

URBAN GREEN INFRASTRUCTURE FOR PEOPLE AND CLIMATE: SYNERGIES WITH EU GREEN DEAL & FIT FOR 55 PACKAGE

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POLICY BRIEFING

Urban Green Infrastructure for people and climate: Synergies with the European Green Deal and the Fit for 55 Package

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INTRODUCTION

The deployment of urban green infrastructure, such as vegetated roofs and walls, on Europe's buildings has been increasingly considered as a tool to both mitigate climate change and to help urban areas adapt to its growing impacts, while increasing people's well-being.

The heatwaves and severe droughts of summer 2022, another signal of our fast-changing climate, clearly stressed the importance of boosting prevention and preparedness, especially in dense urban areas such as European capitals and large cities.

In the framework of the European Green Deal's goal to achieve climate neutrality by 2050 while leaving "no person and no place behind",¹ and of the "Fit for 55" package, this paper aims to provide a summary of the multiple benefits of green roofs and walls, outlining how they can contribute to the important objectives of some EU directives and regulations currently under revision.

1. [A European Green Deal | European Commission \(europa.eu\)](#)

THE BENEFITS OF URBAN GREEN INFRASTRUCTURE FOR PEOPLE, NATURE AND CLIMATE

The installation of vegetated surfaces in urban areas highly contributes to climate mitigation and adaptation. In particular green roofs and living walls:

- 1 **Lower buildings' energy demand and transform them in carbon sinks.** Recent analyses by the European Commission's Joint Research Centre,² show that greening 35% of the EU's impervious urban surfaces (more than 26,000 Km²) would reduce energy demand for the cooling of buildings in summer by up to 92 TWh per year, equivalent to about 15 000 medium-size windmills. In addition, the installation of vegetated surfaces could also avoid up to 55.8 Mtons per year of Co₂ equivalent, approximately the carbon footprint of Finland³.
- 2 **Increase the efficiency of solar panels.** Combining solar panels and vegetation on the roof surface (bio-solar roofs) allows to optimise the panels' performance thanks to the cooling effect of plants and evapotranspiration. Recent studies show bio-solar roofs increase the electricity output of photovoltaic panels by more than 8%⁴.
- 3 **Retain water and improve stormwater management.** By retaining and detaining storm water in growing media and vegetation, green roofs allow to reduce urban runoff and stormwater surges, thus contributing to a more energy and cost efficient stormwater management in urban areas⁵. Through the evapotranspiration process, green roofs also contribute to the important restoration of the natural water cycle in urban areas.
- 4 **Protect urban areas against extreme weather events.** Heatwaves and flooding will increase due to the effects of climate change. Thanks to their cooling effect, green roofs can decrease urban temperatures between 2.5 and 6°C⁶ and reduce the risk of flooding by retaining and detaining rainwater on the roofs, lowering the pressure on the city⁷.
- 5 **Restore nature in European towns and cities.** Vegetated surfaces on buildings can provide a habitat for several species of insects and birds, including endangered pollinators. Their contribution is key to re-introduce nature in our cities and to address the biodiversity loss in Europe⁸.
- 6 **Increase wellbeing.** Vegetated surfaces provide positive effects on health and wellbeing by reducing noise pollution⁹, granting a daily close contact with nature, reducing residents' mental fatigue and depression. Green roofs and walls also facilitate the creation of a sense of community and bring a cultural and aesthetic value to urban neighborhoods, notably densely populated areas.

2. [Water, energy and climate benefits of urban greening throughout Europe under different climatic scenarios | Scientific Reports \(nature.com\)](#)

3. The role of green roofs in enhancing carbon uptake and storage in the urban environment is also highlighted in the latest report of the Intergovernmental Panel on Climate Change (IPCC) Working Group III.

4. See: S. C. M. Hui and S. C. Chan, "Integration of green roof and solar photovoltaic systems," 2011.

5. Urban greening is a successful prevention strategy to avoid water overflows, exhibiting a much higher benefits to costs ratio compared to the corresponding "grey" strategies. See: Emanuele Quaranta, Stephan Fuchs, Hendrik Jan Liefing, Alma Schellart, Alberto Pistocchi, [Costs and benefits of combined sewer overflow management strategies at the European scale](#), in Journal of Environmental Management, 2022.

6. [Water, energy and climate benefits of urban greening throughout Europe under different climatic scenarios | Scientific Reports \(nature.com\)](#)

7. Green Infrastructure Alliance, [Rainwater management through urban green infrastructures](#), April 2022.

8. Green Infrastructure Alliance, [Bringing back biodiversity in our cities: the role of green roofs](#), June 2022.

9. Noise pollution has been recognised as one of the three emerging issues in the [2022's Frontiers report of the United Nations' environment programme](#).

DO YOU WANT TO HELP MAKE EUROPEAN CITIES AND TOWNS GREENER AND MORE LIVEABLE?

The broad range of benefits of green roofs and walls presented in the previous section can be delivered through several crucial pieces of the European Green Deal, most of which are currently being revised. The graphic below summarizes those synergies.



Thanks to a growing recognition of their multiple benefits, the deployment of green roofs and living walls across Europe is increasing. Become a champion and help us foster solutions that benefit citizens, the environment and the climate.

Contact

Luigi Petito

Head of EU Chapter – World Green Infrastructure Network

luigi.petito@wgin.org

The World Green Infrastructure Network (WGIN), established in 2009, is a global organization which brings together national and regional industry associations to disseminate information and research about green roofs and walls and promote their uptake in cities across the world.

The network currently includes 22 national associations from all over the world promoting nature-based solutions in urban areas. Nine corporate members are also part of the network. They operate in the field of green roofs and living wall systems, substrate manufacturers, stainless steel cable structures, healthy plants and decorations sectors.

Since its foundation, WGIN has held 10 international annual congresses.

In 2020, WGIN established its EU Chapter, a Brussels-based advocacy body which follows closely the European Green Deal and aims to stimulate a positive exchange of ideas and good practices among EU institutions, academia, industry and civil society organizations.

For more information:

www.worldgreeninfrastructurenetwork.org

