



BIG4LIFE
BUILDING-INTEGRATED GREENERY

Promoting collaborative strategies for management, maintenance, impact monitoring, and evaluation of Building Integrated Greenery (BIG) systems
Towards the New European Bauhaus by advancing the lifespan of BIG Systems



/ Welcome to the BIG4LIFE newsletter!

Building Integrated greenery (BIG) systems, i.e., green roofs and facades, can help achieve health benefits for people living in urban environments. With this idea at its core, the BIG4LIFE project, which held its kick-off meeting at the University of Lleida in October 2023, aims to promote the renaturalization of the urban environment through BIG systems.

With a budget of 1.8 million euros, this LIFE project has three years to achieve the co-design of framework plans for maintenance, monitoring, and impact assessment of building integrated greening (BIG) systems. The project will ensure the implementation so that this can be verified in the demanding conditions of the Mediterranean climate.

The BIG4LIFE project will work on eight green roofs and facades of buildings in Lleida and Barcelona applying the xeriscaping concept, which optimizes the use of water in these spaces.

The project, coordinated by the University of Lleida, brings together eight European partners (Spain, Italy, the Netherlands, and Greece) from academia and business: the Forest Science and Technology Centre of Catalonia (CTFC), the University of Studies of Genoa (UNIGE), the Hellenic Open University (HOU), TEB Verd SCCL, Verdtical Ecosistema, Sempergreen BV, and Eixverd Solutions.



The BIG4LIFE project has received funding from the LIFE Programme of the European Union

www.big4life.eu

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/ Green-roof refurbishments in Lleida

As part of the BIG4LIFE project’s efforts to promote sustainable urban greening, the project has undertaken two refurbishment projects in Lleida, transforming the green roofs at the Ronda Mercè kindergarten and the Parc Agrobiotech building.

The Ronda Mercè roof, previously unsuccessful due to limited maintenance has been redesigned using water-efficient xeriscaping techniques. Now actively monitored, the roof is expected to provide long-term benefits including improved air quality, thermal insulation, and biodiversity enhancement.

Similarly, the green roof of the Parc Agrobiotech building has been reimagined as a space to be enjoyed by users and features nine distinct sections adapted to the Mediterranean climate. With drought-resistant plants and a low-maintenance design, this roof aims to provide ecosystem benefits and a welcoming green area to the dwellers of the building.

The Ronda Mercè green roof refurbished: <https://www.big4life.eu/new-n-3/>



The PCITAL green roof refurbished: <https://www.big4life.eu/the-pcital-green-roof-refurbished/>



/ Monitoring the impact of green roofs

The BIG4LIFE project is actively monitoring the benefits of green roofs. To assess how vegetation contributes to cleaner air, the project has installed sensors on the green roof of the URBASER building. These sensors measure pollutants like carbon monoxide (CO), carbon dioxide (CO₂), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), volatile organic compounds (VOCs), and particulate matter (PM). By comparing data from this green roof to that from a conventional tiled roof nearby, researchers can accurately evaluate the air-purifying effects of green roofs.

BIG4LIFE is also exploring biodiversity enhancement. At Lleida’s Parc Agrobiotech, researchers installed bio-trapping cameras on a green roof to record animal visitors seeking resources like food, water, or shelter.



Monitoring the impact of green roofs on urban air quality: <https://www.big4life.eu/monitoring-the-impact-of-green-roofs-on-urban-air-quality/>



Monitoring green roofs biodiversity: <https://www.big4life.eu/green-roofs-host-biodiversity/>

/ Launch of the BIG4LIFE Community Service Learning

The BIG4LIFE project has launched its first Community Service Learning (CSL) team to monitor the refurbished green roof of the H3 building at the Parc Agrobiotech building in Lleida (formerly known as the PCiTAL building). Over two years, the six participants will assess plant cover, biodiversity, and other parameters to monitor the environmental services these areas provide. The CSL model, integral to the BIG4LIFE project for stakeholder engagement, combines education and service to promote environmental awareness and sustainability.

<https://www.big4life.eu/launch-of-the-big4life-community-service-learning/>



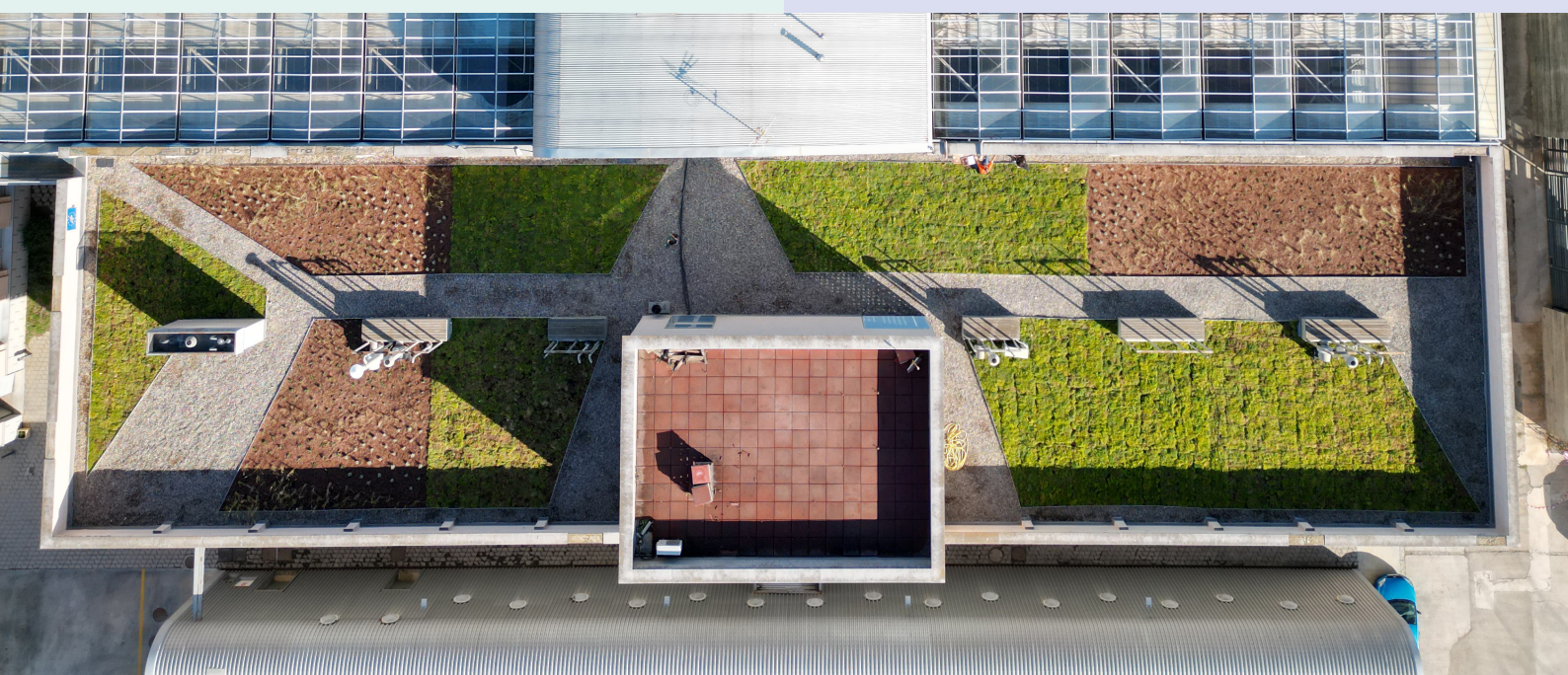
/ More education activities

Green Inspirations Workshop BIG4LIFE organized two “Green Inspiration” workshops to define collaborative strategies for the long-term monitoring and maintenance of green systems in Lleida and Barcelona. <https://www.big4life.eu/great-participation-at-the-green-inspiration-workshops/>

Think Green Workshop Over 40 students from the University of Genoa and the University of Lleida presented proposals to redesign the green roof of the H3 module of the Parc Agorbiotech building in Lleida. <https://www.big4life.eu/students-think-green/>

Workshop with high school students Freshmen students from the Torre Vicens High School in Lleida prepared a 1:1 section of a green roof to learn about the many benefits BIG systems provide. <https://www.big4life.eu/workshop-with-high-school-students/>

BIG4LIFE summer school This summer, Gabriel Luque and Laura Herrera, coordinators of the BIG4LIFE project have hosted Martina, a senior high-school student carrying out her research project on green roofs. <https://www.big4life.eu/big4life-summer-school/>



/ BIG4LIFE at...

ICED 2024

The BIG4LIFE team participated in the 5th International Conference on Environmental Design and Health (ICED 2024), organized by BIG4LIFE partner the Hellenic Open University. The researchers talked about the environmental and social benefits BIG systems can provide, covering topics like xeriscaping, monitoring, and sustainable design materials and methods among others. <https://www.big4life.eu/big4life-consortium-showcased-innovative-research-at-iced2024-conference-in-athens/>



/ Other events

- **Construmat 2024** (Barcelona): presentation of the BIG4LIFE project, its goals, and the contributions of the partners to the project. The session ended with a debate on the potential impact of the project on the construction sector and society in general. <https://www.big4life.eu/big4life-at-construmat-2024/>
- **NBS Summit** (Porto): Gabriel Perez participated in the Scientific panels presenting the project, its goals, expected impact, achievements, and first results to the public. <https://www.big4life.eu/big4life-at-the-nbs-summit/>
- **7th ApS Conference of Catalan Universities** (Barcelona): the participants shared and learnt about diverse, interdisciplinary service-learning practices across Catalan universities. <https://www.big4life.eu/big4life-coordinators-participate-in-the-7th-aps-conference-of-catalan-universities/>
- **Urban Green Biodiversity Fair** (Igualada): BIG4LIFE connected with municipal leaders and industry professionals, emphasizing stakeholder collaboration for sustainable, vibrant urban green spaces. <https://www.big4life.eu/big4life-project-participated-in-the-urban-green-and-biodiversity-fair/>



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