



Exploring the impact of long-term funding on the residential construction sector

A report prepared for the National Housing Federation

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Contents

Executive summary.....	1
Overview	3
Barriers in the residential construction sector.....	4
Potential impacts of long-term funding for construction and manufacturing.....	5
Potential impacts for the wider economy and society.....	8

Executive summary

1. Multiple barriers in the residential construction sector not only constrain the delivery of new homes, but also impede innovation, investment into skills, new technologies and equipment - and create conditions for consistently low levels of productivity (CIOB 2016; Farmer 2016; CITB 2018). Short-term funding pledges and policy instability drive uncertainty; firms are unwilling to invest without the reassurance of a long-term pipeline of work.
2. Within the parameters of this research¹, we have created a logic for structuring key themes around the ways in which certainty around funding can potentially drive growth and capacity building in the construction sector, and wider socio-economic benefits. It is not possible to demonstrate a *direct* link between long-term funding and proven benefits for the construction sector. However, we can point to consequences typically resulting from short-term funding, and the potential impacts that could ensue from a long-term stance.
3. Short-term funding pledges and policy uncertainty contribute to on-going skills gaps and skills shortages in the construction sector. This can have far-reaching impacts on quality, including high costs of remedying defects, monies held in retentions and delays to projects. Furthermore, poor quality construction can severely compromise the safety of homes and their residents, as the Grenfell fire tragically illustrated.
4. A low-level skills base also leaves many firms, particularly SMEs, unable to compete for work, restricting business growth in the construction and manufacturing sectors. Without a long-term pipeline of work, firms are reluctant to invest in new technologies, impeding modernisation and keeping levels of productivity consistently low.
5. Long-term funding can create conditions conducive to building and maintaining a long-term pipeline of work. This in turn gives rise to certainty and confidence, which has the potential to enable investment into upskilling, recruitment of apprentices and greater uptake of Modern Methods of Construction (MMC) and new technologies (although other incentives may be required as well as funding).

¹ Predominantly desk-based and within a timescale of 8 weeks

6. **Critical outcomes for the construction sector and wider economy, arising from long-term investment are likely to include:**

- ✓ Capacity and capability building, which can underpin greater efficiency and quality, potentially saving firms money – better quality management has been estimated to save **up to £12bn per annum** (CQI 2016)
- ✓ Reduction of the incidence and costs of defects in home-building; **estimated defect costs can outweigh industry profits** (CIOB 2018).
- ✓ Ability to build homes more quickly, efficiently and safely using MMC, which has the potential to boost productivity by **up to 70%** (Science & Technology Select Committee 2018) and reduce reliance on skilled workers **by nearly 20%** (CITB 2019)
- ✓ Positive impact on productivity in the construction sector, which is currently typically around 20% lower than the wider economy, and could be increased **5-10 times** through higher R&D spend, adoption of digitisation and investment into new technologies (McKinsey & Co 2017)
- ✓ Increase in GVA – calculations estimate every £1 directly generated from investment in new affordable housing **generates an additional £1.42 of GVA** (NHF 2017)
- ✓ Boost to the economy – every £1 invested in construction of housing **generates £2.84 in total economic activity** (Capital Economics and L.E.K. Consulting 2009)

7. It must be stated, however, that the external landscape is rapidly evolving since the publication of the Spring Budget 2020. This promised enhanced spending for housing, including a further £9.5bn for the Affordable Homes Programme, £1.1bn towards the Housing Infrastructure Fund and £400m for regional building on brownfield sites.²
8. However, at the time of writing, the global pandemic of Covid-19 poses an immediate and serious threat for the construction sector³ – with workers unable to be on site, likelihood of site closures (many major contractors have already closed) and the knock-on impact for SMEs. It is currently unclear whether committed funding for affordable housing may be affected.
9. Notwithstanding, it is vital that government takes every opportunity to maintain and increase levels of funding for affordable housing to create the stability and certainty needed for confidence in upskilling investment – which can create the potential for positive impacts on the wider residential construction sector.
10. Long-term funding should be directed to the avenues where it can be used to best effect and yield the strongest impacts.⁴ Giving stimulus and onus to Registered Providers, local authorities and Housing Associations to review and update their strategic operating models, could be a catalyst to their implementing MMC and innovation-led affordable housing programmes at a national level.

2 <https://www.gov.uk/government/publications/budget-2020-documents/budget-2020>

3 <https://builduk.org/coronavirus/>

4 Activity of Housing Associations when investing into construction is shown to have a large multiplier effect on the economy

Overview

Funding constraints are a critical barrier to investment and R&D in the construction sector.

1. Multiple research studies in recent years emphasising the urgent need to tackle under supply of housing agree that part of the solution must be to ensure a substantial proportion of these are *genuinely affordable*.⁵
 2. Research commissioned by the National Housing Federation and Crisis in 2018 found a backlog of nearly 4 million homes in England. This highlights the need for 340,000 new homes to be built per annum until 2031 – of which 145,000 (43%) should be affordable.⁶
 3. There has long been a case for a sustained commitment to increased provision of affordable housing, but various constraints on local authorities and Housing Associations around borrowing caps and eligibility for grant funding, has impeded progress.
 4. Longevity and certainty of public funding (i.e. guaranteed budgets, fixed terms and conditions) are crucial in providing reassurance to builders of social housing that they can develop a long-term pipeline of work, underpinned by necessary investment in capital equipment, resources, skills, training, technologies etc. This level of certainty does not typically exist, because of short-term funding pledges, policy U-turns and the cyclical nature of the housing market.
- Sustained government funding for affordable housing over the long-term could generate positive socio-economic impacts
5. It is the contention of the National Housing Federation and other industry stakeholders that timescales for affordable housing funding must be guaranteed for a longer period – ten years rather than the typical four to five-year duration. This could yield direct benefits for the construction and manufacturing sectors, and indirect benefits for the wider economy.
 6. This paper sets out:
 - existing barriers to productivity growth and innovation in the construction sector;
 - the role of funding as both barrier and enabler; and
 - likely impacts and benefits that could be expected to result from guaranteed funding over a longer-term period.

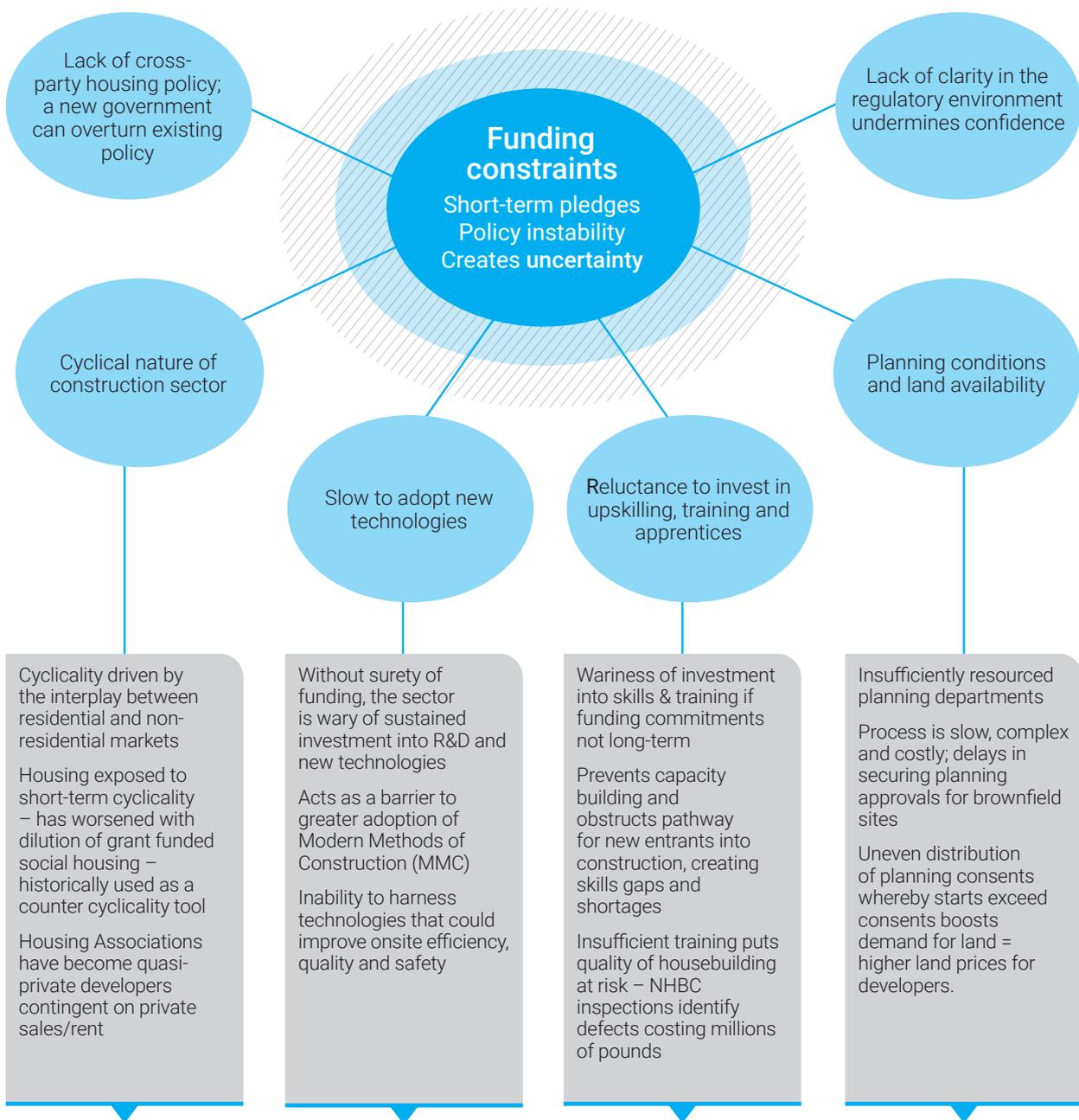
⁵ UK Housing Review Briefing Paper (2017); *Fixing our broken housing market*; IPPR (2017), *What more can be done to build the homes we need?*

⁶ Bramley, G. (2018), *Housing supply requirements across Great Britain: for low-income households and homeless people*

Barriers in the residential construction sector

The diagram below[†] summarises the main barriers that constrain the residential construction sector. Lack of stable funding flowing steadily into the system is clearly the most critical element in creating a climate of uncertainty. Volatility in the economy underpins cyclical nature in the housing market, leaving house-builders vulnerable to impacts of peaks and troughs. Endemic problems in residential construction stem largely from dependency on market cycles, creating a disincentive to invest into skills, new technologies, equipment and materials.

Consequently, the sector is beset with low productivity and skills shortages. Technical innovation has stagnated; modernisation has not kept pace with other industry sectors.



Low productivity:

Construction sector productivity has remained flat for decades, lagging behind other sectors. Persisting with the traditional design-bid-build (siloe, fragmented) rather than widespread adoption of MMC is a key driver of low productivity.

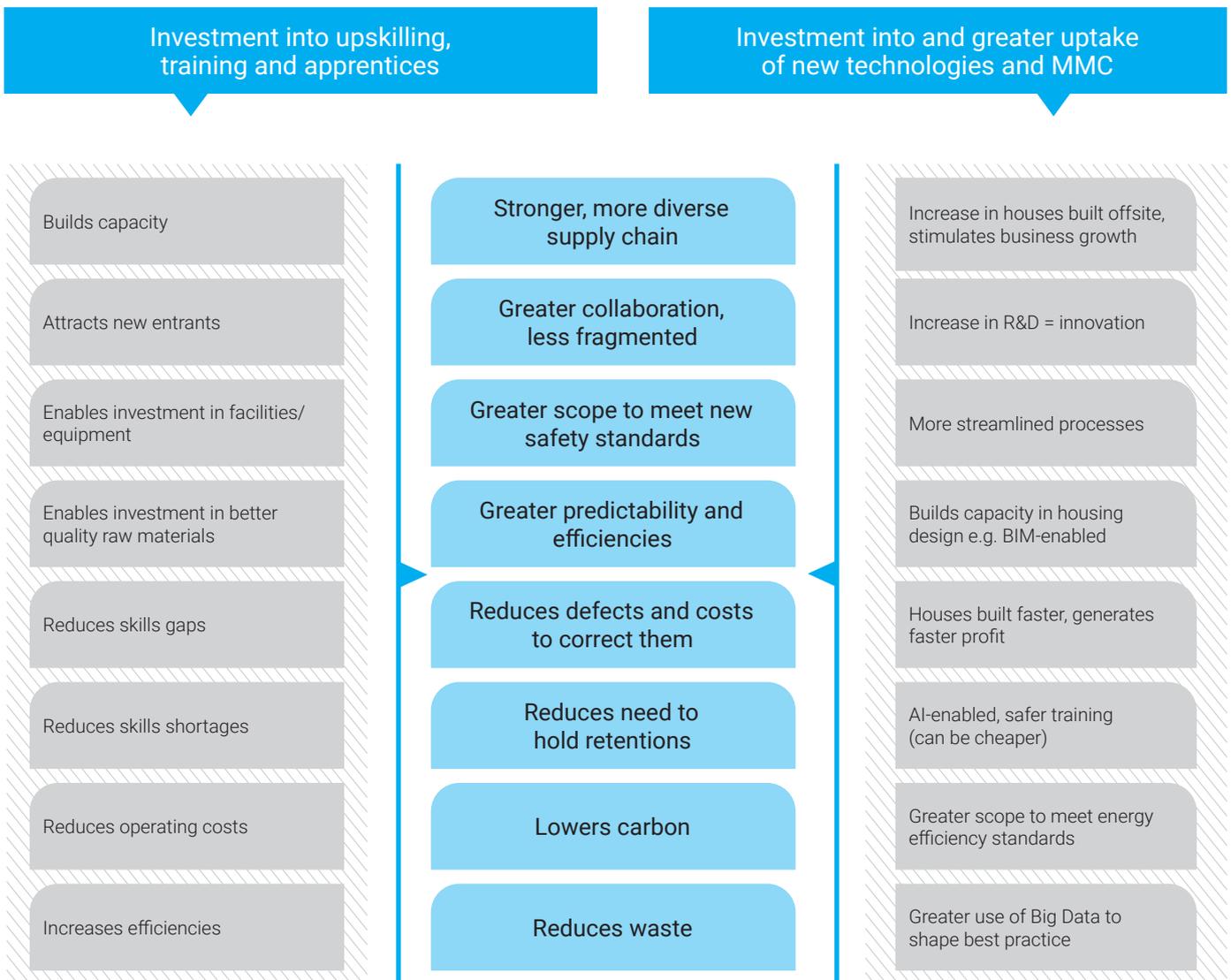
Potential impacts of long-term funding for construction and manufacturing

There is clearly a substantial opportunity to unlock substantial benefits for the construction sector, if funding is assured for a long-term period. Certainty and confidence can only be underpinned by continuity of government policy beyond the typical five-year cycle - but it is not just about security of funding, it is also vital to increase absolute funding levels.

Potential key impacts and benefits are summarised below and described in more detail, with likely broader social and economic benefits, in the following pages.

- Government funding for affordable housing is secured for a minimum of 10 years
 - **Absolute** levels of grant funding are increased
 - Stability and clarity in regulatory environment for Housing Associations & Local Authorities
- 

Creates the **potential** for wide-reaching direct and indirect impacts for the residential construction sector:



A skilled and competent workforce is fundamental to reduce skills gaps and shortages, leading to a stronger, more diverse supply chain operating with greater productivity to high standards of quality

1. Lack of *stable* sources of funding create reluctance to invest in upskilling and recruitment of apprentices, if there is no long-term pipeline of work to create certainty around the need for skilled workers. This culture strongly underpins the incidence of skills gaps and skills shortages.
2. In 2018, CITB reported over 40% of surveyed employers turned work down as a result of skills gaps. Around 57% lost business or were unable to bid for work due to hard-to-fill vacancies. Increased and sustained recruitment of apprentices is perceived beneficial for the sector; a fifth of employers surveyed in 2018 reported that having apprentices improved productivity.⁷
3. Upskilling the workforce first and foremost builds not only capacity, but also capability in the whole of the residential construction sector. Limited and/or precarious sources of funding has fostered a culture of using cheaper, lower skilled workers on site.⁸ While housing remains exposed to short-term cyclicity, there remains the risk of being “unhealthily reliant on low tech skills”.⁹ The use of lower quality materials is another cost saving device.¹⁰
4. Having the funding to invest in appropriately skilled and capable workers, as well as better raw materials, will have a direct impact on the quality of completed homes.

Substantial numbers of buyers have reported dissatisfaction with quality standards in new build homes¹¹. The Grenfell tragedy sparked an urgent need to review quality management in residential construction. High incidence of defects and the costs of remedying these¹² also underpin the culture of holding retentions.

5. In turn, better quality of training, site management and skills, can improve safety – not just for workers on site, but for the consumer who will ultimately live in the home. Of the 147 workplace fatalities in Great Britain in 2019, 44% were in construction.¹³ Post-Grenfell, revisions to the regulatory framework require builders to meet improved fire standards and must be underpinned by better skills and quality assurance.
6. It should be emphasised that these changes are heavily reliant not just on funding as a critical enabler, but on cultural and behaviour change in the residential construction sector, which is typically characterised as operating in a reactive rather than a proactive way.¹⁴

Greater uptake of offsite manufacture can stimulate business growth, productivity and innovation, through reduced build time, less waste, better collaboration and exploitation of technologies

7. Increased use of MMC could reduce the number of skilled workers needed to meet house-building targets. Research published in 2019 estimated an additional 195,000 workers would be needed by 2025 to meet an annual target of 300,000 homes. However, increased use of MMC could reduce this to 158,000 additional workers.¹⁵
8. Offsite manufacture of homes has the potential to reduce waste, reduce health & safety risks (due to less time on site), and reduce whole life costs – benefitting businesses.¹⁶ In 2018 Government research suggested offsite manufacture could increase productivity by up to 70%.¹⁷

“A properly funded affordable housing sector can help the offsite manufacturing industry grow by providing a steady pipeline of work that can support demand even during a downturn when private sector activity is reduced.”¹⁸

Dave Sheridan, ilke Homes

7 CITB (2018), *Skills and training in the construction industry*
 8 House of Commons Briefing Paper 07671 (2020), *Tackling the under-supply of housing in England*; Primary evidence from a new build site manager – major UK developer
 9 Farmer, M. (2016), *The Farmer Review of the UK Construction Labour Model: Modernise or Die*
 10 House of Commons Briefing Paper 07671 (2020), *Tackling the under-supply of housing in England*
 11 House of Commons Briefing Paper 07665 (2019), *New-build housing: construction defects – issues and solutions*
 12 CIOB research in 2018 found defects arising from poor quality cost more than profits generated in the sector. In 2016, the Chartered Quality Institute (CQI) Construction Special Interest Group estimated better quality management could save up to £12bn per annum.

13 HSE (2019), *Workplace fatal injuries in Great Britain, 2019*
 14 Primary evidence obtained from major contractor – pointing to a strongly embedded culture of low-quality building standards and reactive remedying of defects when compelled to do so, rather than proactively seeking to continuously improve quality
 15 CITB (2019), *The impact of modern methods of construction on skills requirements for housing*
 16 CITB (2017), *Faster, smarter, more efficient: building skills for offsite construction*
 17 Science and Technology Select Committee Offsite manufacture for construction: building for change, 2nd report of session 2017-2019 (published July 2018)
 18 https://www.designingbuildings.co.uk/wiki/Funding_options_for_building_developments

9. Less dependent on factors that historically slow down construction projects such as the weather, offsite manufacture can give businesses the security of a longer-term pipeline of work.

Confidence in the funding regime is pivotal to investment into R&D and new technologies, which can unleash a host of wider benefits including better training, improved safety and cost savings as a result of efficiencies in ways of working

10. New technologies have the potential to disrupt the residential construction sector and bring a range of benefits for businesses, namely^{19 20 21 22}:

- Use of software solutions which can streamline processes, facilitate better communication and collaboration
- Use of drones for dangerous activities such as inspections in hard to reach areas
- Improve productivity e.g. via AI devices to track worker time on essential and non-essential tasks
- Use of Augmented and Virtual Reality-enabled training, giving trainees exposure to risks in a safe and controlled environment
- Harness Big Data to reduce risk, improve safety, improve productivity, and predict future outcomes to save cost and time in subsequent projects
- Use of robotics and automation, saving businesses time and money

Certainty of long-term funding can create conditions to boost productivity

11. The construction sector is synonymous with poor levels of productivity²³, on average around 20% lower than the wider economy for over 20 years. Research in 2019 found that productivity in construction has only increased by 14.8% in almost three decades (measured by output per job).²⁴

12. Multiple factors directly influence productivity, including^{25 26}:
- Cyclical and volatility, creating uncertainty
 - Size of the labour force
 - Shortages of skilled labour
 - Funding constraints
 - Working hours
 - Siloed rather than collaborative ways of working
13. Unlocking funding for the long-term establishes conditions that can enable greater investment into R&D/innovative projects. Creativity and innovation are recognised as key drivers of productivity improvement.²⁷
14. Research published in 2017 suggested productivity could be improved five to ten times if the sector embraced greater digitisation and harnessed new technologies.²⁸
15. Certainty and confidence around funding can also act as a catalyst for greater adoption of offsite manufacture of housing; strong correlations have been identified between offsite construction and productivity growth.²⁹

“There is a big opportunity to increase confidence through the commitment of long-term funding, not just to enable investment into R&D and training – but also to enable new ways of delivery: different approaches to managing stock and managing tenants.”

Mark Farmer

16. Over the years, absolute levels of grant funding have been heavily diluted, leaving Housing Associations contingent on private sale and private rentals. Business models must also evolve alongside continuity of funding, in order to realise sustainable change.

19 Farmer, M. (2016), *The Farmer Review of the UK Construction Labour Model: Modernise or Die*

20 CITB (2019) *Evolution or revolution?*

21 10 futuristic technologies that are changing construction (2019)

22 CITB (2018), *Unlocking construction's digital future: A skills plan for industry*

23 Productivity can be defined in different ways. The Chartered Institute of Building (CIOB) measures productivity by the gross added value on site (output) vs the hours worked on site (input). This does not include the supply chain, planning, design or financing of the project; the assembling of the building rather than the building itself, is recognised as the value added by construction.

CIOB (2016), *Productivity in construction: creating a framework for the industry to thrive*

It is worth noting that where there is a transition towards offsite construction – with more emphasis on design and planning – gains in productivity as a result may not be captured in official data that measures productivity.

CIOB (2020), *The real face of construction 2020: socio-economic analysis of the true value of the built environment*

24 Infrastructure Intelligence (2019), <http://www.infrastructure-intelligence.com/article/oct-2019/warning-signs-productivity-continues-be-construction%E2%80%99s-achilles-heel>

25 CIOB (2016), *Productivity in construction: creating a framework for the industry to thrive*

26 The Construction Skills Network Programme 2015-2017, *Productivity Review* found that the average productivity of two gangs on the same site doing identical jobs, under identical conditions at the same time, can differ by as much as 75% - highlighting the influence of high-quality skills and training.

27 Department for Business, Innovation & Skills (2014), *Innovation report 2014*

28 McKinsey & Co (2017), *Reinventing construction: a route to higher productivity*

29 Farmer, M. (2016), *The Farmer Review of the UK Construction Labour Model: Modernise or Die*; The Construction Skills Network Programme 2015-2017, *Productivity Review*

Potential impacts for the wider economy and society

The construction sector makes a substantial impact on our society and economy. Provision of longer-term funding in the residential construction and manufacturing sectors has the potential to create wider, positive knock-on socio-economic benefits.³⁰ This partly stems from the construction multiplier being large in comparison to other sectors.

1. Recent research states construction is the largest provider of the fixed assets that underpin the UK economy.³¹ Wage income and corporate profits for the sector from building new homes has a direct and immediate impact on the economy.³²

“Construction does not just create physical assets. It fundamentally alters the environment that people live in. In creating the built environment and altering the natural environment, construction has a critical role to play in sustainability.”

Chartered Institute of Building

Direct and indirect economic contributions can be substantial

2. 2017 statistics collated by the Chartered Institute of Building³³ (CIOB) point to a significant economic contribution, notably:
 - £7bn PAYE
 - £6.6bn VAT
 - £4.4bn Corporation Tax
 - £6bn planning obligations and community infrastructure levy
 - £6bn National Insurance

3. Detailed analysis has found that every £1 invested in construction of housing generates £2.84 in total economic activity.³⁴
4. Other benefits stem from:
 - Increase of net capital expenditure
 - Increase in GVA³⁵
 - Knock on effects of increased investment in local infrastructure
 - Job creation
 - Increased labour mobility³⁶
5. The activity of Housing Associations is shown to have a larger multiplier effect on the economy where there is spend on construction, major repairs, refurbishment and purchase of housing properties due to the knock on effect for the supply chain and impact of spend on local communities.³⁷
6. Research undertaken in 2015 estimated value creation as a result of building an additional 100,000 homes per year would be £19.5 billion and 430,000 extra jobs.³⁸

Other benefits also result, for example through reducing the costs for critical service providers such as the NHS, reducing homelessness and lowering household debt

7. Evidence points to knock on effects for the wider community arising from the provision of a sustainable supply of affordable homes, including:
 - Lower crime rates
 - Better life satisfaction
 - Better educational attainment
 - Better mental and physical health and wellbeing
 - Increased social mobility
 - Lower household debt

30 Key points are set out here; see National Housing Federation (2019). *Great places: literature review* for a more detailed summary

31 CIOB (2020), *The real face of construction 2020: socio-economic analysis of the true value of the built environment*

32 Shelter (2019), *Increasing investment in social housing: analysis of public sector expenditure on housing in England and social housebuilding scenarios*

33 CIOB (2020), *The real face of construction 2020: socio-economic analysis of the true value of the built environment*. These figures do not include other indirect economic contributions, such as the value construction adds to land

34 Capital Economics and L.E.K. Consulting (2009), *Construction in the UK economy: the benefits of investment*

35 The National Housing Federation found that for every £1 of GVA directly generated as a result of housing associations' day-to-day activities, an additional £1.52 of GVA was generated for the wider economy (National Housing Federation, 2016). The National Housing Federation's local economic impact calculator has calculated that every £1 of GVA directly generated from investment in new affordable housing generates an additional £1.42 of GVA indirectly to the English economy (National Housing Federation, 2017)

36 Home Builders Federation and Nathaniel Lichfield & Partners (2015), *The economic footprint of UK house building*

37 National Housing Federation (2019). *Great places: literature review*

38 Home Builders Federation and Nathaniel Lichfield & Partners (2015), *The economic footprint of UK house building* – NB these figures reflected the economic climate at the time research was undertaken

8. This in turn reduces pressure on the NHS; research in 2015 suggested a £10bn investment in improving existing housing stock (not just building new homes) could save the NHS £1.4bn a year, and suggested the wider cost of poor quality housing was in the region of £18.6bn per annum.³⁹
9. Multiple studies also point to the cost of resolving homelessness; temporary accommodation costs accounted for over £1bn to local authorities between 2018/19.⁴⁰

“Guaranteed investment in affordable house building would assist in decreasing the year on year spend of the government in providing temporary accommodation to deal with homelessness.”

Shelter

† Drawn from multiple sources including:

Homes England, *Strategic Plan 2018/19 – 2022/2*

Ministry of Housing, Communities & Local Government – affordable housing supply statistics

Office for National Statistics, *Productivity handbook*

House of Commons Briefing Paper 07671 (2020), *Tackling the under-supply of housing in England*

CIH (2019), *Boosting affordable housing supply in England: Could revenue support work alongside capital grant?*

CIH (2019), *UK Housing Review 2019*

Shelter (2019), *Quantifying the need for social housing*

Gibb, K (2018), *Funding new social and affordable housing: ideas, evidence and options*

New Economics Foundation (2018), *What lies beneath: how to fix the broken land system at the heart of our housing crisis*

McKinsey & Co (2017), *Reinventing construction: a route to higher productivity*

Department for Communities & Local Government (2017), *Fixing our broken housing market*

Gibb, K. and Hayton, J. (2017), *Overcoming Obstacles to the Funding and Delivery of Affordable Housing Supply in European States*

Farmer, M. (2016), *The Farmer Review of the UK Construction Labour Model: Modernise or Die*

CIOB (2016), *Productivity in construction: creating a framework for the industry to thrive*

Bramley, G. (2016). Housing need outcomes in England through changing times: demographic, market and policy drivers of change. *Housing Studies*, 31(3), 243-268.

Capital Economics (2014) *Increasing Investment in Affordable Housing*

PWC (no date) *Funding affordable housing - new options for housing associations*

39 BRE (2015), *The cost of poor housing to the NHS*

40 Shelter (2019), *Briefing: building more affordable homes*