Publishing Series in PROJECT | Essays and Researches
Possible and Preferable Scenarios of a Sustainable Future
Towards 2030 and Beyond
vol. 05 | 2021 | paper 2 | pp. 32-45

ISSN (print): 2704-6087
ISSN (online): 2704-615X
ISBN (print): 978-88-5509-209-8
ISBN (online): 978-88-5509-232-6

HYBRID COMMUNITIES AND RESILIENT PLACES
Sustainability in a post-pandemic perspective

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section
ARCHITECTURE

typology
ESSAYS & VIEWPOINT

DOI
doi.org/10.19229/978-88-5509-232-6/522021

ABSTRACT
The circumstances of the global pandemic have affected the dynamics of everyday life, accelerating processes of radical transformation of living, in its physical, social and virtual dimensions, oriented towards the creation of enabling ecosystems, resilient places and communities. Institutional, social and design innovations related to the main sustainability policies, Hybrid Communities of Place – social formations 'cultivated in digital space' – and sustainable urban and architectural transformation practices are therefore examined to identify the most concrete, credible and commensurate with the complexity of this century's challenges. In a post-pandemic perspective, the contribution suggests to consider public residential neighbourhoods as places of great physical and social, energetic and environmental complexity, in which to experiment with the renewed values of urban and architectural design.

KEYWORDS
sustainability, resilience, hybrid communities, covid-19, built environment

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The contemporary present is marked by a strong uncertainty about the stability of the technological, economic, productive, energy, and infrastructural systems on which society depends in their everyday-life practices (De Certeau, 2011) and the dynamics of social reproduction (Lefebvre, 2016). The circumstances of the pandemic have increased the awareness of living in a complex and fragile socio-economic context. People demand a more social, environmental, and economic sustainable way to experience the space. For these reasons, it is crucial to frame the post-pandemic perspective in the broader framework of sustainability, acknowledging the renews needs of the individuals within the domestic, urban, mobility, and consumption sphere. During the pandemic have emerged new patterns of consumption and lifestyles, strategies, and practices of sustainability. The understanding of such can help, on a social level, to accept more smoothly the changes required to local bodies, which should experiment with institutional innovation within their inherent structures. This contribution aims to address four main topics. The principles and tools of the theoretical and cultural framework of holistic sustainability within the key strategies at the national, EU, and international levels. The post-pandemic scenario and its effects on the quality of living. The emerging Hybrid Communities of Place, according to the definition of Ezio Manzini. The design approaches that support sustainability – environmental, economic, social – at the urban, architectural, and technological scale.

The contribution aims also to understand which design and meta-design processes can satisfy the different dimensions of sustainability, acknowledging the sudden change in the framework of needs and performances required to the residential space (indoor and outdoor) and the complexity of social, environmental, and energy challenges of this century. In light of the current circumstances, the contribution, therefore, examines whether institutional and social choices can meet at the design level, prefiguring scenarios and objectives for future research that include issues such as health, prevention, production, and consumption within the debate on urban regeneration. The unprecedented combination of factors that characterize the contemporary condition can only be resolved in original, unpredictable reflections. The pandemic issue brings, as a consequence, a variety of implications concerning the health and safety of urban and domestic living, also related to typological, spatial, technological, and digital solutions also suggesting to face the transformation of the built environment in a glocal perspective to address the different dimensions of sustainability.

A Post-Pandemic Perspective[1] | The circumstances of the pandemic have accelerated the awareness of issues proper to the sustainability debate. The slowing down and expansion of daily life during the lockdown has overturned perceptions of well-being about the quality of housing, basic services, and public spaces, nature and landscape, mobility, air pollution, and physical and mental health. Equally, themes such as economic, digital, and gender gaps, solidarity, and cohesion complete the framework needed to understand the post-pandemic perspective that will guide future sustain-

ability and resilience actions, especially at the urban scale, considering the relationship between these factors and the dynamics of the pandemic. First, the spread of Covid-19 and the increase in mortality rates concerning urban air quality as a result of two causes. One identified by the Harvard Department of Biostatistics, which reports an increased risk in the elevated presence of particulate matter in the air (Wu et alii, 2020), which according to the Italian Society of Environmental Medicine (SIMA) would be able to carry trace amounts of virus RNA. The second is related to exposure to nitrogen dioxide, a toxic pollutant produced by fuel combustion, which increases mortality risk factors with effects on hypertension, cardiovascular disease, pulmonary dysfunction, diabetes, and the immune system (WHO, 2003; Ogen, 2020). In this sense, there are prevention and containment measures that depend on urban healthiness and quality.

Another level of effects concerns the quality of urban living, at the neighbourhood scale, and domestic living at the residential scale. In the first case, with the endowment of basic services and the social capacity to reorganize around a need, in the second to the morphological and technological quality of indoor and outdoor spaces. Taking the Italian public residential districts as a reference, it is possible to detect, with due exceptions, a diffuse lack of – or scarce accessibility to – basic services, partly counterbalanced by the increase in e-commerce services and home delivery[2]. These are subordinated, to the level of digitalization of each and the possibility, including economic, of using the technological tools to access them. Also, emerge the ability of a more or less structured network of solidarity provided by non-profit organizations and spontaneous volunteering[3]. This phenomenon fills the gaps in the public service in support of the most vulnerable segments of the population by providing them with goods and assistance both at home and remotely, organizing fundraisers for third parties, also carrying out a general and widespread control of the territory (CSVnet, 2020).

Two post-pandemic perspectives emerge from these considerations. The first, on a social level, is that aside women, children, elderly, differently-abled, homeless, and indigent, also workers with dependent children without smart working opportunities and people without any internet connection or digital devices are now considered fragile categories. The second, more positive, is that in the specific Italian reality, many voluntary associations are already operating a general structural and organizational rethinking to optimize the provision of services in case of future emergencies (CSVnet, 2020).

On the residential scale, can be identified two scenarios: the first concerns the house, the indoor environment, and its spatial, technological, and environmental performance; the second concerns the provision of outdoor spaces of residential relevance, whether private, semi-private, semi-public, common. In the post-pandemic perspective, the activities of daily life are still condensed in the domestic space of the house, whose functional areas are mixed and overlapping: the bedroom is a study, the kitchen a classroom, the living room is a gym and cinema. Besides, the deprivation of opportunities for recreation and leisure sharpens the need to improve the provision of

Fig. 1 | Grass inserts divide driveway from bicycle lanes and tramways in Rotterdam (credit: L. Errante, 2018).

Fig. 2 | Pop-up bicycle lane in Berlin (credit: P. Broytman, 2020).

green spaces and equipped, often denied by the urban and architectural forms of residential neighbourhoods. In this sense, the concept of the ideal home[4] is reconsidered accordingly to the presence of common balconies, terraces, and the overall relationship with outdoor space and nature, which in Italy is found to be lacking compared to other European cities (European Commission, 2018).

Hybrid Communities of Place | During the lockdown, digital space constituted the privileged dimension to satisfy the need for social relations despite the necessary distancing, transferring online everything that the level of digitization allowed individuals, not without contraindications (Manzini, 2020b). From the relationships born in this virtual space, activities of support and solidarity emerge, from the Italian Anthem at 18:00 to the local distribution of goods and services. With this premise, the constraint of spatial proximity at the basis of relationships and social forms breaks down, replaced by the quality of conversations (common interests or purposes) around which new forms of community are built (Manzini, 2018). This is the case of Hybrid Communities of Place, relationships cultivated in digital space that relates to a localized group of interlocutors (Manzini, 2020a).

According to Agamben (2008, p. 9), a Hybrid Community of Place can be defined as a contemporary social formation because in a singular relationship with its own time it adheres to it and, at the same time, distances itself from it through a displace-

Figg. 3, 4 | Tactical urbanism interventions implemented during the lockdown period in Milan (credit: City of Milan, 2020).

ment and anachronism that makes it capable more than others of perceiving and grasping its time. In this sense, these communities are fluid, light, and open, able to oscillate between loneliness and connected individuality and the reactionary attempt to repurpose the closed, identity-based communities of the past (Manzini, 2018). They are hybrid, as their relationships are formed in both the physical and virtual worlds, and they are of place because of a particular interest related to the care, precisely, of a place (Manzini, 2020b). They are the expression of a choice, of a conscious life project around a shared value, something that no one can produce individually but that is made together over time (Manzini, 2018, p. 17). The social innovation constituted by these types of communities lies in being a political and cultural counter-trend to the dominant one based on the desertification, erosion, and commodification of social commons (Manzini, 2020a). Such communities critique 'high viscosity systems' based on material culture and a demiurgic vision of change that degenerates into the environmental and social disaster we find ourselves in (Manzini, 2018, p. 23). The pandemic crisis has shown how the resilience of individuals, society, and the planet derives from the self-critical capacity of a community and the predisposition to change-oriented towards new, happier, and more sustainable lifestyles.

This phenomenon, due to its contemporary character, still has too vague contours whose characters will have to be monitored and verified over time (Manzini, 2020b). Nevertheless, the production of such a fabric of relationships between people, things, and places and their strength and duration over time depends on the stability of the boundary conditions that generated them (Manzini, 2018) hinting at a balance between the virtual and physical dimensions. If the former can reset physical distances by providing support through which to organize, in the latter, the care of places and the preservation of their functional and aesthetic qualities are practised. Ultimately, Hybrid Communities of Place can cope with catastrophic events because, working for the care of each other and the environment in which they live, they can act and self-organize in the face of adversity. Building these new communities requires social, design and institutional experiments that question the relationships between us (human beings) and places (nature in the broadest sense), which cannot be predetermined but

helped through the design of 'enabling ecosystems', socio-technical systems made of activities and opportunities for encounters (Manzini, 2018). It is, therefore, necessary to continue the reflection not only on the level of social innovation but also on that of innovation of design processes.

Designing resilient places | The outlined framework implies a change in the sustainable design process to meet functional (problem-solving) and ethical-aesthetic (sense-making) required to create 'enabling ecosystems'. This perspective finds a place in the broader discourse on the socio-spatial analysis and the design outcomes that may derive from such findings (De Capua and Errante, 2019), supporting the creation of a 'socio-technical' environment in which individuals are engaged in a variety of activities. In this way, people produce social and relational values within themselves and the place. The socio-spatial dynamics and the socio-technical environment have reciprocal and mirror-like behaviour in which the care of the place is pivotal to the creation and continuous regeneration of social commons and vice versa. In this sense, the practices and design approaches mentioned in this contribution represent examples of 'design for social innovation' that also arise in response to the pandemic crisis.

The focus on the urban environment concerns the reduction of consumption, emissions, and environmental impact of the city in terms of sustainable mobility, air quality, and urban healthiness. The issue is approached from two temporal perspectives, long-term and short-term, requiring distinct design approaches. The first, long-term, mobilize actions and principles of urban regeneration proper to the Green City or Ecosystemic Services[5] (environmental and/or ecological) at the urban scale: the improvement of urban quality through the reduction of land consumption, climate mitigation, and adaptation, and the renewal of the built heritage and infrastructure. The short-term perspective is based instead on the need to provide immediate responses: areas with clean air in built-up areas, pedestrianization, and reduction of cars planting of grass surfaces that trap particulate matter (Fig. 1) along the busiest roads, the adaptation of public spaces, parks, sidewalks and bike paths to the needs of distance.

The urgencies posed by the pandemic crisis have been responded to through short-to-medium term design approaches, oriented towards Tactical Urbanism, i.e., able to provide 'short-term actions for lasting changes' (Bazzu and Talu, 2017) also for the benefit of urban healthiness (Rojas, 2020). The outcomes of these tactics can be found in numerous international examples, such as the pop-up bike lanes in Australia, Ger-

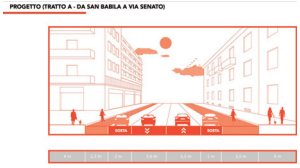
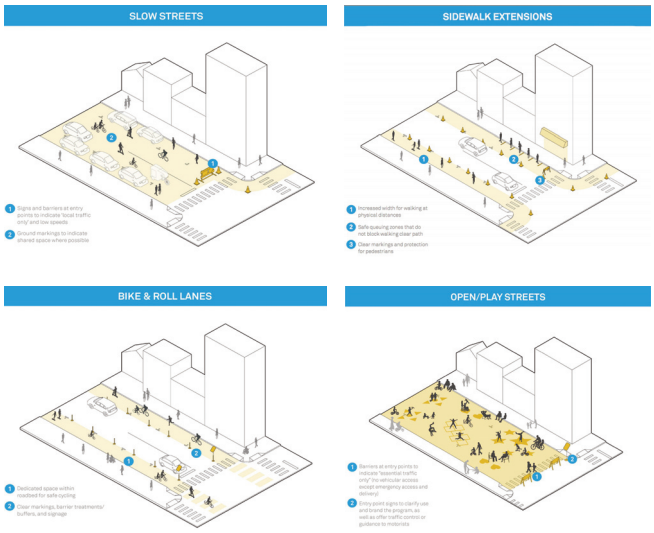


Fig. 5 | The intervention of tactical urbanism in Milan after the phase 2 of the pandemic (credit: F. Romano, 2020).

Fig. 6 | Road section: extract of the Open Roads Plan of Milan (credit: City of Milan, 2020).



Figg. 7-10 | Extracts from the Streets for Pandemic – Response & Recovery Plan on which the urban transformation interventions in Figg. 3-6 are based (credit: NACTO and GDCI, 2020).

many, Spain, (Fig. 2) or the Italian case of Piazze Aperte (Figg. 3-5), Strade Aperte (Fig. 6) and Zone 30, promoted by the City of Milan in collaboration with Bloomberg Associates, National Association of City Transportation Official (NACTO) and Global Designing Cities Initiatives (2020). These initiatives aim to reduce flows and increase spaces for micro-mobility and active mobility (Figg. 7-10). Similar to other radical actions of temporary pedestrianization, they are based on accessibility, flexibility, adaptability, economy, and democracy criteria (Fig. 11), being consolidated by the formal tools of planning and urban design when considered effective.

In this sense, outside the urban policies framework, these design principles can be jeopardised by many potential risks related to ethical, aesthetic, practical, and economic issues. The most common risk appears when the transformation results in an urban make-up operation having no positive social impact in the long term. These risks could be prevented for actions included in the orderly planning of the territory, such as those mentioned for the city of Milan. On the contrary, the case of Tactical Urbanism actions is more complex, even when they are solicited by local governments. The main reason is the participation and active involvement of citizens who are the main protagonists of these interventions, from the idea to the management of places, contributing to their effectiveness and sustainability over time. Such interventions could instead provide an opportunity for the regeneration of urban commons, reconciling the needs of PAs with the involvement of the community. Another aspect of criticism relates to issues of environmental sustainability concerning urban mobility. Although the transformation of the roads and their accessibility and safety are pivotal for the use of greener means of transport, the approach proposed by NACTO (2020) cannot constitute a universally applicable paradigm, finding instead more viability in boulevards.

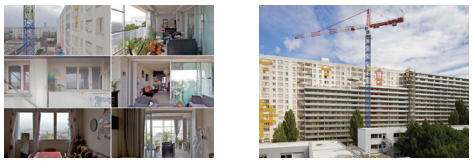
The heterogeneity of the urban forms of Italian cities requires specific studies concerning the overall modification of traffic flows associated with other mitigation interventions of air quality improvement.

At the scale of the built environment, the reflection focuses on residential neighbourhoods, where the technological obsolescence of public housing (Paris and Bianchi, 2019) and the provision of spaces and services are among the most frequent problems. Social, architectural, and technological meanings are linked in the improvement of spatial and living quality implying an ideological and methodological change in sustainable design. In the opinion of the author, the main leading theories are the Soft City concept and the recent Public Space Site-Specific Assessment – Guidelines to Achieve Quality Public Spaces at Neighbourhood Level developed by UN-Habitat (2020).

The first one is based on urban density strategies to ensure access to green spaces and neighbourhood services to the residents (Sim, 2019). As a thematic deepening of Jan Gehl's method on public space (Gehl, 1971; Gehl and Svarre, 2013), the Soft City approach proposes heterogeneous, diverse, flexible, walkable, easily controllable, and green spaces to contribute to the microclimate of the residential block and reduce the environmental impact (Sim, 2019). The second, in continuity with the Global Public Space Toolkit (UN-Habitat, 2016), provides a methodological framework to understand, analyze, and evaluate residential contexts through qualitative methods and propose site-specific solutions (UN-Habitat, 2020).

These examples are configured in their respective fields as process innovations, to be considered as methodological references in the formulation of urban transformation programs based on an evidence-based approach, i.e. structured in a dual analytical and strategic phase. In both cases, these principles need to be revised in light of appropriate adaptations and specific design translations to be adopted on a case-by-case basis. For example, to adopt the analytical approach proposed by UN-Habitat to an Italian public housing district and orient interventions towards a Soft City principle, we would find ourselves using toolkits designed for contexts very different from ours and each other. In the first case, because the indicators, criteria, and proposed actions are designed for extremely complex socio-economic contexts, such as those of developing countries. In the second case, because the experimentation of this project approach

Fig. 11 | The famous pedestrianization of Times Square in New York City, spring and fall of 2009 (credit: NY DOT, 2020).



Figg. 12, 13 | Transformation of 530 homes in the Grand Parc neighbourhood by Lacaton & Vassal, Bordeaux 2016 (credit: P. Ruault, 2020).

refers to geographical, climatic, environmental, urban, and morphological contexts located mainly in northern Europe.

Nevertheless, these principles can be used to identify, even outside of specific strategies or programs, examples of urban and architectural transformation aimed at the overall spatial and technological improvement of living. The characteristics of sustainability, found in numerous examples of contemporary residential, social and co-housing architecture (Figg. 12, 13) can be summarized as follows: constant and rational maintenance of the existing as opposed to demolition and reconstruction with the related energy, economic, and resource savings (Paris and Bianchi, 2019); soft, low-cost and low-tech approach (Paris and Bianchi, 2019; Sim, 2019); orienting the project according to uses and ways of living consistent with the real needs of consumption and indoor environmental comfort of the inhabitants, to contain their impacts; material and technological choices, in wet work or prefabricated, traditional or innovative, which should not be mere technical exercise but contribute to the overall performing, aesthetic and formal value (Figg. 14, 15); evaluate additions and thicknesses that can combine environmental benefits and common spaces for residents.

Fig. 14 | Typological section of the Self-sufficient Neighbourhood housing designed in a post-pandemic perspective (credit: Guallart Architects, 2020).

Fig. 15 | The 'Self-sufficient neighbourhood' winner of the international contest for mixed-use community in Xiong'an, China (credit: Guallart Architects, 2020).

The interpreter of this change is the 'bricoleur', on whom design for social innovation and urban, architectural, and technological design converge (Manzini, 2018; Paris and Bianchi, 2019). The bricoleur performs two actions. On the one hand, according to Manzini (2018, p. 80), he designs by listening to objects and people drawing on a supply of pieces made of products, services, infrastructures, ideas, programs, ways of doing things, formally defined methodologies that can be observed in the socio-technical, cultural, and political ecosystem; on the other hand, he formulates the project and evaluates its outcomes based on the resources internal to that system, such as more or less shared knowledge and values. The bricoleur proposes additions, integrations, grafts of volumes and thicknesses, and simplified constructive and technological choices in aggregation, construction, management, and maintenance. In all cases, he acts respecting the places and the presence of the inhabitants, taking care of the common good and producing heterogeneous living spaces, relational, environmental, and

social. This design attitude, critical and politicized (Marcuse, 2009) is reflected in the sustainability strategies that guide the design choices mediating between the dimensions of sustainability.

Conclusions, criticalities, and future perspectives | The transformations threatened by environmental, energy, and climate challenges and more recently pandemic, the socio-economic conditioning in the definition of lifestyles, require the activation of unconventional design skills and attitudes. In light of what has been said, the project is the pivot of sustainable innovation, social and architectural, equal and proportionate to the tools and more or less institutional actors in the field for the transformation of the urban and built environment. In this sense, the achievement of sustainability goals in the different spheres of public affairs, such as the management of urban space and mobility and social housing, requires institutional restructuring. A revision of the modus operandi also includes investments in support of local, specific, and collective actions of transformation and management of the existing. This aspect reveals the particular research interest, regarding the activity conducted by the writer, in the experimentation of innovative forms of urban and architectural transformation, care of places and common goods, and the integration of these processes in the context of ordered planning.

The approaches described so far do not constitute an innovation in themselves, configuring themselves as established practices or at least widely studied. Nevertheless, from the reflections advanced in this contribution, the opportunity of experimenting with new combinations emerges, according to the peculiarities and specificities of the different urban and territorial contexts. Specifically, the public residential districts are extremely interesting as places where to find multiple levels of socio-cultural, typological-spatial, and technical-environmental complexity. The future research of the author will be specifically oriented on social housing. In particular, the interpretation of the renewed needs that emerged during the pandemic, the criteria that may lead to a transformative scenario, and the optimal condition for the creation of socio-technical systems. All these considerations aim to understand how to increase the quality of life of social housing residents. The complexity and the overlapping of multiple dimensions, scales, and needs outlined here, have always been an inexhaustible source of design material, useful to guide objectives, priorities, and strategies of transformation. The contemporary historical moment is characterized by rapidly changing and mutability as the only certainty (Bauman, 2005) and the designers are called to propose flexible and trans-scalar solutions, both in the intervention and in the expected results. This flexibility is realized in the reversibility and transformability of the proposed design solution and in their ability to interpret the different opportunities and potential offered by each context, the values, and reasons that it represents concerning the time of its implementation and in the contemporary world.

Notes

1) By post-pandemic perspective, the contribution means the immediate present and the near future in which social and spatial practices of normalization of the dynamics connected to the containment of contagions during the pandemic will be tested and progressively consolidated.

2) Overall, the turnover of Italian e-commerce companies is growing, but with difficulty keeping pace with the volume of orders. Small merchants, converted to home deliveries, use social networks to support the local reality and ensure customer service. Source: ilsole24ore.com/art/e-commerce-17percento-2019-ma-coronavirus-stravolge-settore-ADA4HcR [Accessed 18 September 2020]. For further information see: Casaleggio Associati (2020), *E-commerce in Italy 2020 – Selling online at the time of the Coronavirus*. [Online] Available at: casaleggio.it/e-commerce/ [Accessed 24 November 2020].

3) The regional Volunteer Service Centers register an increase in the availability of new volunteers, while the most requested services are home delivery and telephone listening for the elderly and the lonely. To these activities are added those of the non-profit organization Banco Alimentare and the Italian Red Cross. For further information see the webpages: csvnet.it; bancoalimentare.it/it/emergenza-sanitaria; cri.it/Coronavirus [Accessed September 18, 2020].

4) After the lockdown + 5% of Italians want to change home for reasons of overall quality and location, 46% are ready to renovate to improve furniture and space organization but only 11% will invest in energy efficiency. The concept of comfort is linked to multi-functionality and relaxation of environments, enjoyable outdoor spaces, and support and service rooms. For further information see: BVA Doxa, (2020), *2020 – New Market Scenarios*. [Online] Available at: bva-doxa.com/wp-content/uploads/BVA-Doxa-Nuovi-Scenari-2020.pdf [Accessed 18 September 2020].

5) The Millennium Ecosystem Assessment (2005) defines Ecosystem Services as «[...] the benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling».

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