



**Uimhir Thagarta Uathúil:** CRK-C155-DEV21-389  
**Stádas:** Submitted  
**Aighneacht:** The importance of Embodied Carbon

**Údar:** John Morehead

**Comhairliúchán:**  
Draft Cork City Development Plan 2022-2028

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## Tuairimí:

### Climate resilience and the importance of Embodied Carbon

**Caibidil:** Volume 1 - Written Statement» 5. Climate Change and Environment

**Ábhair:** Climate mitigation

Although operational energy is critical, Embodied Carbon will account for 50% of new construction carbon emissions. To meet the objectives identified in the Development Plan, the use of Life Cycle Assessment tools to identify both Operational and Embodied Carbon relating to all new developments is critical. The Plan has failed to address this key component to assist it with the delivery of Carbon Resilience. The Passive House Planning Package (PHPP) using an Association for the Environment Concious Building (AECB) tool PH Ribbon can account for the Life Cycle Analysis used to assess the embodied and operational Carbon of new and renewal constructions. During 2021, PHAI engaged with AECB using a Cork City Social Housing model provided by the City Architects Dept and achieved a reduction from 20.1 Tonnes to 9 Tonnes CO<sub>2</sub>e ( Carbon Dioxide Equivalent) by exploring cost effective alternative solutions and materials in the external wall, floor and footing elements alone. See article here on p70 [https://issuu.com/passivehouseplus/docs/ph\\_ire\\_issue\\_38\\_digital](https://issuu.com/passivehouseplus/docs/ph_ire_issue_38_digital).

See also the London Energy Transformation Initiative <https://www.leti.london/cedg> Climate Emergency Design Guide.

para 5.24 acknowledges that the residential and non residential sector accounts for 70% emissions. Reducing energy demand by taking a fabric first approach rather than reliance on the offsetting of renewables would contribute favourably to carbon emission reduction and airquality. Many European Cities have already adopted the proven Passive House Standard to achieve this.

In Cork we have a high density of highly trained Passivhaus Designers, Consultants, Contractors and indeed certified manufacturers of Timber frame systems, Windows and Building Components, many of whom are exporting their innovative products successfully to Europe and the Americas.

We also have already a significant number of Passivhaus Certified projects in Cork City and County and many more under construction.

There is a high level of interest and capacity to deliver the Passivhaus standard locally which can also contribute to the built environment positively as the standard of delivery is generally of a high standard.

Cork in 2016 saw the construction of the first Certified Passive House dwelling to achieve the Gold standard in HPI <https://www.igbc.ie/certification/hpi/>

More recently, the wedge house by Simply Architecture demonstrated how difficult sites could be developed sustainably. The largest PH project in the UK Goldsmith Street Housing, Norwich by Mikhail Riches Architects won the Stirling Prize 2019. It is interesting to note that this and many other exemplary UK projects have availed of Timber frame units manufactured in Macroom Co.Cork

The PHAI would be delighted to assist in the development of an appropriate methodology to ensure embodied carbon is fully addressed for the duration of the Plan

**Eochairfhocail:** Embodied Carbon, Passive House, Carbon resilience

*Main opinion:*  
Embodied Carbon and Carbon in use reduction deliver resilience

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*Main requests:*  
That the plan adopt fabric first Embodied carbon and Life Cycle Analysis as a core objective in achieving climate resilience

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*Main reasons:*  
Renewables offset but do not necessarily impact upon embodied carbon or operational carbon

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**Documents Attached:** Níl  
**Teorainneacha Gafa ar an léarscáil:** Níl