Chapter 16

Urban Regeneration: An “Incremental Circularity” Perspective

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Urban Regeneration (UR) is an approach to urban development contrasting soil consumption by catalyzing social energies to reuse urban existing heritage (brown-fields and dismissed buildings). The authors of this chapter are professionals within KCity Ltd., a bespoke consultancy specialized in UR design strategies adopting an interdisciplinary approach, derived in particular from policy analysis and urban planning. The aim of this chapter is to investigate the potential of UR practices to give a contribution to the scientific debate about Circular Economy and its application into urban development.

16.1 Circular Economy Vision of Urban Development

Circular Economy (CE)—intended as a regenerative approach in contrast to the traditional “linear” economy—has been widely discussed over the last decades and it is now a very popular and accepted concept within scientific, business and political debate. Cities have been recently at the center of such a debate as they are places where large flows of people, goods, services, materials and energy are concentrated, so here the negative effects of the traditional linear economy based on consumption are more evident. Cities are also places of large social concentration, hosting more than half of the world’s population: for all these reasons, conceiving and implementing sustainable solutions toward CE is strongly urgent in urban contexts.

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During the last decade the Ellen MacArthur Foundation has been engaged in a deep reflection on how to stimulate and realize CE, and has recently set out a model for implementing it in cities, based on three guiding principles: (1) design out waste and pollution; (2) keep products in use and maintain their value; (3) regenerate natural systems in and around cities (Ellen MacArthur Foundation, 2019). Within this model, the absence of waste and the complete optimization of resources' use are key to trigger a new economic development for city and citizens (World Economic Forum, 2018).

Looking at the political level, both the UN New Urban Agenda (2016) and the Urban Agenda for the EU (2016), clearly promote a shift for urban policies to embrace the CE perspective; one of the partnerships established for delivering the EU agenda is explicitly dedicated to Circular Economy, and it recently published different documents on how to implement CE principles at the urban scale, focusing on resource management (Circular Economy EU Partnership, 2018, 2020), and on building and land reuse strategies (Circular Economy EU Partnership and Sustainable Land Use EU Partnership, 2019).

Within this consensual framework, policymakers are asked to drive the transition to CE implementation by defining strategies, approaches and actions to trigger a new economic development for city and citizens (Bulkeley et al., 2010; Predeville et al., 2018; World Economic Forum, 2018). While in a way CE is a cross-cutting and fecund concept especially for changing the global ecological footprint of cities, its implementation is not free from criticisms. From the policy point of view, some scholars have noticed that there is generally a gap between how CE is conceptualized in policies and how it should be translated into concrete actions, pointing out that very often CE tends to fuse with the larger concept of sustainability (Predeville et al., 2018). Moreover, in urban strategies, there is generally a big emphasis on the role of businesses in driving transition toward CE (Farnè Fratini et al., 2019), which refers to the idea that CE depends mainly on production and flows of goods. It clearly appears indeed that political guidelines, business engagement and part of the academic production on CE in cities has been strongly influenced by an approach centered on the physical component of the urban body, whether it is the built environment, or the material and resources flows, or the land itself. Some scholars have highlighted this point, criticizing the dominance of techno-centric views on "circular cities" and a lack of reflections on social aspects and impacts (Pomponi & Moncaster, 2016; Predeville et al., 2018).

16.2 Urban Metabolism and Urban Regeneration

The concept of Urban Metabolism (UM) has recently spread in urban studies to coping with some of the abovementioned issues: it calls for looking at the heterogeneous processes, networks and flows going through contemporary cities as an integrated, interdependent and bio-physical system (Broto et al., 2012; Kennedy et al., 2011). Even if UM concept also originates from a scientific

landscape dominated by the material or energy flow analysis, it recently saw a rejuvenation of studies (Dijst et al., 2018; Rosales Carreón & Worrell, 2018); some scholars and practitioners also tried to mix UM and CE concepts, some called for an explicit “circular urban metabolism framework” (Lucertini & Musco, 2020); some others imagined a “recycle city” that should reactivate its economic loops looking at its endogenous cultural and social resources (Carta et al., 2016). The interest of UM debate is that it progressively opens a perspective putting attention on the human and social component within the urban realm (Dijst et al., 2018). In particular, we believe the metabolism concept itself contains the idea of *dynamic process* which risks getting lost into the “closed loop” typical of CE discourse.

It is from this perspective that we want to consider assonances with some innovations the discourse on Urban Regeneration (UR) has recently brought to the debate on city development. UR has seen a huge spread in literature, practices, and policies within the last decades at the global level, as a concept going beyond the urban renewal, encompassing physical, economic and social aspects into a long-term transformation process (Leary & McCarthy, 2013). UR is very often associated with the reuse of brownfields or former industrial buildings, which are intended as the main asset for the city to develop in order to stop soil consumption. However, in UR strategies the reuse is not the ultimate goal: in our view, UR is rather about catching abandoned buildings and unused spaces as an opportunity to trigger new and alternative mechanisms of city-making, for improving urban quality, promoting social inclusion and public participation, and boosting economic development. In fact, UR draws on the reflection about the urban body as composed by *hardware* and *software* (Landry, 2006): the first one is made by infrastructure, buildings, spaces; the second one is made by human relationships, cultures, social dynamics, economic processes. While the traditional approach to city planning has focused primarily on the hardware, UR assumes that the city is an intertwined organism, then it is not possible imagining urban transformation without taking into account the software component. In particular, our approach to UR builds its specificity on two main aspects: a focus on *process* and *time* in progressively imagining and realizing transformation; stress on *social resources* and values in driving the process.

Starting from this perspective it becomes clear that spreading CE within the urban realm is not only a matter of changing the material flows and cycles into the cities but also asking how CE principles might change to embrace city’s complexity.

16.3 Incremental Circularity

Framing UR into CE debate, we might say that UR is not just a matter of avoiding waste of physical resources by reentering them in the same process: UR is about generating new and unprecedented (material and immaterial) value through the combination of existing resources, and triggering a process that will go on over time. This is why UR cannot be defined as a way of merely applying UM or CE principles

in cities, also because the main CE principle of “closing the loop” is not easily transferable within the urban realm: rather than “closing,” UR aims at “opening” new transformative development paths. Incorporating time dimension and focusing on reactivation of heterogeneous types of resources, UR design process pursues longer-term transformations, also taking into account the possibility of “adjusting the target” over time; this approach is similar to the one proposed by Mallach and Brachman (2013), who advocate a step-by-step “strategic incrementalism.” This is what we can call “incremental circularity”: a perspective combining the value of material and immaterial resources reuse, with the exploration of new (and more adequate) models of their integration, that goes on over time by cycles progressively advancing the reflection and creating the condition for the generation of new values.

Such an approach asks for an active engagement of the community in the co-design of the project for neglected areas, in a process that some scholars have defined as circular metabolism (Amenta et al., 2019).

As UR practitioners, our design strategies aim at enabling physical reuse opportunities to generate social relationships and partnerships that will be the starting point for new local development paths over time. In particular, KCity has set up a specific participatory planning format called “Building communities,” aiming at promoting an innovative way to approach regeneration based on releasing and catalyzing local energies, strengths and resources and introducing them along the city making process (Cottino & Domante, 2017). “Building communities” is a methodological framework that incorporates the idea of “incremental circularity” in its subsequent phases. However, if the traditional symbol of CE is a circle, we conceived a different scheme for the “incremental circularity” (Fig. 16.1) which should embrace and make

Fig. 16.1 KCity approach to Urban Regeneration—Incremental Circularity frame. The continuous line indicates the “planned” process, while the dotted one the “unpredictable” process. The gray circles at the bottom indicate the different types and intensity of resources (material and immaterial) involved

explicit the unfoldment of the process over time, articulating the main steps of our methodological approach:

1. the involvement of a large range of local actors (participatory activities and/or creation of specific partnerships) for setting a shared vision (or alternative development scenarios);
2. the co-design of an incremental masterplan identifying different actions to be realized along time (with the identification of some “trigger” actions or projects immediately doable);
3. the realization and management of trigger actions, in parallel with an assessment of the ongoing process for revising the masterplan and programming future actions.

Each of these points is a process itself and has its own “cycle of action,” during which different types of local resources are collected and combined; at the same time, each phase feeds the other ones in a continuous and iterative process.

Structuring a process is a matter of organizational design and formalizing such a model also takes influence from different design cultures and disciplines. Particularly, our model is based on an evolutionary idea of the project as a process changing and growing over time, and draws on studies on design methods and literature on activity theory that are part of our background and contributed to structure our approach to UR (Cottino, 2009, 2018). Studying design processes and problems structures, Jones (1992 [1970], p. 316) explores a method called “System transformation” which pursues the change through an evolutionary pathway, removing step-by-step some faults from the system and adding some new components, that progressively interact among each other for reaching the complete transformation.

In a similar way, although in a different field, Engestrom (2005 [1987], p. 53) investigates the conditions for organizations to face change, setting out the idea of “cycle of expansive development”: at the end of the cycle, participants are not at the same starting point, rather they reach an improved, different, more mature organization model, thanks to the internal learning occurred during the process.

Our perspective encompasses the lessons learnt from Jones and Engestrom into the building of our incremental circularity model. In particular, Jones shows the transformation as a process that progressively happens step-by-step, adapting itself to the context; Engestrom highlights that the result of a transformation process is an advancement in terms of knowledge, so the conclusion of a cycle is never the same point of the start.

16.4 Case studies

In order to give substance to the abovementioned structure and clarify its logic, we provide in the following paragraph some examples, coming from KCity consultancy experience, particularly referring to the Italian context. The brief descriptions give an overview of the cases and then pay particular attention to aspects related to the

“incremental circularity” frame. In the first one KCity, on behalf of a private investor, designed an incremental masterplan for the regeneration of an abandoned industrial complex, involving a large community in the reuse of buildings and open spaces. In the second case KCity, on behalf of a Charity, engaged associations and representatives of the local community to transform an abandoned urban green area as the first step of a wider regeneration process within the entire neighborhood.

16.4.1 Ferrara: Pioneer Communities for Regeneration

In 2016 KCity has been commissioned by a private real estate company to devise an urban regeneration strategy for Alc.Este complex, a 20 Ha former distillery in Ferrara (Emilia-Romagna, Italy), located right out of the city center, close to the train station and at the crossing-point of two ancient and degraded water canals. The landowner was looking for ideas for conceiving and sharing with the Municipality a regeneration project, and selecting partners for its implementation. According to the real estate market trends, there was no need for new residential stock in Ferrara, so the challenge was finding different drivers for activating a transformation. KCity, after interviewing local experts on market trends and analyzing municipality’s development plans, proposed an alternative approach to development. Usually spaces for local services are seen as a “burden” by developers, who make profit mainly from housing; the idea for Alc.Este was betting on collective uses and local services as a precondition for creating and spreading interest about the area. The key concept here is then building local “pioneer” communities around a shared vision that can steer the social reappropriation of the abandoned area: the reactivation of some spaces for collective uses, led by the local community, is seen as the crucial element for triggering the regeneration process.

Looking at the graphic scheme (Fig. 16.2, top), the first point was to collect policies, projects and practices gravitating around the area, and interested stakeholders at different levels. The actors involved came from different sectors: municipality, university, NGOs, and active citizenship. All the collected elements contributed to the draft of a vision for development that has been debated in a first participatory workshop, and gave birth to three alternative scenarios, respectively focused on water, tourism and youth. In a second workshop the participants, supported and guided by KCity, agreed to choose the third scenario, which was further deepened for setting out the vision: Youth Alc.Este as a hub of services for students and young workers, a new neighborhood dedicated to scientific research, cultural events and *loisir*, able to become attractive especially for the new offer of collective functions and spaces. As a result of this public engagement path, KCity designed an incremental masterplan indicating three different phases for implementation and identifying some “trigger” projects immediately doable. These projects were focused on realizing a reactivation of spaces and social energies in the short period, in some cases even temporarily: the “temporary” dimension was seen as a phase for testing uses, verifying roles and

Fig. 16.2 Incremental circularity frame in case studies, Ferrara and Novara

responsibilities, attracting interests, in order to potentially reorientate the project toward the long-term objectives.

The whole process lasted for two years and led to the Implementation Plan approval (“Piano Urbanistico Attuativo,” PUA in Italian) by the Municipality. Some initiatives have been activated and an application for EU-UIA (Urban Innovative Actions) funds has been delivered. Unfortunately, the bankruptcy of the landowner and a political change within the City Council has temporarily interrupted the process.

16.4.2 Novara: Triggering the Regeneration Starting from Commons

The second case study takes place in the city of Novara (Piedmont, Italy) in 2017 when De Agostini Foundation (DAF) decided to promote an emblematic intervention for the 10th anniversary of its establishment. They choose to intervene in Sant'Andrea, a former working-class and low-income housing neighborhood in the north of the city, which also hosted the historical De Agostini book factory. Together with the Municipality, DAF decided to renew a green area at the core of the neighborhood, which was an abandoned and inaccessible public property.

KCity, as a DAF consultant, participated in the project from the beginning, designing a strategy for community engagement and co-design, and has recently concluded the first Social Impact Assessment (SIA) of the intervention; the process lasted three years and is still ongoing. KCity took the garden renewal as an opportunity for imagining a long-term strategy for a wider regeneration process within the entire neighborhood: the lever of such a strategy was engaging the local community into the renewal project's design, both in terms of physical and architectural space and in terms of management of activities and events for animating the garden, in order for the space to become an urban common.

Referring to Fig. 16.2 (bottom), the first step was analyzing Sant'Andrea neighborhood in terms of history, spaces, social relationships, problems and strengths, through interviews with residents and businesses in the area. The preliminary analysis was discussed in a public meeting in the neighborhood and was the starting point of the participatory path. Four thematic roundtables were focused on specific themes: elderly people, young people, families, recreation for all. They gathered individuals, NGOs and small businesses for debating around the needs and the future activities to be developed in the park. The first output of the roundtables was the concept for the project's name: Piazza Verde ("Green Square"), intending the garden as a place to act and socialize rather than just to stay.

The process had some other major results: a Manifesto containing ten objectives to reach for making Piazza Verde an attractive, vivid and safe space for the entire community; a "Social Use Plan" ("Piano di utilizzo sociale"), a co-designed program of incremental actions the local organizations decided to undertake collectively for the project start-up. Also, the whole participatory process gave some inputs to the landscape team for the architectural design of the park.

Moreover, the process led to the signature of a Collaboration Agreement ("Patto di Collaborazione" in Italian),¹ a formal deal among Novara Municipality, DAF and eight local NGOs, establishing roles and responsibilities for the care of Piazza Verde as an urban common. The goal of the Collaboration Agreement is animating the

¹ The Collaboration Agreement is an Italian form of contract established between the Public Administration (usually a Municipality) and active citizens, which regulates roles and responsibilities of the parties in caring for commons. It was put in place first in 2014 by Bologna Municipality and is a form of realization of the "subsidiarity" principle declared in the Italian Constitution (art. 118).

garden through social, educational and recreational activities organized by and with the users themselves, and increasing the sense of active belonging of residents.

The garden opened officially on September 20th, 2019, taking the name of Giardino Marco Adolfo Boroli, and from that moment on KCity started the first Social Impact Assessment (SIA) of the intervention. The SIA lasted for six months and highlighted—even if in a preliminary way—success features, critical points, areas for improvement and new paths for future work.²

Following the incremental circularity frame, we might say the physical requalification was a new starting point especially for the NGOs involved, who took the leading role in the management and vivification of the place with the realization of the trigger actions. Unfortunately, some planned activities have been canceled due to Covid-19 restrictions (March–June 2020) but the garden turned out to be an extraordinary resource for people to gather and socialize also during the health crisis. Moreover, at the moment of writing this chapter, all the stakeholders involved in the process are working for drafting and finalizing a new Collaboration Agreement, adding new social actors, taking into consideration SIA results, and enhancing the social value of outdoor spaces.

16.5 Conclusions

The contribution of this chapter is definitely just an update of an ongoing reflection perspective, aiming at establishing a dialogue between critical points emerging from the theoretical debate on CE, and professional experiences of urban regeneration led by innovative methodological approaches. The hypothesis is basically that the CE debate can be enhanced by inputs coming from practices of urban regeneration. Particularly, the latter can be a vehicle for introducing incremental and social dimensions in CE implementation model, according to UM concept.

In particular, we may offer some lessons learnt from our experience and from case studies that might contribute to the debate, focusing on urban resources.

16.5.1 *There Is No Circular Economy in Cities Without Social Component*

In both case studies the community (although intended in different ways, as we saw) has been the driver for imagining or realizing the regeneration on the field. This shows the relevance of people (groups and individuals) as actors in transformations, and the importance of “designing” social change at the very beginning of the process.

² The SIA is available online in Italian at <https://gag-fondazioneadagostini.s3.amazonaws.com/wp-content/uploads/2020/10/VISFdeAper-sitowebAFMP20201014.pdf> and the whole process for Sant’Andrea in Novara is illustrated in Cottino and Franchina (2020).

This also highlights that, in implementing CE, social value cannot be a by-product or just a consequence of circular physical resources management; rather social change has to be integral part of the process, and intended as an explicit objective of the shift toward circular principles.

16.5.2 Temporary Use of Spaces and Collective Uses as Trigger for Long-Term Transformation

Ferrara case shows that it is possible designing the revitalization of spaces starting from existing social resource as pioneers for a reactivation. In Alc.Este regeneration, the project identified the use of collective space as a trigger for attracting and collecting interests and new resources. In particular, we believe that the “temporary” use, intended as a testing phase of a long-term strategy, is a fertile dimension for turning on inactive social resources and activate new cycles of development.

16.5.3 The Outdoor Spaces as a New Urban Resource

The urban metabolism has clearly changed due to Covid-19 health crisis. Working system, shopping habits, transportations, supply chains, way of living and using private and public spaces, have been definitely affected by containment measures and are finding new balances. Within this new and uncertain context, the outdoor spaces are becoming increasingly important in reframing the social use of space in cities, hosting numerous activities traditionally carried out indoors as learning, socializing, physically training, and experiencing art. The case of Novara shown us the power of a public garden as community space, and clearly indicates that outdoor spaces will progressively have more weight in urban metabolism as an essential collective resource, to be protected, enhanced, improved.

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