

## CIOB response to call for Expert Evidence - Climate Action Plan 2021

### Introduction to the CIOB

The Chartered Institute of Building is the world's largest and most influential professional body for construction management and leadership across the built environment. We have a Royal Charter to promote the science and practice of building and construction for the benefit of society, and we've been doing that since 1834. Our members work worldwide, and across the island of Ireland in the development, conservation and improvement of the built environment.

We accredit university degrees, educational courses and training in universities and colleges in Ireland. Our professional and vocational qualifications are a mark of the highest levels of competence and professionalism, providing assurance to clients and other professionals procuring built assets.

The CIOB also has a dedicated policy and research function, whose expertise we have drawn on in the preparation of this response.

## CIOB Response

### Enterprise

#### **How can we encourage the diversification away from cement in construction?**

Concrete is one of the most widely used and environmentally damaging materials in the construction industry. Concrete has a high carbon footprint due to its cement content. Production uses almost 10% of the world's industrial water use, and 75% of this consumption is in drought and water-stressed regions. The mining of the large volumes of sand used in concrete production has destroyed beaches and watercourses, is depleting global supplies, and supports organised violent crime. Air pollution is increased in areas where concrete is produced, and where associated mining occurs.

Its impacts can be reduced by eliminating the use of concrete where it can be replaced with other products with lesser environmental impacts and by encouraging the design of efficient, lightweight structures. The global warming potential of concrete can also be reduced, for example by specifying a lower carbon mix

As a first step, significant construction projects could be required to provide information on the total volume of concrete proposed to be used in a development. Environmental Product Declarations (EPD) data for this concrete could be submitted for all new and refurbishment projects. Mandatory Carbon Emissions Reporting for major developments has recently been introduced by the London Mayor's office. A similar move could incentivise the industry to move away from cement to more sustainable materials in Ireland.

With a functioning reporting regime in place, policy could introduce limits on the volume and environmental performance of concrete, embedded in the building regulations. This would reduce the amount of concrete used in the construction industry, and then limit the embodied carbon emissions of the concrete that must be used.

However, we must ensure that there is a just diversification away from cement. Given the tight margin that many, particularly SME construction firms operate with, policy changes must mitigate the financial impact on these firms.

## Built Environment

### **Can Ireland exceed the target of retrofitting 500,000 homes by 2030? If so, how?**

The scale of the challenge.

Ireland's residential sector is responsible for 24% of energy related CO2 emissions. According to the EPA's State of the Environment report in 2019, 50 per cent of Ireland's housing stock had a Building Energy Rating (BER) of D or lower in 2014.

The rate of progress.

Last year around 2,000 homes were upgraded via government schemes to a BER B2 level. The Climate Action Plan envisages this number increasing to 3,500 in

2020 (3,200 were upgraded in 2020) , scaling up to over 50,000 annually from 2024 onwards.

This represents a c.15x increase in the number of homes being upgraded. Achieving this rate of increase requires a a step change in the scale and approach to retrofitting homes in Ireland from Government. It also requires a cultural shift in consumer attitudes towards retrofit, and a significant increase in the capacity of the construction sector. In short, the entire retrofitting system needs to be overhauled.

This overhaul is eminently achievable, but a whole-systems approach is required. The following areas need to be addressed:

- The cyclical nature of the construction industry. See Q2
- The adaptability of buildings. See Q4
- The construction sector facing capacity issues. See Q 2
- Incentive structure to households. See Q9

While finance is crucial to all of the above, we cannot simply grant money to retrofit in the budget and expect to see results. For this investment to have a significant impact we need to ensure that the system - the construction sector and consumer sentiment in particular - is equipped to produce optimal outcomes from the investments made.

The rewards.

According to the International Energy Research Council a retrofitting programme in Ireland would create 32,000 new jobs, generate €600 million in economic savings every year, and €4.5 billion in extra disposable income for citizens to spend. This in turn would increase the possibility of a better quality of life, provide a local economy boost and increase property tax revenues by up to €39 million annually.

## **How should Ireland's training and education system scale to meet the skills requirements to achieve this target?**

From a policy perspective, it is important not to treat the various policy areas that impact retrofit in isolation. In terms of meeting the skills requirements to achieve the retrofit target, we need to make the construction sector an attractive proposition career-wise, otherwise changes to the training and education system will not be effective.

Making construction an appealing career: addressing cyclicalities through long term, public infrastructure & housing investment

['Job quality in the Irish construction sector'](#) a 2021 report by CIOB and TASC finds that the Irish construction sector has undergone much turbulence in the past two to three decades, during which the sector has been characterised by a perpetual cycle of boom and bust.

The economic cyclicalities of the construction sector is one of the root causes of Ireland's struggling to build up its construction labour pool and ramp up retrofit activity. The pool of labour and the ability to attract new talent; job stability; and working conditions all suffer as a direct result of the construction sector's perpetual boom-bust cycle, with the net result that the sector has not had capacity to retrofit at the scale required. Cyclicalities also negatively impacts the sector's ability to meet housing and infrastructure need during an economic downturn, as well as the sector's ability to respond and meet demand during an upturn.

As the biggest client of the construction sector, the Government can play a direct role in arresting this cyclicalities by providing a clear, long term pipeline of construction projects. In order to directly address cyclicalities and concurrently meet the scale of the retrofit challenge, Government needs to resuscitate the missing agent of public housing delivery that has ebbed away since the 1980s.

As part of its housing policy planning, the Government should assemble and publish a stand-alone, comprehensive pipeline of projects in the local-authority construction sector, targeting direct build and retrofit specifically. This should be along the same lines as the National Development Plan. However, rather than relying on developer contributions, leasing or acquisition of housing from the open market, the strategy should create local development corporations with land management resources and specific targets for directly constructed social and affordable housing.

This commitment would give a clear signal to the market that Ireland's construction sector will break out of the boom-bust cycle that has plagued it for 30 years. Construction would then be seen as a reliable sector to work in, and its reputation as a viable career option would be enhanced.

This would dovetail with the aforementioned report's finding that there are high levels of job satisfaction and autonomy across the construction sector. This reflects the visible contribution construction makes to society. These are important messages that need to be shared if we are to continue to attract the best talent into the sector.

### [A long term retrofit strategy](#)

Previously, a lack of confidence in long-term policy direction has impeded the sector's ability to acquire new entrants and train them in the low carbon skills of the future. Instability and piecemeal

policy have weakened the resilience of the construction supply chain and reinforced a lowest-cost procurement model which has eroded quality and hindered innovation.

It is vital that the immediate economic impacts of Covid-19 do not lead to future skills gaps in the competencies and technologies that will be vital to reaching retrofit targets. The industry has long suffered from challenges posed by skills shortages and gaps and the cyclical boom-bust nature of construction means workloads and staffing requirements are heavily dictated by the general condition of the economy. This is exacerbated by an ageing workforce and difficulty attracting new entrants to the sector.

To address these issues, we are also calling for the Government to seek a longer-term commitment to decarbonising our homes, by introducing a national retrofit strategy as a key infrastructure priority and core element of the Climate Action Plan. This will provide a clear direction of travel for the construction industry as well as the certainty that businesses need to create stable, green jobs beyond 2021, and the confidence consumers need to invest in residential retrofit.

#### Changes to training and education

Improving the quality of – and access to – education and training is crucial to ensuring a sufficient pipeline of qualified, professional workers who are passionate about careers in the built environment. However, the poor image of construction has continued to have a detrimental impact on businesses' ability to recruit and retain people with the right skills.

We endorse the UK Construction Industry Training Board's GoConstruct portal, which informs children and parents about the array of careers and opportunities in construction and the wider built environment, from trade-based opportunities through to professional careers in construction management, architecture and surveying.

Additionally, the CIOB's Craft Your Future initiative is a construction game aimed at 12-14-year olds that takes place in Minecraft, and presents students with a variety of problems focussing on the challenges faced by city-based communities. It is designed to help young learners explore the methods and skills required to become a construction manager, including those central to the new technologies that will define the future construction industry.

Ultimately, a sustainable recovery and long-term pipeline of talent must be supported by a shift in the content of built environment courses to reflect the skills needs of the future. Employers have often cited outdated curricula and skills as a barrier to the employment of Further Education (FE) students, and a challenge at FE level is ensuring that the best people are teaching the right skills. Incentivising experts to enter teaching and ensuring that they are not forced to leave the industry to take up less lucrative teaching roles will be vital to skilling and upskilling a workforce that is equipped with modern, low carbon skills.

#### Apprenticeships

The CIOB has worked with the UK Government to develop apprenticeships and vocational routes into the construction and wider built environment sector. This includes shaping apprenticeship standards to ensure they are high quality and importantly meet the needs of those undertaking apprenticeships as well as those employing apprentices. There is also a global aspect to this, and we have a variety of

routes to membership, understanding and valuing qualifications and experience from different jurisdictions.

We believe it is vital for the future of construction to have an apprenticeship system that works for the industry in order to address the skills gap. With the current labour landscape, unemployment levels continue to decline with fewer available skilled workers on the market. More must be done to stimulate recruitment for the construction industry and mechanisms to incentivise recruitment by small and medium enterprises who hire apprentices could be offered.

Importantly, the quantity starting on built environment apprenticeships should not be the indicator of success. Statistics showcase the low levels of competition and attainment on these apprenticeships, highlighting a plethora of potential issues. These might be as a result of low levels of pay, training or might centre around the more challenging aspects of construction such as irregular hours and locational variations that are often inherent in construction. Ensuring that apprenticeships are high quality is of the utmost importance. Those undertaking apprenticeships should have confidence that the skills they are learning will help them succeed, progress and thrive. It also means that employers will see the bottom-line return of a workforce with the right knowledge, skills and behaviours.

The UK has been keen to align apprenticeships with professional body accreditations. The CIOB has already established relationships with the Institutes of Technologies in Ireland and would be keen to advise and support apprenticeship routes into professional careers in construction, including alignment with professional body accreditation.

It is very often the case that apprenticeships are exclusively civil and engineering based. We would like to see construction-based apprenticeships. At the moment the system is very trade orientated, and once students get to degree level it tends to be engineering rather than construction focused.

## Regulations

### **Should further specific changes be made to Ireland's building standards be introduced to support the decarbonisation of Ireland's private and commercial building stock?**

The CIOB supports flexibility in the built environment, particularly city centres. At present, a lot of construction in our cities involves demolition of old buildings; an approach to development with a high embodied carbon cost. Embodied carbon emissions are associated with the materials and processes throughout the whole life-cycle of a building or piece of infrastructure including extraction, processing and manufacture; transport, assembly and installation on-site; replacement, refurbishment and maintenance; demolition and disposal.

A longer term, more sustainable solution would look at interventions earlier in the building process that would allow buildings to change use, rather than demolishing and rebuilding. 'Seed Planning' is a planning and design approach which gives minimum specification of how form relates to function, thereby allowing a building to fulfil multiple uses over the course of its life without sacrificing quality as it changes. This would avoid the need to demolish buildings.

This approach has been used, for instance, by the Amsterdam Municipal Government in its transformation of Amsterdam's Port-City area from a mono-functional work area around the Sloterdijk node to a mixed urban living-working environment. The success of this project relies on

urban, morphological and functional principles, linked to different typologies for buildings and public spaces (relating to density, mixed use, flexibility, and adaptability for many different types of initiatives).

Given the fluidity we are witnessing in terms of how people relate to the built environment, particularly the contingency of office space and the ongoing need for centrally located, affordable housing, seed planning is a proactive type of intervention we could implement now, that will give new buildings the ability to continually adapt to the changing world.

Modern methods of construction (MMC), particularly modular, off-site solutions are well placed to facilitate the adaption involved in a seed planning approach. Modular off-site buildings can be built to be re-configured through their lifetime, adapting to different needs as they evolve. Modular construction provides a repeatable system of building that is easily adapted according to different requirements for height and floor area ratio and is thus deployable across a range of contexts. This is particularly pertinent in the context of large swathes of office space which could potentially become obsolete given changing working practices resulting from the Covid-19 pandemic.

**What emerging technologies (e.g. in relation to heating, lighting, and/or building fabric) should be considered for use in Ireland's construction industry to promote further decarbonisation?**

See Q4

**Are there specific household behaviour changes that should be considered? Should such changes be mandated by way of regulatory changes?**

In order to deliver a long-term national retrofit strategy, the CIOB is proposing a 'Help to Fix' loan scheme, which would involve the provision of interest free loans by Government directly to owner occupiers for a large range of measures which, while predicated on improving energy efficiency, would also extend to other measures including loft conversions, extensions, annexes and home improvements.

The scheme would seek to promote five policy outcomes:

1. encouraging construction activity where SME builders and local jobs are under threat;
2. supporting local economic activity;
3. expanding usable residential floor space;
4. increasing the uptake of energy efficiency measures by private homeowners; and
5. supporting the revitalisation of rundown high streets.

In brief, funding could be secured against a charge on the home, or alternatively, an equity stake. The repayment of the funding would be at the time of sale (a fixed closure date may be advisable to reduce legacy administration). The aim would be to remove the initial payment of a lump sum by households to carry out retrofit work – one of the primary barriers to this type of work in the past.

While it is true that a Help to Fix mechanism would not be universally applied, demand for RMI must be enhanced through a blend of compatible, well-coordinated measures; it cannot be carried out in

isolation. Importantly, Help to Fix would allow for wider improvements than just energy efficiency, for example loft conversions or extensions. These would enhance the value of the home and, in many cases, the space available. This packaged approach to home improvement should encourage uptake and benefit the overall built environment in producing more residential space, a judicious move in light of the growing trend towards homeworking.

Financially, the scheme proposed is likely to prove net positive. The costs would be low, and the Government would likely see gain through a higher tax take resulting from higher employment. This would provide a consequent boost to local economies, further supporting tax revenues. In reducing cashflow pressures for households which are already looking to improve their homes, stronger subsequent spending elsewhere in the economy would help to support economic growth. See Q1 for statistics on the wider economic benefits of retrofit.

**Are there further specific measures and policies, including through planning and building regulations, that might improve the resilience of our building stock to climate change?**

Seed planning. See Q4.

#### Transport

**What specific policies might be required to reduce overall passenger kilometres driven within the private car fleet?**

#### Road pricing

Our current tax system is ill equipped to deal with/pay for the negative externalities created by widespread use of private vehicles. Road pricing would mean moving away from taxing fuel, towards a system where we tax road users according to the congestion, air pollution and CO2 emissions, and road damage they cause. These four 'bads' created by driving are borne by the rest of society, and charging for these, rather than the use of fuel per se, would allow us to raise revenues while also making sure that the most destructive and polluting vehicles on the road are the ones that pay the most.

A tax on road congestion would also incentivise drivers who do not need to use the roads during peak hours to drive when it is less busy. This would help to make roads flow even during rush hour, speeding up commutes and giving motorists more time off the road to spend at home before or after work.

Although it's flawed, the London congestion charge shows the benefits of road pricing to congestion. It reduced congestion by 30 per cent and sped up average traffic speeds by 21 per cent, although it is still likely underpriced. Average road speeds in central London are just 7.4 miles per hour. Singapore, on the other hand, operates a dynamic system where roads are priced in real-time according to demand, and enjoys average rush hour speeds of nearly 20 miles per hour.