

Irish Architects Declare

**Proposal to integrate the 'Green Factor
Method' into Planning Policy for Kilkenny
City & County Development Plan**

March 2021

Introduction on Irish Architects Declare

Architects Declare was first launched in the UK in May 2019, as a declaration of a Climate and Biodiversity Emergency, in the aftermath of the IPCC's 2018 report. The declaration recognises the huge impact the built environment and construction sector has on the planet, and the urgent need for change that is now required.

The Architects Declare petition, and its set of 11 pledges, is both a public declaration of our planet's environmental crises and a commitment to take positive action in response to climate breakdown and biodiversity collapse.

Irish Architects Declare was set up in September 2019 and now has 130 practice signatories with an active steering group collaborating with local and global organisations and peers to turn the declaration into action.

We believe that our proposal to integrate the 'Green Factor Approach' into planning policy should be included in Kilkenny City & County Development Plan and would address a number of the strategic issues as set out in the Draft Stage of the plan, as follows:

Strategic Issues:

- *Climate Action – protecting cities against pollution, flooding and other climate risks.*
- *Quality Housing and Sustainable Neighbourhoods – providing quality housing and sustainable neighbourhoods.*
- *Green Infrastructure, Open Space, Recreation and Natural Heritage – developing more outdoor spaces for sports and play opportunities, while protecting our rivers and canals and parks.*
- *Sustainable Environmental Infrastructure and Flood Risk – including flood risk protection, water supply and good digital connections.*

Context

The Problem:

Urban sprawl and densification is responsible for the significant loss of green infrastructure and greenspace within cities and towns, making them less hospitable to wildlife and more susceptible to the impacts of flooding and climate change. The UN's Global Assessment Report on Biodiversity and Ecosystem Services concludes that global biodiversity levels on land have dropped by at least 20% from 1900 and around one million species are at risk of extinction, with changes in land use being the main driver. (Díaz et al. 2019).

Given this pressure on land globally, the urban ecosystem will become increasingly important to mitigate biodiversity decline. Using green infrastructure is recognised as a desirable approach because it delivers multiple social, economic and environmental benefits. Surfaces covered by vegetation not only enhance biodiversity but also mitigate flooding risk and air pollution, sequester carbon dioxide, cool down "urban heat islands" and increase the aesthetics, enjoyment and health benefits of urban spaces. Several studies have also shown that urban green areas have a direct impact on land value. With nearly 70% of the world's population expected to live in cities by 2050 (UN 2018), the necessity to conserve and protect urban green infrastructure and wildlife is fundamental to the functioning of society, the environment and the economy.

Proposal: Integration of the 'Green Factor Approach' into planning policy

What is it?

The "Green Factor Method" or "Biotope Area Factor" (BAF), originally developed by the City of Melbourne Australia, is an ecological planning tool which provides an opportunity to improve planning practices as it gives a means to assess and develop ways to build **ecological, climate-resistant and denser urban areas in which the social values of urban greenery are a priority.**

Objectives of the Green Factor/ BAF?

The goal of the Green Factor Approach or BAF is to mitigate the effects of development by maintaining sufficient levels of green infrastructure while enhancing the quality of the remaining vegetation. Integration of the BAF/ green factor approach into urban policy aims to improve the 'urban ecosystem' by promoting the green efficiency of vegetation and the conservation of sufficient green structure, whilst making cities more resilient, sustainable and healthier places in the process.

Where has it been used?

The Green Factor method has been successfully used in cities such as Berlin, Seattle, Toronto, Malmö and Helsinki as an important tool for **maintaining and increasing the ecological, environmental and social advantages of green infrastructure.**

Cities, such as Helsinki, have also used the green factor approach to directly address and **promote stormwater management and flood prevention measures.** The key principle in site specific stormwater management is to prevent the increase

of stormwater runoff in new development sites compared to their pre-construction levels. General principles include: stormwater prevention and reduction, stormwater filtering and moderating, and the provision of retention zones (e.g. wetlands).

In the green factor method, the planning authority can set a green factor target level for the site. The method provides for a number of green elements relating to planted and maintained vegetation, various run-off water solutions, green roofs, permeable surfaces, etc. All green factor methods use the same calculation principle: the green factor expresses the ratio of the weighted green area to the total area of the site. The objectives, practices and principles of the various green factor methods are developed to take into account the specific climate conditions, geographic characteristics, local planning conditions, and the functional values and perceptions of what constitutes an urban environment.

BERLIN, GERMANY

The focus of the Biotope Area Factor (BAF) is on improving the functionality of the ecosystem and promoting biotope development while maintaining current land use. The following circumstances led, among others, to the development of the biotope area factor in Berlin in 1994:

1. the high degree of soil sealing,
2. the insufficient accumulation of groundwater, caused by the rapid run-off of precipitation into the sewerage system
3. the lack of humidity and overheating,
4. the decreasing habitat for plants and animals due to insufficient green spaces

Objectives

One of the main objectives of Berlin's urban development is to reduce environmental pollution in the city centre area. The BAF contributes to the specification of the following environmental quality goals:

1. Securing and improving the microclimate and air hygiene
2. Creation and upgrading of habitats for animals and plants
3. Securing and developing soil function and water balance
4. Improvement of the living environment

SEATTLE, USA

Seattle Green Factor is a score-based code requirement that increases the amount of and improves the quality of landscaping in new developments. Landscaping plays an important role in how new development looks and functions. The objectives of the Seattle Green Factor:

1. Reduce stormwater runoff
2. Provide habitat for birds and beneficial insects
3. Provide cooling during heat waves
4. Improve the look and feel of a neighbourhood
5. Support adjacent businesses
6. Decrease crime

TORONTO, CANADA

The Toronto Green Standard (TGS) is a two-tier set of performance measures, with supporting guidelines for new development. Its objective is to promote sustainable site and building designs that address Toronto's urban environmental pressures relating to:

1. air quality
2. climate change and energy efficiency
3. water quality and efficiency
4. ecology
5. solid waste

Conclusion

We believe that the integration of the Green Factor Method into Kilkenny's Development Plan will help set the council's vision of sustainability into action. This method would help reduce the negative impacts of climate change, whilst managing flood risk, promoting biodiversity and supporting the creation of attractive and healthy neighbourhoods.

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