

A NEW LIFE FOR LANDSCAPE, ARCHITECTURE AND DESIGN

Edited by
Francesca Scalisi



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Foreword

The road towards a durable and sustainable development, as an alternative to linear and dissipative models of the recent past and the present, now appears to be paved. The great effort that has been generated after the pandemic with a great strategy to restart Western world economies towards a green transition, backs up the growing diffusion of profound convictions in the scientific and academic sectors but also in the entrepreneurship and production sectors as well as in large parts of public opinion. Finally, the action of youth movements is also relevant, since they speak up for equity and concrete action against inequalities and the climate crisis. Besides the climate crisis, others appear in the present, showing great imbalances and also considerable potentialities. After greatly working on knowledge, information and experimentation, today there is a deeper awareness of the challenge ahead. From the pandemic crisis to the progressive alarming signs of destabilisation of the fossil-fuel energy market, we live in a scenario of uncertainty, and we are also witnessing the birth of a new key-concept system that emerges in an increasingly widespread environmental awareness that affects the project visions and its different skills in the fields of architecture, engineering, and design. The new key words are organised on several levels, concepts and actions that once were separated and now are reflected in international and national technical policies.

The main subjects of the present – oriented towards a sustainable future – lead towards a big effort to overcome the problems of present society and its lifestyles. The factors are well-known and they range from climate change to land and non-renewable resources use, from pathogenic problems to the great socio-economic difficulties that affect even the most developed economies. New scenarios with guide-concepts are born: energy or food self-sufficiency, ‘zero food miles’ processes, combined actions of climate adaptation and mitigation, social inclusion, ecological mobility, ‘15-minute cities’, increasing the efficiency of processes and projects in reducing waste through reuse and recycling actions. In the collective consciousness – as in widespread knowledge – it begins to emerge the demand for a new life for the built environment which is the subject of the 6th volume of the series *Project | Essays and Researches* edited by Francesca Scalisi. It is a complex issue, which contains a well-structured panorama of points of view and experiences aimed at the common transition process. It places at the core of the operations the project subject in its various forms, starting from the knowledge components up to more strictly operational ones.

In the original layout of this volume of the series, the core elements were based on the relevance of the articles that express both methodological approaches and outcomes of descriptive research on the main innovation factors currently concerning the major

issues of green and digital transitions. In this cultural and scientific direction one can find the continuity consistency of the work already done in the published volumes of the series, aiming to show original traits in the field of academic and operational research on the project subjects. The curatorship of this volume has well grasped this complex layout, showing an interesting and well-structured panorama on the transformations of the built environment aimed to a vital drive, that is, regenerative and not merely conservative, as a mandatory path to provide a purpose for the future and a perspective to the new generations.

Changing the metabolism of urban habitats today is a crucial factor to work on by changing points of view and production and consumption systems. Urban habitats also are contexts exposed the most to the effects of climate change and other crisis factors, showing all the problems of creation, management and functional, physical and cultural transformations necessary to resist the impacts of numerous critical factors and to anticipate some ways out based on a unified concept of the inclusive living environment of urban settlements. Among many crises, the climatic one due to global warming is now underway and the data recently released by the IPCC – Intergovernmental Panel on Climate Change (2021) report projections that raise greater concern than in the past, calling even more to the commitment to adapt urban contexts and to mitigate the causes of climate change to be implemented by downsizing energy consumption and reducing greenhouse gas emissions.

In the background of the green transition, some scenarios are defined to achieve the objectives set by the European agenda for 2030 and 2050: minimisation of the flows of matter and energy in urban habitats with the same efficiency and effectiveness of the processes, cities merging with the environment, actions of climate adaptation implemented to get climate mitigation. In the contributions of the volume *A New Life for Landscape, Architecture and Design* this complex scenario is convincingly explained, pointing out the different subjects that will be a challenge for the future and outlining an approach capable of generating multiple benefits for ecosystems and biodiversity, operating on the protection of health, safety, comfort, communities and identity cultures. Virtuous processes will have to be implemented in the socio-economic field, wondering what the best contributions can be to build operating conditions that go beyond the conventional market and are capable of establishing resilient communities.

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A NEW LIFE FOR BUILT ENVIRONMENT

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The subjects of climate change, excessive use of soil, renewable resources, ever-increasing production of waste, the current pandemic emergency and the global socio-economic crisis that it is causing, have in fact entered our daily life. Even if these are terrible issues, they can be, somehow, seized as an opportunity to rethink the way we live and our world. In this ‘revolutionary’ (Floridi, 2020) and ‘polycrisis’ (Losasso, 2020) context, specifically referring to the building industry, the Academy, the Research and Industry worlds are called to give answers – based on sustainability and the principles of the Green Deal – that can stimulate reconsiderations and re-orientations of processes, products and services, new projects on places, buildings, objects and materials, able to positively affect the governance of the global change that our planet and humanity need, able to give a ‘new life’ to the built environment, at any scale.

In the light of these considerations, the volume entitled *A New Life for Landscape, Architecture and Design* encloses 14 essays, research and original experiments, projects and interventions. While they address only some of the issues listed in the introduction, they are food for thought and contain good practices capable of give a contribution to the international debate on the subject.

For the Cultural Heritage it is clear that the ‘passive preservation’ can no longer be the ultimate goal of the intervention: the more marked the cultural heritage is in its material and intangible, natural and anthropic elements, the more there is a need for actions aiming to give new ‘dignity’ and new life to these Assets, sometimes ruins, deprived of their original identity, both to the enjoyment of current generations and to be passed on to future ones. Enhancement, enjoyment, communication and accessibility, also applied through digital and ICT potentialities, are fields of study as multidisciplinary holistic and systemic methodological approaches capable of reading, interpreting and translating into actions the complex relations between pre-existing elements, natural context and added anthropic systems.

In this sense Paço do Frevo can be considered a perfect example for the redevelopment of the built heritage. The objective of including the city of Recife in the cultural tourism circuit is implemented with the Redevelopment Plan of the

Bairro do Recife and with the creation of a museum. It, on the one hand, enhances cultural customs and intangible heritage, and on the other, blends popular traditions and urban life through an ‘integrative design’ that includes the architecture of old buildings, museography and digitised content, considering it as a platform connected with the territory for the dissemination of local culture.

Paço do Frevo uses many expedients derived from good international practices including domestic scenarios linked to Brazilian popular cultures, physical interactivity and blackboards to encourage active participation of the public or floor displays, making the audiovisual image prevail and the creation of a synthetic space in which container and content provide users with new multisensory experiences and go beyond the aseptic ‘white cubes’ that have characterised the art spaces in the last century.

Re-manufacturing, re-cycling and up-cycling as alternative to the concept of disposable items come into play in the building industry, through a creative process or together with new sharing and product/service methods. Some subjects are gaining interest: intersectorial and interscalar subjects, open research fields on urban mining and material bank, end-of-life or Design for Disassembling approach and for Durability/Flexibility, applied on the material and product scale in terms of reuse and recyclability, qualification procedures, traceability and material passport, but also concerning the definition of tools for the analysis of material flows and the quality of end-of-life products and decision support to verify the effectiveness and sustainability of circularity actions.

The concept of waste and remains changes from being a problem to being a resource, a true urban mining to reshape areas of the landscape; zero-waste regeneration strategies and methods of action that can be replicated in similar physical and environmental conditions are re-evaluated. The case study on the Former Manifattura Tabacchi in Naples presents an integrated and multiscalar project, capable of reinterpreting the material and immaterial aspects linked to the subject of waste coming from a selective demolition process: the reinterpretation of two issues (demolition of buildings and land and aquifer decontamination), apparently purely technical, in vectors capable of triggering a circular economy process, allows to consider, in an ecological term, waste as an active material of the project and above all to activate new forms of community and unprecedented urban conditions.

Waste and remains are also the subjects of the Designing Circularity experimentation. It investigates possible scenarios of circularity for the territory and the development of a project (an overlook) based, on the one hand, on the principles of circular economy to give new life to materials (new high-value resources, interconnecting different production sectors, Institutions and local actors), and on the other hand, on the concept of ‘appropriate technologies’ to the context (accessible,

economic and locally manageable) and to operators (in this specific case a farm, a biomedical and a building materials companies) to encourage virtuous development dynamics of an area rich in resources and characterised by high landscape values not yet fully exploited. The results of the research highlight how an intervention on the ‘small scale’ can promote local development, with results applicable also in other contexts.

The physical and social regeneration of buildings, in general, and of large residential complexes built in the suburbs between the 1950s and 1980s is certainly not a new subject but it is constantly evolving. It is driven by European policies and aimed at investigating the use and dissemination of innovative technologies that allow a new life to the artifacts: better energy efficiency and maximum circularity of non-renewable resources, enhancing the environmental characteristics of the climate, geographical and local productive context, to optimise the effects on the quality of life of the inhabitants are the main objectives.

With a systemic approach, specific up-cycling actions through the rational and programmed disassembly of the components and the selective regeneration of usable materials can favour an efficient management of resources, a reduction of CO₂ emissions and a greater durability of materials and components with relative reductions in production and consumption, in environmental impacts and in produced waste. The standardisation of types and construction systems, as well as that of the indoor and outdoor spaces, offer the potential that allows the development of suitable regenerative strategies and design strategies capable of responding to changing requirements, through a life-cycle conscious approach.

Two researches published in this volume deal with this issue. In-Up_Inhabiting the Upcycling is a concept created for the social housing of the neighbourhood Tor Bella Monaca in Rome. It proposes a ‘replicable’ model of environmental regeneration processes management (with a circular and local footprint) based on a construction site. Changing over the construction, it strategically changes its original function, transforming into solar shading devices or into new living spaces with the help of a basic element that modifies the volumes according to the new housing and environmental needs.

A different methodology, but with the same objectives in a ‘circular’ and ‘reversible’ perspective is proposed by another working group from Rome. The group identifies in the recovery of existing buildings the strategic opportunity to combine, always in a life-cycle approach, reuse (at the building scale, its systems, components and materials) and the design for disassembly. The methodology – defined from a theoretical point of view and applied to the case of the former IACP district of Torvecchia in Rome – allows to create, by means of effectiveness level indicators, a reasoned, verified, measured repertoire that can be updated with the progress of the experiments.

The proposed methodology, on the one hand, responds to the quality and eco-

compatibility needs of interventions on buildings, characterised by the replicability of technological-applicative solutions in the national and international context, on the other, promises significant impacts in the social, economic and environmental areas through the definition of objectives useful for decision makers, designers, producers and deconstructors.

New natural and built environments, where the community continues its path towards the acknowledgment as an active part of the economy and social relations in a specific context that can restore an idea of democratic, inclusive and resilient territories and cities that by understanding ongoing socio-economic dynamics, renew and regenerate natural and built spaces, territorial and productive frameworks, vulnerable and fragile areas, they become an active connection able to answer the phenomena of ‘progressive dispersion’ and to increasingly pressing and imperative safety, inclusiveness, pandemic and emergency vulnerability issues with smart approaches, and human-centred at the time.

This is the case for Prato. Since 2013, it has committed in the systemic reinterpretation of its built environment – complex and full of overlaps between productive, residential and social fabrics – through medium-long term territorial governance policies based on sustainable development. And it is added into the network of European cities with the aim of leading the circular transition of cities, improving the human well-being and reducing emissions. The project methodology developed in 2019 is based on the awareness that environmental and energy sustainability can only take place if it is integrated with cultural, economic and social awareness of the interventions and if it implements naturalistic solutions as additional drivers for the transition towards circular economy and urban resilience.

The experimentation carried out by a research group from Florence on two macro lots identifies a series of design solutions that have the common goal of effectively overturning the relationship between impermeable and permeable surfaces: the reduction of soil consumption through densification and enhancement of existing buildings; the regeneration of the urban fabric by encouraging functional mixes capable of activating new social and economic activities associated with living; the improvement of energy performance through redevelopment actions on the building envelope and on the plants; the increase in soil permeability through volumetric equalisation and Nature-Based solutions.

The subjects of degrowth, shrinking territories and conservation and enhancement of the rural landscape – the result of (natural and anthropogenic) transformations due to social and economic dynamics and the prospective abandonment caused by climate change – are addressed in the case study of Antikythera, small island in Greece, a remarkable example of the Mediterranean cultural landscape. The debate on the future of these landscapes often recalls the controversial juxtaposition between environmental and conservation issues, although it is clear that

today more than ever it is necessary to deal with the original multifunctionality of these Mediterranean landscapes. If, on the one hand, it is desirable to consider agriculture again as a strategy of economic regeneration, on the other it is necessary to activate an integrated program of related activities that enhance the local identity and regenerate the rural built heritage through actions of connectivity, re-signification, participation and communication which, by reinterpreting the original ecological and economic balances, implement the resilience of the landscape.

The landscapes demanding for a ‘new life’ are also urban landscapes marked by the indelible scars of natural disasters such as earthquakes. After them, the temporary works transform the landscape of a city and prevent its enjoyment. We examine the possibilities given by these works to regenerate a landscape where the local community can identify itself since after the event there is a temporariness that still contains life and in which processes are developed and implemented, with the aim of securing people and artifacts.

Can scaffolding and centering take on a new ‘set-up function’, limiting the trauma of the event and activating a regeneration capable of restoring contexts in which to operate in a renewed way to make the city enjoyable? Starting from the Technical Data Sheets of the Temporary Works in the STOP handbook made by the Italian Firefighters Department, the research STOP-UP (Italian acronym of Technical Data Sheets of the Temporary Works and Potential Uses) – adding a design experimentation in the city of Norcia hit by the earthquake of 2016 – considers temporary works as elements generating living spaces, transforms technical works into complex elements which can be used as shelters and can trigger the involvement of the population to oppose to the processes of progressive dispersion.

A city that is ‘organised’ (instead of ‘built’) through bottom-up strategies and models, unscheduled ‘spontaneous’ actions carried out with minimal investments and on a small scale of intervention to slowly reactivate social processes after Covid-19, guaranteeing social distancing, and offering a ‘new life’ to neglected places and outskirts of the city. It provides several ‘light’ case studies taken from the international scenario. The common denominators were social inclusiveness, simplicity of implementation, temporariness, the ‘micro’ dimension, the informal image, but also the use of simple technologies, modular systems, cheap materials and recycled products. The good practices suggest a scenario in which the public space will resemble to an archipelago of self-sufficient micro-islands immersed in the urban fabric, ‘multi-purpose’ ‘open-air’ rooms with a temporary character set up with functional, flexible and essential solutions, where it will be possible to re-discover the sense of community and facilitate new forms of sociality.

The unforeseen circumstances that hit the planet during the Covid-19 health emergency have had disruptive effects for all production sectors, including the fashion industry which for decades has been one of the drivers of economic

growth. Suddenly, the fashion sector had to rethink products, services, and management processes following a new sustainable development and implementing new socially responsible business models, in the short and long run, instead of strategies aimed at quick profits. Future Thinking, Speculative Design and Systemic Design provide the tools necessary to outline future-oriented and critical approaches useful to list the possible guidelines of the complex fashion system to pursue sustainability objectives.

Different scenarios projected up to 2030 suggest that, in a first phase (already in progress), it will be necessary to resort to digitisation and resource efficiency, to optimise rapid prototyping processes and reduce waste. Subsequently, it will be necessary to focus on reuse and conversion at any scale, to avoid dead stocks, probably even speeding up the transition to an approach no longer oriented towards trends and seasonality. Finally, productions on demand will prevent the system from falling back into over-productions with terrible environmental and social impacts.

The volume contains many best practices, both at international and national level. The latter are characterised by eco-innovations for processes, products and cultures, typical and linked to the territory, essentially defining a real 'Italian way'. Fashion, as a powerful cultural lever, has the potential to influence the behaviours of significant critical masses, stimulate the creation of new manufacturing activities and high-tech services, increase the competitiveness of businesses and create new highly skilled jobs while respecting sustainable development.

The papers published, although not covering all the fields of investigation, show how the academic world can make an important contribution, with experimental research and critical essays, to the solution of the new climatic, environmental and health challenges that we are facing by implementing 'virtuous connections' among the different stakeholders (public and private) of the building process and identifying the innovation drivers useful to spread the culture of social, economic and environmental sustainability that ensure, through conscious products and processes, a 'new life' for the built environment.

Recovery, reuse, recycle, up-cycling, refunctionalisation and zero waste are some of the implementation strategies to aim for in order to efficiently use the resources in a circularity perspective. Eco-innovation, energy efficiency, digitalisation, life-cycle, durability of materials and their performance, flexibility, multifunctionality, modularity, safety and healthiness.

We need to ask ourselves: if the road has already been mapped out, why is the new transition phase implementation delayed?

The reduced financial availability caused first by the economic recession of 2008 and subsequently by the recent pandemic emergency has slowed the much-desired ecological transition, but it can't be delayed any longer, as also con-

firmed by the 2021 recent IPCC report. Tools such as the 2030 United Nations Agenda and the Next Generation EU give us guidelines and financial resources that will unlikely be available in the future. Now more than ever a paradigm shift is needed. Though a multidisciplinary, systemic and interscalary vision, it should be able to deal with problems as if they were complex processes, activate projective simulations with the use of big data and implement structured strategies and actions that, on the one hand, can determine new balances adaptable to the unpredictable, continuous and constant change, and on the other, are respectful of our planet and of its non-renewable resources, but are also inclusive not to leave anyone behind.

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