshireinsight.org.uk/wp-content/uploads/2021/10/CWS-Housing-Needs-of-Specific-Groups-Oct21.pdf Date:2021
- Peterborough: Peterborough Housing Needs Study: The housing requirement for Peterborough between 2016-2036 which is the base date for the current Local Plan. Link: https://www.peterborough.gov.uk/asset-library/imported-assets/SHMAFinalReport-2017.pdf Date 2015/16