

CORK CITY DRAFT DEVELOPMENT PLAN

Irish Green Building Council submission

October 4, 2021

PLANNING TOOL KIT FOR LOCAL AUTHORITIES

1. Introduction

The Irish Green Building Council (IGBC) provides leadership for a sustainable built environment. IGBC is a registered charity with over 220+ corporate members drawn from all parts of the value chain, from occupiers, design professionals, contractors, suppliers, academics and public authorities and affiliated with a global network of 70 national councils within the World Green Building Council. This allows us to create workable solutions and tools to deliver transformative change towards a sustainable built environment.

The Irish Green Building Council (IGBC) welcome the opportunity to make a submission on Cork City Council's Draft Development Plan. Planning plays a crucial role in national climate policy both in terms of policy for *Adaptation*, to protect against future climatic impacts on built environment, and creating the correct policy signals for *Mitigation*, to limit, as far as possible, carbon emissions associated with spatial development. As buildings account for 39% of global carbon emissions, IGBC is also advocating for a Whole Life Carbon (WLC) approach¹ to development so that policies are designed to target both operational (energy-in-use) and embodied carbon (carbon intensity) of buildings. This submission presents the general principles that the IGBC believe should underpin all Development Plans in order to ensure that they are fully aligned with the government policy objective to reduce carbon emissions by 50% by 2030. It presents a range of *suggested actions* and *supporting tools* that the Council should consider in order to incorporate a WLC approach and to consider carbon as a key performance metric for plans.

¹ https://www.worldgbc.org/sites/default/files/WorldGBC_Bringing_Embodied_Carbon_Uponfront.pdf

2. General Principles

In the context of the climate emergency, all plans should incorporate the following 'first principles':

1. Must be designed with carbon neutrality as the end goal – Development Plans (DPs) must be designed so that all actions, objectives, and policies are aligned with the overall national objective of reducing carbon by 50% by 2030² and net zero carbon, by 2050.
2. All climate measures and those aimed at decarbonising the built environment should be cross-cutting. New DPs must be designed with this in mind so that no one policy overrides or counteracts the objectives of another.
3. Design out dependency and 'lock-ins': all new residential development and buildings must be designed to reduce and eliminate car-dependent travel. Every new home and building must demonstrate accessibility by public transport, walking and cycling infrastructure. Car parking standards should reflect predicted lower levels of car ownership, with a presumption against dedicated carparking and a presumption in favour of dedicated cycle parking.
4. Zero Carbon Buildings – All new development must be encouraged by DPs to move towards Zero Carbon across the full life cycle by 2025. This can be achieved by optimising energy efficiency first, such as Passive House Standard, and meeting the balance with renewables on site for lower density development, or directly contracted off-site for higher density development. Embodied carbon must be measured utilising Life Cycle Assessment (LCA), and it must be reduced as far as possible, with the balance offset, ideally within the development scheme or local area, using verified means.
5. Resource efficiency and circularity – All development must integrate circularity and resource efficiency principles. DPs should adopt renovation first policies, avoid unnecessary demolition, encourage space optimisation, design for long life and flexibility, design for disassembly and reuse of components.
6. Water efficiency first – All new development must integrate water efficiency measures such as use of A-rated taps and showers.
7. Comply with the 'do no harm' principle i.e., no action should undermine environmental objectives and diminish ecosystem services and biodiversity.
8. Think Mitigation – how best to ensure that the plan mitigates against increasing the carbon load of the plan over its lifetime and beyond, in buildings (design and materials), infrastructure (design and materials) and transport (generation).
9. Think Adaptation - how best to 'design-in' adaptation for climate change in buildings, infrastructure and transport, siting, and location and with increased emphasis on the critically important role of green infrastructure.

² Climate Action Plan 2019; Climate Action and Low Carbon Development Bill, 2021

10. Construction Waste Hierarchy: Reuse, Renovate, Demolish (first to last)
11. Biodiversity – Every development must have a biodiversity plan.
12. Minimum density guidelines must be followed for all types of housing development to ensure compact growth, to avoid soil sealing and maximise efficiency of infrastructure.
13. Encourage 3rd party verification of all principles above and go beyond minimum standards - Councils have a responsibility to lead by example. Encourage use of tools such as Home Performance Index, Passive House, BREEAM and LEED certifications on all developments.

3. Toolkit Recommendations

MEASURING CARBON ACROSS THE FULL LIFE CYCLE OF BUILDINGS

A coherent and integrated approach to reducing the carbon emissions from the built environment is critical to the achievement of Ireland's climate targets.

- Buildings are directly responsible for 40% of energy use in Ireland
- The choice of building materials in construction influences the embodied carbon³ impact of the construction sector as a contribution to Ireland's overall emissions intensity.
- The density and typology of housing has a direct impact on the energy efficiency of individual units⁴ and on transport emissions.

'Nearly Zero Energy Buildings' (nZEB) as currently implemented is insufficient to meet Ireland's carbon targets. Ireland needs to move to net Zero Carbon buildings that consider not only the carbon emissions from operating them (operational carbon or energy efficiency) but also the carbon emissions to construct and maintain the building but the emissions arising at end of life/construction demolition/disposal stage ('embodied carbon').

Councils should begin to consider whole life carbon as a key metric for the assessment of the performance of development.

Suggested actions:

- Introduce a Whole Life Cycle (WLC) approach to take embodied carbon into account in public procurement decisions. Councils should revise Procurement Guidance to require that Life Cycle Analysis and Life Cycle

³ Embodied carbon is defined as carbon emissions from manufacture, transport, use and end of life of materials, including construction materials (Climate Neutral Cities Alliance & One Click LCA. [City Policy Framework for Dramatically reducing embodied carbon. 52 Detailed Policies to reduce embodied carbon](#)).

⁴ [Read more](#).

Costing be required for all public building contracts (see recent EPA guidance (2021)⁵).

- Require Environmental Product Declarations (EPD) for construction products used on public projects.
- Look for carbon measurement as part of criteria for planning consent for private developments.

Supporting tools:

To enable easy measurement and reduction in embodied carbon for all new development IGBC will launch, in late 2021, with the support of EPA Green Enterprise and the Land Development Agency, a free cloud-based Carbon Designer tool to allow whole life carbon measurement⁶. This will use typical Irish assemblies for wall, floor, roof, and foundations and use generic data created specifically for Ireland. This will make it possible for all local authorities to require applicants to provide a basic carbon footprint measurement of any building seeking planning permission.

IGBC also run an internationally audited Environmental Product Declaration Programme (EPD) for Irish manufacturers of construction products to facilitate the measurement of carbon and resource efficiency impacts.⁷ It is also developing generic default product data for use in early Whole Life Carbon Assessment.

SUSTAINABLE HOMES, BUILDINGS AND NEIGHBOURHOODS

Net Zero Carbon Buildings

This year, the Climate Action and Low Carbon Development Bill (2021) will enshrine into law the objective of reaching climate neutral economy by 2050⁸. Local authorities must lead by example. A way to do so is to move beyond nZEB and to commit to Net Zero Carbon buildings. In addition, it can act to send a message to developers by adding specific clauses to zoned areas.

⁵ <https://www.epa.ie/publications/circular-economy/resources/green-public-procurement-guidance.php>

⁶ A prototype is under development and is being modelled on <https://www.igbc.ie/planetary/>

⁷ [EPD Ireland](#) was launched in 2017 and has already published 17 Environmental Product Declarations covering nearly 40 construction for 5 producers. It has registered nearly 100 EPD for products used in the Irish market from international producers covering a large range of products from insulations to paints.

⁸ <https://www.oireachtas.ie/en/bills/bill/2021/39/>

Suggested actions:

- Show leadership and commit to only leasing or owning buildings that operate to net zero carbon by 2030. Twenty-eight cities globally, including Helsinki, London and Copenhagen have signed up to this commitment⁹.
- Require a percentage of all development land or sites to be developed at net zero carbon standard, and all land released by public authorities to private developers must require Net Zero Carbon development.
- Set a target for all new development to be Net Zero by 2025/2030 or within the lifetime of all new DPs adopted from 2021 onwards.
- Consider 'total carbon' benchmarks based on occupancy for all housing units and buildings (private, public and/or rental/leased)

Supporting tools:

IGBC have developed tools to support Local Authorities (LAs) progressing towards net zero carbon buildings. Zero Carbon Homes is a voluntary indicator under the Home Performance Index certification¹⁰. Furthermore, the IGBC will develop guidance document on zero carbon commercial buildings later in 2021 to facilitate private developers who already want to move to this standard. Finally, IGBC can also provide LAs with further information on the net zero carbon buildings commitment and support them in reaching it.

Beyond Net Zero Carbon Buildings

The *National Development Plan 2021* and the *Housing for All* policy estimates that 500,000 new homes will be built across Ireland up to 2040. It is imperative that planning policy ensures that these homes are delivered within existing settlement boundaries and by means of renovation/ adaptation of existing buildings¹¹. Otherwise, dispersed housing will continue to lead to higher carbon emissions per household and limit the chances of reaching out climate targets of 7% per year, up to 2030 and climate neutrality by 2050.

Planning policy should therefore encourage densification and infill development over new development. Planning authorities must ensure that any growth is compact, within existing settlements and that it is sustainable, based on principles of good carbon management and design for all building stock (new and adapted).

⁹ <https://worldgbc.org/commitment-signatories?cat=city>

¹⁰ See technical manual page 12

¹¹ That is conversion/adaptation of office, student housing and small and large-scale retail, public houses in the city that have become redundant and/or are now oversupplied.

'Travel plans', Traffic Impact Assessment and any mobility management must refer to the need to measure, monitor and reduce carbon emissions. Development plans should refer to more holistic assessment methodologies for measuring sustainable homes - and recommend the use of qualitative evaluation of environmental and quantitative evaluation of carbon performance for all residential development.

Suggested actions:

Councils should require (or promote) assessments that consider the environmental impact of new homes across their life cycle (using tools such as the Home Performance Index) as part of planning consent.

Planning authorities should introduce a sustainable accessibility index and a minimum benchmark for all homes and buildings, as a prerequisite for planning approval.

Supporting tools:

The Home Performance Index Technical manual is [available here](#).

REUSE AND RENOVATE

All Councils are required to renovate and decarbonise existing stock as part of Ireland's Long Term Renovation Strategy¹² and under the 2019 Climate Action Plan:

- Local Authorities need to bring dwellings to a BER level of B2 or cost optimal equivalent by 2030.
- All public sector buildings should be retrofitted to a BER level of B by 2030.
- All Local Authorities and others should help underpin community mobilisation in relation to energy renovation.

There needs to be more recognition of the urgency and importance of re-using and retrofitting existing building stock, as per the above national targets¹³. LAs should lead by example, avoiding demolition and strongly discouraging demolition unless it is demonstrated that it is unavoidable and there is a clear case made to do so.

In the UK for example, the London Borough of Camden's Development plan¹⁴ provides that a case must be made by applicants, by way of comparison of the full Whole Life Carbon calculation, of the impacts of renovation against the proposed new build, as well as other criteria such as threshold of density achieved. It is significant to note that Dublin City Council, from its own analysis, found that

¹² <https://www.gov.ie/en/publication/a4d69-long-term-renovation-strategy/>

¹³ See Climate Action Plan and Long-Term Renovation Strategy

¹⁴ <https://www.camden.gov.uk/documents/20142/3912524/Local+Plan+Low+Res.pdf/54bd0f8c-c737-b10d-b140-756e8beeae95>

renovating existing social housing has 1/8 of the embodied carbon footprint of constructing new homes¹⁵.

To make a better business case for renovation, to support policy decision-making and to better engage with citizens on this topic, local authorities should gather better quality data on the impact of their own retrofit work. To do so, the IGBC has developed a multi-level energy renovation framework (Build Upon Framework) that enables local authorities to better assess the impact of energy renovation, including its co-benefits. If used at scale, the new Build Upon² multi-level energy renovation framework can help local authorities to:

1. Project manage renovation
2. Capture the impact of energy renovation while demonstrating its co-benefits
3. Communicating the co-benefits to a wider public as part of climate advocacy and communications.

To improve quality assurance on renovation and incentivise upskilling, Councils should consider incorporating Energy Efficiency training clauses into public procurement¹⁶. Such clauses are in use in the Hauts-de-France region in France, whereby any company winning a tender for a nZEB building (new or retrofit) must commit to upskill all employees working on the project in energy efficiency. The process has significantly improved quality assurance in nZEB buildings.

Suggested actions:

- Adopt a no demolition policy and guidance to ensure that no unnecessary demotion is allowed either by developers or the local authority.
- Ask applicants to make a case, by way of comparison, of the full Whole Life Carbon calculation, of the impacts of renovation against proposals for demolition and new build, as part of planning permission.
- Use the BuildUpon² Framework to track the delivery of the renovation of public sector stock, as part of the EU Renovation Wave.
- Introduce an energy efficiency 'training clause' for upskilling attached to all renovation procurement contracts starting in the first year of new Development Plans¹⁷.
- To set targets for the retrofitting of projects of public housing and to lay down an annual commitment for retrofit of all public building stock.

¹⁵ [Read more](#).

¹⁶ See <https://busleague.eu/gpp-main-barriers/>

¹⁷ IGBC would welcome enquiries from Councils about participating in the EU [BusLeague](#) project to trial the use of these clauses, which are fully compliant with EU Public Procurement rules Contact IGBC for more details.

Supporting tools:

- The Energy Renovation Framework developed by the IGBC as part of the H2020 funded Build Upon² can be used to capture better quality data on the impact of energy renovation (CO2 emissions and wider benefits)¹⁸. This in turn should help LAs in making a better business case for energy renovation and in better communicating it.

The IGBC is adapting the energy efficiency training clause in use in France, so that it can be used in public procurement in Ireland. Irish LAs should be able to pilot it from autumn 2021.

PLANNING FOR CLIMATE MITIGATION & ADAPTATION

It is imperative that planning policy ensures that housing is delivered within existing settlement boundaries and by means of renovation and/or adaptation of existing buildings. The National Development Plan predicts that 550,000 new homes will be required in Ireland by 2040¹⁹. Of these, the government plans to build 90,000 social homes until 2030²⁰. Local authorities therefore will be one of the key delivery agents for housing in the country, in conjunction with the Housing Agency, Department of Housing, the Land Development Agency and Home Building Finance Ireland. Councils also have a key role in the organisation of the delivery of private development through planning policy. It is imperative that all housing, public and private, is climate proofed, compact in form, built within existing settlements and close to transport, cycle and walking networks.

Building design should be guided by the principles of good carbon management covering both embodied carbon and operational energy. It is critical also that sustainable transport becomes the norm and that good permeability for cycling and walking becomes a key feature of any new housing scheme. Finally, green infrastructure, supporting both biodiversity and climate adaptation Nature Based Solutions (NBS), must become the norm and be fully incorporated into design schemes and masterplans for all developments.

Suggested actions:

- The quantum of permissions in DPs should be on zoned and serviced land on Infill/Windfall/brownfield sites within existing settlement boundaries, as a priority.

¹⁸ In Ireland, the Framework has been piloted by Dublin City Council, with additional feedback provided by Cork City, Laois, and Kilkenny County Councils.

¹⁹ That is conversion/adaptation of office, student housing and large-scale retail in the city that have become redundant and are now oversupplied.

²⁰ Housing for All 2021: <https://www.gov.ie/en/publication/ef5ec-housing-for-all-a-new-housing-plan-for-ireland/#view-the-plan>

- Take a 15-minute settlement approach, which is central to sustaining and maintaining vibrant residential communities.
- Adopting the Ecosystem Services Approach (ESA)²¹ to acknowledge and protect the benefits that ecosystem services and biodiversity provide to society and require enhancement measures within all development.
- Adopting the 'Avoid Shift Improve' approach to transport to limit in as far as possible lock-in to private car-based transport²².
- Engaging in active land management and site activation measures, including the implementation of the vacant site levy on all vacant residential and regeneration sites. This will help to meet housing delivery objectives in underused sites and buildings.
- Normalising sustainable transport modal shift via the provision of cycle network infrastructure and the promotion of carpooling/sharing, multiuse public vehicles, integrated cycle/walking/EV charging infrastructure. All road and bridge development or improvements to same, must incorporate cycle lane infrastructure as standard.
- Normalisation of the concept of circularity in relation to waste management and include as standard, a chapter on Circularity in all Development Plans, providing for waste re-use as a concept from cradle-to cradle, which is the linchpin of decarbonisation. All references to 'waste management' within DPs should be replaced with the term 'circular economy' so there is a shift in understanding and emphasis moving from waste to circularity.
- Plans should highlight for the public, the significant role and the importance of green infrastructure for climate change adaptation and mitigation - from planting, to limiting conversion of gardens to driveways and large scale hard surface soil sealing in developments; to promoting the increased planting of native trees/community planting/gardens; and the need to protect, develop and manage existing ecological networks in urban and rural areas for their many varied and important ecosystem services.

MEASURING CARBON IN THE BUILT ENVIRONMENT

Planning authorities should consider Whole Life Carbon as a key metric for the assessment of the performance of buildings in all developments. This should be integrated into both planning consent and procurement policy. The forthcoming revision of the Energy Performance of Buildings Directive (EPBD) suggests that in future the key metric for measuring building performance will be carbon, not

²¹

https://www.researchgate.net/publication/319991132_Guidance_on_the_application_of_the_Ecosystem_Services_Approach_for_Local_Authorities_ESLA

²² See Dun Laoghaire Draft Development Plan 2021

energy. IGBC has proposed key carbon targets for new homes and other documents such as LETI²³ and RIBA²⁴ benchmarks can be used to set targets for buildings.

Suggested actions:

- Councils should require the evaluation and demonstration of the Whole Life Carbon emissions of buildings utilising Life Cycle Assessment (LCA) and Life Cycle Costing (LCC) under its Public Procurement rules. The recent EPA Green Public Procurement Guidance²⁵ on office buildings can be used to require more environmental criteria is included in public procurement for all buildings, including for social housing contracts.
- Councils should begin to review their own key metrics and begin to establish how to measure carbon for both domestic and public buildings utilising Life Cycle Assessment (LCA) and Life Cycle Costing (LCC) methodologies.
- Councils should review the metrics by which they measure the performance of all public buildings under their ownership or leased, by examining both embodied carbon and carbon as represented by energy use (operational carbon).

DEVELOPMENT MANAGEMENT STANDARDS

Development management standards can be utilised to convey and act upon a commitment to delivering on zero carbon at local authority level. In addition, they can send a message to developers about the requirement to consider carbon as a key metric in building performance and design, by adding specific clauses to zoned areas. IGBC's submission on other Development Plans has proposed that new development standards should apply in any newly designated Decarbonisation Zones²⁶, to ensure that for example, development consent is conditional on meeting net zero standards. This principle could also apply within specifically zoned sites or areas with extant permissions. For example, in Dun Laoghaire, the number of extant permissions is equivalent to 10,000 units at present, yet the Council has acknowledged that it has limited land activation powers, other than the vacant site levy. For this reason, the Councils might consider adopting new measures to trigger faster development that meets both its housing delivery as well as wider climate objectives.

Suggested actions:

Planning authorities should designate new zero carbon zoning to specific sites within DPs and to existing sites with extant permissions and require that for any new permissions on these sites, applicants must measure and demonstrate

²³ <https://www.leti.london/publications>

²⁴ <https://www.architecture.com/about/policy/climate-action/2030-climate-challenge>

²⁵ <https://www.epa.ie/publications/circular-economy/resources/green-public-procurement-guidance.php>

²⁶ Action 165 Climate Action Plan 2019

delivery of zero carbon. This measure could also be applied by means of requiring a percentage of all development land or sites to be developed at net zero standard within the DP.

- Planning authorities should, within one year of the adoption of new plans (from 2021), include new a development control standard to account for net zero, by attaching a condition to permission within specifically zoned sites or areas requiring carbon measurement.
- Councils should require, as part of the Energy Statements, details of both operational and embodied carbon of commercial, residential, and public building stock.
- Designated a percentage of development land or sites at net zero standard.

DEVELOPMENT CONTRIBUTIONS

Housing density and a proactive approach to limiting unnecessarily excessive home size can play a large part of reducing emissions. Low density housing will generally have a higher carbon load due to a combination of factors. These can include location and proximity to services; size, design, and materials; positioning/siting; and private transport dependence²⁷. A detached NZEB bungalow will have up to 4 times the heat loss as an NZEB apartment of the same area, with the same level of insulation. Density passively reduces heat loss via either sheltering or shared walls and floors. The SEAI report (2018) which combines BER with CSO figures²⁸ show how floor areas for detached dwellings have grown since 2000, to an average of 241 m² in 2016. Planning policy should therefore encourage optimisation and densification, for the purposes of energy efficiency and carbon management associated with building stock²⁹.

Suggested action:

- The Development Contributions Scheme may be used as a tool to influence the delivery of more carbon efficient housing stock. For homes above optimum sizes, Carbon Development Levies could apply. The revenue accruing from the carbon development levy would be ring-fenced by Councils for carbon mitigation and green infrastructure measures and for retrofitting public housing stock within each local authority.

²⁷ [Energy Efficiency of Buildings: A New Challenge for Urban Models: Franz Fuerst and Michael Wegene](#)

²⁸ Energy in the Residential sector 2018 - SEAI

²⁹ <http://homeperformanceindex.ie/>

PERFORMANCE MANAGEMENT INDICATORS FOR DEVELOPMENT PLANS

The Dun Laoghaire Draft Development Plan (2021) introduced performance management to provide for an evidenced based framework for future DPs. This action is to be commended and all local authorities should introduce similar measures.

Suggested action:

- Planning authorities should include carbon management as a key performance metric, in relation to the built environment, transport and water and it should also consider the measurement of any off-setting measures, such as green infrastructure.
- Furthermore, evaluation should include 'renovation of housing' and 'renovation of non-residential buildings' as a key performance indicator and should refer to the Build Upon Framework to support its delivery.

GREEN INFRASTRUCTURE

Green Infrastructure plays a significant role in mitigating the impact of climate change (e.g., heating and cooling and in flood management) and its ecosystem services provide multiple tangible and intangible benefits to society (regulation of water quality, carbon sequestration, air purification, biodiversity, pollination, amenity etc...).

Suggested action:

- New GI standards should be introduced to ensure that both design and planting mix of landscape schemes directly support biodiversity, carbon sequestration and the creation of ecological and pollination corridors in both urban (private gardens, street, and roadside verges) and rural areas. This should also refer to the *ecosystem approach to decision making* – so that all development considers how it can enhance or impact on ecosystem services with the local authority area. In addition, the parks division of LAs should facilitate the re-wilding and the expansion of urban meadows in accordance with the All-Ireland Pollinator Plan. Local authorities should promote the use of designated open space in housing developments and any vacant/underused public land, for communal gardening, hedge and tree planting, wilding and/or growing of vegetables.