

From Popular Neighborhoods to the City of the Future: New Visions for Reclaiming Green Spaces in Urban Regeneration

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Abstract

The city is a system in continuous evolution, with needs that change over time and require adjustment and adaptation strategies. Today, we inherit parts of cities that reflect past urban and planning logics, which have not always met future expectations. Post-World War II peripheral neighborhoods, in particular, frequently suffer abandonment and degradation, often showing the results of dichotomous choices related to the relationship between built structures and green spaces. The mounting urgency of climate change necessitates both adaptation and mitigation, especially within urban contexts. This need, combined with a renewed vision of urban living, calls for a critical reassessment of urban functions, where green space emerges as a strategic and essential element. Within the perspective of 'reclaiming green spaces' the objective is to outline a design approach that utilizes the expressive power of drawing for description and representation, capable of guiding sustainable requalification intervention methods for abandoned urban areas. The research follows an integrated methodology, grounded in urban analysis and visual representation, to envision future scenarios. The definition of new images and the creation of new visual suggestions can indeed trigger the regeneration processes for the recovery of existing heritage.

Keywords

regeneration, environmental sustainability, urban design, green city, ecological infrastructures

Detail of the INA-Casa ceramic tile on one of the buildings in the Verderuolo neighborhood, Potenza. The emblem, symbol of the historic public housing initiative promoted in Italy between 1949 and 1963, attests to the original identity of the neighborhood as a planned settlement within the framework of the INA-Casa Plan (photo by the authors).



Introduction

Contemporary cities face unprecedented environmental and social challenges. There is an urgent need for urban regeneration to address both environmental degradation and urban decay, calling for a critical reassessment of twentieth-century settlement models [Bencardino 2015]. The uncontrolled cementification of cities, driven by functionalist logics and oriented towards vehicular traffic, has produced impermeable, inhospitable spaces that are often vulnerable to environmental and climatic risks [SNPA 2024]. Within this framework emerges the need for an urban transition that no longer views nature as a mere ornament but as an essential element and strategic infrastructure for climate resilience and collective well-being. The primary aim of this work is to propose a replicable methodological model for urban regeneration, capable of combining environmental sustainability, social inclusion, and the quality of public space. The design proposal envisions a future city where greenery plays a structural and cultural role in reshaping the urban landscape.

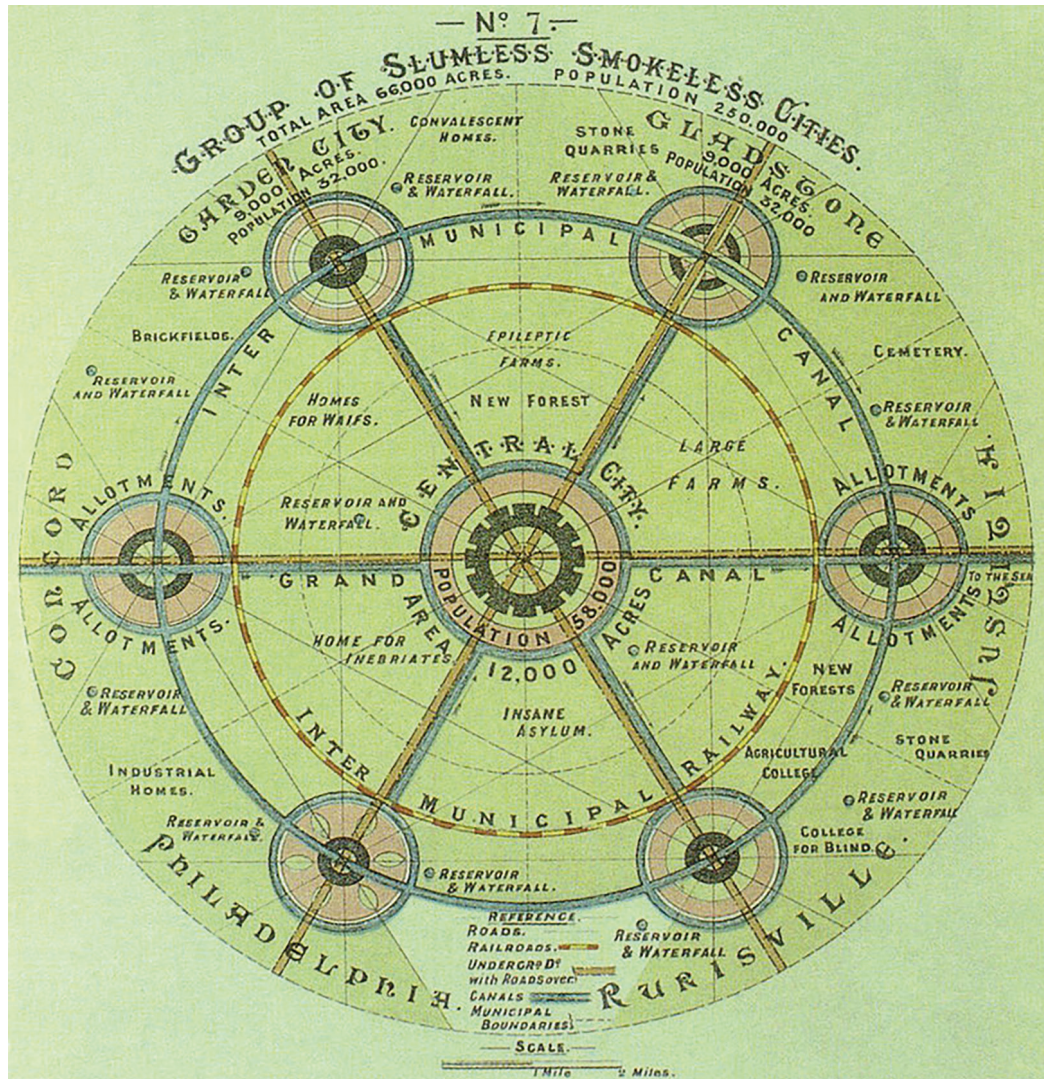
Drawing is a fundamental aid for imagining new scenarios. Through visual representation, it is possible to envision cities, or parts of them, where nature reclaims its original space, transforming vehicular roads into ecological corridors, asphalted squares into urban parks, and gray neighborhoods into vital ecosystems.

Urban visions

The relationship between city and nature has spanned different eras and models, evolving from symbolic expressions to functional strategies. During the Renaissance, with its emphasis on balance, order, and harmony, the concept of the 'ideal city' emerged. The celebrated representations attributed to Piero della Francesca depict geometrically perfect cities, where expansive central squares, symmetrical road axes, and loggias alternate with gardens and tree-lined courtyards, all under tight spatial control. In these visions, green spaces play a symbolic role: nature is 'tamed,' incorporated into precise geometric schemes that reflect the era's ideal of control [Carrieri 2021]. With the Industrial Revolution, cities underwent radical transformations: uncontrolled and chaotic expansion generated congested, unhealthy, and alienating environments [Farinella 2022]. Ebenezer Howard's Garden City (fig. 1) emerged as an organic response: a model that sought to reconcile city and countryside through an ideal solution encompassing the benefits of both urban and rural life. Howard envisioned a city with a radiocentric urban structure, where self-sufficient urban nuclei are connected by green corridors, ensuring recreational spaces, urban gardens, and public parks. In this model, green space moves beyond mere aesthetics to take on functional and social significance [Iacobone 2020], anticipating key principles of urban sustainability. Le Corbusier's Ville Radieuse (1930) further advanced this paradigm, elevating multi-story buildings on pilotis to liberate ground space for services and vegetation [Leone 2018]. Here, greenery serves to enhance urban hygiene and natural lighting; however, it loses its relational and social dimension. This model, although innovative, often generated cold and austere urban environments, where green spaces were relegated to residual, marginal zones.

From the mid twentieth century onward, urban planning increasingly confronted ecological impacts of urban growth. Diffuse urbanization, soil impermeabilization, and biodiversity loss accentuate phenomena such as the urban heat island, air pollution, and hydrogeological risk [Gardi, Dall'Olio & Salata 2013]. In this context, contemporary approaches based on urban ecology and environmental resilience emerge. Contemporary strategies such as the Sponge City concept, originating in China and now globally adopted, use green infrastructure to retain, absorb, and reuse rainwater, reintegrating biophilia and adaptability into urban systems [Li et al. 2016].

These visions, though differing in era and approach, share the common goal of reintegrating nature into urban design, with varying degrees of radicalism and realism. Alongside them, more extreme and provocative scenarios emerge, in which greenery does not merely coexist with the built environment, but entirely absorbs it. In these utopian visions, the city yields, surrenders, to the regenerative power of nature: architecture dissolves into the landscape,



urban spaces blend with spontaneous ecosystems, and vegetation infiltrates the fabric of human settlement until it ultimately engulfs the remnants of anthropization. This concept of a 'green recolonization', which evokes both theories of urban rewilding [Pampaloni, Brocada 2022] and urban wilderness [Jianing et al. 2024] (fig. 2), as well as literary suggestions, does not claim to be fully achievable but serves an evocative and critical function. It is precisely in the confrontation between utopian visions and real-world conditions that urban design finds room for innovation. Positioned within this theoretical framework, the case study of the Verderuolo neighborhood aims to translate these suggestions and conceptual premises into a tangible design strategy. The project seeks to reconcile visionary thinking with technical and operational feasibility, employing drawing as a critical tool to reinterpret the existing urban fabric through the lens of ecological and climate-resilient design principles.

Drawing as a tool for envisioning the 'reclamation of green spaces'

The approach used for the research is interdisciplinary, combining theoretical reflections, urban analysis, and graphic-design experimentation. The intent is to represent new visions of the city through drawing, understood as a narrative tool capable of guiding urban transformation towards sustainable scenarios [Mazzoleni & Lepratto 2018]: drawing is thus conceived as a form of visual *ékphrasis* that accompanies the entire design process, from analysis to the final intervention proposal. This narrative dimension is particularly valuable in urban regeneration projects, where the transformation of existing space cannot be understood solely in quantitative terms, but requires a shared imaginative component. Drawing enables the construction of dynamic and flexible scenarios, capable of adapting to the context and fostering the participation of citizens and stakeholders. In this sense, drawing becomes a tool for mediating between environmental and social needs, between what exists and what is desired.

The research pathway developed from a phase of historical and bibliographic analysis, useful for contextualizing the evolution of the neighborhood and the relationship between nature and the built environment. This theoretical reconnaissance established the conceptual framework necessary to interpret the current landscape conditions and to define strategic guidelines for potential interventions. Through direct surveys and on-site observations, it was possible to analyze the urban fabric, highlighting both environmental criticalities and unexpressed potentials. The design phase was grounded in the elaboration of future scenarios, represented through plans, sections, and three-dimensional views. These graphic tools made it possible to simulate the proposed transformations and assess their impact on urban and environmental quality.



Fig. 3. Coordinated District of CEP Potenza, General Urban Plan (ATER Archive, Title VI, 466 ASA).

Case study: the Verderuolo neighborhood in the city of Potenza

The Verderuolo neighborhood is part of the urban expansion of Potenza initiated in the post-World War II period, in response to the growing demand for housing and the need to reorganize the city following wartime damage and internal migration flows [Comune di Potenza 2008]. The local housing development plan, launched in 1952 and completed in 1966, envisioned the construction of a series of residential buildings connected by open spaces, wide sidewalks, and public green areas (fig. 3).



Fig. 4. View of the Verderuolo neighborhood, Potenza - highlighting the predominance of impervious surfaces (photo by the authors with drone assistance).



Fig. 5. Current state of the Verderuolo neighborhood. Site plan highlighting the existing urban configuration. The three photographic views, corresponding to specific points along the urban layout, document the current conditions of public spaces, characterized by high imperviousness and a layout centered on vehicular traffic (graphic elaboration by the authors and L. Di Noia based on cadastral data).

The original urban layout was characterized by a strong openness toward the surrounding landscape, featuring an arrangement of open blocks, a curvilinear street network that follows the natural topography, and a continuous relationship with green spaces [Bilancia 2006]. The toponym 'Verderuolo' itself reflects the neighborhood's environmental vocation, understood both as a landscape infrastructure and as an element of urban identity. However, subsequent urban development has progressively undermined this balance: the increase in impervious surfaces, the conversion of public spaces into parking areas, and the reduction of vegetative cover have significantly altered the spatial and environmental quality of the neighborhood (figs. 4-6).

The analysis of the current condition, conducted through on-site surveys, revealed several critical issues: fragmentation and neglect of green spaces, extensive asphalt paving, a lack of shared public areas, absence of cycling connections, and a general perception of social marginalization. Furthermore, the neighborhood's original design, conceived as permeable and open, is now contradicted by the presence of physical barriers and functional discontinuities. Existing green areas are in a state of degradation and are largely inaccessible, suffering from poor maintenance and limited use by residents.

In this context, the design idea of an ecological reclaiming of the neighborhood developed, based on three guiding principles: reactivating green spaces, re-stitching public space, and rethinking mobility. The objective is to transform Verderuolo into an active urban ecosystem, where green spaces are no longer a decorative element but an environmental and social infrastructure (figs. 7, 8). The design proposal envisions the recovery and interconnection of existing green spaces, the integration of vegetated drainage strips along streets, and the creation of rain gardens, urban gardens, and shared spaces with a collective vocation.

Fig. 6. Longitudinal section of the existing conditions along Via Milano, the main axis of the Verderuolo neighborhood. The drawing, derived from surveys and digital reconstructions, highlights the current urban layout featuring the sequence of Bologna, Gorizia, Pisa squares, and the Market (graphic elaboration by the authors and L. Di Noia).

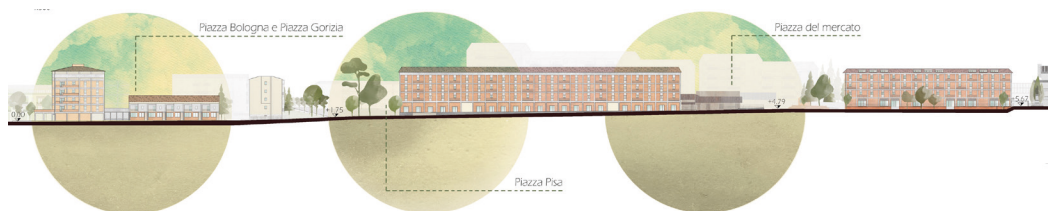


Fig. 7. Urban regeneration project of the Verderuolo neighborhood: site plan and longitudinal section along Via Milano. The drawing summarizes the proposed interventions, including the creation of a continuous bike lane, the redevelopment of public spaces (Piazza Bologna, Gorizia, Pisa, and the Market), increased greenery, and the demineralization of surfaces (graphic elaboration by the authors and L. Di Noia).

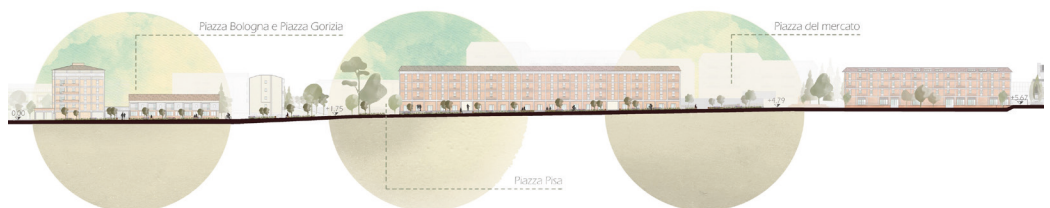
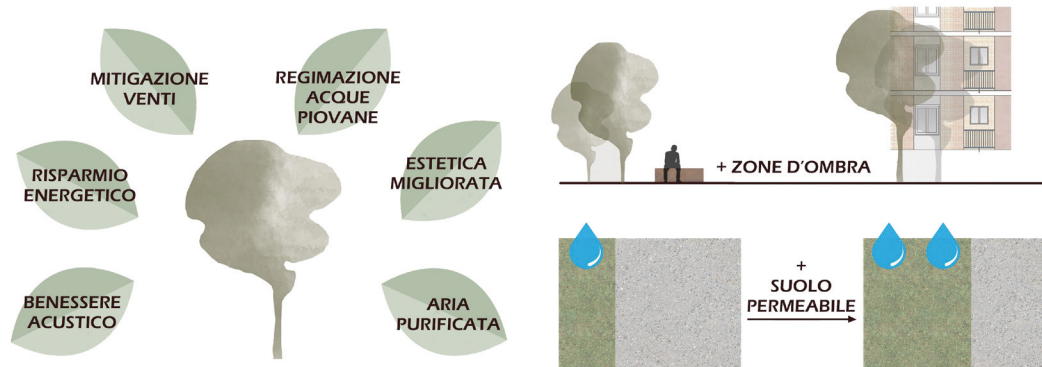


Fig. 8. Diagram of the benefits associated with expanding greenery and increasing permeable surface areas as part of the Verderuolo neighborhood regeneration project (graphic elaboration by the authors and L. Di Noia).



Particular attention has been given to the transformation of vehicular routes into multifunctional ecological corridors, capable of reconnecting the urban fabric and improving microclimatic quality [Neonato, Tomasinelli & Colaninno 2019].

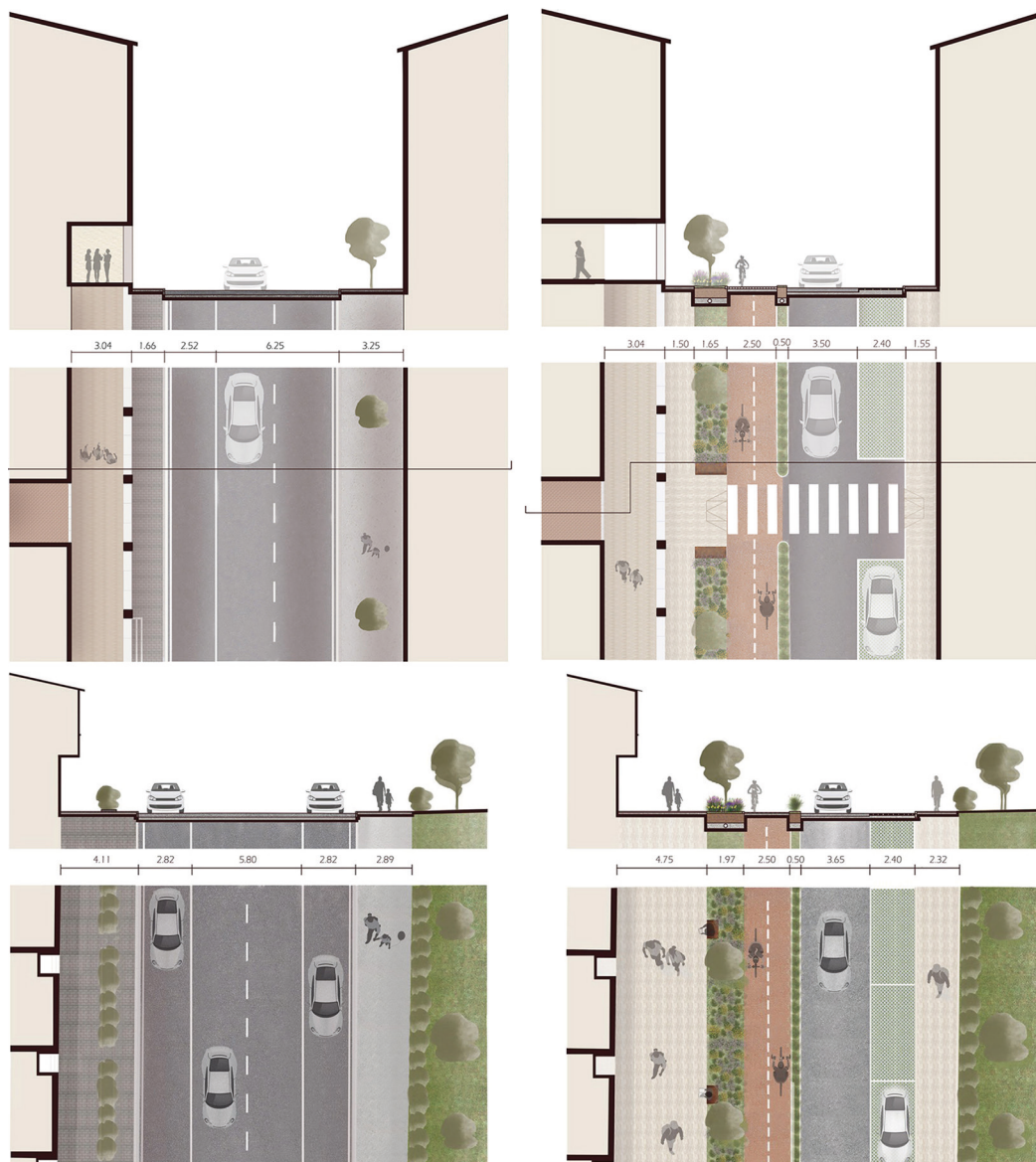


Fig. 9. Comparisons between existing conditions (left) and proposed designs (right) at two locations along Via Milano, Verderuolo neighborhood, Potenza. The illustrations highlight the increase in permeable surfaces and the recovery of green areas, emphasizing improvements in urban quality (graphic elaboration by the authors and L. Di Noia).

A significant increase in permeable surfaces within the area was recorded, rising from approximately 12,100 square meters to around 16,500 square meters. Along Via Milano and in the adjacent zones, new trees and shrubs were planted, carefully selected from native species to ensure adaptability, low maintenance, and the preservation of biodiversity. These species were primarily integrated into the rain gardens, which cover an area of approximately 400 square meters and serve as key elements for both biodiversity enhancement and hydraulic risk mitigation [Andreucci 2021].

The introduction of a network of pedestrian and cycle paths, approximately 1500 meters long, was planned, traversing and embracing the neighborhood's key points, capable of limiting car dependence and promoting soft mobility. Of strong design impact is the reorganization of four important public areas in the neighborhood: Piazza Bologna, Piazza Gorizia, Piazza Pisa, and the Market Square. The intervention restores centrality and social quality to these meeting places. The project is completed by the installation of e-bike stations, wooden seating, and other urban furniture elements that encourage rest, social interaction, and inclusion (fig. 9).

Fig. 10. 3D View of Via Milano at the intersection with Piazza Bologna, Verderuolo neighborhood, Potenza – Graphic rendering illustrating the integration between built environment and urban greenery (graphic elaboration by the authors and L. Di Noia).



Fig. 11. 3D View of Via Milano at the intersection with Via Pisa, Verderuolo neighborhood, Potenza – Graphic rendering illustrating the integration between built environment and urban greenery (graphic elaboration by the authors and L. Di Noia).



By proposing strategies based on ecological regeneration and the revitalization of public spaces, the project outlines a model applicable to other urban contexts with strong yet underutilized landscape potential. Urban design, through the use of plans, sections, and renderings (figs. 10, 11), allowed for the representation of a future vision of the neighborhood, based on ecological regeneration and the enhancement of public space.

Considerations and conclusions

The future of cities hinges on the ability to envision and design new balances between the built environment and nature. Urban green spaces, once regarded as decorative or peripheral elements, must now assume a strategic role in shaping future urban transformations. They should become key components capable of addressing environmental, social, and climate-related challenges.

The case study of the Verderuolo neighborhood offered the opportunity to experiment, through urban design, an alternative vision: a resilient, permeable and inclusive city, where landscape intertwines with architecture and public space once again becomes a place of connection and sharing. The design proposal demonstrates how simple but targeted strategies can trigger significant transformations in urban quality, addressing functional, environmental and social themes far beyond the aesthetic aspect. This is not merely about imagining a physical transformation, but about activating a process of reinterpreting public space: a return to nature as a collective, resilient infrastructure capable of fostering inclusion, identity and a sense of belonging.

The developed work constitutes a first step towards defining an open design model, adaptable to other urban contexts that share similar characteristics of spatial fragmentation and poor maintenance. The proposed method is configured as an operational tool to accompany the transformation of the contemporary city in an ecological and participatory key.

The objective is to contribute to the construction of new urban imaginaries, capable of guiding policies and processes towards sustainable transformation. Expected outcomes include: a significant increase in permeable surfaces and accessible green spaces, a reduction in urban heat islands through increased tree planting, improved stormwater management, and renewed pedestrian and cycling accessibility. Furthermore, it is hoped for a strengthening of social cohesion through the creation of shared spaces and urban gardens that encourage the collective care and use of public space.

All of this is based on drawing as a design and narrative tool, capable of transforming visions into concrete and shareable scenarios. Drawing thus becomes a mediator between present and future, between project and possibility: it is through it that we can imagine new cities, tell of possible cities, and truly begin to build them.

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To cite this chapter: Silvia Vittiglio/Francesco Paolo R. Marino (2025). From Popular Neighborhoods to the City of the Future: New Visions for Reclaiming Green Spaces in Urban Regeneration. In L. Carlevaris et al. (Eds.). *èkphrasis. Descrizioni nello spazio della rappresentazione/èkphrasis. Descriptions in the space of representation*. Proceedings of the 46th International Conference of Representation Disciplines Teachers. Milano: FrancoAngeli, pp. 4231-4240. DOI: 10.3280/oa-1430-c976.