

# BDC

Università degli Studi di Napoli Federico II

# 24

numero 2 | anno 2024



# BDC

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**Direttore Responsabile: Luigi Fusco Girard**  
**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



fedOAPress

Journal home page [www.bdc.unina.it](http://www.bdc.unina.it)

**BDC volume 24, issue 2, year 2024**

print ISSN 1121-2918, electronic ISSN 2284-4732



## **Drawing urban processes: a visual grammar to make opportunities for social innovation accessible and inclusive**

*Disegnare processi urbani: una grammatica visuale per rendere accessibili e inclusive le occasioni di innovazione sociale*

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### ABSTRACT AND KEYWORDS

#### **Drawing urban processes**

The current context presents a high level of complexity that is difficult to interpret, while also recognizing the need to increase environmental preservation sensitivity. In architecture, where building production is one of the sectors with the highest global waste generation, there is a shift in focus from new construction to regeneration and reuse, which are seen as preferable strategies for transforming physical space. However, a critical issue persists: the lack of attention to the content and relationships that make these 're-' processes vital, leading them to the risk of reintegration into cycles of abandonment. This can be confirmed by looking at major funding calls for regeneration, such as PINQuA and PNRR, where attention to social aspects is a criterion that scores well, but no actual financial support is provided for related practices and activities. To avoid this anti-virtuous cycle, the situation suggests a potential reinterpretation of the architect's role: from designer of spaces to interpreter of processes. Architecture's design tools could be reinterpreted to ensure the development of projects that are coherent with their context and future-oriented, thereby aiming to prevent failure.

**Keywords:** social innovation, visual storytelling, community-driven design, inclusion, participation

#### **Disegnare processi urbani**

Il contesto odierno presenta alta complessità di difficile interpretazione, ma riconosce la necessità di accrescere la sensibilità nei confronti della salvaguardia ambientale. In architettura, dove la produzione edilizia è uno dei settori con la maggior generazione di scarti mondiale, è in corso lo spostamento di attenzione da nuova costruzione a rigenerazione e riuso, viste come strategie preferibili nella trasformazione dello spazio fisico. Persiste però una criticità: la mancata attenzione verso contenuti e relazioni che rendono questi "ri-re" vivi, li conduce al rischio di essere reinseriti nei cicli dell'abbandono. Una conferma di ciò si può avere guardando ad alcuni grandi bandi di finanziamento per la rigenerazione, come PINQuA e PNRR, in cui l'attenzione agli aspetti sociali è un dato che concede buon punteggio, ma non sono poi previsti effettivi sostegni economici a pratiche ed attività. Nell'intenzione di evitare questo circolo contro-virtuoso, la situazione suggerisce una potenziale rilettura nella figura dell'architetto: da progettista di spazi ad interprete di processi. Gli strumenti progettuali della materia potrebbero essere rilette al fine di assicurarsi che vengano sviluppate progettualità coerenti con il contesto ospitante e futuribili, puntando ad evitarne il fallimento.

**Parole chiave:** innovazione sociale, narrazione visiva, progettazione orientata alla comunità, inclusione, partecipazione

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## 1. Introduction

The article discusses the genesis and partial development of ongoing research aimed at improving accessibility and inclusivity in processes, specifically focusing on opportunities for participation and urban regeneration. The foundation of this research lies in a master's thesis, which initiated the experimentation of tools that will be described through the case study of Lumen, a cultural-based regeneration project involving a publicly-owned space in Florence. The article will outline the construction of meaning within the research, developed by engaging with the relevant academic literature reviewed during this phase of the work. The next section will formulate the research question and its corresponding objectives, addressing the contingent challenges that underscore the necessity for such research development. The subsequent section details the experimental and exploratory aspects from a methodological standpoint. It then proceeds to provide a concise overview of the Lumen case study, which is crucial for understanding the complexities that influenced the selection of this case as suitable for advancing this particular research on process narration. The following section describes the final research output, presented in three volumes, accompanied by a series of annexes that provide multiple forms of engagement depending on the reader's abilities, interests, and available time. Special attention is given to the volume that documents the visual experiments developed throughout the research process. The article then discusses the research findings and analyzes the challenges encountered during the study, followed by an account of future developments. This final part aims to update the research output by incorporating the significant advancements that have taken place over the past year.

## 2. Framing the scientific problem

The frenzy of urban centers and the rhythmic sounds of pocket devices continuously update individuals on the complexity of today's reality. Despite the contrasting natures of these informational devices –physical proximity and presumed digital proximity– the data received concerns highly atomized macro contexts, which are vital in the continuous production of hybrids between elements and the simultaneous purification, or deconstruction of the same (Latour, 1991). This can be described as a process of multiplication and efficient specialization of even the smallest components. The process of otherization (Armiero, 2021) is intrinsic to the mechanism; the socio-ecological relationships generate waste bodies, places, and materials, investing what is not considered to conform to the standards of acceptability.

In an attempt to simplify a complex system, the proliferation of minute isolated systems increases. According to complex systems theory, this is a counterproductive mechanism because entropy grows irreversibly in an isolated system, leading to death. The continuous exchanges with the external environment define the evolving life of self-eco-organizing systems (Morin, 2011) instead. Among the macro outcomes, daily life is characterized by the worsening of systemic crises – environmental, social, and economic – that compose scenarios with unpredictable negative implications, suppressing design possibilities, generating disorientation and suffering in the individuals (Figure 1).

The high potential of social innovation (Murray et al., 2010) thus tends to remain unrealized; these processes have always existed, but the natural conditions that facilitate their genesis have ceased to be present (Manzini, 2018). Such human

coalitions have demonstrated considerable capacity for recirculating waste, generating renewed mechanisms of activism for vulnerable individuals, materials, and spaces. It concerns the recreation of relationships that have been previously rejected or the formation of new relationships that demonstrate active resistance in an urgent search for survival in the context.

**Figure 1. A suggestion in comics that tries to explain the concept of complexity in a simple way**



Source: A. Camellato, 2022

As designers of a finite system of resources, there has been a notable shift in focus within the field of architecture, moving from new construction to regeneration,

requalification, and the reuse of abandoned spaces. To confirm and support this direction, it is notable that Italy has two major funding calls, namely PINQuA (Italian Government, 2020) and PNRR (Italian Government, 2021). The implementation of these is being closely monitored, with early indications of their impact beginning to emerge. However, there is a critical point: often in such operations the attention to the social aspect is appreciated during the project phase, but not supported and financed. The risk is that, without support for the socio-cultural components that keep the recovered spaces alive, they tend to fall back into cycles of abandonment, an outcome to be avoided, especially in one of the sectors with the highest global production of waste (UN Environment Programme, 2020).

The context thus indicates the potential for a paradigmatic evolution in the architect's role, moving from that of a designer of spaces to that of an interpreter of complex processes. In numerous disciplines, including architectural technology, the building process is meaningful to ensure consistency between objectives and resources through design, optimizing the life cycle management (Bologna et al., 2021). Such a shift requires an expansion of the life cycle considered, inevitably shifting the focus away from the objects that dominate much of architectural production and instead looking at the continuous cycle of spatial production, including the people and processes involved. The dynamic and therefore temporal nature of space communicates that spatial production must be understood as part of an evolving sequence, without fixed beginnings or ends, and recognising that multiple actors contribute to its various phases (Awan et al., 2011). As argued in *Spatial Agency*, architecture can thus be redefined as an act of facilitation, mediation, and empowerment rather than an exercise in solitary authorship. The architect ceases to be the sole creator and becomes a facilitator, integrating multiple voices and perspectives into the fabric of the project.

Some years earlier, in *Architecture of Survival* (Friedman, 2003), the author clearly emphasised that the architectural object involves two processes with two different protagonists: its creation and its use. The protagonists are the architect and the inhabitant, that is any user affected by it. Although the satisfaction of the inhabitant should be the *raison d'être* of the architectural object and should therefore take precedence, the reality is that we live in a socio-economic system based on such specialised knowledge that the case of the inhabitant as a builder -or even as a designer- of the object is a rare exception. This creates a fundamental communication gap: although the inhabitant knows his needs better than anyone else, he rarely has (or is aware that he could have) the tools to communicate them to the architect. Conversely, the architect learns in school how the inhabitant lives - or rather, develops the presumption of knowing better than anyone else how the inhabitant wants to live. To bridge this communication gap and its consequences, Friedman suggests that the architect should act as a consultant to the inhabitant, providing the tools of the discipline to meet their specific needs. Further demonstrating his strong commitment to bridging this communicative gap, Friedman makes extensive use of imagery in his writings, particularly comics. This culminates in the *Manual of Self-Building* (Friedman, 2017), where comic strips alone provide instructions for constructing various architectural components with different materials.

Following such principles, the architect could position himself as an agent of systemic transformation, using his expertise to reconfigure relationships between stakeholders, resources and environments. The focus shifts to the co-production of knowledge and solutions with communities, ensuring inclusivity, resilience and adaptability to contemporary challenges. The examples analysed in *Spatial Agency* (Awan et al., 2011), selected according to the criteria of spatial judgement, mutual

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knowledge and critical awareness<sup>1</sup>, clearly demonstrate how architects can act as mediators, translating complex systems into understandable structures and fostering a collective sense of belonging to spaces and processes.

### 3. Research Questions and Objectives

Can democratic processes be imagined and represented in a way that includes objects, or, can traditionally considered material processes be extended to include immaterial and vital components?

This question is translated into research by investigating of the potential for evolving architectural representation tools to facilitate their utilization in reading urban processes. This investigation considers a diverse range of interlocutors, including humans, plants, spatial, temporal, and relational elements, and posits their equal legitimacy on a single plane of discourse. The initial formulation of this research hypothesis was outlined in my master's thesis (Camellato, 2023), wherein the potential of images to enhance the communicative capacities of social innovation was explored.

Suppose images are considered the most effective vehicle of information. In that case, it may be proposed that for the *Homo videns* (Sartori, 1997), this medium has the potential to enhance the social accessibility of processes, initially at a cognitive level and subsequently in a manner conducive to activism. The aim is to explore ways to increase the dynamism of the informational content of images, intending to bridge the gap between existing communicative tools and the needs of complex and rapidly changing contexts.

The research objective is to develop and test visual tools to enhance the efficacy of participatory processes in urban regeneration initiatives. Such processes are frequently treated as tokenism, an oxymoron that reduces these processes to levels of false participation (Arnstein, 1969).

A review of recent processes indicates the prevalence of textual narrative tools in both process development and reporting modes. This mode of transmission is exclusionary for vulnerable individuals, including children, those with cognitive differences or cultural distance, and even those with limited language proficiency. It is also a barrier for experts, researchers, and third-sector entities, who may be able to comprehend the information but lack the time to do so. In this context, the term cultural associations or informal groups refer to organizations that have demonstrated high potential in reactivating abandoned spaces as catalysts for relationships in urban areas. However, to survive in the current accelerated context, these groups often find themselves constrained by the contingencies of an unsupportive bureaucratic framework.

### 4. Methodological Experimentation

A literature review hasn't yet identified any research or theories comparable to the one presented here. The methodological framework is still under development, relying on a multi-method and multidisciplinary approach. This approach is fundamental to consider the complexity of the elements and stakeholders the research seeks to address.

The approach is predominantly empirical, characterised by data collection through direct experience within the applied case study, participant observation, and unstructured interviews. In contrast to traditional studies that rely on a substantial

body of bibliographic references, the references, in this case, are fundamental to sense constructing the context and serve as a guide to direct its intrinsic exploratory and qualitative nature.

The data collection was conducted through direct interaction with the case study participants, enabling the acquisition of rich and detailed information from multiple perspectives that reflect the participants' direct experiences. In this phase, unstructured interviews were instrumental in helping a high level of flexibility, which allowed for in-depth exploration of emergent topics and adaptation of questions based on participants' responses. This approach facilitated the discovery of new insights allowing for the capture of nuances that might have been overlooked in a more rigidly structured context, which would likely be unsuitable for experimentation in the applied case study which will be described in more detail later.

The process of validating the results -which was only partially initiated due to timing constraints by the thesis submission deadline and later resumed on subsequent occasions- is based on a similar methodology, comparable to the unstructured interview but with the addition of visual aids. This phase aims to gather feedback and validate the preliminary conclusions by presenting the work to individuals with diverse professional, generational, and cultural backgrounds. The synthesis of data obtained by comparing information collected from various sources and viewpoints enhances the validity and reliability of the findings.

Therefore, the methodological structure of this work is characterised by a robust foundation in empirical reality, with a particular emphasis on adaptability and direct interaction with the case study participants. This strategy permits the construction of a more profound and textured comprehension of the observed dynamics, thereby establishing a robust basis for future research developments and advancements.

## 5. The case study

The experimentation was applied to the case study of Lumen Firenze, a cultural regeneration project with some characteristics that make it a distinctive case within the Italian context. The main actor in this initiative is the *APS ETS Icchè ci vah ci vole (ICVCV)*, formally constituted in 2018. However, it had once been active in Florence in other forms for nearly a decade. The *APS ICVCV* was established as an association of associations, bringing together the experiences of *Riot Van* (formed in 2008), *No Dump* (formed in 2012), and *Progeas Family* (formed in 2017). These entities have been collaborating since 2011 to organise a festival dedicated to local arts, music, and culture. The festival provided an opportunity for the provisional reactivation of disused and underused urban spaces. The *APS ICVCV* takes its name from the festival, which was renamed *Copula Mundi* in 2018.

After numerous years of temporary activism confined to the festival period, the advent of the global pandemic, which necessitated a one-year cessation, afforded the association's leadership an opportunity for introspection, prompting them to contemplate the potential for transforming this experience into daily work. In examining this potential, they identified Article 20 of the Municipal Properties Regulation (Florence Municipality, 2017), which outlines that, for evident social benefit, properties designated for municipal disposal can be provided on a free-use basis in exchange for ordinary and extraordinary maintenance by third entities. By leveraging the article, *APS ICVCV* took a previously unused space in concession, subsequently named Lumen.

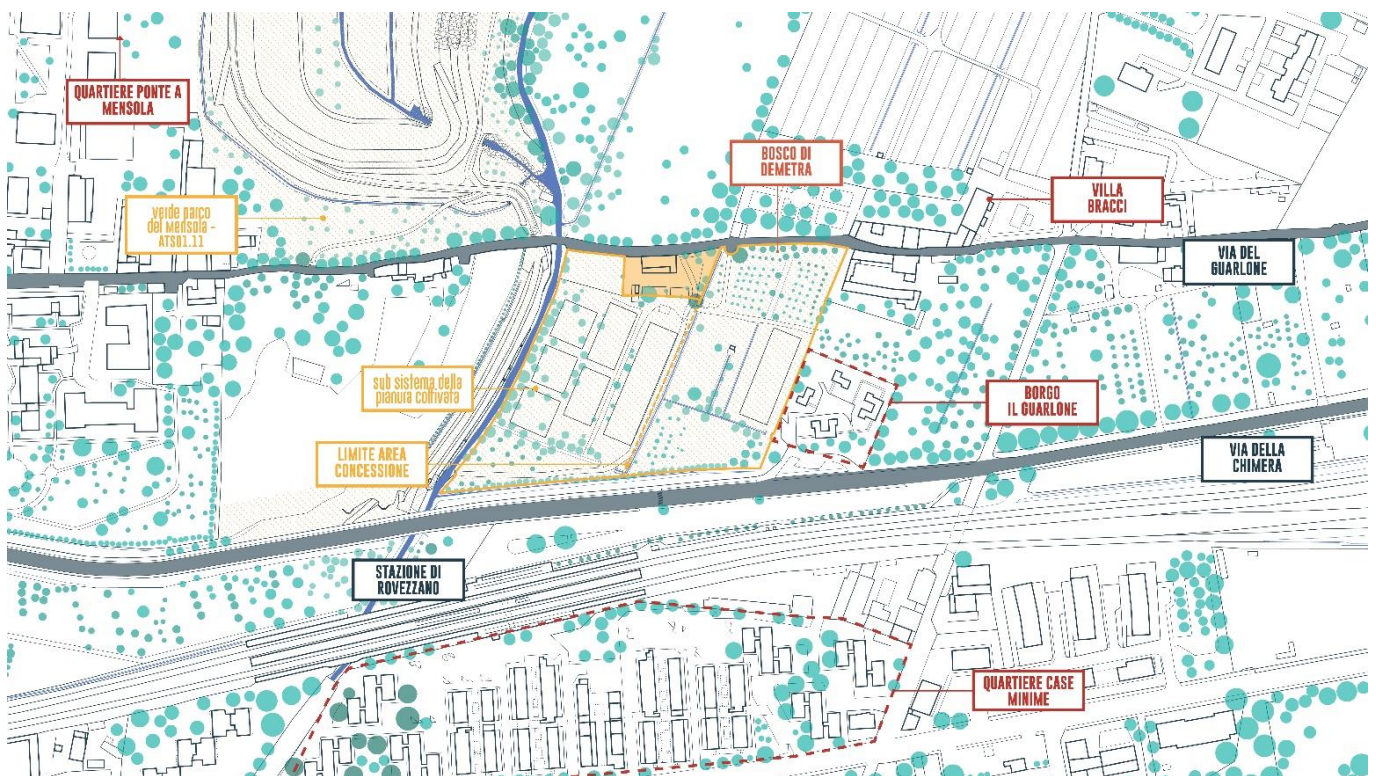
The Lumen space project is distinctive nationally due to three specific



characteristics. The first factor is the direct allocation of space, which is made possible by applying Article 20 of the aforementioned regulation. The second distinctive feature is the possibility of a 30-year concession, after which the space will be returned to the public domain, revitalised, and enriched with new life. The third distinctive feature refers to the potential for experimentation with the designation of the space as an urban collective services area. This opportunity is provided by urban planning legislation, although it hasn't been fully implemented previously.

APS ICVCV thus presented the municipal administration with a cultural regeneration project that provides the full reinvestment of profits into cultural activities, including concerts, theatre performances, exhibitions, workshops, and educational initiatives for various generational groups, to engage the entire community. Additionally, the project outlines a strategy for the incremental reactivation of the concession area, with schedules that align with the potentialities offered by a venture predominantly based on self-sustainability and the assistance of cultural funding grants. Access to the space is regulated through membership cards, which provide insurance coverage for families and allow users to enjoy the space and activities free of charge.

**Figure 2. Framing of the Lumen area in the surrounding neighborhood**



Source: A. Camellato, 2022

The concession space contains a farmhouse to be restored and nearly half a hectare of surrounding green space. It is situated in a transitional zone between the built environment and agricultural areas, next to the Rovezzano station, at the southern extremity of the Mensola Park landscape system, an extensive flood retention basin designed as a public park. This node was previously excluded from redevelopment efforts due to the necessity for a high level of social sensitivity. The area is close to the underutilised Rovezzano station, which separates it from the Le Minime public housing district. It borders some private residences and the *Borgo il Guarlone*, a

group of public housing units allocated on an experimental basis in the 1990s to Romani families (Frantz, 2011). To the north of Mensola Park lies *Ponte a Mensola*, an affluent neighborhood. The surroundings of the Lumen area are also associated with informal groups engaged in drug traffic. (Figure 2).

In the summer of 2021, the association entered the space with an 18-month temporary concession, representing a preliminary step towards the subsequent 30-year concession. This type of concession permits the transformation of the space solely through the erection of temporary structures in the open areas, which restricts the association's public engagement to summer (Figure 3). This represents the inaugural instance of Article 20 being applied to a project of this nature in Florence, rendering it highly experimental and operating within a loosely structured bureaucratic framework. One of the objectives of APS ICVCV is to establish a replicable precedent for other associations. Because of the necessity to align with the bureaucratic procedures, the 30-year concession has not yet been activated. However, the temporary concession has been extended, thus enabling the project to experience its fourth summer season.

**Figure 3. An example of the space transformation two years after the association's arrival**



Source: A. Camellato, 2022

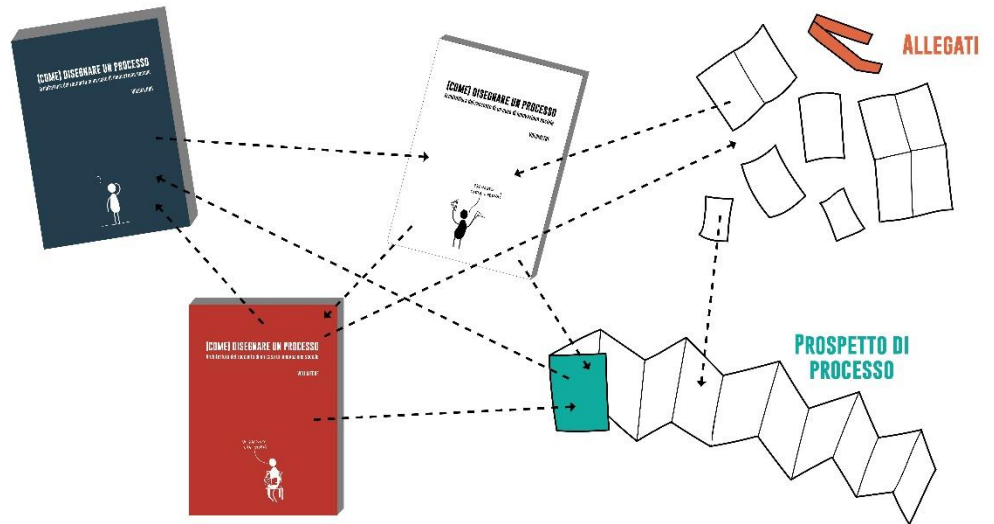
## 6. The research product

The case study was selected for its intricate sequence of events and the multifaceted nature of its key stakeholders that facilitate the realisation of the desired narrative aim. The research output is presented in three volumes, each with a distinct objective. The first volume focuses on theoretical dissemination and research, the second on experimental work, and the third has been structured as a comprehensive account of the steps taken to complete the work, including a series of useful annexes for understanding the story. The research is presented through an innovative system of cross-references between textual narrative, images, and in-depth analyses, all



interconnected by notes and references that allow the reader to engage with the story according to their abilities, interests, and available time. The aim was to create a narrative that could be read with a comic book's simplicity and a gamebook's dynamism (Figure 4).

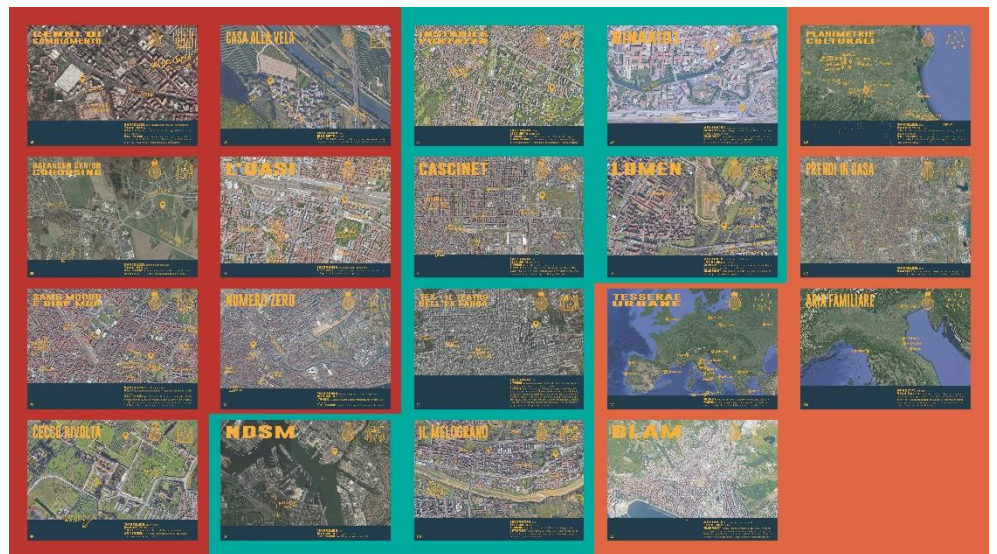
**Figure 4. A conceptual scheme on the flexible structure of research showing the components**



Source: A. Camellato, 2022

The initial volume comprises the account of the literature review, which is aligned with the summary presented at the outset of this article and reflects the developments that have occurred since. The volume then turns to case study analysis related to social innovation. These studies are grouped into living, regenerating, and connecting platforms for innovative practices (Figure 5).

**Figure 5. The case studies**



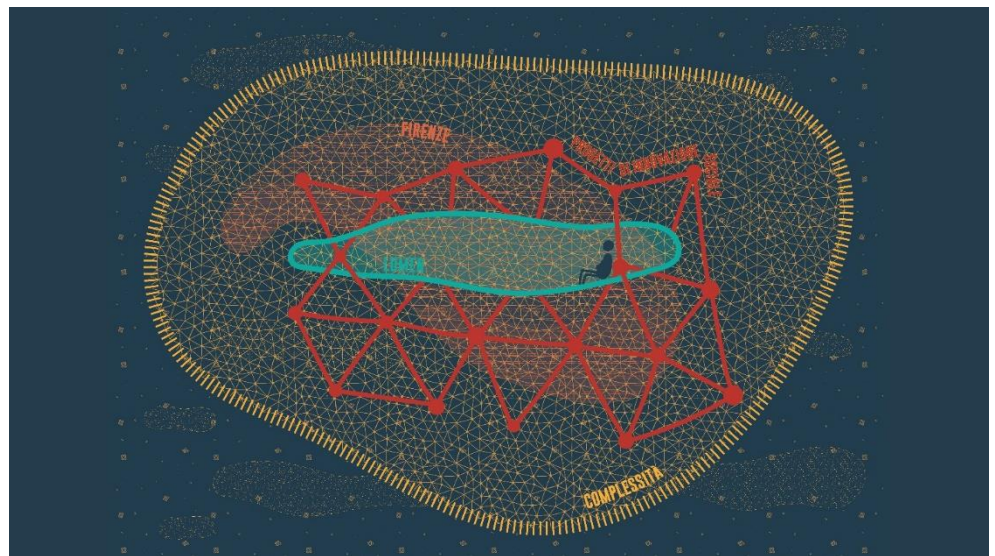
Source: A. Camellato, 2022

The investigation then analyses innovative visual communication strategies, focusing on participatory processes. This confirms the predominant presence of

textual components. The chapter concludes with an exploration of the potential effectiveness of comics as a tool to improve information accessibility (Friedman, 2011). The volume then includes a final chapter on the concept of social innovation and a section providing suggestions for engaging with the research, tailored to different profiles of potentially interested users.

The second volume is dedicated to the practical experimentation of visual process storytelling, conducted through a transposition of the phases of architectural project representation into the narration of the process. In this process, each narrative phase is subjected to a re-semantisation. This volume is of particular significance, and I shall endeavor to provide a comprehensive account of it here. Starting from the large territorial scale -typically the urban framework- this approach transforms it into the Framework of interests, grounded in the recognition of context analysis as the fundamental first step in narrating a story. In this instance, the contextual representation situates the Lumen project within the broader narrative construction and case studies developed in the initial volume, simultaneously elucidating the author's position concerning the context. This transparency is imperative, as no designer, narrator, or observer is outside its work system; they tend to approach their task from a specific perspective that must be made explicit (Figure 6).

**Figure 6. An image useful in stating the narrator's point of view in the context of the research**



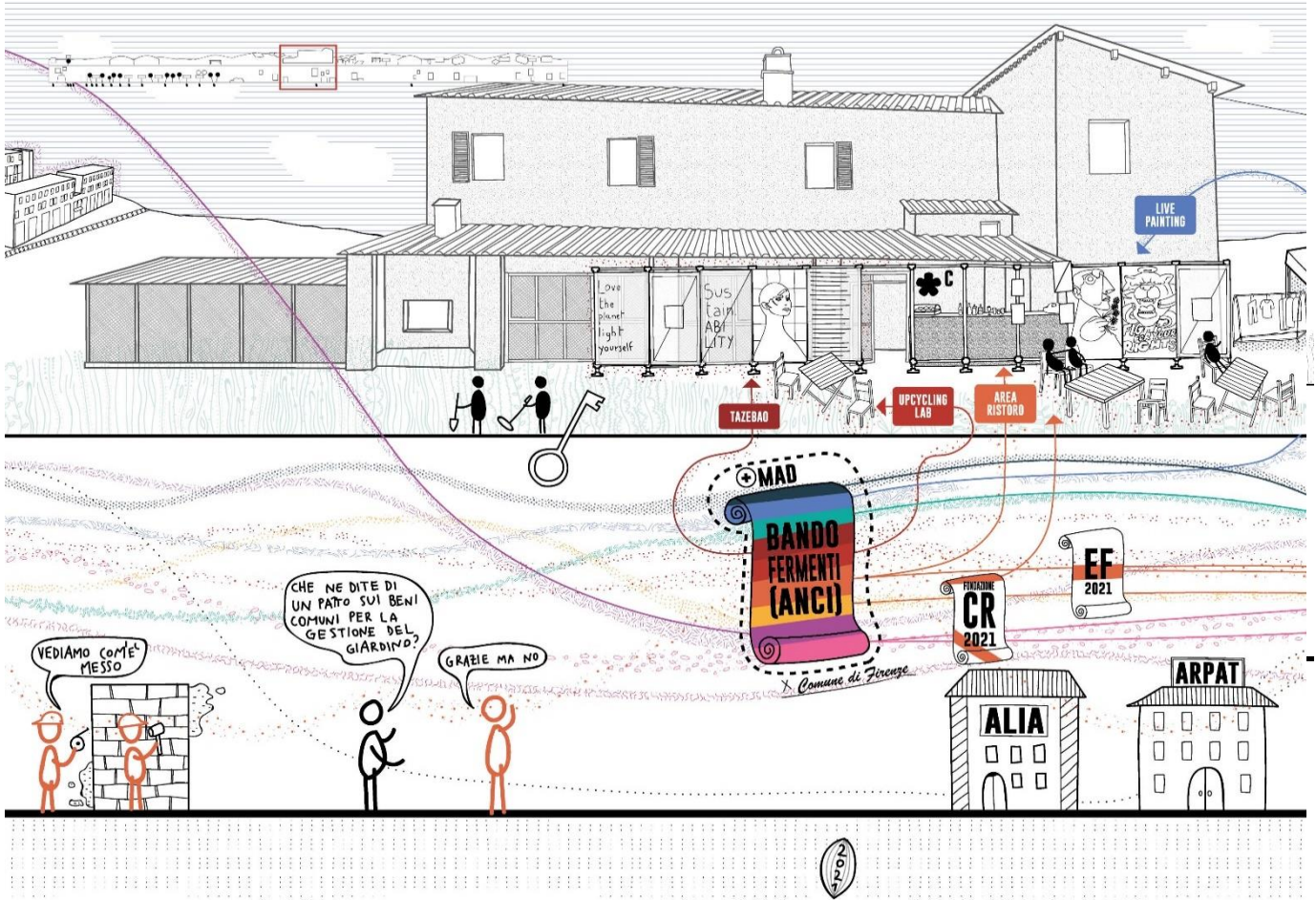
Source: A. Camellato, 2022

The following chapter employs a more detailed scale and presents the transposition of the building's elevation into the Process Elevation. This essentially narrates the evolutionary process of the Lumen project through a drawing approximately 3 meters long (Figure 7). In this ample illustration, all the contributing stakeholders are afforded equal consideration, and their positioning makes visible the typically imperceptible relationships between immaterial occurrences in the context and tangible outcomes in the host space. The aforementioned stakeholders include time, physical space, vegetation -which, at this juncture, indicates periods of high and low space utilisation-, bureaucratic components, and human elements, which are represented at multiple levels, from local associations to the leaders of the concessionary association, interacting administrators, and Lumen space users. The process elevation is based on a coding system (Figures 8, 9) which is explained in a



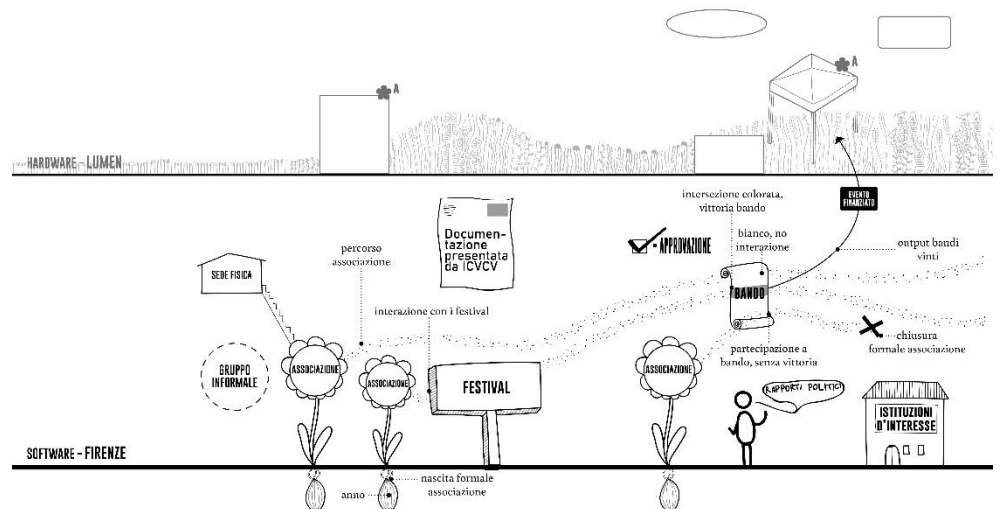
legend and allows for multiple levels of readability. The drawing can also be read as a discursive text, and both refer to a series of in-depth insights related to specific components of the drawing or additional annexes found in other chapters of the same volume or others (Figure 10).

Figure 7. The central portion of the Process Elevation



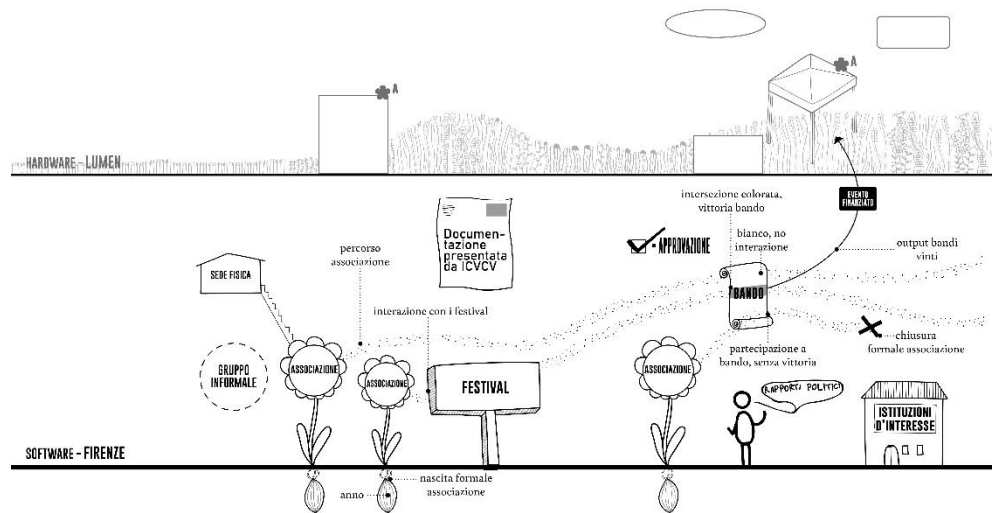
Source: A. Camellato, 2022

Figure 8. Illustrated key of the hardware level



Source: A. Camellato, 2022

Figure 9. Illustrated key of the software level



Source: A. Camellato, 2022

Figure 10. The structure of the pages with descriptive text and detailed explanations of the icons. On the side, the stakeholders featured in the illustration.



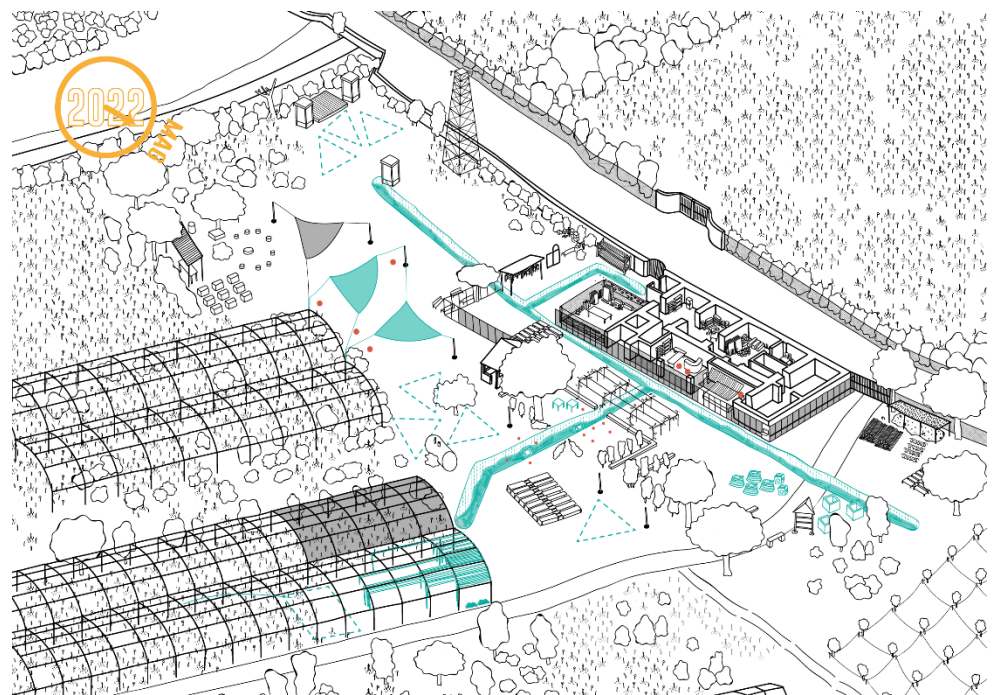
Source: A. Camellato, 2022

Although the Process Elevation is highly effective in portraying relationships through a two-dimensional projection, it is unable to convey the spatial aspects of events as they occur in physical space. To address this need, I developed the spatio-temporal axonometry, a GIF composed of approximately 100 frames that. This dynamic image when viewed in axonometric projection, demonstrates how the interaction between physical, human, and temporal components can determine the configuration of what could be defined as a multifunctional space (Figure 11). This work allows for the visualisation of a phenomenon that cannot be captured through photography, particularly in the context of a space that employs temporary structures as the exclusive means of transformation. This implies that by merely dismantling the temporary structures and allowing the surrounding vegetation to reclaim its original position, the tangible physical work within the space could potentially vanish, although the same cannot be said for the intricate network of relationships that has been activated.

The following part is entitled Dialogical Section. It is concerned exclusively with social dynamics and seeks to describe the evolution of the association's governance

structure throughout its development. A figurative cross-section of the social group concerned illustrates the dynamics, employing mathematical representation methods like graphs and diagrams. The concluding chapter, *Speaking Details*, permits the narration of anecdotes and more sensitive matters about the emotional domain. In this manner, the narrative voice is attributed to characters from classic-style comics, delineated with simple black wireframe strokes. The two final chapters reflect the most direct influence of Yona Friedman's work, in which he combines talking characters with icons, schemes, or mathematical graphs. This approach extends the white to be filled by contents between comix sequences, but also in the interpretation of individual panels. The drawing style is distinguished by a minimalist, archetypal, and unadorned way that facilitates both immediate comprehension and autonomous reproduction by anyone.

**Figure 11. A frame of Spatio-temporal axonometry**



Source: A. Camellato, 2022

## 7. Research findings and discussion

As previously stated, the presentation of research findings does not rely on specific, analogous precedents and primarily focuses on the effectiveness of visual representations as assessed thus far. The information collected can be categorized into two distinct phases: in-progress and post-completion. These categories correspond to feedback received during the development of the work and after its completion, respectively. The data were collected through unstructured interviews, yielding qualitative data.

During the development phase, several members of the Lumen team were interviewed, and they were allowed to review the evolving Process Elevation. In such instances, it was observed that interviewees were able to identify errors, gaps, or elements that were not intuitively represented with remarkable swiftness. This dynamic enabled them to proffer suggestions for enhancements to the narrative in an organic manner. Once the process representation was complete, interviews were conducted with individuals who were not previously familiar with the research work



or the Lumen project. In these instances, it was observed that respondents were able to swiftly discern that the subject was a social space that hosted a lot of activities. It was also observed that once the interviewees were made aware that the representation depicted a temporal sequence, they began to explore the connections between the elements depicted, and in some cases even identified the representation as a process without any external prompts. The final group of interviewees comprised individuals with minimal knowledge of the Lumen project. In these instances, the space was readily identifiable, despite the representation not explicitly reflecting a specific viewpoint but rather comprising a collection of recognisable components.

Concerning the data collection after the completion of the project, the work was presented or used in some workshop settings, thereby facilitating the acquisition of further insights. During the *SIC! Spazi d'intelligenza collettiva*, a self-training event promoted by Sociolab -a social enterprise focusing on participation and social research in Florence- a workshop was held at Lumen using the Process Elevation. Key insights included the immediate readability of the interplay between material and immaterial aspects of the process. Furthermore, the work was observed to prompt reflection, a desire to explore certain aspects in greater depth, and connections between the narrated experience and other known experiences, thereby generating new insights. Another significant post-completion experiment occurred during an Erasmus+ Training Course on participation, a non-formal education event for youth workers from various parts of Europe. In this context, the Process Elevation was employed as a means of supporting the narrative of the Lumen project. It was notable that the use of the drawing facilitated comprehension of the events, while also prompting the audience to inquire further and seek additional information, thereby rendering the narrative interactive and responsive to the group's interests. In general, during the presentation of the research or the Lumen project, it was observed that the images produced and the minimal use of text helped to maintain a high level of attention and curiosity.

At this point, it is also important to briefly address some of the challenges encountered. The first one pertains to the second volume, particularly the delineation of the boundaries of scale between the various phases of the investigation. This phase entails a considerable degree of discretion, which is shaped not only by the researcher but also by the process being narrated and the aspects on which each interviewee chooses to focus. Moreover, it is essential to consider the collaborative role of the researcher in the case study. This involvement undoubtedly facilitated the collection of extensive data necessary for constructing the narrative. However, from the perspective of replicating the narrative tools, it cannot be considered an indispensable condition. To proceed, it is vital to identify a data collection process that can be applied in a generalised manner to the conditions of various researchers. A second area of concern pertains to the representation itself. This work presents an engaging visual approach, made possible by the specific expertise of the research designer and guided by a deliberate choice. It is hypothesised that a viewer presented with an intuitive graphic that allows for immediate recognition of its content is more likely to provide prompt feedback. However, the study is deficient in a critical assessment of the product's efficacy when utilising disparate graphic styles, including expediently sketched forms or alternative representations that can be automated through the use of online software or open-source tools. This assessment must be conducted to ensure the future success of the research project. It is necessary to determine the optimal compromise between effectiveness and the time required to produce the representation, which is an essential consideration given the challenges



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this research seeks to address.

## 8. Future Development

The work presented was further developed in support of my application for a doctoral scholarship in Architectural Technology at the Department of Architecture, a program I began in November 2023.

In the context of my doctoral research, I have thus far concentrated on examining studies that are potentially analogous in their objectives or methods. My principal objective is to evaluate the feasibility of surmounting the identified challenges and to conduct a systematic data collection on the efficacy of the proposed tools. These two latter objectives are of critical importance for the validation of the research and the comprehension of the potential for replication. The tools will be tested in a new case study, Borgo San Martino, a social housing project currently under development in a former military barracks that has been abandoned for over twenty years, located in the historic center of Pisa.

In the initial stages of the investigation, a desk-based analysis of the context was undertaken, accompanied by interviews with key stakeholders involved in the regeneration process. These included representatives from *Abitare Toscana* (the social manager of the project) and the *Arnera* Cooperative, which will assist in social management and service provision. It is crucial to begin the application of the research in a new case study to address some of the structural challenges encountered in the previous work. These include the issue of the researcher's proximity to the process being narrated, which allows for a more realistic consideration of challenges such as the cost of data collection.

A participatory process is currently being designed for the stakeholders of the new social housing complex. The visual tools developed will be tested in this process, with the aim of co-constructing the narrative collaboratively. This shift in research approach aims to facilitate the integration of a narrative that can be used to assess the project's social impact. It involves participants not only in the information-gathering phase but also in the design of the narrative and consequently in planning activities and services related to the new housing hub, as well as in the ongoing evaluation of the process. Regarding potential innovative aspects of this approach, the proposed mechanism of continuous production, evaluation, and reproduction offers the possibility of converging the narratives of places and people with the methodological rigor of data collection and analysis. This would seek to bridge the qualitative and quantitative value of the process. The realisation of this scenario is particularly intriguing in the context of participatory processes, given the current low receptivity to qualitative aspects related to human and contextual sensitivities. These form the foundation of the most effective social innovation opportunities, yet conversely, they are currently receiving little attention.

## Notes

1. "Spatial judgement refers to the ability to exercise spatial decisions. In this it exceeds, but does not exclude, spatial intelligence, which has been understood as an innate human capability and a defining feature of the architectural and other creative professions.<sup>23</sup> Where spatial intelligence tends to concentrate on the ability to work in three dimensions, and thus to focus on the formal aspects of spatial production, our understanding of spatial judgement prioritises the social aspects of space, and the way that the formal affects them. It follows that,

in selecting examples on the basis of spatial judgement, we were looking more at the way that they initiate empowering social relationships than at formal sophistication, the latter of which has been for so long the paradigm of architectural excellence.

Mutual knowledge refers to Giddens' term, discussed above; it indicates the willingness of spatial agents to both share their knowledge in an open manner, and also to respect the knowledge of others. Mutual knowledge implies openness as to what may contribute to spatial production, so that the instinct of the amateur is accepted as having equal potential as the established methods of the supposed "expert". Mutual knowledge expands the means by "which knowledge may be displayed and developed. Thus stories (which can be shared) are as productive as drawings (which often exclude the non-expert), and actions are privileged as much as things.

Finally, critical awareness refers to the need for spatial agents to act in a critical manner – "critical" here designating not a negative stance but an evaluative one that is aware of the opportunities and challenges, freedoms and restrictions, of the given context. Critical awareness also relates to the need to be self-critical, and so avoid imposing the same solutions onto different places, just playing out the old tropes in an unthinking manner." Quoted from *Introduction, Choosing Spatial Agency* from *Spatial Agency* by Awan, Nishat.,Till, Jeremy.,Schneider, Tatjana.

#### **Funding**

This research received no external funding.

#### **Acknowledgments**

Many thanks to Prof. Maria De Santis (relator) and Arch. Cristina Setti (co-relator) for supporting me since the early development of this work. Thanks to all the members of Lumen who helped me in the collection of information and to the subsequent interviewees.

#### **Conflicts of Interest**

The authors declare no conflict of interest.

#### **Originality**

The authors declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere, in English or any other language. The manuscript has been read and approved by all named authors and there are no other persons who satisfied the criteria for authorship but are not listed. The authors also declare to have obtained the permission to reproduce in this manuscript any text, illustrations, charts, tables, photographs, or other material from previously published sources (journals, books, websites, etc).

#### **Use of generative AI and AI-assisted technologies**

The authors declare that they did not use AI and AI-assisted technologies in the writing of the manuscript; this declaration only refers to the writing process, and not to the use of AI tools to analyse and draw insights from data as part of the research process. They also did not use AI or AI-assisted tools to create or alter images and this may include enhancing, obscuring, moving, removing, or introducing a specific feature within an image or figure, or eliminating any information present in the original.

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