LOCALIS

Plain dealing

BUILDING FOR FLOOD RESILIENCE

By Grace Newcombe

Executive summary

Planning for climate change and flood resilience

Climate change is having visible effects on the world, with changing rainfall patterns, increased temperatures, and rising sea levels. In the UK, we are already seeing more extreme weather events, including hotter, drier summers, flooding and rising sea-levels also. Despite this, as a nation we have fallen behind on adapting to climate change. Under pressure ahead of COP26, the government has finally published its long-awaited net zero strategy setting out how it plans to meet the country's legally binding 2050 climate goals[1]. As such, the UK now has firm commitments that largely mirror the guidance of the Climate Change Committee, but concerns are held around the speed, extent, and funding of the plans, which are tenuous in places. Ultimately, overall progress in planning and delivering adaptation is being outpaced by increasing risk. Consequently, the UK is less prepared for climate change impacts[2] now than it was when the previous risk assessment was published in 2016.

The frontline of the push to resilience is the planning system. Planning makes a major contribution to both mitigating and adapting to climate change, through decision-making on location, scale, mix and character of development. Planning reform must therefore have climate change at its core. Otherwise, we run the risk of developing a system that fuels, rather than tackles, the climate crisis. In 2011, a relaxation of the planning rules meant local planning authorities no longer having to report cases where they have ignored Environment Agency advice, whilst also making it easier for them to approve planning applications in high-risk areas. The upcoming planning reforms must, therefore, be seen as an opportunity to redress this and strengthen climate risk planning policy, not weaken it, to 'Build Back Better' as part of the government's plan for growth.

The *Planning for the Future* white paper, on which the currently-paused planning reforms are based, is clear in its ambition to erase the existing post-war system. However, where the crucial area of climate resilience is concerned, rather than create a more rigorous system, the proposed reforms in fact create uncertainty with little detail as to the role of the planning system in increasing climate resilience[3]. If planning policy were to be weakened, Environment Agency (EA)

1 Department for Business, Energy and Industrial Strategy (2021) – Net Zero Strategy: Build Back Greener

2 Climate Change Committee (2021) – Progress in adapting to climate change: 2021 Report to Parliament

3 Centre for Sustainable Energy & the Town and Country Planning Association (2020) – Why the Planning System needs to be at the heart of delivering the UK's Climate Change targets

research has shown that damages from poor planning decisions would engender overwhelming economic harms by building in the wrong places in a way that is neither safe nor sustainable. The issue of flooding, both of existing properties and the building of new properties in high-risk areas, is emblematic of the challenge ahead. Floodplain development sits at the intersection of the housing and climate crises, presenting either an opportunity or obstacle for building back better, depending on policy choice and political governance.

How local government acts within the current system is as crucial to resilience as to how central government carries out reform. Although most local authorities have climate change policies, over the last five years, few can show as yet that their planning policies are designed to secure their area's contribution to full decarbonisation of the UK, as required[4]. As a result, a situation arises where those deciding applications are left with a lack of clear guidance as to whether the proposed developments presented are consistent with their area's decarbonisation plans. It must be recognised however, that local authorities are under huge pressure. In addition to limited planning policy support, they are grappling with increasingly scarce resources coupled with low levels of private-sector investment - making it even more difficult to meet any ambitions for climate change.

Flood risk and development

In 2019, the Climate Change Committee warned that the most recent climate change risk assessment revealed 1.4m people in England face a significant risk of flooding of some kind[5]. The National Audit Office estimated in 2020 that 1.9m homes are at risk of flooding, due to being situated on or near a floodplain[6]. Flood damage can be extensive, causing disruption in the community, infrastructural damage, and even the loss of life. The Bonfield Report found that persistent rain in 2016 caused extensive damage across the country, with 17,000 properties being flooded and costs expected to amount to £1.3bn.[7] [8]

While we cannot quantify the cost of flooding at a local authority level, we can observe the disparity in the overall flood-risk faced by a local authority through looking at the percentage of homes at risk of flooding. For councils at high risk, often on the east coast of England, there is very little choice when it comes to

4 The Planner (2020) – Councils must climate-proof plans

5 Climate Change Committee (2019) – Progress in preparing for climate change – 2019 Progress Report to Parliament

6 National Audit Office (2020) – Managing flood risk: a data visualisation

7 Peter Bonfield OBE (2016) – Each Home Counts: An Independent Review of Consumer Advice, Protection, Standards and Enforcement for Energy Efficiency and Renewable Energy

8 Environment Agency (2018) – Estimating the economic costs of the 2015 to 2016 winter floods

building on floodplains to meet housing demand under the current system. This is particularly acute in those high-risk districts where 10 percent or more are already at risk of flooding – in South Holland, 34 percent of the district's land is at high risk of flooding. So far in 2021[9], these high-risk planning authorities have approved **5,283** new dwellings on floodplains, with **4,255** planned in areas identified as highly likely to flood. In the top five local authorities for flood risk, **31 percent** of approved planning permissions for new residential buildings on floodplains did not come with a Flood Risk Assessment. Clearly, a refresh and revitalisation of governance procedures is needed as we face down ever-increasing risk.

Flooding policy in the UK

In the UK, parliament, the regulatory authorities, and the courts have recognised the dangers of flooding and attempted to address them through regulatory frameworks. In the last two years, the government has published a National Policy Statement on the issue, alongside the Environment Agency's national Flood and Coastal Erosion Risk Management (FCERM) Strategy and Action Plan (2021), the combined aim of which is to ensure resilience in England towards flooding and coastal erosion. The Policy Statement sets out a long-term approach to commit to making better decisions about the actions and investments taken which account for future risks in a changing climate. The FCERM Strategy, as a requirement of the Flood and Water Management Act (2010), seeks to invest £5.2bn in flood schemes over the next six years, with over £860m expected to support flood alleviation schemes in 2021[10].

The moves were broadly welcomed and provided a "positive message for communities" but some experts said maintenance budgets for flood defences would also need to rise and that local authorities still needed more resources[11]. For the FCERM strategy, while the ambition is for councils to continue to work with partners to create climate resilience places, they are not able to take on the level of additional activity that the strategy proposes without significant additional investment. Positively, the strategy recognises that the tools needed to deliver resilience will vary from place to place, that there is not a 'one size fits all' approach and that it is best designed at a local, rather than national level. Yet, at the same time, the strategy assumes that the present funding model will continue in its current format, which allocates funding on a prioritised basis according

9 Up to 20th September 2021 - Methodology note for planning register analysis

10 HM Government (2020) – Flood and coastal erosion risk management: Policy Statement

11 The Guardian (2021) – Record funding for flood defences in England as climate crisis worsens risks

to national outcome measures and does not lend itself to deliver flexible local place-based solutions. There is a need to look at existing funding mechanisms for funding flood and coastal resilience to establish whether they are suitable and supportive of a resilience-focused flooding and coastal change agenda.

Additionally, the National Planning Policy Framework provided a set of guidance in relation to floodplain development[12]. It stated that, "inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere". This highlighted the key goal of avoiding developments that could suffer from a flood risk, should they be made in areas designated as being inappropriate due to the natural hazard. However, it also stated that developments could be made so long as safety measures were taken in case of flooding. In an October 2021 report, the Environment Agency doubled down on their FCERM guidance, issuing a stark warning: adapt or die[13]. The agency has warned of more extreme weather leading to increased flooding and has urged governments, businesses, and society to embrace and invest in adaptation, rather than living with the costs of inaction.

Problems with the current system

While national planning policy in England should steer development away from current flood risk areas and advises that future risk should be considered, at present there is no clear policy for how local authorities should effectively account for the flood risk associated with increasing climate change in plans and development decisions. Thus, faced with competing interests and institutional agendas such as constraints on building on protected land (e.g. the green belt around urban areas in England) and pressure to meet national housing targets, local authorities frequently permit new developments in flood zones[14]. The complex nature of this issue – local authorities, under-resourced and under pressure to deliver housing targets, working in something of a grey area – highlights the asymmetrical central-local relationship that exists in this area of governance.

There is a huge mismatch between central and local relations regarding flood risk management, one affecting the entire journey from local plan to development control. This has led to data gaps, a lack of ambition and subsequent lack of

12 Department for Levelling Up, Housing & Communities – National Planning Policy Framework

13 Environment Agency (2021) – Adapt or die, says Environment Agency

14 Viktor Rözer and Swenja Surminski (2020) – New build homes, flood resilience and environmental justice – current and future trends under climate change across England and Wales

effective action and change. Complexity is borne from the multitude of bodies involved in flood risk and service management. In England, local authorities are responsible for housing (district councils in county/district areas), with the county council (if it is a two-tier authority) responsible as the statutory consultee for surface water drainage. Meanwhile the EA is responsible for flood risk and a private water company is responsible for drainage. When there is an emergency, these roles are slightly different and don't align in the same manner. The district council is responsible for evacuation, with the county council focusing on provision of alternate accommodation.

The defunding of local authorities since 2010 has naturally had an impact on the ability of councils to manage this complex issue. Just 12 percent of local authorities strongly agree that they have the skills and expertise to take account of flood risk now and in the future in planning decisions[15]. Despite over 60 percent of councils declaring climate emergencies, local authorities have a critical shortage of skills and expertise in relation to planning for climate change. For example, only two percent of local authorities are considering future insurance availability and affordability when making planning decisions, and only a third of local authorities are seriously considering the impacts of climate change when deciding whether to grant planning permission[16]. As local decision-makers, it is paramount that local authority planning departments are better resourced to deal with the flood risk challenges they are facing, both now and into the future.

Role of insurance and Flood Re

A key private institutional actor in the governance of flood risk is the insurance sector. Widespread flooding causes a dramatic increase in insurance claims which, in the past, have led to large rises in premiums for insurers. As a result, the government and insurers developed a new system of re-insurance, Flood Re, which promotes the availability and affordability of flood insurance to those who own and live-in properties in flood risk areas. Since the start of the scheme, 300,000 people have gained access to flood insurance where they didn't previously. However, it is not a perfect system and so far has not led to a steer away from floodplain development.

One stipulation of Flood Re is that only properties built before 2009 would be covered to discourage developers from building on floodplains. Yet this has not been an effective deterrent at all – housing has continued to be built on these high

15 Town and Country Planning Association (2020) – Blog: Loss of skills and power: is local government critically unprepared for the climate crisis?

16 Ibid.

flood risk areas. Furthermore, there is an issue of uptake and communication. The 2020 Blanc review was undertaken in Doncaster following the devastating flooding in November 2019 and was one of the first opportunities to look at the adequacy of Flood Re insurance scheme in practice[17]. The review found sizeable differences between owner-occupiers and tenants with more tenants being poorly protected. Yet, even 28 percent of owner-occupiers were not covered[18]. If repeated across the country, this could mean tens of thousands of vulnerable households would be unnecessarily unprotected against flooding and failing to access the support set up to help them.

Living with flooding

As an island nation situated where several major weather patterns meet – including the increasingly erratic Gulf Stream – there's a four-sided problem facing the UK[19]:

1. To meet the UK's growing housing needs we have little choice but to build on flood-prone development sites.
2. Major storms that saturate the ground are increasing the volume of rainwater run-off to swollen rivers and waterways.
3. Climate change will lead to average sea levels rises this century of close to two metres.
4. This will increase coastal and estuary flooding, force rivers back onto floodplains, pushing water further inland.

In determining effective strategies, decisions-makers need to look at enhancing the resistance of the system, its resilience, or consider refraining from development on floodplains entirely.

Resistance, resilience, and refrain

The traditional strategies in developed countries, focusing mainly on the hazard of flood risk by aiming at flood prevention, can be considered resistance strategies[20]. Resistance strategies involve uncertainties by assessing and including them in the flood probability while over-dimensioning flood prevention structures.

17 Amanda Blanc (2020) – Independent Review of Flood Insurance in Doncaster
18 Climate Change Committee (2021) – Progress in adapting to climate change: 2021 Report to Parliament
19 Enzygo (2020) – Flood Plain – Mitigation vs. Resilience
20 Karim M. De Bruijn (2003) – Resilience strategies for flood risk management under uncertainties

There are a lot of floodplains that are currently defended, providing a level of protection that might enable appropriate housing developments. This ranges from large scale hard defences such as the Thames Barrier and self-closing flood barriers in Cockermouth[21], Cumbria, to the more traditional approach of riverside floodwalls and embankments as can be seen along the River Severn[22]. And in this situation particularly, flood defences prove that they are critical in defending people's homes. However, with increasingly heavy rains and rising sea levels due to climate change, as Environment Agency Chair, Emma Howard Boyd points out: "we cannot win a war against water by building higher flood defences". As a stand-alone measure, in the face of climate change they have limitations, the foremost of which are the costs of erecting and maintaining flood defences. As it stands, unless long-term changes are made, on current trends insufficient funding is being allocated to maintain flood defences indefinitely. The October 2021 Environment Agency report to government emphasises that deadly events such as the flooding in Germany this summer would hit the UK if the country did not make itself resilient to the more violent weather the climate emergency was bringing[23].

Resilience is an holistic approach to flood risk management, focusing on the balance between the socio-economic situation, the physical situation, and the climatic variability. Resilience strategies focus on living with floods instead of preventing them, relying on a flexible response to floods and a rapid recovery from them[24]. Flood risk management is an issue of risk, balancing which risks are acceptable to take. Resilience involves accepting that with climate change, even with resistance and resilience measures to flooding, repeated flooding will be experienced as areas increase in flood risk. Flood resilience works on multiple scales, and to 'Build Back Better', it must be remembered that a flood resilient building is only the beginning. Communities need to understand their risk to flooding and coastal change, know their responsibilities and how to act. To do this, people need to be educated and inspired to act pre-emptively, before flooding or coastal change happens. Resilience has a role to play but it isn't the silver bullet, and you can only go so far with such strategies. To be truly effective, principles of resilience must be ingrained among the public.

The Public Accounts Committee said it makes no sense to keep allowing houses

21 CarbonBrief (2017) – Mapped: Where £4.4bn is being spent on flood protection in England

22 South Gloucestershire Newsroom (2020) – West of England Enterprise Area flood defence work gathers pace

23 Environment Agency (2021) – Adapt or die, says Environment Agency

24 Karim M. De Bruijn (2003) – Resilience strategies for flood risk management under uncertainties

on floodplains where climate change means the risk of flooding is continually on the rise[25]. The panel of MPs advocated for legislation to change planning policy and halt building in areas vulnerable to flooding after warning of gaps in flooding risk protection and funding concerns. They argued that the government is not intervening to prevent new homes being built on floodplains, and that more needs to be done to combat the exorbitant home insurance costs that result. While government policy is not to build on floodplains unless unavoidable, there could still be a large increase in the number of houses built on flood plains over the next 50 years[26]. Despite this, the fact remains that we live on an island with limited capacity to meet the growing housing demands. Is opting out of building on floodplains the most realistic and practical option?

Going forward

Imminent tests are coming up for flood risk management, specifically around the planning reforms and the call to 'build back better'. The planning reforms could be seen as an opportunity to strengthen flood risk planning policy, not weaken it. However, flood risk adaptation does not have a strong enough presence at the moment. Advisory bodies such as the EA can only provide guidance on what exists; if there isn't a supportive planning policy then flood risk adaptation will remain ephemeral. Currently the country is in a period where the focus is understandably on building and recharging the economy. Yet equal focus must be placed on good adaptation, placemaking and 'building back better'. There is a trade off-here with investment in every aspect - projects, skills, capabilities - required for adaptation and resilience. The planning system - along with how new resources announced at the 2021 spending review are allocated - will ultimately influence the framework for flood resilience and adaptation going forward into the foreseeable future.

25 Construction News (2021) – Flood protection is the 'next major building scandal', MPs warn
26 Public Accounts Committee (2021) – Managing flood risk

Recommendations

- **Planning reforms**
  - Floodplain development should be avoided wherever possible and should be accompanied by appropriate flood defences, constructed alongside new developments, where unavoidable.
  - Local authorities with planning teams should appoint a chief resilience offer who is: -
    - Required to sit on local resilience forums.
    - To become a single point of contact for English local government districts on the issue in county/district areas, or in unitary authorities depending on governance systems.
- **Funding recommendations**
  - Specific funding should be made available to establish a new cross-departmental task force to look at flood-risk development. A new ministerial post, between Defra and DLUHC, should be set up to oversee and provide accountability for this task force.
    - This would include provision for: –
      - engagement with, and capacity training for, local authority planning teams (particularly chief resilience officers);
      - design and funding of graduate schemes for flood resilience professionals in planning, water management and other key disciplines;
      - serving as a single point of contact for central government on the issue.
  - Money must be made available for upgrading maintaining flood defences (overseen by task force)
    - a blended mix of revenue allocation via the Environment Agency to local authorities and to internal drainage boards, to undertake essential work on existing flood defences going forward. This may well involve a period of just a few years where we frontload a significant amount of public money to bring our assets up to a condition that is easier to manage than on a 'little and often' basis.
- **A future risk-based approach to development**
  - The insurance industry should work with the government, local authorities, developers and other key stakeholders to help inform what measures might be needed in the future to help mitigate against climate change and ensure that homes are and remain insurable.

Introduction

There is much riding for the government on the back of its 'Building Back Better' agenda as a ubiquitous mantra. Equally, having set in law the world's most ambitious climate change target to cut emissions more than three quarters of the way by 2035 compared to 1990 levels, departments are being commissioned across Whitehall to achieve the ambitious cross-government Net Zero Strategy, published in October 2021. But building back better risks being merely a vapid slogan if the overriding domestic political issue, the long-term failure to fix a broken housing market, isn't addressed. This means the actual building of beautiful homes for new and existing communities at scale, at affordable levels for first-time buyers, and in parts of the country where demand is greatest.

However, analysis of planning permissions reveals there are currently schemes to build thousands of homes in high-risk flood zones throughout the UK. There is a real risk that in focusing on the twin goals of net zero and housing targets – amid the minefield of contentious planning reforms – the impact of climate change gets overlooked given the political expedience of granting planning permission away from existing settlements.

According to the findings of the Climate Change Committee's Independent Assessment of UK Climate Risk, the UK is falling behind on adapting to climate change – with the need for additional adaptation above what has been already planned, having increased in the last five years. The general pattern of change in the UK is towards warmer and wetter winters, hotter and drier summers, with high variability. These changes will increase our exposure to weather-related hazards, leading to increases in average and extreme temperatures, in winter and summer, changes to rainfall patterns, leading to flooding in some places, at some times, and water scarcity in others.

The issue of flooding, both of existing properties and the building of new properties in high-risk areas, is emblematic of the challenge ahead. Floodplain development sits at the intersection of the housing and climate crises, presenting either an opportunity or obstacle for building back better, depending on governance. Measures to improve both resistance and resilience to flooding have the potential to both stimulate building back better and safeguard future housing supply on an island with a growing population. To move towards this outcome – and avoid a situation of an ever-increasing number of homes, along with their owners and occupants, facing significant annual risk of extremely damaging flooding events – the correct policy steps must be taken. This report surveys the current landscape, in the vital context of climate change and housing demand and

presents some policy prescriptions to ensure that new homes are built in the right places with the appropriate resilience measures.

Localis
Vox Studios, V.311
1-45 Durham St
London, SE11 5JH

0870 448 1530
info@localis.org.uk

localis.org.uk

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