

# NEIGH BOUR HOODS OF THE FUTURE

## HOUSING

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Couple enjoying new development at Gifford Lea  
in Hertfordshire

# Homes for later life



Why are we missing this huge opportunity? // Money is not the  
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## Why is it so much more lucrative for all the volume house-builders to focus on younger buyers and ignore the older age groups?

**Lord Richard Best**  
Chair, All Party Parliamentary Committee on Housing and Care for Older People

Two recent reports from think-tank DEMOS tell us there are 3.8 million people over pension age who are interested in downsizing; and there is an annual demand for over 30,000 new, purpose-built homes designed for older people. But the actual number achieved last year, including retirement villages and Extra Care/Assisted Living schemes, was just 7,000 homes.

Meeting the pent-up demand for tailor-made, “age-friendly” homes would mean tens of thousands of family properties, mostly with gardens, coming onto the market. So building for the older age group also generates the accommodation needed by younger families who, so often, find themselves crammed into tiny new houses and flats.

Indeed, society as a whole would benefit hugely from a programme of new homes specifically for our later lives. It is inadequate and unsuitable housing that generates the problems and magnifies the costs of health and social care for an ageing population. The work of the NHS is increasingly about caring for people with long-term conditions in their own homes. But too often, the home itself is the problem. NHS budgets are seriously affected by the ill-health caused by damp and cold properties, and by accidents from icy steps, troublesome stairs and inadequate maintenance. Frequently, it is not possible to discharge patients from hospital because their home is not suited to their recovery. This problem, known as “bed-blocking”, is wasteful and expensive. And if it is too difficult for local authorities to provide social care in the home, the huge expense of residential care – which could have been prevented or at least postponed – becomes a crippling burden for the Council, or for the individual and their family.

Health and Social Care both depend on housing as the vital “third leg of the stool”.



Innovative housing models for older people can also facilitate a social life with like-minded neighbours that protects against the scourge of loneliness.

So, with these massive gains to be achieved, why is the UK – in contrast to many other European countries – failing to build the homes that our changing demography so clearly requires?

### Money is not the biggest problem

Clearly those “under-occupiers” who are tenants or homeowners in low value property need a subsidised solution – most probably provided by a housing association. But 75% of those over 60 own their homes with no, or only minimal, debt. Most can cover the cost of a new apartment or bungalow from sales proceeds. And for others an equity loan, not repayable until the new home is sold, could meet the balance.

The “silver surfers” may be cautious about spending their money, but if their next bricks-and-mortar asset is more appropriate to their needs, they should be less reluctant to reinvest. And pensions will go further when fuel bills and running costs are much reduced in their new home.

The real reason why so few people are moving to age-friendly new homes is that the UK house-building industry has let us down. The house-builders have failed – and continue to fail – to create the places that we older people would like to move to. Where are the attractive, well-designed, high quality homes to meet the aspirations of would-be “right-sizers”? So long as there is nowhere sufficiently enticing to go to, we will all simply stay where we are.

UK house-building is dominated by a handful of very large companies, with an oligopoly of eight firms commanding 70% of the market. These concentrate on the mass production of houses and flats for younger households. They outbid and crowd out any developers who seek to serve a different market.

First, because younger purchasers are heavily subsidised through the government’s Help to Buy scheme. At a cost to the Exchequer that will exceed £20 billion, this can cover 20% (or 40% in London) of the purchase price, with

no interest to pay for 5 years. Last year, Help to Buy recipients accounted for nearly half the buyers of, for example, Persimmon, the biggest house-builder. And, uniquely, first-time buyers can also get exemption from Stamp Duty.

Second, the prospective young buyer will probably be in urgent need of a new home, in order to leave the parental home or privately rented property, or to accommodate new offspring. By contrast, the older buyer often has no necessity to buy at all. The older customer will be more discerning when confronted by poor workmanship, an absence of storage space, low standards of design, and the other deficiencies so commonly encountered in new housing. Whereas the younger buyer may be persuaded to purchase after simply visiting the show house, without a proper inspection of their new property, the older buyer will be harder to please. They may require several visits before committing themselves. After all, the older owner is going to spend most of their time in the home, while the young will be out at work and commuting there and back.

Third, younger households can be accommodated outside the urban core on the large greenfield sites that are easier to develop, and where values multiply when planning consent is granted. Repetitive, pattern-book houses and flats can be churned out here with no regard to the local vernacular, local materials, design quality or place-making. Housing for older people, on the other hand, usually needs to be on more central, brownfield land, within walking distance or easy public transport for shops, GP surgeries, etc. These smaller urban sites each need careful attention – even the services of an architect – and acquiring them may well mean bidding against the likes of Aldi or Lidl or a car showroom.

Fourth, there is the problem that when building for the older buyer, the customer must sell their own home before completing the deal. The first-time buyer comes, mortgage offer in hand, without the hazards of a sales chain that can go awry.



So it is much more profitable for the volume house-builders to stick to their production line of bog-standard houses for younger buyers, which are built only at a rate the market can absorb without bringing down the price. While overall shortages continue to exist, these builders can choose to stay away from older customers who demand the kind of high quality design spelt out in the “HAPPI” standards from the Housing our Ageing Population Panel for Innovation, which have gained traction across the country.

*In an industry dominated by companies that can clearly disregard the potential market for an extra 30,000 homes a year, and have no interest in the social and economic benefits that meeting these needs would fulfil, what can be done?*

#### Action must come from three main sources

First, government has a central part to play. It has created the incentives for building for first-time buyers. But similar help for “last-time buyers” would achieve a “two for one” benefit, stimulating a second-hand market currently in the doldrums. Levelling the playing

field to support companies catering to older “right-sizers” could be achieved by a Stamp Duty exemption for buyers over pension age. Treasury stands to gain from such a concession because, on average, nearly three properties get sold when one older owner decides to move. And government can enlarge the market of those potential movers by allowing access to Help to Buy equity loans (repayable when the home is sold) to bridge any affordability gaps.

Second, the housing associations and Councils need to recognise the ageing profile of their own tenants (and Right to Buy purchasers) as well as the growing numbers of older adults with unsuitable accommodation in their communities. A bigger proportion of the new homes these social landlords are building need to be for this age group. Meanwhile, Local Planning Authorities need to take forward their recently extended duties, and use their planning powers more strenuously to secure homes for older people through their Local Plan and their planning agreements.

And third, the entrepreneurial private sector could offer so much. The smaller, niche developers, the SMEs, could make this fledgling sector their own, working alongside the new custom house-building movement wherein individuals or groups commission

their own new homes. Smaller building firms often have a strong local connection and a local reputation to maintain; they have every reason to go for a quality product. And when seeking sites and planning consents, they can draw upon local trust and local knowledge to offset the disadvantages of competing with the volume housebuilders’ economies of scale.

New companies could bring the imaginative thinking this emerging market needs. For example, there are opportunities for introducing new online applications. No-one stands to gain more from greater connectivity than older people who spend so much time at home. New entrants to the world of housing development will bring new ideas for IT to make life easier for older users and help achieve the connectedness that counteracts the scourge of isolation.

Another big opportunity is to take hold of the innovations in building techniques – the Modern Methods of Construction – that the volume house-builders are shunning. While the inflexible oligopoly of major builders fails to invest in innovation – just as they fail to invest in skills/training – entrepreneurs newly entering the field will bring a different mindset. Off-site manufacture, in a variety

of formats, can outperform the flawed products of the big players. You can learn more about these innovations in this white paper. Hopefully newcomers will use these advances to steal a march.

#### Joining the fray

With a large, ready-made market that the unimaginative house building industry is failing to address, there are massive opportunities for creating homes for later life. Government, local and central, stands to gain from incentivising and supporting a major growth in this fledgling sector, not least in collaboration with housing associations. But the tipping point – when “right-sizing” becomes the norm for those in their 60s and 70s – will arrive when a new generation of entrepreneurs take up the challenge. A market that is worth over £6 billion p.a. beckons. And with it comes the great prize that both older and younger generations can live in homes that make their lives better.

**Photo credit:** Images courtesy of Lord Richard Best and Inspired Villages Group



# Future homes? They're out there now

**With 80% of the homes that we will be living in by 2050 already built, retrofit for ageing is the big housing story.**

**Sue Adams OBE**  
CEO, Care & Repair England

So far, 'Neighbourhoods of the Future' has, for good reasons, focused on the building of new homes which are well designed for active ageing. This is undoubtedly important given the lack of innovation and poor design of so many new properties, but it is far from the whole story.

This is because the neighbourhoods of the future are already out there – 80% of the homes people will be living in by 2050 are already built. Consequently, there is a massive opportunity in the field of retrofit to make this general housing stock fit for a rapidly ageing population.

In England today, there are 26 million households of which 9.5 million (43%) are lived in by older adults (55yrs+). Virtually all (96%) are ordinary homes which anyone of any age might occupy, with only 4% of older households living in homes specially built for retirement.

This housing and ageing profile and scale of market potential is of great relevance to the building, product design and service industries, particularly as the vast majority of older people (76%) are owner-occupiers, with an estimated £1.4 trillion of housing equity. (Over half of this is concentrated in the south of England, i.e. London/South East and South West.)

## Happy at home

I like my home. You probably do too, especially if you are over 50, in which case you are likely to be a homeowner with a fair amount of space to do what you like, be that dancing around the living room during Strictly, having your friends or grandchildren to stay for the weekend, or web surfing in your back bedroom (a.k.a. home office.)

With evidence emerging of the value to health of maintaining social networks and avoiding loneliness in later life, living with good friends and neighbours in a well-established, mixed community seems like a good idea. Even if I wanted to move (and I currently don't) there aren't many homes in my area that would be much better for ageing than where I live now. So what better solution than to retrofit my current home to make it a better place to age?

In fact, 94% of older people say that they are satisfied or very satisfied with their current home and neighbourhood. When older people have been asked about where they wish to live in the future, three impartial studies have found that around 80% want to continue to live in their current homes for as long as they possibly can. And the inclination to move home decreases with age.



There is undoubtedly a market for innovative new homes (I like Grand Designs as much as the next person), and a minority of older people are chafing at the bit to move to on to pastures new. However, in addition to the matter of personal housing choice, the reality is that there is a very limited supply of well-designed (let alone accessible and adaptable) new homes out there. For many older people, especially those with more limited equity and income, there are few or no realistic alternatives to living in their current home.

This retrofit of current homes to make them age friendly is a potentially massive market, as hardly any homes in England (just 7%) have the four accessibility features that provide visitability to most people, including many wheelchair users.

The four accessibility features that provide 'visitability' are level access to the entrance, a flush threshold, sufficiently wide doorsets and circulation space, and a toilet at entrance level. In 2014, around two thirds (64%) of homes had a toilet at entrance level, but the presence of the other three visitable features was less common, especially level access (18%).

The majority of current homes could, however, be adapted to a degree that will suit the needs of retired people for most, and often all, of their remaining lives. Almost three quarters (72%, around 15.7 million properties) of all the homes that lacked full visitability could be adapted to provide all these four features.



A national network of Older People's Housing Champions identified a range of influential factors including:

- Access to impartial/ independent information and advice about possible options
- Clear, reasonable pricing
- Good communication with customers
- Simple process to get help if and when needed
- Speedy delivery
- Fast and efficient installation of well designed, quality products
- Good value job done well by a trustworthy contractor

On the whole, older people will be more likely to adapt their homes for ageing if they:

- Know what is possible
- Have access to trusted, impartial information about what would work best for them
- Appreciate how this might benefit them individually
- Are able to identify affordable, attractive products
- Trust the building sector to make changes to their homes with minimal disruption

# 15.7 million

the number of adaptable homes

# 7%

the total number of homes in England that are built to accessible standards

# 26 million

homes in England

# 9 million

older households (HoHH 50+)

# 76%

owner-occupied older households



# Do I really want to die before I get old?

So why don't more of us think about future proofing our home for later life in the same way we are supposed to make financial plans for our retirement?

The Who [note for any younger readers – this is a reference to a song by a band from the 1960s who said they wanted to die before they grew old] have a lot to answer for when it comes to acceptance of older age as a desirable stage of life. (The death alternative really is much worse). There can be an ostrich-like attitude to ageing, with so many people hoping 'it' will never happen, whatever 'it' is. Even for those with the means, there is often a reluctance to plan ahead, even as far as retirement income. So to anticipate being less mobile, let alone disabled, is way off most people's radar.

We are living longer (good news) and live independently at home for longer (more good news.) Yet healthy life expectancy has not kept up with the past increases in life expectancy, and there is also a growing divide between rich and poor (both trends are not so good news.) Nearly half of all people over 65yrs have difficulty walking even a moderate distance whilst just over 2 million people aged 65yrs+ have some degree of sight loss which impacts on their day-to-day living.

Whilst medical advances can help to address these physiological changes, they will not eliminate this functional decline in the foreseeable future. One way to reduce the impact of such physical and sensory changes on day-to-day living is to alter the built environment, particularly the home, to accommodate such change. For example, improved lighting can go a long way to addressing eyesight decline, whilst alterations to the design and layout of key areas of our homes can make moving around them easier and safer.

## Time to put the fit into retrofit

In terms of the retrofit market, there is an interesting convergence of spending priorities for home improvement and later life independence. Upgrading kitchens and bathrooms is the biggest market when it comes to money spent on existing homes. As we age, the design of these two critical areas of the home have the greatest impact on our ability to live independently.

Half of all government grant-funded home adaptations are related to use of the bathroom. Getting safely in and out of the bath is one of the first problems that people



encounter in advance years. In the kitchen, the quality of lighting, positioning and design of storage and appliances can make all the difference to being able to continue to cook and look after yourself.

And yet all too often the 'improved' kitchens and bathrooms that people put into their homes are poorly designed for ageing and can even make matters worse. Let's take lighting. There is a research-based guide published by the Thomas Pocklington Trust which sets out what works best in terms of lighting for people with sight loss. Unfortunately, what is often installed as part of modernisation is lighting that can make matters worse if your eyesight is less than perfect, e.g. spotlights that create pools of dark and shade and/or inadequate task lighting.

In the case of kitchens, there is solid research that has identified the key inclusive design features that can make kitchens good places for people to live independently in later life. Yet this has not been taken on board by mainstream manufacturers – despite the best efforts of the researcher.

#### If not now, then when?

If we understand what works to make our homes more suitable for ageing, why isn't everyone applying this knowledge and proactively adapting ahead of a later-life crisis? Why are manufacturers not chasing this market?

Given the negative connotations of old age, it is understandable that not only are people reluctant to view themselves as 'old', but also disinclined to purchase generic products

that are identified as being for older people. Anecdotally, we hear from the retail sector that anything perceived as being designed for ageing is toxic in terms of wider marketing.

Consequently, we have a situation where there is a niche market for specialist disabled home adaptations and equipment, much of which is only purchased and installed at the point when the individual is pretty desperate. The classic example would be an urgent need for rapid installation of a level access shower and/or stairlift, because an older person can no longer get in and out of the bath or negotiate the stairs as a consequence of falls-related injury. This crisis point decision-making is not conducive to driving market innovation or more widespread application of inclusive design.

If we are to drive significant market change, we somehow have to overcome our reluctance to think and plan ahead when it comes to making homes better places to age, as well as finding ways to remove the barriers to advance retrofit.

#### Understanding the obstacles and nudges

We can speculate about the 'ageing denial' phenomenon based on personal experience and professional observations. But it is also useful to consider some of the hard evidence about obstacles to altering homes in order to accommodate the mental and physical changes that ageing so often brings.

A survey by market research company BMG asked people over 55yrs about their housing situations and aspirations, including home adaptations. Just under a quarter had already

**For many older people, especially those with more limited equity and income, there are few or no realistic alternatives to living in their current home.**



## The potential technological advances by 2050 are hard to imagine. Who could have predicted innovations such as Alexa 30 years ago?

had adaptations made to their homes. A similar number expected to have to carry out adaptations at some stage.

Looking into the barriers which may stop people from adapting their home, 43% of over 55s said that they could not afford home adaptations. 23% said they didn't know what adaptations might be possible or best for them, whilst 16% couldn't face the disruption of building work.

These issues of knowing what is possible alongside affordability and worry about installation come up in other housing adaptation studies and surveys. Care & Repair England works with a national network of Older People's Housing Champions who have discussed the issue of adapting existing homes.

As a step to improving the information available about retrofit, the Older People's Housing Champions have worked with Care & Repair England to produce a series of self help guides to modifying your home if you have particular long term health conditions, covering respiratory, macular, and heart disease, dementia, stroke and arthritis. There is also one general guide for people with long term conditions.

### More extensive adaptations

The future age profile of neighbourhoods will change significantly in terms of the rising numbers of 'older old' people. According to the latest figures from the ONS, in mid-2016 there were 1.6 million people aged 85 and over; by mid-2041 this is projected to double to 3.2 million. Using current data about functional decline, we know that this age group will have an even greater need for more extensive home modifications to enable them to live safely and well at home.

The most common home modification after bathroom adaptations is the installation of a stairlift. Henry VIII is credited with using the first contraption to enable a person who can't walk to go up and down stairs, but what we would now recognise as a stairlift was invented by C.C. Crispen in the 1920s. The basic design has seen limited change over nearly a century, and even though they are life-transforming for individuals, stairlifts continue to be the butt of ageist jokes. We are just starting to see innovation in through-floor lifts that are now much simpler to install as an alternative to this common adaptation. It will also be interesting to see how robotics developments tackle this issue, particularly in the light of innovations in the field of exoskeletons to enhance muscle function.

In this later stage of life, given the high incidence of long-term health conditions such as respiratory problems and heart disease, being able to keep warm in the winter and cool in hot summers becomes even more crucial. Efficient, affordable heating, insulation from excess cold and heat, plus good internal climate/ventilation controls are critical modifications to ensure healthier ageing. With the onset of dementia, this management of the thermal performance of the home becomes even more of an issue.

Enabling carers to have virtual control of the home environment, able to monitor and control room temperatures even if they are hundreds of miles away, could be of great benefit to older people. Alongside other monitoring measures (e.g. tracking liquid intake) it could help to prevent dehydration, which is a significant cause of health decline amongst older people, as well as reducing cold-related health problems such as increased risk of stroke.

Amongst the ageing population, and for women over 75yrs in particular, we see an increasing proportion of people living alone. Alarm systems which can trigger a response to accidents in the home, particularly falls, are seen as key to safe, independent living at home for more at-risk groups, including the rising number of those living with dementia. Smart technology will ultimately replace the current generation of pendant or similar alarms. The interconnection of retrofit of existing homes with wider adoption of smart technology has yet to be fully explored.

The potential technological advances by 2050 are hard to imagine. Who could have predicted innovations such as Alexa 30 years ago? But whatever this tech future looks like, we will still have to get the basic bricks and mortar of mainstream buildings right for ageing. If my home is cold, if I can't go safely upstairs to bed or to use the bathroom, if I'm unable to get in and out of my home because of steps, stairs or broken lifts, the best falls alarm system around will be cold comfort.

### Avoiding the stigma of a medicalised home

Another factor which contributes to reluctance to adapt the home is stigmatisation and 'medicalisation'. Recent research by Northumbria University found that older people with health conditions and mobility issues are delaying making vital changes to their homes due to the off-putting and stigmatising appearance of products. It found that older people often made the decision to install equipment and adapt their homes too late; usually once they were in crisis such as after an injurious fall or a long period of struggling with basic activities such as daily washing.

'Many people said that the clinical appearance of equipment and adaptations – including handrails, ramps and accessible bathing equipment – were off-putting. They associated them with ageing and vulnerability, with items often designed to be practical rather than attractive, and making their homes reminiscent of hospitals and clinics.'

The research calls for innovation in creating a wider range of attractively designed products, including from high street retailers, and for kitchens and bathrooms to be designed inclusively, so they're suitable for all ages.

There clearly is a need for more innovative thinking by industry in terms of the diversity of the older population, and a shift away from a 'one size fits all' perspective. People's experience of ageing can differ greatly – there are fit and well 90yr olds, very disabled 55yr olds, some older people are very well off indeed and live in wonderful homes, others struggle on low incomes and are badly housed. There is as wide variation in personal taste and life experience in older age as there is at other times of life. Retrofit innovation is needed to cater for this diverse market.

### A word of warning

When looking for ways to stimulate increased housing retrofit in the context of significant later life diversity, we must not forget the million or so lower income older homeowners living in non-decent homes. They face day-to-day worry about repairing, maintaining, and even insuring or heating their homes.



## Whilst many people can and will pay for preventative retrofit and home adaptations, there is still an important role for society to support those who are disadvantaged.

There is a narrative that says everyone is individually responsible for preparing their homes for ageing, and if they fail to do so they are to blame for resulting problems. (In the case of homes this might be the ensuing accident/fall/health decline.) This is over-simplistic in the context of widespread inequality.

The estimated cost of poor housing to the NHS is £1.4 billion per annum, and over half a million long-term sick and disabled people over 65yrs live in a non-decent home, most of them in the owner-occupied sector.

Even if these lower-income older home-owners have some savings (so often put by for a funeral), many will understandably be reluctant to use what little money they may have to adapt their home in advance of a need. This is especially true if they think that a more pressing crisis might occur first (e.g. urgent roof repair). Most older people don't want to be a 'burden' to their children and/or grandchildren, often preferring to use their limited resources to help these younger generations, passing on even low levels of home equity or savings.

Whilst many people can and will pay for preventative retrofit and home adaptations, there is still an important role for society to support those who are disadvantaged. The current modest, means tested grants for home adaptations have a high cost benefit profile, e.g. NHS savings. Similarly, home improvement agencies and linked handyperson services (which carry out small, essential works in older people's homes at minimal cost) also offer invaluable practical housing help and need to be more widely available.

### Kick-starting the retrofit revolution

In the face of deep-seated ageism, a climate of economic and social uncertainty alongside commercial conservatism, the building-related industries are unlikely to innovate in response to demographic change without some stimulus or active market disruption.

Radical change will need to be kick-started with joint action by government and the building-related, retail and technology sectors, all working alongside older people as co-producers.

This wide-ranging partnership must also include the academic research community, who can help to develop evidence about the potential gains of retrofit, both fiscal and social, quantifying the benefits for individuals, industry and wider society.

**A Radical Retrofit Kick-start Programme** is urgently needed, which would include:

- Raising awareness of what is possible in terms of inclusive design and home modifications that enable active ageing.
- Highlighting the benefits that can result from retrofit. This includes gains for individuals, both fiscal (e.g. reduced high residential care costs) and social (maintaining independence and quality of life.)
- Quantifying increased risks of failing to retrofit mainstream homes for ageing, e.g. to individuals' health and demands on the NHS.
- Making it easier for individuals to make changes to their homes – spreading knowledge about 'what works' with truly impartial, independent information and advice, as well as support to implement home changes where necessary.

- Market disruption through co-production with older people; frugal innovation and cost-cutting through better design and increased volumes.
- Mainstreaming of inclusive product design, setting new standards and creating higher expectations.

### Win, win, win

The retrofit revolution will be great for individuals who want to age well in the homes they love, without making them feel like hospital wards. It will be a great opportunity for the building and tech sectors, as more money is spent by older householders to future proof their homes in ways that add value, rather than devaluing. And it will benefit the public purse, reducing calls on the NHS, as the 9.5m older people living in ordinary homes are less at risk of housing related injury or health decline.

In the words of Joan, a woman who spent a year in hospital waiting for home adaptations to be installed, "You don't value normal until it's gone". For her, it was about the thrill of being able to return home; to use her own bathroom, sleep in her own bed, and make a piece of toast in her kitchen

It's time to make retrofit of current homes the new normal.

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# Our mission is to help fund the future

**Nigel Wilson**  
Chief Executive, Legal & General

The weekly “Tomorrow’s World” programme was a staple BBC product and compulsive viewing for almost forty years. Futurology is fascinating, even if some of the inventions – like the fold-up car that fitted into a suitcase – never made it off the drawing board.

Today, science and technology is the most exciting it has been in my lifetime. From AI, to genomics, to nuclear fusion, we are experiencing exponential change. As the articles in this publication illustrate, the neighbourhoods, towns and cities of tomorrow will be radically different from those of today, partly because of technological and scientific advances, but equally because of complex changes in how we live our lives.

Education, work and retirement are no longer part of a linear process. There will be multiple stages and transitions. Work will be very different. There are already multiple different types of family structure, from “blended” families with stepchildren, to single parents and households headed by grandparents – an almost infinite variety. Some (mainly well-off) people will live much longer and will see the hundred-year life as the “new normal” Others (mainly poor people) will not see life expectancy rise at the same pace, if at all. So, inequality becomes, quite literally, a life and death issue.

We all talk about disruption as a “given”, but we don’t think enough about in whose interests we are disrupting, or which societal issues we are trying to address. As sci-fi writer William Gibson said: “The Future is already here: it’s just not evenly distributed.” Alongside new technology, we need people with the skills to use it. Alongside longer lives, we need better social care for older adults and more savings for later life. Today’s and tomorrow’s older adults received a huge windfall in housing equity, and they will have to use it. This requires innovative approaches which change both the demand and supply sides across the financial services and care industries.





### The role of investors

Legal & General's mission, as the UK's largest investor, is to help fund the future: directly, by investing in new technologies, cities and neighbourhoods, and indirectly by helping individuals to plan financially. There has never been as much global money available for investment as there is today, but it has never been so badly invested, with data from the US Fed and others showing around \$10 trillion globally earning negative returns.

Meanwhile, some of our cities are regenerating themselves and becoming fit for the future, while others remain not overbuilt, but under-demolished. Legal & General's estimates, based on the UK National Infrastructure Plan estimate the UK has funding gaps or shortfalls of: £150bn for housing, £100bn for urban regeneration, £40bn for clean energy, £90bn for transport and £125bn for SME financing.

The money exists to meet these challenges, but we have policy gaps and need a series of "nudges" to make it happen. For example, a housing policy framework disproportionately focused on home ownership and capital gains for consumers and providers alike needs to morph into a balanced, multi-tenure approach, where long-term rentals also provide steady long-term yields to pay pensions.

De-carbonisation, battery technology and AI will revolutionise transport and the built environment. Smart cities need to regenerate to reflect modern living, working, shopping and leisure trends. We will have to build homes differently to meet rising demand – precision-built, energy-efficient modular homes will supplement, and possibly replace, building techniques which have barely changed since Ancient Egypt. High streets will look very different. We need to anticipate those shifts.

**The neighbourhoods, towns and cities of tomorrow will be radically different from those of today, partly because of technological and scientific advances, but equally because of complex changes in how we live our lives.**



### Grasping opportunity

British universities are world leaders and have produced huge amounts of high-quality core research, with many potential applications. Company formation has never been as easy as it is in the era of "capitalism without capital" – modern start-ups typically don't need "plant and machinery", just ideas, technology and skills. But they do need capital to expand – unfortunately for the UK and Europe, the twenty largest global tech firms are all either American or Chinese. The internet was a British invention, but we gave it away. We failed to capitalise on 4G. To catch up and compete, we have to fund university spin-outs and grow our scale-ups.

The neighbourhood and the society of tomorrow has to work more fairly across all generations. Baby boomers like me had it good, with free education, free housing (price appreciation outweighing mortgage interest), and relatively plentiful, steady employment often with good pensions. It is time for us, as dedicated viewers of Tomorrow's World, to deliver the real thing.

**Photo credit:** Images courtesy of Legal & General Group PLC

**Unfortunately for the UK and Europe, the twenty largest global tech firms are all either American or Chinese.**







# Multigenerational housing is the future

**Stephanie K. Firestone,**  
Senior Strategic Policy Advisor, International  
AARP

## Urban aging

It is estimated that by 2020 over 70% of the world's population will live in urban environments. Due to rapid population aging, an increasing proportion of these urban residents will be older adults. By 2050, approximately one in four people around the globe will be 60 years or older—up from one in ten today.

Yet, most of the housing stock in cities on both sides of the Atlantic doesn't match the needs or desires of existing populations. The housing that exists in many metropolitan areas was designed for able-bodied residents and often becomes inappropriate as individuals live longer. Many older adults live alone in large houses that they can no longer maintain or navigate due to a disability or frailty. Once retired from driving, they may also experience social isolation, since inadequate public transportation in many communities makes it difficult to access markets and other essential services and amenities.

The explosion of urban dwellers in metropolitan areas means municipalities are struggling to meet affordable housing needs. In many cities, tight housing markets trigger expensive new developments that are beyond the reach of many. In the US, young adults have difficulty purchasing or even renting a home. At the same time, older adults are the fastest growing demographic among the US homeless population. Similarly, in a number of European countries, such as the UK, "little progress seems to have been made in creating wider housing choices and improving housing affordability for older people" (Pannell, Aldridge & Kenway).

One part of the solution to the affordable housing crisis is to focus on how existing housing and other building stock in established communities can be adapted with new housing models. In June 2018, the German Marshall Fund of the United States and AARP assembled a group of 13 transatlantic experts, including AAA founder Ian Spero, to explore this challenge. The emphasis was on housing models that

offer the opportunity to connect multiple generations and reduce isolation.

Despite differing contexts between the US and Europe, there are many shared similarities in terms of how cities are embracing policy frameworks that enable multigenerational housing as a key component to sustainable and livable cities. Over two days, participants at the GMF/AARP workshop discussed new housing models (such as shared housing, co-housing and accessory dwelling units) and technological innovations (such as smart home systems and wearable devices) that offer the opportunity to connect multiple generations, reduce isolation, and improve integration. The group worked to identify specific policies, practices and regulations that would enable implementation, as well as the principles for transferability to both the US and European contexts. The forthcoming policy paper will highlight alternative housing models and a road map to navigating the opportunities and challenges of their implementation in transatlantic cities.

## Generations living together

A multigenerational approach to housing provides an important perspective. Millennials and Boomers prioritize similar living environments—namely, mixed-use communities that are walkable, livable and facilitate social engagement. We are also witnessing the increasing value of intergenerational engagement—in the form of mentor/mentee relationships, mutual learning, and companionship.

Closer and more regular intergenerational interactions can also lead to a change in the perception of older people—from largely a burden, to a renewed appreciation. Thus, multigenerational housing can help to catalyze a cultural shift in the narrative around aging. This can uncover opportunities to create alternative housing options that meet a greater diversity of community members' needs and desires.

In the US, multigenerational living is on the rise. Homes that include at least two



Sector experts meet to discuss  
intergenerational living in Washington DC

adult generations, or grandparents with grandchildren younger than 25, increased from 12% in 1980 to 20% in 2016. The growing racial and ethnic diversity in the US—particularly among Asian and Hispanic populations—explains some of this increase, as foreign-born Americans are more likely than those born in the US to live in multigenerational family households. Cities on both sides of the Atlantic would do well to prioritize housing options that are varied and flexible, in order to accommodate these changes in household composition.

### Zoning for housing options

Communities must offer housing options that serve residents across longer lifespans, and that encourage generational co-living. An Accessory Dwelling Unit (ADU), for example, is a small dwelling attached to or on the grounds of a single-family house (i.e. an apartment above a garage, a basement apartment, or a tiny house in the backyard). These second homes often house grandparents or a paid caregiver, or are rented to a younger person who can help with household maintenance.

While ADUs have existed for a long time, rigid residential zoning rules enacted in the US after WWII have erected numerous barriers. Local rules that were established to separate different types of land uses hindered the emergence of alternative housing options. Across the US, single-family housing is still the preferred development type, often allowed by-right. On the other hand, multi-family housing often requires a special permit, variance, or other actions that are time-consuming and costly. Yet, the demand for ADUs is great. In January 2017, a new California law took effect allowing ADUs across the state, leading to some 5,000 ADU building permits in just the first year—an increase of 400% on some cities.

The UK doesn't face the same zoning-related barriers, since ADUs are not recognized in the planning system as separate units. However,

as people can easily create “granny annexes” without conflicting with zoning code, there is no ability to count or monitor them, thus creating a different type of hurdle for city planners and housing professionals.

Another housing option—coined “missing middle housing” ([www.missingmiddlehousing.com](http://www.missingmiddlehousing.com))—is comprised of multi-unit or clustered housing types, such as duplexes or courtyard apartments. This housing type is typically the size of a large house and, in the US, was integrated throughout pre-1940s neighborhoods that were close to transit and other amenities. Yet, only one in ten cities has zoning that enables missing middle housing.

ADUs and missing middle housing enable a gentle increase in density in tight housing markets. In both the US and the UK, zoning for single-family dwellings has led to a mismatch between existing housing and a greater variety of housing options. Creating alternative housing options will require a more flexible approach to land use.

### Effectively using existing structures

Two alternative housing models center around more effectively utilizing existing building stock—home sharing and adaptive reuse housing.

For over twenty years, AARP has advocated for home sharing, wherein two or more unrelated persons share a home for mutual benefit. Often the homeowner is an older adult with one or more spare rooms, which they share in exchange for an affordable rent, or a combination of rent and support, such as household tasks, or simply companionship.

Such arrangements are either professionally engineered via nonprofit service organizations, or increasingly coordinated through online websites and apps. These tools match homeowners with home seekers—the latter often being young people, particularly in university cities where students are financially strapped.

According to a recent AARP survey, adults aged 50 and older today are much more willing to consider home sharing for extra income, or if they need help with daily activities, than they were in 2014 ([www.aarp.org/livablesurvey2018](http://www.aarp.org/livablesurvey2018)). Despite this increasing interest, rules in some cities can undermine home sharing as an alternative housing option. Such rules prevent a certain number of people from living under one roof if they are not related by blood or marriage.

Additionally, some novel ways are emerging to use other types of existing structures to create affordable multigenerational housing options. Younger people are finding living arrangements in adult care centers, such as nursing homes, paying nominal or no rent in exchange for services like teaching art/music, or otherwise engaging with the older residents.

Budget residential hotels are also being explored as places for older adults to reside and manage their health. Typically, they will provide kitchenettes and cleaning services. Recent research has shown that older adult residents relish the independence and privacy, as well as the opportunity to connect to a diverse array of people in a community context.

### Conditions for innovation

How can existing structures and building footprints be adapted and marketed to encourage housing types that accommodate multiple generations, and that meet the increasing need for affordable and appropriate housing?

Some of the transatlantic conversation has focused on easing the administrative burdens that accompany these developments. Collectively, we agreed that the lender community must be engaged, to offer more financing options and re-examine policies that hamper them. These include barriers that limit access to grants or loans, and per-unit impact fees that disincentivize the development of smaller housing units. In short, we must encourage cross-sector partnerships and collaboration among the public, private and third sectors, to create conditions that are favorable for innovation.

Finally, we agreed on the need to address the ageist attitudes that prevail on both sides of the Atlantic. Ageist biases are often the cause of housing marginalization and isolation; indeed, many “retiree communities” in the US are located at the physical margins of the community. Yet it is not only older adults who are feeling isolated. Recent research, including an AARP survey, shows that Generation Z (those surveyed were aged 18-22) are more likely to report feelings of a lack of companionship, feeling left out, and feeling isolated from others than any other generation ([www.aarp.org/livablesurvey2018](http://www.aarp.org/livablesurvey2018)). There can be no better reason to advance a transatlantic conversation around a multigenerational housing agenda.

**Photo credit:** Images courtesy of AARP International and GMF Alexander Nasserjah

**Adults age 50 and older today are much more willing to consider home sharing for extra income or if they need help with daily activities, than they were in 2014.**



# A perfect storm in construction?

With a rapidly and inexorably ageing population needing more flexible options, we must act now.

**Jon Johnson**

Founder, The National Federation for Affordable Building (NFAB)

We have reached a fork in the road of construction. Along one path lies the perpetuation of overpriced traditional housing, built to suit the industry and its cartel of big business interests. It is the path of inflated pricing, where unnecessary strata of risk are sold down the chain, inflating the economy, all whilst using outdated materials and techniques.

Along the other path, a little further off but shining with promise, is the land of MMC.

Modern Methods of Construction. Call it what you will, offsite, volumetric, pre-engineered (just not prefab, thanks!), there is no doubt that this is the route to the future. But the road is not without its potholes. Opposition is mounting from traditional builders who see a growing threat. It's time for MMC stakeholders to pull together and learn to collaborate to meet the challenges ahead. This is the raison d'être behind a new organisation: The National Federation for Affordable Building (NFAB).

My own efforts with REACH Homes to bring a low-cost eco container-based solution to market have shown how difficult it is to gain acceptance from commissioners, investors, councils and housing associations, even while they are being whipped to find the 'missing' 140,000 homes per year that the traditional market is consistently failing to build.

Of the 214,000 new homes (including 85,000 conversions of existing buildings) built in 2017, only 40,000 met the Government's £250,000 definition of 'affordable'. Over 120,000 social rent homes have been lost in the last six years through Right to Buy, with a further 130,000 under threat by 2020. Housing associations only built 13% social rent properties in Q1 2018 – less than they built for sale.





Caledonian Modular home



The government’s English Housing Survey 2014/5 reveals that 51% of owner-occupied homes in England (7.3 million households) are under-occupied. These are homes that have at least two bedrooms that are not regularly occupied. In 1995/6, the equivalent figure was 39% (5.3 million households). This indicates that our existing private sector housing stock is being utilised less and less efficiently.

With a rapidly and inexorably ageing population (many with inadequate provision for a longer old age) needing more flexible options, we need to act now. The benefits of freeing up larger homes – worth up to £356bn – have been examined elsewhere in this whitepaper, but where should older adults – still independent but not yet ready for supported living – go? NFAB are keen to examine new tenures, new tailored designs, new ways of building and the ability for people to make their own choices about communities that they can stay active in.

*At the moment, just a few companies are in control of building new homes. That means they can control what gets built and when – and they aren't delivering what's needed. The market needs a shake-up, and we need to make sure local authorities can also start building homes again on a bigger scale.*

Polly Neate, Shelter

The pioneers of ‘Offsite v2018’ – latest in a series of efforts going back to the 1920s to build decent volume affordable homes – have a huge advantage this time. As the title states, we have a perfect storm which demands change, for the following reasons:

**Tech** has caught up so that digital solutions such as integrated supply chain and BIM are ready to further streamline the time and labour-saving aspects of MMC. It will also attract more IT-savvy young people to a construction industry struggling with image, low wages, retention and diversity issues. Offsite working environments are far better for workers, cutting risks and reducing illness. Quality homes, built efficiently and designed to perform specifically for the ‘last time’ buyer, are the achievable goal.

**Land supply** is a huge discussion point, with some brave decisions needed from MCHLG, Treasury, the Local Government Association and a newly-revamped Homes England. This latter body is still struggling to get its collective head round how to deal with smaller firms, smaller sites and moving away from the DPP3 (approved companies) list. By ring-fencing public land for affordable and co-housing projects and encouraging more specialist SME manufacturers, Homes England & LGA can be the ones who “Modernise rather than Dying” and help NFAB members to provide the accommodation that all communities need.



Goodwin Development Trust, Hull/Premier Modular



Buildings should be designed once.  
It's another reason why we need a  
more joined-up industry.

**Sustainability;** With the growing urgency to tackle climate change, offsite buildings offer low-carbon, low-energy homes in line with the UN Sustainable Development Goals.

**Skills gap & training;** With a declining age profile in construction, fewer starters, Brexit promising to shrink the EU workforce (by 30% in London) and poor standards in existing training, you'd think something urgent would be happening to address the skills gap. Now is the time to start a new delivery framework for sustainable building techniques, from design to completion, and begin building the target of 300,000+ new homes to energy standards, which will end fuel poverty and tackle climate change.

**Funding;** With billions of pounds promised, investment waiting and savings to be made from the £28bn bill for Housing Benefit, there is no shortage of cash. What is missing is leadership; a committed Housing Minister who stays in post for more than a few months and coherent policies which deliver the homes people need, not what Bovis, Persimmon etc. dictate we should have.

**Public opinion;** The clamour for change is becoming deafening, but still there is no joined-up voice for anything different. That's why NFAB was set up. Most of the business world wants change' – 'The environment demands it.'

**The opportunities above form the basis for NFAB's business plan. We aim to build for people and planet, with profit as a far less significant factor. Indeed, with concerted backing we will change the shape of construction.**

*The long-term vision for our industry has to be one where businesses of all sizes are working in more distributed manufacturing supply chains, spanning centralised large factories through to local, small scale 'flying factories' using accessible digital technologies and equipment and with SME builders using more open source pre-manufactured components and assemblies rather than just traditional building materials. I wish the NFAB well on its mission to open up the MMC market at all levels of the supply chain.*

Mark Farmer, Author of "Modernise or Die".

Photo credit: Images courtesy of REACH Homes



The Hundred House – Sunday Times British Homes Awards  
2018 winning submission



# Creating an opportunity out of a crisis

**Simon Bayliss**  
CEO, HTA

If there is an urgent need to reconsider how we best respond to the changing housing needs of our population, then it is perhaps no coincidence that this is against the backdrop of a more general housing crisis in the UK. The chronic housing shortage, caused by a long period of undersupply, has been exacerbated by the building of the wrong sort of houses to suit the way we live. But we are hopeful that a growing understanding of how we best respond to the changing physical needs of an ageing population will create the political drive and economic means to deliver the right housing in the neighbourhoods of the future. It is this that will transform our way of life for generations to come.

Whilst acknowledging the challenges we face, it is surely a fact to celebrate that we are all living much longer. Sustained improvements in our standards of living, advancements in medicine and nutrition, and the mechanisation of many of the more physically damaging jobs of the past should be hailed as major progress that is all to the benefit of our society.

The opportunities created by these additional years of life are threatened by new health issues arising through increasingly sedentary lifestyles, and perhaps the more pernicious threat, the impact of loneliness on health. The increased isolation experienced by people living longer and more alone is in contrast to the trend of urbanisation, where we choose to live ever closer together. By 2030, it is expected that over 90% of the UK population will be living in cities, providing the opportunity to radically rethink the types of homes we need and the quality of neighbourhood we deserve.<sup>1</sup>

The lamentable quality of much of the housing currently being delivered in the UK would seem to offer few solutions. Over a period of 40 years, successive UK Governments have put their faith in the private market to deliver the population's housing needs. There is now widespread acknowledgement that this faith was misplaced and that the market needs fixing<sup>2</sup>.

## The market is in need of a fix

Although this market failure was ostensibly focused around the shortfall in numbers of homes completed, it is also now acknowledged that the building of more homes will only be a success, indeed might only be possible, if coupled with significant improvements in quality. Better quality homes, both in terms of design and construction, within more successful and sustainable places. Homes that support mixed communities and neighbourhoods and which enable a higher standard of health and wellbeing for all residents.

We must strive to create walkable neighbourhoods, with local facilities that promote cycling and reduce the impact of the car on the public realm and environment. Successful places need networks of green spaces, trees and outdoor amenities that encourage physical activity and benefit mental health. They can also include advances in technology to enable self-driving, shared access and the rental of travelling time rather than the ownership of individual transportation. This will fundamentally influence and shape the places we create.



Mixed communities need a wide choice of housing types, with homes for sale and rent, a mix of houses and flats, of different sizes and internal layouts. Some homes need to be designed to meet very particular requirements, while others can be designed to be more generally flexible and adaptable over time to respond to changing needs. Although the building of more smaller homes would seem a natural response to a housing crisis that sees more people living alone, creating larger homes that enable more of us to live together whilst retaining independence could enrich lives and respond more effectively to people's changing circumstances as they grow older.

The need for better designed housing in places where people will choose to live, requires greater collaboration between planners, urbanists, landscape architects, architects, interior designers, and environmental specialists. These stakeholders will need to work alongside the new breed of developers and manufacturers emerging in the housing market, with a greater focus on better homes through improved methods of delivery.

### An iconography of home

Buildings combine with streets and spaces to create places. A careful balance of standardisation and variety creates a unified vernacular, a distinct and recognisable whole within which varied individual elements personalise each home and reflects the essence of local materials, craftsmanship and quality.

Within the homes, we must design, model, visualise and assess our proposals to create healthier and more comfortable internal climatic conditions. We need generous levels of daylight and supplies of fresh air, both avoiding overheating and minimising heating costs. Advancement in virtual modelling enables not only the testing of performance of homes to deliver sustainable living, but modelling of the qualities and character of buildings and spaces through virtual or augmented reality. Using this technology, future residents can experience and contribute to the design of their neighbourhood.

### The precision manufactured home

We are experiencing the power of offsite manufacture to craft buildings. They are better designed and higher quality than traditionally built homes, are delivered more quickly with greater certainty of outcome and potentially far more cost effective. Factory manufactured housing significantly reduces waste, energy use and carbon, both in construction and in use over the life of the building, by reducing vehicular movements, pollution and disruption to neighbours of construction sites. In addition, factories create safer and healthier working conditions than a traditional building site, and so appeal to a more diverse and older workforce who can live nearby and cycle to work.

**We must strive to create walkable neighbourhoods, with local facilities that promote cycling and reduce the impact of the car on the public realm and environment.**

HTA Design's winning submission to the 2016 Architects' Journal Home of the Future Competition was based on the potential for a range of housing types that would enable far more flexible modes of living. These housing types would meet demanding environmental standards and could be delivered effectively using offsite construction in a variety of contexts. The plans considered the changing needs of families and sharers, bringing together old and young members of the family unit to mutually benefit from greater interaction. These ideas have been explored further in our Terrace of the Future, winner of this year's Sunday Times British Homes Awards and through our work in developing a manufactured platform for future housing delivery in collaboration with Tata Steel.

Tata are developing a housing system which will be flexible but quick to construct. Working with HTA and others, they have developed a proof-of-concept structural design which we are confident will be welcomed by the housing market and meet the needs of modern consumers.

We are focusing on the flexibility that steel structures can provide, which makes it an ideal material for housing construction. The design is a simple structural steel frame which will allow homes to be constructed very quickly using pre-manufactured components. The structure is flexible and will create the potential for open-plan spaces. Designed to be integrated with any number of materials the new system allows the walls to be lightweight and easily adaptable during the building's life.

There is no comparable home construction system available in the UK market. It enables the home to be future-proofed much more than traditional homes. When they reach the end of their life, they can be easily dismantled and recycled. Future home owners, particularly older buyers, will be more demanding of housing quality. We expect them to integrate new technologies into their homes from the very beginning and to want flexible, spacious houses that allow them to expand and contract as their family life changes over time.

### Ergonomic and sustainable

Fortunately, among the generic baseline of so much of our housing, there are plenty of exemplars to show the way to build our Neighbourhoods of the Future, and the homes that form it.

Hanham Hall, on the outskirts of Bristol, is a development designed and built in response to the Carbon Challenge – a UK Government competition to identify housing fit for the future. The dwellings meet very high standards of energy performance. They generate a proportion of their energy, harvest and recycle rainwater and are designed to be resilient to overheating.

The homes are spacious with minimal circulation and have varied, flexible layouts. Some living rooms are on upper floors, benefiting from additional ceiling height into the roof space, and exploiting views to the street and landscape. Some ground level bedrooms provide more accessible and flexible spaces.



Hanham Hall, on the outskirts of Bristol, is a development designed and built in response to the Carbon Challenge



Successful places need networks of green spaces, trees and outdoor amenities that encourage physical activity and benefit mental health.

The homes are flooded with natural light through unusually large windows, with shutters that prevent over-heating and offer privacy. The addition of balconies and verandas enhance the contact from inside to the public landscape beyond, increasing neighbourly interaction and promoting a greater sense of community.

The project includes a large area of local parkland, with a trim trail and permanent exercise stations. Allotments and greenhouses are available for rent, and there is a crèche, café and a general multi-purpose room for use by residents. The allotments and greenhouses are generally oversubscribed, and the resident community are very active in organizing events on the village green, particularly with nature-focused events for children. Neighbours compete for the lowest bills over coffee in the greenhouses, and swap their home grown produce. Recently, the first batch of Hanham Honey was produced.

Delivered using factory manufactured systems, the homes were built rapidly to the highest quality with unusually few defects. The homes were particularly popular with older buyers who were looking to downsize to more flexible and sustainable homes. They needed houses that would suit them for life, whilst guarding against long term increases in energy bills. A process of post occupancy evaluation with local residents has provided valuable feedback, with lessons to influence future projects and ensure a process of continuous improvement.

### Re-imagining past neighbourhoods (Supurbia)

Some neighbourhoods of the future will form from neighbourhoods of the past. The badly designed and poorly built housing stock often built at very low suburban densities will suffer from increasing costs in use, with the inability to sustain local amenities. From such areas, community development groups will form and focus on redeveloping better, more sustainable homes in more attractive neighbourhoods. These areas will rely less on private cars and enjoy improved amenities.

To achieve improvements across our communities, both new and old, we must bring together organisations across many sectors. This creative collaboration will be required to rethink and deliver neighbourhoods that transform the health and happiness of the population – to enable us to grow old actively, independently and healthily in the comfort of our own home by 2035.

In doing so, we believe we can create an opportunity out of a crisis!

1. <https://www.theguardian.com/news/datablog/2009/aug/18/percentage-population-living-cities>
2. <https://www.gov.uk/government/publications/fixing-our-broken-housing-market>

**Photo credit:** Images courtesy of HTA Design LLP

Hanham Hall in Bristol







# Laying the groundwork for modern methods of construction

**Mike Basquill**  
UK Residential Associate Director,  
Royal Institution of Chartered Surveyors (RICS)

The UK construction sector is a strategically significant part of the UK economy, representing 8% of GDP and 9% of employment. Every year £150 billion is invested through the public and private sectors. It is not only important in terms of its contribution to the economy but has a multiplier effect; creating wider economic growth, and directly contributing to new infrastructure, making better places, and improving the environment.

The sector has been struggling to meet the growing demand for residential accommodation driven by the rising population. This manifests in skewed price points which exclude even reasonably well-paid households from home ownership in many parts of the country. This has seen the huge growth of the Private Rent Sector (PRS) from 10% to over 20% of households since 1998, with home ownership falling from 69% to 61% of households. Strikingly, the number of households with dependent children in the PRS increased by nearly 1m, with a significant increase also in the number of older adults renting.<sup>1</sup>

Those on the lowest incomes are almost completely excluded from home ownership, and increasingly excluded from social housing due to the reduction particularly in council stock and the switch of Housing Associations to the so-called 'affordable rent' product. The affordability issue manifests in 9% of PRS tenants being in rent arrears, and 31% reporting difficulty in paying their rent.

There are, therefore, large supply and demand imbalances, seen in extremis as homelessness, which has rapidly increased. Market-led policy interventions such as Help-to-Buy, shared ownership, and 'affordable rent', driven largely by a disproportionate commitment to home ownership, have not met the housing needs of large segments of the population.



The stage is set for MMC homes to achieve scale. A smart way of getting over this line would be to ‘democratise’ the consumer experience by utilising the principles of custom build.

### Current trends in the construction industry

The construction sector offer to the residential market is characterised by low productivity, variable quality, output lagging behind target, and slim margins for builders. These margins are sometimes unsustainable, as evidenced by the decline in the numbers of SMEs working in the sector, and the concentration of production in the top few developers/constructors. This is partly due to the cyclical nature of the residential sales-led trader model, which has created unstable foundations for the finance sector to invest. Hence, planning consents outstanding are running about 30% in advance of those implemented. There are many reasons for this, including delays incumbent on negotiating a s106 agreement, awaiting the expiry or outcome of the judicial review process, and the need to leverage construction finance through expensive short-term lending. The Letwin Report (2018) also identified the trader model as being incentivised to control market ‘absorption’ tightly, to maintain price points.

The demands on the residential construction sector are substantial. At a time when we are facing a skills shortage, we have increasing workloads and aspirations to deliver ambitious infrastructure projects and targets alongside other national strategic goals such as improving productivity.

Another key issue at play, beyond planning and developers’ business planning and marketing strategies, is industry capacity. In his 2016 report about the construction industry, *Modernise or Die*, Mark Farmer identified a skills crisis in mainstream construction, likely to result in a decrease

of 20-25% in the workforce over the next decade. The workforce is ageing, and the rate of new entrants is lagging those leaving. This is likely to be exacerbated by Brexit, as one in eight UK construction workers are foreign, rising to around one in four in London. In addition, the weakening pound has increased the cost of imported materials, with some 20% of bricks and brickmaking components imported, mostly from the EU.

### The construction sector deal: Government support

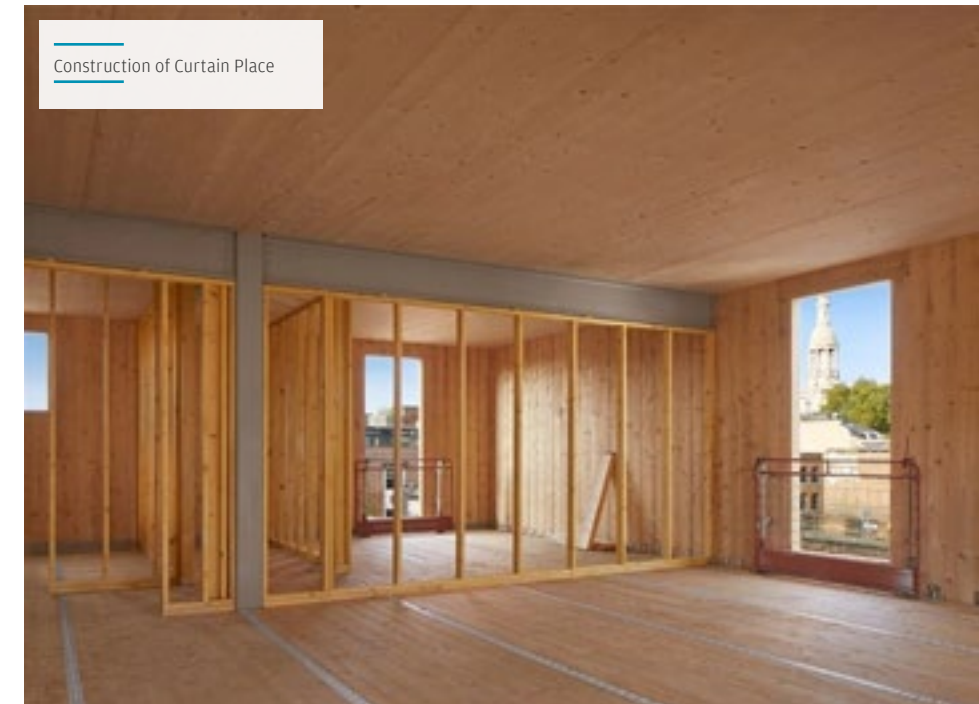
Recognising some of these problems, on 5th July 2018 the Government and the Construction Leadership Council published the Construction Sector Deal, allocating £420m to industry transformation.

The Sector Deal is based on three simple principles:

1. Digitising – Delivering better, more certain outcomes using digital technologies.
2. Manufacturing – Improving productivity, quality and safety by increasing the use of manufacturing.
3. Performance – Optimising whole life performance through the development of energy efficient, smart assets.

These are applied to five key themes:

1. Ideas – Investment in the development of digital and manufacturing-based approaches to construction.
2. People – Reforming industry recruitment and training to attract, retain and develop the skills that the industry needs.



3. Infrastructure – Taking forward the investment set out in the National Infrastructure and Construction Pipeline.
4. Business environment – Developing a sustainable business model for construction and establishing the UK as a global leader in infrastructure delivery.
5. Places – Working across the sector to strengthen the supply chain and skills base across the UK.

The residential construction industry has stepped up to the Government challenge to build 300,000 new homes per year. Achievement in the last 12 months was 195,000 newbuild completions, a 50% increase on 2012. This splendid achievement is still far short of target, which suggests that radical disrupter input is required.

Modern Methods of Construction (MMC) resonates with all the above principles and themes and can ‘fill the gap’ as a significant disrupter. There are also radical moves by Homes England to increase funding and guarantee lending to the construction sector. In addition, the local authorities’ borrowing cap incumbent on their Housing Revenue Account (HRA), has been lifted.

### The disruptive power of MMC

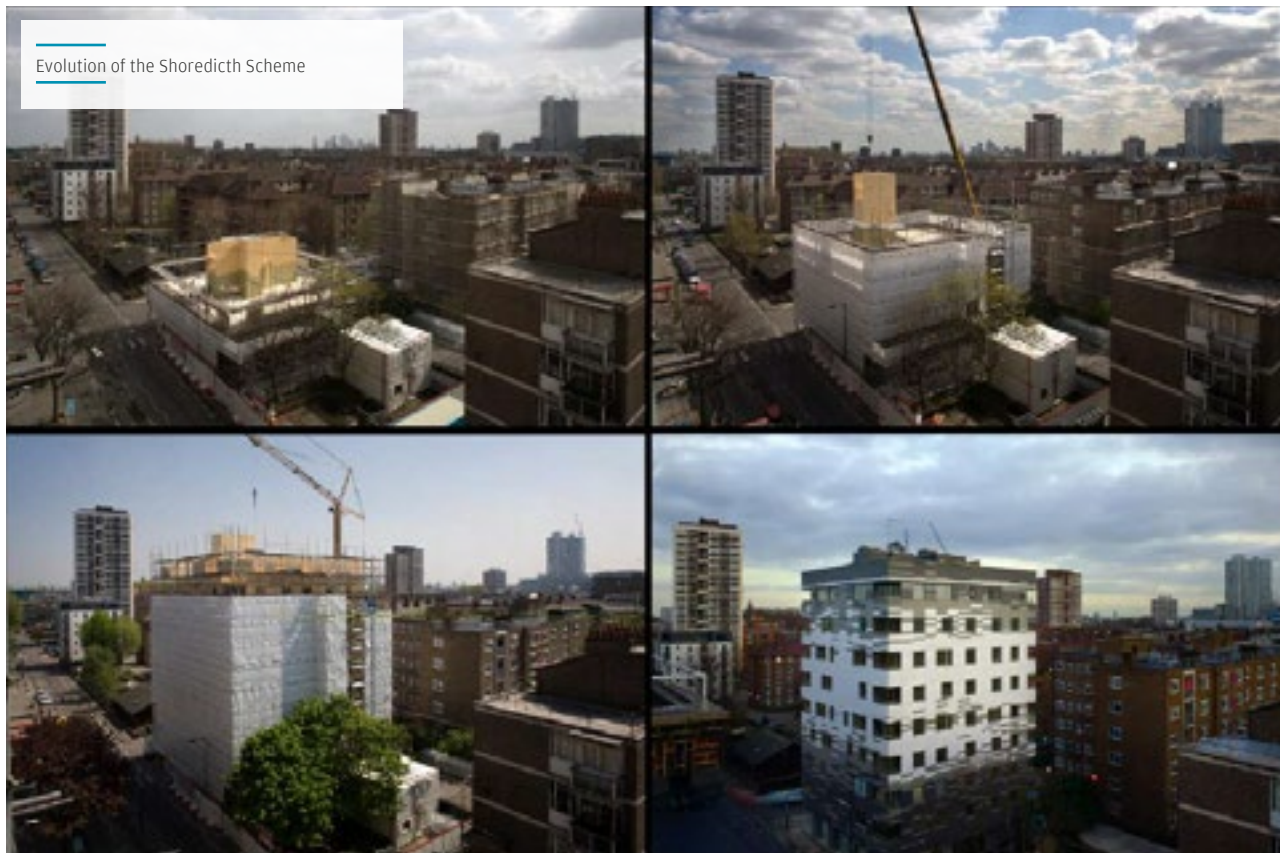
Manufacturing production methods produce a workflow which is significantly different from the traditional model. Nowadays, much more of the production value comes at the better

production-managed design and assembly phase. Therefore, quality, digitisation and efficiency gains are more easily achievable.

The utilisation of pre-manufacturing technologies brings construction into the modern age by transferring a substantial proportion (up to 70%) of value from the site to the factory through greater quality control and more efficient use of materials and labour, for example by achieving 24-hour working. Employing manufacturing techniques will boost productivity, enabling faster scheme delivery with less risk of on-site programme disruption. With scale, increased productivity can be achieved through greater efficiency in a safer, controlled environment for workers.

Digitisation may be deployed both in the production process to achieve precision assembly, and through BIM and its successor models to create a dynamic database which can track the unit through design, specification, procurement, construction/assembly, quality control, finishes and sign-off, handover, letting/selling, residential occupation and management, depreciation and planned replacement to end-state recycling and renewal. Digitisation has the potential to transform stakeholder confidence in the product including investors, manufacturers, builders, surveyors, lenders, insurers, managers, and, of course, consumers.





Performance will be much more closely monitored and scrutinised through digitisation and manufacturing. Through BIM, PropTech, Big Data, AI and the Internet of Things, performance can be tracked throughout the building's life, meaning there is a continuous cycle from design, manufacture, build, and management, feeding back into design. Moreover, for industry, MMC provides constructors and developers with wider options.

By having a different profile and properties, MMC supplements existing capabilities. Developers will have more options to choose from when considering pricing options for a development. This introduces a new dynamic into a traditionally rigid operating environment, particularly around labour and resource factors, planning and engineering constraints, and sustainability and environmental performance.

As part of the National Industrial Strategy, wider goals can be targeted:

- Skills – Modern technology needs modern skills.
- MMC-specific training offer – Government and industry must work together on the creation of apprenticeships and training products that support the rollout of MMC and encourage new entrants into construction.

- Upskilling existing workforce and organisations – This must be funded and otherwise enabled strategically, including the encouragement of SMEs.

This requires resourcing and incentivising new delivery agencies such as local authorities, local housing companies, SPVs and joint ventures to recognise and utilise emerging technologies.

### Benefits of MMC for the consumer

RICS' 2018 MMC Case Studies paper subtitled 'a Forward-Thinking Solution to the Housing Crisis' looks at several different technologies as constructed on site. These include Timber-Frame, Cross-Laminated Timber, Steel-Frame, and the Design for Manufacturing and Assembly process.

The locations and design standards of the projects are impressive, and mortgageability demonstrated by sale into the owner-occupation market. The projects have in common the BOPAS (Build-Offsite Property Assurance Scheme) technological accreditation, as well as conventional insurances and assurance e.g. NHBC.

The stage is set for MMC homes to achieve scale. A smart way of getting over this line would be to 'democratise' the consumer experience by utilising the principles of

custom build; within a limited range of options, on show in the factory, where the consumer, off-plan, is enabled to make a layout, fit-out, and finishes selection to the volumetric unit.

This concept has potency in the generation of a new model of home design, selection, and consumption, broken down here into sub-markets:

- Older households – priorities are achieving highest levels of thermal performance and minimising fuel poverty; fit-out to be appropriate to need e.g. mobility, personal hygiene, and operational ease.
- Council development for lower income households: amenity, especially for families, demountability, so that temporary sites can easily be utilised, and consumer choice through factory viewing, in a sector where choice is strictly limited by availability.
- Build-for-rent: standardisation, increasing yield and reducing voids and costs to users, variety, subject to range of offer, and specification/fit-out, for frequent tenancy turnover e.g. wider door sets, and cassette replacements.

The RICS case studies show the contribution MMC has made to alleviating the housing crisis, accommodating thousands of households in high quality homes, with added social and infrastructural value as well as supporting non-residential uses.

### Barriers to change for MMC

Given the stated advantages, MMC can become much more prominent in the sector. However, there are obstacles to overcome before MMC becomes mainstream.

#### Supply chain

The supply chains for many MMC technologies have yet to develop to a point which can meet the ambitions for the sector. Demand fluctuations, unstable investment and construction cycles, and a fragmented housing market procurement model is not obviously a good fit with factory production. Nevertheless, some offsite products and processes have had greater longevity, and have achieved significant penetration in the conventional housebuilder supply chain,

albeit as augmentation of the traditional approach rather than a replacement. Roof trusses and floor cassettes are now fully mainstreamed, for example.

#### Skills

The skills issue in the sector can also impact on the development of offsite construction. If there are no skills or labour supply problems at the factory end, there will still be the requirement for sub-structure, superstructure and finishing trades on site, as well as issues around utilities. Moreover, as MMC strategies are tied into digitisation, IT literacy amongst construction workers will be a concern. Given the recent pattern of concentration and fragmentation in the sector, elevated levels of investment in training and education will be required, not least around encouraging SMEs and new entrants into the evolving market.

#### Cost and data

From a cost, value and performance perspective, modern offsite construction is relatively untested and is still in an evolutionary phase. The data on cost of construction, value and performance using offsite is not yet robust, and as techniques evolve, cost information and performance changes, and previous data becomes obsolete. This makes it hard for the industry to estimate costs, assess benefits and plan appropriately, which is a challenge for surveyors. This is an issue for investors, lenders, values and insurance/warranty providers naturally concerned about product durability, value and ongoing maintenance cost. The Build Offsite Property Assurance Scheme constitutes a significant provider of confidence and assurance in this sector.

#### Changing work profile and inflexibility

As the objective is for up to 70% of cost to be incurred offsite in factories and at the design phase, the points at which labour is most intensively used throughout a project differs from traditional build, with the cost curve far more front-loaded. This cost profile demands a 'right first time' ethos from initiation. This also means less flexibility to change elements of the projects later. As a substantial portion of labour and other cost is generated early, there is greater project risk earlier on in the programme, which is exacerbated by uncertainty around land and planning, and expensive development period funding.



**Industry familiarity**

Lack of familiarity with different offsite construction techniques can lead to risk averse decisions against its use. This is reinforced by the subcontracting model and informal networks.

**Consumer perception**

There is still consumer resistance, with an abiding image of post-war emergency housing rather than 21st Century technology delivering better quality, safer, and far more cost-effective homes at the same or, with upscaling, at lower cost.

**Standardisation and scalability**

Standardisation of different technologies is also critical to reducing complexity and achieving scalability. There needs to be a sense that consumers have a choice between contractors when choosing a technology, although conventionally there will be a natural selection of technologies, leaving a handful in the mainstream.

**Actions required for MMC to succeed****Public procurement**

MMC can be supported through public procurement. Government must support MMC through its influencing power, directly through investment and indirectly through planning, education and construction and design quality standards and programmes, including encouraging and incentivising construction of MMC factories in areas of high unemployment.

**Private investment**

Private sector investment in MMC is already widespread; however, more can be done to create an environment of cooperation and joint ventures, particularly to allow SMEs to access and invest in larger production plants.

**Government risk mitigation**

Government should consider how it can give some risk mitigation to potential new entrants and suppliers.

**Guarantees**

Investors and consumers need confidence in MMC products through the availability of mortgages, assurance and warranties. Accreditation for MMC such as BOPAS needs to be championed and strengthened. Stakeholders need to be satisfied that there is an industry seal of approval which gives equal or greater assurance compared with conventional home insurers and warranty

providers. Partnerships with lenders and investors, are critical in this regard. Accreditation models like BOPAS can catalyse MMC into the mainstream.

**Investor and lender engagement**

Investors and lenders must engage with the sector to recognise and calculate the long-term value of products. We need improved integration and collaboration between lenders and builders through schemes like BOPAS, so that lenders better understand products and build confidence in the quality, durability and marketability of the product. Regardless of tenure, investment approvals must become systematised, like mortgage approvals for second-hand property, despite, arguably, resales having a greater risk profile regarding the three criteria. Now, the second-hand home sales process is clear – lenders have tolerances for bulk retail lending. Surveyors and valuers also have a key role to play, and must add knowledge of MMC technologies to their reporting skillset, especially regarding their durability and cost in use.

**Standards**

Regulation, standards and professionalism need to be adapted to support MMC.

**Regulator familiarity**

Regulators need to familiarise themselves with MMC. Regulators and warranty providers like NHBC, LABC, BBA (BRE) must upskill in the treatment of MMC by getting better familiarised with products on offer and their properties, to enable the provision of the consumer protections to encourage confidence in the products.

There are great advantages to be gained from growing the volume of offsite-manufactured homes to significant levels. There are opportunities for all participants in the development process as it stands, and for the encouragement of new participants. The key beneficiaries, however, should be those households seeking better value for money, better quality, cheaper cost in use and higher amenity in their home.

1 Office of National Statistics

**Photo credits:** Images courtesy of Mike Basquill and Will Pryce and Waugh Thistleton Architects





# The next generation of housing is rolling off the line

**Matt Cooper**  
Business and Operations Consultant, Arup Group

Digital technologies, clever design and an acceleration of Modern Methods of Construction could make it possible for us to adapt our homes throughout our lives and enable us to keep our communities together.

## A new way of working

Today, the UK has around 24 million homes and a population of around 66 million people. During 2016/17, around 200,000 new homes were built, including both houses and flats. Yet there isn't a day that goes by that we are not reminded of the chronic shortage of housing, and that a significant proportion of our younger generation are finding it impossible to get onto the housing ladder. Government and many industry experts agree that a move to more high-quality, factory-produced housing could help to alleviate the problem. But could the new generation of modular housing help to change the way our housing markets work and open the door to new business models that have a much wider social impact? At Arup, we support and enable the change to a more sustainable future; not only to create more housing, but to revolutionise the way housing is provided.

## A shortage of housing

The cessation of council house building in the 1980s was based on a government belief that the private builders and housing associations would take the slack and deliver the right mix of built-to-sell and built-to-rent properties for our housing market. That simply didn't happen. And, based on the rules of supply and demand, we have seen the inevitable price inflation that comes with a shortage of anything, and a crisis in the affordability of housing.

For a myriad of reasons, skills shortages being just one, the traditional house-building industry has failed to keep pace with demand. Experts agree that a new build rate of 300,000 houses per year will be required, just to start to break the housing ladder barrier to entry of affordability. With skills shortages set to become an even greater obstacle post-Brexit, we need to accelerate the development of new, high-quality manufactured housing that use Modern Methods of Construction.

Stacked module housing



## Ageing housing stock

But that's not the whole story. The UK has a shortage of the right type of housing in the right places. We also have over 600,000 homes sitting empty, many of which can only be described as the wrong type of housing. Since they are empty, they must be in the wrong places, right?

Maybe not. Simple maths suggests that with 24 million homes and a current build rate of around 200,000 new homes per year, each new house or flat built today will need to last an average of 120 years – and that is without increasing the total housing stock. A recent survey stated that the UK has the oldest housing stock out of all EU member states, with 38% built before 1946. By contrast, Japan, a country with roughly twice our population, builds over a million houses each year. In Japan, homes that are no longer fit for purpose are simply replaced and the precious land is re-utilised.

Just as the back-to-back terraces and tenements built in the 1890s aren't suited to modern living, it is highly unlikely that our older houses are going to be suited to future living. With the acceleration of new digital technologies designed to make our lives easier and more connected, surely it is time for a rethink of how we finance, build and maintain relevance in our housing stock.





Homemade Heartlands by Igloo Regeneration

### It's not the money

Anyone who has driven through one of our inner cities will have seen streets of houses boarded up, no longer fit for habitation. But the land that those houses sit on is, in most cases, still perfectly suitable for housing. So, why don't we just replace houses that are no longer fit for purpose?

Well, it is not just the money. Using traditional build methods, it takes a considerable amount of time and associated disruption to knock down and regenerate an area of housing. As a result, builders prefer to develop greenfield sites. Unfortunately, this leaves the more problematic areas to degenerate, allowing resultant societal problems to grow.

The UK spends around £40bn per year on housing, yet 98% of Local Authorities are unable to meet demand. They spend hundreds of millions of pounds repairing dilapidations, in an attempt to keep houses just fit for habitation. The total cost of inadequate housing in the UK was estimated in 2011 at £4.4 billion per year. That figure includes not only the maintenance costs but

also those of associated energy, crime, health and a range of other factors. In 2009, the UK Audit Commission stated that 'Every £1 spend on providing housing support for vulnerable people can save nearly £2 in reduced costs of health services, tenancy failure, crime and residential care.'



### Rapid regeneration

Most of us accept that an old family car will be worth less than the equivalent new one. As they become dilapidated, we seem perfectly happy to replace our cars for something newer, more technologically enabled, more fuel efficient, and generally better. We don't factor in the cost of the land that we park our cars on when we make that decision. So why not replace our housing stock using the same logic?

What if we could replace our homes as quickly and easily as we replace our cars? Homes can and are being made in factories using the latest Modern Methods of Construction (MMC). Innovations in modular construction technologies now make it possible to produce high quality, customisable, energy efficient housing that can be adapted to meet changing societal and personal needs, and that can be delivered and installed in days rather than months. Japan delivers more homes in produced factories each year than we build in the UK in total.

The model of developers building on greenfield land is not sustainable in the long term. The advances in technologies, and the need for society to be less wasteful and polluting, present a need, or indeed an obligation, to reinvent and rejuvenate our cities.

### Building in adaptability

With clever modular designs, a house can be installed in days and can be replaced, adapted or reconfigured equally efficiently. This means that our homes and neighbourhoods can be adapted to meet individual or family needs as they change throughout our lives. This could be either due to physical changes, or the changes in technology that will inevitably impact on all of us.

We are already seeing giants like Amazon investing in technology-enabled, prefabricated modular housing, and financial institutions, like Legal and General, establishing their own MMC production capabilities. Companies like Tata Steel are developing housing systems that could provide quality, adaptable modular designs. These allow us to upgrade our homes in much the same way that we upgrade our cars and technology.

The range of materials, and ability to customise products, make for some interesting places to live. Different MMC typologies allow us to create different types of places, tailored to local needs. This can readily be translated into local design guides and codes. The combination of innovative financial and technical services could see a major shift in the way housing is provided.

This doesn't mean that we are proposing a throwaway society. We are committed to promoting the principles of a circular economy. With clever design, just as cars are reused, housing can be easily upgraded, reprocessed and ultimately recycled, without reducing them to rubble. The approach will not only reduce the sprawl into precious greenbelt, but it will recycle housing land and the materials that our homes use. It will allow communities to remain together and to adapt to living in homes that fit with differing needs and means across a lifetime. Furthermore, by decoupling the land value from the house, and increasing the aftermarket value for housing components and modules, we can attract new financial models, services and industry markets. This will help offset the cost of the homes we use.

Housing is at the core of the community and can integrate society across all ages. Quality housing, which is maintained to a high-quality standard, can establish pride in a community. There is no shortage of studies that prove the benefits of communities on health and wellbeing. At Arup, we are working with central and local Government departments, housing developers, financial institutions and technology partners to develop products and collaborative models to not only address the current housing shortage, but create new markets and industries associated with urban regeneration. We want to allow individuals, families and communities to have a better chance of remaining in the places we want to live in.

### A new social economy

The creative pioneers of the new generation of MMC not only have the opportunity to alleviate our housing shortage, but to change the way housing is delivered across the social spectrum. A house is just a house, but homes are part of communities. Throughout our lives, the way we use our home changes. With adaptable and agile regeneration capabilities built in by design, MMC could be the game changer. Within the next 10-20 years, it may not only halt the downward spiral in our housing market, but act as the catalyst for a new social economy.

**Photo credit:** Images courtesy of Arup Group and Igloo Regeneration Ltd – [www.homemadeheartlands.co.uk](http://www.homemadeheartlands.co.uk)



# BIM – Disrupting construction industry practices

**Terry Stocks**  
Director and Head of Public Sector and Education, Faithful+Gould

Homes and neighbourhoods in the UK are generally not fit for purpose to meet the needs of an ageing population. If we want to see change at an industrial scale, stakeholders need to work more collaboratively to redefine the way buildings are constructed from the ground up.

The UK Government recognises the importance of this agenda and is championing change within the construction industry under the IPA and Department for Business, Energy & Industrial Strategy (BEIS). Industry- academia- and government-led programmes such as the Cambridge Centre for Digital Built Britain and the Construction Leadership Council's Sector Deal are focusing on driving this change. The IPA Transforming Infrastructure Performance (TIP) programme is a 10-year initiative to drive efficiency and improve the outcomes of planned and delivered infrastructure assets.

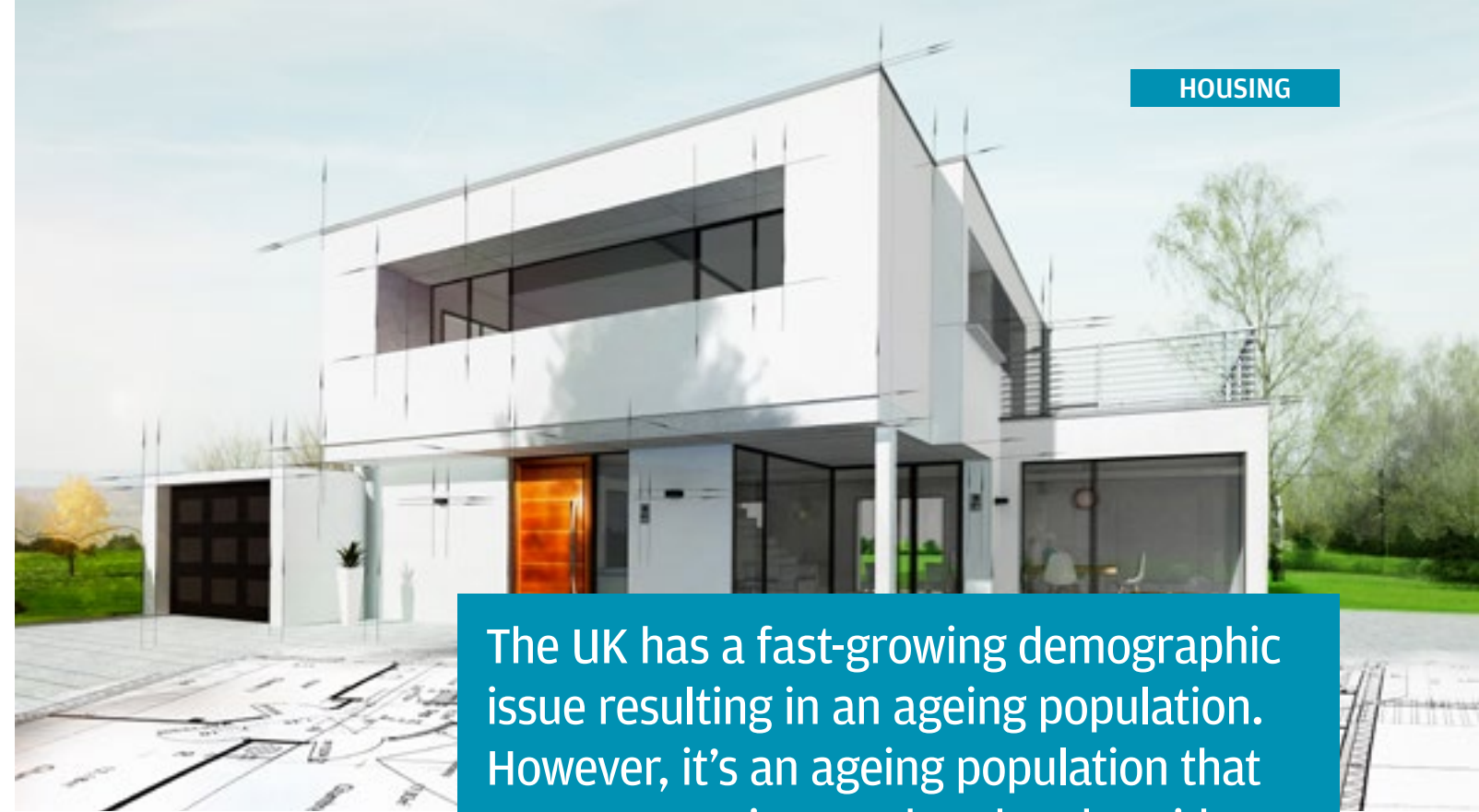
This ambitious programme relies on digital approaches to delivery, adopting a process called Building Information Modelling (BIM.) The BIM process enables designers to build a 'digital twin' of the proposed asset, which reduces on site construction waste and duplication. It provides increased certainty that the delivered asset reflects the intentions outlined at the project/programme inception.

## A social infrastructure that serves its intended users

The BIM approach supports digital libraries and the open sharing of object information and designs. Combined with collaborative design practice, this supports Modern Methods of Construction (MMC) as stated in the TIP efficiency programme.

BIM also facilitates the building of 3D models of the facilities to increase stakeholder engagement and understanding. This, in turn, allows better feedback and comment, allowing a more insightful design and specification process. This collaborative approach to scheme briefing, design development, delivery, handover and operation is critical in delivering the TIP requirements, and a social infrastructure that serves its intended users and functions.

Current delivery process can be opaque. The various players (client, procurers, professional service providers, contractors, facilities managers and so on) work in silos and deal with misaligned expectations of outcomes. The tragic events of Grenfell Tower and the subsequent review of building regulations report led by Dame Judith Hackitt, 'Building a Safer Future', demonstrated the consequences of working within an opaque system. The Hackitt report identified the production and sharing of information



The UK has a fast-growing demographic issue resulting in an ageing population. However, it's an ageing population that spans a growing age band and a wide demographic need from active through impaired mobility and extra care.

as the 'Golden Thread' that should run through the whole life cycle of an asset. Collection and verification of the data must be supported by digital approaches.

The report also emphasised the importance of crystallising aspirations and expectations at the start of a project. Further, there should be a checking process in place throughout design development and delivery of the asset, to ensure those expectations have been delivered for the asset that is handed over. Finally, the asset data should be held, accessible and updated throughout the operational lifecycle.

This is where BIM comes into its own and you can read more about this process in Alex Small's article on page 282. BIM is championed by Central Government represented by the Infrastructure and Projects Authority (IPA), Business Energy and Industrial Strategy (BEIS) and the Cambridge Centre for Digital Built Britain. It enables the delivery of the asset 'soft landings' process. This includes post-occupation reviews, providing a detailed in-use occupancy report to support better operation of the delivered asset, and lessons learned for future asset briefing and specification.

The Hackitt report focuses on high rise, high risk buildings (residential buildings generally over 10 stories high). However, Dame Judith would like to see her recommendations extended to other buildings where those using or living in the facility could have mobility or other issues affecting their free and rapid movement around a facility. This is particularly pertinent to the housing of older adults.

## Breaking traditional moulds

Delivering the combined benefits of BIM and the wider digital initiatives requires a joined-up collaborative approach across the whole project and asset life cycle. The client, procurement and professional service teams, contractors, designers, facilities management, and end users will be able to work together sharing clear intent and understanding of the outcomes to be delivered.

This approach will break the traditional 'iron triangle' of Time – Cost – Quality, where one aspect is delivered at the consequence of the other. The collaborative BIM approach supports a move to a Time – Cost – Quality Venn diagram approach where all three can be delivered simultaneously.



## We need to start now if we want to deliver homes and neighbourhoods that meet the needs of 21st Century society.

### Delivering through scale

Because of the ageing population and the general housing shortage, there is an opportunity for BIM, MMC and revised procurement approaches to have a real impact across a wider sector. This can address what may look like a diverse asset requirement, which could, in fact, be resolved through standard design approaches. (This is not to be confused with standard designs or standard aesthetics!)

The demographic need could be satisfied through development of age-friendly targeted developments. But residential houses, apartments and so on could still use the same basic structural frame approach. Such an approach would provide manufacturing facilities with the means to mass-produce assets. After all, the requirement would be across a whole sector rather than the current feast or famine situation brought about by individual orders across a diverse set of projects, all with bespoke requirements.

By adopting a collaborative cross-sector approach to asset specification and delivery and using BIM/digital approaches as the collaborative tool to support production, delivery and operation, many of the current and emerging delivery and planning risks could be mitigated. Modern Methods of Construction are enabled through BIM, and championed as a step to improve productivity and output. (MMC articles directly follow) A production type volume is required to deliver the benefits of a correctly procured and collaborative sector approach. We need to start now if we want to deliver homes and neighbourhoods that meet the needs of 21st Century society.

F+G (Member of the SNC Lavalin Group) are a construction multi-disciplinary design and integrated project and programme management organisation. They have national and global coverage with offices throughout the UK and worldwide. Their staff hold key positions in Government and Industry in developing and deploying the BIM and MMC initia.





# Modern methods of construction (MMC) will transform the supply chain

**Jonathan Parnes**  
CEO, Regents Affordable

I've been a property developer for over 30 years. I've been involved in countless developments during this period and I've had first-hand experience with most major construction companies. So, when I say that the infrastructure of the construction industry is rotten, I'm speaking from experience.

One of my most recent projects is a £80 million student accommodation in Coventry, and I am currently taking forward my next scheme in the city which will be built in time for Coventry's tenure as the UK City of Culture in 2021. I've been impressed by the city's appetite for doing things differently in building a Neighbourhood of the Future and I want to be part of it.

I want to incorporate changes envisaged within the Neighbourhoods of the Future white papers. This way, we can develop communities which work for an intergenerational demographic. Our homes will incorporate the recommended 'cognitive' systems, including health-based monitoring and environmental controls and will adapt in form as people's needs change.

Pivotaly, I want to join with others in building quality and affordable housing on a scale that will make a difference. Our society needs it: research tells us that the UK needs 250,000 new "affordable" homes annually to meet the needs of our population. And we need them quickly. Our partners exist – they are called Housing Associations, Local Authorities and, of course, likeminded developers.

My company is ambitious, we want to scale and help meet the UK's growing demand for new housing. So, what do we need? A suitable site, willing partners, investment, a plan, a set of architectural designs and then builders. If this sounds easy, it isn't!

I believe that we need to change supply-chain dynamics and the volume construction process and these need stakeholders to change their mindsets.

What currently happens is that as soon as a developer commissions a building contractor, the contractor starts to think of how they can save money and increase their profit. The contractor tries to renegotiate the design, the materials and, of course, renegotiate the agreed price. This happens all the way down the contractor's supply chain. This results in delays and litigation, which results in more delays and in the case of international construction giant Carillion, an utter collapse in January 2018 having racked up debts of £1bn (Inman, 2018).

I'm not the first to recognise the rotten infrastructure. It's been a familiar refrain for two decades<sup>1</sup>. In June 2018, the chief executive of construction industry standards notifier, British Board of Agrément, Claire Curtis-Thomas, stated her belief that "fundamental" problems with procurement are making "good companies complicit in bad outcomes,"<sup>2</sup> leading to cuts in quality. She continues: "Once the contract has been won, [contractors] go about 'subbie bashing' – they go to subcontractors and say we haven't got a lot of margin here, how we going to make the margin up?"





### A shorter, transparent supply chain

We need to transform the supply chain, which we can do by shortening it and by making it more transparent.

We can shorten it using modern methods of construction (MMC). We can make it more transparent with a shared 'open book' accounting system.

MMC enables more efficient builds, as sites can be prepared at the same time as in-factory production of build materials. 80% of the build can be produced in the factory and transported efficiently to site. This ensures that each development will be delivered to an agreed design, fully fitted and typically in 60% of the time. A large housing scheme will take 14 months from mobilisation date rather than 24-30 months for a traditional build. The method is tried and tested (see also Mike Basquill's article on MMC on page 68). It's the scale of application I am proposing that is disruptive, along with the additional infrastructure that goes with it.

My vision involves opening a factory in Coventry, ideally in collaboration with Tata Steel and other members of the Agile Ageing Alliance. The location is perfect. Coventry is a traditional engineering hub and has the skills. The city council's housing strategy outlines the need for affordable accommodation for students and older people and Coventry University is keen to engage in order to help facilitate and promote knowledge transfer. Logistically, Coventry's central location enables it to serve a wide geographical area.

With support from Coventry's local authority we will in turn reinvest in the community, providing steady employment and quality housing within dependable timescales.

This evolved method of construction still requires building contractors to complete the remaining 20% of the builds. However, I suggest that with higher profit margins, and working to open book accountancy, we can transform the supply chain into one of trust and transparency.

When I say that the infrastructure of the construction industry is rotten, I'm speaking from experience.

Contractors currently work on a 2%–3% margin, sometimes less. If we double this, we reduce the need to cut corners. This means that developers like me should also step up to the plate and significantly reduce our margins.

I say, let the challenge commence!

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1 See Latham Report 1994, Egan Report 1998, Government Construction Strategy 2011, Farmer Report 2016.

2 The Fire Protection Association, 2018

**Photo credit:** Images courtesy of Jonathan Parnes





# A bio-revolution in home construction

**Ehab Sayed**  
Founder and Director of Innovation, BIOHM

If we were to imagine the ideal neighbourhood of the future, we would subconsciously place great emphasis on truly happy and satisfied communities, as we inherently understand that a healthy and flourishing community forms the heart of any successful neighbourhood. Architecture allows us to create built environments in which we can flourish. Natural ecosystems and environments that enabled species to flourish have been developed and optimised over 3.8 billion years, making them ideal places to seek inspiration. Biomimicry, or biomimetics, is the abstraction of formations, structures, functions and processes in biological systems to synthesise man-made products and systems that solve a problem (John et al., 2005).

The science of biomimetics is driven by the realisation that our most prized inventions exist in more elegant, eco-sensitive, efficient and effective forms in nature. Bamboo stems and lily pads contain beautifully constructed structures that make man-made architectural beams and struts seem underwhelming. Our air conditioning and ventilation systems cannot compete with the way the architecture of termite mounds passively maintains precise temperatures. A deep understanding of how organisms achieve such feats of engineering can shed light on how we can work towards creating healthy and sustainable neighbourhoods of the future.

## Biomimetic neighbourhoods of the future

With bio-technologies, bio-inspired design and bio-engineering becoming more popular than they have ever been and rapidly attracting the attention of academics, practitioners and governments, it seems that a bio-revolution is taking shape. This means that we may be working our way towards a biomimetic future that celebrates the ingenuity of nature, makes use of renewable resources and collaborates with natural organisms to develop healthy and sustainable products. Within this context, the ideal neighbourhood of the future would adhere

to ecological laws in nature that govern every living entity. Laws that can lead to optimal efficiency and resilience when applied to products, systems and processes.

The wellbeing of neighbourhoods is heavily affected by the physical environment in which they exist. Appropriate ecosystems need to exist in nature for species to survive, thrive and flourish. The species here could be perceived to be the inhabitants, but they could also be the buildings and infrastructure that forms the neighbourhood. An interesting thought to consider is what those species or buildings would look like in a biomimetic future.

## Living buildings

Billions of years of development and evolution in biological systems have resulted in the world's most resilient and successful species. If we were to extract the driving adaptive features that result in their success, perhaps we would gain insights into how to create resilient and successful buildings. We could even take this a step further by bringing buildings to life. After all, a biomimetic future would thrive with living buildings.

Decades of studying nature have allowed ecologists to extract nine laws (Benyus, 1997; Brown, 2016) that all living organisms and ecosystems must follow:

1. Nature runs on sunlight
2. Nature uses only the energy it needs
3. Nature fits form to function
4. Nature recycles everything
5. Nature rewards cooperation
6. Nature banks on diversity
7. Nature demands local expertise
8. Nature curbs excesses from within
9. Nature taps the power of limits

If we combine these laws with the features that allow organisms to achieve optimal resilience and success in survival, we can create a vision that would inspire us to perceive buildings as living organisms.



Self-assembly and collaboration

We know that all organisms, structures and environments from the nano-scale to the macro-scale come into existence in nature through a process known as self-assembly. This is where biological building blocks multiply and combine to create living entities. Those that assemble a self that is fit for its environment, structurally appropriate, adaptive, multifaceted and flexible increase their chances of survival. The less an organism depends on another for survival and energy generation, the more likely it is to succeed through the natural selection process and avoid extinction. But if dependency is necessary, those who develop ingenious, mutually beneficial and sustainable collaborations and cooperation mechanisms can cheat natural selection. The rate at which an organism is capable of evolving and developing is limited by its self-awareness and intelligence. Humans are the best example of rapid development, albeit highly unsustainable in its current form, as a direct result of our self-awareness and our ability to collect information, process it and alter our behaviour accordingly (Zimmer, 2006).

Thus self-assembly, the self, self-sufficiency and self-awareness are the four prominent features or areas that determine a species' survival within an ecosystem. The nine ecological laws found in nature can be used to set guidelines within those four areas to create the beginnings of a truly biomimetic framework through which a building could be brought to life. A biomimetic future could be represented in every aspect of our life. From city planning, infrastructure and products to methods of governance, business models and daily processes. The true value lies in biomimicry becoming our common mode of perception. Perceiving life, tangible entities, ideas and processes as collections of systems within ecosystems offers an advanced level of analysis and understanding.

The key to a biomimetic future

Digital technologies are possibly the most critical enabler for a biomimetic future. They allow us to develop and integrate intelligence in our creations. This intelligence would mimic the wisdom that lies in biological organisms and ecosystems as they develop. Biomimicry requires an information-led approach.

The science of biomimetics is driven by the realisation that our most prized inventions exist in more elegant, eco-sensitive, efficient and effective forms in nature.

Processing such dense datasets and pieces of information can be beyond our mental capacity and comprehension.

Therefore, the use of computational power has allowed us to optimise products and systems with algorithms and analyse rich datasets to draw conclusions and instantaneously respond. It has also allowed us to achieve real-time models of phenomena that have puzzled scientists for decades. Feats that were impossible to achieve before the digital age, which is, perhaps, a logical explanation for the absence of biomimicry in mainstream thinking. With the emergence of quantum computing, one can only imagine the processing capabilities we will be able to achieve in the coming decades.

Empowerment through AI and blockchain

The use of sensors and advanced data management systems and the cost reductions achieved in renewable energy have brought artificial intelligence into our homes. Artificial Intelligence is more than welcome in our future neighbourhoods. In truly inclusive neighbourhoods that cater for the diverse needs of members of society, we would need to ensure that an intelligent infrastructure is in place to manage buildings in ways that are conducive to occupant wellbeing and optimal building performance. Technology can be truly empowering when implemented sensitively and appropriately, supporting a flourishing community.

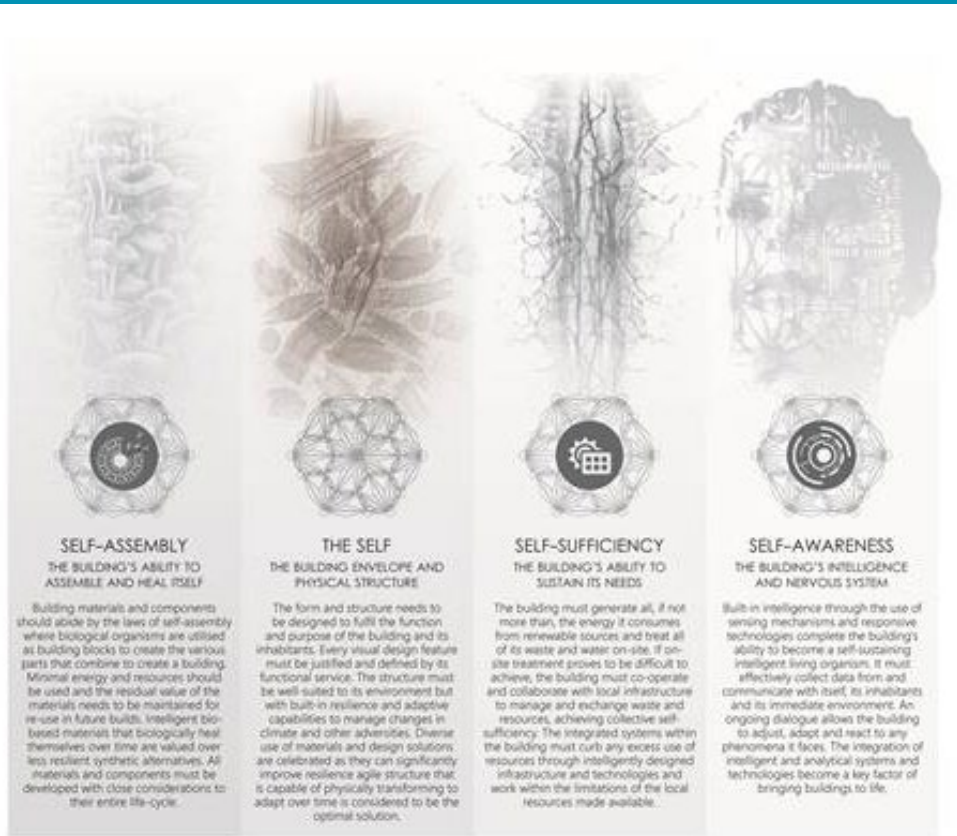
One of the most transformational innovations of our time, Blockchain, is making the implementation of decentralised micro-grids easily achievable. Blockchain can be perceived as an ever-growing records list, linked and made secure using cryptography. A by-product of the cryptocurrency, Bitcoin, Blockchain facilitates transactions between two parties efficiently and securely, enabling the trade of energy in a peer-to-

peer managed network (Kushch and Prieto Castrillo, 2017). Not only does this empower the public, allowing them to take ownership of the energy their homes generate but it creates a more resilient and efficient society and, in turn, economy as it reduces the reliance on fossil fuels or centralised energy generation.

Heliophilic planning

Such fluid movement of information, energy and people and the fast-growing and ever-changing nature of today's cities means that we need to start considering different approaches to neighbourhood planning. Ancient civilisations around the globe have taken a passive, yet ingenious, approach to planning influenced by the lay of the land and the sun-path throughout the day and the seasons. Such eco-sensitive design inspired and influenced by nature is one that can deliver some of the healthiest and most sustainable buildings. Heliophilic (attracted or adapted to sunlight) planning allows the optimal amount of solar heat and light to reach every building as well as improving overall ventilation. It is guided by the movement of the sun and determines building and street orientation, shape and size (Knowles, 2003).

The Industrial and Petrochemical Revolutions have introduced mechanical means of generating energy, heat and light, which unfortunately resulted in less emphasis on the solar envelope. Heliophilic buildings help reduce energy bills, improve heat control indoors and have a regenerative effect on inhabitants' health and wellbeing (World Green Building Council, 2014). In self-sufficient communities with decentralised micro-grids, energy efficiency is vital and, therefore, as well as designing highly energy-efficient buildings, heliophilic architecture is key (Knowles, 2003).



Buildings as living organisms

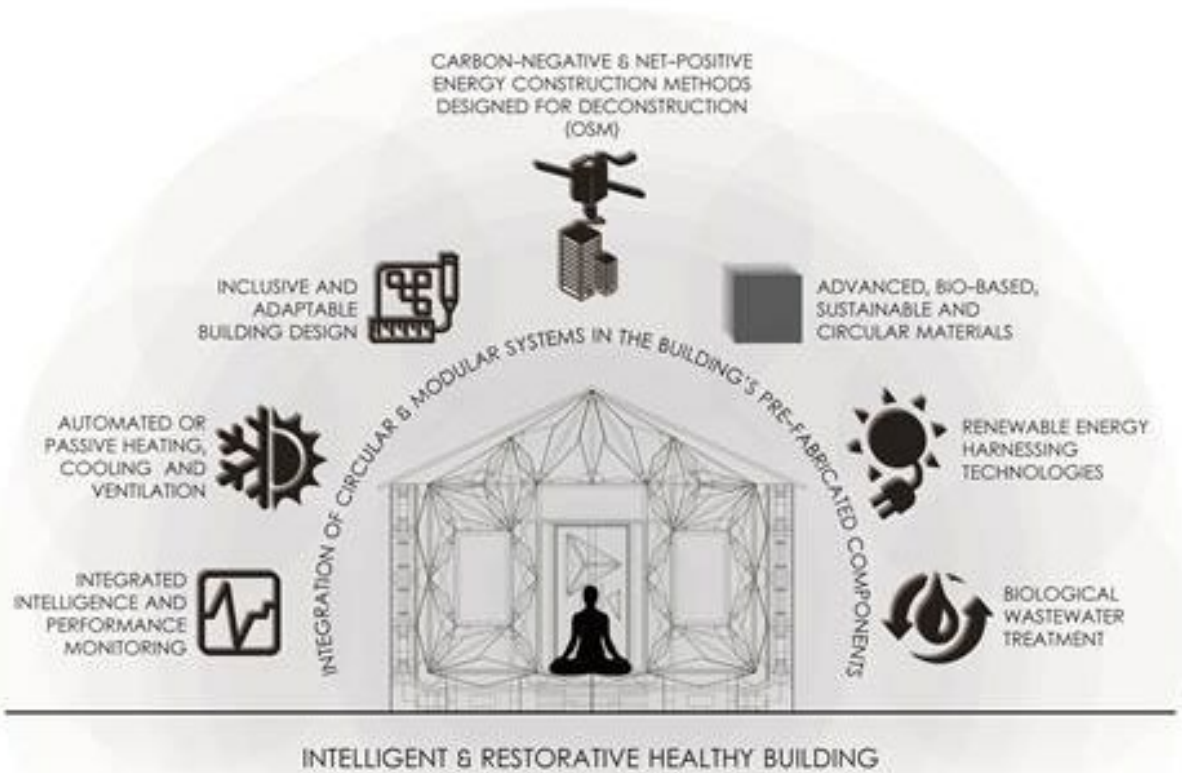


The way organisms, such as Mycelium (the vegetative part of a mushroom) or the unicellular slime mould, Physarum Polycephalum, grow and multiply on a two-dimensional plane to access resources can offer transformational insights into optimal efficiency in city planning. Combining learnings from natural organisms with heliophilic architecture (both of which are biomimetic concepts), can allow us to create highly efficient, healthy and resilient infrastructure in cities, whilst alleviating traffic congestion issues (Vogel et al., 2017). Off-Site Manufacturing construction methods and systems designed for deconstruction, could create agile infrastructure that can be adjusted throughout its life, allowing planners to abide by the solar envelope and taking inspiration from nature's ingenious approaches whilst ensuring the integration of future flexibility.

Agile infrastructure

Buildings, whether residential, public or commercial, need to meet a variety of needs determined by their purpose, the client, the owner and/or occupant, the architect's vision and environmental, economic and social considerations. This creates tension in the balance between time, quality and cost when it comes to the building method and design. Nature, however, would tackle this predicament by utilising the power of information, systems-thinking, mathematics and geometry in what is known as parametric, generative or computational design to achieve all three. Generative, parametric or computational design can be defined as a design method where rules and algorithms drive the generation of form using computational tools, which integrates efficiency and agility in building systems.

The integration of circular and modular systems in a building's OSM (Off-Site Manufacturing) components to create truly intelligent and restorative buildings



Agility here has two separate yet aligned definitions. One may perceive agile infrastructure as one that is resilient and dynamically responds to climate change, energy insecurities, human needs and general adversities over time. One may also perceive agility in a physical sense where buildings have the ability to transform their shape, structure, features, purpose and function over time. Sensors, Blockchain, advanced energy harnessing technologies and emerging materials combined with the modularity and customisability of Generative Design and Off-Site Manufacturing methods form viable solutions for both definitions.

The integration of circular and modular systems in a building's OSM (Off-Site Manufacturing) components to create truly intelligent and restorative buildings.

A biomimetic future of agile infrastructure can be considerably accelerated by Off-Site Manufacturing and facilitated by the integration of intelligence and modular systems, allowing a building to cater for any inhabitant at any time and in any geographical location. This intelligence must mimic the genius of nature not only through digital technologies and sensors, but also through intelligent multi-tasking, or even living materials that can react to and interact with their environment. Modularity in building design and design for deconstruction offer unprecedented flexibility to city-planning. The idea of a 'desolate neighbourhood' could become obsolete as buildings would become immortally revived and re-invented through reconfigurations, relocations and upgrades. They would age elegantly and sympathetically with their surrounding communities and inhabitants. As communities grow and change, so do their needs. Agile and restorative infrastructure can allow communities to flourish indefinitely (Russell, 2011).

The age of bio-revolution

A revolution in the construction industry is certainly overdue and we appear to be marching towards one. Developing new biomimetic products alone will not revolutionise the industry. Nor would the development of new business models or methods of procurement. A revolution in thought and value needs to occur across the industry, or, rather, across the entire economy. The 19th and 20th centuries were the ages of revolutionary advancement in physics and chemistry. Perhaps it is time for a more eco-sensitive, socially driven and economically viable revolution. One that considers every living entity and achieves balance through abiding by the laws of nature. One that is restorative by intelligence and design and led by biology. It appears that the 21st century may become the age of a Bio-Revolution.

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Photo credit: Images courtesy of BIOHM



# ‘Active Homes’ are key to a decentralised energy future

**Gill Kelleher**  
Policy and Engagement Manager, SPECIFIC Innovation Knowledge Centre

David Attenborough’s poignant message at the opening ceremony of the United Nations-sponsored climate talks, COP24 in December 2018, highlighted the need for us all to take action against the risks of climate change. The naturalist was occupying the ‘people’s seat’ at the conference, acting as the link between the public and policy-makers. The most recent IPCC report indicated that global net human-caused emissions of carbon dioxide (CO<sub>2</sub>) need to fall by 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050.

Since buildings account for around 40% of global carbon emissions, the next 10-20 years demand rapid, far-reaching transitions in the way we heat and power our homes and neighbourhoods. (IPCC, carbon pathways).

People, governments and cities are already taking steps to reduce their carbon impact. However, more needs to be done. For example, the California Building Standards Commission approved in December 2018 a new rule that all homes built in California after 2020 require the capacity to produce and process solar energy. Through this mandate, California will attempt to become the most highly populated area on earth that uses 100 percent renewable energy. In the UK, SPECIFIC Innovation and Knowledge Centre (Swansea University) and its partners are also using a range of full-scale building projects to demonstrate why homes and buildings are key to a decentralised energy future by creating ‘Active Buildings’ that can generate, store and release solar energy.

## What will energy provision look like in an ideal world?

An Active Building integrates solar generation and storage technologies for both electricity and heat within its construction and uses an intelligent system to optimise energy management and comfort for inhabitants. Active Homes using this design require no gas for heating, whilst being net generators of solar energy, with the potential to share or trade surplus with surrounding buildings, electric vehicles or the grid. This provides a different social economic proposition. Our future homes and neighbourhoods can be used to reduce peak energy demand, whilst meeting consumer energy needs and reducing pollution; connecting communities of homes together, sharing energy and charging electric vehicles, including e-bikes.

Modelled Energy global pathways that feature low carbon energy generation, and demand, show that the technical feasibility of solar energy and electricity storage technologies have substantially improved over the past few years. Unlocking this potential is not just a technical challenge, we also need to overcome economic, institutional and socio-cultural barriers, and inspire change in public behaviours.

## What should we be doing about it now to make the vision a reality?

Climate change impacts and responses are closely linked to sustainable development, which balances social well-being, economic prosperity and environmental protection. Therefore, we need to manage and plan the use of our land and communities more effectively over the long term, making best use of innovation and technological advances. House-building and community infrastructure projects should be designed to transition away from fossil fuel power generation, to protect future generations from climate change risks. Greater investment is needed to extend decarbonised energy solutions across regions, and this requires access to finance, policy levers such as building regulations, local planning reforms and new governance models.

An independent study (Bankovskis 2017) modelled the benefits of this approach, calculating what would happen if the ‘Active Homes design’ used for a development in Neath, South Wales, were applied to a million homes. It revealed that the average saving per household could be as much as £600 (a cut of more than 60%), whilst also reducing carbon dioxide emissions by nearly 80 million tonnes over 40 years and peak central generation capacity by 3,000 megawatts – equivalent to a very large power station.

Delivering Active Buildings at scale requires significant electricity market reforms, and greater investment priority for the decarbonisation of heat. There is a great prospect for the UK government to seize this golden, once in a century opportunity to mandate all future energy scenarios to include Active Buildings at scale as a

key enabler to reach carbon targets and transform markets. In doing so, enabling the best trade-offs for sustainable development to be realised; protecting jobs, become world leading in ‘Active Building’ technologies, alleviating fuel poverty. With UK government house-building targets currently at 300,000 homes per year, 10-20 years could be enough time for millions of homes and vehicles to transition away from fossil fuels to solar-powered, Active Buildings.

**An Active Building integrates solar generation and storage technologies for both electricity and heat within its construction and uses an intelligent system to optimise energy management and comfort for inhabitants.**





# Community Land Trusts – More power to the people

**Chris Tuppen**  
Managing Director, Advancing Sustainability Ltd

The Neighbourhoods of the Future will require innovation in both technology and in delivery models to overcome challenges and be successful. One, relatively unused vehicle, Community Land Trusts (CLTs), offer the opportunity for communities to take ownership and directly facilitate accommodation for older adults. CLTs provide major benefits to communities, including the ability to control:

- the location of homes, through land purchase;
- their design, by focusing on people's specific needs;
- affordability over the long-term, rather than minimising build costs;
- the build itself, by letting contracts to local builders; and
- continued community engagement and support, by retaining ownership in the CLT.

However, it takes voluntary effort and some specialist expertise to get a CLT off the ground. Help is at hand though, particularly from the National Community Land Trust Network<sup>1</sup> and through seeking advice from existing CLTs.

## East Bergholt – A view from the front line

East Bergholt is a picturesque village in Suffolk, best known as the birth place of John Constable. It offers easy access to main roads and a good rail link into London. This makes it a popular place to live and commute from.

Executive style homes sell easily and developers, supported by our district council, want to build these in quantity, but the community has other views. We want to focus any new build on local needs – especially for those that struggle to find affordable housing.

In the case of our older demographic, they have often lived here for many years and in most cases want to remain integral and active members of the community. However, housing options are often restrictive.

Communities that mutually support themselves socially, and through their own asset management, may be the best way for older adults to achieve this ambition. Indeed, recognising that people who can directly control the destiny of their community are more motivated to get involved, David Cameron announced plans in 2009 to return power to local people. In a Guardian article<sup>2</sup> he wrote,

“The Conservative party wants nothing less than radical decentralisation, to reach every corner of the country”.

Willy Lotts cottage in Suffolk



**Communities that mutually support themselves socially, and through their own asset management, may be the best way for older adults to achieve this ambition.**

Subsequently, in 2011, the government introduced the Localism Act. This allowed provision for Neighbourhood Plans, which were designed to allow communities to come together through a parish council or neighbourhood forum and say where they thought new houses, businesses and shops should go – and what they should look like. It was actually intended to let local communities use neighbourhood planning to grant full or outline planning permission in areas where they most wanted to see new homes and businesses. The idea was to make it easier

and quicker for development to go ahead<sup>3</sup>. However, inevitably, some communities saw this as a way to stop building rather than specify it.

Taking advantage of the localism agenda, East Bergholt spent time producing a Neighbourhood Plan that received overwhelming endorsement (95% in favour) by the village's residents in a referendum poll. The Plan covers numerous aspects of village life, with multiple policies and projects covering housing, businesses, transport, architecture, landscapes and the environment.

However, at the same time as localism was meant to blossom, the shortage of new homes across the country, especially affordable ones, was reaching crisis levels. Central government responded, in part by imposing housing targets on local authorities, and through the introduction of the controversial New Homes Bonus, which only pays out if the local authority approves ‘additional housing’<sup>4</sup>.

In their desire to see new homes built, local authorities are desperate to ensure good relations with large house builders and are nervous of anything that might discourage the developers, such as pushing for more affordable and/or sustainable homes.



Flatford Mill in Suffolk



These competing forces leave local authorities caught between communities trying to do their own thing, central government targets and funding rules, and developers seeking to maximise their profits.

Back in East Bergholt, we felt that our district council was disregarding our Neighbourhood Plan and favouring large-scale building that ignored local needs. This led to two judicial reviews.

### A community-led approach

Despite the legal proceedings, we were keen to take forward a community-led approach to development and so have progressed one of our Plan's more ambitious projects. This involves:

'the establishment of a Community Land Trust as the means of delivering homes for local people and to deliver affordable housing, to offset private sector provision, in or near to the village centre, for shared ownership or rentable properties.'

Community Land Trusts (CLTs) are non-profit, community-based organisations which are run by volunteers and that develop housing, community facilities or other assets that meet the needs of the community. The assets are owned and controlled by the community and are made available at permanently affordable levels. A growing number of communities are forming CLTs, with well over 225 groups in England and Wales.

The East Bergholt CLT was legally established in 2017 and now has over 150 members. One of the first tasks was to identify the wants and needs of the community, and to that end we held several open days. Villagers were asked their views and a rough poll was taken. The overwhelming preference has been for small (typically two bedroom), affordable, energy efficient, rented homes for either young people who can't afford to get on the housing ladder, or for retirees. The need to design for accessibility and assisted living was also highlighted. The East Bergholt CLT is now in the process of finding suitable building sites, meeting local builders, and building a register of potential future tenants.

With the right conditions, this innovative community-led approach to housing development could become a key feature of all neighbourhoods in ten to twenty years' time.

### Looking to the future

Overall, CLTs offer a model that is replicable, not only in rural villages, but also in urban communities. With the right conditions, this innovative community-led approach to housing development could become a key feature of all neighbourhoods in ten to twenty years' time. However, a failure to take advantage of CLTs, and similar initiatives, means housing developments will continue to be driven by short-term imperatives, divorced from the communities who are best placed to know what they need.

- 1 <http://www.communitylandtrusts.org.uk/>
- 2 <https://www.theguardian.com/commentisfree/2009/feb/17/cameron-decentralisation-local-government>
- 3 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/5959/1896534.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/5959/1896534.pdf)
- 4 <https://www.insidehousing.co.uk/news/news/no-changes-to-new-homes-bonus-says-javid-53652>

**Photo credit:** Images courtesy of Chris Tuppen



Residents have the opportunity to meet our teams and give their views at our community events



# Social housing – And now for something completely different

**Jim Ripley**  
CEO, Phoenix Community Housing

It is astonishing to consider that by 2028 around one third of the residents who live in Phoenix homes will be 75 years old or more. Today, just 12% of our tenants and 5% of our leaseholders are aged 75 or over.

As a resident-led housing association (the first in London) we're proud of our community-based approach, and the opportunities our tenants and leaseholders have to influence and shape our services and priorities. Since tenants voted to create Phoenix in 2007 we've worked hard to get to know our residents and to understand their needs.

This demographic shift will be felt by housing associations up and down the country. In the context of the housing crisis, it will have major and far reaching implications for generations to come.

While the population in England is projected to grow by 17% between 2014 and 2039, almost two thirds (63%) of population growth in the UK will be among people over the age of 65.

Nowhere is our ageing population so evident as in social housing. The dearth of a long-term housing vision by successive governments – both the lack of a substantial construction programme and the right to buy initiative – have deprived two generations of the benefits of low rent housing. If you wander around virtually any housing estate, anywhere in the country, you will see a high proportion of older people.

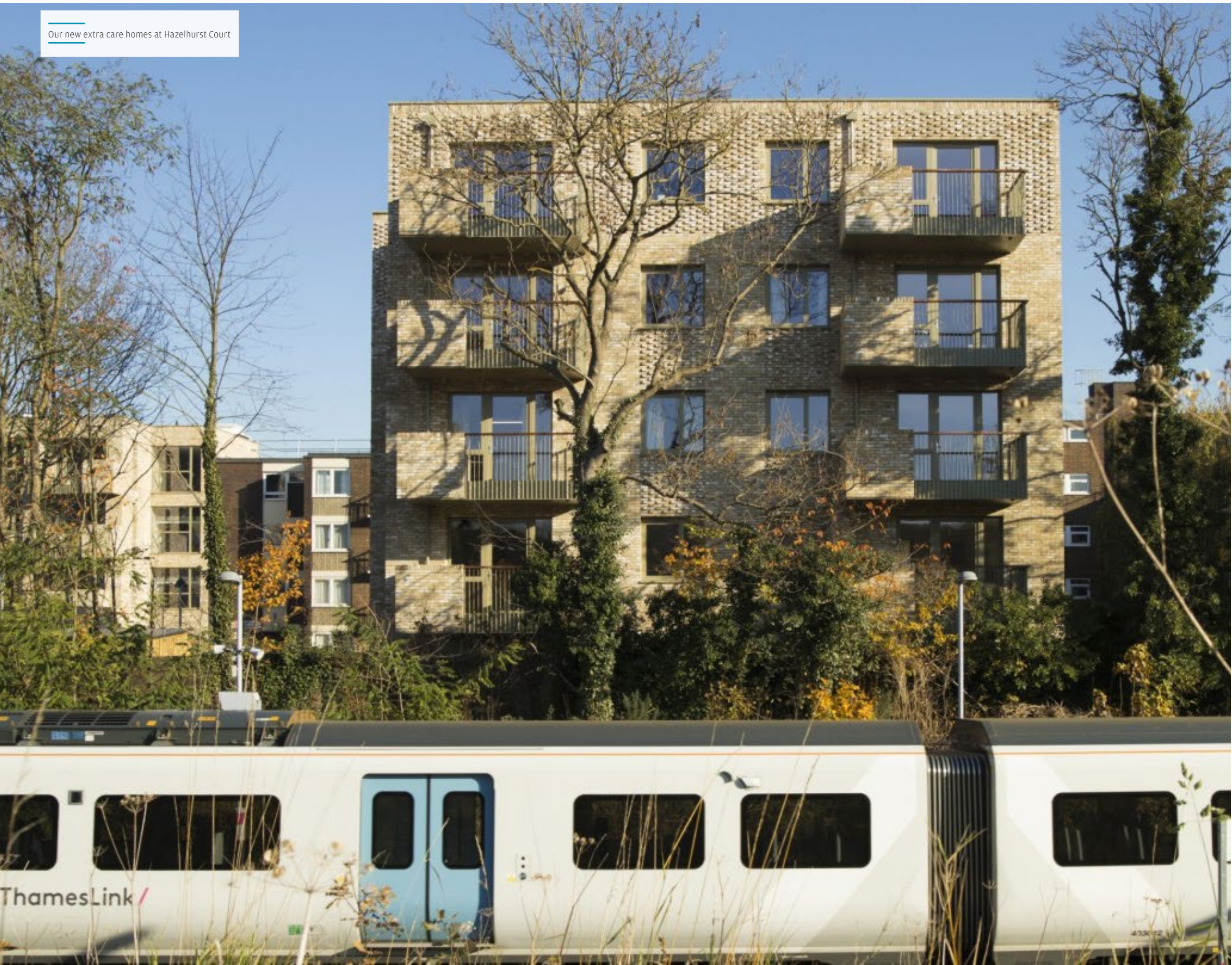
As with many housing associations, at Phoenix, we're committed to addressing the housing shortage. Our first decade was largely occupied with bringing our 6,300 homes up to Decent Homes standard. Our second will be focused on development. We've plans for up to 1,000 new homes in South Lewisham over the next 10 years.

But our key challenge may well prove to be less about erecting new buildings, and more about creating different kinds of homes. The profile of people living in our homes is steadily changing. More vulnerable people, those from diverse backgrounds, and many older people. In particular, we have to consider the support networks our residents will need, not just for independent living but so that they can get the most out of life.

This demographic shift will be felt by housing associations up and down the country. In the context of the housing crisis, it will have major and far reaching implications for generations to come.



Our new extra care homes at Hazelhurst Court



These considerations were at the forefront of our minds when we started planning our first new homes. We knew many older residents were living in large family homes in our area. One advantage of being a community-based housing association is that we become familiar with our residents. We see them regularly and we talk with them.

So, we knew that lots of older people were struggling to maintain their homes. Many struggled with heating bills, and with the garden and the cleaning. And we knew that, presented with the right offer, many would be keen to downsize to properties that better met their needs.

### Understanding the needs of people

It's a relief, as much as anything, for Phyllis to be in one of the 60 new homes at Hazelhurst Court. She tells us she felt depressed when alone in her old home and didn't like going upstairs. Since her move, she says that she's sleeping better than she has in years.

Or Margaret, who'll tell you that old age suddenly hit in her late 80s. Now, she's enjoying the renewed experience of having lunch with other people and the opportunities to mix.

It's been illuminating to hear feedback from the Housing Minister's conversations with social housing tenants ahead of the new green paper. A theme that came up time and again was isolation and loneliness.

As an extra care scheme, residents at Hazlehurst Court with identified care needs can benefit from care packages delivered by our partner, Notting Hill Genesis. But it was also designed as a communal development, with a restaurant and places to socialise. Residents tell us it's this that's made the biggest difference to their lives and wellbeing.

We can all sit in our offices, focus on the bottom line, and imagine a world where Phyllis and Margaret and thousands like her interact with their landlords through a laptop. But the reality is that they want to talk to people, and that's such a basic and important human need. It's vital that none of us – housing associations, or government – lose sight of this as we plan for the future.

Technology and the Internet of Things will no doubt change our ways of living, but they will not change our life needs. For me, the ideal homes and neighbourhoods of the future are sociable places.

We will need to think about co-housing, more integration of health services, wrap-around social care provision. We will also need to think extremely carefully about the sustainability of our homes and carbon impact.

But, most importantly, we should be focused on places where people can meet each other outside the home; places where we can chat together, cry together and make each other laugh.

**Photo credit:** Images courtesy of Phoenix Community Housing





# Homes for our future selves – A view from the front line

**Sue Coles**  
University of the 3rd Age (U3A)

**Sam Mauger**  
Chief Executive, The Third Age Trust

'Older people are not just beneficiaries of Neighbourhoods of the Future, we also have a key role to play in their creation. Our desire to participate does not decrease with age. Consultation is essential in identifying best practice and challenging negative planning and design. In addition, the act of consultation and engagement itself will confer greater self-esteem, satisfaction and wellbeing.'

Last year, the Agile Ageing Alliance (AAA) invited members of the University of the Third Age (U3A) to participate in the AAA's 'Neighbourhoods of the Future' conference.

Along with fellow members I took advantage of the opportunity. We had no idea what to expect, but I am delighted to say we enjoyed mixing with an inspiring group including Lords, captains of industry, politicians, professors, famous designers, doctors and nurses, entrepreneurs and technologists.

A quick introduction to the U3A. It is a network of over a thousand self-funding local organisations co-ordinated by The Third Age Trust. Formed over 35 years ago, the U3A has more than 420,000 members nationally. That's approximately 3.5 per cent of the 11.8 million people aged over 65 in the UK.

The media often paints older people as 'a problem', rarely focusing on what we can contribute. The so called 'deficit model' focuses exclusively on the negative aspects of ageing. This is a view that jars with U3A members, who engage in lifelong learning, have a thirst for knowledge and a more optimistic view of ageing.

What struck me at the Neighbourhoods of the Future conference was the speakers who painted a future where there are opportunities, not just for better housing, but for living longer, healthier, independent and more fulfilling



**Older people are not just beneficiaries of Neighbourhoods of the Future, we also have a key role to play in their creation. Our desire to participate does not decrease with age.**



lives. This is the future we want for ourselves, for other older adults and indeed younger people who have later years to look forward to.

### Here are some of the key takeaways:

Lord Best, Chair of the All Party Parliamentary Committee on Housing and Care for Older People, and Sue Adams OBE, CEO of Care & Repair England, presented compelling arguments on the need for a re-think of house building and retrofitting, which you can read about on pages 32 and 36 respectively.

Other speakers emphasised that it's not only homes but neighbourhoods that need to be age friendly, providing easy access to key services, especially public transport. They also spoke of the need to foster a sense of community. A fair and equitable multigenerational community where young families and older adults live in harmony.

A number of speakers pointed out that older adults in a community typically help one another. This element of self-help is valuable, as it can help maintain independence and needs to be actively encouraged in the design of housing for older adults. Self-help is also a way to provide support when budgets are tight. Carefully designing housing to encourage a sense of community also has real health benefits. Indeed, we learned that social isolation has implications in terms of health equivalent to smoking a pack of cigarettes a day<sup>(1)</sup>.

### Older adults are a real market opportunity

Marketing, communication and language matter. Older adults do not want to be corralled and badged as “The Elderly”. Marketeers categorize the public in different demographic groups, like ‘millennials’, but astonishingly they view all over 60s as one consumer group<sup>(3)</sup>. This means that something like a third of consumers are assumed to have the same needs and desires.

What's ironic is that 70% of UK wealth is held by the over 50s, so there's clearly no shortage of money for the right products. Ageing should be good business, for example

over half of 56-74-year olds have a tablet and most Apple watch owners are over 45. In the US, the nation's leading fitness program, ‘Silver Sneakers’, was designed for older adults and has 15.6 million members (2).

### Product design needs to be inclusive

We heard from design gurus that great design can influence behaviour; it can help people stay fitter for longer and provide older adults with independence, safety and security<sup>(3)</sup>.

But there is a paradox – ‘as soon as you try to design something specifically for older adults they don't want it’<sup>(2)</sup>. Unsurprisingly, older adults don't want unattractive and badly designed products that mark them out as ‘old’. What they do want is ‘inclusive design’; well-designed products that anyone can use but which happen to be particularly useful to older adults, for example online shopping<sup>(2)</sup>. People don't automatically stop caring about design once they reach 60. Designers need to use their creativity to be more inclusive, ensuring new products are also suitable for older adults.

### Older adults want to engage in a conversation about the future

Being older doesn't mean we shouldn't have a stake in shaping the future. Society can be quick to write off older people and ignore or dismiss their views. But, as a retiree, you have invaluable life experience and/or professional expertise to call upon, contribute, and importantly, the leisure to really engage with the issues and think about solutions.

‘If older adults don't engage in conversation about their future then it will be imposed on them and probably without reference to them again.’

Diversity matters. It's widely acknowledged that diversity improves organisational performance and decision making, and yet older people's views are often not sought or simply dismissed. The irony is that older people already have the lived experience of being younger, whereas younger people haven't yet experienced being old. Some societies revere the wisdom of age, but we live in a society where it's not currently fashionable to be old.





If older adults don't engage in conversation about their future then it will be imposed on them and probably without reference to them again.

#### Collaborating with AAA and Neighbourhoods of the Future Project

Looking to the future, U3A members inspired by the AAA event have formed a group 'Future Lives' to collaborate with this project. We are looking forward to providing insights from the perspective of older adults, who share an enthusiasm for the future and a desire to help shape it. The Future Lives group's role is not intended to be a one-off consultation exercise but an ongoing collaboration throughout the life of the project.

'The real value of the group is that it is representative of older adults, most of whom already have experience and, therefore, views on the suitability of current older persons' living arrangements and what might be useful for future arrangements.'

As a group, we have a wide range of professional and life experience. We want to provide a sounding board for Neighbourhoods of the Future and a two-way channel between those developing homes, neighbourhoods, products or services and older adults. We're enthusiastic about collaborating with the AAA and we have both the passion and the time to help build a better future for older adults.

#### The University of the Third Age

Sam Mauger, U3A's dynamic Chief Executive, is equally enthusiastic: "We are keen to explore new ways of engaging U3A members with big societal issues. Our members

already make a significant difference in local communities where they add significant value by engaging in support programmes as diverse as plastic recycling, reading initiatives and clearing local woodland of rubbish.

"U3A members have described being part of the U3A as enabling them to "reach their potential". It is a movement where everyone is valued for themselves, and where learning and sharing experiences is exciting. Members have said that they have taken part in events and programmes they would never have dreamed of being involved in before. Whether it's Latin ballroom dancing, literature or hill walking, everyone has a chance to explore their potential and reach for more within themselves. The movement is so successful because it is shaped by the members, and the key point about the Agile Ageing Alliance project is that U3A members are the very people which our Neighbourhoods of the Future need to cater for, so who better to get involved from the outset?"

#### Acknowledgments:

- (1) Jennifer Rubin, Chief Executive of the Government's Economic and Social Research Council
- (2) Eric Kihlstrom Interim director of the Industrial Strategy Challenge Fund for Healthy Ageing
- (3) Paul Priestman, Chairman, Priestman Goode

**Photo credit:** Images courtesy of the Third Age Trust



# Innovation@Home

**John Feather, PhD**  
CEO, Grantmakers in Aging (GIA)

**Alana Officer**  
Lead, World Health Organisation (WHO) Global Network for Age-friendly Cities and Communities

The desire to remain in our own homes and communities as we grow older, connected to the people and institutions we value, is shared around the world. In cities and villages, rich and poor neighborhoods, and more and less developed countries, people want accommodation that meets their needs and honors their preferences at all stages of the life course. This concept has come of age, but our ability to realize it is still a work in progress.

The pursuit of age-friendly housing is important because very few variables have as much power to support – or derail – healthy, productive aging and related quality of life. As the world's population gets older (a process that is both permanent and accelerating), this pursuit needs to be on everyone's agenda, whether we are elected officials, health care leaders, social services or aging services providers, real estate developers, technologists, philanthropists, families, or individuals.

## “Age-friendly” means good for people of all ages

Calling this “age-friendly housing” is useful shorthand but requires a quick explanation. The term “age-friendly” comes from the work of the World Health Organization's (WHO) Global Network for Age-Friendly Cities and Communities, which launched in 2007 and chose eight critical domains for communities that wanted to work toward a WHO age-friendly designation. Housing is one of the eight domains. With the age-friendly movement now encompassing 39 countries and 705 cities with more than 210 million people worldwide, its terminology is gaining traction, but this work can go by many names.

**The pursuit of age-friendly housing is important because very few variables have as much power to support – or derail – healthy, productive aging and related quality of life.**



Programa d'Arranjament d'Habitatges de la demarcació de Barcelona – receive their award



Sausalito, a city in Marin County, California

## Improving housing is a priority. The physical and social environments in our cities and communities are powerful influences on the experience of aging, and housing plays an important role.

Age-friendly housing initiatives can take many forms: expanding the amount and variety of housing options; making housing more affordable; removing barriers to innovation, such as zoning, building codes and planning; helping with home modifications; using assistive technology to improve safety and promote inclusion; involving multiple generations in co-housing; co-locating services, such as health care; and facilitating access to transportation, shopping, and health services, just to name a few.

### Building the foundation: The role for philanthropy in our neighbourhoods of the future

Philanthropy is taking a growing interest in age-friendly communities. The organization I lead, Grantmakers In Aging (GIA), a Washington, DC-based membership association for funders and foundations dedicated to improving the experience of aging, has been working in the age-friendly

sphere for several years. This has included grantmaking and technical assistance to a variety of age-friendly programs and innovators across the United States, where government funding for such work is not the norm.

A key objective for GIA is to make more foundations and other charitable organisations, particularly local and regional funders, aware of the benefits of age-friendly work, how it supports and connects to other community and foundation goals, and the need for seed money and operational support while programs are becoming established and embedded in their respective communities. This incubator-style approach is similar to what is known as “social funding” or “social investment” in Europe and elsewhere.

To do this, GIA also leads funder collaboratives and creates educational materials that help funders and others become familiar with the issues and existing programs ready to be replicated, scaled, or adapted.

### Innovation@Home: Good ideas have no borders

Most recently, through a grant from the Robert Wood Johnson Foundation, GIA has been working to identify age-friendly housing innovations from around the world that might work in the United States. This included launching a global contest, Innovation@Home, in partnership with the WHO, and with the assistance of the International Federation on Aging (IFA).

Powered by a sense of excitement about the diversity of ideas being tested around the world, the project aspires to highlight both qualified success stories and promising initiatives that might not be mature enough to be classified as best practice but still have the power to inspire us.

“We believed and hoped that it would be quite a crowded field, and it was,” said Jenny Campbell, Innovation@Home project lead for GIA. “We reached out as widely as we could because we wanted to learn more about what’s out there, celebrate diversity, and make these ideas more available to the rest of the world.” For that reason, contest entries are being included in the publicly-available

WHO Global Database of Age-Friendly Practices (see <https://extranet.who.int/agefriendlyworld/afp/>)

Submissions from 15 countries were assessed by our panel of distinguished judges: Nathalie Röbbel from the World Health Organization, Stephanie Firestone from AARP International, Vivian Vasallo from Fannie Mae’s Partnerships and Innovation initiative, Ian Spero from the Agile Ageing Alliance, and Betty Lynch, a community consumer champion from Avondale, Arizona.

The judges selected three winners, but it was not an easy process. “The Innovation@Home challenge is a brilliant concept and the breadth of the entries was both stimulating and challenging, said Ian Spero, founder of the London-based Agile Ageing Alliance. “We saw projects ranging from pioneering long-term policy and planning efforts in Portland, Oregon, which was the first US city to join the WHO Age-friendly Network, to brilliantly designed government-funded accessory dwellings being built for extended and intergenerational families in the Emirate of Sharjah, which was the first Arab city to join. We also saw a lot in between, so it was extremely challenging to compare like with like”.



“There is so much good work taking place in the world today,” commented judge Betty Lynch, who plans to recommend one of the winners to her own local government. “I learned as much as I provided while working on this project.”

The results of the Innovation@Home contest make clear that counties and communities take many different paths toward the shared goal of increasing housing options. Here are the winners:

- In the university town of Porto, Portugal, Aconchego Program (Programa Aconchego) matches older people who have extra room in their homes with students who need a place to live.
- In Sausalito, California, Age Friendly Sausalito helps people obtain free or reduced-cost building permits for projects that improve the safety and accessibility of their homes.
- Across the Barcelona region of Spain, the Home Refurbishment Program (Programa d'Arranjament d'Habitatges de la demarcació de Barcelona) provides non-structural home repairs, improves home energy efficiency, together with assistive technologies.
- A fourth program, which received Honorable Mention, is the CHORE Volunteer Handyman Service in Bergen, New Jersey, which sends retired volunteers to help older people and people with disabilities with minor home repairs.

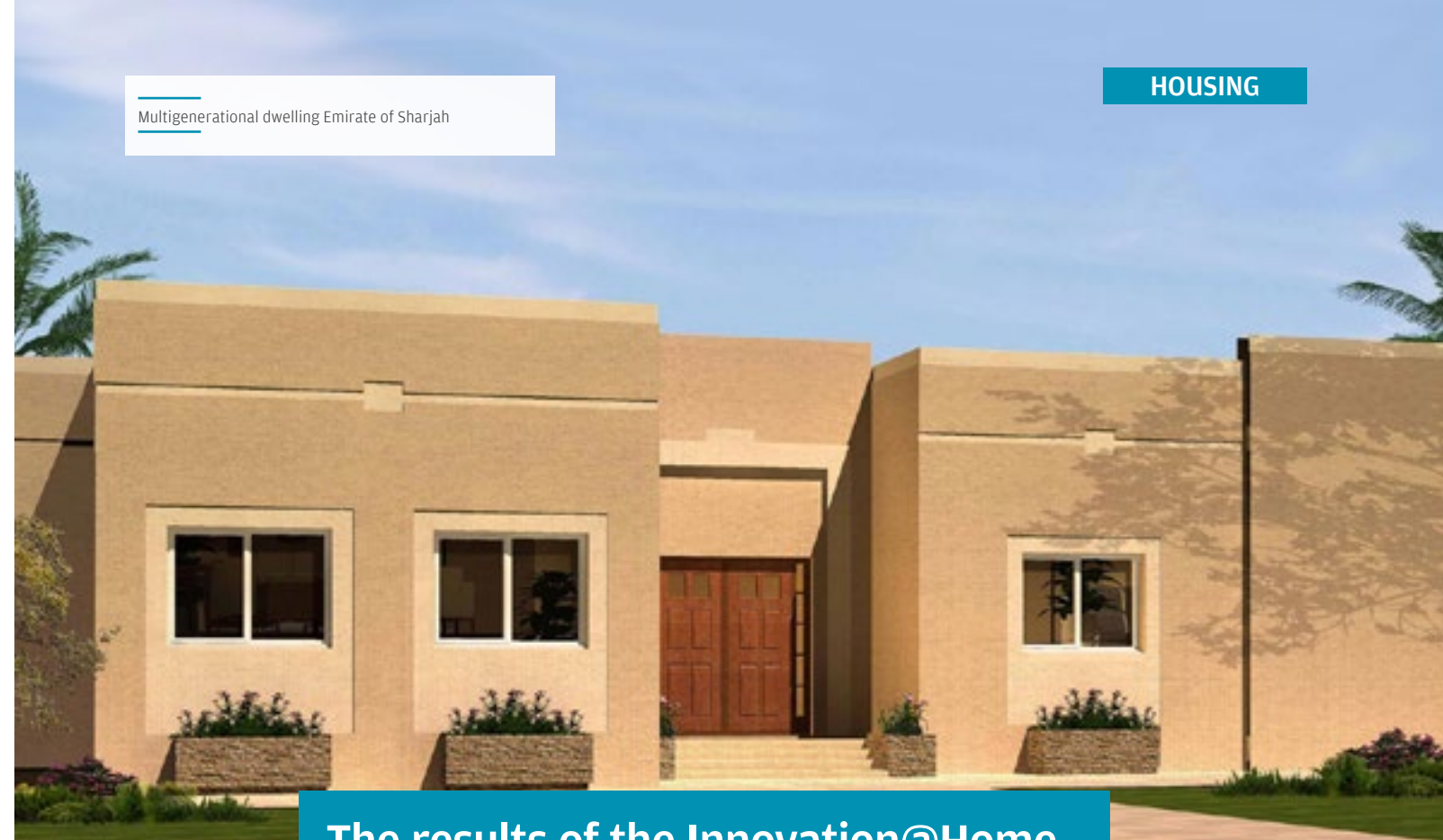
“It is striking that several of our contest winners are efforts led by local governments, and we celebrate the fact that they are testing creative and cross-sector solutions,” said judge Stephanie Firestone, AARP International's Senior Strategic Policy Advisor for Health and Age-friendly Communities. “That said, we were also happy to see a number of very worthy grassroots initiatives, which are absolutely critical to the ecosystem of solutions.”

### Lessons learned

The contest made it clear that age-friendly housing is a dynamic but decentralized field. That and other lessons will be distilled and shared in a forthcoming Grantmakers In Aging report. A few highlights:

- There is no central clearinghouse for age-friendly housing information, so finding basic facts and contacts, much less evidence, can be hard. There has been an exciting burst of new programs in the last ten years, but many are small or local, have not been well publicized or evaluated, are not researchable online, or have not been taken to scale. This was a major reason for choosing our contest format.
- Language and cultural differences, including jargon and acronyms, can make replicating programs difficult.
- Political systems matter. For instance, diverging approaches to public health and housing funding, particularly between Europe and the U.S., leave it unclear whether models with government funding behind them will travel well to places that do not offer such support.
- Costs are all over the map, raising questions about the feasibility of adapting the solutions of the rich for the poor and vice versa, and even about whether age-friendly development is a luxury primarily relevant to rich countries. The desire to age well in community does not vary by income bracket, however, and many low-cost ideas, such as simple home safety modifications (e.g. bathroom grab bars), are need-specific rather than cost-specific and are broadly applicable.
- The role of philanthropy varies geographically. Most US-based age-friendly work has required foundation backing, whereas governments provide the primary support in much of the rest of the world. This influences how some models operate and how well they may translate internationally.

Multigenerational dwelling Emirate of Sharjah



**The results of the Innovation@Home contest make clear that counties and communities take many different paths toward the shared goal of increasing housing options.**

While the challenges are real, we've found that a flexible approach can overcome many of them. Drilling deeper to find the essence of an idea, rather than getting stuck on problematic details, is worthwhile.

With early stage projects, particularly where quantifiable evidence and evaluation are not available, it's still worth considering the participants' own observations of how it is working and asking whether reliable data might be available in the future. Since no-one can predict where the next great idea is going to come from, it's essential that we keep experimenting, evolving, and sharing.

A final word from Alana Officer on behalf of our partner the World Health Organization: “Most people want to age at home rather than in institutions, and an increasing number of older people will need social and health care services at home to enable them to do so. In the face of shrinking budgets – cities and communities are looking for innovative ways to respond to needs while increasing efficiency, reducing costs, and improving the quality of life for their residents.”

By shining a spotlight on fresh ideas and best practice, we hope that initiatives such as Innovate@Home will promote and foster new types of collaboration and innovation, thereby furthering the aims of WHO's Global Network for Age-friendly Cities and Communities.”

**Photo credit:** Images courtesy of Grantmakers in Ageing, Ian Spero and Emirate of Sharjah



# A city council's perspective

**Harnessing the power of working in partnership and ensuring that improvements are for the benefit of our whole population, not just the few, are paramount.**

**Liz Gaulton**  
Director of Public Health and Wellbeing, Coventry City Council

There are plenty of reasons to look to Coventry as a model when re-imagining what our neighbourhoods might look like in 10 to 20 years' time. It provides a unique blend of a central location, strong City Council partnerships, a Marmot City with both Age Friendly and Migrant Friendly status, as well as being the City of Culture in 2021.

Coventry is taking a leading role in the movement that sees neighbourhoods as much more than simply a set of buildings. Like many cities, it is facing growing homelessness and housing scarcity, and there is an energy and drive across agencies to provide solutions that achieve better, healthier life chances for all its residents.

Harnessing the power of working in partnership and ensuring that improvements are for the benefit of our whole population, not just the few, are paramount.

In recent years, the city gained WHO Age Friendly City (AFC) status through a unique partnership between the Council, Age UK and Coventry University. Similarly, the success of our City of Culture bid was due to the creation of the Coventry City of Culture Trust, a partnership between the City Council, the city's two universities, arts organisations and the private sector.

## Preparing for an ageing population

Although Coventry is a young city with a large population between the ages of 20 and 40, many residents are aged 65 years and over. By 2028 there will be an estimated 58,200 residents aged over 65 and 8,600 aged over 85. The AFC programme is an international effort to help cities prepare for two global demographic trends: the rapid ageing of populations and increasing urbanization. The AFC initiative provides a vehicle for a variety of organisations to work together to become more age friendly, to consider older people as an asset, and to ensure that people have a good quality of life as they age.

At the same time, because active ageing is a lifelong process, an age-friendly city is not just 'older adult friendly'. Barrier-free buildings and streets enhance the mobility and independence of people with disabilities, young as well as old. Secure neighbourhoods allow children, women and older adults to venture outside in confidence to participate in sports, leisure and social activities.

Council House Square, Coventry





Broadgate and open air market

Secure neighbourhoods allow children, women and older adults to venture outside in confidence to participate in sports, leisure and social activities.

- Promotion of healthy eating
- Energy efficient homes
- Combatting fuel poverty
- Facilitating jobs growth
- Improving air quality.

Coventry City Council has therefore adopted the following Marmot recommendations in its Local Plan:

1. Prioritise policies and interventions that both reduce health inequalities and mitigate climate change by:
  - Improving active travel
  - Improving good quality open and green spaces
  - Improving the quality of food in local areas
  - Improving the energy efficiency of housing
2. Fully integrate the planning, transport, housing, environmental and health systems to address the social determinants of health in each part of the city.
3. Support locally developed and evidence-based community regeneration programmes that:
  - Remove barriers to community participation and action
  - Reduce social isolation.

Achieving positive change requires input from an unprecedented range of sectors, including transport, housing, employment, environment and communities. Therefore, new models of partnership will be key to developing sustainable homes and communities of the future. In the City of Coventry, we have an excellent starting point.

**Photo credit:** Images courtesy of Coventry City Council

The active participation of older adults in society, and the patronage of older adult consumers, has a wide range of benefits. Just recently, improvements to city parks and green spaces has helped to create much more accessible park marker routes for residents to be more active.

In the year ahead, new cricket and bowls facilities are being created, while investments in community sports, improving our parks and making our city greener, alongside the creation of a new 50m swimming pool at the Alan Higgs Centre, will all make a difference.

### Looking to improve

Crucial to the realisation of this vision is the reduction of health inequalities. Guided by the principles of Professor Sir Michael Marmot's 2010 report Fair Society, Healthy Lives (The Marmot Review).

The city's involvement with Sir Michael Marmot has also helped it to channel its efforts in tackling health inequalities, where life chances can be vastly different from one part of the city to another. This support has also helped in Coventry achieving success in its Mi-Friendly cities programme, offering sustainable benefits to the city's migrant community, is helping to mitigate the effects of welfare reform through partnership working, and is helping the Council to place an even greater emphasis on tackling poverty.

The City Council's local plan includes a 10-year commitment to focus on improvements in key areas including:

- Sports and physical activity
- Provision and protection of good quality green spaces
- Better networks for walking and cycling







# Age-friendly cities – A developer's perspective



The world is ageing, particularly in advanced economies. Over the next 30 years, we will see an extra 15,000 people reach retirement age in the Organisation of Economic Cooperation and Development (OECD) member countries every single day.

By 2045 the proportion of the population aged over 65 will rise to 25%, from the current 16%. This equates to 146 million more older adults than there are today - totalling 1.4bn globally.

This demographic shift is set to have a profound impact on society and the social fabric of cities. By 2030 all major urban centres in the OECD will see a sharp increase in the number of older people. These cities will need to adapt and develop a number of short and longer-term strategies to ensure they respond adequately to both the challenges and opportunities that an ageing society presents.

For over 340 years, Grosvenor has been developing, managing and investing in properties and places. We are now active in more than 60 of the world's most dynamic cities and we recognise that our future success is inextricably linked with their success.

Our approach is to combine our international property expertise with local knowledge and to apply a farsightedness to our activity that ensures we contribute solutions to the challenges that these cities face and helps them realise the opportunities.

Whilst there is no silver bullet solutions to what is a serious challenge and a defining one for generations to come, we hope that our insights from four diverse cities: Hong Kong, London, Madrid and Vancouver, will further the aims of this white paper by encouraging discussion and debate across the wider property industry, involving and encouraging central and local authorities and other relevant stakeholders to work together in recognising the issue and prioritising its resolution. We plan to play our part.

**Mark Preston**  
Grosvenor  
Group Chief Executive



**“By 2045 there will  
be 146 million more  
older adults than  
there are today.”**





# The looming impact of an ageing population



An unprecedented demographic change in the global population // Ageing is most pronounced in advanced economies // The 100-year lifespan and the changing cycle of life // Old age is still associated with increased health risks



**An unprecedented demographic change in the global population is now underway**

While ageing is a global occurrence, it is happening most rapidly in OECD economies. By 2045 the proportion of the population aged over 65 in the OECD will rise to 25%, up from 16% today. Ageing is particularly pronounced in continental Europe (Italy, Germany, Portugal and Spain) and North Asia (Japan and Hong Kong), where over a third of the population will be elderly by 2045 (Chart 1). In contrast, the regions that will continue to have younger demographic profiles over the next 30 years are predominantly in emerging markets, such as Africa, India and South East Asia.

There are two main reasons for this:

**1. A decline in the number of births**

Fertility rates have declined steadily through the post-war period, particularly in advanced economies. Almost all OECD countries now have fertility rates below the replacement rate of 2.1 children per female; a fall in the fertility rate of 3.4 in the 1950s to 1.6 today. While emerging markets tend to have higher fertility rates, even here the trend is declining due to rising education and income levels. This suggests that we are unlikely to see any reversal of this trend in the coming decades.

**2. People are living longer**

In the OECD, life expectancy at birth is currently 76 years for men and 82 years for women. This has increased by around 10 years for both genders since the 1960s. However, this often-quoted estimate of life expectancy understates the true lifespan of most adults, as it assumes that there will be no improvement in life expectancy throughout a person's life. This is despite the fact that data for the past 140 years shows that life expectancy has continued to improve on average by an additional 2.4 years every decade since the late 1800s. To adjust for this, statisticians also produce a 'cohort' measure of life expectancy, which adjusts for the likely improvement in life expectancy that will occur through a person's life. Based on cohort estimates, a more accurate life expectancy for most people alive today is already 90-100 years (Chart 2).

“An extra 15,000 people reach retirement age in the OECD member countries every single day.”

Chart 1  
**Ageing countries**

Proportion of population over 65 years old (selected countries)

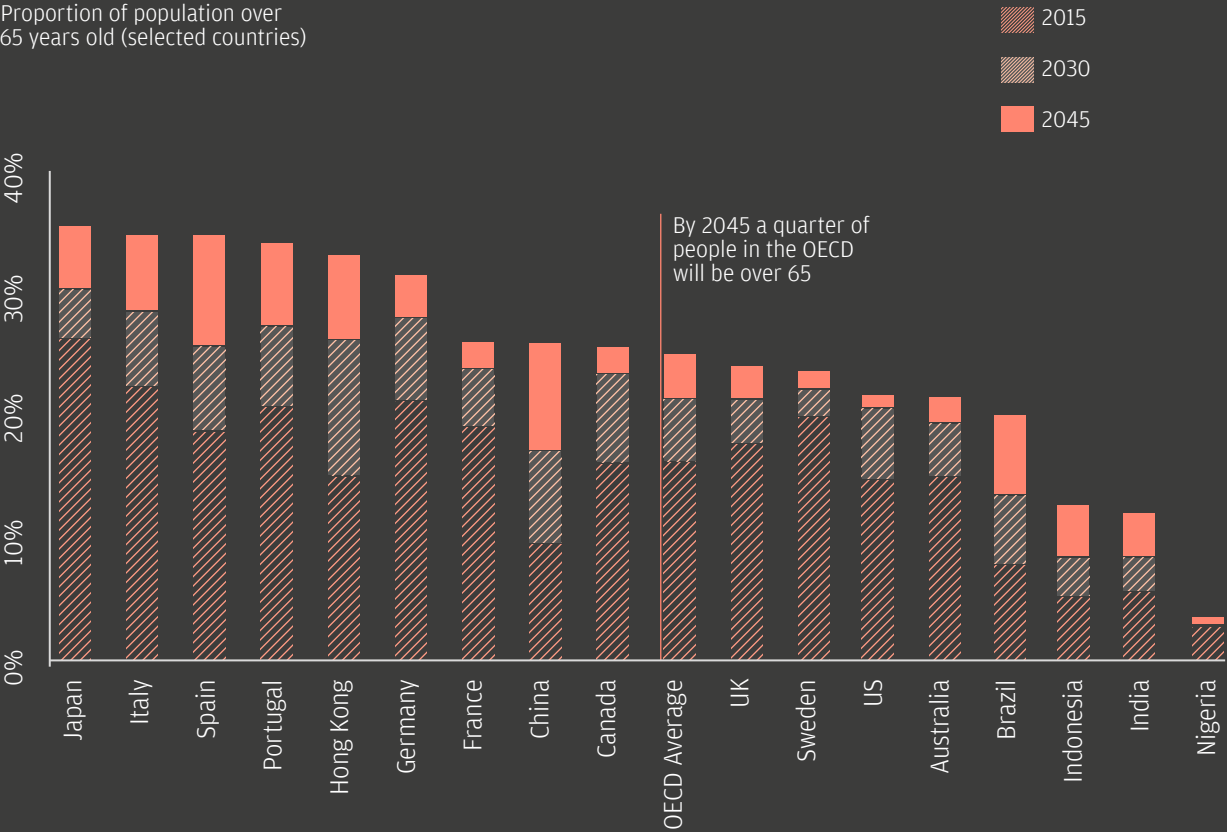
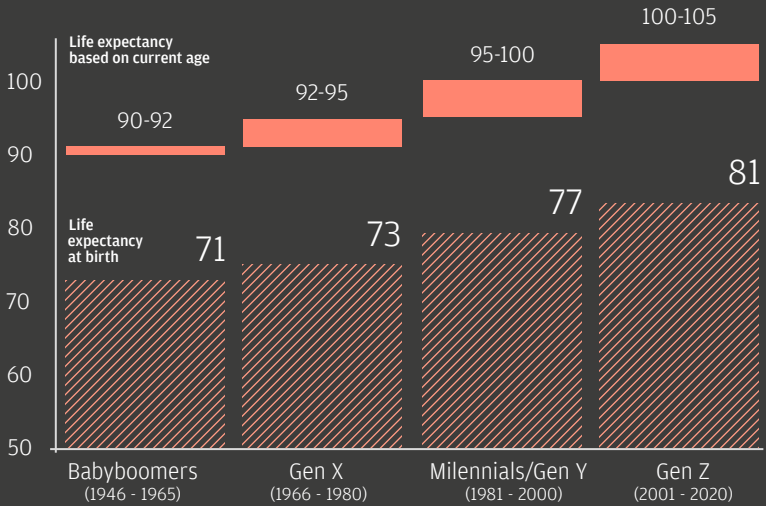


Chart 2  
**Life expectancy now vs life expectancy at birth**



**Average life expectancy**

16th Century

35 yrs

19th Century

42 yrs

20th Century

80 yrs

21st Century

100+ yrs

Chart 1  
Ageing Countries: UN World Population Prospects 2017

Chart 2  
Life expectancy now vs life expectancy at birth: UN, Human Mortality Database Note: Data is for selected OECD countries: Australia, Canada, France, Germany, Italy, Japan, Spain, Sweden, UK, US. Figures are for period life expectancy and cohort life expectancy for both genders.

Average life expectancy. The Human Mortality Database. Average life expectancy for developed countries.



Chart 3  
Proportion of OECD population over 65 years old

Male Female

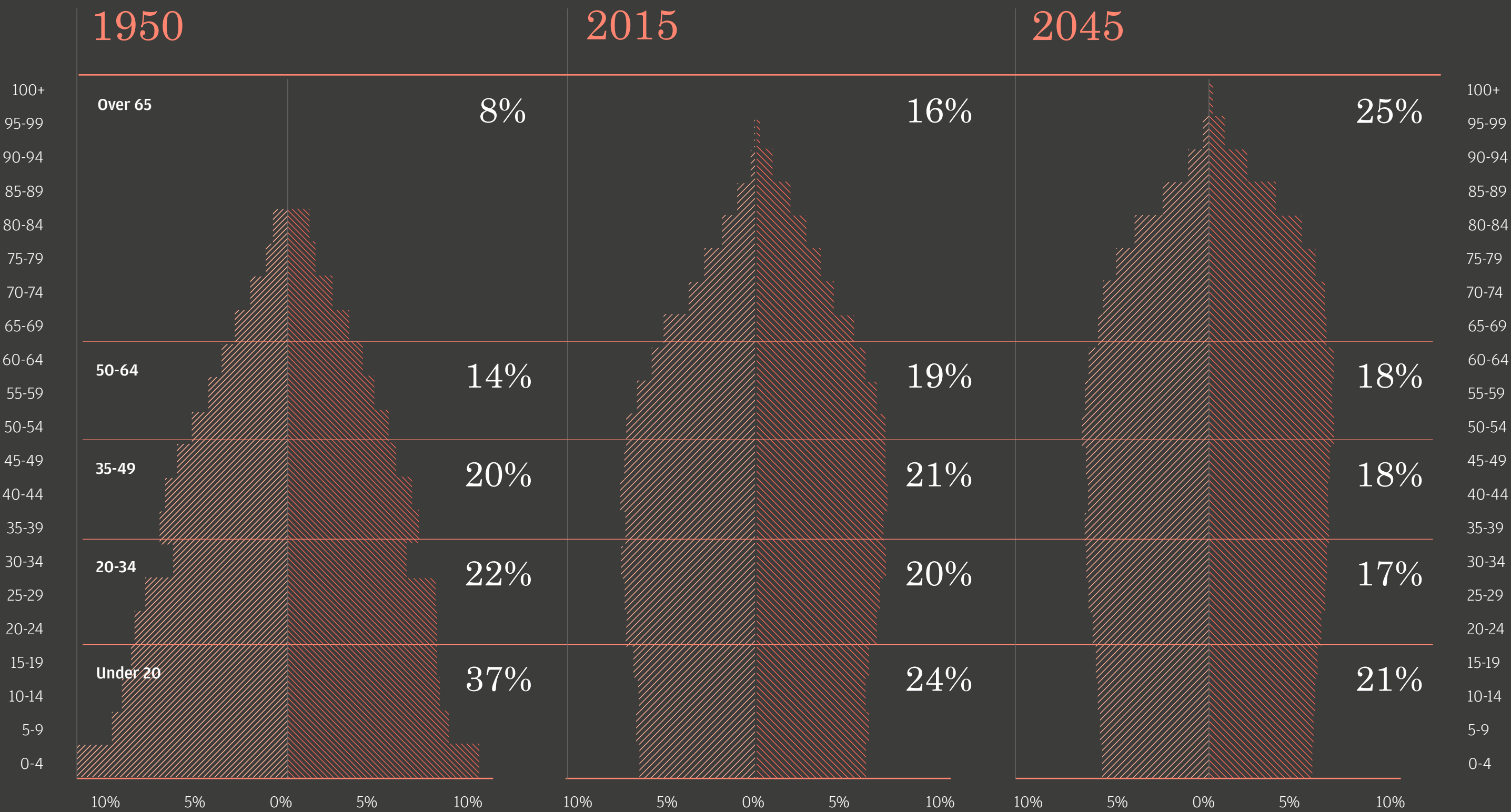


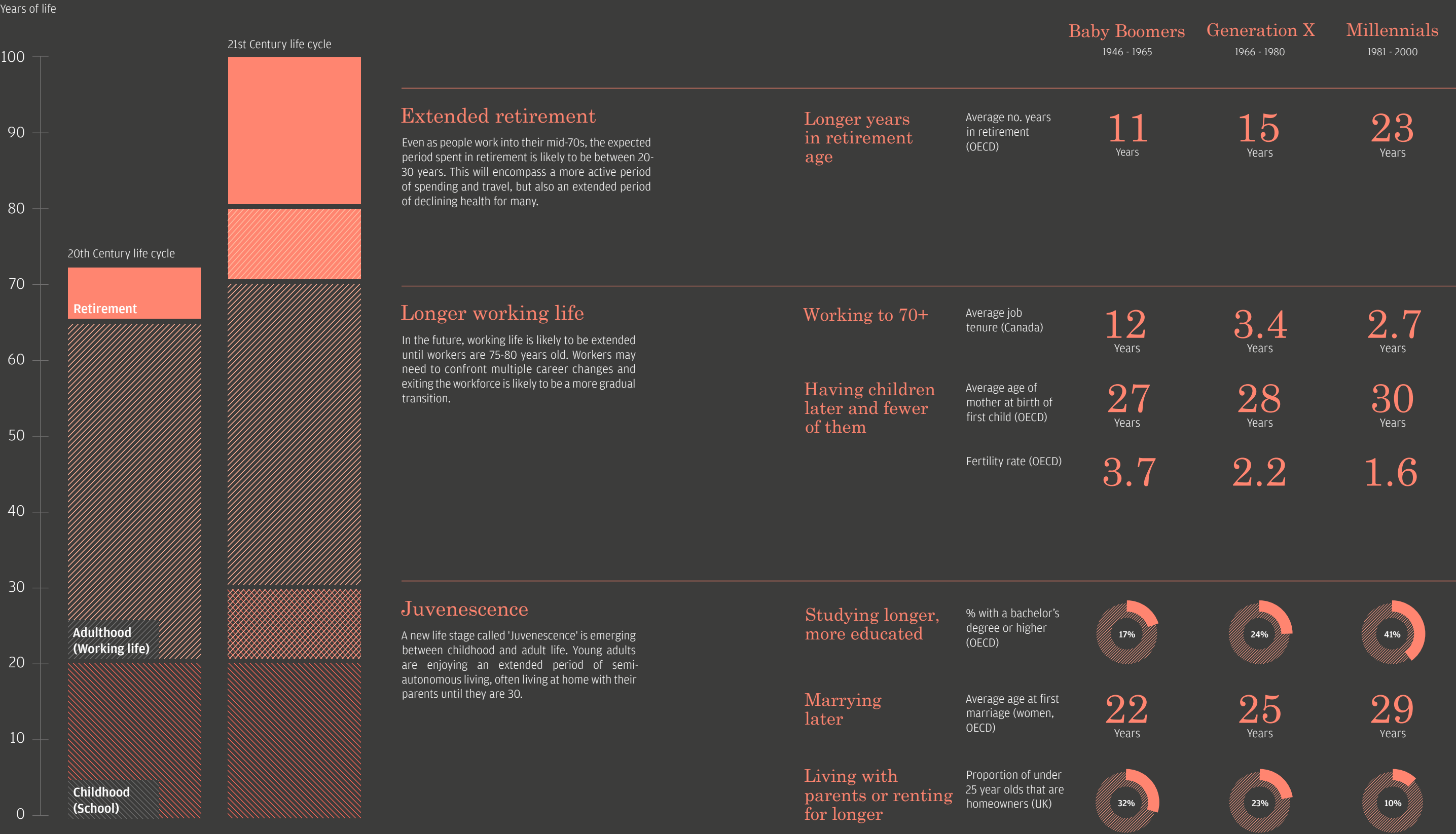
Chart 3  
Proportion of population over 65 years old: UN World  
Population Prospects 2017, OECD countries



# The 100-year lifespan and the changing cycle of life

The steady increase in longevity is having a noticeable influence on human behaviour, especially how and when people reach major milestones in life. In particular, there are three major observed changes:

The 100-year lifespan and the changing cycle of life: UN World Population Prospects 2017, indicative average life expectancy for developed countries.

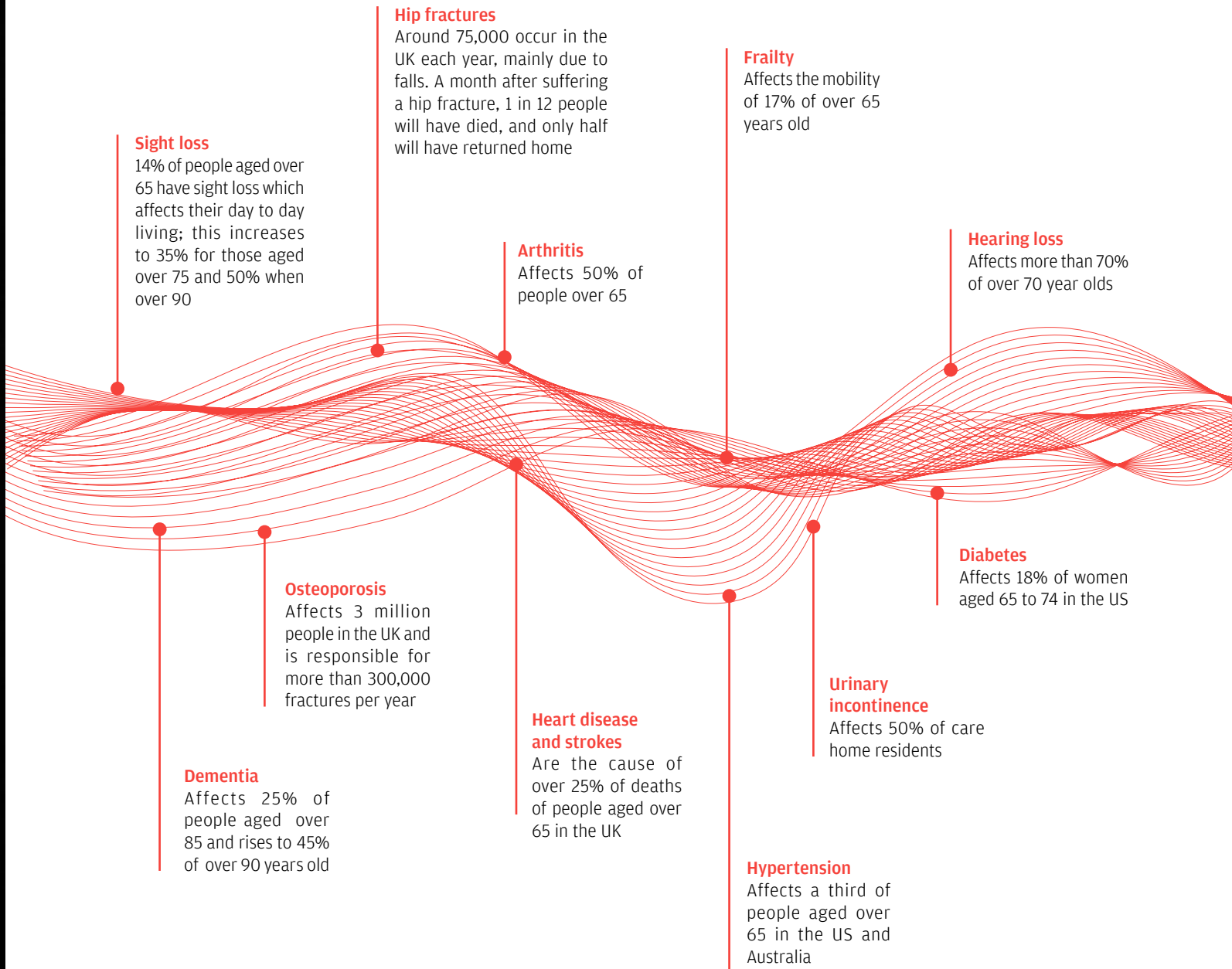






“However, old age is still associated with increased health risks.”

Despite the fact that people are living longer and benefitting from continued medical advances, ageing is still associated with a host of health issues. Health begins to deteriorate noticeably after 75 years of age. On average, older adults spend most of the last decade of their life with some form of disability, as illustrated below. Wherever in the world they may live, these special health needs have major implications for their lifestyle and living arrangements.







# The economics and politics of ageing

...

Demographic change will have profound economic implications // Economic growth will slow permanently // Living standards have started to stagnate // Global interest rates are likely to remain low // House price growth is likely to slow // Ageing will be negative for public debt // Difficult political decisions will be needed to pay for ageing // Politics is becoming fractured along generational lines



“A number of countries (particularly in North Asia and Europe) will see the size of their workforce shrink over the next 15 years.”

Demographic change will have profound economic implications

One of the more pessimistic conclusions from our analysis is the profound implications demographic change will have on economic growth and investment returns. While a number of factors could potentially mitigate the corrosive impact of demographic change (e.g. deferred retirement, increased immigration levels, a boost to productivity growth from new technologies), for now it seems more likely that we have entered a 'new normal' of sustained low growth, which will see investment returns slow.

Economic growth will slow permanently

Recent academic research suggests that much of the diminished prospects for economic growth in the post-global financial crisis era can be attributed to the unprecedented shift in the demographic structure that is now occurring across most major economies. Global population growth has peaked and will continue to slow over the remainder of the century (Chart 4). This demographic shift will be a sustained drag on global growth, particularly in the OECD, where the number of workers has now plateaued. Indeed, a number of countries (particularly in North Asia and Europe) will see the size of their workforce shrink over the next 15 years.

Living standards have started to stagnate

Rising living standards can only be sustained by higher productivity growth. Unfortunately, the latest evidence suggests that productivity is negatively correlated with ageing, due to the decline in the physical and cognitive agility of older workers. Consequently, ageing is likely to cause a decline in aggregate productivity due to the declining 'quality' of labour. The combination of fewer workers and slowing productivity supports the view that we have entered an extended era of low growth (Chart 5).

Chart 4  
Global growth in working age population

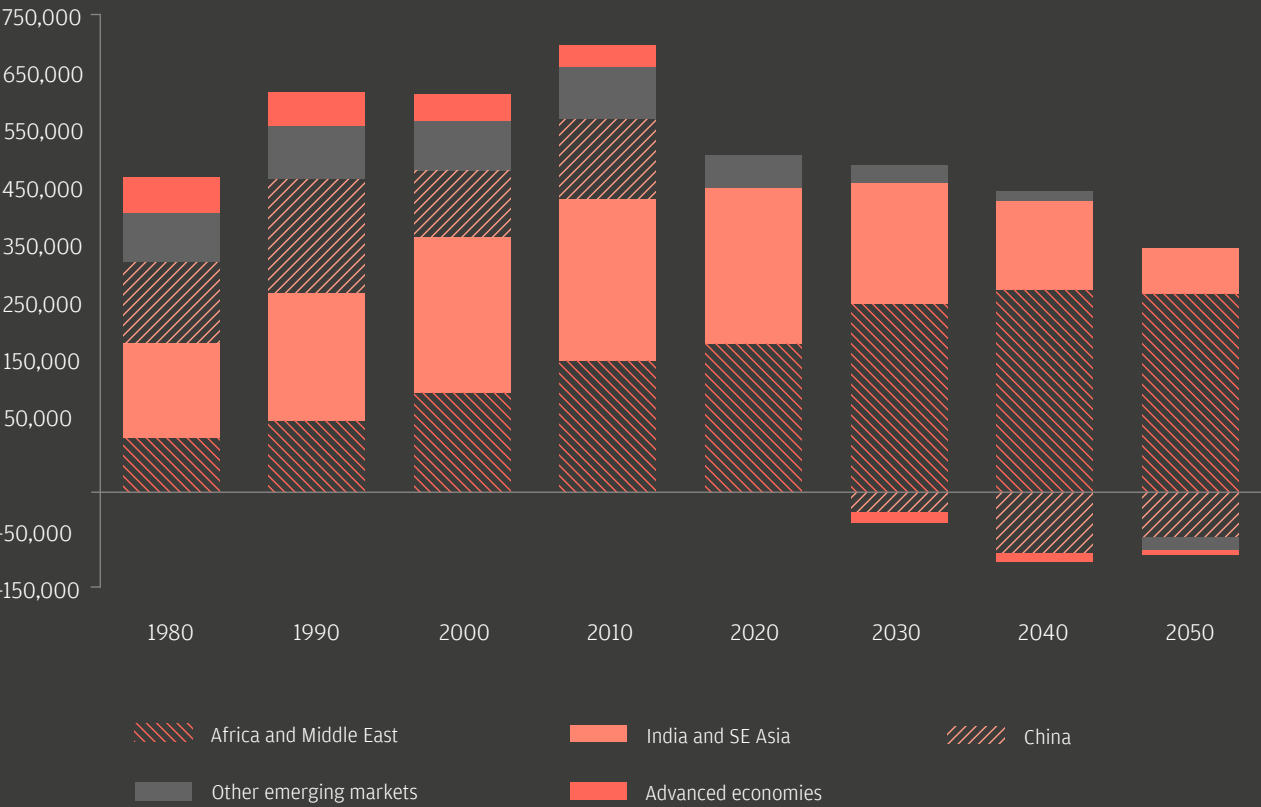


Chart 5  
GDP growth

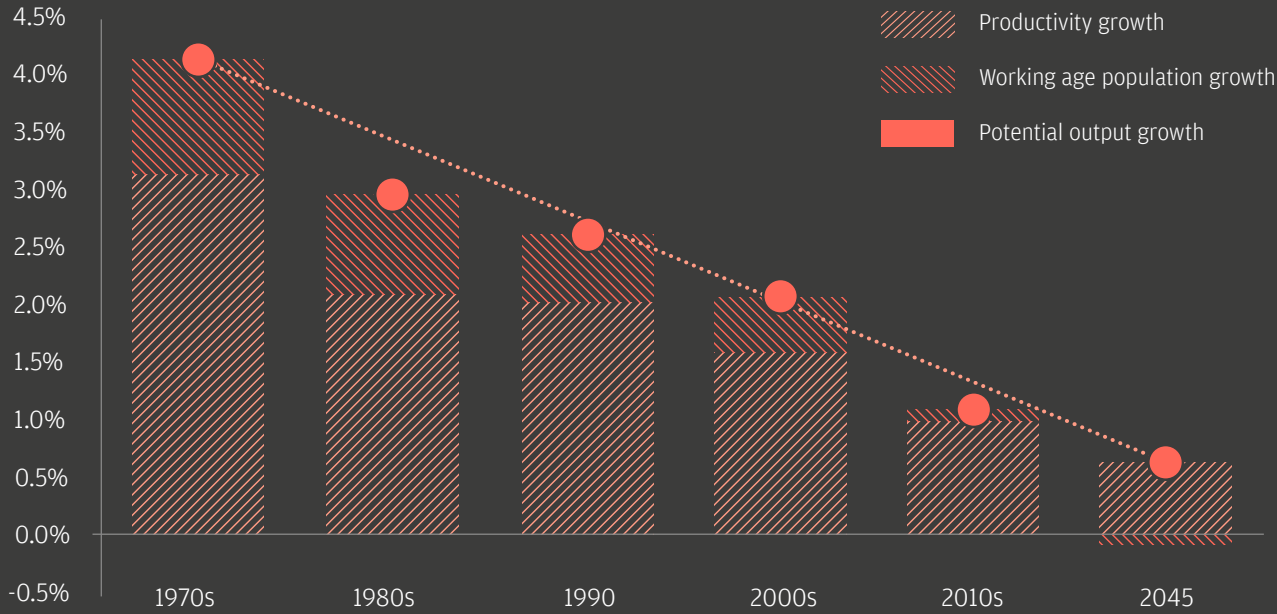


Chart 4  
Global Growth in Working Age Population: UN World Population Prospects 2017

Chart 5  
GDP growth: OECD, UN



Chart 6  
Prime savings age population in advanced economies and world interest rates

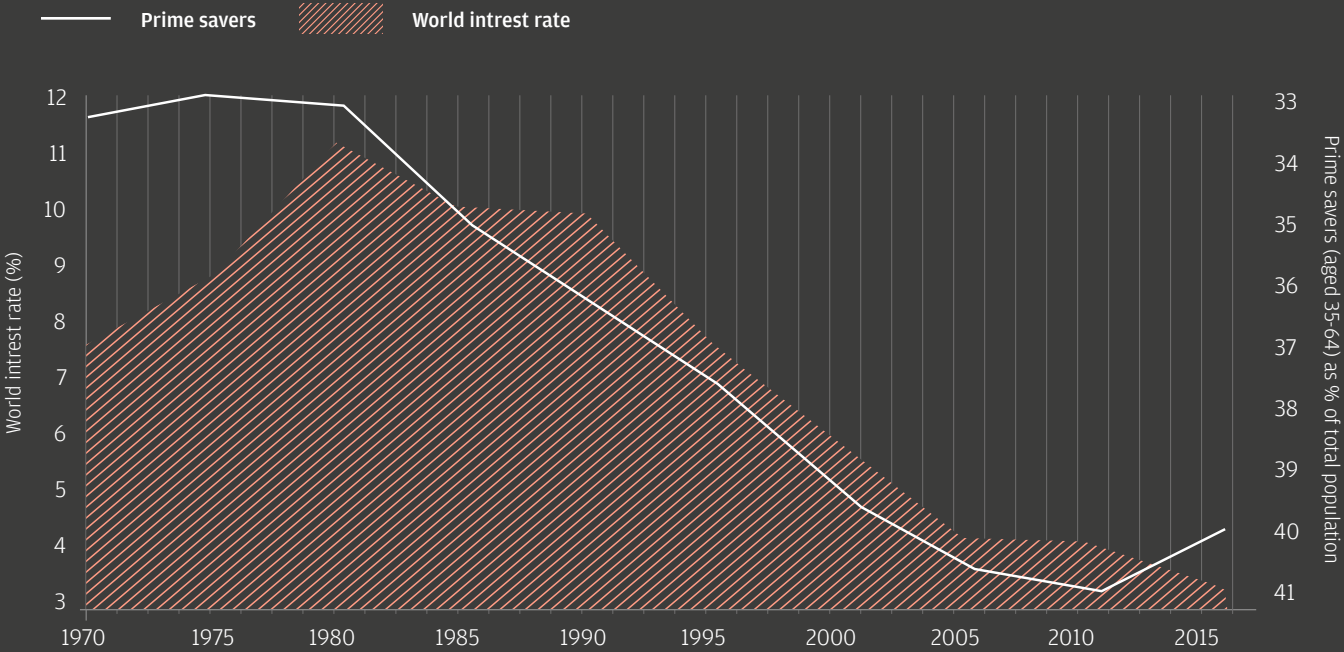


Chart 7  
Number of workers per pensioner in advanced economies

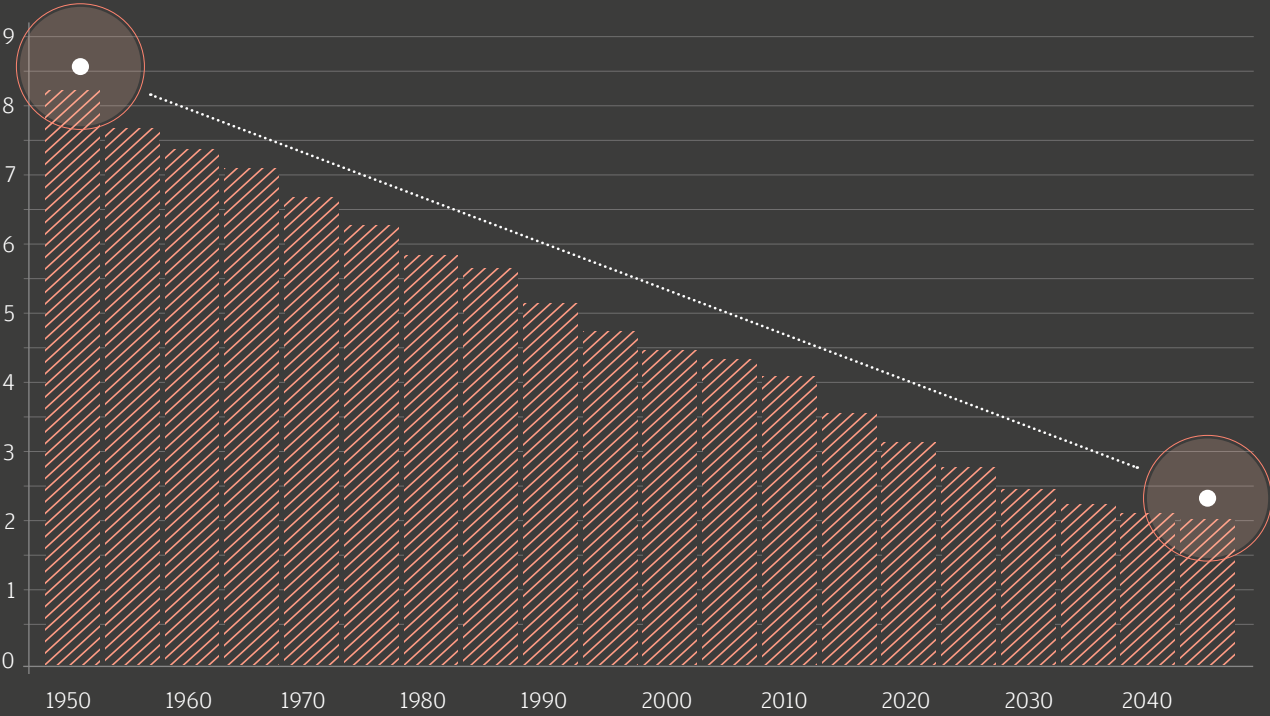


Chart 6  
Prime savers in advanced economies vs world interest rates: OECD, IHS

Chart 7  
Number of workers per pensioner: OECD

“The modern welfare state was created with eight workers per pensioner in the late 1940s.”

—  
“Advanced economies will have two workers per pensioner by 2045.”

**Global interest rates are likely to remain low**

The changing age structure also has major implications for equilibrium long-term real interest rates. Recent academic work suggests that much of the decline in real interest rates over the past 30 years can be traced, either directly or indirectly, to demographic factors. The rise in the number of older workers (i.e. 'peak savers') accumulating savings ahead of retirement has seen global savings swell (Chart 6), pushing real interest rates lower. At the same time, ageing populations have also contributed to a decline in investment, further depressing global interest rates. Going forward, the latest research suggests that demographic factors are likely to keep global real interest rates permanently low; recent estimates suggest the equilibrium global real interest rate has now fallen to just 0-0.5%, compared with an average rate of 4-4.5% in the 1980s.

**House price growth is likely to slow**

Demographic change is also likely to be negative for asset prices in the coming decades, as older adults look to sell down at least part of their assets to maintain their consumption once they enter retirement. However, the fact that older adults tend to retain their housing assets for much longer than other forms of wealth, should help to cushion the residential market from any sudden dislocations. To this end, an expected increase in demand for equity-release products (e.g. reverse mortgages) in the coming years will further help older adults to defer the outright sale of their housing wealth. With that said, our analysis shows that countries with higher numbers of elderly do have weaker house price growth.

**Ageing will be negative for public debt**

An ageing population will create significant fiscal stress for governments in OECD economies, as a result of rising health and pension costs. A rising proportion of older people is expected to see government spending on old-age benefits (principally health and pension expenditure) to rise significantly over coming decades. The OECD estimates that rising age-related spending will increase total government expenditure by around 8% of GDP p.a. on average, by 2045. With government debt-to-GDP levels already high in many countries, covering the increased fiscal cost of ageing will require some combination of offsetting government spending cuts or raising taxes, to prevent an unsustainable rise in government debt levels.

**Difficult political decisions will be needed to pay for ageing**

This will force governments to confront difficult decisions about who pays for ageing; either younger workers will be forced to carry a greater tax burden, or older adults will need to fund a greater share of their own retirement costs. Our analysis of government spending suggests that there is already limited room in many countries to make further cuts to non-age related expenditure (e.g. education spending and unemployment benefits) as government spending on old-age benefits is already starting to 'crowd-out' spending on items that benefit younger generations. Meanwhile, on the revenue side, it will become harder to keep squeezing income taxes that primarily affect younger workers, as the ratio of workers to retirees is expected to continue to decline (Chart 7).



### Politics is becoming fractured along generational lines

An ageing population potentially has major implications for politics. As older adults become an increasingly important political constituency; they are more politically engaged than younger generations and the evidence suggests that they increasingly have divergent fiscal priorities to younger generations. The widening gap in inter-generational political preferences is evident in the stark voting differences along age-lines in the 2016 UK Brexit referendum and the US presidential election. This growing political divide reflects the difference in economic interests of wealthy Baby Boomers; most of whom have enjoyed full-time employment and sustained house price growth over the past 30 years, with the diminished prospects of Millennials, who are struggling to buy a home, face an uncertain labour market, and potentially a rising tax bill to pay for the elderly.





# Implications for real estate



The Rise of the Silver Consumer // The Silver Consumer is different // The rise of the multi-generation workforce // Better workplace design may help improve the productivity of an ageing workforce // The changing needs of the last-time buyer



Retail Sector

The rise of the Silver Consumer

The swelling number of retirees, combined with strong income and wealth levels, means the consumer market for older adults is set to grow rapidly over the next 30 years. Because a significant proportion are homeowners when they retire, their discretionary spending on non-housing consumer items is sustained well into retirement. Indeed, older adults tend to spend more on a number of key discretionary items, including travel and entertainment.

The Silver Consumer is different

Given the spending power of this growing consumer class, there will be greater emphasis on the spending

choices during their extended retirement. The expected growth in what the European Commission call the “Silver Economy” over the next 15 years presents a compelling opportunity for retailers who understand the needs and desires of older adults. While many retailers continue to target younger consumers, more work is needed to fully understand the shopping habits of the mature market segment. In general. Older adults tend to be: less price sensitive, make frequent small trips, are more willing to spend on luxury items and to shop during weekdays and working hours. However, like other consumers, older consumers are also increasingly buying online. Industrial as well as retail stand to benefit from increased online shopping courtesy of older customers

Behavioural profile of the Silver Consumer

Selective, but big ticket spenders

They tend to buy fewer items, but spend more per item.

Indulging their interests

Around 2/3rds of American seniors plan to spend more time on hobbies and interest in old age.

Looking for assistance

Between 52% and 66% of the 60+ struggle to read labels, and over 60% would like to sit while shopping.

Going digital

As with the general population, 60+ are increasingly shopping online.

Young at heart

60% of the 65+ said they feel much younger than their age.

Staying close to home

68% of the elderly prefer smaller shops close to home.

Weekday shoppers

Most older consumers prefer to shop on weekdays and earlier in the day.

Less price sensitive

Only 32% of 65+ say that price is their primary purchasing criterion.

Quality over quantity

43% of 65+ people will buy on offer only if the quality is the same; many are not interested in 2-for-1.

Resistant to advertising

Between 66% and 75% of 65+ adults say advertising either depicts them negatively or does not relate to them.

Frequent small trips

Two out of three elderly shop at least twice a week, more than necessary.

Behavioural profile of the Silver Consumer: AT Kearney, Age Positive





“By the start of the next decade there will be more older workers aged over 60 still in the workforce than young workers aged under-25.”

Office Sector

The rise of the multi-generation workforce

Tomorrow’s older adults are likely to work longer than previous generations. While the number of retirees is set to swell, so too will the numbers of older workers who remain in the workforce. More ageing older adults have started to defer retirement or are now transitioning more gradually out of the workplace by switching from full-time to part-time work. By the start of the next decade there will be more older workers aged over 60 still in the workforce than young workers aged under-25 (Chart 8). However, the trend still differs markedly by region and culture. Already a quarter of people in Japan and South Korea continue to work past 65 years. In contrast, Europe has the lowest number of older workers, though the trend is for people to continue working for longer than was previously the case in all regions.

This will have significant implications for offices

An older workforce will increase the need for employers to plan office space for use by multiple generations. Older workers have different needs to younger workers. In particular, office design will need to adapt for the different spatial requirements of older workers in areas such as lighting, acoustics and ergonomics. For instance, work by the World Bank and the British Council of Offices suggests that older workers tend to appreciate the ability to control artificial light sources and prefer quieter work areas as well as furniture and desk spaces that can be adjusted to different height and comfort requirements.

Better workplace design may help improve the productivity of an ageing workforce

Research shows that the ageing brain experiences a decline in certain cognitive functions but also shows a remarkable ability to compensate by improving performance in other functions, particularly verbal and social skills (Table 1). The retention of older workers can bring benefits such as being repositories of tacit knowledge built up over years and as experienced influencers to a younger generation of workers.

“Research shows that the ageing brain experiences a decline in certain cognitive function.”

Chart 8  
OECD employment by under-25s and over 60s

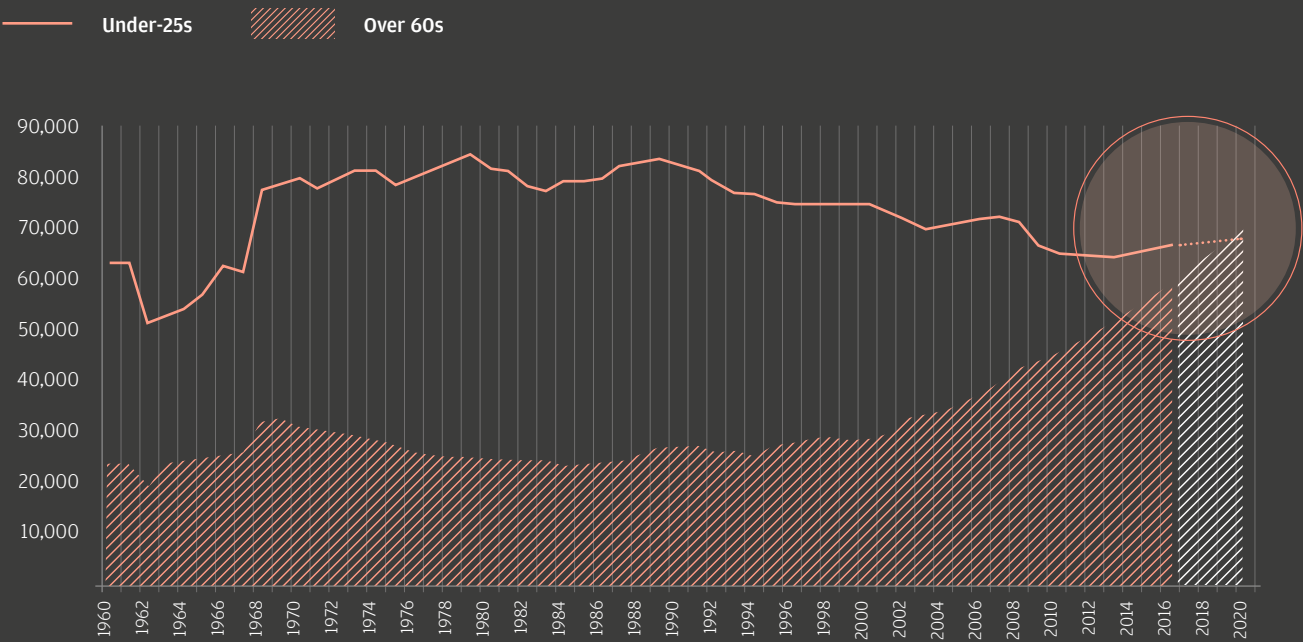


Table 1  
Effects of ageing

Why offices need to be designed with an ageing workforce in mind

Positive Weakly negative Strongly negative

Function	Subfunction	Impact of ageing
Working memory	Attention resource allocation	Impaired for tasks that require high attention
	Speed of information processing	Slower processing of more complex tasks
Memory	Semantic memory	Older people have a larger knowledge set
	Implicit memory	Brain can draw on accumulated experience at older age
	Episodic memory	Lower ability to remember context deadlines
Attention	Selective attention	Older people require more time to focus
	Dual tasks	Older people require more time to divide or switch attention
Perception	Hearing and vision	Deteriorate with age, affect cognitive performance
Higher-level cognitive functions	Language and speech	Discourse skills improve with age

Chart 8  
OECD employment by Under 25s and Over 60s: OECD

Table 1  
Effects of ageing: Cai and Stoyanov (2014),  
Wieczorkowska-Wierzbinska (2014), World Bank



Chart 9

### Homeownership rates: old vs young

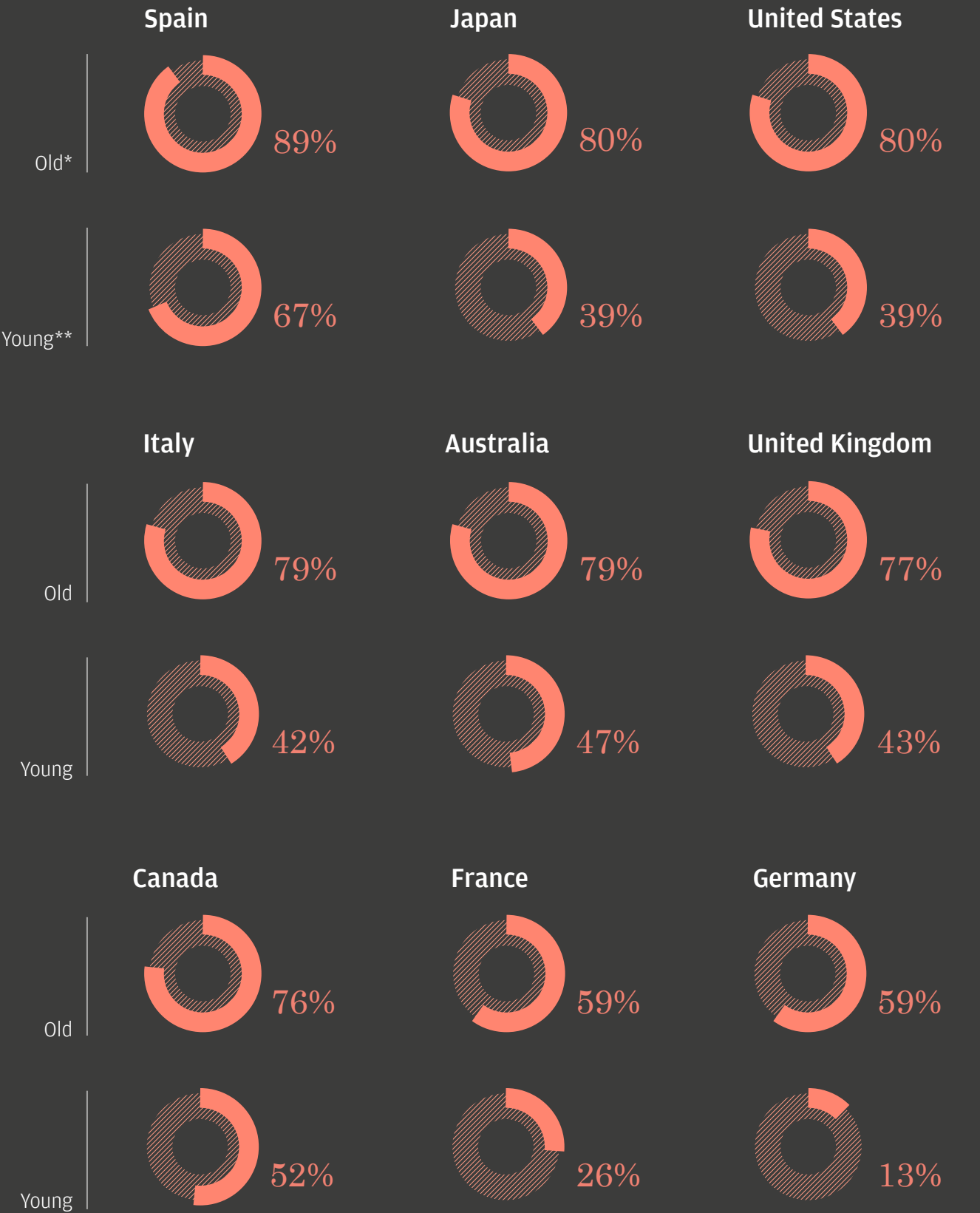


Chart 9

Home owner rates: young vs old: National statistics

\*65-74 years old \*\*25-34 years old

“In the UK, there are an estimated 11.4 million potential last-time buyers.”

#### Residential Sector

##### The changing needs of the last-time buyer

While demographic change will affect all real estate sectors, the impact on housing markets are perhaps most profound.

##### Older households will become a significant proportion of the residential market

An ageing population will inherently see a surge in the number of older households. By 2030, as many as a third of households in many OECD countries will include an older adult. Moreover, the proportion of households aged over 75 years will account for much of this increase, with more than half of old-aged households including someone aged over 75.

##### There will be a sharp rise in lone pensioner households

While most homes will continue to be occupied by couples, the number of single person households is expected to rise significantly over the next 30 years, driven by an increased number of divorces in middle age and a high proportion of widows in later life. Already, one in five older adults in the OECD live alone. In general the older the household, the more likely it is to be a lone household (usually a lone female household).

##### There is still little evidence of the elderly actively downsizing

Although there is a common perception that older people want to downsize to smaller dwellings, the actual international evidence is quite mixed. Rather than downsize as their housing needs change, older adults tend to 'age in place', in locations where they have long-term community attachments. In England, only 2% of households aged over 65 have moved in the past seven years, compared to 51% of 16-24 year olds and 24% of 25-34 year olds.

The majority of older households in the UK, for example, are owner-occupiers with 70-80% of the elderly owning their own home (Chart 9). Few older adults make the positive choice to move

to retirement housing until something forces them to do so, and there is limited demand for assisted living arrangements, which remains the housing option of last resort for many. Most prefer to receive long-term care at home and only move to assisted living or care facilities when deteriorating health requires them to do so. The net result is that a growing number of older adults end up living alone and under-occupying large houses, not fit for purpose, in typically quiet, low-density suburban locations.

##### There is an untapped potential market for quality age-friendly housing

This analysis highlights that there is a fundamental mismatch between the large, under-occupied houses that older adults currently own and the mid-sized, accessible housing they actually need. There is clearly an untapped market opportunity to build the right product to unlock the potential downsizing (or 'right-sizing') into purpose built dwellings that are better designed for their life-time needs and located in the communities where they have existing attachments. In the UK, there are an estimated 11.4 million potential last-time buyers (homeowners over 55). Furthermore, by developing housing products that are more appealing to older buyers, the real estate industry could help unlock the number of larger properties available for younger working families, who have higher space requirements.

##### Existing housing stock will need to be adapted

There is also likely to be significant opportunity in retrofitting existing houses to allow older adults to live independently for longer. Many countries now recognise the important link between long-term health and the houses older adults occupy. Governments are directly funding the retrofitting of housing in order to prevent wider (and more costly) 'social hospitalisation', where older people end up weighing on the healthcare system because of injuries sustained in poorly designed homes.





# How an ageing population will change cities



Many cities are getting older // How an ageing population will change cities // City insight studies



“Only 9% of OECD cities currently have a high exposure to an ageing population, but this will rise to 31% by 2030.”

Global cities remain relatively young

Despite the global nature of ageing, many leading global cities have so far remained relatively insulated from the ageing trend that is now underway. Most leading global cities have a much younger demographic profile compared with the national average. This has been reinforced by internal migration patterns, with vibrant global cities attracting an inflow of high-skilled young workers and a corresponding outflow of older adults. Indeed, our analysis of the top 100 largest cities in the OECD shows that only 9% of cities currently have a high exposure to older adults (defined as over 20% of population older than 65).

But this is set to change

While cities are not ageing as rapidly as countries, the ubiquitous nature of ageing will become more pronounced over the next 15 years. By 2030 there will be a high proportion of older adults in over 30% of the OECD’s top 100 largest cities including Tokyo, Berlin, Milan, Madrid and Lisbon. Our analysis of ageing trends in global cities highlights that virtually all of the 212 ‘young’ cities in the world in 2030 will be located in emerging markets. However, while these younger cities often offer stronger economic growth prospects, they are often less resilient cities, with higher levels of corruption and less transparent real estate markets.

Cities must adapt to the changing needs of older adults

Ageing will force a rethink about how we design and build cities to be more inclusive of all adults. One area where ageing will have an impact is on what exactly is the right level of density in our cities. Most vibrant cities are implicitly designed for active, working-age populations, but given their stage of life and health requirements, older adults cannot live at the same high density as the young. Policies designed to achieve greater density often boil down to attempts by developers to build ever-smaller-sized apartments, which are unlikely to be suitable for the changing physical needs of older residents (particularly the very old). Many will become mobility- impaired as they age and thus require larger rooms, ground-floor access and additional space for in-house care.

Increasing density must be balanced with age-friendly design principles

These preferences often conflict with the smaller average size of units that developers are currently building. A strategy of simply building ever-smaller micro-apartments aimed at young workers is likely to be a short-term solution that addresses current housing needs, rather than helping to create long-term sustainable age-friendly communities. Efforts to achieve greater density would be better if focused on building medium-density to make downsizing more attractive for older people (possibly through incentives in the planning system). Ultimately the density debate will need to factor in the impact of ageing. This will have significant implications on the urban form of our cities.

Cities should incorporate age-friendly principles

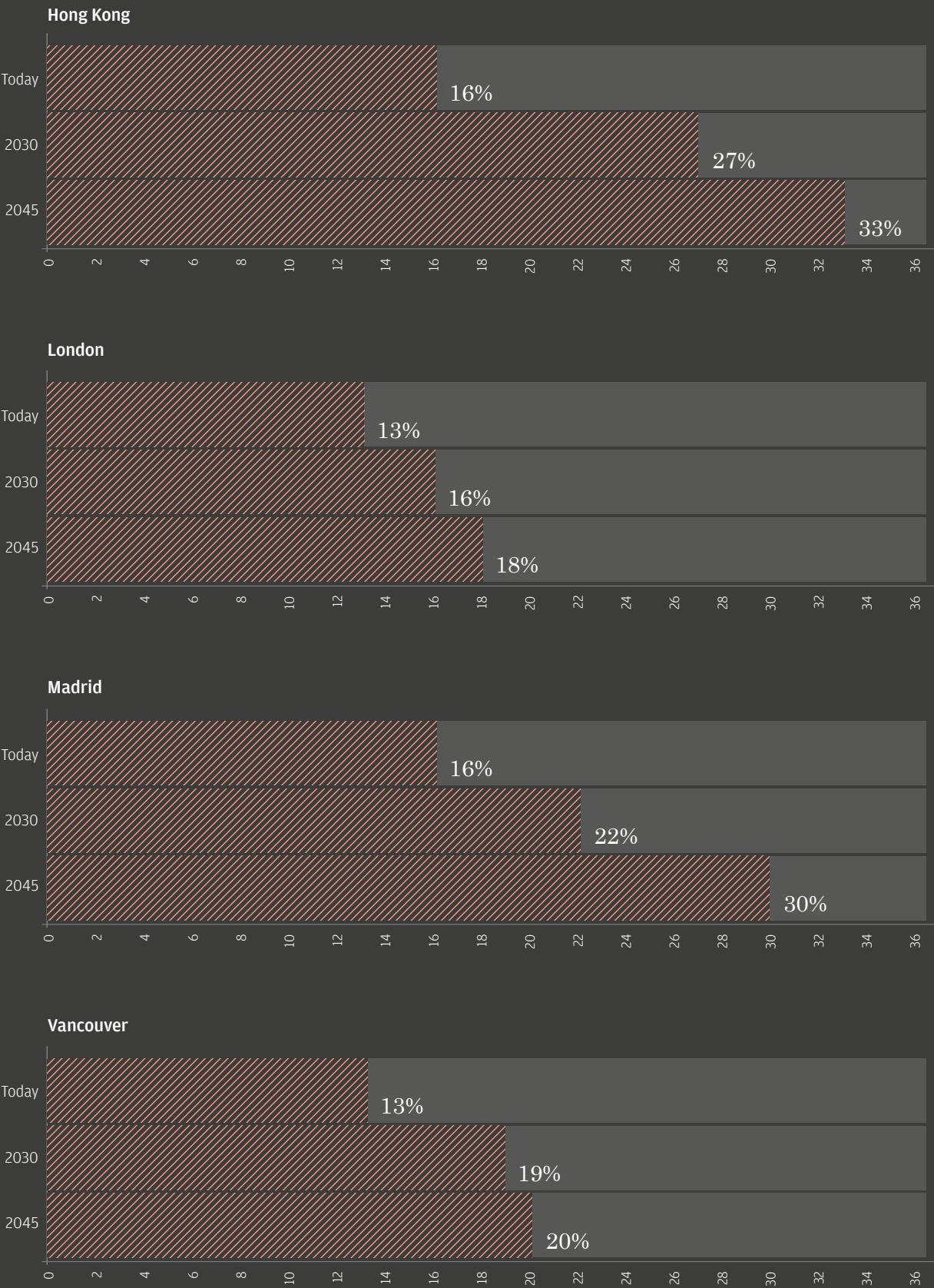
Beyond the density debate, with a greater number of older adults living in and visiting cities, increased focus is needed to make the urban environment more appealing and suitable for older people. There is a growing need to make cities more accessible and responsive to the changing needs of ageing populations. Many cities’ public transit networks are not fully accessible to the mobility impaired. For example, in Paris, only nine of 303 metro stations are fully accessible to people unable to walk up or down stairs. Increasingly, planning policy internationally is geared towards creating ‘lifetime neighbourhoods’ and ‘age-proofed’ communities.

Grosvenor’s approach

At Grosvenor, our activity is guided by combining expertise built over centuries with a far-sighted approach that is informed by research and projections of how megatrends, such as ageing, will impact cities and communities in the future. We want to play our part in helping address the challenges that cities face and deliver schemes that are flexible and able to accommodate the needs of future occupiers.

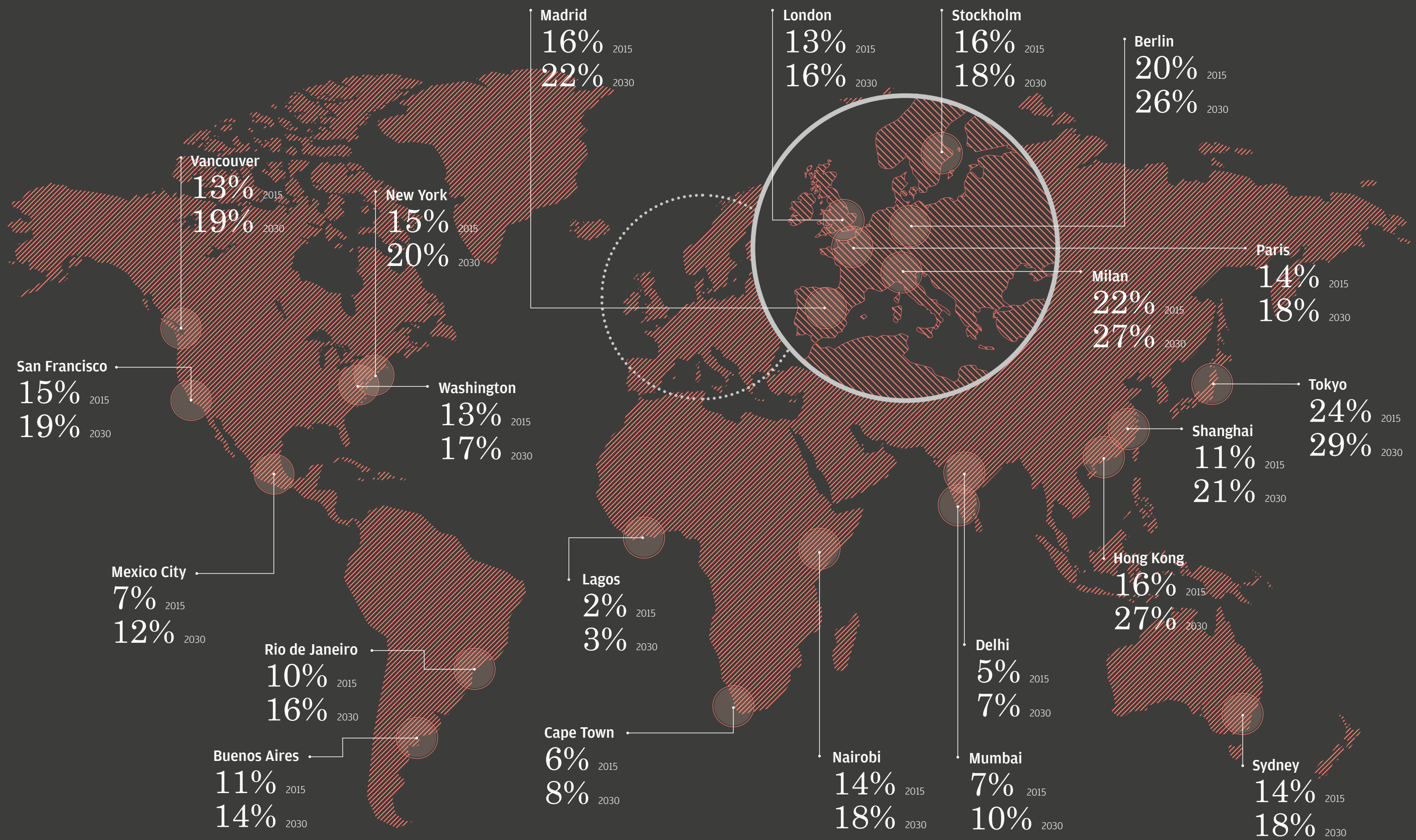
The following insights by some of our developers around the world, look at the ageing issue from a city perspective, providing a snapshot of how the implications of an ageing population are being addressed, if at all, within four very different global cities: Hong Kong, London, Madrid and Vancouver (Chart 10). These pieces also offer views on how the sector can play a part in shaping the future development of cities in a way that improves their resilience to the ageing challenge.

Chart 10  
Older adults (65+) as % of total city population





Older adults (65+) as a proportion of total city population





# Hong Kong

Improving the quality of  
homes for older people

**600**

square feet is a typical size  
home for a family of four or  
more to live together in

**326,000**

houses will have been  
built more than 70  
years ago by 2045

**27%**

of the population will be  
over 65 by 2030 and 33%  
by 2045



## “In Hong Kong, unless older adults require special care, it is not common to put them in a care home.”

By Gary Wong  
Senior Project Development Manager,  
Hong Kong

Hong Kong is one of the most densely populated cities in the world and has been ranked by Forbes as the world’s most expensive city to buy property in for the seventh year running. The pricing for a residential flat is now averaging between HK\$16,000-20,000 per square foot. To make residential property more affordable, developers are increasingly focusing on the development of small flats, primarily targeted at young, single buyers.

The high cost of living in Hong Kong means that it is the norm for both parents to work, in turn relying on grandparents for childcare. This adds to the already strong cultural tradition of families staying close or together as a unit. In fact, unless the elderly require special care, it is not common for them to go to a care home. Showing filial respect for one’s parents is a virtue of Chinese people.

The combination of cultural expectations and the high cost of housing mean that it is typical for a family of four or more to live together in an apartment unit of no more than 600 square feet.

But despite the obvious challenges facing Hong Kong, with its rising share of older people, limited space, and a culture of two-year lease lengths, there is sadly little awareness of the issue facing older adults among the public. There are few signs that the authorities are interested in the challenges either, instead focusing on wider issues, such as economic competitiveness.

### What could the authorities do?

Since there is a respect for free trade and enterprise in Hong Kong the government is not minded to impose new conditions on private developments.

While the government already has planning rules for new developments aimed at setting minimum standards for the disabled, such as wheelchair access, these could be broadened out and extended to include senior citizens. For example, expanding the current limit on Buildable Floor Area that can be allocated towards recreational use from 5% by say two to three percentage points more, provided the developer commits to integrate a scheme or recreation space that caters to the needs and usage specifically for older adults to help them remain active and integrated in their communities.

The government could specify a minimum size for apartments in schemes when they tender a land sale for development to ensure that the homes have the flexibility to accommodate multiple generations.

There could also be tax incentives, such as tailoring allowances for people living with their parents to be more generous to those families living in more crowded accommodation.

A good example of where a project has focused on this demographic is a suite of four projects developed by the Hong Kong Housing Society, a non-government and non-profit organisation, which built 1,224 units between 2003 and 2015. Three - Jolly Place, Cheerful Court, and Tanner Hill - are wholly for older adults, while one, Harmony Place is built for a mix of buyers alongside their elderly parents and offers shared facilities such as a gym, swimming pool, and an activity room. While these schemes have been very successful, delivering fewer than 1,300 units in the past 15 years is definitely not catching up with the market demand.

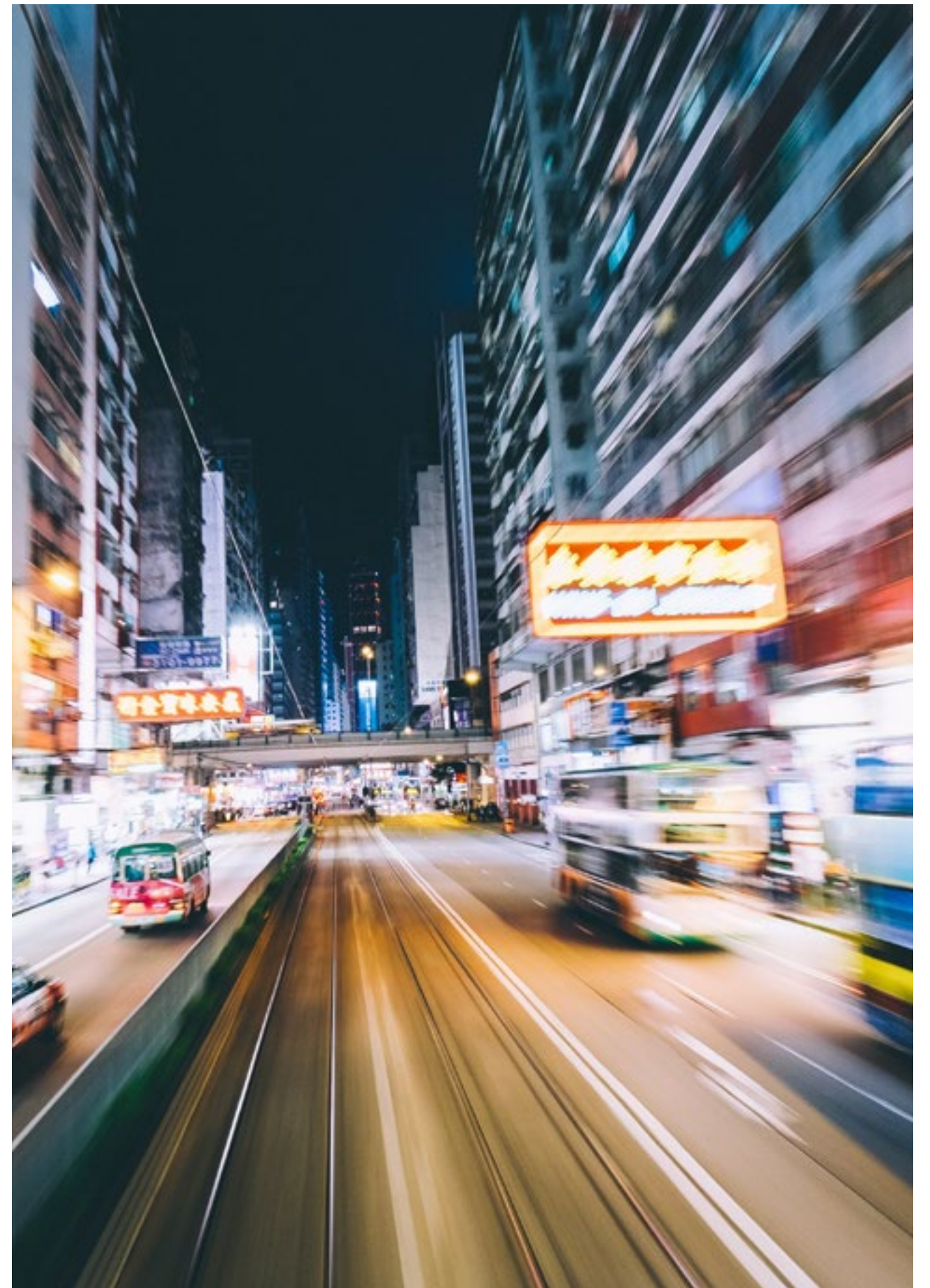
For private developers, the idea of adapting schemes for elderly living is still a work in progress. The sector could look to improve the quality of the offer by working with other sectors to ensure buildings can be adapted as residents age.

Developers should also be encouraged to develop products that focus on wellness, which have a positive impact on residents’ physical health, mental state and productivity. For example, it’s been shown that thoughtful material usage, colours, biophilia design, lighting and use of texture, are features that become increasingly important as people age.

There are also good opportunities to cooperate with technology and service providers to include improved telecommunications and internet facilities that senior citizens increasingly take advantage of and may come to rely on more in the future.

Constraints of space and pricing will mean the solution will come from adapting existing stock rather than building new properties in Hong Kong. This means enhancing the living areas to include wider corridors, more spacious rooms, a more joyful atmosphere and more greenery as well as better public amenities, to allow older people to remain within their communities.

Looking ahead, Hong Kong will always have a high density. That is fine in itself, but in order to meet the challenge of an ageing population the government and developers must work together to ensure the existing stock is adaptable.





# London

Build-to-rent to ensure our global city remains home to older people

**£2.5 billion**  
is the cost of poor quality housing to the National Health Service every year

**80%**  
of older adults wish to age in place

**37%**  
increase in number of aged 65+ households by 2029



“74% of older adults move to places within 100 km (or 1 hr – 1.5 hr train ride) of Central London.”

By Simon Harding-Roots,  
Executive Director,  
Grosvenor Britain & Ireland

London is a young and fast-moving city but that does not mean it cannot be a city for older people.

Much of the negative language that is attached to the notion of an ageing population is both surprising and frustrating. People are not geriatric at the age of 60 or 70, and many will look forward to as many as 20 years of a really active lifestyle, taking advantage of transport, culture and leisure.

The 'silver surfer' generation is an exciting demographic and it means that what we have in London and in the real estate sector is a huge opportunity, especially in a country that does not have a strong culture of keeping older adults within the family unit.

We need to move away from the idea that the only option is for the elderly to go into a care or rest home when, in fact, most older people in London, as much as elsewhere, wish to remain independent.

The challenge is that many older Londoners are living alone in the family four-bedroomed home that they raised their family in, but which is unlikely to be suitable for an older person.

There is a strong opportunity for us as an industry to focus on building communities made up of homes for rent that will meet the needs of all demographics and not just the 25- to 35-year-olds whose faces often adorn modern development hoardings.

There is currently an acute lack of the type of accommodation in London that suits all ages. Developers need to capture those elements of a home that older people particularly value, whether that is spacious rooms, wider corridors, storage areas, or some outside space.

Including a range of different sized blocks and building with flexibility into a development so the units can be adapted later on is a very cost-efficient way of accommodating residents' future needs.

Developers should also look to include more public amenities such as ground level open spaces within a proposed new community in order to make it more attractive to the older occupier.

Grosvenor hopes to put this into practice in Bermondsey, south-east London, where we have drawn up a masterplan for a mixed use community of 1,500 flats with office, retail and community space. Building for rent means the apartments will typically come with facilities and features such as two standard sized bedrooms and two bathrooms unlike much of London's older stock where there will often be small 'box' rooms as part of the accommodation offer.

This takes into account that it is increasingly common for individuals of all ages to share homes, making living in London more affordable. New developments designed with this in mind are more appealing to people who fear being priced out of London. Technology integrated within the very fabric of new buildings will also become an important feature for the increasing tech-savvy older generation.

Renting should be seen as a functional way of life that offers flexibility where people might start off in a studio and work their way through the different types of property but within the same development, enabling people to remain in their chosen communities for longer. It can also provide a positive alternative to retrofitting large older houses, which are in demand from families.

Tax incentives could play an important role in encouraging older homeowners to sell an oversized family home and so free up housing stock, and for modern regeneration aimed at diverse and integrated communities. A financial incentive to sell, and an exemption from Stamp Duty when buying, could be very beneficial.

The good news is that London has made significant strides to make the city more accessible, not just for older adults but for everyone who needs help with mobility, including the disabled and parents with buggies. Whether it is way-finding signage, free public transport, pedestrian zones, dropped kerbs, supermarket deliveries and even taxis at the touch of an App, it makes for a friendlier city for everybody.

If we get this right, London will be a more integrated city. With people living for longer in places they are happy in.





# Madrid

Designing new communities that  
accommodate the older person

**1.1 million**

older adults live in the inner city;  
over half of the population

**84 years**

the average life expectancy in Madrid  
is 84, making it the region with the  
highest life expectancy in Spain

**3 out of 4**

older adults live in  
underoccupied buildings





## “New large-scale land developments in Madrid are now required to incorporate 25% social housing.”

By Fátima Sáez del Cano,  
Managing Director, Spain  
Grosvenor Europe

Every crisis brings an opportunity and in the case of Madrid the steep property crash of the last decade has opened a way for the city's developers and authorities to pioneer a new approach to an age-old problem.

The downturn means that there has been little property development and low levels of public investment over the last 10 years. Now that confidence is returning, the needs of older adults are back on the agenda and there is an opportunity to implement best practices and designs that have emerged over the past decade.

New concepts coming through include shared housing aimed at single women with children, who can support each other with childcare. This idea could be easily adapted to suit older people, overcoming the issue of loneliness and enabling citizens to share costs of living and social care without having to move to a care home.

New large-scale land developments in Madrid are now required to incorporate 25% social housing and this could be adapted to include an allocation for older people.

In terms of new properties, companies are starting to look at what will appeal to older people. They have to take account of the culture in Spain, which is very much family focused. Grandparents play a large role in helping to take care of their grandchildren for example, which means that families want to live close to (but not with) each other. Therefore, there needs to be a variety of housing to enable people to move within their existing community.

This means the concept of a retirement village that is popular in the United States will not attract much interest in Spain. Instead, the industry needs to focus on designing accommodation that is ready now but to which improvements can be made later.

We need a revolution that leads to the creation of better alternatives, which will in turn stimulate demand and lead to further innovation. There is a huge opportunity for an industry that is at a

new starting point. The challenge is to produce something that is attractive to a 55- or 65-year old who may have few additional requirements, but which is flexible and can respond to their changing needs as they age.

This will include the flexibility to turn traditional layouts into open plan spaces and providing a main bedroom and bathroom that can still suit the needs of older adults with mobility issues.

There is also a huge potential for developers to collaborate with services companies to install features that can help older people, such as incorporating technology that is very intuitive for older people to use and which adds greatly to their wellbeing.

The government too can help. Four out of five Spaniards own their home, but it is often their only financial asset, which means that they are reluctant to sell in order to finance living in a retirement home, fearing they will leave nothing to their children when they pass away.

The cost of buying and selling homes, including a property transfer tax and notary and registration fees for the buyer and commissions and capital gains taxes for the seller, are high and could be reduced as an incentive to move.

The key for developers is to educate the generation who are nearing retirement, helping them understand that there are options between their existing home and a care home. If this group trust developers to deliver high-quality homes that are flexible enough to adapt to their changing needs and at a price that is not just aimed at wealthier households, they are more likely to make the move.

The future may lie in the suburbs. Although many of Madrid's older adults live in the city centre, its history and layout make it hard to find new sites or demolish existing buildings that often have no lifts.

The move of younger people to suburbs which are well connected to the centre by metro and where there is a supply of ready to develop land, offers the potential to build new neighbourhoods where multi-generations of families can more easily live closer for longer. That would be a positive legacy from the crisis.



# Vancouver

Densification key to ease shortage of homes for older adults to rent or buy

**65 years**

there are more people over the age of 65 than under 15 in Canada

**60%**

of ethnic minority seniors are Chinese

**13%**

of downtown Vancouver residents are over 65 years old



“The primary focus of both the public and politicians in Vancouver has been on young people and families and how they will afford to live in the city.”

By James Patillo,  
Managing Director, Development,  
Grosvenor Americas

Vancouver is a fast growing city but its ability to create sufficient housing to meet the demands of a growing population is generally constrained by lack of available land (surrounded by mountains to the North, an ocean to the West, the United States border to the South, and greenbelt and agricultural land to the East), long entitlement and permit timelines and public resistance. The result of this has been fast-rising property prices and an increasing affordability problem.

While this has led to a debate about housing supply, the primary focus of both the public and politicians has been on young people and families and how they will afford to live in the city. My concern is about a lack of attention to the other end of the demographic, the large increase in the ageing population.

This constraint on space means densification within existing communities is required, especially as there is a strong desire among older people to remain in neighbourhoods where they have established their lives and social networks. There is overwhelming demand for new residential condominiums and it is not unusual for 100+ unit buildings to sell out in a weekend.

However, there is resistance to these types of developments, particularly within the communities where we know there is the most demand for that product. The strong NIMBY (Not-In-My-Back-Yard) tendencies present in many municipalities means the very people who have reached or are reaching retirement are often the ones opposed to those plans.

The challenge for the municipal councils and planning departments is to find solutions to bring more supply onto the market more quickly to meet the needs of people looking to downsize without putting further strain on existing civil and transportation infrastructure.

Grosvenor has designed a number of developments aimed at the downsizing market. By way of example, our 98-unit Grosvenor Ambleside development in West Vancouver is designed to meet the needs of the ageing community by including local serving retail outlets and an enhanced public realm.

The homes have largely been purchased by local older residents who want to remain in the community where their roots are, while being able to walk to local shops and restaurants.

Our Connaught development in North Vancouver features 82 homes over three or four storeys with over 60,000 square feet of ground floor retail including full service grocery and drug stores. We have received strong local interest; particularly from downsizers in the immediate vicinity. Our proposed downtown Vancouver condominium development, The Pacific, is also attracting interest from active downsizers who want to enjoy the vibrancy of the urban environment.

Another challenge will be to meet the demand from older people who have not built up equity in their homes to fund downsizing and who will require rental apartments in a tight market where the vacancy rate is below 1% regionally. There is a big problem emerging that will likely require government intervention, which could be as simple as rezoning areas for senior assisted living and care homes.

The challenge is for municipalities to encourage the construction of more accommodation for both sale and rent, marketed to older people while at the same time meeting demand from the younger generations. Creating balanced communities that serve diverse interests is how healthy societies survive.

Hopefully there will also be a change in the way developers look at senior living that produces more options between the current family home and a facility providing full care. People who are ageing nowadays are more active and want to be around like-minded people but do not want or need to go into a care facility.

The problem is that I do not see a lot of planning happening in municipalities for making specific zones or land parcels where the only approvable use is senior housing or a care facility. In the absence of deliberate zoning, land prices can escalate to a point where developing certain forms of housing for the ageing is not likely the highest and best use and therefore developers are not likely to do so.

One positive trend is the growing YIMBY (Yes-In-My-Back-Yard) movement among the younger generations who are aware that there is a need for more high density housing to respond to the demand created by a growing population and changing demographics.

As developers and planners, we have to figure out how to increase the supply while accepting that that process will change the city. That will be a big challenge but it's what has to happen to address the needs of an ageing population.



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