



CARING NATURE

Sustainable solutions for healthcare

FACTSHEET #2

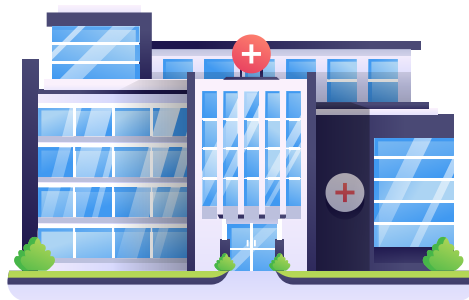
Reducing the environmental impact of healthcare buildings





The environmental impact of healthcare buildings

Healthcare facilities use **twice as much energy as conventional buildings** due to the continuous need for patient care and energy-demanding equipment and processes. They have the highest average embodied carbon content per m² among all building types. Implementing various measures within the facilities could result in substantial reductions of emissions. Examples of transformative actions include optimising electricity, lighting, air conditioning, heating, and insulation systems, incorporating renewable energy sources and eco-friendly construction materials.



CARING NATURE aims to reduce the negative environmental impact of buildings' construction, renovation and energy consumption by developing two innovative solutions:

1 Green Building Compass 4 Care

2 ENER





Green Building Compass 4 Care

Green Building Compass 4 Care is an AI-powered toolkit for decision support and management of Green & Resilient Healthcare facilities. The toolkit guides decisions with a “compass” that integrates three buildings’ dimensions: circularity profile, carbon profile and healing environment profile.

COMPASS integrates the Nature-Based-Infrastructure approach (NBI*), using plants and landscaping to offer environmental, economic, and social benefits such as carbon sequestration* and improved air quality. NBI, alongside Circular Building Design (CBD*) principles, drives COMPASS development to enhance sustainability in healthcare facilities.

Methodology :

The solution was developed by 4D Architects. It was tested and validated in three use cases - in Germany (by UKHD), in Spain (by FHAG) and in Finland (by WPH)



ENER

ENER is an energy management software solution powered by AI and cloud technologies for healthcare buildings. It offers an integrated approach to monitor, predict, optimise, and assess processes towards achieving low and zero impact energy structures. It will facilitate a straight-through data processing in the integrated facilities system by utilising 4.0 technologies. To develop the solution, data will be collected from the local information systems and other available sources. Performance tests will be conducted and evaluated to obtain a quantitative assessment of the system's effectiveness.

Methodology :

The solution was developed by IDEA75. It was tested and validated in three use cases - in Italy (by FPG), in Spain (by FHAG) and in Finland (by WPH)





The CARING NATURE solutions




The solutions aim to enable key players in healthcare to make better-informed decisions and take action towards circular, resilient and green healthcare facilities. Furthermore, the project targets capacity increase and a reduction of resource waste, energy consumption, carbon footprint, and overall economic and social costs.



Learning corner !

- **Nature-Based-Infrastructure approach (NBI):** Unlike traditional "gray" infrastructure, which involves constructing concrete or steel structures, NBI utilises natural features and processes to provide similar or enhanced benefits. Examples include using wetlands for flood control, restoring natural vegetation for erosion control, or implementing green roofs for stormwater management.
- **Carbon sequestration:** The process by which CO₂ is removed from the atmosphere and stored in carbon sinks, such as forests, oceans, or underground geological formations.
- **Circular Building Design (CBD):** CBD refers to an approach to building design and construction that aims to minimise waste and maximise resource efficiency by adopting principles of the circular economy. In CBD, buildings are designed to be regenerative and to maintain the value of materials and products over their lifecycle.



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