WPI STRATEGY

Sustainable living

How the ‘downsizing dividend’ can deliver a greener housing future

April 2022

McCARTHY STONE
Life, well lived

Contents

Cover image: McCarthy Stone development in Chislehurst, Bromley

About McCarthy Stone

McCarthy Stone is the UK's leading developer and manager of retirement communities. Its customers maintain their independence within a beautiful, secure, contemporary private home, while enjoying the peace of mind that help and care is on hand if needed. Its communities make a positive difference to the lives of its customers and the organisation is focused on supporting and championing the role, wellbeing and happiness of older people in society. All developments built since 2010 are managed by the company's in-house management services team, providing reassurance that it will look after customers and their properties for the long term. As of November 2021, McCarthy Stone operates 475 developments across the UK for more than 20,000 people.

www.mccarthyandstone.co.uk

About the authors

WPI Strategy is one of the UK's leading political communications consultancies, with a track record of delivering high impact public affairs campaigns. We offer senior strategic counsel and work extensively with senior economists to ensure that campaigns are underpinned by evidence-based content. Analysis for this report was undertaken by Paul Chamberlain and Chris Walker, both former senior economic advisers in the Government Economic Service, part of the UK Civil Service.

wpi-strategy.com nick@wpi-strategy.com @wpi_strategy

Introduction and Executive Summary

Like many other countries, the UK's population is ageing. In 1999, around one in six people were aged 65 years and over. By 2019, this had increased to one in every five people. This is primarily driven by improvements in life expectancy and declining fertility.

In the years ahead, the older population in the UK is projected to grow further. By 2039, it is projected that around one in four people in the UK will be aged 65 years and over.[1]

Of course, living longer is widely seen as a cause for celebration. But the ageing population has brought about challenges in several policy areas. Older people frequently need support with home maintenance, adaptations and repairs to enable them to stay in their homes for longer. They may also require other support services, such as social care, to maintain their independence and well-being. All too often this is not happening and the evidence that poor housing can lead to health problems in old age, with enormous resultant costs to the NHS and social care, is well-established.

Older people are also more likely to be under-occupying their accommodation, inadvertently causing a bottleneck at the top of the housing market. This is at least partly linked to the fact that there is a shortage of accessible and specialist housing for older people in both the private and social sectors.

Our recent work has explored how specialist retirement housing can help many of these challenges to be met. Our previous research in this area with the Homes for Later Living group found that each person living in a retirement community enjoys a reduced risk of health challenges, contributing to fiscal savings to the NHS and social care services of approximately £3,500 per year.

Our further research suggests that roughly two in every three retirement properties built releases a home suitable for a first-time buyer and that retirement housing creates more economic value than any other type of residential development, with customers contributing more to local shops, jobs, services and communities than any other group.

As the Government plots the path to achieving net zero carbon emissions by 2050, one further benefit of specialist retirement housing that is yet to be assessed in any detail is the impact on the environment compared to other developments.

In this paper we seek to address this gap in the research to date by looking closely at data from McCarthy Stone, the UK's leading developer and manager of retirement communities, in two areas. First, we compare the carbon emissions credentials of McCarthy Stone's new build apartments with standard new build homes, and with the existing stock of homes in England. Our analysis here shows that:

- **Each new build McCarthy Stone apartment could save over 1 tonne of CO2 each year through reduced energy loss in a 'downsizing dividend'. Our analysis shows that building a new McCarthy Stone apartment instead of a standard new house could mean CO2 emission increases of only 0.3 tonnes of CO2 per annum versus 1.4 tonnes of CO2 per annum. This also compares favourably to the typical CO2 emissions of the older household from their previous home before they moved of between 3.3 and 3.7 tonnes per annum.**
- **The key point about the 'downsizing dividend' is that if we don't build retirement apartments, older people are more likely to stay living in their existing houses and we are likely to need to build more new houses in order to meet demand from younger people and first time buyers as existing houses are not being released. Because new build houses have higher emissions than new build apartments, this in turn is likely to mean higher emissions from housing overall.**

- **Older people moving into a McCarthy Stone apartment create a 'home improvement dividend' as younger homeowners move into the freed up family homes and make energy efficiency improvements. Our analysis considers both a top-down analysis and a bottom-up one and estimates a 'home improvement dividend' of between 0.1 and 0.5 tonnes a year, with the more likely figure between 0.3 and 0.5 tonnes a year.**
- **Residents of specialist retirement housing are also less likely to drive and it is estimated that building 45 specialist retirement housing properties could take up to 15 cars off the roads. Collectively these cars would otherwise drive roughly 1,800 miles a week. Our analysis indicates that the carbon savings from reduced car use amount to around 0.35 tonnes per year for each McCarthy Stone household.**
- **Adding the various savings together, building a new McCarthy Stone apartment instead of a standard new build house could save nearly 2 tonnes a year in CO2 emissions.**
- **Taking these savings together, in line with recognised estimates of demand, were the UK to build 30,000 retirement living properties - ie 10% of the new homes per year target - annually, instead of 30,000 new standard houses, our analysis suggests that we could prevent nearly 60,000 tonnes of carbon dioxide a year being released into the atmosphere.**
- **It is also clear that the energy consumption of a McCarthy Stone home is much lower than the average home, with older households moving in likely to reduce their energy consumption by at least a half and probably more.**

Second, we compare the biodiversity credentials of McCarthy Stone's apartments with standard new build homes. Once again, the resulting analysis paints a positive picture for retirement communities when compared to other new build developments:

- **McCarthy Stone's apartments are significantly more likely than other new homes to be developed on brownfield land rather than greenfield land. Around nine in ten homes developed by McCarthy Stone are on brownfield sites, compared to an average of around five or six in ten in the mainstream housing market, depending on the year.**
- **Developing McCarthy Stone apartments frequently means cleaning up contaminated land which would have previously posed a serious threat to biodiversity.**
- **Biodiversity loss from land use is further minimised due to McCarthy Stone's developments being significantly less land intensive than standard new build developments overall, with 90 homes rather than 43 homes per hectare.**
- **McCarthy Stone's developments use less land area for car parking than standard new housing developments, due to customers' ages and central locations, meaning more retained or newly created green space that supports biodiversity.**

With these findings, on top of our previous research showing the health and wellbeing benefits of specialist retirement housing, and the wider benefits to the housing market and to local communities, we can now see that retirement communities also have demonstrably better outcomes for sustainability and biodiversity.

CHAPTER 1

Analysis Part 1 - Carbon Emissions

The first part of our analysis considers the carbon emissions credentials of McCarthy Stone's new build properties. This was done by looking at 852 new build homes completed by McCarthy Stone mainly during 2021. We compared these new build homes with standard new build homes, and with the existing stock of homes in England. Our analysis shows how downsizing from a standard home to a McCarthy Stone property will help the UK to decarbonise more quickly.

Cleaner energy

In the UK, a home's energy efficiency is measured by an Energy Performance Certificate (EPC) rating. On the current EPC measure new build McCarthy Stone apartments are very similar to standard new build homes. This is also the case with the current Environmental Impact rating, a measure of a home's impact on the environment in terms of CO2 emissions per square metre, based on standardised assumptions about occupancy and energy use. Once again, on this current measure new build McCarthy Stone apartments are very similar to standard new build homes.

However, neither current EPC ratings or Environmental Impact ratings tell the full story of a home's energy efficiency. To get a deeper understanding of this we looked at the raw figures behind these numbers, factoring in the crucial point that McCarthy Stone apartments are typically heated 100% through electricity, unlike standard homes which are usually a mix of gas and electricity. This way we can see that, through cleaner energy, McCarthy Stone's apartment really have a significantly lower carbon footprint than standard homes.

According to the latest EPC data, new build McCarthy Stone properties have average carbon emissions of 1.19 tonnes of CO2 per annum which is similar to standard new build apartments and less than standard new build houses. Yet within this figure it is important to note that McCarthy Stone have a distinct environmental advantage over most other new build properties. This comes from the fact that its properties do not use natural gas in their energy mix and are 100% mains electricity. Beyond 2025, standard new build homes are likely to move to 100% electrification too, including many with heat pump installations.

Crucially, electric heating does not directly emit polluting gases or environmentally hazardous by-products. The emissions associated with grid electricity have also been falling rapidly with the move away from coal and gas-fired generation and towards renewables such as offshore wind, which has expanded rapidly in the last five years. The share of low carbon electricity supply in the UK has risen from 22% in 2010 to 56% in 2020 - with renewables at a record 41% and rising.

Unfortunately, this relatively new reality is not yet reflected in the current methods of assessment. But this is about to change. A new version of the Standard Assessment Procedure (SAP) has been developed with lower emissions associated with mains electricity. All other things being equal, we expect that the adoption of new SAP will mean that McCarthy Stone's new build properties will be deemed to have only around a quarter of the CO2 emissions than currently assessed under the previous regime.

The downsizing dividend

Staying with the new SAP rating, we estimate that from 2022 to 2025, building a McCarthy Stone property could save over 1 tonne of CO2 each year in a downsizing dividend. Depending on whose measurements you go with, this is the equivalent of one passenger on a return-flight from Paris to New York, or of 2.6 flights from Amsterdam to Rome. Alternatively, it has been suggested that around 50 trees are needed in order to capture 1 tonne of CO2 per year.[2]

Our assertion here is based on the premise that (i) each new McCarthy Stone apartment enables an older household to live there instead of in an existing house; and (ii) that the existing house freed up means a new build house no longer needs to be built in order to meet demand.

The key point about the 'downsizing dividend' is that if we don't build retirement apartments, older people are more likely to stay living in their existing houses and we are likely to need to build more new houses in order to meet demand. Because new build houses have higher emissions than new build apartments, this in turn is likely to mean higher emissions from housing overall. Simply, it becomes a near-straight swap between building new McCarthy Stone apartments, or standard new houses.

All of this considered, we found that building a new McCarthy Stone apartment instead of a standard new house could mean CO2 emission increases of only 0.31 tonnes CO2 per annum versus 1.38 tonnes CO2 per annum. In other words, a net saving of over 1 tonne CO2 per annum for each new home built.

Building a new McCarthy Stone apartment instead of a standard new house could mean CO^2 emission increases of only...

0.31 tonnes CO^2 per annum

versus

1.38 tonnes CO^2 per annum

Home improvement dividend

An additional benefit of having more older people moving into a McCarthy Stone apartment is that this would create a 'home improvement dividend' as a result of investment from new typically younger household owners.

The home improvement dividend would occur as younger homeowners are more likely to move into the family homes that have been freed up by older households finding suitable accommodation to downsize into. It is to be expected that these new homeowners would then make energy efficiency alterations to reduce their carbon emissions in what are typically less energy-efficient homes.

This is something which would not otherwise happen, principally because older households are less likely to see a return on green investments given the long payback periods involved.

Our analysis sets out to quantify the home improvement dividend by measuring the CO2 emission savings that accrues when an older household (typically with residents aged 75 years old or more) moves out of their existing home and into a retirement living home, and a new household moves into the home vacated and makes energy efficiency improvements.

Calculating the dividend

One way of calculating the home improvement dividend is to look at the energy efficiency rating / implied CO2 emissions of the home of a household aged 75 or older and compare it to the energy efficiency rating / implied CO2 emissions of the home of an average household. The assumption is that an average household would move into the home vacated by the household aged 75 or over when it moves to a

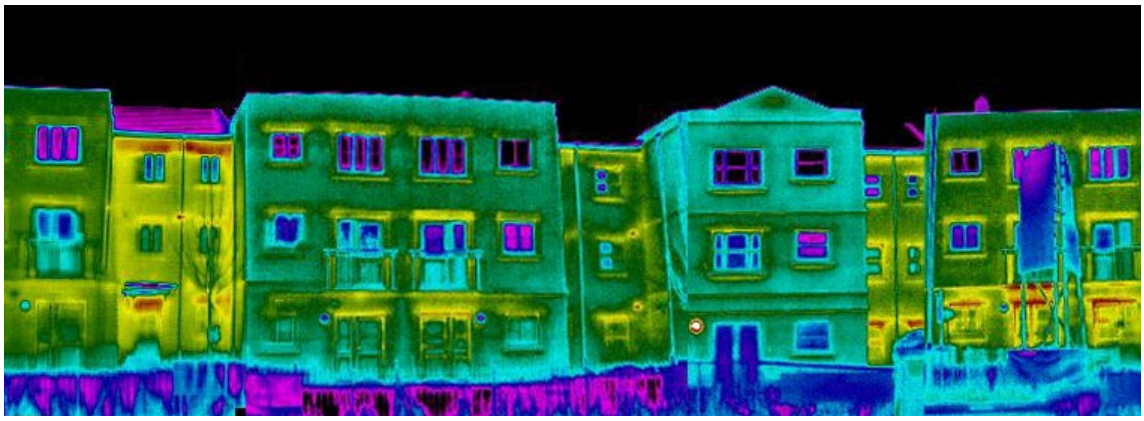
retirement living home, and make the necessary energy efficiency improvements to bring it up to an 'all age' average energy efficiency level with associated reduced CO2 emissions.

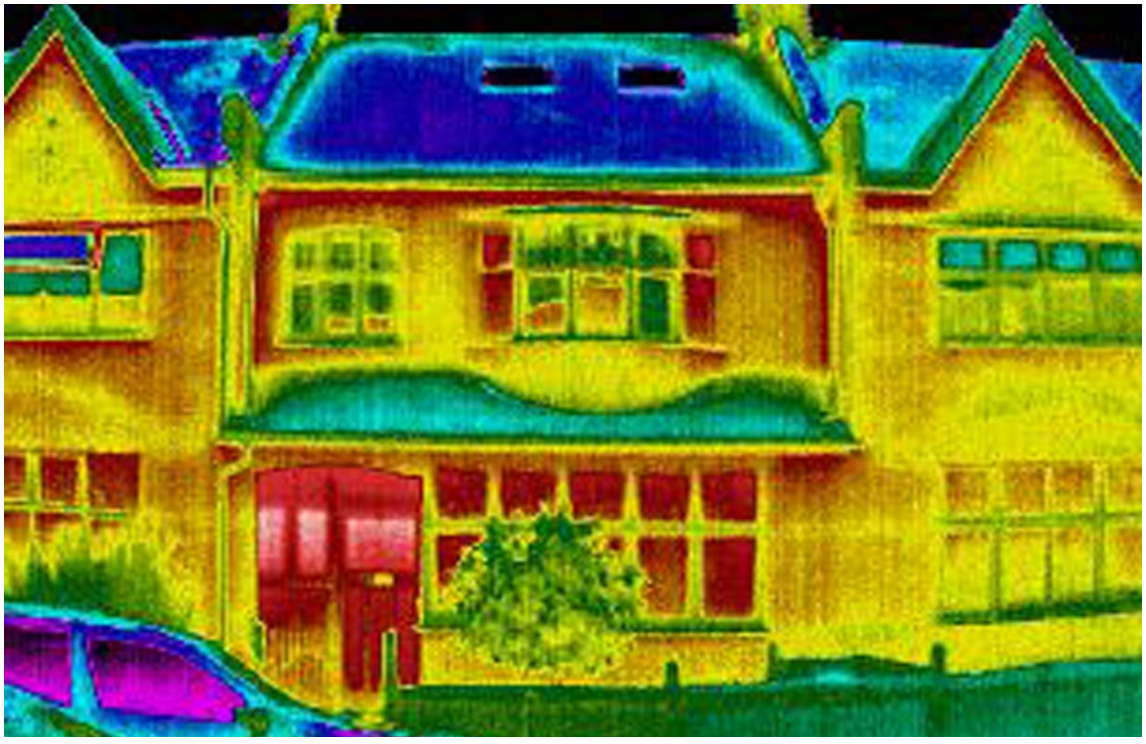
This top-down analysis would suggest a home improvement dividend of between 0.1 tonne and 0.5 tonnes a year for all tenures.

Other estimates, including those based on research from the Home Builders Federation, also appear broadly consistent with our estimate of the home improvement dividend. Overall, taking account of this, our analysis estimates a 'home improvement dividend' of between 0.1 and 0.6 tonnes a year, with the more likely figure between 0.1 and 0.5 tonnes a year.

A significant minority of existing homes coming onto the market each year, around 300,000 in England, are those vacated by the last member of an older household dying. The average household living in a retirement living property lives there for 8 years, implying each retirement living home built 'brings forward' the home-improvement dividend by 8 years.

Thermal images of McCarthy Stone developments show low levels of heat loss (in red) compared to standard homes. Top is a thermal image of Casterbridge Court, a McCarthy Stone development in Dorset. Below this is a thermal image of a standard three bed terraced house.





All in all, building a McCarthy Stone apartment has CO2 savings of over 1 tonne a year from being built instead of a new build house – the downsizing dividend – as well as this likely 0.3 to 0.5 tonne home improvement dividend. These emission reductions persist for as long as these homes exist.

Carbon savings from reduced car use

Residents of specialist retirement housing are less likely to drive. Indeed when Homes for Later Living previously looked into this, we established that customers were a third less likely to drive – 51% vs 77%. This reduced likelihood of driving can almost wholly be attributed to those saying that moving to a retirement property meant that they chose to give up driving.[3]

Looking at self-reported driving among customers, the Homes for Later Living analysis suggested that building 45 specialist retirement housing properties could take up to 15 cars off the roads which would otherwise drive a collective circa 1,800 miles a week. This is a stark contrast with other developments, coming as research has found that greenfield housing estates are adding hundreds of thousands of new car journeys to our roads, increasing congestion, carbon emissions and air pollution.[4]

Elles House, Wallington

Our analysis indicates that the carbon savings from reduced car use amount to around 0.35 tonnes per year for each McCarthy Stone household.

Cars in the UK emit 68 million tonnes of CO2 per year, according to the latest Government figures, from 2019. Car emission per head is therefore just over 1 tonne of CO2 per year, although this figure is likely to be lower now – around 1 tonne – as a result of more electric cars on the roads.

Polling commissioned by Homes for Later Living established that while older people in the general population are just as likely to be drivers as anyone else, they drive less often. These figures suggest that each retirement living household before they moved emitted 1.05 tonnes of carbon dioxide.

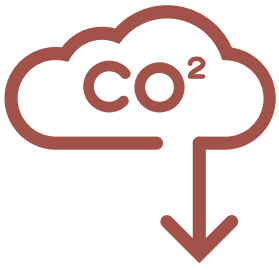
Drawing from previous research, polling and surveys, Homes for Later Living residents are broadly a third less likely to drive, having moved to a more sustainable location accompanied by a decision to give up the car alongside a change in lifestyle. From this, we have calculated that each retirement living household after they move emits 0.7 tonnes of carbon dioxide.

Overall emissions savings

Adding the various savings together, building a new McCarthy Stone apartment instead of a standard new build house could save nearly 2 tonnes a year in CO2 emissions, including the 1.1 tonnes downsizing dividend, up to 0.5 tonnes home improvement dividend, and 0.35 tonnes from reduced car use.

This further helps to make the case, previously argued in our reports that 30,000 of the homes built to meet the 300,000 new homes a year target should be specialist retirement homes. Specifically, our analysis suggests that were the UK to build 30,000 retirement living properties instead of 30,000 new standard houses as a one off, we could prevent nearly 60,000 tonnes of carbon dioxide a year being released into the atmosphere. These carbon savings would then grow by around an additional 60,000 tonnes for each successive year we built 30,000 retirement homes.

Were the UK to build
30,000 retirement living properties
instead of
30,000 new standard houses
as a one off, we could remove as much as...



..nearly 60,000 tonnes of carbon
each year from the atmosphere.

Estimated CO2 emission savings*

		Home energy consumption	Home improvement dividend	Car use	Total
Older household stays put (A)	CO2 emissions from an older household living in an existing family-sized home, tonnes p.a.	3.3 to 3.7	NA	1.05	4.35 to 4.75
	CO2 emissions from a family living in a new-build home, tonnes p.a.	1.4	NA	2.4	3.8
Older household moves to McCarthy Stone home (B)	CO2 emissions from an older household living in a McCarthy Stone home, tonnes p.a.	0.3	-0.1 to -0.5 (saving) as an existing family sized home is retrofitted after the older household moves out / downsizes	0.7, versus 1.05 before, as an older household's car use is reduced	0.5 to 0.9
	CO2 emissions from a family moving into the vacated family-sized home, tonnes p.a.	3.3 to 3.7		2.4	5.7 to 6.1
Emission savings from older household moving to McCarthy Stone home vs staying put	CO2 emissions saving, tonnes p.a. (A vs B)	1.1 'downsizing dividend' (1.4-0.3)	0.1 to 0.5 'home improvement dividend'	0.35 (1.05-0.7)	1.55 to 1.95 total CO2 emission savings p.a.

*Based on new SAP ratings

CHAPTER 2

Analysis Part 2 - Biodiversity

The second part of our analysis compares the biodiversity credentials of McCarthy Stone's apartments with standard new build homes currently. For this analysis we looked at 697 new build homes completed by McCarthy Stone mainly during 2021, alongside England-wide data for standard new build homes of various completion dates. This shows that, among other biodiversity benefits, McCarthy Stone's apartments are significantly more likely than other new homes to be developed on brownfield land rather than greenfield land. Developing these apartments also frequently means cleaning up contaminated land and losing less land to buildings and car parking than is the case with other developments.

Previous land use

There are demonstrably better outcomes for biodiversity coming from the fact that retirement communities tend to be on brownfield sites in urban areas, which is where people in their 70s and 80s often wish to live, as they are connected to local services. Brownfield land is previously developed land, and the re-use of this land helps to preserve greenfield land which is typically richer in biodiversity than brownfield. Other things being equal, the use of brownfield land or housing development instead of greenfield is better therefore for biodiversity.

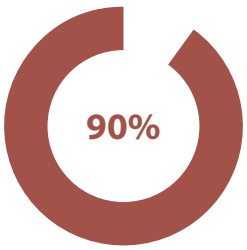
Whilst is it hard to generalise, brownfield sites are often unloved and are easier than greenfield sites to create a biodiversity gain, though they are often harder to develop. This is important because protecting and enhancing biodiversity not only benefits ecosystems directly, but also impacts across other areas of sustainability such as climate change and human health and wellbeing.[5,6] The closest we have to a monetary value on the latter is the ONS' Ecosystems Accounts which contain evidence of an average circa £5,000 house price premium for access to green and blue space.[7]

This all explains why Government policy during the last decade has favoured brownfield development. The Government recently allocated £57.8 million for councils to develop brownfield land into good quality housing and to help transform derelict localities as part of the levelling up agenda.[8]

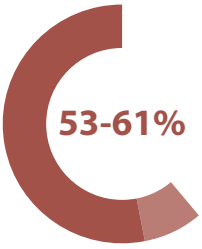
Meanwhile 70% of the British public are in favour of housing development on brownfield land, according to YouGov research.

From the sample of McCarthy Stone's sites developed during 2020/2021, coupled with land exchanges during that year to give an overall pipeline view, we see that around 90% of their newly built dwellings are on brownfield land. The analysis is corroborated by its land exchange data covering seven years which also show around 90% of its homes to be built on brownfield sites. This is likely to be much higher than for new homes in general, with the most recent Government statistics indicating that between 53% and 61% of newly built dwellings in England have been built on brownfield land in recent years.

McCarthy Stone new housing developments on brownfield



New homes in general on brownfield



In 2020/21, covering mainly 2021, 94% of McCarthy Stone's land exchanges were brownfield, measured in terms of homes , including a former garage, a police station, a disused factory car park, a former medical centre and old care homes.[9]

It is also the case that developing retirement communities on brownfield sites frequently means cleaning up contamination which poses a serious threat to biodiversity. Of the recently completed McCarthy Stone homes, one in three were developed on sites where known or suspected contamination was addressed.

Land use impact on biodiversity loss

Biodiversity units are a metric used to measure the level of biodiversity on a hectare of land. They are calculated based on 'quality' ratings for the distinctiveness, condition, and strategic significance of natural habitats. The quality scores are then multiplied by the size (population) of each habitat.

From work undertaken by the Department for Environment, Food and Rural Affairs it can be seen that using brownfield land for housing development instead of greenfield results in a potential loss of 0-4 biodiversity units instead of 4 to 16 biodiversity units. Our research suggests an average loss of around 3 biodiversity units for each HA of development by McCarthy Stone, much less than that of new housing development generally.

It is worth stressing that the estimates above are for biodiversity loss only. They do not take account of mitigations by developers – whether they are voluntary or negotiated locally as part of the planning obligations.

Looking ahead, the UK Government has a 25 Year Environment Plan and in 2019 the Government announced that it would mandate biodiversity net gains for all housing development in its Environment Bill. The resulting Environment Act (2021) mandates biodiversity net gain in England by amending the Town and Country Planning Act and it is due to become law in 2023.

This will mean that for new development a minimum 10% net biodiversity gain is required, calculated using the 'Biodiversity Metric' and that habitat must be secured for at least 30 years via planning obligations / a conservation covenant.

However it isn't just the amount of biodiversity lost per HA from housing development that matters, but the absolute amount of biodiversity lost, which depends on the quantum of land.

The average density of McCarthy Stone's developments built during 2021 was 90 homes per hectare. This reflects the predominance of flatted developments in central urban locations and means less land is needed for a given number of homes. This is especially important in the context of the Government's 300,000 homes a year target and how we minimise land use from building these.

From the latest available figures, it is reasonable therefore to conclude that its new build developments are around twice as dense as standard new build developments overall, with 90 homes rather than 43 homes per hectare. In other words, McCarthy Stone's apartments use less than half the land per home than standard new build developments.

McCarthy Stone apartments = **90 homes per hectare**

Standard new build developments overall = **43 homes per hectare**

To go into more detail, according to the EPC data, a standard new build house has 112.2 square metres of floor space, or an implied 56.1 square metres of land use given houses are typically two-storey. On the other hand, a McCarthy Stone new build apartment has 66.6 square metres of floorspace, or 22.2 square metres of land use if in a three-storey building and we can assume an additional 20% for internal communal areas (26.6 square metres).

Buildings and car parking

When comparing the housing densities and land takes of new housing development it is also important from a biodiversity perspective to consider the balance of uses on the site. Key to this is the balance between the footprint of the dwellings and other hard infrastructure versus green open space, including gardens and landscaping. The latter either protects or enhances biodiversity, whereas the former are generally most damaging.

McCarthy Stone's developments use less land for car parking than standard new housing developments. From our sample we found that its new apartments have an average of 0.75 parking spaces each. For standard new apartments there tends to be a local planning authority requirement for between 1.5 and 2 car parking space per apartment. For houses the requirement tends to be between 2 and 3 spaces, sometimes going up to 4 spaces for or 4 or 5 bedroomed properties.[10]

The data suggests that 32% of the land area on a new 3 storey McCarthy Stone development is for car parking and buildings - the same as for new flatted developments and slightly higher than for standard new housing developments. But more eye-opening are the figures for the amount of land lost to buildings and car parking on a per home basis.

Crucially, we can see that for every 100 new build McCarthy Stone apartments, just 0.35 HA land is lost to buildings and car parking, which are generally damaging for biodiversity. This is less than half of the amount lost to buildings and car parking for every 100 standard new build houses, and less also than for standard new build apartments.

Across several indicators it is therefore the case that McCarthy Stone's apartments have positive outcomes for biodiversity.

CHAPTER 3

Case Study

Anglesea Road, Southampton

McCarthy Stone's Shirley Retirement Living development is located on a quiet road in-between Shirley and the neighbouring suburb of Maybush in Southampton. The development features 25 one bedroom apartments and 24 two bedroom apartments alongside attractive landscaped gardens. Previously the site was a milk depot building on hard ground along with three separate properties, paths and drives.

Arcadian Ecology were appointed by McCarthy Stone to undertake retrospective biodiversity net gain calculations. These calculations provided favourable results, with the design implemented meeting the 10% biodiversity net gain target. This included achieving 100% for hedgerows and 842.03% for habitat post-demolition.

Endnotes

1 https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/overviewoftheukpopulation/january2021

2 https://www.climateneutralgroup.com/en/news/what-exactly-is-1-tonne-of-co2/

3 https://homesforlaterliving.org/wp-content/uploads/2021/02/Homes-For-Later-Living-Silver-saviours-for-the-high-street-.pdf

4 see for example https://beta.trafford.gov.uk/planning/strategic-planning/UDP-Interactive/appendix-j-car-parking-standards.aspx

5 https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapital/ecosystemaccountsforurbanareashttps://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapital/ecosystemaccountsforurbanareas

6 https://ukgbc.s3.eu-west-2.amazonaws.com/wp-content/uploads/2019/01/05151216/Insights-into-Nature-and-Biodiversity-Industry-trends-commitments-and-best-practice-examples.pdf

7 ibid, the precise figure is £4,813 in 2018, based on an average GB house price of £246,010 that year

8 https://www.gov.uk/government/news/thousands-of-new-homes-to-be-built-and-derelict-land-transformed

9 https://www.mccarthyandstone.co.uk/-/media/mccarthy-and-stone/ files/pdfs/reports/social-responsibility-and-sustainability-report-fy19-pdf. pdf

10 see for example https://beta.trafford.gov.uk/planning/strategic-planning/UDP-Interactive/appendix-j-car-parking-standards.aspx

WPI Strategy Limited

11 Tufton St,
London,
SW1P 3QB

@WPI_Strategy

wpi-strategy.com

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