

BDC

Università degli Studi di Napoli Federico II

22

numero 1 anno 2022



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Towards a Circular
Relationship between
Territory and the City



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BDC - Bollettino del Centro Calza Bini - Università degli Studi di Napoli Federico II
Registrazione: Cancelleria del Tribunale di Napoli, n. 5144, 06.09.2000
BDC è pubblicato da FedOAPress (Federico II Open Access Press) e realizzato con Open Journal System

Print ISSN 1121-2918, electronic ISSN 2284-4732

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THE EVOLUTIONARY PARADIGM AND THE CIRCULAR ECONOMY MODEL: THE HORIZON 2020 CLIC RESEARCH OUTCOMES

Luigi Fusco Girard

Abstract

The aim of this paper is to illustrate some outcomes of a research project financed by HORIZON 2020: Circular models Leveraging Investments in Cultural heritage adaptive reuse (CLIC). The general issue of CLIC research was: how to transform a waste/abandoned/dead site in to an attractive and living ecosystem through adaptive reuse. Four kinds of cultural heritage assets were, in particular, considered in the CLIC research: dismissed churches, abandoned industrial buildings, farm buildings no longer used for agriculture and cultural landscape. The CLIC project main objective was to identify evaluation tools to test, implement, validate and share innovative “circular” financing, business and governance models for systemic adaptive reuse of cultural heritage, demonstrating the economic, social, environmental convenience in the long term.

Keywords: adaptive reuse, circular economy, Horizon 2020 CLIC

IL PARADIGMA EVOLUTIVO E IL MODELLO DI ECONOMIA CIRCOLARE: I RISULTATI DELLA RICERCA CLIC HORIZON 2020

Sommario

L’obiettivo di questo articolo è illustrare alcuni risultati di un progetto di ricerca finanziato da HORIZON 2020: Circular models Leveraging Investments in Cultural heritage adaptive reuse (CLIC). Il tema generale della ricerca CLIC è stato: come trasformare un sito di scarto/abbandonato/morto in un ecosistema attrattivo e vivo attraverso il riuso adattivo. Nella ricerca CLIC sono stati presi in considerazione, in particolare, quattro tipi di beni culturali: chiese dismesse, edifici industriali abbandonati, edifici agricoli non più utilizzati per l’agricoltura e paesaggi culturali. L’obiettivo principale del progetto CLIC è stato quello di individuare strumenti di valutazione per testare, implementare, validare e condividere modelli innovativi di finanziamento, di business e di governance “circolari” per il riuso adattivo del patrimonio culturale, dimostrando la convenienza economica, sociale e ambientale nel lungo termine.

Parole chiave: riuso adattivo, economia circolare, Horizon 2020 CLIC

1. Introduction

In April 2022, the research “Circular models Leveraging Investments in Cultural heritage adaptive reuse” CLIC Horizon 2020 ended. It was attended by many researchers from Interdepartmental Research Centre in Urban Planning “Alberto Calza Bini” (or already belonging to it), from Prof. Pasquale De Toro to Francesca Buglione, from Francesca Nocca to Maria Cerreta and many other young researchers.

The key role recognized to cultural heritage adaptive reuse has been linked to the transformative power of the city for the common good (see the New Charter of Leipzig, 2020).

The general issue of CLIC research was: “how to transform a waste/abandoned/dead site in to an attractive and living ecosystem through adaptive reuse”.

The CLIC general condition for the success is inspired by the network economy (the ecology), by its perfect circular metabolism, by its adaptive capacity, by its symbiotic behaviours.

These conditions become able to promote circular virtuous relationships (between the cultural assets and the community, between cultural assets and natural ecosystems etc.).

The Horizon 2020 call SC5-22-2017 required “innovative financing, business and governance models for adaptive re-use of cultural heritage”. Four kinds of cultural heritage assets were, in particular, considered in the CLIC research: dismissed churches, abandoned industrial buildings, farm buildings no longer used for agriculture and cultural landscape.

The CLIC main objective was to identify evaluation tools to test, implement, validate and share innovative “circular” financing, business and governance models for systemic adaptive reuse of cultural heritage and landscape, demonstrating the economic, social, environmental convenience, in terms of long lasting economic, cultural and environmental wealth. Eleven specific objectives were also identified. The ambition of CLIC was to propose operational tools for contributing to the implementation of Agenda 2030 goals, of New Urban Agenda goals, of the European Amsterdam Pact and of UNESCO goals and, more in general, for improving urban regeneration strategies, assuming the cultural heritage as the entry point of the circular economy model.

The choice of new uses/functions in CLIC research about adaptive reuse are less linked to the traditional tourism sector or to the residential reuse of heritage assets and are much more linked to contribute to implement the circular city, through place-making, with new functions, more linked to creative/cultural activities and cultural industries.

Thus, CLIC research is oriented to suggest conclusions about innovative financing, business, governance models for the adaptive reuse of cultural heritage coherent with the European Green Deal, and also with the New European Bauhaus, implementing virtuous loops between sustainability, inclusion, quality/beauty of landscape, thus contributing to implement the circular city (starting from cultural heritage as the entry point).

Here we want to underline, in particular, the cultural dimension in shaping new governance, business and financial circular tools. The comprehensive set of outcomes is in the CLIC website.

2. Toward “re-placing” the city/territory system

Through our iper-connections, we are dis-connecting our cities, our life, from the networks of Mother Nature. We are changing the evolutionary dynamic of the nature ecosystems. In CLIC research the attention is to re-connect as soon as possible our city systems with the

Earth patterns. And also, to re-connect people in the fragmented society, reducing growing inequalities and poverty in its multidimensional forms.

Some arguments toward “replacing” our city/territory starting from the adaptive reuse of cultural heritage have been proposed.

First, the adaptive reuse is read through the lens of bio-ecology. The “intrinsic” characteristic of the bio-ecological systems is their circular organization.

Second, the adaptive reuse is interpreted in relation to the humanization challenge (see New Urban Agenda by United Nations, 2016) towards a reduction of poverty in its multidimensional forms, linking people, community and places through lived relations of people and the emotional and affective attachment that connects a community to a space: a space of permanence in a constantly evolutionary changing environment.

Third, the integration of the bio-ecological and humanistic approach is proposed through the circular economy model (from which new governance, business and financial models can be identified).

Fourth, the adaptive reuse is a key element for a creative place-making, for implementing the circular and human-centred paradigm.

Fifth, the adaptive reuse is interpreted in an evolutionary context, requiring strong innovations to become effective and to allow the needed complex management. Ancient signs of human creativity should be combined humanizing urban spaces with innovative tools.

Sixth, the awareness that data and information together with digital innovative technologies are essential for implementing and managing the circular organization model in the space/territory. But information and data are not the key to sustainability. Culture is the critical resource for implementing sustainable development, and thus the circular model. Culture and community are interconnected. They drive development strategies. Cultural heritage is a robust connective infrastructure if integrated with digital/ICT infrastructure.

3. The general characteristics and the approach of CLIC

According to the above, the ambition of CLIC is to offer first of all a cultural framework about the promotion of a “circular” inclusion in time and in space, evoking the contribution of H. Daly (Daly and Farley, 2003), K. Boulding (1966), F. Capra (1989), E. Schumacher (1973), R. Costanza (2014) and also of A. Sen (1995) and I. Serageldin (1999) (who have stressed the goal of humanizing the economic development: not the profit but the well-being of people as the core of the economic development).

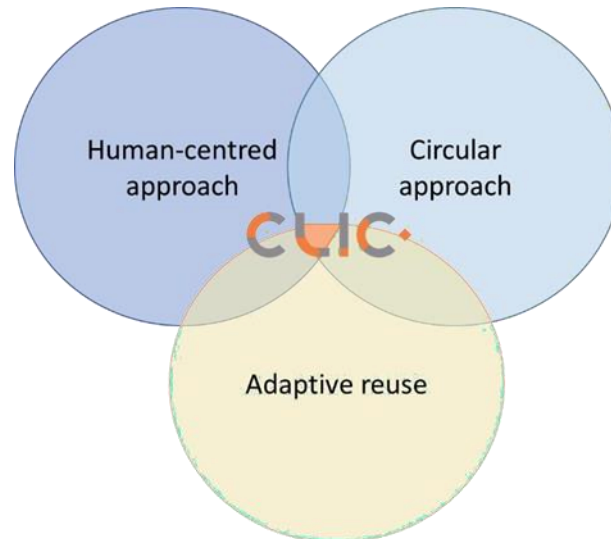
The characteristics and the approach of CLIC research in interpreting the adaptive reuse of cultural heritage between the bio-ecology and the human-centred approach (Fig. 1) are:

- the assumption of the bio-ecological paradigm to reconnect our built environment with nature life networks;
- the assumption of the human-centred paradigm to reconnect the human beings with each other and also with future generations, reducing distances/inequalities;
- the assumption of a key role recognized to culture and cultural conditions for implementing sustainable development. The role of culture is fundamental. As in nature a resource degenerates and is lost if it is not regenerated, in our society a cultural value (as trust, respect of rules, inclusion, etc.) is going to be lost if it is not regenerated (Morin, 1990).

Thus, it emerges the need of a culture local strategic plan (see §6) to avoid the risk of an

entropy crisis (coming from inside of our society due to the loss of sense/meanings/shared directions).

Fig. 1 - The CLIC general approach



Interpreting the adaptive reuse in the circular and human-centred perspectives means to reconnect cultural heritage in the space and also in the time dimensions with the territory and its community. But it means also to assume an evolutionary perspective/approach (characterized by notions of complexity, metabolism, entropy) (Fig. 2).

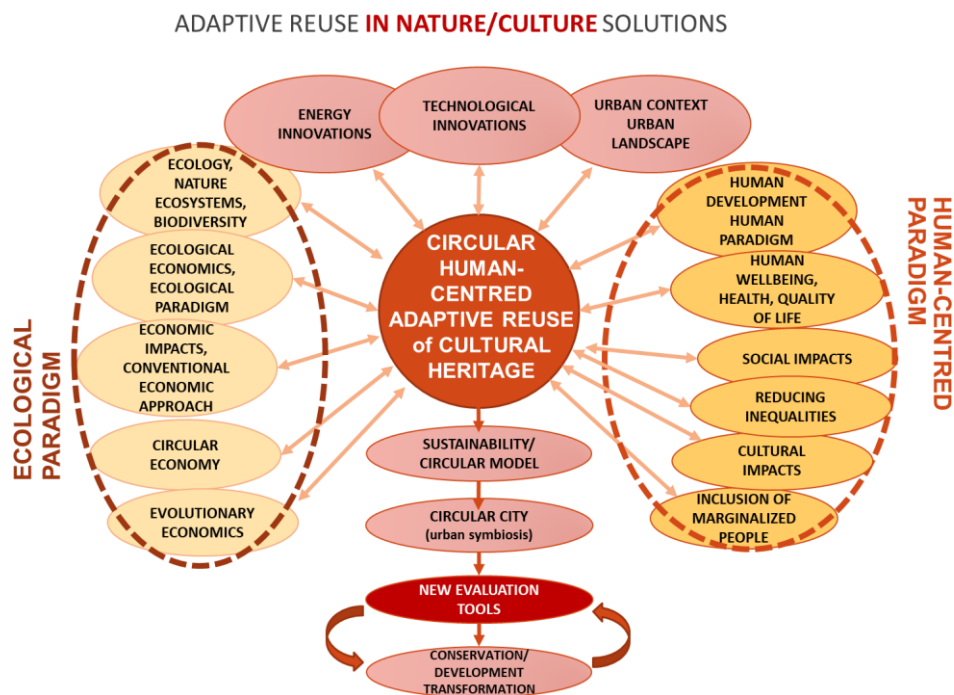
From the integration of the ecological paradigm with the human-centred paradigm through the circular model, it derives that the outcomes of CLIC regard specific tools not only in technical terms. The outcomes of CLIC are also in the immaterial/cultural dimension, considering the heritage asset also as the immaterial city infrastructure for regenerating new loops.

Thus, more in particular, some specific common elements connecting the research contributions/deliverables beyond many differences of each work package are:

- The adaptive reuse in a bio-ecological perspective. This means the assumption of the ecological paradigm in interpreting the adaptive capacity (as the creative power of nature that evolves in its dynamics through exploratory tentatives). They are remembered by the ecosystem memory. As nature adapts and remembers, also circular adaptive reuse should be characterized by adaptive, evolving capacity to a changing context and attention to its memory. The image of the tree/forest and its circular metabolism is the reference model: as a tree/forest is «generous» of spill overs, also adaptive reuse should do the same. As the tree/forest is characterized by a circular set of processes, also the adaptive reuse should be characterized by a circular logic in its functioning.

- The assumption of the human-centred paradigm. Culture is the production “for excellence” of human beings. CLIC introduces the cultural condition for sustainable development that integrates the economic/ecological conditions. This means not only to stress the key role of creativity and innovation capacity as engine of a new spatial shape and new architecture. But they are key elements in planning and designing the adaptive reuse and also in management. Innovations improve metabolism, reducing entropy and multiplying benefits. On the other side, the attention is to avoid material and immaterial forms of waste, including the human/social capital waste.
- The assumption of the evolutionary perspective/paradigm coming from the notion of adaptation. This paradigm is due to R. Ayres (1994) but, many years before, also to J. Schumpeter (1943). The evolutionary paradigm characterizes the whole CLIC research. This evolutionary perspective can be proposed in the planning and design of adaptive reuse; in business models; in financial tools; in governance models; in evaluation tools, knowledge and culture. The evolutionary paradigm (in the Evolutionary Economics) shifts the attention from market price and values and market cost to quantitative/qualitative impacts and quantitative/qualitative metabolism and also in their circular mutual causation.

Fig. 2 - Circular and human-centered adaptive reuse



Evolutionary Economics, starting from the dynamics of complex systems, recognizes that all economic systems are dissipative in the sense that they “import” energy internally and “export” entropy externally (Georgescu-Roegen, 1971).

Evolutionary Economics (and in particular Ecological Economics) links the evolution of the economic system to technological innovations, thus stressing the attention to the node of energy and of metabolism that are underestimated in current economics.

Adaptive reuse in the perspective of Ecological Economics can be referred, on the one hand, to the approach of one of the greatest exponents of modern urbanism, Patrik Geddes (1915) who interpreted the bio-ecological dimension of the dynamics of the urban system, and, on the other hand, to the approach of Nicholas Georgescu-Roegen (1971) founder of bio-economics and critic of mainstream economics, as this ignored the relationship between economics and ecology. This relationship is a key characteristic of circular economy.

4. Culture and cultural values

4.1. The role of culture for proposing meanings to face the human challenge

Culture and cultural values represent the most important non-material needs. In fact, they are the foundation of any transformation/development project.

The reason of this emphasis on culture is due to the fact that the real challenge is within people. This is an inner challenge, in the way of thinking that should be modified and “enriched” in a systemic and critical perspective. This is first and foremost a cultural challenge to be required.

The current culture, through an exaggerated confidence in technology, has become the engine of alteration of the evolutionary dynamics of nature: the degradation of the environment, the loss of biodiversity, etc. But it has also produced social fragmentation and isolation, growth of inequality and marginalization.

This cultural foundation refers to the common values/roots of the European cultural tradition, which can be interpreted, in synthesis, as the search and proposal of meaning for a more human life, being linked to a specific vision of man and life: man as the end of the economy, and not as a mean; the dignity of every human person, regardless of any belonging, as the source of his rights.

In designing a sustainable future, the roots of the European culture should be firmly taken into account. The common European values are fundamental to face the technological challenge in the perspective of humanization, of the “new humanism” in the digital era. We must not lose these values now that the extraordinary technological development provides powerful innovations, from artificial intelligence to the internet of things to robotization etc. that can be used for human promotion but also for the exact opposite of “human”: that is, for any form of manipulation and control/submission by the various forms of economic and political power.

It is necessary not to lose these values in the era of economic globalization, in which the relationship between population and territory should be strengthened.

The CLIC project interprets the preservation and enhancement of cultural heritage as a source generating new values and new creativity: a matrix of creative mediation open to the future on the basis of memory/past. That is, considering cultural heritage as the entry point for the proposal of the neo-humanistic perspective in the time of the digital revolution.

The heritage of cultural assets represents the signs of the creative activity of past generations: it expresses a way of feeling the life. It can help to transform the status quo

with new meanings/values. It represents not only an economic entry point, but also and above all a cultural entry point. In short, its transformative force/capacity is not only a consequence of economic, social, and environmental benefits, but first and foremost of cultural benefits (often neglected because they are “intangible”).

4.2. The circular economy model for integrating the neo-humanistic and ecological paradigms

The ecological transition, which is configured as the greatest transformation ever achieved in the history of human civilization, is absolutely essential. But it will produce a series of human and social costs that must be anticipated and foreseen for their mitigation. Some new activities will be imposed, while others will become obsolete with respect to the new paradigm of sustainability. Therefore, they are destined to disappear, with all the consequent negative impacts on employment: with significant human and social costs.

To achieve an effective ecological transition, it should be necessary to promote a “community spirit”, generating responsibility in people’s behaviour.

The circular economic model integrates the two paradigms. It not only proposes a new urban metabolism, reusing and recycling materials, etc. This is of great importance today. But above all, it is based on and promotes a culture of cooperation/collaboration/symbiosis with other subjects, with nature and with future generations: in the spatial and temporal dimension. It is in coherence with the interpretation of human rights in a relational/cooperative dimension.

The model of circular economy, as it has been realized in the experiences of Industrial Ecology, has proved to be capable of ensuring a profit to the company, but also a profit to society (new jobs) and to the environment (less climate-altering and polluting impacts). This model is configured as more suitable to meet the economic and ecological conditions of sustainability. But it is also able to satisfy the cultural conditions of sustainable development: the ability to re-generate cultural values at a rate at least equivalent to that of their consumption by current economy.

The culture of the circular model opens to create links in space (between different subjects and between people and nature) and in time (between today and yesterday; between today and tomorrow generations).

The integration of the neo-humanistic paradigm with the ecological paradigm is fundamental in shaping the transformation of our society. They require not only green tools but also cultural processes. They are related to the cultural challenge, and thus to culture as a specific product of excellence of human beings, through which they shape their interpersonal relationships and also their relationships with nature. Culture shapes (and reshapes) the worldview, the interpretation of reality and behaviours in relation to nature and in relation to others. Human and cultural dimensions are closely linked.

It must be recognized that cultural values such as cooperative, collaborative values are becoming increasingly important in our fragmented society. Transformation of mindset is at the core of everything for growth and success, as well as the creation of positive social/environmental impacts.

The neo-humanistic paradigm is linked to the ability to re-produce and re-share cultural values such as cooperation, collaboration, coordination, which can reduce social fragmentation, towards a long-term future. They should be able to reshape business, market choices, investment decisions.

Certainly, the ecological transition, characterized by an “integrated system of renewable energy”, offers a strong contribution to the conservation and regeneration of natural resources, with a drastic reduction of waste, which are recycled/regenerated as much as possible, and transformed into resources (thus reducing the amount of extraction from the natural ecosystem) and making sure that the outputs can return to the natural ecosystem as much as possible. Certainly, the use of renewable energy sources is essential to the decarbonisation of current economy, as is the planting of new green areas etc. The ecological transition is required to be able to help implement the “city of symbiosis between humans and nature”, nature being recognized as the most important city infrastructure.

But this is not enough. It is necessary to introduce a new rationality in choices: a rationality different from that of the *homo-oeconomicus*. A relational and multidimensional rationality that

refuses optimization (maximization and minimization) but is interested in the search of balanced solutions, able to creatively combine also conflicting needs/objectives.

We propose in CLIC the “human-centered and ecological/circular approach” inspired by the circular model, because it reshapes the development project of the city towards a project that unites, generating and multiplying relationships and links between subjects, in space and time: between human beings, between people of this and future generations, but also between people and nature (Mother Earth) and between people and the past, history. The memory of the past shapes the notion of “We”, thus reshaping the notion of “I” (Fusco Girard, 2021).

5. The regenerative re-use of cultural heritage/landscape

A re-generation/re-use of cultural/landscape assets (in which Europe is particularly rich), because of its multiple transversal dimensions, can be proposed as an entry point for the implementation of the circular city. The circular city is the spatial/territorial aspect of the circular economy.

The valorisation of cultural heritage - at certain conditions - strengthens and promotes, in turn, the culture of collective memory in a circular process in the temporal dimension. Thus, it stimulates the regeneration of the values of inclusion, solidarity, integration. These values are not “given”, but must be regenerated as quickly as they are consumed. In nature, if a resource in the ecosystem is unable to regenerate, it decays, de-generates and eventually disappears. The same phenomenon characterizes intangible/immaterial components, such as values: if they do not regenerate, they de- generate and are lost.

In conclusion, the circular economy model is proposed in CLIC not only as a model able to reuse materials, raw materials and energy, but also as the bearer of a new culture: an inclusive/relational culture that is strengthened by reusing cultural heritage (which emphasizes inclusive values in the temporal dimension and not only in the spatial one).

The “adaptive reuse” becomes, therefore, part of a more general “cultural strategy”. It is necessary to regenerate the physical assets but, at the same time, also to the link between man and man, between man and nature/ecosystems: to rethink behaviours, lifestyles and choices. Through adaptive reuse of cultural heritage new “circular heritage ecosystems” should be implemented, able to produce positive integrated impacts.

The regeneration of cultural values is essential to reshape the value of freedom in the perspective of responsibility.

No effective adaptive reuse, and more in general, no ecological transition or no new

symbiotic circular ecosystem will be characterized by effectiveness if one is not able to regenerate values such as inclusion, solidarity, responsibility, and the ability to care for others and for nature. No Next Generation Plan to improve resilience and ensure recovery will be implemented effectively if the pre-conditions for all of the above are not re-generated: namely, interpersonal and institutional trust. If a real project of regeneration of the culture of trust is not promoted.

Adaptive reuse should be integrated also in the above perspective.

It is necessary to build and spread a new “culture”, characterized above all by a long-term horizon, by the recognition of intrinsic and not merely instrumental values, by critical knowledge and the ability to evaluate as the foundation of the culture of responsibility. The “horizon of the city” and in particular of the “circular city” promotes the overcoming of forms of radical hyper individualism, which transforms legitimate rights into particularistic selfishness. Circular city should promote trust, i.e., social capital, as the necessary glue of society for its development.

The foundation of the circular economic model is represented by cooperation. Cooperation is grounded on trust. From the trust, that finds its origin in the search of the truth, of the transparency, of the respect of the rules and of the civil virtues, it springs the ability of collaboration, cooperation, synergy/symbiosis. Therefore, not only social benefits but also economic ones arise. Lock (1663) already underlined how trust represents the bond of society. Antonio Genovesi (1765) and the Neapolitan School of the 18th century considered trust as the foundation of resilience, of economic development and of the humanization of society itself.

6. The cultural conditions of sustainable development

From the above it is possible to deduce more clearly the cultural condition for implementing the sustainable development.

The existing economy has been described as “devouring natural resources, socially divisive, and environmentally hostile”. But, in reality, the economic organization of the capitalist model is also a devourer of cultural values.

It should be noted that Schumpeter (1943) already pointed out that the economy, with its rationality of ends/means, has become the matrix of logic, in the sense that economic rationality and rationality in general tend to coincide: the economy has offered the current logic, that is, the “rational” way of reasoning and behaving/choosing. But Schumpeter also stressed that the capitalist process erodes its own institutional scaffolding and its founding culture.

Max Weber (1991), sometime later, in analysing “the spirit of capitalism”, had focused on the relationship between cultural values and economic phenomena (for example, the economic rationalism), emphasizing the role of ethical values (starting with trust) in economic dynamics.

More recently, Hollis (1998) substantially confirmed how economic development erodes the cultural values it needs, making the “value” of trust increasingly fragile, as Fukuyama (1995) also pointed out.

The economic and ecological conditions of sustainability are well known. It is necessary that the speed of extraction of resources from nature does not exceed the speed of their regeneration and that the speed of production of waste discharged into the ecosystem does not exceed the speed of absorption of waste (Rees, 2003).

The identification of the cultural condition of sustainable development integrates the above two ecological conditions. The teaching of nature shows that a resource that is not capable of regeneration ends up dissolving and disappearing. This statement is transferred and re-proposed from the field of tangible resources to the field of intangible/cultural resources, such as the cultural values of trust, respect, cooperation, co-responsibility, etc.

Thus, in analogy, values of solidarity, integration, and inclusion are not already “done”, but they have to be re-generated with the same speed of their consumption by the market capitalistic economy, in analogy with the functioning of natural ecosystems. If they are not re-generated, they de-generate and are lost. Circular economy and heritage valorisation/reuse contribute to re-generate values and not only tangible/material components. This is the cultural condition for sustainability.

The above opens the analysis of industrial and urban metabolism, fundamental in the implementation of the circular model in a new perspective. Also, the analysis of intangible/cultural components should be considered: trust as a fundamental value today increasingly scarce but for this reason increasingly important. From the re-generation and dissemination of this value follows the ability to improve the effectiveness of investments. The above appears particularly topical in the time of National Resilience and Recovery Plans, for the ecological modernization of our society.

The circular model satisfies the ecological and also the cultural conditions for sustainability. It not only proposes a new urban tangible metabolism. It also reflects, is grounded and promotes a new culture: a culture of cooperation/collaboration/symbiosis in the space and in the time dimensions with other subjects, with Mother nature, and with future generations. The linked valorisation of cultural heritage reinforces and promotes on its turn the culture of collective memory in a circular process in the time dimension.

Thus, the circular human-centred approach recognizes a particular attention to the cultural dimension, as a key dimension for implementing sustainability. Cultural dimension is not only interpreted as the material cultural heritage valorisation, but also in terms of change the current worldview, mindset, way of life.

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