

ICE submission to the Built Environment Committee inquiry into meeting the UK's housing demand

August 2021

Introduction

Established in 1818 and with over 95,000 members worldwide, the Institution of Civil Engineers exists to deliver insights on infrastructure for societal benefit, using the professional engineering knowledge of our global membership.

ICE's 2019 State of the Nation report made a number of recommendations on the interventions required for better integrating the planning and delivery of housing and infrastructure. Our submission to this inquiry draws on this report's findings and our work in response to the government's proposals in its Planning for the Future White Paper.

Executive Summary

The responses within this submission are targeted at improving the planning and delivery of economic infrastructure to enable and support housing. There is much scope within the current system to consider infrastructure more strategically instead of as something that runs as a consequence of development.

This submission focuses specifically on questions 6, 7, 8, 9 and 10 of the Committee's inquiry. It makes the following key points:

- New homes require sufficient economic infrastructure such as energy, transport and digital networks. Better alignment between budgets, funding streams, data analysis and local needs would avoid poorly planned housing developments. Integrated regional housing and infrastructure strategies that are based on evidence, have cross-authority agreement, and go beyond individual political cycles, could mean infrastructure for housing is planned in a far more strategic way, delivering high-quality communities that are aligned with long-term national economic, social and environmental goals.
- The proposed removal of the Duty to Cooperate in the White Paper without a replacement risks undermining the strategic planning of housing and infrastructure across boundaries. In addition, the proposed new Infrastructure Levy does not appear to be suitable for major infrastructure projects. While the current regime could be improved, replacing section 106 and the Community Infrastructure Levy entirely is not appropriate. Careful thought needs to be given to alternative ways of raising funding for infrastructure, including the potential role of the new UK Infrastructure Bank.
- The Development Consent Orders process would almost certainly offer an effective delivery mechanism for large-scale new settlements, but it would need to be integrated more effectively with wider spatial planning. The role of regional infrastructure strategies in effectively identifying this spatial approach is important, as they can recognise the broad parts of the country suitable for new settlements/large scale developments.

- Too many housing developments are being built with insufficient regard to the sustainability of the location. Growth areas should be identified based on a strategic view of sites that will be most sustainable and most viable in terms of quality of life, the capacity of infrastructure, and integrated spatial factors such as availability of jobs. At the same time, the NIC's National Infrastructure Assessment should start to identify options for future-proofing new developments, and the government should ensure these evidence-led findings develop into the Future Homes Standard.

1. Is the construction sector able to deliver the UK's housing demand? What barriers are facing the sector?

A more strategic approach to infrastructure planning

To create new homes and high-quality places for people to live, sufficient economic infrastructure – such as energy, transport, water and wastewater, waste, flood risk management and digital networks – must be in place.

However, there are a number of infrastructure-related barriers to housing supply, including a lack of existing infrastructure to support new housing development, worries that new housing will place unsustainable pressures on existing infrastructure, and the under-resourcing of infrastructure to accommodate new housing provision.

Strategic infrastructure such as transport and utilities is planned primarily at a national level. Uncertainty as to where new housing, population and economic activity will be located undermines the planning of infrastructure services for the future. Better alignment between budgets, funding streams, the analysis of available data and local needs would avoid poorly planned housing developments with inadequate infrastructure provision. By creating integrated regional housing and infrastructure strategies that are based on evidence, have cross-authority agreement, and go beyond individual political cycles, infrastructure for housing could be planned in a far more strategic way than at present.

There are no legal obstacles to housing and infrastructure being delivered in a more integrated way. However, too often there are no shared objectives between the public and private sector, and between different public sector bodies, to achieve this.

It is not enough just to consider the number of new homes and where they are located when it comes to infrastructure requirements.¹ There are crucial economic, social and environmental challenges, including water provision (most acutely in the south of England); ensuring housing and infrastructure is delivered in a way that meets the net-zero emissions target and preserves and protects natural habitats; the decarbonisation of transport and heat; flood resilience; and creating communities where people want to live, work and relax.

Integrated and strategic housing and infrastructure planning and delivery can therefore address some of the core challenges the UK faces.

An integrated approach to infrastructure and housing would also be more likely to secure public support for new housing developments. Polling conducted by ICE for our 2019 State of the Nation report found 60% of British adults would support the building of more housing in their local area if any necessary new infrastructure was built at the same time.² The National Audit Office, in a review of the planning of new homes, also found that concern over a lack of supporting infrastructure is a frequent cause of local communities' opposition to new developments.³

¹ ICE (2019) [State of the Nation 2019: Connecting Infrastructure with Housing](#)

² Ibid

³ NAO (2019) [Planning for New Homes](#)

Utility company and regulator engagement

Careful planning and integration are needed to avoid siloed delivery of utilities infrastructure and housing, which can otherwise delay delivery and cause sites to become unviable. There is benefit in encouraging regulators to build greater flexibility into regulated asset base models so that infrastructure for housing developments can be considered outside of price control periods. This would improve the current situation where there is limited scope or incentive for utility companies to look beyond their asset management periods to forward-fund infrastructure for housing developments.

Delivery of economic infrastructure to enable and support new housing developments is vital, but planning and delivery of utilities infrastructure within the current regulatory framework is siloed and, in many regions, too reactive to housing demand, which can often delay construction. The current regulatory structure across the utilities does not prioritise housing, often restricting investment that may need to be planned ahead of need.

ICE has explored this issue in more detail, recently publishing a paper on improving the regulatory regimes to align with national strategic priorities.⁴ Given the increasingly complex and holistic long-term solutions needed to tackle these challenges – including addressing the nation’s housing shortage – the regulation of economic infrastructure needs to be more flexible and strategic.

The National Infrastructure Commission has also explored this area, and ICE agrees with its recommendations that the regulatory framework for utilities be updated to move beyond the current focus on value for money and competition, and include new duties on environment, quality, resilience and collaboration.⁵ This latter point would go some way to aligning utility investment strategies with local and strategic planning.

2. The Government has published its proposals for reform of the planning system. How can the planning system be shaped to meet housing demand?

Collaboration across boundaries

The White Paper proposes abolishing the Duty to Cooperate, but is silent on a replacement that would enable effective strategic planning mechanisms for infrastructure, homes, flood risk etc. While we recognise concerns from local authorities that the Duty to Cooperate can lead to unfair distribution of housing requirements, its proposed removal is a symptom of a lack of collaboration, rather than a solution to it. There must still be a requirement for cross-authority collaboration to ensure that strategic ‘larger than local’ and cross-boundary growth projects proceed.

ICE has also heard from infrastructure client bodies who are concerned that removing the Duty to Cooperate may inhibit their ability to deliver on their own infrastructure plans. Firstly, as they believe the current system works well in ensuring local authorities effectively collaborate with them to plan and deliver vital infrastructure, and secondly as its removal could lead to inconsistencies if it is not replaced with a similar obligation.

ICE’s preference would be for the Duty to Cooperate to remain or be replaced with a similar fundamental and legal requirement to collaborate, notably for cross-authority infrastructure projects. However, if it is to be removed, consideration should be given to the regional infrastructure strategy approach outlined later in our response, and how this could allow for formal collaboration on strategic cross-boundary issues.

⁴ ICE (2020) [Aligning Long-term Government Policy and the Regulation of Utility Companies](#)

⁵ National Infrastructure Commission (2019) [Strategic Investment and Public Confidence](#)

Infrastructure Levy

There is no doubt that there is merit in a nationally established levy for infrastructure, which could reduce the transaction costs of section 106 agreements while more accurately capturing land value. However, the proposed Infrastructure Levy has a number of shortfalls. Notably, it does not appear appropriate for major infrastructure projects. The levy will capture the increased value of the development, but not necessarily the cost of a major infrastructure project that the uplift does not pay for in full or which the local planning authority (LPA) does not commit to provide. The legal test to grant planning permission at present essentially boils down to 'do the benefits outweigh the adverse impacts?'

If there is no upfront payment available to mitigate those impacts, the Infrastructure Levy will not work for nationally significant infrastructure projects because contributions have to link to offsetting adverse impacts of a project for them to count. Paying into an amorphous fund will not do this.

On more complex developments, including those delivered through Development Consent Orders (DCOs), section 106 is the only tried and tested way in which appropriate mechanisms can be arrived at to make sure that, for instance, necessary infrastructure comes forward at the right time and by way of a sensible process, bespoke to the circumstances of the development, agreed between the parties. There is no proposal in the paper that the role of planning conditions could be expanded instead.

Therefore, either some form of section 106 will have to remain for larger projects delivered via DCOs, or exceptions to the proposed Infrastructure Levy would have to apply to those projects to mitigate development impacts on local communities.

Funding outside of a levy system

Mechanisms such as developer contributions have a significant role in infrastructure delivery, but careful thought needs to be given to alternative ways of raising funding for infrastructure, given the possible limitations of existing mechanisms such as planning obligations. Locally derived mechanisms such as strategic tariffs, used in Milton Keynes, might be one way forward. Developer contributions alone do not have the capacity to provide the necessary funding and investment to deliver all planned infrastructure requirements in a region, only those necessary to enable their development.

The new UK Infrastructure Bank could play an important role. It has £12bn in initial capital and a sustainability mandate to prioritise investment in net-zero and levelling-up aligned infrastructure as well as crowd-in private finance.

Strategic Infrastructure Tariff

The Strategic Infrastructure Tariff (SIT) that allows combined authorities to pool resources to fund specific strategic infrastructure must be made better use of. This will allow groups of charging authorities to use existing powers more effectively and support the delivery of strategic infrastructure, often cross-boundary, through the pooling of their local CIL receipts that can capture uplifts in land value.

We would be keen to see more promotion of SIT from the Government and how it could apply, particularly for 'larger than local' projects and whether it could apply outside of combined authorities alone.

Development Consent Orders

There are some important disconnects between infrastructure delivery and housing delivery. At a very large scale in England and Wales, the Development Consent Order (DCO) process for infrastructure can deliver only 500 homes maximum as part of any Nationally Significant Infrastructure Projects (NSIP) application, which itself depends on functional need and geographic proximity. Often, the homes delivered under the NSIP regime include housing for key employees working on large-scale infrastructure schemes. This means the system is not used to deliver large-scale coordinated infrastructure and housing projects or facilitate strategic mixed-use schemes with business or commercial projects.

The success of the DCO process in delivering integrated consents for infrastructure projects of national importance suggests that there is no proper planning reason why it cannot be extended to deliver large-scale coordinated housing developments. A major benefit of the DCO process is that all powers required to deliver a project are wrapped into a single consent, such as environmental permits, highways orders and compulsory acquisition of land. Research has also shown the DCO process delivers high levels of certainty and transparency, helped in part by well-understood processes, a defined timescale and an extensive consultation period, providing confidence to all parties.⁶

If it is to apply to large scale new settlements, the process must have a strong balance between detail and flexibility in the preparation of DCO applications. There is little dispute that a degree of flexibility can be beneficial all round, but the extent of flexibility will be scheme and context dependent.

One of the main weaknesses of the DCO process regarding housing is that it lacks a spatial element and does not suitably integrate with spatial planning.⁷ This must be central to the scope to use the DCO process more widely for housing, particularly as new settlements on this scale often have a staggered development process over a long time period. The process therefore requires flexibility in delivery and the right mechanisms in place for adaptive governance. This is where the role of development corporations, particularly locally led ones that include local authority partnerships, is vital.

The role of regional infrastructure strategies in effectively identifying this spatial approach is important, as they can recognise the broad parts of the country suitable for new settlements/large scale developments that can be developed under DCO engagement principles with input from Local Authorities and, in some cases, devolved administrations.

The views of consultees and other stakeholders are often underpinned by a perception that the DCO process is complex and opaque.⁸ Locally-led project promoters who are willing to take local views into account can ensure early engagement with the process and lead to ongoing collaboration to address this particular issue. At the same time, empowering and effectively resourcing LPAs to participate fully and effectively through the pre-application, examination, and post-consent stages can further reinforce the certainty that the DCO process provides.

While a fixed threshold of the number of homes required to be able to apply for a DCO might not be suitable, it does provide an incentive and target for those involved in projects to submit an application and not feel like they are wasting their time and resources in submitting one.

If it is to be voluntary to use the regime, and if such projects are not to suffer the fate of the DCO for 'business and commercial' projects where no applications have been made since the regime began in December 2013, there must be capacity-building in the housing sector and collaboration between the infrastructure and housing sectors so that consultants and advisers are less apprehensive of using it. It is worth considering that the infrastructure sector had not used anything similar to the DCO process before it was introduced in the Planning Act 2008, while it is now a well-understood process that has been broadly welcomed.⁹

Sustainability of Developments

The choice of location for housing determines a wide range of subsequent long-term infrastructure requirements. For example, a location that does not permit active travel options such as walking or cycling, or support high-frequency public transport tends to necessitate the allocation of more land for car parking.¹⁰ At present, too many housing developments are being built with insufficient regard to the sustainability of the location.¹¹ In particular, despite growing awareness of sustainability concerns, large greenfield developments continue to be built without quality access to dense, diverse public

⁶ UCL (2016) [Infrastructure Delivery: The DCO Process in Context](#)

⁷ Barton Wilmore (2020) [National Infrastructure and Development Planning Review](#)

⁸ NIPA (2019) [NIPA Insights II: Towards a Flexibility Toolkit](#)

⁹ UCL (2016) [Infrastructure Delivery: The DCO Process in Context](#)

¹⁰ Transport for New Homes (2018) [Project Summary and Recommendations](#)

¹¹ RTPI (2016) [The Location of Development](#)

transport networks, and in locations where there are few practical alternatives to car ownership and use.¹² This tends to create a legacy of low-density, car-dependent housing, which will have long-term consequences for energy use, carbon emissions and air quality.

Where housing is located can also lead to other, less obvious, consequences. The area required for car parking and roads determines the volume of run-off, impacting on the design of the drainage system, the potential to introduce sustainable urban drainage systems (SuDS), and the amount of land left over for publicly accessible open space.

Growth areas should be identified based on a strategic view of sites that will be most sustainable and most viable in terms of quality of life, the capacity of infrastructure, and integrated spatial factors such as availability of jobs. There are strong links here to long-term regional infrastructure strategies that join up housing and infrastructure planning and delivery.

Case Study: Housing and infrastructure planning and delivery in Australia

Our 2019 State of the Nation report includes several international case studies looking at different approaches to housing and infrastructure planning and delivery.¹³

Australia, for example, has a three-tiered system of government defined by a national level ('Commonwealth'), six states and two self-governing territories, as well as local government. The States and Territories have primary responsibility for land-use planning, while responsibility for infrastructure funding and delivery straddles all three levels. The Commonwealth established the National Housing Infrastructure Facility, to help finance infrastructure to support housing development, such as energy, transport, water, sewerage or communications.¹⁴

Contributions are also sought from developers to pay for the shared or public infrastructure requirements associated with housing development. Initially, these were limited to basic services essential to housing development – like roads, drains, sewerage and water, and sometimes open space. However, different approaches to these contributions have been enabled by the States/Territories – ranging from a comprehensive range of items which can be levied for (NSW, Victoria, Queensland) to more limited requirements around car parking and open space (South Australia).¹⁵

The states have also established strong parameters within which local contributions for infrastructure can be collected, seeking to balance the need to secure or recoup funding for the basic services needed to support new housing against the risk that overly onerous requirements will discourage growth. In greenfield areas, a variety of arrangements exist, depending on land ownership. Under the 'precinct acceleration protocol', developers may install infrastructure upfront to service their own projects, being recouped for excess contributions subsequently as new development takes place.

3. What can be done to improve the quality of new homes? How can the design and aesthetics of new homes be improved?

In many cases, homes and their associated infrastructure are being built without due consideration of the future needs of society. There is a need for future-proofed housing that addresses 21st-century issues – in particular the critical changes that are foreseen across technological, environmental and demographic fronts. A national policy direction is required across a number of areas, with the core consideration of how housing and infrastructure can be delivered to reach the 2050 net-zero carbon target while taking full advantage of appropriate technological advancements.

¹² Urban Transport Group (2019) [The Place to Be](#)

¹³ ICE (2019) [State of the Nation 2019: Connecting Infrastructure with Housing](#)

¹⁴ Australian Government [National Housing Infrastructure Facility](#)

¹⁵ Gurrán, N (2011) Australian Urban Land Use Planning: Principles, Systems and Practice

In our 2019 State of Nation report, we recommended that the next National Infrastructure Assessment should identify options for future-proofing new housing developments and strengthening existing communities, ensuring that decisions are strongly linked to the transformation in transport, water, energy and digital infrastructure that technology will enable and climate change will demand.¹⁶ This should feed into developing and iterating the Future Homes Standard in England.

The reference within the White Paper to the use of modern methods of construction (MMC) is welcome. There has been growing support for innovative and sustainable methods of construction, both in the housebuilding and infrastructure sectors. MMC and other aspects such as Design for Manufacture and Assembly (DfMA) are already gaining traction as the future standard by which most construction will take place, given its proven advantages in reducing construction time, improving build quality and minimising associated impacts, including embodied carbon.^{17 18}

4. Is the workforce equipped with the professional, digital and other skills required to meet housing demand, for example in the construction, planning and design sectors? What can be done to overcome skills shortages?

Providing the skills to reach net-zero

The Climate Change Committee has highlighted the need to tackle any skills gaps that would hinder progress towards net-zero.¹⁹ For example, new skills support for designers, builders and installers is urgently needed for low-carbon heating (especially heat pumps), energy and water efficiency, ventilation and thermal comfort, and property-level flood resilience.

In our 2020 State of Nation report we recommended that government develop an Infrastructure Skills Plan to ensure the UK has the capability within the built environment sector to deliver the transition to net-zero.²⁰ Details for the development of the skills plan should be set out as part of the forthcoming Net-Zero strategy.

5. How does the Government interact with Local Authorities to deliver more homes? How can this relationship be improved?

Regional Infrastructure Strategies

Devolution in England has focused on city-regions and on the conceptualisation of new economic geographies such as the Northern Powerhouse and Midlands Engine. As the programme of devolution progresses it is critical that the different levels of decision-making and service delivery are effectively joined-up, both with one another and with strategic developments at the national level.

As discussed above, there are inextricable links between housing, energy and water supply, waste services and the provision of transport. Within this, many different public and private sector organisations are responsible for infrastructure

¹⁶ ICE (2019) [State of the Nation 2019: Connecting Infrastructure with Housing](#)

¹⁷ Bryden Wood (2018) [Platforms: Bridging the Gap Between Construction + Manufacturing](#)

¹⁸ Trinder L (2018) [Design for Manufacture and Assembly: its Benefits and Risks in the UK Water Industry](#), Proceedings of the Institution of Civil Engineers – Management, Procurement and Law, 171(4): 152–163

¹⁹ Climate Change Committee (2020) [Policies for the Sixth Carbon Budget and Net Zero](#)

²⁰ ICE (2020) [State of the Nation 2020: Infrastructure and the 2050 net-zero target](#)

delivery. A strategic approach to their delivery can foster a better understanding of overall system need. Setting in place a framework to inform where ultimate decision-making over the implementation and delivery of a given area of infrastructure policy should be located is imperative. It is as important to establish a system of identifying infrastructure need at multiple political and economic levels, while allowing for effective community engagement.

Lessons need to be learned from previous and current deficiencies in the system, while building on the success seen recently in combined authorities and subnational transport bodies (STBs) that have brought together multiple stakeholders in developing a coherent vision with continuous engagement.

In 2016, ICE argued for the creation of cross-sectoral regional infrastructure forums, bringing together government, regulators, businesses and stakeholder representatives to develop regional infrastructure strategies.²¹ ICE's 2019 State of the Nation report showed that support for those forums is still high, and that housing must also be central to this, ensuring any planned infrastructure supports new housebuilding.²²

We believe that forums for developing regional infrastructure strategies should be convened and managed by subnational infrastructure bodies – these would be created by extending the remit of STBs such as England's Economic Heartland, Transport for the North and Midlands Connect to include other economic infrastructure sectors, as well as housing.

Many existing STBs have built up a wide evidence base on future requirements for transport, energy, digital infrastructure and more. Investment has already been made to further develop this evidence base, which can act as a platform for local authorities to determine their own infrastructure requirements.

It is important to emphasise that adequate infrastructure for housing is not simply a matter of transport connections. It is well known that transport infrastructure supports economic expansion and provision of new housing, and hence targeted investment to increase capacity should remain a priority.²³ But with the 2050 net-zero carbon emissions target and a need to adapt to the impacts of climate change, other infrastructure – such as heat and power networks, digital communications, electric vehicle charging and flood resilience – need to be considered, as well as a focus on sustainable travel options.

Strategies at a regional level must consider all this in their development, focusing on how infrastructure and housing can be catalysts for reducing environmental impacts, utilising innovation and new technology to its greatest effect. Subnational authorities already have influence over a range of sectors that need to be decarbonised to achieve net-zero. However, as the Climate Committee has highlighted, to be most effective they will require additional powers and funding from central government.²⁴ This will need to be addressed as part of the Government's overarching net-zero strategy, along with a framework that sets out fully the roles and responsibilities of subnational authorities for delivering net-zero.

Greater alignment of budgets, funding streams and programmes for transport infrastructure, housing, health, education and other local infrastructure, particularly at local authority, combined authority and county levels, would contribute to greater productivity and more efficient use of resources. We recognise that each regional infrastructure strategy will be different and, depending on geography, have a multitude of stakeholders to engage. This would include, but not be limited to, local authorities, combined authorities, regulators, utility companies, local businesses, Local Enterprise Partnerships, community groups, national and local delivery bodies and central government departments. These strategies must go beyond individual political cycles, both at a national and local level. Appropriate governance mechanisms must be created around them, allowing flexibility for principles and needs to evolve over time and in line with policy developments.

The regional infrastructure strategy approach also means infrastructure providers can manoeuvre away from a system where they build or upgrade assets for where growth is going to happen, to one where they can come together with a multitude of stakeholders to influence the location of growth ahead of Local Plan stage.

²¹ ICE (2016) [State of the Nation 2016: Devolution](#)

²² ICE (2019) [State of the Nation 2019: Connecting infrastructure with housing](#)

²³ IPA (2016) [National Infrastructure Delivery Plan 2016–21](#)

²⁴ Climate Change Committee (2020) [Local Authorities and the Sixth Carbon Budget](#)

A critical aspect of a higher-level plan is to ensure it sets the vision for the region to which each functional area can respond without outlining painstaking levels of detail. Local Authorities can then use the high-level vision to prepare corresponding and aligned Local Plans reflecting the context of each council area. This approach also avoids replicating that taken under the former Regional Development Agencies, where plan-making was a lengthy and often contentious process. It is also important that any future regional infrastructure strategies are compatible with one another across service-level boundaries such as energy or water networks.

