



05. New Horizons

Citizen-led Co-production Toward a Circular Built Environment

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Circular transition requires collaborative efforts between different stakeholders to narrow, slow down and close resource loops throughout time and space. Not only are the roles of these stakeholders reframed, but new stakeholders might also need to be considered. So, who collects resources that are no longer needed? Who reuses and maintains them to extend their lifespan? And what new skills and capabilities are needed for these tasks? What we notice is that in a circular system, both producers and users become active “circular doers.” This presents new opportunities and challenges, not just for the typical agents involved in spatial production - but also for citizens.

And here, co-productive processes become key for understanding how diverse people – regardless of their predefined roles – can work together. In spatial co-production, diverse actors like citizens, planners, public officials, researchers and others, bring together their knowledge, skills, and resources, to create spatial interventions. Interests and viewpoints of stakeholders may be diverse and sometimes conflicting in such processes.

Citizen-led co-production in particular, is based on the idea that citizens have valuable knowledge and capabilities to improve their environments; and that citizens can take accountability in transforming spaces in collaboration with others.

In 1969, Sherry Arnstein said: *“The idea of citizen participation is a little like eating spinach: no one is against it in principle because it is good for you.”* And indeed, citizen-led co-production has many advantages, like building community cohesion, optimizing resource use, improving maintenance quality, creating awareness, and enhancing transparency. These are especially valuable when addressing complex issues like the circular transition or the climate crisis, that no one person has the capacity to solve alone. But there are also drawbacks to co-productive processes. They can increase time and resource requirements, complicate consensus, amplify power imbalances, and lead to political manipulation or conflict.

Grassroots transition approaches argue that large-scale change often begins locally with small citizen-led initiatives. Whilst the spotlight for the circular transition is mainly focused on the approaches of the industrial and governance sectors, we take a moment to reflect on the importance of building community capacities, promoting participatory decision-making, and empowering citizens to act on the circular transition. At the moment, there are numerous citizen-led initiatives around the world that point toward circular futures. In our research, we analyze such processes - to explore how diverse stakeholders can work together toward a circular built environment.



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For example, have you heard of “Haus der Materialisierung” in Berlin? It’s a living lab for circular resource use, research, and practices - all in a repurposed warehouse. Diverse circular activists work together with local government, researchers, neighbors, and public real estate developers to experiment with how a circular city could work.

In the neighbourhood Barrio31 in Buenos Aires, Argentina, the initiative “Diseño Informal” was organized by researchers, local government, and intergovernmental organizations to explore co-productive approaches in informal settlements. Architecture and design students, local craftspeople, and residents co-created small-scale prototypes from locally available materials to tackle the structural challenges of self-built houses.

Enablers and barriers

So, what enables processes of citizen-led co-production toward a circular built environment? In our observation of case studies, we found that innovation was enabled by *1. Collective Intelligence* in the cases where diverse stakeholders brought their knowledge and skills together. This sometimes resulted in new design solutions, construction techniques, and maintenance strategies. Another critical enabler we identified as part of some processes was *2. Awareness and capacity building*, which lead to sensitization, value shifts, and skill development among citizens. Building economic capacities in particular, enabled initiatives to thrive in the long run. We also observed that co-productive processes toward a circular built environment needed *3. Safe spaces to experiment*. Some of such spaces of possibilities were physical spaces, for example, where

initiatives pay affordable rent prices. Others were legal spaces of possibility, where processes are freed from standard legislation and bureaucracy, such as building codes and norms.

However, we also found some barriers to citizen-led co-production. For example, many analyzed processes have shown themselves to be more *1. Labor and cost-intensive* than conventional building processes. Another common challenge was the *2. Quality control of reclaimed materials*. For example, how to ensure the load-bearing capacity of recycled rebar? Further, *3. Deviating timeframes* were challenging to match. For instance, the moment when leftover building components became available from a deconstruction site did not always fit with the users’ needs for materials. Such unpredictability made processes challenging to plan. And finally, in most cases, *4. Limited knowledge and skills* for circular construction were still not broadly developed amongst process participants.

New roles

Looking into these cases we learned some valuable lessons on sustaining factors for citizen-led initiatives toward a circular built environment. Mainly that *a shift in stakeholder roles is necessary* for a diversity of people to get active and collaborate. In our research, we discovered new roles that people take on in co-production processes toward a circular built environment. Some become matchmakers. They find new users for discarded materials, urban wastelands, and abandoned buildings to close resource loops. Matchmakers are material harvesters, vacancy platforms, scavengers, reuse centers, and others. And *architects and planners* also take on new



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roles, depending on their level of involvement. As *facilitators*, they help to organize the processes, as *translators* they convert ideas into technical designs, as *enablers* they empower communities to self-organize, and as *activists* they support including disadvantaged groups or concepts like circularity.