

## Session theme – Forum Innovation 2025

### Urban innovations and systemic relationships between circular and creative processes

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The transition towards more sustainable cities and territories calls for a reorganization of production models. While globalization has driven technological progress, it has also led to the outsourcing of manual labor, technical knowledge, and industrial innovation away from urban centers, intensifying the environmental impact of mass production. In response to these challenges, the New European Bauhaus (NEB) (European Commission, 2023), in alignment with the European Green Deal, promotes local and circular manufacturing practices, strengthening synergies between creativity, innovation, and industry to foster more resilient territories.

In this context, concepts such as distributed urban production and urban (micro) factories are emerging as viable alternatives, enabling the relocation of manufacturing within cities in a more sustainable and innovative manner (Herrmann et al. 2020). These production systems rely on small-scale, circular and multi-functional manufacturing spaces, leveraging urban resources and local specificities to develop small-batch production models that directly engage consumers as prosumers (Buxbaum-Conradi et al. 2022; Hofer et al. 2024; Dupont et al. 2023).

The rise of advanced technologies - including the Internet of Things (IoT), 3D printing, peer-to-peer networks, and the interconnection between physical and digital environments - facilitates the development of such hybrid production models, fostering new localized organizational structures based on community engagement, commons, and shared values. By enabling small-scale, local fabrication, these innovations create new opportunities for artisans, creatives, and small and medium production businesses, who often struggle to engage in innovation processes due to the dominance of mass production (Boutillier & Perrin 2024).

However, while these innovations create new opportunities, their integration into urban ecosystems is shaped by systemic conditions. The interplay between circular processes and urban creativity is influenced by structural constraints that both necessitate and stimulate innovation. Cities, as dense and resource-intensive environments, face spatial limitations, regulatory frameworks, and material scarcity, which require creative solutions to optimize resource flows and production systems (Williams 2019). These constraints drive the adoption of circular strategies such as material reuse, shared infrastructures, and closed-loop production systems encouraging the development of innovative business models and design approaches (Lüdeke-Freund, Gold, & Bocken 2019). At the same time, the presence of collaborative and hybrid production spaces in cities provides a fertile ground for circular activities to emerge (Kasmi et al. 2022). The development of urban manufacturing ecosystems - such as third places, Fab Labs, makerspaces, and creative hubs can facilitate co-creation, knowledge exchange, resource sharing and cross-sectoral collaboration, which in turn foster circular innovation and enhance both cultural and economic dynamism.

Indeed, these spaces have the potential to function as Middleground that connect the Underground - grassroots innovation driven by talented and creative individuals engaged in experimental, non-structured, and collaborative processes with the Underground, which includes formal institutions such as local authorities, companies, and research centers responsible for structuring and scaling innovation (Cohendet et al. 2010). This dynamic represents a systemic relationship between different scales of stakeholder action and decision-making processes, interweaving top-down and bottom-up approaches to urban innovation. In the context of circular and creative processes, this interaction becomes particularly relevant, as circularity often emerges from localized, experimental, and community-driven initiatives that require institutional recognition and support to scale up and integrate into broader urban policies.

This session seeks to explore the emergence of circular and creative urban production models, focusing particularly on the role of these intermediary collaborative spaces (third places, Fab Labs, makerspaces, creative hubs) and their potential to evolve into urban micro-factories supporting innovation and distributed production. These spaces have often been analyzed for their capacity to generate collaborative dynamics, foster knowledge communities (Aubouin and Capdevila 2019), and enhance territorial creativity by reshaping work organization (Boutillier et al. 2020; Nadant and Marinos 2020). However, their role as transformative production sites contributing to the structuring of local manufacturing ecosystems - strengthening synergies between artisans, creatives, entrepreneurs, researchers, and institutions - remains underexplored. Furthermore, their contribution for eco-innovation could be reinforced (Kasmi et al. 2022; Vence et al, 2022) in parallel to a change of scale.

This session aims to further investigate the emerging models of urban factories and distributed production, examining their diversity and integration into local dynamics. It will explore how these models transform the interactions between production spaces, cultural industries, and creative territories, promoting a more sustainable relocalization of manufacturing. Special attention will be given to technological and organizational innovations that facilitate more sustainable urban production, notably through circular economy strategies, waste repurposing as productive resources, and the optimization of local material flows.

Furthermore, the session will examine governance mechanisms and collective organization strategies, analyzing the engagement of key stakeholders - including local authorities, businesses, non-profit organization and citizens - in shaping collaborative productive ecosystems following the quintuple helix of innovation dynamic. Lastly, it aims to assess the economic, social, and environmental impacts of these transformations, questioning their contribution to territorial resilience and the transition towards a more localized and circular production model.

The session welcomes papers on the following topics (non-exhaustive list):

- Typologies and emerging models of circular distributed urban production
- Interactions between production spaces (Fab Labs, makerspaces...) and creative territories
- Digital and green technologies enabling circular urban manufacturing
- Artistic approaches and experimentations for sustainable and circular design & production
- Collaborative urban production ecosystems (creators, SMEs, and institutions) following a quintuple helix innovation model
- Governance, inclusion and new forms of urban production organization
- Scaling strategies and economic models for localized urban production
- Regulatory frameworks and policy support for circular urban manufacturing

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