

National Assembly for Wales Climate Change, Environment and Rural Affairs Committee
Consultation: Low-Carbon Housing – the Challenge
Response from Sophie Howe, Future Generations Commissioner for Wales

Dear Chair and Members of the Climate Change, Environment and Rural Affairs Committee,

1. Introduction

1. I welcome the opportunity to respond to your consultation on Low Carbon Housing. Following a wide-ranging conversation with stakeholders, citizens and experts over the past year I have identified **housing as one of my priority areas for action**. Housing forms the cornerstone of both the well-being of individuals and families. The buildings we live in typically exist for a century or more, and so the decisions we make today will also have a profound impact on the well-being of future generations – both directly on their living conditions and more broadly through impacts on Wales's emissions and energy use, landscape and communities.
2. As Future Generations Commissioner for Wales, my duty is to promote the sustainable development principle and act as guardian for future generations. In this capacity, I am determined to ensure that decisions we make about housing today maximise Wales's progress towards the seven goals defined in the Well-being of Future Generations Act of 2015, and clearly demonstrate the **use of the five ways of working** the Act lays out: long-term thinking; prevention; collaboration; integration; and involvement.
3. For housing, this means addressing future challenges such as increased population with a higher proportion of single-person households, an older population where people need to live in homes adapted for diverse care needs, different climatic conditions and energy/materials, and technological advances which alter how we live including supporting different patterns of work and economic activity. It also means considering how it can prevent issues from happening or getting worse e.g. isolation, loneliness, poverty; integrating decisions made around housing with other significant planning or transport decisions; collaborating with those who are able to offer innovative solutions; and involving those who are going to be affected by any decisions i.e. citizens and communities.
4. A new approach to housing should look to maximise the Act's vision of the Wales we want: a more prosperous Wales, a resilient Wales, which supports healthy, functioning ecosystems and recognises the limits of the global environment, a healthier Wales, a more equal Wales, a Wales of more cohesive communities, a Wales of vibrant culture and a globally responsible Wales.
5. A new approach to housing could create many opportunities for Wales - supporting the shift towards a low-carbon green economy and better-quality work through developing Welsh enterprises and a supply chain that can deliver future-fit housing, supporting more vibrant and cohesive communities through improved place-making with access to green space and better integration with other services and local services/assets, with a reduction in raw material consumption and waste production and well-connected resilient environments for everyone in Wales.

6. Around 11 Public Bodies out of the 44 listed under the Well-being of Future Generations Act have set objectives relating to housing, and in particular affordable housing, good quality, good design, more rented accommodation and safe housing.
7. Well-being assessments produced by the Local Services Boards this year describe the local evidence and trends in their areas. I produced a report [Well-being in Wales: planning today for a better tomorrow](#). Two Chapters of this report will be of particular interest for this enquiry: The role of our homes in our well-being and How places serve populations, infrastructures and the environment.
8. I welcome the Committee's commitment to addressing the need for change in the housing sector and its attention to the role housing can play as part of Wales's low-carbon transition. However, I would expect your response to also consider a wider perspective on housing, and make the most of any imminent policy developments or work by others (e.g. Revision of PPW and development of new NDF, the housing enquiry by the Equality and Human Rights Commission), to ensure that they reflect the breadth of Welsh Government's duties under the Well-being of Future Generations Act. Future-fit housing must be energy-efficient, support healthy lifestyles, address care needs, fit how we live and work (and adapt to how this will change over time), and be resilient to a changing climate.

2. What role can housing play in Wales' low carbon transition, including the potential positive impacts on greenhouse gas emissions?

1. In our view, housing can play a significant role in supporting Wales' low carbon transition as housing is responsible for 27% of our carbon emissions. Homes are also central to people's lives and shape our relationship with energy, not least because paying energy bills is such a core expense for most households.
2. To leverage change at the scale needed it is vital that all types of housing are taken into consideration. Most of the homes people will live in by 2050 already exist and much of our housing stock is energy inefficient in its design: retro-fitting and adapting our existing housing stock to improve its performance in relation to all aspects of well-being must be given at least as much importance as building better new homes.
3. A majority of homes in Wales are also in private ownership, and it is important that whatever technical approaches and policy levers are developed are able to mobilise and incentivise change in this sector as well as in publicly funded homes.
4. Both the new build sector and the social housing sector can offer great opportunities to test out and demonstrate new approaches, but I would like to see that innovative pilots in these sectors are not pursued at the expense of reaching out to these sectors (private ownership and existing homes), even if this is more challenging.
5. Whilst central to Wales' low carbon transition, housing that is truly fit for the future needs to do much more than contribute to the low carbon transition: it must also deliver broader environmental, economic, social and cultural well-being, and be resilient to change in the future. Therefore, in my view, any new policy or public investment aimed at improving our housing stock must maximise contribution to all seven of the well-being goals. Considering these broader requirements must be integrated into the thinking from the outset, and not just left to chance as 'nice side-benefits' of a focus on energy and carbon. I also expect the five ways of working set out in the Well-being of Future Generations Act to be used in designing such a policy.

6. In identifying my housing priority, discussions with a range of stakeholders have suggested the following preliminary **criteria for housing that is “fit for the future”**, beyond achieving **energy efficiency** and meeting **already-established standards** for comfort, health, and freedom from hazards:
- a. **Adaptability** – housing stock must be able to adapt to people’s changing needs over time. This might mean adapting as family units change; adapting for care through periods of ill health, disability, or age-related conditions; or being able to accommodate home-working arrangements and technological advances which support smart living.
 - b. **Net positive environmental impact** – not just with regards to carbon and energy consumption but also considering the embodied whole-life energy and material costs of different building materials and construction types, and the interaction between buildings and the landscape and ecosystem health of the places where they are located;
 - c. **Protection from future challenges** – specifically flooding and more extreme weather caused by climate change, and other possible challenges such as changes in the availability and reliability of different types of fuel, energy and other materials/resources, changes in population.
 - d. **Community well-being** – housing needs to provide connectivity (both virtual and physical, e.g. integration with transport infrastructure), to support social and economic interaction and not leave people isolated; it needs to give people access to other amenities such as services, shops and recreation facilities; and it needs to preserve, enhance or create vital community assets such as green spaces, markets, and cultural institutions;
 - e. **Green economy** – house-building, maintenance and improvement should drive progress towards the future economy, creating jobs, skills and businesses throughout the relevant supply chains to build a thriving low-carbon Welsh economy in which people earn decent incomes from doing meaningful work.
7. They must do all of this whilst still prioritising the core purpose of houses, which is to provide homes for people in which they can be **comfortable, healthy and secure**.
8. Our understanding is that many approaches which can address the above can also deliver dramatic impacts in reducing the energy and carbon impact of our housing stock, so the objectives are not conflicting and reinforce each other. A holistic approach is vital in ensuring that different building options are evaluated with a view to improving all aspects of well-being, not just those that prioritise carbon and energy performance.
3. The development and availability of technology needed for highly energy efficient housing;
1. Technology has huge potential to deliver new options, but as the pace of technological change is also increasing, the way in which technologies are incorporated into housing will need to be flexible and adaptable. What may be considered a cutting-edge solution today will be commonplace in a year and in many cases redundant in a decade or two.
 2. The way technology is embedded into homes needs to reflect this, for instance, by ensuring it is possible to remove or replace technology easily, or repurpose components to perform other functions without wasting energy or wasting/degrading materials.

3. We must reflect on lessons from the past here: as experts have pointed out, gas back boilers replaced coal fires not because they were the most efficient option but because they fitted in the fireplaces that were already standard in all homes. More recently, new homes built on the assumption that the combi-boiler was the way forward have not provided space for water tanks, which is limiting the ability of these homes to now take advantage of solar thermal technology to heat their water (see RWAS's submission to this enquiry).
 4. The performance of energy efficiency measures can be significantly affected by the quality of the work to install it and also by the behaviour and preferences of people living in the home. Different technologies have different levels of sensitivity to these factors, so when it comes to rolling schemes out at scale, it will be important to take them into account. The optimum technical solution may not always be the one with the best theoretical performance, and will certainly not be the same in all circumstances.
 5. Again, I would urge the Committee to take a holistic view and consider issues wider than energy efficiency, generation and storage – e.g. how will housing for the future encourage residents to participate in active travel and will there be space to charge electric vehicles, how can opportunities presented by automation be used in a way that leads to improved well-being of occupants and wider communities?
4. What changes are needed to ensure that existing housing stock is as energy efficient as it can be?
1. Different types of housing and the variety of ownership arrangements, will require different strategies for optimising efficiency. What is technically possible, financially feasible and practically viable varies between housing type and ownership structure.
 2. As already mentioned technology alone is not sufficient, people need to understand how their behaviour can affect energy use and hence carbon emissions.
 3. Across the UK and beyond, a number of retrofit and efficiency programmes have been implemented. Given our commitments under the Well-being of Future Generations Act and other legislation, Wales would be well placed to bring these parties together to draw out the useful lessons and identify the strategies that may work best for the future.
 4. In addition to Wales's NEST and Arbed programmes, some good examples to learn from include:
 - a. Scotland's Home Energy Efficiency Programmes (HEEPs) - <http://www.gov.scot/Topics/Built-Environment/Housing/warmhomes/eap>
 - b. Energiesprong in the Netherlands. <http://energiesprong.eu/> This video explains the concept in under 4 minutes: https://www.youtube.com/watch?v=gm_EIE99W0o&index=3&list=PLxqrMoxgE53ndDAFqpEb9h9tbLuB3MD7c and a UK version of Energiesprong has now been set up: <http://www.nef.org.uk/service/search/result/energiesprong-uk>

5. Whether it is possible and feasible to deliver low carbon, energy positive, affordable housing at scale in Wales and, if so, how this can be achieved

1. My view is that it is essential to deliver low-carbon, energy positive, affordable and adaptable housing at scale in Wales. The appalling tragedy at Grenfell Tower in London is a stark reminder that making trade-offs between affordability, scale and quality can have devastating consequences and in Wales, the Well-being of Future Generations Act demands that we take an integrated, preventative and long-term view. It implies that scale, affordability and quality can all be achieved together, and that we get on with working out how.

6. What are the barriers to delivering transformative change in house building in Wales?

1. From our discussions with stakeholders to date, it has been identified that high-volume house-building firms are seen as barriers to change. They are said to be resistant to changes which they perceive will cut into their profit margins, but at the same time wield huge power over the sector and over decision-makers because of their financial scale and ability to build on a big scale.
2. We need more diverse voices in the sector, more benefits to the Welsh economy and skills emerging from housebuilding, and more options and innovations in future-fit housing. Moving away from business as usual is essential.
3. The Energy Saving Trust has calculated that the additional costs of making new homes more energy efficient is minimal, and demonstrated that these costs fell very rapidly as soon as they became commonplace – suggesting that in the long-term the financial impact would be negligible (see EST's submission to this enquiry). This suggests that the cost argument should not be a barrier, and that a more holistic approach to considering the cost implications for future generations as well as the potential for achieving wider social, environmental, cultural and economic value should be factored in.
4. Another barrier is the availability of land for building, and the way in which it is often released in large plots which the volume house-builders are better placed to snap up. Decision-makers should assess 'affordability' and 'value' in a more robust and holistic way than short-term financial gain. Public bodies involved should ensure that creating new and better homes delivers maximum social, cultural, economic and environmental well-being, by using the ways of working set out in the Well-being of Future Generations Act.
5. Wales has pioneered One Planet Development, which is a great example of a more integrated approach to land-use planning in which permissions and criteria for construction are integrated into a wider set of social, environmental, economic and cultural considerations. Whilst at the moment this is mainly taken up as a 'niche' approach to housing provision in specific circumstances it could provide an excellent model for how house building could be approached on a larger scale. Further information is available at www.oneplanetcouncil.org.uk. (See David Thorpe and Calon Cymru submissions).

8. Whether Wales has the requisite skills to facilitate and enable change in the housing sector;
1. Skills are obviously crucial to any industry. Our enquiries so far suggest there is a lot of scope for radically updating the content of relevant training courses to pay far more attention to the challenges of maintaining, retro-fitting and improving existing buildings rather than building new ones, and to introduce a much wider range of building techniques relevant to the low-carbon, future-fit housing Wales will need from now onwards.
 2. Whilst building this skills base will be essential to effecting change in the sector, it is unlikely to be effective as the main driver of change. Investment in skills must sit alongside increased demand for new and better approaches to house building and retrofit. The role of centres such as the new Construction Wales Innovation Centre at the University of Wales Trinity St David's and the [Sustainability Supply Chain school in Wales](https://www.supplychainschool.co.uk/wal/sustainability/construction/default.aspx) (<https://www.supplychainschool.co.uk/wal/sustainability/construction/default.aspx>) could be catalytic in effecting this change. It may be worth drawing in learning from Teesside University in England which is also developing new construction courses with a focus on innovation www.tees.ac.uk/advancedhome/
9. What changes are needed to Building Regulations in Wales to accelerate progress towards 'near Zero' energy standards and beyond?
1. With regards to Building Regulations and other parts of the regulatory framework for building, others responding to this consultation will be better placed than us to give an informed response on the details.
 2. 'Near Zero Carbon' is not an ambitious enough goal at this stage. To meet Wales's global obligations and drive change 'net positive' is the minimum standard we should be aiming for, working towards a broader definition of 'Future Fit' as rapidly as possible.
 3. To drive change towards low-carbon and future-fit norms in house building and maintenance/retrofit, the regulatory framework must be revised at a systemic level. It seems unlikely that tweaking single levers will produce the step-change that is required. I would urge the Committee to take into account the whole range of regulations which govern construction and buildings when looking into what needs to change, and work towards alignment across all of them. This should be enabled by adopting the ways of working laid out in the Well-being of Future Generations Act, and should demonstrate how housing can maximise contribution to achieving the 7 well-being goals.
 4. It is also important to consider levers beyond regulation – for instance the role of mortgage companies in determining what types of housing private buyers can access; the skills and incentives for small businesses and sole traders who deliver the majority of home maintenance and improvement work in the UK to become agents for change; and the conditions that would encourage financial institutions to invest in housing fit for the future (e.g. Chris Jofeh of Arup has recently introduced the Cabinet Secretary to the Energy Efficiency Financial Institutions Group at COP23). The Energiesprong approach in the Netherlands mentioned at 4.4. above has been pioneering in not only developing new technical solutions for retrofit but also establishing planning agreements and financial arrangements which remove some of the primary barriers to roll-out.

10. How communities can be planned and shaped to be more energy efficient and low carbon (including examples of good practice in Wales and further afield).

1. Our vision of future-fit housing puts communities at the centre. Communities should not 'be planned and shaped' by others, but should rather be involved in doing that planning and shaping themselves. This will generate not only better future-fit housing but other benefits in terms of social interaction, shared community assets, local economic activity, education and learning opportunities, democratic engagement and environmental benefits.
2. Welsh Government are currently updating Planning Policy Wales to have a greater focus on sustainable place-making. Well-being assessments, area statements (which are being developed by NRW and partners) should create a baseline from which to approach place-based development, and maximising energy efficiency (which can often be more effective at community scale than house-by-house) must be pursued as one part of delivering all of the well-being goals, not in isolation.
3. On a practical level, to enable energy efficient, low-carbon behaviours and norms over the long term, housing developments must be integrated with other infrastructure and local amenities – including transport, services, shops, businesses, recreation facilities and green space – to encourage people to spend more time outdoors, to use active travel for daily journeys, to support their local shops and cultural facilities, and to develop more cohesive communities.
4. As the next few generations will be living in homes that already exist today, in practice this will involve paying attention to how these other infrastructures and amenities can be redesigned to support communities where they live, rather than starting with the housing. Sometimes it might start with repurposing non-residential buildings for new homes.
5. Useful approaches to learn from include:
 - a. Baugruppen in Germany – group build initiatives in which communities co-create and co-own sustainable and affordable housing that suit their needs and bypasses the need for developers. This approach is one of the ways in which Vauban in Freiburg, a renowned example of large-scale sustainable urban development, has come about.
 - b. Heathcott Road in Leicester – a development of affordable sustainable houses which have been achieved through a community-led partnership involving the council, a local voluntary group and a developer, based on a large-scale community consultation. (See David Thorpe's submission for further information on these examples)
 - c. Community Land Trusts are community-led housing initiatives which put people in control of their homes and localities, integrating key assets such as work facilities and green spaces, whilst ensuring they have access to truly affordable homes for the long-term. See www.communitylandtrusts.org.uk for more information. Welsh Government committed to promoting this model in 2010 and commissioned a handbook which is available at www.gov.wales/topics/housing-and-regeneration/publications/communitylandtrust/?land=en.

I hope the Committee will find this submission useful. My office will be pleased to provide you with any further information you require.