

Distributed Design for Biodiversity

OCTOBER 18TH
2024

DISTRIBUTED
DESIGN
for BIODIVERSITY
POLIFACTORY
POLITECNICO
DI MILANO
(ITALY)

Exploring Distributed Design
for the Biodiversity of Urban
and Agrifood systems

Open Call for Ideas | ENGLISH

Information and guidelines for participation
in the experimental initiative developed by Polifactory
as part of Distributed Design

OPEN CALL
DEADLINE:
20 NOVEMBER 2024

Biodiversity in cities, agricultural systems, and natural ecosystems is crucial for the well-being of both people and the environment. It enhances air quality and water management and enables the production of healthier food, ensuring a natural balance. Protecting and promoting biodiversity is essential for a sustainable and resilient future.

Rewilding is important for protecting natural processes and wilderness areas, promoting biodiversity recovery, and restoring ecosystems' self-sufficiency. In cities, this involves creating urban forests, green corridors, natural parks with native species, green roofs, and vertical gardens. In agriculture, rewilding means partially or fully converting farmland into natural or semi-natural areas, creating hedges, small woodlands, and wetlands, and reintroducing agroecological practices and regenerative farming.

Innovation challenges for more widespread biodiversity include interdisciplinary collaboration, data access and management, community participation, adaptability and scalability of solutions, impact monitoring, and economic sustainability. It's necessary to foster collaboration between ecology, agronomy, urban planning, and social sciences through open design approaches. We must improve access to relevant data to monitor and assess the impact of biodiversity actions and involve local communities in the rewilding process. Solutions need to be modular and flexible, adaptable to various geographic and socio-cultural contexts, combining innovative technologies with traditional practices.

Distributed Design for Biodiversity unfolds in four stages:

- A **call for ideas** invites young designers, makers, independent innovators, and interested experts to submit ideas related to open-source solutions that explore the role of Distributed Design in supporting the monitoring, health, and growth of biodiversity in urban ecosystems and agro-systems.
- Two ideas aimed at **supporting biodiversity in urban ecosystems and agro-systems**, presented by two different teams, will be selected by an evaluation committee composed of experts in design, making, and the circular economy.
- The teams will develop their projects and prototypes with the technical and scientific support of Polifactory, working as Makers in Residence, demonstrating the potential for materializing solutions with real production and distribution capabilities.
- The two projects will be promoted on the Distributed Design platform and presented at events and initiatives dedicated to design and making.

Distributed Design for Biodiversity does not offer cash prizes or financial contributions to participating designers, makers, and independent innovators. Instead, it supports the development of innovative, open-source demonstrative projects that promote biodiversity.

THE SOLUTIONS WE ARE LOOKING FOR

The Open Call for ideas encourages young designers to freely propose ideas for open-source solutions focused on the biodiversity of urban and agricultural ecosystems. Through distributed design, these projects can include products, analog and digital tools, IoT devices, etc., that enhance data collection, monitoring, tracking, and biodiversity management, in line with the values of the New European Bauhaus. It is essential that the proposed ideas pragmatically and professionally consider the use of digital technologies available in makerspaces and Fab Labs, including microcontrollers, microprocessors, and integrated or applied sensors in the products. These digital fabrication technologies can also be combined or integrated with industrially or artisanally produced products or components. This requires careful

consideration not only of the opportunities but also of the constraints and limitations these technologies may present when aiming to create products with aesthetic and technical excellence, effective performance, market distribution, and user appreciation.

EVALUATION AND SELECTION OF IDEAS

A panel of experts in design and making will evaluate all the proposals at their sole discretion. Two ideas will be selected for development and prototyping based on the following main criteria:

- The idea's ability to provide useful or innovative solutions for issues related to the monitoring, tracking, and control of biodiversity in ecosystems.
- The technical feasibility of the ideas as future open-source products that can be partially or fully developed in spaces like Fab Labs and distributed online through the Distributed Design platform.

'MAKERS IN RESIDENCE' AND PROJECT PROTOTYPING

The selected teams will join Polifactory as "Makers in Residence" to:

- Create the prototype of their idea with the support of the Fab Lab.
- Produce the digital documentation of the project.
- Promote the project on distributeddesign.eu.
- Document the prototyping phases with photos and videos.
- Participate in events and initiatives related to the Distributed Design project.

Polifactory, in addition to providing technical-scientific support for project development, will offer access to its technologies for prototyping and will cover the costs of materials and components.

PROJECT PROMOTION

Polifactory will organize a final event dedicated to the presentation of the projects. Furthermore, Polifactory will support the promotion of the projects and designers through the Distributed Design platform, its communication channels, and social media, as well as within initiatives dedicated to design, makers, and the world of food.

KEY DATES

18 October 2024	Open Call for Ideas presentation
18 November 2024	Deadline of the Open Call for Ideas
20 November 2024	Selection of ideas
1st November 2024 - 28 February 2025	Prototyping and presentation of the projects
Since 1st March 2025	Promotion of the projects

PROJECT TEAM PARTICIPATION AND COMPOSITION

Due to the complexity of the topic, team participation is mandatory. Ideas can be submitted by groups of at least 4 people, composed of Politecnico di Milano students and professionals who graduated within the last 5 years. External members such as biologists, citizen scientists, designers, makers, programmers, researchers, artists, and independent innovators may also join the groups. The Distributed Design Platform adopts inclusive principles in the composition of teams.

It is mandatory for project teams to include one or more foreign residents in Italy and members representing diverse gender identities. If these requirements are not met at the time of idea submission (see the next point), the Commission will restructure the selected teams during the "Makers in Residence" phase to ensure inclusivity principles are respected.

HOW TO SUBMIT YOUR IDEAS

Participating is simple. Submissions must be made by **24:00 on November 18, 2024**. Proposals should be sent to polifactory@polimi.it with the subject "Open Call for Ideas Distributed Design Platform + idea name" and must include two attached documents:

1. **Project Summary:** A PDF file with a resolution of 150 DPI (max file size = 10 MB), named "IdeaName.pdf," containing:
 - o Text in Italian and English (max 1,000 characters, including spaces) explaining how the project idea is open-source, its level of innovation and usefulness in the field of Food Ecosystems, and its technical feasibility as a prototype and product using one or more Fab Lab technologies (e.g., 3D printers, laser cutting, vinyl cutting, CNC milling machines, microprocessors, microcontrollers, sensors, and actuators).
 - o A graphic representation or general illustration (1 or more images), approximate technical drawings, and main technical and construction details of the object that can help the Evaluation Committee understand the idea.
2. **Contact Information and Participant Profiles:** A text file containing personal details (name, surname, address, email, and phone number) and a brief profile (max 500 characters, including spaces) of each team member.

Polifactory will NOT be held responsible for any IT errors attributable to third parties, fortuitous events, or force majeure.

INTELLECTUAL PROPERTY

The selected projects, subsequently developed in collaboration with Polifactory, will be released as open-source with a Creative Commons license and published on the Distributed Design platform (distributeddesign.eu) with the relevant documentation.

CONTACTS AND INFORMATION

During the Open Call for Ideas period, an assistance service will be available to provide guidance and information to anyone wishing to submit an idea.

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