Feedback opportunity for the work programme 2025

The New European Bauhaus Facility

Destination 2: Circular and regenerative approaches for the built environment

Draft expected impacts:

The development of a European circular and regenerative ecosystem for the built environment is key to support the competitiveness of the sector and EU open strategic autonomy, and to achieve our climate ambitions. But this cannot be achieved without ensuring that citizens accept and support the necessary transformations.

Although considerable research efforts are underway on this matter, there remain significant gaps, meaning that innovation spreads slowly namely in the construction ecosystem, but also materials, including, where applicable, textiles. For instance, renovations are still not correctly targeted, too expensive, too slow, and often of insufficient quality, resulting in renovation rates that are too low; buildings are inefficiently used and undermine people's well-being; there is a lack of awareness of circular and innovative approaches amongst the different actors of the construction ecosystem; construction and renovation activity is concentrated only in specific neighbourhoods or cities, while other places face decline; and the market remains very attached to low costs in the short term. There is a broader dimensions of circularity that involves also re-purposing existing built environment and living spaces, as well as regeneration.

In work programme 2025, this Destination will contribute to addressing certain gaps and making the construction ecosystem more sustainable, resilient, circular and regenerative while also being human-centred. The Destination aims to deliver on this by:

- Increasing the re-use and re-purposing of materials, building elements, buildings and public spaces towards circularity in construction, based on reversible building design and sufficiency.
- Turning the built environment into a carbon sink (including through nature-based solutions), while respecting local cultural heritage and [cultural] landscape, taking them as inspiration for the design and construction of contemporary buildings, infrastructure, public spaces and landscapes.
- Applying the concept of sufficiency to buildings and architecture, and developing designs, methods and approaches in order to create structures that are functional, efficient, resilient, and effective in fulfilling intended and changing purposes and in satisfying people's social and psychological needs.
- Identifying regenerative design and construction processes that can be applied to a variety of building and public spaces, including cultural heritage.
- Ensure that the solutions developed are user-centred, connect with local cultural identity and cultural heritage, answer the needs of people on the ground - including minorities and vulnerable groups -, strengthen sense of belonging and societal resilience and are accepted.

The rural, peri-urban and urban environments should be considered.

Main expected outcomes:

To address the expected impacts mentioned above, this Destination aims to:

- Make elements of the built environment, construction materials and products more adaptable, durable and re-usable, and increase their recycling rate, leading to a more circular ecosystem for the built environment and a more efficient use of resources, thus limiting the extraction of new materials and waste generation for the construction ecosystem, in turn strengthening the EU's open strategic autonomy and competitiveness.
- Further explore sufficiency and regenerative design to research solutions for buildings and public spaces (including cultural heritage), applicable by architects and other relevant construction stakeholders, making better use of existing buildings, including for changing demand. Better designed and/or multi-purpose buildings and public spaces contribute to minimising the waste and environmental impact of the built environment while also contributing to the well-being of end-users.
- Better collect, structure, process and use data to contribute to increased circularity in the built environments by enhancing resource efficiency, reducing waste, and promoting sustainable practices throughout the building life cycle. This will include the specificities of cultural assets.
- Research how to ensure a better, more frequent use of by-products and secondary bio-based materials (including re-claimed wood), as well as regenerative design by the construction ecosystem and develop new solutions, contributing to making the built environment a carbon sink.
- Develop innovative uses for residuals from conventional forestry or non-timber forest products applicable by the actors of the construction ecosystem.
- Develop life cycle assessment methodologies to assess the aesthetic, social and economic impacts (affordability, job creation, skills needed, well-being) of carbon-sequestering materials in the built environment (including for cultural heritage), resulting in mainstreamed and affordable use of those materials.
- Artificial intelligence (AI) technologies are increasingly used to significantly reduce costs, optimize resource utilisation, and enhance efficiency of renovation, production and construction processes to make sustainable, circular and regenerative renovation and construction more economically viable and culturally sensitive.
- Develop methods and tools that more effectively facilitate collaboration among diverse stakeholders such as architects, engineers, designers, environmentalists, artists, culture and creative professionals and the end-users throughout the design and implementation phases to enhance multidisciplinary collaboration.
- Improve the climate adaptability and resilience of buildings and public spaces through regenerative designs that contribute to longevity, energy efficiency, and overall climate resilience in the face of evolving environmental conditions, contributing to a more sustainable and future-proof built environment.