

WHITEPAPER

# CENTRINNO

A new industrial revolution that puts citizens  
at the core of sustainable transformation



1. Vision
2. Background
3. Mission
4. Pilot cities
5. Approach
6. Outputs

CENTRINNO is a European Horizon 2020 funded project. Its main objective is to recover the heritage value of industrial sites in Europe to foster a more inclusive and sustainable productive model in city neighbourhoods. The alternative urban regeneration processes proposed by the project will create opportunities in the context of great societal and environmental challenges, leaving no one behind as we lead a transition toward a more sustainable future. CENTRINNO fosters productive cities that put citizens at the core of a sustainable transformation focusing on nine unique European industrial sites and creative production such as wool and leather or food and gardening.



CENTRINNO envisages cities creating local impact by enabling production processes at historic sites and hubs, that

- Use heritage as a catalyst for innovation and social inclusion
- Boost a diverse, inclusive, and innovative urban economy
- Hold true to the ecological challenges of our time



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## BACKGROUND

Two centuries ago, Europe ignited the Industrial Revolution and economic benefit at regional and national scale became abundant. More recently, globalisation, which was foreseen to strengthen global markets, has led to substantial losses for the manufacturing capacity of European cities. Europe's forced transition to a knowledge economy has resulted in a decrease in manufacturing jobs, a lack appreciation for these jobs and the neglect of industrial areas. Subject to decay or exploitation by extractive economic activities, historic industrial areas are disconnected to local knowledge or value generation.

Cities are currently facing huge challenges that demand new solutions. The current model of massive consumption and extraction in cities contribute to the acceleration of the climate crisis. Automation and Industry 4.0 present great potential but also challenges, such as the loss of jobs or the social exclusion of vulnerable populations. Coronavirus pandemic has drastically exposed the fragility of the current system and our own vulnerability in cities.

We are at a moment in history in which we need to make a change. CENTRINNO proposes alternative urban regeneration processes which will be welcomed as opportunities in this context, leaving no one behind as we transition toward a sustainable future.



# MISSION

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CENTRINNO aims to develop and demonstrate strategies, approaches and solutions for the regeneration of industrial historic sites as creative, locally productive, and inclusive hubs to:

- Shape new socio-economic and sustainable identities of industrial historic sites
- Foster social inclusion through craftsmanship culture and heritage
- Rethink the way cities govern their material resources

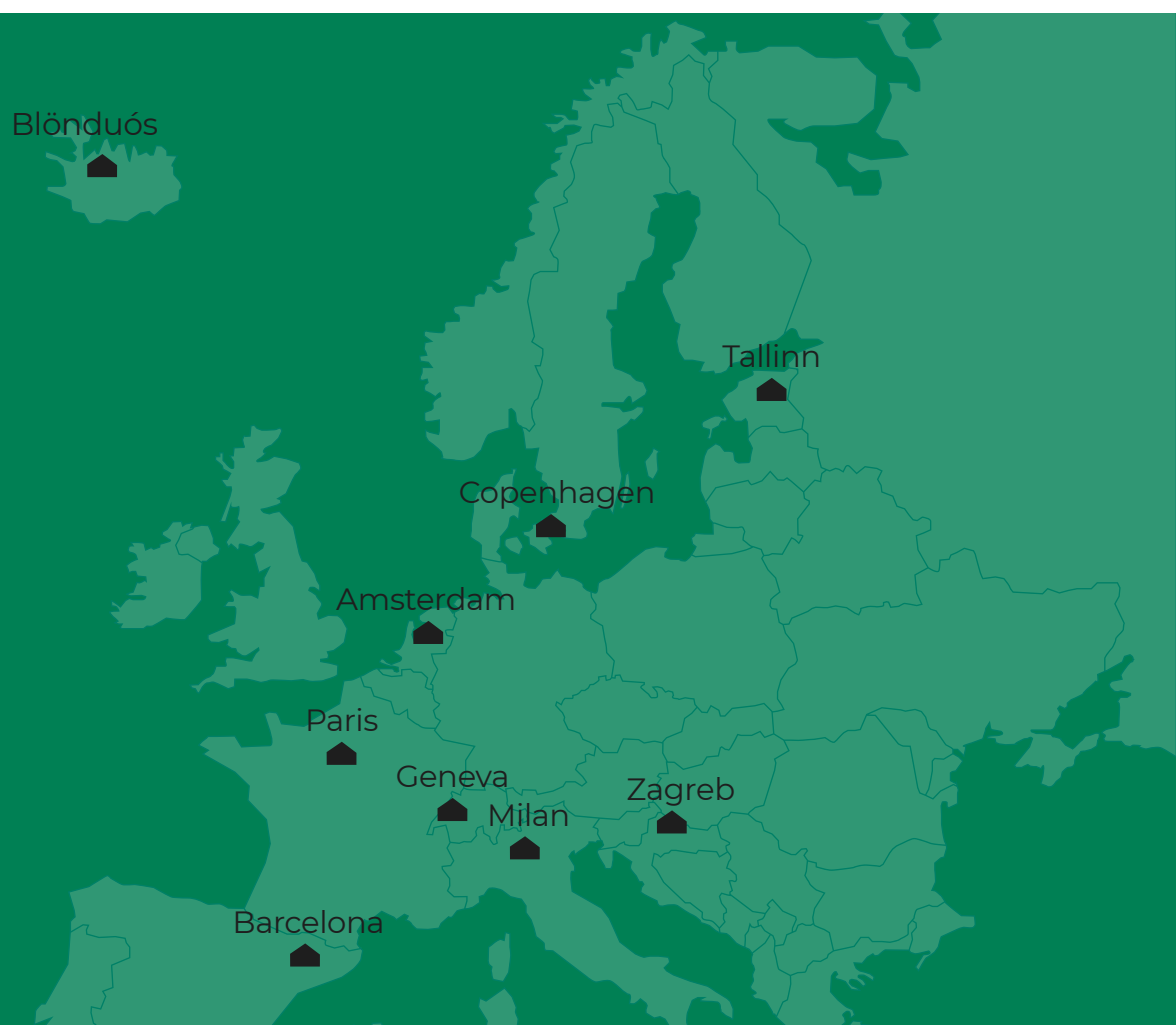
The project is based on project-based learning, focusing on the role of heritage and vocational training, including digital fabrication tools and soft skills connected to local challenges and needs, and, at the same time, producing social and environmental impact by adopting the principles of circular economy in new urban transformation processes. Ultimately, CENTRINNO tests and assesses innovative strategies, approaches and solutions for alternative urban regeneration processes in different European sites.



# PILOT CITIES

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CENTRINNO involves 9 European pilot cities very different in nature and scale. The focus area in some cases is a neighbourhood, whereas in other cases is a block or a delimited industrial site or a single building. Some cities are focused on one type of craftsmanship or material, and others combine several such as fashion, gardening, media production, wood, wool, food and more. Cities from a population of 2 million people to just 7 thousand inhabitants include:



## **Amsterdam**

Buiksloterham and the NDSM-warf area

## **Copenhagen**

Rentemestervej in the Northwest Neighbourhood

## **Tallinn**

Kopli Peninsula

## **Barcelona**

Poblenou in Sant Martí District

## **Geneva**

Zone Industrielle de Charmille (ZIC)

## **Paris**

Mouzaia and Jardin des Traverses in the 18e and 19e arrondissements

## **Blönduós**

Town and municipality in the Northwestern Region of Iceland

## **Milan**

Ex-Ansaldo area

## **Zagreb**

Sljeme former factory in the Sesvete district

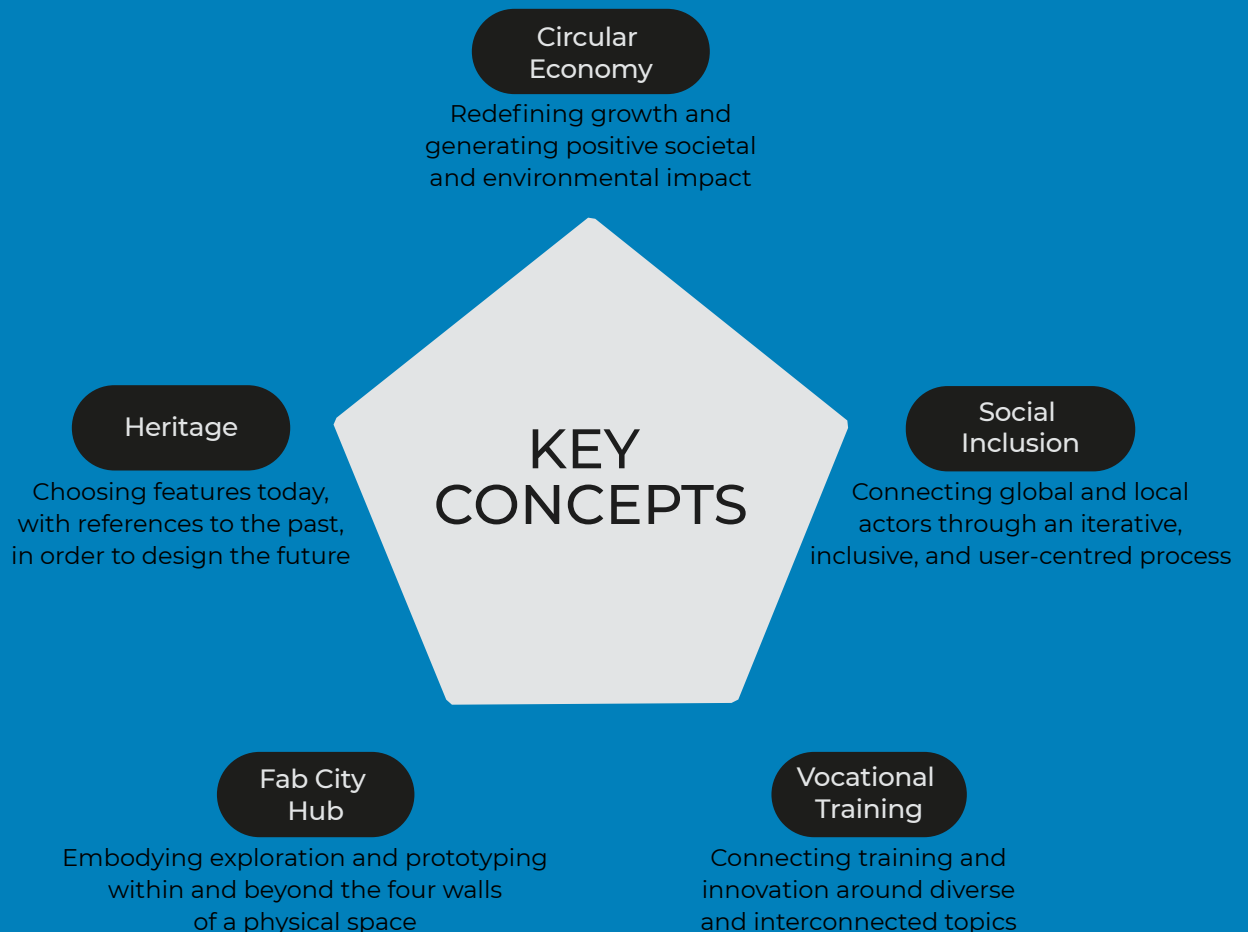
# APPROACH

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Europe has the opportunity to evolve the productive model for cities to become circular. CENTRINNO contributes to the reinforcement of the narrative of Circular Economy and productive cities, not only in terms of buildings, products and manufacturing infrastructure, but also in relation with cultural constructs around local design and making.

While connecting the traditions linked to the industrial revolution in cities, pilots follow different strategies, aligned with pilot size and theme, but following a common approach in mission-driven innovation and multi-scalar strategy.

In this new industrial paradigm, materials stay local, and information travels globally, supported by distributed networks of innovation in creative hubs such as Fab Labs and Makerspaces, while enabling the recovery of local knowledge around design and production.





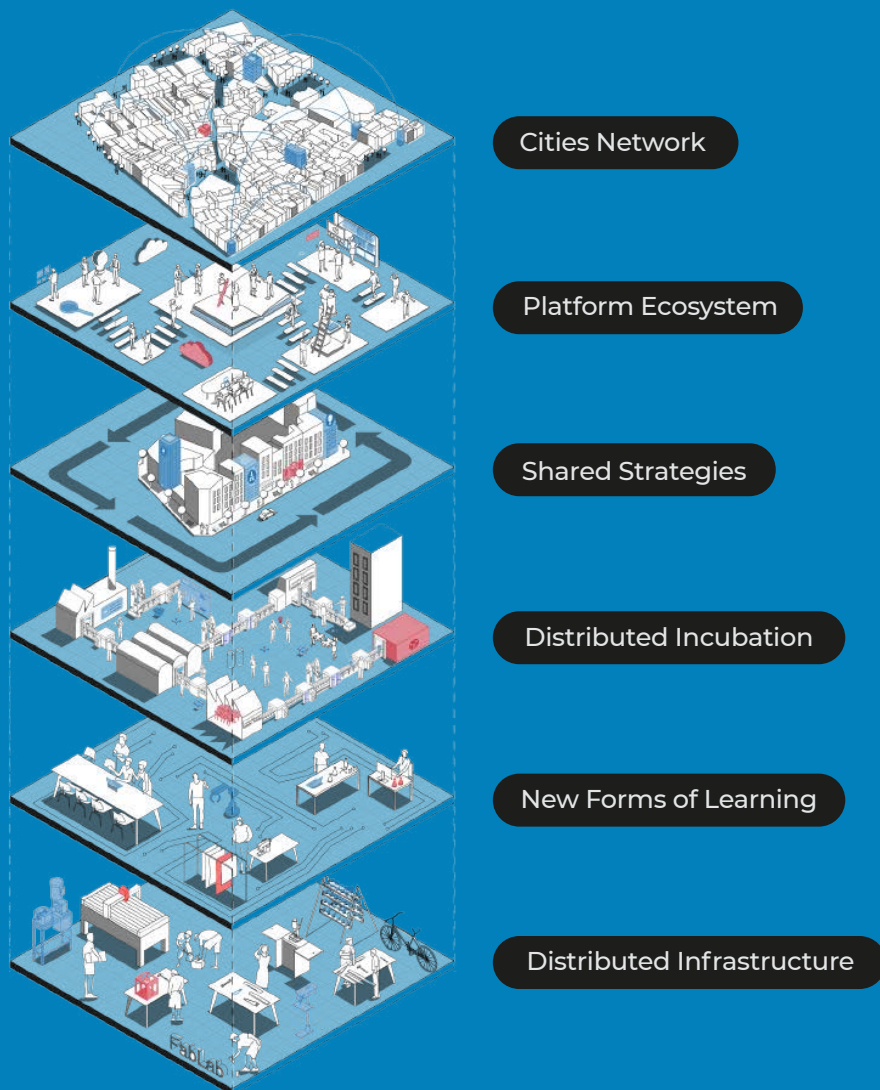
# Methods

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The new industrial paradigm developed in the project will be operationalized through the CENTRINNO framework, containing different tools and methods based on the five key concepts of the project's approach. The project's framework is based on the experience and work of the consortium members, especially on three existing methods:

## Full Stack

is a global framework developed by the Fab City Global Initiative based on the concept of solution or software stack from computing science. It explores the multi-scale nature of change-making in the city - the most complex system ever created by humans. The CENTRINNO methodology employs the Fab City Full Stack to activate synchronous actions from the bottom-up and top-down that complement and interconnect with each other. It encourages a prototyping approach that brings together software and hardware, local and global, individual and collective action across practice, place and policy. The pilot cities will implement local activities, feeding back into this framework.



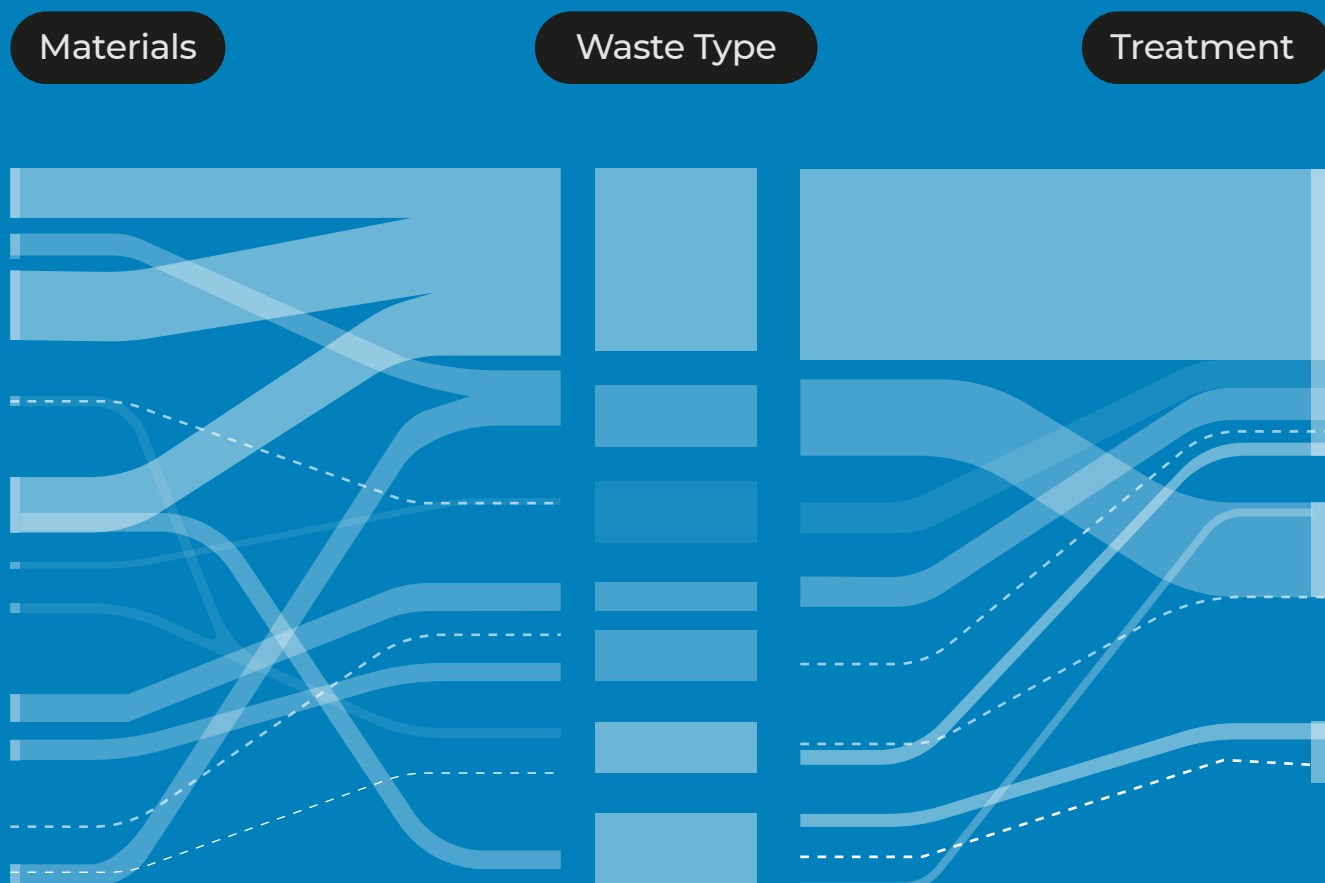
## Methods

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### **Material Flow Analysis (MFA)**

CENTRINNO's approach to circularity builds on the concept of the '**urban metabolism**', which seeks to understand the city and its surrounding region through the lens of biological systems, and technical processes. At the core of urban metabolism concept is the Material Flow Analysis (MFA) method: an analytical method to quantify flows and stocks of materials, water, energy, and products in a pre-defined system in order to study biophysical aspects of human activity on different spatial and temporal scales.

CENTRINNO develops its own approach and method combining MFA with other methods, such as input-output analysis. The focus of the Urban Metabolism analysis for CENTRINNO is two-fold: Firstly, the mapping of waste streams, their location of generation and their destination shall identify available resources for local production. Secondly, an analysis of urban demands for products and goods adds insights into the opportunities for re localising product value chains.





## Methods

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### **Emotion Networking (EN)**

In the CENTRINNO project Emotion Networking is positioned to be utilised as an innovative and qualitative data collection method. Developed by Imagine IC and the Reinwardt Academy, EN is a way to map and understand how an item, object or location is subjected to a network of emotions at the local level. The result is the visualisation of a network of frictional or consensual relations of understanding about something. The practice also facilitates the “digging up” of traces of the past and personal and/or communal stories, which together can be seen to (temporarily) shape, or initiate a collection that constitutes heritage. Each pilot is able to develop its own approach to EN, adapting the method to its own needs and its specific items of heritage, activities and stakeholders involved.



Emotion Networking session. Source: Imagine IC

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## What makes CENTRINNO unique?

### **An innovative, inclusive approach**

Stakeholders are invited to reflect on their own feelings in relation to local heritage through a novel approach called 'Emotion Networking.' The method fosters exchange and discussion between different individuals and collectives and, therefore, allows for the inclusion of minorities or segregated groups in the discussion and definition of an heritage item. It pursues the democratic potential of heritage making by encouraging the unpacking and exploration of place, through emotional recognition, identification and visualisation.

### **Recognition of the collective and multi-layered nature of a place**

Stakeholders, infrastructure, and resources are all valuable to the CENTRINNO understanding of urban areas. A holistic, systems-based analysis of place aims to unlock the potential and opportunities for circular transformation processes in cities that draw on the power of community.

### **A focus on the Fab City Hub**

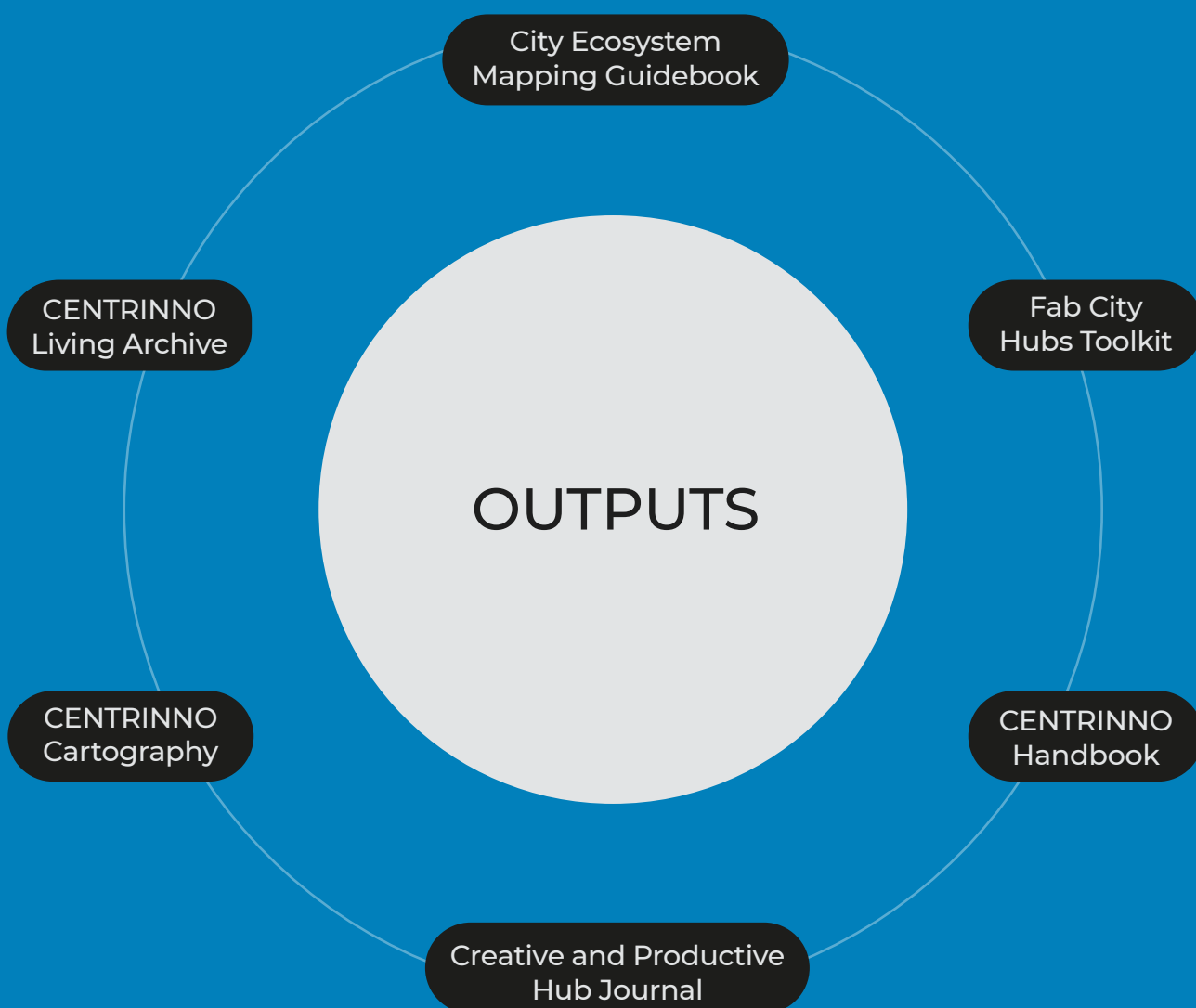
Emerging from the Fab City Global Initiative, the Fab City Hub represents an evolution of the Fab Lab, Living Lab and makerspace. CENTRINNO analyses, co designs and prototypes different typologies, organizational structures, and governance models for Fab City Hubs. It responds to local needs and ignites global knowledge exchange within and beyond the walls of a physical space.

# OUTPUTS

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CENTRINNO will generate a series of operative resources to facilitate transformation processes across historic areas. Online platforms, how-to guides and practical toolkits will be available as open source data for other cities that are also willing or in the process to reconvert, revamp and revolutionize industrial sites in benefit of their citizens.

All these resources will be released during the project and will be accessible on the project's website [centrinno.eu](http://centrinno.eu)





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## **City Ecosystem Mapping Guidebook**

A how-to guide for cities to map their local ecosystem, including resource flows, as well as key producers, makers, educators, suppliers and craftspeople, with the aim of visualising and igniting the city's circular potential and unfolding the role of heritage.





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### **Creative and Productive Hubs Journal**

An open journal of personal experiences and case studies from leading Hubs across Europe and the world, aimed at inspiring and informing the creation of innovative approaches to new hubs.



## CENTRINNO Whitepaper

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### **CENTRINNO Cartography**

A common web-based platform that displays dynamic information to spatially visualize the multi-stakeholder networks and urban resources of each pilot city.



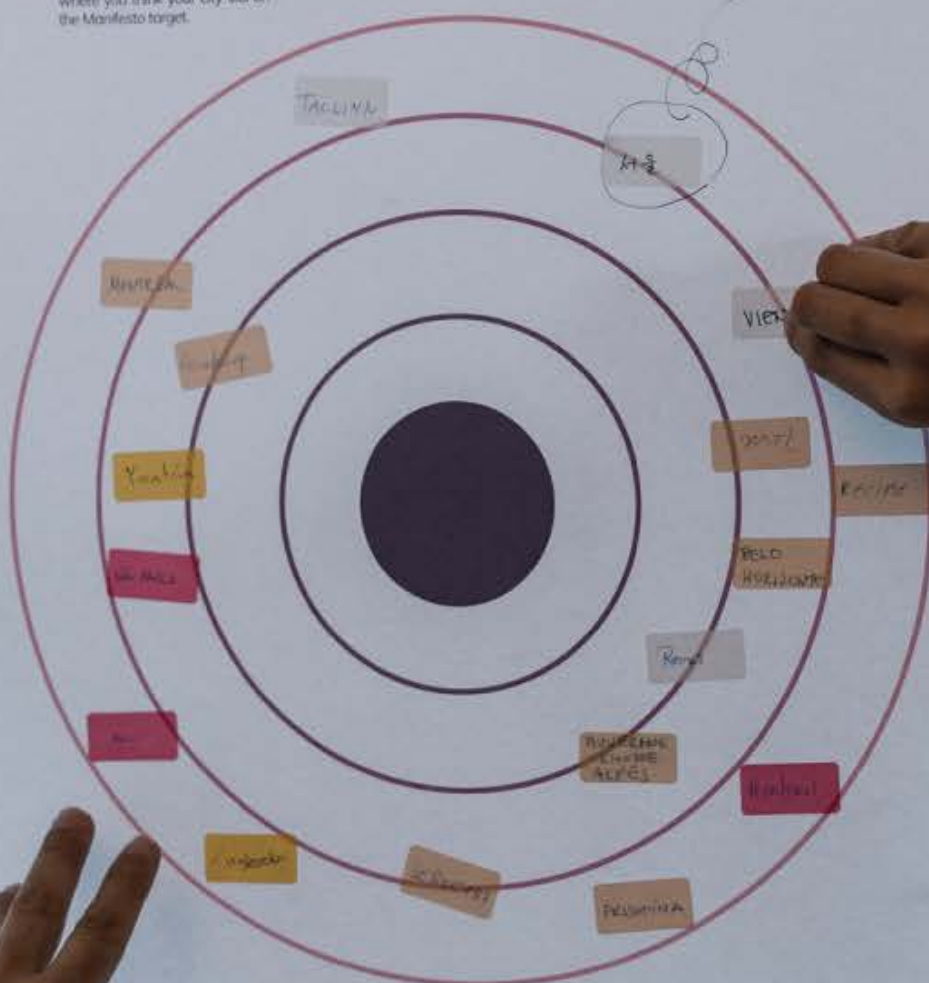


A multimedia repository that shares the unique multi layered cultural identity of each pilot site, gathering the content developed during the emotion networking activities.



→ 06 How locally productive is your City?

Add a sticker, with your city name where you think your city sits on the Manifesto target.



We support the efficient and effective use of available resources in a circular economy to build a productive and vibrant city.

## Case Study



there are currently 24 square meters under environmental initiative. The Chief's Garden Farm in Cajuru neighbourhood in 2019, with 4,435 square meters, uses of renewable spaces are complemented by the bee population within the food plantation through the importance of bees in Brazil to implement a food unsold products for environmental

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### **Fab City Hubs Toolkit**

A hands-on toolkit for cities, developed through real-world prototyping undertaken in the project's pilot cities.

Documenting the emerging Fab City Hub model that is being developed by and with productive communities across Europe, explaining how to go about setting-up your own.





A collection of tools and methods developed, implemented and validated inside the project. It will be a useful resource for other cities and partners to apply the learnings and methods developed in CENTRINNO in the future



## Project coordinator



## Scientific coordinator



## Funded by



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## Consortium members



Generalitat de Catalunya  
Departament d'Educació

Innova FP - Generalitat de Catalunya



Poblenou Urban District



Waag



Pakhuis de Zwijger



Hout- en Meubileringscollege



MD Nema - Rete Nuove Manifatture



Fab City Grand Paris



Volumes



Sony Europe BV



Copenhagen Municipality



Danish Design Centre



Fab Lab Onl'fait



Au Fil du Geste



Ressources Urbaines - Cooperative



Icelandic Textile Center



Háskóli Íslands

Haskoli Islands - University of Iceland



TalTech - Tallinn University of Technology



City of Tallinn



Fab Lab Zagreb



Faculty of Architecture, University of Zagreb



Metabolic Institute



Reinwardt Academy - University of Amsterdam



European Creative Hubs Network