

Waste Action Plan for a Circular Economy

We set out our responses to the consultation on the construction waste sector. We are commenting only on issues to do with our areas of expertise in the construction sector.

The IGBC is [a unique network of nearly 170 organisations](#) spanning the entire value chain of the built environment. We represent all stakeholders in the construction and property sector from building owners, developers, architects, engineers to local authorities. As a member of the World Green Building Council, we draw on best practices internationally in delivering high quality, sustainable homes and commercial buildings. The Irish Green Building Council is working to transition the Irish Built environment to sustainability.

We set out our response to the consultation particularly focusing on construction.

9.0 Consultation questions on Construction & Demolition Waste

What other measures need to be put in place to encourage all players to prevent and recycle waste from construction?

Prevention of unnecessary demolition waste from both unnecessary demolition and retrofit is one of the largest contribution to reducing construction waste. Consideration of Whole of life cycle carbon of buildings will bring greater focus to assessing benefit of retaining existing buildings rather than demolition. This is expected to be the focus of the forthcoming EU's Circular Economy Action Plan. It would also bring greater focus to designing out waste at every stage of the building life cycle. Too many buildings are demolished because it is seen as easier without proper evaluation of the lost embodied carbon.

These are some additional measures that should be considered.

Standards and quality assurance of materials – The BC(A)R system puts onus on specifier to ensure all products used are fit for purpose. Recycled materials will only be used where there is assurance as to the standard of material. For example, in order to reuse glass panels for balustrades there would need to be a certificate to show that it was in fact tempered safety glass before it could be reused. In order to reuse aggregates engineers must be reassured of the standard and quality. There needs to be much more emphasis on quality assurance of recycled materials.

Solutions : Material Passports, BIM and retention of data

BC(A)R certification already creates large volumes of data to demonstrate compliance with Building regulations including product datasheets. If all this information was retained and available to future purchasers or owners this would enable reuse of the materials as there would be clear record of the standard to which it was produced.

The [Madaster platform in Holland](#) and the [BAMB \(Buildings As Material Banks\)](#) network gives an insight into how this could work. A real estate company or even a homeowner can record all information on their building tracking all of the resources in the building with the intention that this data can be made available in the future to prospective owners. It allows tracking of resources and their value in the building to track residual value. The data can be made available to anyone who needs it. If materials are removed for example during refurbishment or demolition there is a record of the original certification and the data can be made available to a prospective user. The use of Digital twins using BIM (Building Information models) can also

assist to tag all materials within the building and associated data if made available to future tenants and owners.

Promotion of Environmental Product Declarations.

IGBC with assistance from EPA Green Enterprise has developed [EPD Ireland](#) a programme for verified Environmental Product Declarations for Irish Manufacturers. Whilst insulation manufacturers have embraced this, we have yet to see action from cement manufacturers and concrete producers to develop EPD. This could be a powerful way to enable specifiers to pick products with the lowest environmental impact particularly as the data is automatically imported into the key LCA tools such as One Click LCA. Currently there is very little awareness amongst ordinary procurers about EPD. IGBC has received a commitment from IPUT, Hines, Dublin City Council, Transport Infrastructure Ireland, Hammerson to request EPD on all new construction works.

Develop guidelines for the waste audits before demolition and renovation works of buildings to embed the recommendations from the recent EU guidelines and international best practice into two protocols that will address the current gaps in understanding the lifecycle value and impact of existing buildings, components and materials. Require an audit of the existing materials on site and a method statement regarding salvage, reuse or disposal; In addition, the design and piloting of pre-demolition and pre-refurbishment tools provides an opportunity for local authorities (as a planning requirement), clients and contractors to undertake a detailed evaluation of the existing assets to determine what resources (buildings, components and materials) can be retained and/or recovered at their end-of-life to maximise value and utility to facilitate reintegration into the value chain.

Pre planning evaluation of demolition need : Develop a single reporting template where major demolition of existing buildings and ground works is proposed. This will allow applications submitted to demonstrate in a consistent manner the environmental, economic and social benefits of demolition/new build versus retention including a comparative and numerical Life Cycle Assessment carried out in accordance with *EN 15978 -Sustainability of construction works. Assessment of environmental performance of buildings. Calculation method*. This would allow benefits of intensification of land use versus the waste and carbon generation to be assessed but would force greater discipline on developers to prove the benefits of new build and provide and demonstrate any new building is designed to integrate concepts of circularity.

Tools for measurement of comparative LCA : Provision of free to use simple Irish Part L adapted high quality LCA calculation tool eg. [Carbon designer](#) to allow iterative analysis at early concept design stage allowing quick feedback comparison of alternative design concepts, structural concepts and solutions and to build the capacity of construction professionals to understand where effective GWP reduction is possible and for use in comparative analysis for new build v retention. Transport Industry Ireland have already developed a [carbon calculator for infrastructure](#) that allows comparison of different road/infrastructure options at early concept stage. This is now needed for buildings.

Estimated cost of this measure could be-in the order of €25,000-35,000 plus annual maintenance based on quote to IGBC.

Level(s) framework - Work with all relevant organisations and procurement agencies to define and develop clear consistent reporting developed based around around the EU [Level\(s\) framework](#) IGBC

Facilitate resource sharing – Investigate the use of resource sharing platforms for construction. This was attempted through Smile. It may be necessary to do this on a wider European basis rather than just Ireland in order to create scale and potential to link into other European platforms could be investigated. For high value products most of the embodied carbon is in the manufacture rather than the transport so it often makes sense to transport reused products.

What existing measures are in place that could be improved?

Eliminate difficulties with the classification of waste or materials as end-of-waste or by-product. There appears to be an issue with EPA making decisions on applications and there is no time limit for a decision. Continue with the use and implementation of Article 27 and 28 alternatives and/or establish a control mechanism to facilitate the effective reuse of materials – transfer direct from site to site. Properly resource the EPA to deliver licences for reuse of materials in a time limited manner.

Some local authorities have a requirement for waste management plans at planning stage, however these tend to be used as paperwork exercises appear not to be fully implemented. By setting initially a requirement to report on tonnage of waste going off sites on larger contracts benchmarks based on kg of waste per meter square can be developed.

The use of benchmarks would focus minds of design professionals and contractors alike to focus on designing out waste and meeting the target set. Initially the targets could be linked to financial incentives in design team contracts and construction contracts.

What changes could be made to environmental and/or planning legislation to facilitate more recycling of construction waste?

In particular crushed concrete should not be going to landfill and EPA need to properly resource a methodology for declassifying crushed concrete as waste.

Use planning policy / public procurement of contracts to incentivise the market place in the use of recycled materials. Establish within the specification of materials a greater recycled content - as a phased approach – where end use e.g. fire rating, durability, etc allow. Revise the planning levy to incentivise the meeting of targets on construction waste targets and reuse of recycled content.

Require iterative low carbon full life assessment design and reporting at each stage of the design process and allow for associated design team time and fees, recognising that the opportunities to reduce carbon both embodied and operational are at the highest in the earliest design stages.

S

What incentives could be introduced to increase the use of recycled materials?

Develop benchmarks and targets at the building level based on constructed area. This would focus the minds of professionals. Public procurement contracts should provide leadership with specifications for recycled materials and effective waste management targets and fully costed.

Should levies be applied to the use of virgin material where a recycled material is available as an alternative?

Yes but not in isolation from all other measures proposed here, as during a construction boom the cost will simply be passed along the line and those furthest removed will not see the connection. It should actually discourage virgin material use rather than a revenue raising measure, with all revenue ringfenced and reinvested into developing innovation and developing the infrastructure needed to enable greater levels of reuse.

How can site managers be encouraged to ensure more on-site segregation?

On larger sites many site managers are already aware of the need to segregate and recycle – where the constraints of their sites allow. There needs to be financial incentives for sub contractors to segregate. By setting enforcing targets which are communicated to all subcontractors with contractual financial penalties

where segregation does not happen. It is more of an issue on smaller sites particularly for domestic construction.

What financial incentives / penalties could be introduced to encourage better waste management practices?

Development levies should aim to encourage circular low carbon building by linking use of 3rd party certification to a reduction in development levies, eg Home Performance Index, LEED or BREEAM. Each of these certifications offer credit for recycled content and waste management.

What are the best approaches to raising awareness and education?

At a professional level engineers need to be convinced that they can safely include recycled aggregates in their specifications through their professional organisations. This also needs to be driven by public procurement.

At construction level this needs to trickle down the line from the procurement contract. For the onsite personnel there will need to be on the job training via tool box talks.

Non segregation is more likely to occur on smaller sites particularly with domestic construction and there must be a requirement to move away from the use of single skips.

What are the barriers/enablers to these measures?

A key barrier is the fact that the construction industry is a low margin sector. Where there is the threat of additional costs without recompense; then there will be business resistance.

The current level of activity makes it more difficult to engage the industry in changing behaviour. With manpower shortages speed is prioritised over resource efficiency both at the design and construction stage. There is insufficient time allowed at design stage to look at alternatives.

The construction sector is very conservative and the phrase 'This is the way I have always done it' is a common response to new practice. The nature of apprenticeships mean that new tradesmen often learn and continue poor practice from their mentors. This needs to be changed by a requirement for all trades to engage in upskilling.

18.4 Short Term Measures 2020 EPA Research Programme

We would like to see more of the EPA research funding directed towards the construction sector. Currently IGBC can only apply for Green Enterprise funding which is only a small part of the available funding. Most EPA funding is only available for academic research which does not influence industry and is locked behind paywalls. There needs to be a business plan for all research on how it will have practical application and contribute directly towards change in the following years. For example IGBC would be happy to define issues for research which would result in real outcomes that could be used by industry. This could include national benchmarks for waste from construction.

IGBC developed long term operational programmes out of Green Enterprise with relatively small sums, €60,000 www.homeperformanceindex.ie (2335 registered homes) and EPD Ireland www.epdireland.org. (over 60 product EPDs developed and growing) These programmes continue

to grow and operate and IGBC has been able to win H2020 funding -Smarter Finance for families, and the Life funded - Life Level(s) directly as a result.

The Green Enterprise fund has the simplest and most practical approach of all the funding streams which IGBC has used and should be expanded. IGBC has been particularly successful in winning H2020 and Life funding (7 in the past 5 years) however we realise the limitations of European funding to organisation like ourselves due to excessive administration, need for multiple partners, co-ordination time, application times etc.

International programmes such as H2020 and Life are not an alternative to national funding. The Life funding in particular is highly time consuming and inflexible and not always a good fit.

IGBC has developed a full long term strategy on mainstreaming Life Cycle Assessment and circularity in Ireland but has only been able to implement part of this due to inflexible funding streams. In order to fully implement, specific national funding needs to respond to and unblock specific barriers, with relatively small sums of money such as on data and tools. Organizations like IGBC who work with industry have proven they can deliver programmes much more quickly and effectively, building long term self financed programmes at relatively low cost.

We would like to see the following actions developed and funded.:

Tools for measurement of comparative LCA : Provision of free to use simple Irish Part L adapted high quality LCA calculation tool eg. [Carbon designer](#) to allow iterative analysis at early concept design stage allowing quick feedback comparison of alternative design concepts, structural concepts and solutions and to build the capacity of construction professionals to understand where effective GWP and waste reduction is possible and for use in comparative analysis for new build v retention. Transport Industry Ireland have already developed a [carbon calculator for infrastructure](#) that allows comparison of different road/infrastructure options at early concept stage. This is now needed for buildings.

Estimated cost of this measure could be as little as €25,000-35,000 plus annual maintenance based on quote to IGBC.

National generic carbon and LCA database for construction Products: This will allow default data to be developed for Life Cycle Assessment of buildings including encouraging producers to increase levels of recycled content in their products. In general generic data bases as per [National Milieudatabase](#) in Holland, and the French data base used in the E+C regulations introduced in 2020, penalise those who do not produce specific data through EPD as they use a very conservative figure. Producers such as cement and precast concrete manufacturers tend not to produce data as they are aware that the data does not look good from a carbon perspective. A generic database would force publication of data and therefore greater competition to reduce carbon and increase recycled content.

Estimated cost €45,000 - €60,000

20.7 Consultation Questions - Green Public Procurement (GPP)

What are the barriers to public authorities using GPP? •

Lack of knowledge. As part of the [Life Level\(s\) project](#) we are engaging with the public sector and they would admit that instead of leading on public procurement in many cases they are behind the more progressive leaders in the private sector.

As part of the project IGBC will develop courses related to the integration of the EU circular economy framework Level(s) framework for the public sector focussing on Life Cycle Assessment, Life Cycle Costing and Indoor air quality.

How can business support more widespread use of GPP?

IGBC and our members are already implementing green procurement and we are happy to share their knowledge and our network of national and international experts. As part of the Life Level(s) project we will be developing courses for GPP on the key indicators in Level(s) in 2021 -2022, LCA, LCC and IAQ, We will be sharing knowledge and best practice on GPP from across Europe and the 7 other participating Green Building Councils, including Finland, France, Holland, Spain, Italy, Germany and Croatia.

What % target should apply to the use of GPP in Ireland?

100% of all publicly funded projects should be using Green Public procurement.