

Building a Better Britain

A vision for the next Government



Contents

Executive summary	2
Shaping places	6
Homes	24
Schools	42
Health and older people	50
Energy	62
Flooding	74
Footnotes	84

Written and researched by:

Dan Beagle

Will Fox

James Parkinson

Emilia Plotka

Edited by:

Anna Scott-Marshall

Steering group:

Ruth Reed, Chair RIBA Planning Group

Dale Sinclair, Vice President Practice and Profession

Lynne Sullivan, Chair RIBA Sustainable Futures

Andy von Bradsky, Chair RIBA Housing Group

Copyright: Royal Institute of British Architects (RIBA) July 2014

“We need to retrofit our homes, offices, hospitals and shops at a rate of one property every minute if we are to meet our 2020 targets.”

Executive summary

The UK faces many of the same problems as developed countries across the world. The economy is sluggish, there's a shortage of new homes, our population is becoming older, we are less physically active causing strain on the NHS and many schools are in drastic need of repair. Similarly, the effects of climate change and extremes of weather are having a major impact on our everyday lives, to reduce our carbon emissions and save on peoples' energy bills, we need to retrofit our homes, offices, hospitals and shops at a rate of one property every minute if we are to meet our 2020 targets.

Addressing these challenges will undoubtedly be a priority for the next Government. But by focusing on architecture and the built environment – that is, buildings and the places in between them – we can help to resolve these pressing issues and foster greater growth, save money to the public purse and improve the places we live, work and play in, for the long-term.

In this report we provide a vision for the next Government which sets out where these challenges lie. This report is intended to provide policy makers with a greater understanding of the impact of how places are designed, planned and built and how they affect our day-to-day lives.

“The next Government needs to set out a long-term vision for places which will identify major infrastructure, large housing developments, aspirations for improving quality of life and long-term sustainability.”

Executive summary

Shaping places

The next Government needs to set out a long-term vision for places which will identify major infrastructure, large housing developments, aspirations for improving quality of life and long-term sustainability.

By developing a National Spatial Strategy the next Government could combine strands of key evidence and long-term strategic decision making to align housing growth with other areas of Nationally Significant Infrastructure Projects and engage local leaders, preferably at a city region level.

An architecture policy should be developed alongside the National Spatial Strategy to set out a long-term vision for great places, linked to our economic strategy, and explain how every level of Government can drive this agenda to deliver well designed communities for all.

The next Government should go beyond city deals to deliver autonomous city regions and ensure they have the financial mechanisms to access long-term sustainable funding.

Homes

We believe improving the quality of housing is as important as increasing supply. With new homes in the UK, the smallest in Western Europe, the public are dissatisfied with the quality of new homes. To increase the quality and quantity of new homes the next Government needs to empower Local Authorities to start building again and encourage the support of the public for new development. We offer a number of recommendations from finance mechanisms to investment in new forms of housing models to deliver economically, socially and environmentally sustainable homes and communities.

Schools

Providing enough good school places is a basic responsibility for any Government. The impact of a child's physical and mental health across their school life is hugely significant. Exercise, a healthy diet and supporting social and emotional wellbeing are paramount to ensuring children can concentrate fully at school. Yet, despite this, how we are designing our schools is falling short of their potential. We need to get it right otherwise we will be paying for our scrimping for decades to come. Schools being built under the current Government programme are just too cheap. The likely result of these designs will be increased maintenance costs alongside poorer results for pupils and teachers. We identify how a small increase in the amount of schools capital funding will yield results for future generations.

Health and older people

From childhood to old-age, the built environment has an important role to play in supporting healthy lifestyles as a part of everyday living. We identify the role Central Government and Local Authorities should play to encourage healthy lifestyles through setting out healthy infrastructure action plans and good principles for new developments to encourage active travel.

We also look at the social, economic and political impact the growing 60+ demographic will have on how we design and build our towns and cities to accommodate people as they become older.

Energy

Rising energy bills, and concerns over fuel poverty, energy security and climate change have necessarily focused Government attention on the performance of our homes and buildings. Many of our homes, work places and public buildings leak energy which is both costly and damaging to the environment and presents a major challenge if we are to reduce our carbon emissions. We look at measures to insulate our homes and non-domestic buildings to meet this challenge.

Flooding

Flooding, higher temperatures and drought as well as increases in the cost of food and fuel prices are widely accepted as the impacts of climate change. We need to get better at dealing with flooding through adaptation and mitigation. From simple home design solutions to rethinking how we design our cities we present policy solutions to create a more resilient nation based on the impact flooding has had on parts of England.

80%

48%

Planning approval rate since 2003 has been consistently over 80%.¹

Unstarted units made up nearly half of all unimplemented planning permissions for residential dwellings in 2013, almost no change since 2008.²

Setting the framework for success

Enthusiasm for planning in England is at its lowest ebb. Consistently cited as a barrier to growth, Local Planning Authorities have had to deal with constant reform and diminishing resources. This has, in turn, undermined public confidence in the ability of planning to shape new development in the public interest and to respond to local priorities.

Planning should be a visionary, creative and inclusive process, enabling the delivery of high quality architecture and great places for people to live, work and play. However, more often-than-not it has become a risk-averse, tick-box exercise focused on development control and achieving targets in granting planning permissions. The Farrell Review of Architecture + Built Environment outlined how important a system of proactive planning could be in moving away from a reactive approach to a focus on place.³

The next Government must ensure that through planning we set clear expectations for the quality and long-term sustainability of new development in England rather than focus on short-term financial returns on investment.

We need a clear and coordinated long-term framework to shape national, regional and local priorities in a way that brings together spatial and economic strategies for Britain.

An architecture policy

Architecture policies have been used with great success in north-western European countries, where they set out a long-term strategic vision for quality of place through great architecture and thoughtful public spaces. A comprehensive policy can bring together the objectives of Government departments such as housing, planning, infrastructure, economic growth and the environment, in a coherent way, whilst setting out how architecture and urban design can help deliver those aspirations. Often high-level and non-prescriptive, these policies go beyond political cycles to set the agenda in the long-term interest of people, communities and local businesses.

Denmark has used this approach to articulate the value of design in delivering a better quality of life and link this to economic prosperity. Over the years, the Danes have become known for their innovation and expertise at the forefront of delivering high quality and sustainable development and have recognised that the export of these skills abroad can clearly benefit from demonstrating consistent success at home.

We need a similar, long-term political commitment to the improvement of our towns and cities, buildings and public spaces, communities and businesses by recognising the added value of design quality in delivering sustainable and resilient places that people can be proud of.

Recommendation

The next Government should engage the public and industry to produce a cross-cutting Architecture Policy. This must set out a long-term vision for great places, linked to our economic strategy, and explain how every level of Government can drive this agenda.

A National Spatial Strategy

A National Spatial Strategy should be a light touch framework which considers the way in which infrastructure and economic development align with housing growth in particular. It could be used to consider how New Towns (or Garden Cities), energy provision, specialist industry, higher education, demographic change and environmental issues like flooding and the green belt, could all be better integrated as part of a national strategy to rebalance the economy, reduce social inequalities and better engage the public in a democratic process to outline progress for the country.

To build consensus, we need to collate evidence in order to assemble a clear picture of how best the country should develop over time, in the national interest. This process should be coordinated nationally but reflect close engagement with Local Authorities to ensure national priorities will support local ambitions.

This has already been done in part with the introduction of a National Infrastructure Plan in 2010. It identified and evidenced the country's long-term needs for infrastructure such as transport and energy linking those needs to economic development. But infrastructure cannot be thought of in isolation. Tackling the housing crisis to identify areas for growth, housing development and the infrastructure needed to support those would be best considered in the round. Housing growth should be considered alongside other Nationally Significant Infrastructure Projects (NSIP) as a priority.

A National Spatial Strategy would need to be developed with Local Authorities in consultation with the public. Setting a national framework can join up priorities and create a shared plan for the country but it is local people and local decision makers who must then take ownership of this and use it to guide their own ambitions.

Only
1.5%

of GDP spent on infrastructure in the UK compared to 3% in France and the USA and 6% in Japan.⁴

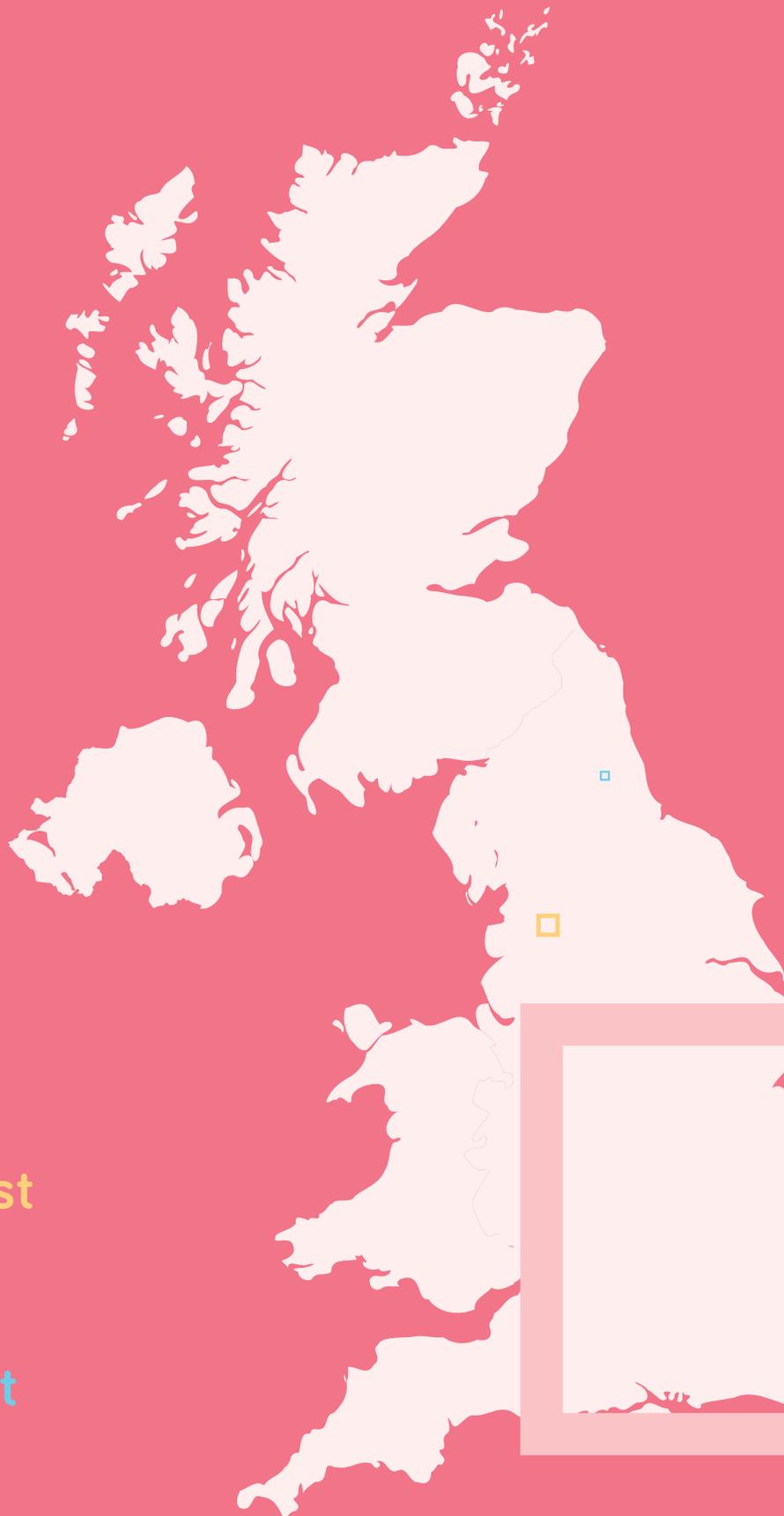
Recommendation

To create a long-term strategic plan for the country addressing major decisions around housing, infrastructure, flooding and energy the next Government should develop and deliver a National Spatial Strategy. The strategy should be informed by key evidence and developed together with Local Authorities democratically.

Recommendation

The next Government should appoint a minister within Cabinet Office to deliver the Architecture Policy and National Spatial Strategy. They should be supported by a Chief Design Advisor from the construction sector.

Per Capita spending on transport infrastructure⁵



London
£2,596

North West
£99

North East
£5



City regions and city deals

It is becoming increasingly accepted that cities are crucial to growing and rebalancing our economy. From creating jobs, improving skills and education, reducing welfare dependency and tackling inequality, cities have the potential to unlock national prosperity. However, many of our cities are under performing, with seven out of the eight largest English cities – Birmingham, Leeds, Liverpool, Manchester, Newcastle, Nottingham and Sheffield – performing below the national average across a range of economic indicators.⁶ This is in stark contrast to countries such as Germany where big cities' growth outpaces the national average.

There is no one-size-fits all solution to improving the performance of our cities, but they are struggling to get on and address local priorities as they do not have the adequate powers, funding or geographical scope to address their respective issues. In addition, creating successful, resilient and liveable cities must involve a combined understanding of urban economics with expertise in architecture and urban design.

Great strides have been made in devolving both powers and budgets to a more appropriate city tier and the next Government should continue developing this transfer of powers. UK cities need the freedoms to take big decisions on local transport, housing and skills over an appropriate 'city-region' geography that relates to the way the local economy operates and the way people live their lives. In addition, cities must be able to raise finance and retain income to invest in local priorities; quality housing, innovative infrastructure and joined up services.

Recommendation

The next Government should push beyond city deals to deliver autonomous city regions and ensure they have the financial mechanisms to access large amounts of long-term but sustainable funding.

Recommendation

As part of devolution of powers and finances through city deals, city regions should be expected to outline how they will deliver the aspirations for great architecture and quality of place described in the Architecture Policy.

7
—
8

Seven out of the eight largest English cities; Birmingham, Leeds, Liverpool, Manchester, Newcastle, Nottingham and Sheffield are performing below the national average across a range of economic indicators.

Delivering high quality, strategic development

Garden Cities and New Towns

Garden Cities (and indeed New Towns) have made a recent resurgence, identified as a key part of the solution to meeting the scale of house building we desperately need. Indeed, powerful New Towns legislation is still in existence (albeit that would benefit from some modernisation) that would pave the way for the large scale land assembly and delivery vehicles required to begin a national programme early in the next Parliament. This type of development could also provide an opportunity to innovate with the planning process on a test-scale basis before rolling out successful new concepts for proactive [strategic visioning], rather than reactive [development control], planning more widely.

Any new Garden City or New Town programme should not be an exercise whereby powerful legislation and land assembly pave the way for short-term housing supply. New development must be in the right place, of the right quality and demonstrate long-term sustainability.

The world has moved on since Ebenezer Howard's original Garden City prospectus, but we can learn valuable lessons from his vision. It was one of self-sustaining communities that combined decent housing and employment with green space, whilst empowering local people with a genuine stake in the fortunes of their new community. Visionary planning was at the heart of the concept and should remain so, in order to address new 21st century challenges such as an ageing population, tackling climate change, reducing carbon emissions and embedding modern technology such as big data.

Certainly, many of the founding Garden City principles are still relevant today, for any large scale housing programme, including the need for strong local leadership and community engagement, a community stake in new development and a variety of employment opportunities within easy commuting distance of homes. Importantly there was, and should be for any new large-scale house-building programme, a focus on high-quality imaginative design. The architecture of the buildings and spaces must ensure a rich and engaging experience that communities can be proud of.



Granary Square, Kings Cross – John Sturrock

The links to existing or planned infrastructure will also be crucial to success, both for short-term investor confidence and long-term sustainability and resilience. Planning any new large-scale housing development must be bold enough to provide a clear vision for quality of place, but flexible enough to accommodate change in circumstance and adapt over time.

The Department for Communities and Local Government has produced a recent prospectus for locally-led Garden Cities, but this document remains light touch in scope inviting Local Authorities to express an interest in embracing large scale development in their area and outlining what they can expect in return from the current Government. This stops short of setting out a bold vision for comprehensive masterplanning and the design standards that this scale of new development should aspire to.

Recommendation

The next Government should produce a more comprehensive prospectus for New Towns/Garden Cities setting out master planning principles including the design standards to which they must aspire.

Brownfield, green belt and urban extensions

Garden Cities or New Towns will only provide part of the picture in a successful response to our housing crisis. We still have a considerable amount of brownfield land in sustainable, urban locations, complete with existing infrastructure, that could accommodate many new communities following the right strategic investment in land remediation. The HCA has identified 61,920ha of brownfield land in England, with 54% derelict or vacant, while the remainder is in use but with potential for redevelopment. Brownfield land takes time and expense to make it fit for redevelopment and this barrier is often compounded by locations in less popular areas, requiring investment and the increased likelihood that available sites are smaller or more piece-meal in nature.

However, there is a significant amount of brownfield land in public ownership and we need to put this at the heart of a public sector led, national house building programme. The next Government must better empower, support and incentivise Local Authorities to reuse brownfield sites for housing and economic development as well as new urban parks or green spaces, in much greater quantities at a much faster rate.

To do this Government will need to:

- Ensure Local Authorities have access to up front finance to assemble strategic land assets, conduct the necessary remediation work and lay down infrastructure to enable investment.
- Allow for strategic land assembly to be compensated at existing use value, or fair value, that is not the full potential development value.
- Ensure that the uplift in land value following remediation and subsequent planning permission for new homes or commercial activity is captured by the public sector and used to pay off the up front capital expenditure on assembly, remediation and infrastructure

Some parts of the green belts that surround our cities are of low or negligible environmental and amenity value. By preserving the green belt as a clear ring to prevent sprawl, we have successfully consolidated core urban areas. But in some places we have also encouraged development to 'jump' over this belt and into areas of genuine countryside. Commuting across the green belt to access jobs, services and the cultural offer of our cities is not a sustainable approach as we try to accommodate a growing urban population.

We must prevent urban sprawl and preserve areas of outstanding natural beauty and cherished countryside, but we need to think smarter about our growing cities in the 21st century. We need to incorporate high quality green infrastructure, parks and areas of biodiversity right to the heart of our cities. High value green space can help support healthy and active lifestyles, mitigate the impact of flooding and manage the environmental impact of dense urban areas.

If there was to be any reclassification of the green belt to accommodate development, we first need to know what is there. We do not currently have a robust way of assessing the quality of our green belt. This should be assessed based on environmental, recreation and amenity value and should establish an evidence base to help Local Authorities manage their green belt in order to support sustainable growth. Any discussion on greenbelt is often undermined by an emotional response rather than sound evidence.

There have been proposals⁷ for 'green belt swaps' whereby a Local Authority can have more flexibility to approve development on low value green belt provided the equivalent higher quality land is protected elsewhere. More flexibility for the strategic planning for new, large-scale development complementing clear networks of valuable and accessible green spaces that penetrate right to the heart of our cities, could allow us to grow our urban areas in a controlled and logical way; one that embraces existing infrastructure and could even link adjacent urban centres more closely together, whilst also preserving the best of our green belt and, crucially, the best of our countryside.

With the right approach, developing areas of low value green belt could be a mechanism to unlock brownfield sites, if Local Authorities could retain the uplift in land value generated by granting planning permission on these sites, and use this income to remediate brownfield sites to increase density close to our urban centres.

Recommendation

The next Government should provide a review of the green belt using a method to assess the environmental and amenity value of the green belt and compile an evidence base to support Local Authorities in local decision making.

Local Development Alliances

In most successful European precedents for delivering large-scale housing or mixed use development on publicly owned land, there has been the creation of strong, dedicated agencies established to carry forward the planning and development process. A typical model of delivery in the most sustainable, brownfield locations could involve complex land assembly, remediation of contaminated land and additional investment in infrastructure up front. Alongside this, comprehensive master planning often occurs before serviced plots are split and released to market. At each stage, a variety of skills will be necessary, from development finance and project management to planning and urban design followed by property economics, contract management and defining appropriate long-term stewardship arrangements.

The next Government should find a way to assemble these skills at a city region level and use this vehicle to drive local, large scale development in a way that would allow the public sector to take the lead in developing public assets and setting a precedent for great architecture and quality of place.

In the past Development Corporations have been used to fulfil a similar role but we believe Local Development Alliances could be formed instead to bolster democratic Local Authority governance (and city region leadership) with LEP representation, HCA expertise and specialist skills such as planning, design enabling and property economics. They might even include key local landowners.

Local Development Alliances could come together to drive delivery of a key development or become a more permanent city-regional fixture, drawing up a strategic local development framework that interprets the national vision for economic place-making and upholds the National Spatial Strategy at a sub-regional level. This would include identifying local priorities and outlining good process in planning, designing and delivering development specific to the area.

Recommendation

The next Government should establish Local Development Alliances, able to operate at a city region level, which combine democratic accountability with cross-professional strategic expertise to partner with key landowners and drive forward new development in the public interest.

Design support skills

Many Local Authorities do not currently have the urban design expertise and the resource to comprehensively masterplan large and complex sites or provide an in-house design advisory service. Extensive budget cuts have undermined Local Planning Authorities' ability to make strategic long-term judgments, adequately appraise the quality and impact of proposed development and enable public participation in the design process, as skilled practitioners have moved into the private sector. In the long-term, we need to ensure that specialist design expertise is at the heart of pro-active plan-making and the next Government must establish an immediate mechanism to support and train Local Authorities in these skills. This could form part of the remit of Local Development Alliances.

The Design Network currently comprises nine not-for-profit organisations nationwide, aligned to key regions, and each is predominantly engaged in delivering design review and design enabling services, alongside community engagement expertise, neighbourhood planning and knowledge transfer or training. The Network already coordinates a significant resource of local and national placemaking expertise and with the right funding, this would offer a ready-made model of comprehensive design support available immediately to development delivery vehicles such as Local Development Alliances.

We estimate it would cost £3 million per year to fund the Design Network to deliver these services for major development across the country and this could come out of the Regional Growth Fund on the basis that the Design Network be required to deliver a training programme to Local Planning Authorities to develop long-term capacity to deliver high quality new development.

Much of what has been discussed in this chapter represents a vision for finding a better way to initiate pro-active planning to create great places and enable great design.

Alongside this, the next Government will need to ensure that the current planning system is fit for purpose and paves the way for British planning to re-discover its visionary ambition.

Recommendation

The next Government should commit £3 million per year from the Regional Growth Fund over the next parliament to fund the Design Network to deliver design enabling and planning support across the country.

Case study

Hammarby Sjöstad, Sweden

This urban extension of 11,000 homes in Stockholm, Sweden is widely regarded as an exemplar in delivering a new, sustainable urban community on brownfield land. The scheme was led by the Local Authority who owned most of the land at the outset, but controlled the development by acquiring the rest before producing a strategic masterplan in-house.

Alongside investment in infrastructure and decontamination – supported by Central Government – the strategic masterplan was divided up into numerous sub-districts and a detailed masterplan was drawn up for each area. Partnerships were established with developers, contractors and architects for each sub-district and detailed design codes were produced in collaboration with private sector delivery agents. The design codes aimed to ensure high quality and harmony across the whole development.

Sub-districts were divided further into smaller plots with no one developer dominating large areas, establishing a greater depth of character in what is a wholly new district of the city of Stockholm. Importantly, the development was phased, and any developer who failed to perform was not offered subsequent phases. Alongside this, the Local Authority delivered around 30% of the housing through local housing companies.

From land assembly, remediation and infrastructure to masterplanning, the Local Authority demonstrated leadership throughout, overseeing the project from conception to construction and delivering aspects of the project itself.

30%

The Local Authority delivered around 30% of the housing through local housing companies.



Hammarby Sjöstad, Sweden - Ola Ericson



Hammarby Sjöstad, Sweden - Ola Ericson

Short-term planning challenges

The National Planning Policy Framework (NPPF)

The NPPF, which streamlined national planning policy with increased emphasis on local planning, was a welcome introduction.

However, when considered as a whole – as intended – the framework promotes economic sustainability and financial viability more prominently than social or environmental factors. With the current need to focus on growth this is understandable, and, to a degree, necessary but to ensure we are building successful places in the long-term this balance must be addressed.

Envisaged as a response to unlocking stalled development in the recession, new policy on viability in the NPPF could seriously undermine Local Authorities' ability to ensure design quality in new development and provide adequate affordable housing in the right places. The NPPF empowers developers to renegotiate terms on new development based on their business model, which would demand a degree of specialist expertise to fully understand. Concessions on the grounds of financial viability may range from quality and standards in construction and materials to the provision of infrastructure or previously agreed affordable housing provision. Clearly, no developer is going to build something that is not profitable, but there is a negotiation to be had which is in the interests of the public and the Local Authority. Viability policy like this puts the Local Authorities on the back foot from the outset and with a shortage of resource and skills in many areas, they are unlikely to have adequate skills in development finance to properly engage in negotiations. Local Authorities are likely to be pressured into accepting what is being proposed and this could undermine any aspiration for great architecture or quality in placemaking. If affordable housing provision and quality of new development are consistently compromised by an opaque argument for financial viability, we will not be able to adequately respond to the challenge ahead in solving the housing crisis.

Recommendation

The next Government should review the National Planning Policy Framework to ensure that it balances the tenets of sustainability – economic, social and environmental to shape the development of resilient places.

1 in 7

In June 2014 less than one in seven authorities have an adopted Local Plan that complies with the NPPF.⁸

Local Planning

At the time the NPPF came into operation, only 50% of Local Authorities had an up to date Local Plan in place.⁹ With authorities under pressure to put an updated plan in place, amidst a backdrop of squeezed resources, there is a danger of rushing the necessary pro-active and strategic planning that will shape our communities for a generation or more. If the resultant Local Plans do not display a high standard of placemaking in their approach to urban design principles and the quality of architecture expected in new development, underpinned by a sound strategic vision, then we will have missed the opportunity promised by Localism and will likely create a significant number of problems to address in the years to come.

One condition of a Local Plan being considered up-to-date (and thus avoiding defaulting to the NPPF's presumption in favour of sustainable development when decision taking) is that Local Authorities must have a five year supply of land for housing to accommodate an evidenced need. In some cases, this has prompted the authority to consider alternative housing delivery models such as self or custom build, which is a positive impact. However, this policy can also undermine local planning. For sites to be included, they must be deliverable within the plan-period – so a site with planning permission which a developer is unable or unwilling to deliver within that time, does not count as part of a deliverable five year supply. Due to the fact that many of our main housebuilders' business models rely on making profit from the uplift in land values once planning permission is secured – it's easy to see how development could stall at this stage during a recession, when high values may well have been paid for land in the boom times and there is no value in building the homes now.

This creates the possible situation of identifying and releasing land that should have been deliverable, but the market dynamics mean development is unlikely. If this endangers the validity of a Local Plan, then it undermines pro-active strategic planning and in the extreme case, would open the door to unwelcome applications made in non-strategic locations being subject only to the NPPF's presumption in favour of sustainable development.

Only
50%
Of Local Authorities
had an up to date Local
Plan in place.¹⁰

Recommendation

The next Government needs to ensure that all Local Authorities have up to date and adopted Local Plans in place that display high standards in their ambitions for great architecture, quality of place and urban design excellence.

Neighbourhood Planning and community engagement

Neighbourhood Planning should be a central tenet of a democratic and participatory planning process. However, communities have been left largely unsupported by Local Authorities that lack both the skills and finance to realise the full potential of Neighbourhood Planning and embed this adequately as part of their Local Plan making process. For the most part, this has ensured Neighbourhood Planning is the preserve of those communities with the greatest means and the majority of funding available is spent on organising referenda. However, it is often the most deprived and complex urban areas that could benefit from this process the most.

Communities who wish to participate in Neighbourhood Planning should have access to design support to help them to understand what might be possible in their area and better articulate their priorities. Professionals should work in partnership with communities; designing with, rather than for, local people.

Recommendation

The next Government should ensure long-term support to deliver a programme of design enabling and expertise alongside the practical support to initiate and adopt neighbourhood plans.

Recommendation

The next Government should make a requirement that all neighbourhood plans over a defined size should be assessed by a design review panel at an appropriate point in the development. This panel should be established in accordance with Design Review: Principles and Practice.¹¹

“Communities who wish to participate in Neighbourhood Planning should have access to design support to help them to understand what might be possible in their area and better articulate their priorities.”

95%

95% of Government expenditure on housing spent on housing benefit.

5% of Government expenditure on housing spent on building new homes.

The biggest challenge of our times

We need decent homes in the right location, of the right quality and at prices people can afford to rent or to buy.

Successive Governments have tried and failed to get a grip on the problem, and despite a nascent recovery in the housing market, there remains a significant shortfall in the supply of homes. Approximately 130,000 new homes will be built in the UK during 2014 and yet household growth projections show that supply must at least double, to meet housing need.¹

Coupled with a year-on-year increase in house prices and limited access to finance, the affordability of housing, now more than ever, is a barrier to home ownership and has resulted in vast regional disparities across the country for both buyers and those in the rental market. Tackling the housing crisis will undoubtedly be one of the top priorities for the next Government.

With a focus on building such a substantial number of new homes, we believe improving the quality of housing is as important as increasing supply. New homes in the UK are the smallest in Western Europe² and our research has shown significant dissatisfaction with the quality of new homes.³ It will be important for the next Government to address how it can increase the number of new homes built, whilst ensuring they will stand the test of time and in doing so encourage the public to support new development in their area.⁴

Number of new homes **built** in 2012/13

107,000

Number of new homes **needed** every year

300,000

Number of new homes **needed** in the next parliament

1.5 million

A greater role for Local Authorities

Local Authority investment

There are significant barriers to be overcome if councils are to fulfil their potential in supplying new housing, most notably the availability of finance to fund the up-front costs of development. Despite the significant devolution of power from Central to Local Government in recent years, the system of Local Government finance in England remains highly centralised. Local Government in the UK receives 83% of its funding through Government grants, compared to the OECD average of 45%.⁵

Following policy reforms in the 1980s, councils all but stopped building new homes which has contributed to the stagnation of supply. Recent changes to the Housing Revenue Account (HRA) offer an opportunity to reverse this. Many councils are seeking to exploit their new found powers to develop new homes and play a more significant role in helping ease the housing crisis and severe shortage of social housing. Many Local Authorities possess significant land assets and this, in addition to their planning and procurement powers, leaves them in a strong position to start pioneering a new generation of affordable homes of all tenures.

However, there are still significant barriers to be overcome if councils are to fulfil their full potential in supplying new housing, most notably the availability of finance to fund the up-front costs of development.

One barrier which should be removed to facilitate this investment is the restriction imposed by the Treasury on Local Authority borrowing against Housing Revenue Account receipts. Currently, councils are in a weaker position to borrow compared to Housing Associations, and this is an unnecessary barrier to locally-led housing development.

“Since the reforms of the 1980s, councils have all but stopped building new homes.”

The 2013 Autumn Statement made a move in the right direction with the announcement that council borrowing limits on the Housing Revenue Account will be raised by £150 million a year in 2015/16 and 2016/17,⁶ but this does not go far enough. Research by the Local Government Association has revealed that if the borrowing cap were to be removed in its entirety, councils could fund over 60,000 homes in the next five years.⁷ In 2011, Price Waterhouse Coopers and The Smith Institute estimated that nationally, over the next 30 years, the potential value of new Local Authority investment capacity could be as much as £54 billion.⁸ Whilst this would only go some way to alleviating the housing shortage, it would, nonetheless enable Local Government to make a much more significant contribution.

Recommendation

The next Government should remove the Local Authority borrowing cap on Housing Revenue Account receipts in order to give councils greater capacity to invest in and deliver new affordable housing.



Derwenthorpe, York – Joseph Rowntree Housing Trust

EU countries % of GDP spent on housing

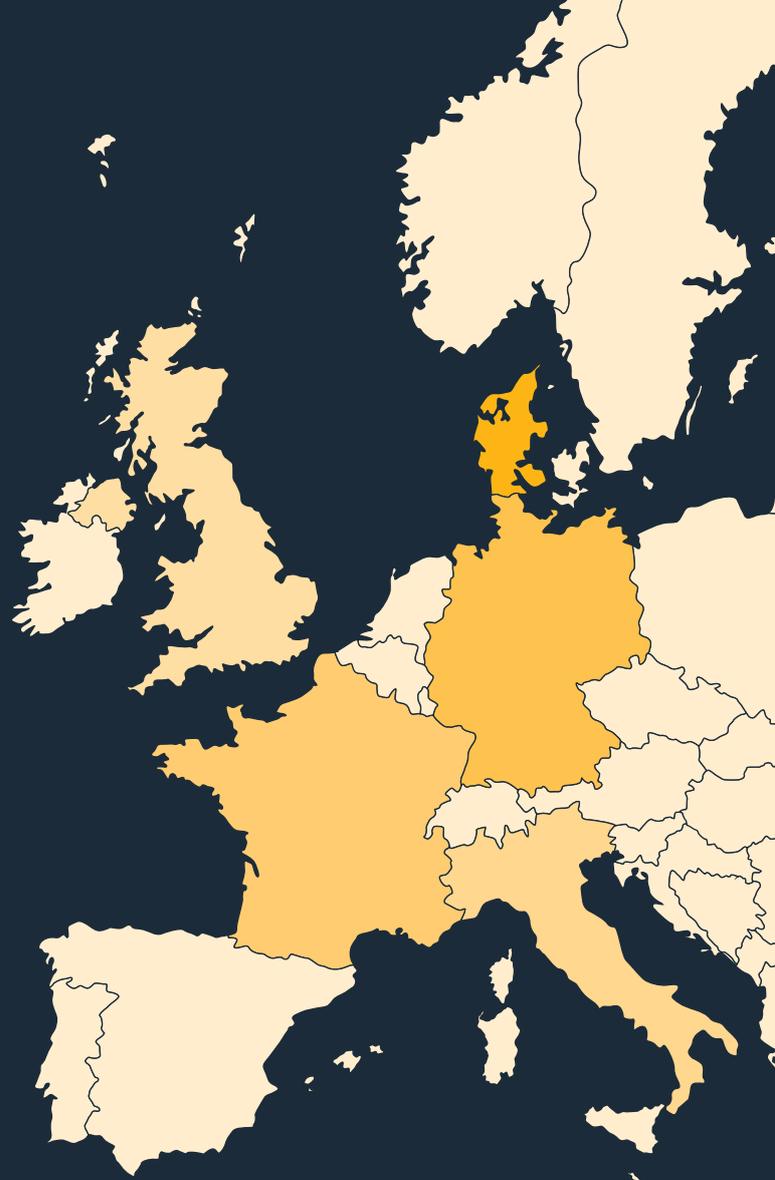
Denmark 6.5%

Germany 6%

France 6%

Italy 5%

UK 3.5%



Exposure to Residential in Institutional Property Portfolios

Source: Institutional Attitudes to Investment in UK Residential Property, IPF, June 2012



A new role for Local Government in delivering new homes

History suggests that supplying the number of new homes needed each year can only be achieved if the private and public sector both deliver. House building during the late 1940s to the mid-1970s, when production was at its peak, was characterised by private developers and Local Authorities each producing a minimum 100,000 homes a year. Inevitably, private house builders approach to volume building will continue to be determined by the market, so Government needs to better utilise the powers and assets at its disposal and outline a long-term plan to deliver more housing.

Today, one of the main barriers to building homes in the numbers needed has been an inadequate supply of land released for new development. This has led to significant increases in land value, which has made house building increasingly unaffordable.

The public sector, be it, Local Authorities, Central Government or public bodies, is one of the biggest land-owners, owning an estimated 40% of larger sites suitable for development⁹ in the country. The use and disposal of publicly-owned land will be central to increasing the supply and quality of housing in the long-term, not least because there is more scope to set the terms of development in the national public interest.

The National Planning Policy Framework (NPPF) requirement for Local Authorities to identify a five year supply of land for housing within their Local Plans,¹⁰ and the Government's 2011 Housing Strategy¹¹ mark recent efforts to increase the amount of public land brought to market, but we need a more strategic approach for authorities to address housing needs in their areas. Local Authorities – where possible collaborating at a city or country region level – need to play a more proactive role in catalysing new development. This does not necessarily mean building homes themselves, but promoting new housing development and infrastructure delivery in partnership with housing associations, developers and financial institutions.

To enable this to happen, Central Government needs to cede power and finances to Local Authorities for housing and infrastructure provision, where councils can provide a coherent plan and vision for large-scale development. This should include increased powers over land assembly and to raise finance, assistance with underwriting the costs of providing infrastructure up-front and the adequate support in planning and design. Local Authorities – operating at a sub-regional level – should be able to set up new vehicles for housing delivery and, where desirable, housing investment and delivery companies in partnership with developers and housing associations.

Recommendation

In order to catalyse large-scale locally led housing development, the next Government should oversee a radical devolution of power and resources to Local Authorities. This should include Government guarantees to underwrite the cost of infrastructure provision, new financial freedoms, control over all public land in their areas and direct support on planning and design.



Increasing investment in new housing

Unlocking investment in new housing

The UK has underinvested in housing for decades. Figures show that the UK is lagging behind many of its European counterparts with around 3.5% of GDP invested housing, compared to 6% in France and Germany. Of the money that Government does spend on housing, 95% is taken up by the housing benefit bill, with only 5% invested in bricks and mortar. As house prices and rents rise, the problem will only get worse.

Relying too heavily on speculative house building – particularly given its susceptibility to the effects of economic downturns – will not deliver the number of homes we need, so we must unlock other forms of investment, and enable new forms of development such as self and custom build to come forward.

Private investment in housing

In many countries across Europe and North America, a large proportion of investment in housing comes from pension funds and institutions, mainly investing in private rented housing and the Build to Rent sector specifically, whilst in the UK this has remained elusive. According to the Investment Property Fund (IPF), less than 1% of UK financial institutions' property portfolio is currently invested in the residential sector, compared with 47% in the Netherlands, 21% in the United States and 15% in France.¹²

The RIBA's Future Homes Commission inquiry found¹³ that institutional investors are reluctant to expose themselves to the risks of residential projects in the UK, ranging from planning and construction risks to concerns about the rate of return.

The Commission suggested one innovative solution to mitigate risk and solve this problem would be through the investment of Local Government Pension Fund assets. It highlighted the poor performance of many Local Government Pension Funds and suggested that the largest 15 Local Authority Pension Funds should pool 15% of their assets in an independently managed Local Housing Development Fund to invest in developing sustainable, mixed-tenure communities. This builds on the work of the Greater Manchester Pension Fund and others, who have kick-started Local Government Pension Fund investment in housing.¹⁴

This Local Housing Development Fund would invest in developments planned and procured by Local Authorities, using Local Authority land. The Commission envisaged that once the development had been completed and shown to work, secondary institutional investment would be possible, allowing Local Authority Pension Funds to then re-invest in another scheme. The Fund would be independently managed provide a better rate of return than Local Government Pension Funds typically generate, whilst at the same time, boosting local housing supply, jobs and allowing Local Government to take a more proactive role in housing development.

Similarly, Government should also explore setting up a National Housing Investment Bank to tackle the need for strategic and regional growth. The bank, following European models, would be funded through bonds, ISA's, Right to Buy receipts and capital gains tax in order to provide development finance in low cost mixed tenure housing.

Recommendation

The next Government should support the establishment of a Local Housing Development Fund, sourced from Local Authority Pension Funds and secondary institutional investment, or a National Housing Investment Bank, based on European models.

Increasing diversity of supply

Stimulating competition and innovation

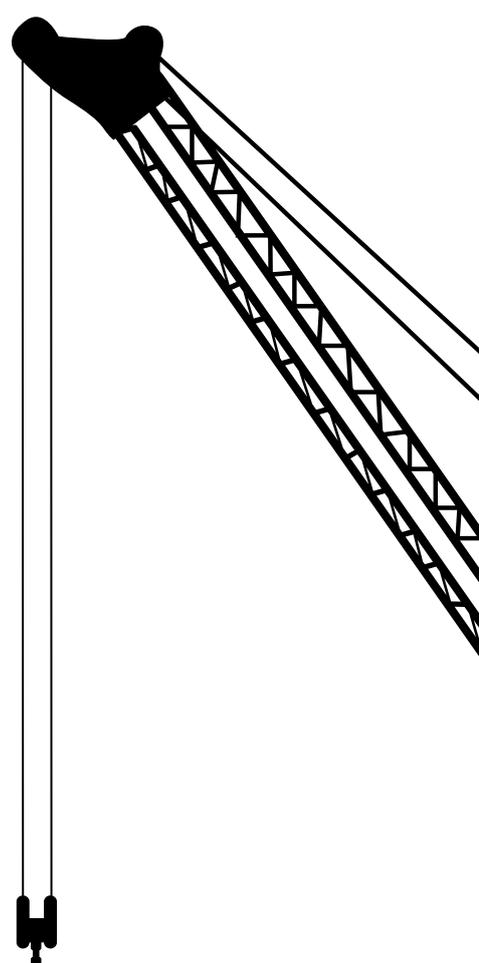
The top eight house builders are responsible for approximately a third of all house building in the UK. This lack of competition and the absence of choice for consumers caused by the housing shortage has resulted in a failure to innovate or embrace new technologies and poor quality products for consumers.

Government has a key role to play in addressing this market failure and should have a more active part in stimulating greater competition and innovation within the industry to ensure that more and better quality homes can be delivered quickly.

Encouraging self and custom build

Self and custom build needs to become a more prominent part of the housing mix. Self-build accounts for 38% of new homes in France and 30% in Sweden, compared to an estimated 7.6% in the UK.¹⁵

Along with the difficulty in obtaining mortgage finance for self-build projects, one of the main barriers to expanding the self-build movement in the UK is access to land. In response to NPPF requirements and the Community Right to Build initiative, we believe Local Authorities should commit a proportion of land to self-and custom build, accompanied by best practice principles to achieve consistency. In countries with active self-build sectors such as Germany and the Netherlands, the state sets the framework for development which begins with municipal ownership of land which is then laid out with infrastructure and offered as onward sales directly to consumers. This model puts the house builder in a more competitive position, vying for business and delivering construction and design to suit consumer demands, whilst promoting consumer choice and driving up standards and quality. Some house builders are experimenting with the potential of Custom Build development in the UK to deliver both convenience and choice to consumers and best practice must be shared and mainstreamed.



Recommendation

In order to encourage a more diverse and competitive local housing market, the next Government should ensure Local Authorities make public land available for custom build, self-build and smaller developers in the form of serviced plots.

Case study

Homeruskwartier, Almere Poort, the Netherlands

This innovative experiment in large scale self-build involves a 250 acre urban extension to the south west of the city of Almere for plots of land from 86m² to 1200m².

Using reclaimed land from the sea, the entire area has been master planned by the Local Authority into a number of districts for around 720 self-build plots with around 3,000 self-built homes planned.

Each of the self-build districts is themed into areas for live/work self-build homes; there are terraced areas, areas with larger gardens and a zone for high-end sustainable homes. There is also a zone specifically aimed at housing developers, who assemble collectives of people who want a block of apartments or a terrace of similar homes built for them.

The infrastructure is installed by the municipal council. Each home comes with a “passport” which acts as a building permit that specifies any building restrictions such as height and required space between homes. Beyond this, plot holders have free rein on design, materials and style. This has resulted in innovation and architectural diversity of the homes on the plots.

All the plots are sold at a fixed price based on market rates. For an average three bed semi, a new home works out at about £100,000 to build plus the cost of £50,000 for the plot. Once a plot has been purchased the plot holder will go to a ‘Market Day’ where various designers and contractors will compete to supply the customer’s home. Importantly, affordable homes are available for those on low incomes who go through the same process on a shared ownership basis.



Hans Engbers – Shutterstock.com

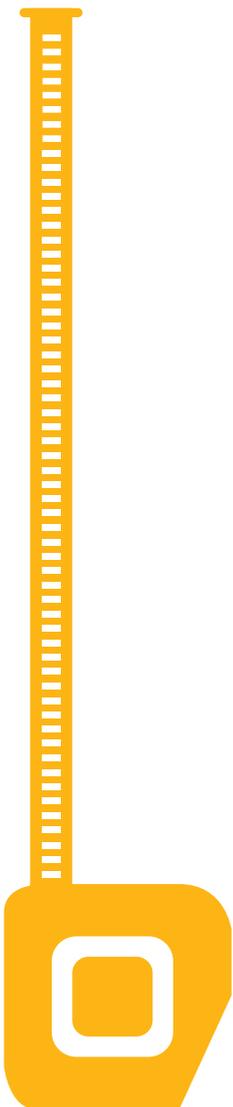


Improving quality

Building homes with a future: raising standards of design

Consumers have little choice or power to influence the homes that get built, which too often results in poor quality, inappropriate development.

Poor quality design and a lack of innovation in the housing sector is a symptom of a failing housing market. But local communities should not have to pay the price for failures within the housing industry. There is a clear need for Government intervention to address some of these failures in order to protect the public and ensure that a sustainable housing stock is delivered now and into the future.



Getting the regulatory framework right

Housing design standards play a crucial role in upholding housing quality and ensuring new homes are fit for purpose now and in the future. Currently, there are a baffling range of different standards and regulations affecting new housing, but the Government has made good progress on rationalising many of these overlapping standards through the technical Housing Standards Review. This will result in a Building Regulation only approach to technical issues, the introduction of a National Space Standard and simplification of planning requirements into National Planning Policy Guidance. But we need to ensure that the outcome is a decent baseline standard underpinned by a regulatory framework for high quality, sustainable homes for all tenures.

Consolidating standards into regulations is only the first step towards a simple and coherent national approach to the design and detailing of homes and neighbourhoods.

We should review the structure and format of Building Regulations and bring together planning and building regulations into a simple format that is easy to read and use, whether by the self-builder or the volume house-builder. The London Housing Design Guide provides a good example of such an approach and has provided clarity, certainty and a level playing field for those designing, planning and developing new housing in the city.

Similarly, with the demise of the Code for Sustainable Homes we need to maintain higher performance through new voluntary, aspirational standards for those that wish to go further than baseline minimum requirements. These standards should capture the learning from the Code and new issues relating to health and well-being.

Recommendation

Following the Housing Standards Review, Government should simplify the regulatory requirements for new homes into a national guide that sets out minimum standards, including national space standards and aspirational standards for Local Authorities that wish to go further than the baseline requirements.

A National Housing Design Guide would:

- 1 Address market failure** and guarantee that all homes built in England are built to a decent quality, entrenching the right of all communities to a good quality home.
- 2 Provide certainty and clarity** for professionals working in housing development by creating a one-stop-shop document related to housing design which sets out nationally prescribed baseline design requirements through Building Regulations.
- 3 Provide strong planning guidance** alongside regulations related to building performance (e.g. space, access, energy efficiency), on neighbourhood design issues (e.g. neighbourhood security, outdoor space, bin storage) for Local Authorities to apply and adapt through local planning policy.
- 4 Encourage future innovation** and improvement by setting out voluntary, aspirational standards for those that wish to go further than baseline minimum requirements.
- 5 Create a level playing field for new housing development** by ensuring cross-tenure housing standards. This will allow housing associations to compete more easily with private developers in the land market and help bring about a more diverse provision of new housing.

Using public land to raise standards

The way in which the public sector manages and/or disposes of its land assets needs to change. The imperative – driven by dogmatic Treasury rules – has been to dispose of land to the market as quickly as possible to the highest bidder. By taking a best-price rather than best value approach to land disposal, the public sector directly fuels problems in the land-market. In a bid to secure valuable land and market share, house builders will often pay over the odds for land, meaning that they have to re-coup their profit margins on the development itself, often squeezing design quality and public realm. In a demand driven marketplace, house builders have plenty of scope to make savings on construction to maintain a required profit margin.

In order to improve housing quality, a radical new approach to the use and disposal of public land is needed, to ensure that the full potential of such assets can be realised. Instead of encouraging a fire-sale of public sector land assets, Government should incentivise councils to use them more effectively and productively. There has to be a clear expectation that public land that can be developed should be brought forward. But, in return, Central Government should provide a greater level of support for councils to maximise the long-term social, environmental and economic value of their assets. This support should include access to up-front development finance, design enabling and planning expertise, as well as more practical support related to the mechanics of delivery and in forming contractual arrangements with developers and other partners. One model to achieve this would be implementation of local development alliances.

Recommendation

The next Government should review the rules set out in relation to the disposal of public sector land. Government should look to incentivise Local Authorities to bring forward proposals for development that demonstrates high quality on the land that they own, by offering the support and appropriate expertise needed.

In addition to providing a greater incentive for councils to bring forward development, there needs to be a much stronger more strategic approach to the sale of land to the private sector. A detailed design brief should accompany all strategic public sector land disposal and set out the standards expected for any development. The sale should be appraised not only in terms of cost but on the quality of development proposed and the strategic vision for the site.

Newhall Be, Alison Brooks Architects – Paul Riddle



Ownership of the land should only be fully transferred once the development is delivered to the quality demanded by the Local Authority. This would ensure that developers get the land they need but also give greater reassurance to the taxpayer that their assets are being used wisely to create the kind of communities they want to live in. This will not just benefit society long-term but also has the potential to deliver a better financial return to the public body in charge, where a well-designed development becomes a more valuable asset. It would also begin to re-configure the development process, ensuring that developers are increasingly competing on the quality of product they can deliver, rather than how much they are able to pay for land. In turn, this would break the hegemony of the larger developers, opening up opportunities for more design-conscious builders.

Recommendation

In order to ensure that public land disposals are based on the quality of proposed schemes, public authorities should establish a set price – following independent valuation – for land they are disposing to the market. Decisions on disposal would therefore be based on the quality of proposed developments and their deliverability.

Recommendation

The next Government should mandate that a detailed design brief accompany all strategic public sector land disposal and set out the standards expected for any development. Bids should be appraised on the quality of scheme submitted rather than up-front cost. Ownership of the land should only be fully transferred once the development is delivered to the quality demanded by the Local Authority.

Recommendation

Government should amend the Public Services (Social Value) Act 2012 to extend the duty on public authorities to consider the social, environmental and economic value of procurement to include public works and the disposal of public land.

Facilitating innovation

Creating a more consumer-oriented housing marketplace

People have more product information when buying a washing machine than they do when buying or renting their single largest investment, their home. Government can ensure a more consumer-oriented housing market by requiring house builders and estate agents to include essential information on the design of homes at point of market in a consistent way. This would include information on space, energy performance, carbon emissions, and any metric that has a cost implication such as water and security. This would enable comparison websites with a better informed consumer helping to drive up quality through consumer demand.

Recommendation

Government should establish with industry bodies a labelling system for new homes.

Encouraging greater innovation in house building

New technology and construction techniques have radically changed the way we deliver buildings in the 21st Century and the quality of the product that can be delivered. Methods such as off-site construction have been used incredibly effectively in the commercial sector, yet the house building industry has relied primarily on more traditional and inefficient methods of construction.

If we are to double housing supply we need to radically re-think the way homes are delivered and the construction methods we employ. Currently, the infrastructure for delivering high quality components for off-site construction is very immature in the UK and developers often have to source products from overseas. Government should help foster the conditions for off-site construction to ensure that a more mature market and delivery infrastructure emerges.

Recommendation

The next Government should provide tax incentives for firms producing off-site construction components and developers utilising off-site construction techniques.



Igor Plotnikov - Shutterstock.com

1
—
4
million

Britain's sustained population boom since 2000 has created the need for a quarter of a million extra school places in England by autumn 2014.

Britain is facing the worst shortage of school places in decades

Britain's sustained population boom since 2000 has created the need for a quarter of a million extra school places in England by autumn 2014. Despite an extra 80,000 places created in the past two years, the school system remains under strain, with a total of 256,000 new school places needed by 2014-15, of which 90% are primary.¹ London has the greatest need, accounting for 37% of the extra primary places required, but pressure points exist in Leeds, Manchester, Bristol, Cambridgeshire, Derby and Hampshire, and they are growing in many other areas.² One in five primary schools in England is now full or near capacity. This shortage of space is forcing numerous overcrowded schools to abandon library spaces, music rooms and playgrounds to build emergency classrooms; and children travelling further afield to find school places.³ An additional 400,000 school places will be required by 2018-19 to accommodate a second peak in births which is bound to exacerbate the situation.⁴

Although driving up standards of education in poorly performing schools which have empty places could go some way towards relieving the overcrowding, the shortage of schools in the UK is primarily a supply-side issue.

A legacy of crumbling and overcrowded schools

Apart from filling to the brim British schools are also crumbling, creating poor learning and teaching conditions.

Of the 29,000 schools in Britain, 80% of the stock is beyond its shelf life,⁵ a significant part of the school estate is in poor condition and insufficiently maintained.⁶ The estimated £8.5bn backlog of repairs needed for existing schools⁷ are creating poor teaching and learning conditions and potentially exposing children and staff to health risks – for example, it is thought that more than 75% contain asbestos.⁸ The full extent of the repairs and maintenance required to guarantee a place for every child in a decent classroom remains to be seen in summer 2014, when the Government is due to release a Property Data Survey covering all schools in England.

Turbulent national school rebuilding and refurbishing policy of past decade stifled the number and quality of new schools

The current Government initiative set up to address the needs of schools requiring urgent repairs – the Priority School Building Programme (PSBP) – intends to rebuild or refurbish just 261 schools by 2017. Progress has been slow – three years on from the announcement of PSBP, building work has started in fewer than 30 schools, with the first completed in May this year.

A further 400,000 school places will be required by 2018-19 to accommodate a second expected peak in births.



Jesmond Primary School, ADP Architects – Andrew Heptinstall

“Making upfront cost a primary consideration for PSBP school may potentially cause a number of long-term social and economic consequences whose implications are yet to be fully understood.”

The PSBP is almost a complete reversal of the Government's previous flagship school building programme – the £55bn Building Schools for the Future scheme (BSF) set up to rebuild and refurbish every school and half of primaries in England by 2020. Although based on the sound premise of initiating a step-change in children's education, with design a core procurement component for winning bids, the underestimated scale of the of the challenge delayed project completions, and costs escalated as a result of red tape and lack of a central team for commissioning and procuring schools. As a result, six years into its 15 year programme the scheme was abandoned leaving 231 schools under, or nearly in construction, and a further 1,000 new schools in the pipeline.

With 178 school rebuilds or refurbishments delivered through BSF, and only 261 – instead of 737 under the BSF programme – expected to be completed by 2017 through the PSBP, UK's school building programme is advancing at an alarmingly slow pace. Fewer schools coincide with substantial cuts in capital spending budget for schools, producing the risk of poorer outcomes.

In an attempt to substantially reduce costs, under PSBP the functions of the Non-Departmental Body Partnership for Schools were transferred to a new Education Funding Agency (EFA), which became a central procurer of construction contracts for new schools. In line with the James Review,⁹ the PSBP programme also encouraged standardised designs supported by new DofE baseline standards, intended to save an estimated £6m per school. While the EFA did much to streamline procurement processes which cut costs and time, making upfront cost a primary consideration for PSBP schools may potentially cause a number of long-term social and economic consequences whose implications are yet to be fully understood, given the timescales for building projects for the first schools under the scheme are just being realised now.



Enterprise South Liverpool, BDP – David Barbour



New school designs are now 15% smaller than those built under BSF, and have smaller corridors, assembly halls, canteens and no standalone atria.¹⁰ This could have a direct impact on maintenance costs and student well-being. Narrow corridors can exacerbate bullying and harassment as a result of overcrowding during peak times,¹¹ and less space outside classrooms more generally can limit student's ability to socialise, opportunities for informal learning,¹² and schools' capacity to generate extra income through venue hire.¹³ Restricted circulation space can also increase incidental and deliberate damage, consequently escalating maintenance costs.¹⁴

Not enough consideration is given to these aspects in design and procurement guidance for PSBP schools. The value of quality outdoor space is also undermined, with external work currently receiving very little money under PSBP – sufficient to build access roads and car parking, but not soft landscaping or providing the infrastructure for learning outside.

The overriding cost-efficiency of new schools set at £1113 per square metre¹⁵ is simply too cheap to achieve quality schools that will stand the test of time, particularly in the current economic environment where it is becoming more expensive to procure the same products and services due to inflation. Through cutting costs and sizes of schools, the PSBP programme may create flaws that will cost the Government more - in escalating repairs and rebuilds of PSBP schools – than it will initially save. The capital cost per square metre for new schools should be increased by at least 20% to improve building durability and limit future maintenance costs. The extra money should go towards increasing space outside classrooms within schools, higher specification materials, and improved external works.¹⁶ The impact of the change can be mitigated through innovating construction processes (e.g. maximising off-site assembly potential), and innovative public-private partnership building.

With old, crumbling schools falling into further disrepair, and fewer poor quality schools are now being delivered, urgent action is needed to relieve Britain's overcrowded schools. We need to lay the foundations for inspiring environments for our children to thrive in. The national school building programme should provide buildings that are flexible and will last the test of time rather than refurbishments and rebuilding because of poor design.

Recommendation

Increase cost per square metre for PSBP schools by 20%. New schools are simply too cheap to provide healthy learning environments for pupils that can stand the test of time.

Recommendation

The size of schools funded by the Government should return to the areas recommended in Building Bulletin 98 – Secondary Schools, Building Bulletin 99 – Primary Schools and Building Bulletin 102 – Special Schools.

Recommendation

The scoring on procurement to be changed from a cheapest wins approach to improve design and deliver long-term cost effectiveness and social value. External works such as quality landscaping should feature as a criterion.

Recommendation

Understand how schools shape outcomes by further improving research on all schools built to increase knowledge about the effectiveness of those schools. Research should include data on management, maintenance, energy costs, and other indicators PSBP schools are currently required to record; as well as indicators on pupil and teacher wellbeing – to understand impacts on bullying, educational outcomes etc.



15%

New school designs are now 15% smaller than those built under BSF, and have smaller corridors, assembly halls, canteens and no standalone atria. This could have a direct impact on maintenance costs and student well-being.

Health and older people

43%

The number of people aged over 60 will increase 43% in the UK over the next 20 years.¹

Health in our cities

In 1950, 79% of the population lived in cities in the UK. This swelled to 90% in 2010 and is set to rise to a staggering 92.2% by 2030.² As this trend increases, our cities will further define our quality of life, from health, happiness and wellbeing to the way we grow old.

We will be presented with a number of challenges but we have the opportunity to shape our cities to address these by thinking ahead and designing in active lifestyles and supportive communities. To plan for this increased urbanisation we will need new models of housing, greater engagement of local people of all ages in their communities and towns and cities to allow for and encourage healthy lifestyles.

Public spending on health issues should move towards long-term prevention. The design of our cities, communities, buildings and public spaces must be at the heart of the solution, and innovating now will save the taxpayer millions in the coming years. Architects and urban designers could be the key to a healthy Britain in the 21st century.

Health and wellbeing at the heart of local communities

How we design and plan our towns and cities has a direct impact on our health and general wellbeing.

The way we use our cities day-to-day can either help or hinder physical exercise; from access to sports facilities and space for recreation to the quality of parks and public spaces and our opportunities for incidental exercise – how we choose to get to work, the shops or out to socialise.

RIBA research has found that 59% of people living in England's nine core cities are not exercising enough.³ In addition, 80% of those aged 65-74 in Britain are not doing the recommended levels of exercise.⁴ Our urban population is both growing and ageing, with the number of people over the age of 60 in the UK set to rise 43% in the next 20 years,⁵ so if we don't take our urban health seriously, we could be heading for a national crisis. With the introduction of the Health and Social Care Act in 2012 and the subsequent Health and Wellbeing Boards, Local Authorities have been empowered to consider how public health and social care services can be better integrated and delivered to respond to local communities' needs. This gives new impetus to better understand the root causes of health inequalities and invest up front in their long-term prevention.

Health and ageing must become issues of local planning recognising that the way we design our towns and cities, our homes and communities, will have a big impact on how much investment is required in managing public health and social care in the decades to come. By joining up housing and planning priorities with health and active ageing strategies we can encourage healthier lifestyles through healthier local environments.

Our ageing population also represents a significant potential contribution to both the social and economic life in our cities and we need to be thinking about the best ways in which to nurture and harness this; by seeing active, older people as an asset and integral part of urban communities, not a drain on resources.

Planning for a more active population

In 2014 the RIBA examined three core health outcomes; life expectancy, levels of diabetes and obesity in children, in the nine most populous cities in England. We found that there is a clear link between land use and health outcomes in those cities. The study found that the healthiest Local Authorities in our major cities have almost half the housing density and a fifth more green space than the least healthy ones. Our public survey, conducted across the eight core cities and London, discovered that it's not the amount of parks and streets that would encourage many people to walk more, but the quality and safety of those parks and streets. If everyone in the UK could be encouraged to meet this level of activity, the RIBA estimates that the NHS could save up to £675 million a year.⁶

By integrating public health considerations into planning policies and programmes in a truly joined up way, Local Authorities can take the lead in pro-actively encouraging active and healthy communities; creating parks, streets and spaces that encourage people to walk or cycle on a daily basis. This could be done by creating new and engaging routes through the city that are pedestrian orientated; combining a series of attractive spaces to enjoy with opportunities to relax and socialise or partake in local recreation, sports or exercise. There are many examples around the world of entire streets being redesigned around the pedestrian and cycle experience first. These routes often incorporate sporting facilities and local services, whilst linking with public transport networks. By adopting this attitude to planning, many more people will find it easier to make healthy choices as part of their day-to-day experience of the city.



The cost of providing pension, welfare and health services to older people will rise by up to 60% in the next 20 years.

Recommendation

The next Government should require that Local Authorities comprised of less than 50% green space and/or have a housing density of over 5% produce a Healthy Infrastructure Action Plan as part of their Local Plan in conjunction with Health and Wellbeing Boards. This should outline their strategy for making streets and parks safer and more attractive and outline the principles of encouraging active lifestyles that they expect new developments to meet in order to gain planning permission.

Recommendation

The next Government should require that all Health and Wellbeing Boards include a local planner and/or a local design champion who understand the urban design challenges in the area and can assist in linking health and social care priorities with issues of planning and placemaking.

Local Authorities have been given ring fenced grants to spend on providing public health services, which have increased by an average of 5.5% in 2013-14 and 5% in 2014-15. However, seven of the 10 city Local Authorities with the worst health performance in our study, did not receive a higher than average increase in funds, whereas eight of the 11 best performing Local Authorities did.⁷ This suggests that the funding is not being prioritised for the communities that need it the most.

Recommendation

The next Government should ensure that Local Authorities identified with the worst health performance levels should be prioritised and receive above average ring fenced grants. The recipient Local Authorities should be required to use a proportion of the grant to invest in actions specified in their Healthy Infrastructure Action Plan.

The UK performs very poorly in levels of cycling with only 4% of respondents to a recent Eurobarometer survey using a bike daily. Compare this with over 40% in the Netherlands, nearly 30% in Denmark, 28% in Finland and 20% in Germany and Sweden.⁸ These countries recognise that increased cycling can have a significant impact, not only on citizen health and wellbeing but also the perception and safety of cities helping to humanise them and ensure they are attractive places to live. Many of these countries have a minimum funding level of £10 per capita per annum for cycling over the long-term, something which has only been achieved sporadically and temporarily in the UK.⁹ This is disappointing given the positive steps that have been taken by successive Governments to promote cycling from the Sustainable Travel Towns initiative, to the Active Travel Strategy and more recently the Local Sustainable Transport Fund.

One of the key reasons why we are not making the kind of progress we should expect on active travel (walking and cycling) is the lack of commitment from Government to put in place long-term, dedicated and ring fenced funding streams for the required local initiatives. The Local Sustainable Transport Fund (LSTF) was a short-term pot of money accessible via a competitive bidding process. In the 2014 budget, the LSTF was reduced and absorbed into the Local Growth Fund with no ring-fencing. The onus is now on Local Authorities to work with LEPs to ensure that sustainable transport proposals are given due consideration in the development of strategic economic plans.

If the next Government is serious about tackling public health, we must aspire to the levels of investment and commitment to active travel demonstrated by our European neighbours. We should look to achieve 15% of transport to be by bicycle by 2030, which would still be 10 years behind the target advocated by the European Cyclist Federation Charter of Brussels¹⁰ of which 60 cities are already signatories including Bristol and Edinburgh in the UK. The RIBA, alongside the UK's leading organisations working on all areas of public health, have backed calls for a realistic level of immediate ring-fenced investment of 10% of transport budgets to be committed to walking and cycling and to ensure that we increase funding in line with new, ambitious targets for active travel in the UK over the coming years.¹¹

27%

Walking trips have fallen 27% over the last 15 years.¹²

Recommendation

The next Government should commit to spending 10% of transport budgets on active travel (walking and cycling). A first step to achieve this would be to ensure a proportion of all Community Infrastructure Levy (CIL) revenue was ring-fenced for Local Sustainable Transport initiatives or delivering aspects of a Local Authority Healthy Infrastructure Action Plan.

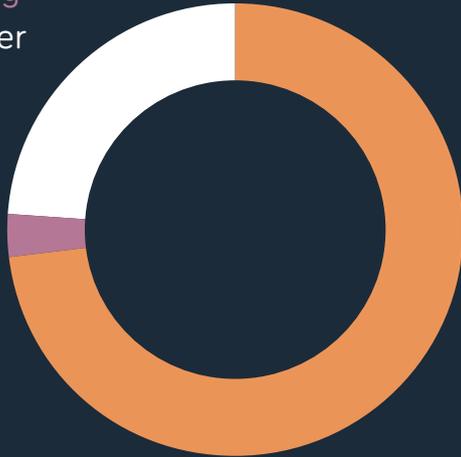
Recommendation

The next Government should, over the next parliament, draw up a cross departmental strategy to achieve long-term investment in active travel initiatives with a target of 15% of all trips in Britain to be made by cycle by 2030.

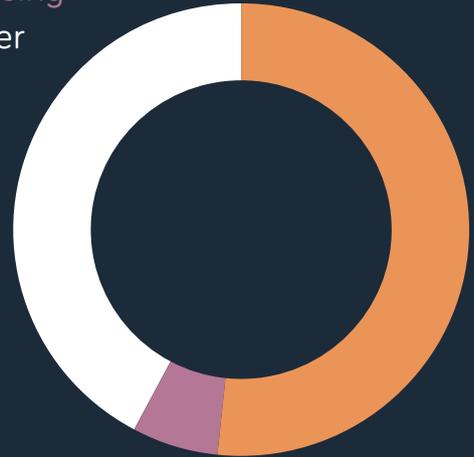
Land use

Land use in the best and worst performing (highest and lowest levels of physical activity) Local Authorities outside London.

Healthiest (highest levels of activity)
73.2% green space
3% housing
23.8% other



Least healthy (lowest levels of activity)
51.9% green space
6.1% housing
42% other



Levels of Cycling

Percentage of population using a bike as the main mode of transport for daily activities.¹³

Netherlands 30%



Denmark 20%



Sweden 15%



Germany 10%



UK 2%



Ageing in our cities

Britain's population of over-sixty year olds is set to rise significantly over the next twenty years, greatly outstripping increases in younger age groups. As a result, our cities will very quickly have to embrace an entirely new demographic phenomenon. But this need not be a burden or a drain on public resource; instead of adapting our environments to mitigate a challenge, we can design them to help harness a potential opportunity. As the number of older people rise, so will the proportion of people around retirement age who are capable of participating in mainstream society, from work and education to leisure and cultural pursuits. This group is the Active Third Age. They could have a key role to play in socio-economic sustainability in the 21st century if we design our cities to allow them to work and live more flexibly and maintain levels of health, independence and wellbeing through active transport infrastructure and social connections.

Recommendation

The next Government should require that Local Authorities representing our core and key cities have an Urban Ageing Strategy in place that aims to address issues of active ageing in line with World Health Organisation's Age Friendly Cities principles. These should be produced in conjunction with Health and Wellbeing Boards.

Recommendation

The next Government should encourage the development of the emerging UK Network of Age Friendly Cities by requiring that a network representative be present on the local Health and Wellbeing Board in every city where this is applicable.

High streets are one area that this growing population could have a long lasting and positive impact. Up and down the country our high streets are struggling as local trade and retail are slowly eclipsed by out-of-town shopping centres and the rise of online shopping. As a consequence, we are threatening the heart of many neighbourhoods by undermining the economic and social dynamics of local businesses. And yet an active, older population could galvanise our high streets giving them a new lease of life, if we encouraged them to host many more local services; from promoting health and wellbeing, to providing new products for savvy older consumers.

High streets could better support recreation and active lifestyles with a new emphasis on public spaces that accommodate sports or fitness classes, allotments or just better opportunities to meet and interact. They could also better support intergenerational exchange, perhaps providing space or facilities for mentor/apprentice relationships between older, skilled people and younger generations to develop. As older people wind down to retirement the high street could also be the ideal location for people to work remotely for part of the week.

The High Street Innovation Fund has been established as part of a package of measures to revive the fortunes of high streets following the Portas Review. Local Authorities are eligible to apply for investment as part of a one-off funding pot. The next Government could extend this fund by establishing a 'lifetime high street fund' in partnership with the Future High Streets Forum, but broaden the scope of applications to include local Business Improvement Districts or Neighbourhood Forums who wish to explore innovations that support ageing and the high street.

Recommendation

The next Government should require a proportion of all Community Infrastructure Levy (CIL) receipts from out of town retail development, be to ring fenced for improvements to the local high street(s).

Recommendation

Government should set up a 'lifetime high street' fund in conjunction with the Future High Streets Forum to fund initiatives directly supporting our ageing population.



Littleny - Shutterstock.com

Homes and Intergenerational Communities

The idea of multiple family generations living under one roof is not new. However, for many it is seen as a necessity rather than a choice. The lack of family homes in Britain alongside the rising cost of healthcare and increasingly inadequate pensions may indeed force extended families back together in the near future. However, architecture and design has the potential to make this decision a choice. Intergenerational homes which provide innovative new ways to combine both private and shared communal spaces could be a realistic and desirable prospect. But the industry has been reluctant to explore these options.

Recommendation

The next Government, together with a Housing Association and/or developer, should establish a pilot scheme for a new and innovative multi-generational home. Ideas for the pilot could be generated through a design competition.

Encouraging older people – who currently own a significant amount of the country's wealth, mainly as property assets – to downsize in retirement and free up a potential new family home could have a significant impact on the housing crisis. It is not surprising, however, that older people are reluctant to do this if smaller homes are designed with a first-time buyer in mind and don't meet the needs or aspirations of an older, established homeowner. Most homes for older people tend to fit a retirement home model and mentality. In many ways, this type of product represents a potential market opportunity rather than an existing one, and we need to find ways to incentivise the development of that market.

One way could be to empower the consumer – the older homeowner – to utilise their existing property asset in different ways. If there was a more efficient and trusted equity release market in place, older people could see the value in downsizing to free up equity to spend in retirement, either in place of a pension, to fulfil ambitions to travel or start a business, or help their children buy property of their own. This could provide the capital needed to stimulate a private sector market for innovation in smaller housing for older people at the heart of our cities, close to amenities and services, but integrated into existing communities.

There are also potential opportunities for an active, older generation to build their own homes, addressing their own priorities for downsizing. Confidence in equity release schemes could help kick-start a more mature co-housing movement in this country, allowing older people to develop their own community support networks through new developments of appropriate housing with shared spaces and facilities.

What is clear is that this should not be a conversation about building more care homes or retirement villages, but about integrating appropriate new models of housing into our existing communities or large scale new developments to provide the infrastructure for a real support network to grow in a sustainable way as a desirable feature of enjoying later life.

Recommendation

The next Government should look at ways to establish and regulate an efficient and trusted equity release market that consumers could have confidence in, and that would incentivise a market in downsizing to new and innovative products that offer a better deal for older people than remaining in the traditional family home.

Recommendation

The next Government should use any new programme for New Towns, Garden Cities or large scale, public sector-led housing development to provide opportunities for innovation in new housing, such as a self-build co-housing community for older people or multi-generational family homes, and intergenerational mixing in new communities.

“If there was a more efficient and trusted equity release market in place, older people could see the value in downsizing to free up equity to spend in retirement, either in place of a pension, to fulfil ambitions to travel or start a business, or help their children buy property of their own.”

2
—
3

Emissions from buildings account for 2/3rds of total greenhouse emission in the UK.

The only permanent solution to drive down energy bills and end fuel poverty

Rising energy bills, and concerns over fuel poverty, energy security and climate change have done much to focus Government attention on the performance of our homes and buildings.

Each winter, the cold kills over 20,000 people in the UK, 23% more than in Sweden. Last year, this difference was even starker as the exceptionally cold winter of 2013-14 claimed an additional 31,000 lives in the UK.¹ Despite near identical levels of disposable income in the two countries, the proportion of people who live in fuel poverty is 70% higher in Britain than Sweden, where winter temperatures regularly plunge as low as -30 degrees Celsius. With energy bills expected to increase in 2014, this number may increase rapidly in the near future.²

The key factor affecting these disparities is the quality of homes. Britain's homes leak three times as much heat through their walls as those in Sweden, and twice as many British people (10 million) live in a home with a leaking roof, damp walls or rotting windows. Sweden is not the only country Britain lags behind. Britain has some of the worst housing stock in all of Europe, with the majority of its existing stock requiring some level of retrofit to enable us to live and work more sustainably.³

Britain's leaky homes, and its poorly performing non-domestic building stock, also pose a great challenge to meeting our obligation to reduce carbon emissions by 80% by 2050. Emissions from buildings account for more than two thirds of total greenhouse gas emissions in the UK. 85% of total 2012 building stock is expected to be still in use by 2050.⁴ Retrofitting is therefore also a key measure for helping the Government meet its strategic objectives. However, the challenge at hand is vast – if the UK is to meet its 2050 carbon reduction target of 80% under the Climate Change Act, retrofit would have to be carried out every minute until that date.⁵

“Each winter, the cold kills over 20,000 people in the UK, 23% more than in Sweden.”

Our built environment needs to be re-engineered rapidly within resource constraints

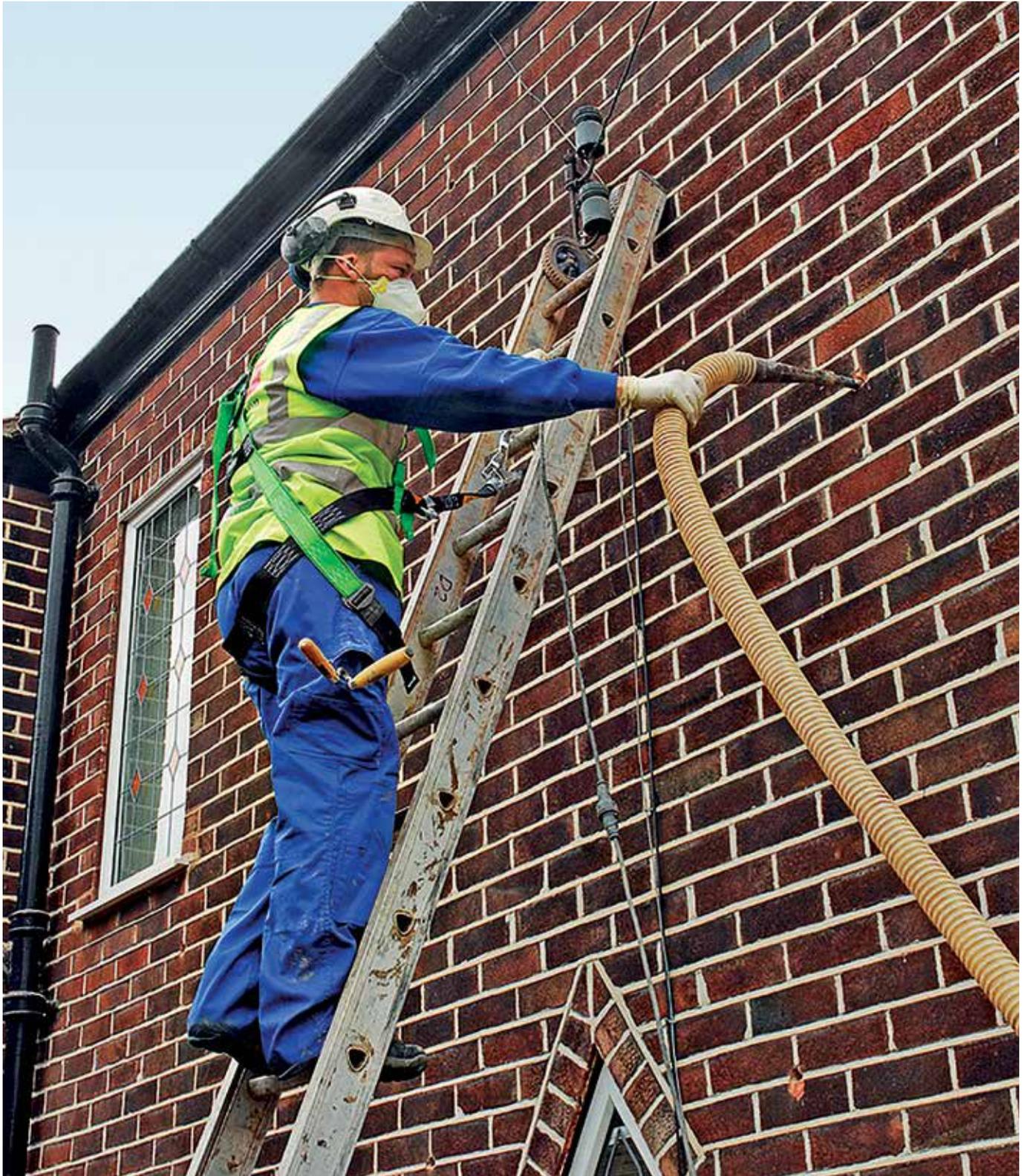
The Government's recently published National Energy Efficiency Action Plan and Building Renovation Plan provide an encouraging start in setting the direction for a long-term strategy for mobilising investment in building renovations. It provides an overview of the stock, as well as policies and measures that are currently in place to stimulate cost-effective deep and staged deep renovations. However, it also demonstrates that the multiple policies in place intended to drive energy efficiency improvements remain disjointed, with some failing to meet targets.⁶

Recommendation

The UK should build on the National Energy Efficiency Action Plan to set out a coherent National Retrofit Strategy for all building types that aligns existing retrofit policies and other related Government policies and initiatives to ensure they do not contradict each other. It should provide a sound reference point for Local Authorities to enable them to set up effective local Retrofit Action Plans to accelerate the rate of energy efficiency take up. The Green Construction Board's 2013 recommendation⁷ for a National Existing Buildings Hub should be set up with a set of experts who can provide the technical knowledge to inform a National Retrofit Strategy.

In a world of increasing resource constraints and with a slowly recovering economy, it is necessary to also improve the quality of our existing building stock to maximise their durability and operational cost savings throughout their lifespan. In doing so, we can also help retain their asset value for longer. Assessing the environmental and economic costs of all stages of design- building, maintenance, and disposal – can help eliminate substantial amounts of waste (water, energy, materials, carbon) and money in carrying out building or building improvement works.^{8,9} Where possible, Government should introduce Whole Life Cost Assessments for retrofit projects as a pre-requisite for energy efficiency funding, to reduce waste and costs – for example for all public sector non-domestic buildings. Once the methodology matures and a skillset is built up, this requirement should be rolled out to the rest of the non-domestic sector; and subsequently to the domestic sector, once a procedure is developed for implementing the assessment for small-scale projects at an affordable price.

While domestic and non-domestic properties share many technical and policy issues, both have distinct retrofit challenges and opportunities.



Cavity Wall Insulation - Flickr

Domestic retrofit

Regulation

The Government has already made clear that homes for rent will need to be much more energy efficient. Under new laws introduced in the Energy Bill, from 2018 the rental of the very worst performing properties – rated F and G – will be banned through a minimum energy efficiency standard. From 2016, private sector landlords will also not be able to refuse any requests from tenants or their representatives for consent to make reasonable energy efficiency improvements.

Retrofit for the remaining 70% of privately owned homes is currently being conducted on a voluntary basis through the Government's flagship Green Deal scheme. The Green Deal was designed to help people make energy-saving improvements to their homes and find best ways to pay for them. However, due to a number of issues, uptake rates have been slower than intended. By April 2014, a cumulative total of 188,234 Green Deal Assessments have been carried out since the scheme launched in January 2013, of which only 883 households have had measures installed under the scheme, with a further 1468 households with either 'live' or 'pending' Green Deal plans.¹⁰ Together, the completed, live, and pending Green Deal plans constitute a 1.25% take up rate of total Green Deal Assessments; and just a fraction of the 10,000 Green Deal sign up target by end of January 2013.

One way to address the current low levels of domestic retrofit take-up would be to make it mandatory for home owners who are already undertaking refurbishment work on their home to also make use of the Green Deal at the same time. If home owners or landlords are already having some building work it is an ideal time to do the necessary upgrades.

Recommendation

Ensure that if home owners are making improvements to their homes that they will also be required to make energy efficiency improvements at the same time. This will require two changes within Part L of the Building Regulations:

- Include retrofit improvements as a requirement in the current 'Consequential improvements' requirements. It would ensure that home owners offset any home alterations or extensions which would increase a home's energy demand, via extra retrofit measures. Kensington and Chelsea BREEAM Ecohomes assessment requirements¹¹ offer useful criteria for establishing the need for retrofit measures in consequential improvements.
- Require higher standards for energy efficiency in home repairs, alterations, replacements and renovations. This should be done through increasing the energy standards that 'retained thermal elements' (parts of buildings that regulate temperature) have to satisfy.

Provisions for retrofitting should also be made in planning permissions to make it easier for home owners to implement energy efficiency measures. Applying external insulation with a render finish on an existing brick house is currently subject to planning permission being granted, as it is regarded a 'material change'. Apart from heritage buildings – which require a different approach – this should be permitted development to incentivise home owners to insulate their properties.

Recommendation

Make external insulation a permitted development, except in the case of heritage buildings.

Government as enabler

It is unclear to the public what the Green Deal is. Energy companies, DIY stores, and local tradespeople are all offering different versions of the Green Deal with differing incentives such as loft clearance. Following a Green Deal advice report, home owners can either ask a Green Deal provider to arrange installation and pay for the work themselves; ask a Green Deal provider to arrange an installation and a Green Deal finance plan to pay for the work; get their own installers to fit improvements and pay for them themselves; or combine the ways to pay for the work, for example through a Green Deal finance plan with money from another scheme, or money of their own.¹² Some companies provide all the services for a Green Deal package – assessment, finance and installation. Others only provide specific services. Although this assortment of choices gives home owners the chance to shop around to find the best deals, the sheer quantity and variety of possible options also make it unclear what is on offer and that it is a reliable or credible service.

As organisations that enjoy high public trust,¹³ Local Authorities could broker Green Deal relationships to increase home owner confidence and increase Green Deal take up rates. Some Local Authorities in the UK already provide home owners with a single route to trusted energy efficiency advice and the various energy efficiency improvements available to them.¹⁴ Others have joined up efforts with neighbouring local councils to develop proactive strategies for retrofit to achieve economies of scale.¹⁵ These approaches should be rolled out across all Local Authorities in the UK to give the flagship Green Deal scheme some real momentum. There is an opportunity for retrofit strategies to be developed with neighbourhood planning initiatives.

Recommendation

Local Authorities should lead retrofit as credible brokers of the Green Deal – as they have done in some areas very successfully. Local Planning Authorities should work in partnership with private sector organisations, social landlords and households to support the delivery of retrofitting homes in their areas. This would be achieved through a local retrofit strategy established by local councils, which would set aspirations for their area as well as incorporate neighbourhood retrofit plans identified as key areas to retrofit and reduce fuel poverty. The targeted approach would help address other council priority issues, and could be financially supported by Government Community Green Deal funding pots to help carry out street-by-street retrofits to achieve economies of scale.

Branding for success

The Green Deal certainly has great potential. But as Governments in other countries have learnt, removing the upfront cost of insulation and other energy efficiency measures does not mean that people will install them. An analysis of over 150 energy efficiency loan schemes in the US, for example, found that most of the programmes reached less than 0.1% of their potential customers.¹⁶ Similarly, current levels of public awareness about the Green Deal remain low.¹⁷ In both instances, low levels of awareness have been primarily attributed to limited and weak marketing by the Government.

The Government needs to develop a more coherent and coordinated UK Green Deal marketing strategy, if it wants to accelerate take-up rates. In January 2013, the Government already announced it would be carrying out a substantial campaign to raise awareness of the scheme to catalyse action on domestic energy efficiency.¹⁸ It will also link the campaign with messages about other retrofit schemes such as the Renewable Heat Incentive to drive a wider and more coherent national retrofit campaign. However, the Green Deal marketing campaign could also benefit from linking the benefits of the Green Deal to more than just reducing energy bills and carbon, to create greater consumer interest in, and, demand for, the scheme.

At the moment there is a lack of consumer demand more generally for energy efficient homes and retrofitting (not just the Green Deal), with many consumers declining the offer to carry out measures even if offered free of charge in the UK.¹⁹ Retrofit is seen as unappealing by the public, and the lack of perceived added value of, or need for it means that it does not compete with demands for time, money and other people's desires, for example getting a new kitchen. Yet energy efficiency measures have a number of benefits which could be marketed better to better inspire the public – improved comfort,²⁰ wellbeing²¹ and property value,²² to name a few. There is too much emphasis on carbon and consumers do not understand how little energy an energy efficient home could use.²³

Recommendation

Government to develop a coordinated UK marketing strategy that appeals to a wider audience to improve Green Deal take up.

Skills

There is a lack of awareness and availability of skills for consumers when procuring the services needed to deliver a retrofit project. The current model for finding retrofitting professionals is also too fragmented, depending on the work needed to be done.²⁴ RIBA supports the development of a Retrofit Coordinators training programme to support the national building retrofit programme.²⁵ Retrofit Coordinators provide customer care throughout the retrofit process from advice and installation, to quality control. They can ensure retrofit advice given is appropriate for individual buildings, particularly if they are 'vulnerable' old buildings that may not be protected by Conservation Areas or Listing. Using this accreditation scheme in the Green Deal package would give consumers greater confidence by accessing trusted services.

Recommendation

Government to make Retrofit Coordinators a formal project management role within the Green Deal scheme to provide greater support and customer care for customers throughout the retrofit process.

0.1%

An analysis of over 150 energy efficiency loan schemes in the US found that most programmes reached less than 0.1% of their potential customers.

How our homes lose energy



45% heat loss through uninsulated solid walls
33% heat loss through uninsulated walls
25% heat loss through the loft/roof space
20% heat loss through windows and doors

Source: Energy Saving Trust

Non domestic retrofit

Retrofitting the UK's 1.8 million non-domestic buildings presents a significant opportunity to provide businesses savings between £3bn and £5bn per year,²⁶ while reducing 70-75% carbon emissions at no net cost.²⁷ This is on top of increased productivity and quality of life for workers²⁸ and school pupils,²⁹ which in time would translate into value for building owners, occupiers and investors.³⁰

With so much at stake, Government has been driving energy efficiency improvements in the non-domestic sector through a number of initiatives, such as the Carbon Reduction Commitment Energy Efficiency Scheme, mandating Display Energy Certificates for public sector buildings, and requiring all large organisations to undertake energy audits (buildings and wider energy use) from 2014 through the Energy Efficiency Opportunities Scheme. However, the existing policy landscape for non-domestic retrofit is not providing the necessary driver for wide-scale adoption. There is not a clear enough business case for refurbishment on either the supply or demand side in the market, and this is down to the lack of accurate and complete information about non-domestic building energy and carbon emissions.

This crucial information is needed to provide a solid foundation for policy mechanisms, and for businesses, landlords, and occupiers to use as the basis for energy reduction strategies and investment decisions. Actual non-domestic building performance disclosure could be achieved by extending the Government's Display Energy Certification to the private sector.

Display Energy Certificates are prominently displayed in buildings to show their actual energy use – as opposed to Energy Performance Certificates, which only provide theoretical ratings based on assumed energy use. They are currently only required in public sector occupied buildings over 500m² in the UK. However, Display Energy Certificates are widely seen as a vital tool in driving energy efficiency in buildings - in 2013 the European Union extended the requirement for Display Energy Certificates to commercial buildings over 500m²,³¹ increasing numbers of private sector organisations are embracing it on a voluntary basis,³² and the wider built environment industry, including RIBA, has campaigned for mandating Display Energy Certificates for a wider range of non-domestic buildings through the Energy Bill.³³

Beyond accurately monitoring and displaying actual building performance across the non-domestic sector, Display Energy Certificates would promote better energy management. A recent survey of public sector organisations who have been required to use Display Energy Certificates since 2008, and of private sector organisations who use the certificates on a voluntary basis, revealed Display Energy Certificates are seen as a relatively inexpensive process of information gathering that has a positive impact on knowledge and stimulating change, which can help with negotiating energy management budgets and raise the internal profile of energy consumption.³⁴ Its format is seen as useful for providing trend information and benchmarking to provide both a target and instigate competition between buildings and organisations.

Once rolled out, data obtained from Display Energy Certificates across the non-domestic sector could support other carbon related policy for the building sector, thereby significantly reducing the cost of measuring building related energy and carbon emissions.

Recommendation

Government to mandate actual energy performance disclosure across the non-domestic sector through an extension of Display Energy Certification requirements to the private sector.

UK Flood Cost

Clear up of 2013/14 winter floods'

£1 billion

Smaller firms losing

£830 million

Insured losses up to

£1.5 billion

Clear up costs of potential 2050 floods

£29 billion

Meeting the rising tide: resilience against flooding

Flooding is one of the greatest threats to the UK. Nearly one in six properties are currently at risk of flooding in the UK, and this number is set to increase as the latest projections indicate the severity and frequency of rainstorms are rapidly on the rise.¹

Over the past few years the UK has been affected by an exceptional run of severe winter and summer storms, and prolonged periods of rain, culminating in coastal damage and widespread flooding across the country – the latest being the significant UK flood events of winter 2013/2014. The impacts on individuals, communities, businesses and infrastructure have been substantial. The clear-up costs of the last winter floods alone cost £1bn,² with smaller firms losing £830m,³ and insured losses up to £1.5bn.⁴ The impacts of the increasingly intense downpours driven by climate change, as well as population growth and urbanisation, will see the cost of flood damage cost rise fivefold in the UK by 2050, up to £23bn a year.⁵

How can we improve our resilience to the ever increasing impacts of climate change not by 'bouncing back' but instead focusing on learning, adaptation and mitigation to these profound challenges to our communities?

Half-hearted investment with a short-term horizon

Despite the increasing risks and costs of flooding to the UK, there has been a reduction in staffing and investment in flood-risk management.⁶ Flood defence spending in 2011-15 will be £247m less in real terms than the amount spent between 2007 and 2011, and the maintenance budget for flood defences has been cut by 39% – from more than £100 million in 2010/11 to £60.7m in 2014/15.⁷ This approach contradicts the Government's own estimates⁸ for the amount of spending needed to keep pace with increased flood risk from climate change to maintain existing levels of protection. The UK underspend on flooding currently stands at £580 million behind the identified need. What is more, continued cuts to Local Authority budgets and a lack of ring fencing of 'external contributions' from developers and other partners for work on flood defences means funds are being diverted to other areas to plug budgetary holes.⁹

Experts warn that while existing flood defences have helped protect more properties in the 2014 floods compared to those in 2007, the defences are ageing and current Government spending on flood defences and maintenance will provide neither the level of investment or long-term certainty to guarantee the country's resilience against future flood events.¹⁰

A clear and consistent commitment, primarily of funds for capital and operational and maintenance costs, is needed at Central Government level. This would strengthen the Flood and Water Management Act in which a only a select number of authorities, mainly at the local level, have a duty to cooperate on flooding.

If we are to provide real security for communities living in areas affected by flooding, Government must ensure stronger commitment and resources to act upon its own climatic risk assessments and predictions, regardless of political make up. It should also provide a longer-term programme to better protect communities, businesses and infrastructure from extreme flooding events than the current five year commitment.

Recommendation

The next Government should introduce legislation committing successive UK Governments to build flooding resilience as a strategic priority over the next 100 years, regardless of political make-up.

Smarter investment of existing Government flooding funds is needed to strengthen UK resilience

Skimping on flood defences could end up costing Britain more than it will save. Without additional spend now, the Government's official advisers, the independent Committee on Climate Change, have warned the £580 million shortfall risks an extra £3bn of avoidable damage in future years.¹¹ Government should return capital and maintenance investment in flood risk management to pre-2010 levels in real terms to get back on track.¹² In the immediate term however, the national flooding programme could benefit from a smarter investment strategy of existing funds. In order to achieve this, Government must recognise that flooding is a complex issue requiring joined up action as it is just as much a climate change issue as it is a water cycle management one, closely linked to planning, design, and land management practices.



Planning for the future

Local Planning Authorities are not adhering strictly enough to the National Planning Policy Framework's (NPPF) requirements regarding new developments in relation to flood risk. Despite the NPPF being clear in requiring flood risk assessments for all new development, with stringent requirements regarding flood resilience and resistance, planning is currently granted to developments on flood plains and in flood containment areas. With the need for new housing, some homes may be built in high risk areas, but there are ways to design homes that can adapt to flooding.¹³ Some 12,000 to 16,000 new houses are built in flood-risk zones in England every year, and this number is increasing. Across England and Wales Local Authorities have been ignoring the Environment Agency's objections and waving through developments on land at severe risk of flooding – in 2013, local councils allowed at least 87 planning developments involving 560 homes to proceed in England and Wales in areas at such high risk of flooding that the Environment Agency formally opposed them.¹⁴ The number of homes built in areas deemed particularly high at risk by the Environment Agency has risen by more than a third in 2013, compared to the previous year.¹⁵

It is clear the risks of flooding are not identified in the planning system clearly enough. The severe winter 2013/14 floods have forced a number of councils such as Berkshire, Royal Borough of Windsor and Maidenhead to remove housing sites from their Local Plans after areas previously earmarked for new homes were inundated by the recent floods.¹⁶

Greater action needs to be taken to support Local Planning Authorities to ensure developments are not granted planning permission in high flood risk areas.

The UK underspend on flooding currently stands at £580 million behind the identified need.

£580
million

Urban design and development

For too long, we have been designing water out of our towns and cities when we should have been designing it in. Flooding, droughts and watercourse pollution are all signs of stress where developed areas have a troubled interaction with the natural water cycle. The way places and their drainage systems are planned and designed can either exacerbate or mitigate these issues by either facilitating or disrupting the natural water cycle. This basic relationship between cities and water is often overlooked in planning and design decisions, leading to costly investments in flood defences that have limited effectiveness, and in outdated urban water and sanitation infrastructure that perpetuate the problem.

All elements of the water cycle need to be considered when designing and developing new places. This necessitates changing our perception of water from threat to the lifeblood of our cities, and thinking about the water cycle at the earliest stages of planning and design processes.

We can start by looking beyond the idea that a pipe in the ground is the best option for getting rid of rainwater. This is a 19th century solution that is neither effective, nor the best solution to growing 21st century problems. Our vast legacy of Victorian sewage infrastructure removes water so effectively from our urban environments that it causes floods and, in some cases, diffuses water pollution. It does not make the best use of water as a resource that can mitigate drought. Additionally, sewers are reaching the end of their lifespan, with many over capacity or collapsing, prompting expensive refurbishment works.

Sustainable Drainage Systems (SuDS) – often designed to mimic natural drainage provide a flexible, more cost-effective and environmentally friendly alternative to our current sewage infrastructure, while creating valuable public amenities.¹⁷ Coupled with investment in overhauling our Victorian sewage networks and expensive flood barriers, Government infrastructure and flood defence budgets should also be spent more intelligently on SuDS that do not pollute clean water, help re-stock our aquifers and reserves, and replenish the water cycle – and therefore mitigate flooding and droughts. SuDS and other types of green infrastructure should be a core requirement in Central and Local Government policy and plans as this natural, service-providing infrastructure is often more cost-effective, resilient and capable of meeting social, environmental and economic objectives than our existing ‘grey’ infrastructure.¹⁸

The Government is increasingly supporting the value of green infrastructure, for example in its National Planning Policy Framework, Natural Environment White Paper, and National Ecosystem Assessment. Increased recognition, however, needs to be matched with funding and an approach to landscape that enables Green Infrastructure to flourish, as currently the pressure for development, lack of council adoption of public spaces, and planning permission being given on a plot-by-plot basis rather than prioritising green infrastructure, is compromising the value Green Infrastructure could deliver. It is important that Green Infrastructure is strongly embedded in plans that lead to future funding opportunities, such as Infrastructure Delivery Plans in England which set out an area’s need for future funding through the Community Infrastructure Levy.

But we need to go further than green infrastructure and start joining the dots between flood risk management and water resource management, and start putting water at the heart of discussions about what makes places great to live.

Bristol Harbour Side, Grant Associates



“Fundamentally water sensitive design can be applied at all scales, from a single house to an entire city.”

Architecture and urban design can harmonise the built environment with its water cycle to make buildings and places more resilient and adaptive to flooding.^{19,20} For example, Water Sensitive Urban Design can help support healthy ecosystems, lifestyles and livelihoods through creating places that improve surface and waste water management, and make water supply more efficient by utilising the most appropriate source water for its use. This helps take pressure off existing infrastructure by reducing the amount of water entering the sewers and the need for water abstractions.²¹ Its successful application in various countries around the world (e.g. Australia, Singapore and New Zealand) demonstrate it presents the opportunity to create successful and resilient places, which are also attractive. Fundamentally, water sensitive design can be applied at all scales, from a single house to an entire city, and it can be retrofitted to existing developments as well as built in from the start.²² We need policies that see this thinking adopted in every Local Plan and a commitment from the Government to a comprehensive water management programme for the UK.

Recommendation

Stronger support from the Government should be given to Local Authorities to resist granting planning permission for development in areas of high flood risk:

- National Planning Practice Guidance on Flood Risk and Coastal Change should be amended to enable Local Authorities to reject planning applications where flood risk will be increased as a result of building in a specific location.
- In areas of high risk, Local Authorities should require detailed design briefs attached to planning application to ensure that homes built are of suitable standard to weather flooding. These applications should undergo scrutiny of Design Review Panels to ensure they are of sufficient design standards for reliance against flooding.



Land management

Together, Water Sensitive Urban Design with integrated Sustainable Drainage systems would make cities more resilient to handling excess water, as well as better prepared for dry spells. However, no amount of clever urban design can be fully effective without addressing wider issues of land management. Although they currently exist in silos, policies on land use and water management can have a direct effect on the effectiveness of flood strategies, and their relationships are very complex. For example, insufficient consideration is given to the complicated interactions between flood management, food growing, and biodiversity. Water sinks into the soil under trees 67 times more quickly than soil under grass.²³ However vast stretches of UK catchment areas have had their trees removed which causes more water to be carried downstream to flood towns and villages, as well as more silt and soil, which in turn increases the amount of dredging required. This siloed approach prevents us from adopting more dynamic, integrated and forward-thinking solutions.

Moving forward: towards a new Land Management Strategy for the UK

Floods in the UK must no longer be treated as short-term climate change issues isolated from broader urban planning, development, environmental and farming processes – all of which have a direct effect on flooding intensity, damage potential, and frequency. Despite increasing risks from climate change, the impact and severity of flooding in the UK is being exacerbated by an inadequate current approach to flood risk and land management at both Central and Local Government scales. A strong commitment and dedication of resources to reassessing these is needed with immediate effect, as is a strong focus of achieving a sustainable water cycle for the whole of the UK.

Recommendation

Government to jointly develop and implement an effective Land Management Strategy that embraces water resilient infrastructure, design, planning, and recognises the value of ecosystem services. The strategy must address how the UK will achieve smarter investment in water sensitive urban design, green infrastructure and local level surface management strategies.

Central Government should work more closely with Local Lead Flood Authorities to help them target flood spending where it is most needed, based on these principles.

Recommendation

Based on a new Land Management Strategy, the Government and Environment Agency should develop a strategic plan for flood risk management which could be used by Local Planning Authorities.

“Together, Water Sensitive Urban Design with integrated Sustainable Drainage systems would make cities more resilient to handling excess water, as well as better prepared for dry spells.”

Footnotes

Shaping places

- ¹Planning Application Statistics; table P120, Department for Communities and Local Government, 2014
- ²An analysis of Unimplemented Planning Permissions for Residential Dwellings, Local Government Association, 2013
- ³The Farrell Review of Architecture + Built Environment 2014
- ⁴Road to Recovery, Reform, 2009
- ⁵On the Wrong Track, Institute for Public Policy Research, 2011
- ⁶Centre for cities
- ⁷Building the Homes we Need, KPMG & Shelter, 2014
- ⁸Planning resource research, 2014
- ⁹Countryside Promises, Planning Realities, Campaign to Protect Rural England, 2013
- ¹⁰Design Review: Principles and Practice, RIBA/DC Cabel/Landscape Institute/ RTPi, 2013

Homes

- ¹The Future Homes Commission: building the homes and communities Britain needs, The Future Homes Commission, 2012
- ²Evans A and Hartwich O M, Unaffordable Housing: Fables and Myths (Policy Exchange and Localis, 2005)
- ³The Way We Live Now, RIBA/IPSOS Mori, 2012
- ⁴Building the homes we need, KPMG/Shelter, 2014
- ⁵Cities Outlook, Centre for Cities, 2014
- ⁶Autumn Statement, HM Treasury, 2013
- ⁷'Let's get building', Local Government Association, 2012
- ⁸Institutional Attitudes to Investment in UK Residential Property, IPF, June 2012
- ⁹Accelerating the release of surplus public sector land: Progress report one year on, DCLG, 2012
- ¹⁰Paragraph 47 of the National Planning Policy Framework 2011, Department for Communities and Local Government
- ¹¹Laying the foundations: A Housing Strategy for England, Department for Communities and Local Government, 2011
- ¹²Institutional Attitudes to Investment in UK Residential Property, IPF, June 2012
- ¹³Building the Homes and Communities Britain Needs, RIBA Future Homes Commission, 2012
- ¹⁴Communities and Local Government Select Committee inquiry into the Financing of New Housing Supply, 2012
- ¹⁵Build-it-Yourself? Understanding the changing landscape of the UK self-build market, University of York Centre for Housing Policy, 2013

Schools

- ¹National Audit Office Capital funding for new school places (2013) http://www.nao.org.uk/wp-content/uploads/2013/03/10089-001_Capital-funding-for-new-school-places.pdf
- ²Ibidem
- ³Ibidem
- ⁴Ibidem
- ⁵Tim Byles, Chief Executive, Partnership for Schools Radio 4 Today Programme 1 April 2010
- ⁶Department for Education Review of Education Capital 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/180876/DFE-00073-2011.pdf
- ⁷Financial Times report March 2013: <http://www.ft.com/cms/s/0/ec1359b0-5721-11e0-9035-00144feab49a.html#axzz33rurGrJH>
- ⁸Department for Education Policy Review: Asbestos Management in Schools 2014 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/276514/Call_for_Evidence_-_DfE_Asbestos_Review.pdf
- ⁹Department for Education Review of Education Capital 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/180876/DFE-00073-2011.pdf
- ¹⁰Education Funding Agency Guidance: Primary and secondary school design (updated in 2014) <https://www.gov.uk/government/publications/primary-and-secondary-school-design/primary-and-secondary-school-design>
- ¹¹Dickmann, E. and Fram, S. How the School Build Environment Exacerbates Bullying and Peer Harassment 2012 Children, Youth and Environments 22(1): 227-249 http://www.colorado.edu/journals/cye/22_1/22_1_11_Bullying.pdf
- ¹²Scottish Government Building Excellence: exploring the implications of the curriculum for excellence for school buildings <http://www.scotland.gov.uk/Resource/Doc/207034/0054999.pdf>

- ¹³Scottish Executive, The Lighthouse and Gaia Group Design and Construction of Sustainable Schools Volume 1 2005 <http://www.scotland.gov.uk/Resource/Doc/91982/0055196.pdf>
- ¹⁴Scottish Government School Design: Building our future: Scotland's school estate 2003
- ¹⁵Excluding external works, particular circumstances and fees. When externals and fees are added this amount to around £1450 per metre squared. Education Funding Agency Guidance: Baseline designs for schools 2014 <https://www.gov.uk/government/publications/baseline-designs-for-schools-guidance/baseline-designs-for-schools-guidance>
- ¹⁶Recommended by our advisory board, comprising designers and engineers currently involved in the PSBP programme.

Health and older people

- ¹Based on data from analysis of the Office for National Statistics Principle Population Projection 2010 (including births, deaths and migrations)
- ²Percentage of population living in cities, by continent, Guardian Data Blog, 2009 <http://www.theguardian.com/news/datablog/2009/aug/18/percentage-population-living-cities>
- ³City Health Check: How Design Can Save Lives and Money, RIBA, 2013
- ⁴One Voice: Shaping Our Ageing Society, Age Concern and Help the Aged
- ⁵Later Life in the UK: Fact Sheet August 2013, Age UK, 2013
- ⁶City Health Check: How Design Can Save Lives and Money, RIBA, 2013
- ⁷City Health Check: How Design Can Save Lives and Money, RIBA, 2013
- ⁸Attitudes of Europeans Towards Urban Mobility, EU Special Eurobarometer, 2013 - http://ec.europa.eu/public_opinion/archives/ebs/ebs_406_en.pdf
- ⁹Evidence to Parliamentary Commission on Physical Activity, Strustrans, 2013
- ¹⁰<http://www.ecf.com/about-us/manifesto/charter-of-brussels/>
- ¹¹Take Action on Active Travel, 2008 http://www.fph.org.uk/uploads/Take_action_on_active_travel.pdf
- ¹²National Travel Survey, Department for Transport, 2012

Energy

- ¹UK Office for National Statistics Excess Winter Mortality in England and Wales 2012/13 and 2011/12 2013, http://www.ons.gov.uk/ons/dcp171778_337459.pdf
- ²Association for the Conservation of Energy (ACE) Comparing the UK and Sweden 2013, <http://www.energybillrevolution.org/wp-content/uploads/2013/12/ACE-Research-Comparing-the-UK-and-Sweden-3.12.13.pdf>
- ³Association for the Conservation of Energy (ACE) The Cold Man of Europe 2013, <http://www.energybillrevolution.org/wp-content/uploads/2013/03/ACE-and-EBR-fact-file-2013-03-Cold-man-of-Europe.pdf>
- ⁴Committee on Climate Change 2013 Progress Report to Parliament 2013 http://www.theccc.org.uk/wp-content/uploads/2013/06/CCC-Prog-Rep-Chap3_singles_web_1.pdf
- ⁵Centre for Low Carbon Futures in association with the Energy Saving Trust The Retrofit Challenge: Delivering Low Carbon Buildings 2012 http://www.superhomes.org.uk/wp-content/uploads/2012/01/Retrofit_Challenge_2011.pdf
- ⁶DECC UK National Energy Efficiency Action Plan 2014 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307993/uk_national_energy_efficiency_action_plan.pdf
- ⁷Green Construction Board Scoping study for a low carbon existing homes or buildings support mechanism 2013 <http://www.greenconstructionboard.org/images/stories/pdfs/performance-gap/Scoping%20study%20for%20low%20carbon%20existing%20buildings%20support%20mechanism.pdf>
- ⁸RIBA Whole Life Assessment for Low Carbon Design 2009 <http://www.architecture.com/Files/RIBAHoldings/PolicyAndInternationalRelations/Policy/Environment/WholeLifeAssessment.pdf>
- ⁹RIBA Guide to Sustainability in practice 2012 <http://www.architecture.com/Files/RIBAProfessionalServices/RIBAGuidetoSustainabilityinPractice.pdf>
- ¹⁰DECC Green Deal and ECO monthly statistics, April 2014 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/305432/Monthly_Statistical_Release_Green_Deal_and_Energy_Company_Obligation_in_Great_Britain_24_April_2014.pdf
- ¹¹<http://www.rbkc.gov.uk/planningandconservation/planningpolicy/policyce1climatechange.aspx>
- ¹²Gov.uk online guidance as at 28.05.2014 Green Deal: energy saving for your home <https://www.gov.uk/green-deal-energy-saving-measures/getting-the-work-done>
- ¹³Ipsos Mori survey on public trust February 2013 <http://www.ipsos-mori.com/researchpublications/researcharchive/3123/Public-concerned-about-cuts-to-council-services-but-councils-arent-necessarily-to-blame.aspx>
- ¹⁴For example The Royal Borough of Richmond Upon Thames' Energy Smart scheme, run in partnership with Green Deal Provider Climate Energy Ltd. http://www.richmond.gov.uk/gogreen/gg_home/green_deal.htm

- ¹⁵For example, the Retrofitworks cooperative <http://retrofitworks.co.uk/>
- ¹⁶Fuller M. Enabling investments in energy efficiency technical report 2009 <http://uc.ciee.org/downloads/Resfinancing.Pdf>
- ¹⁷Holland J. Green Deal and ECO: Operational Issues – A view from the industry 2013 <http://www.ukace.org/2013/09/green-deal-and-eco-operational-issues-a-view-from-the-industry/>
- ¹⁸Speech by Climate Change Minister, Greg Barker, at the UK Green Building Council's 'Towards Green Deal 2.0' event <https://www.gov.uk/government/speeches/towards-green-deal>
- ¹⁹National Energy Foundation and Energy Efficiency Partnership for Buildings Breaking Barriers: Summary Report 2013 http://www.nef.org.uk/themes/site_themes/agile_records/images/uploads/BreakingBarriers_SummaryReport.pdf
- ²⁰Prasad, S. Retrofit for Purpose: Low Energy Renewal of Non-Domestic Buildings 2014
- ²¹Saint-Gobain, Salford University and Leeds Metropolitan University Energy House: the very fabric of whole house retrofit 2014 http://media.saint-gobain.co.uk/App_Media/Saint-Gobain/pdfs/V9477_Saint-Gobain_Energy_House_Leaflet_HIGH_RES_V8.pdf
- ²²DECC An investigation of the effect of EPC ratings on House Prices 2013 <https://www.gov.uk/government/publications/an-investigation-of-the-effect-of-epc-ratings-on-house-prices>
- ²³National Energy Foundation and Energy Efficiency Partnership for Buildings Breaking Barriers: Summary Report 2013 http://www.nef.org.uk/themes/site_themes/agile_records/images/uploads/BreakingBarriers_SummaryReport.pdf
- ²⁴RIBA report The Business Case for...Retrofit Coordinators 2013
- ²⁵Prewett Bizley Architects, Parity Projects and Rickaby Thompson Associates Retrofit Coordinator Training: project summary 2012
- ²⁶Carbon Trust Homeworking: helping businesses cut costs and reduce their carbon footprints 2014
- ²⁷Carbon Trust Building the Future, today: transforming the economic and carbon performance of the buildings we work in 2009
- ²⁸Westminster Sustainable Business Forum and Carbon Connect Building EfficiencyL reducing energy demands in the commercial sector 2014 http://www.policyconnect.org.uk/wsbf/sites/site_wsbf/files/report/403/fieldreportdownload/wsbfreport-buildingefficiency.pdf.pdf
- ²⁹Hong S. et al A comparative study of benchmarking approached for non-domestic buildings: Part 1 Top-down approach 2014 International Journal of Sustainable Built Environment <http://dx.doi.org/10.1016/j.ijbsbe.2014.04.001>
- ³⁰UKGBC Task Group Carbon Emissions in existing non-domestic buildings 2011
- ³¹Under the European Union Energy Performance of Buildings Directive 2
- ³²Support for Display Energy Certificates amongst businesses: <http://www.ukgbc.org/document/dec-rollout-supporting-organisations>
- ³³Industry letter to Government on Display Energy Certificates to the Government ahead of the second reading of the Energy Bill in the House of Commons <http://www.ukgbc.org/document/bpf-uk-gbc-open-letter-government-decs>
- ³⁴Ibidem.
- Flooding**
- ¹DEFRA UK climate change risk assessment: evidence report 2012 http://randd.defra.gov.uk/Document.aspx?Document=10067_CCRAEvidenceReport16July2012.pdf
- ²PwC comment on 10th February 2014 http://pwc.blogs.com/press_room/2014/02/pwc-revise-estimated-cost-of-continuing-uk-floods-to-630m.html
- ³Federation of Small Businesses comment on 5th March 2014 <http://www.theguardian.com/business/2014/mar/05/uk-floods-cost-small-firms-830million-pounds>
- ⁴According to Credit Suisse and Bank of America Merrill Lynch analysts' comments on 5th March 2014 <http://www.theguardian.com/business/2014/mar/05/uk-floods-cost-small-firms-830million-pounds>
- ⁵Jongman, B. et al Increasing stress on disaster-risk finance due to large floods 2014 Nature Climate Change 4, 264-268: <http://www.nature.com/nclimate/journal/v4/n4/full/nclimate2124.html>
- ⁶Committee on Climate Change More money for flood defence (repairs) (2014b) <http://www.theccc.org.uk/blog/more-money-for-flood-defence-repairs>
- ⁷Ibidem
- ⁸Cabinet Office An update of the Foresight Future Flooding 2004 qualitative risk analysis 2008; and Environment Agency Flooding in England: a National Assessment of Flood Risk 2009
- ⁹Committee on Climate Change More money for flood defence (repairs) (2014b) <http://www.theccc.org.uk/blog/more-money-for-flood-defence-repairs>
- ¹⁰Institution of Civil Engineers submission for the 2014 Budget 2014 <http://www.ice.org.uk/getattachment/5557c311-b37f-48f9-8261-bcd12b0cf948/ICE-s-submission-for-the-2014-Budget.aspx>
- ¹¹Committee on Climate Change Policy note: flood and coastal erosion risk management spending 2014 <http://www.theccc.org.uk/publication/policy-note-flood-and-coastal-erosion-risk-management-spending/>
- ¹²Institution of Civil Engineers submission for the 2014 Budget 2014 <http://www.ice.org.uk/getattachment/5557c311-b37f-48f9-8261-bcd12b0cf948/ICE-s-submission-for-the-2014-Budget.aspx>
- ¹³http://www.architecture.com/Files/RIBAHoldings/PolicyAndInternationalRelations/Policy/Environment/2Designing_for_floodrisk.pdf
- ¹⁴Figures obtained from the Environment Agency by The Independent on Sunday February 2014 <http://www.independent.co.uk/environment/nature/the-more-the-experts-warn-against-the-more-we-build-on-flood-plains-9101710.html>
- ¹⁵Ibidem
- ¹⁶Information obtained by Planning Magazine on 28.02.2104 <http://www.planningresource.co.uk/article/1282533/floods-force-changes-local-plan>
- ¹⁷CIRIA Susdrain Demonstrating the multiple benefits of SuDS – A business case – Literature review 2014 http://www.susdrain.org/files/resources/ciria_guidance/ciria_rp993_literature_review_october_2013_.pdf
- ¹⁸Landscape Institute Green Infrastructure, An integrated approach to land use 2013
- ¹⁹RIBA Designing for Flood Risk 2009 http://www.architecture.com/Files/RIBAHoldings/PolicyAndInternationalRelations/Policy/Environment/2Designing_for_floodrisk.pdf
- ²⁰RIBA Sustainable Desing Strategies: Water conservation resources on Pinpoint <http://pinpoint.ukgbc.org/resource.php?item=8345>
- ²¹Abbott et al 2013 CIRIA C724 www.susdrain.org/files/resources/ciria_guidance/wsud_ideas_book.pdf
- ²²Abbott et al 2013 CIRIA C724 www.susdrain.org/files/resources/ciria_guidance/wsud_ideas_book.pdf
- ²³Marshall et al 2014 in Hydrological Processes Journal The impact of rural land management changes on soil hydraulic properties and runoff processes: results from experimental plots in upland UK



Royal Institute of British Architects
66 Portland Place
London W1B 1AD
T 020 7580 5533

www.architecture.com