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Designing inclusive urban spaces

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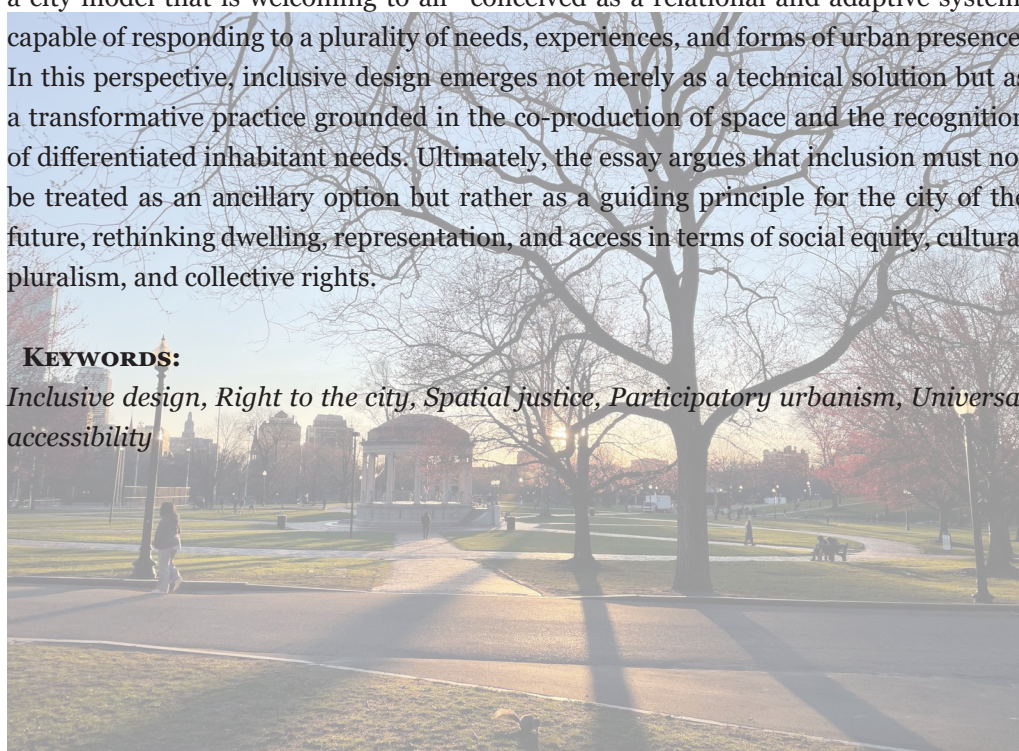
From inclusive design to the right to the city

Antonio Acierno

In light of the transformations affecting contemporary cities—marked by environmental pressures, social polarization, and demographic shifts—this contribution offers a theoretical and methodological reflection on the concept of inclusive design as both a critical and operational tool for the governance of urban space. Starting from a renewed reading of Henri Lefebvre’s “right to the city,” the text explores the multiple meanings that urban inclusivity has assumed in recent debates: from full physical and sensory accessibility to the integration of neurodivergent subjectivities, from perceived urban safety to spatial justice, from collaborative planning to gender-sensitive urbanism and LGBTQIA+ identities. These instances, still fragmented across normative frameworks and governance models, are brought together within a shared interpretative framework that unites ethical, design, and political dimensions. The contribution highlights the urgency of overcoming adaptive approaches aimed at “special categories” in favor of a city model that is welcoming to all—conceived as a relational and adaptive system, capable of responding to a plurality of needs, experiences, and forms of urban presence. In this perspective, inclusive design emerges not merely as a technical solution but as a transformative practice grounded in the co-production of space and the recognition of differentiated inhabitant needs. Ultimately, the essay argues that inclusion must not be treated as an ancillary option but rather as a guiding principle for the city of the future, rethinking dwelling, representation, and access in terms of social equity, cultural pluralism, and collective rights.

KEYWORDS:

Inclusive design, Right to the city, Spatial justice, Participatory urbanism, Universal accessibility



Dalla progettazione inclusiva al diritto alla città

Nel quadro delle trasformazioni che investono le città contemporanee – tra pressioni ambientali, polarizzazioni sociali e mutamenti demografici – il presente contributo propone una riflessione teorico-metodologica sul concetto di progettazione inclusiva come dispositivo critico e operativo per il governo dello spazio urbano. A partire da una rilettura attualizzata del “diritto alla città” formulato da Henri Lefebvre, il testo indaga le molteplici declinazioni che l’inclusività urbana ha assunto nel dibattito recente: dalla piena accessibilità fisica e sensoriale all’integrazione delle soggettività neurodivergenti, dalla sicurezza urbana percepita alla giustizia spaziale, dall’urbanistica collaborativa all’urbanistica di genere e alle identità LGBTQIA+. Tali istanze, ancora frammentate nei dispositivi normativi e nei modelli di governance, vengono ricondotte a un comune quadro interpretativo capace di tenere insieme dimensione etica, progettuale e politica. Il contributo sottolinea l’urgenza di superare la logica adattiva rivolta a “categorie speciali” per approdare a un modello di città accogliente per tutti, concepita come sistema relazionale e adattivo, capace di rispondere a una molteplicità di bisogni, esperienze e forme di presenza urbana. In questo senso, la progettazione inclusiva si configura non solo come strumento tecnico, ma come pratica trasformativa fondata sulla co-produzione dello spazio e sul riconoscimento dei bisogni differenziati degli abitanti. Il saggio invita dunque a considerare l’inclusione non come opzione accessoria, ma come principio ordinatore della città del futuro, ripensando le forme dell’abitare, della rappresentanza e dell’accesso in chiave di equità sociale, pluralismo culturale e diritti collettivi.

PAROLE CHIAVE:

Progettazione inclusiva, Diritto alla città, Giustizia spaziale, Urbanistica partecipativa, Accessibilità universale

Dalla progettazione inclusiva al diritto alla città

di Antonio Acierno

1. Introduzione

Nel corrente millennio, le città sono diventate il centro di attenzione dell'economia, del progresso tecnologico e civile e della ricerca di uguaglianza tra i cittadini. Come è noto, entro il 2050 circa sette miliardi di persone abiteranno nelle città che diventeranno il motore trainante della società e dove si affronteranno le sfide di una società sostenibile, equa e giusta.

L'urbanizzazione crescente, le migrazioni demografiche, le disuguaglianze sociali e il cambiamento climatico reclamano una ridefinizione dei paradigmi attraverso cui progettiamo e costruiamo lo spazio urbano. Progettare la città inclusiva è un'operazione complessa, che interviene sulle infrastrutture fisiche e i servizi ma allo stesso tempo deve tener conto dei diritti di cittadinanza, dell'equità spaziale, dell'accessibilità universale, della sostenibilità ambientale e della partecipazione attiva delle comunità.

Purtroppo, la competizione tra stati, regioni e città di questi ultimi decenni dimostra la difficoltà nel perseguire obiettivi di uguaglianza e accessibilità universale ai beni fondamentali. La pianificazione urbanistica è coinvolta nella ricerca di tale equilibrio nel proporre modelli spaziali e socio-economici in grado di garantire il più vasto accesso ai servizi e beni a tutti i cittadini senza lasciare dietro le componenti più fragili, dai bambini agli anziani, ai portatori di disabilità fisiche e cognitive nonché a coloro che sono esclusi economicamente dalla formazione e dall'occupazione. Numerosi approcci progettuali e normativi, ricerche scientifiche nonché best practices globalmente riconosciute propongono linee guida, modelli e suggerimenti per perseguire tali obiettivi ma non esiste una condivisa modalità di progettazione, in particolare degli spazi pubblici inclusivi orientati all'accoglienza universale.

Le principali agende globali – dall'Agenda 2030 delle Nazioni Unite al New Urban Agenda di UN-Habitat – riconoscono la necessità di rendere le città “inclusive, sicure, resilienti e sostenibili” (SDG 11), sottolineando l'importanza di politiche urbane che pongano al centro le persone, in tutta la loro diversità. In tale prospettiva, la progettazione urbanistica non può limitarsi a dimensioni funzionali o estetiche, ma deve incorporare dimensioni etiche, sociali e percettive, capaci di accogliere e valorizzare soggetti spesso esclusi o marginalizzati.

La città inclusiva contemporanea, in considerazione della pluralità di condizioni e bisogni, non può essere concepita come un modello unico, ma come un processo adattivo che si adegua ai contesti locali e cerca di rispondere ai bisogni plurali praticando un approccio di co-progettazione tra istituzioni, tecnici e cittadinanza (Bianchetti, 2016).

Tra i filoni progettuali e interpretativi della città inclusiva si possono annoverare numerose possibili declinazioni, esplorando in particolare il contributo di modelli

internazionali e italiani: accessibilità fisica e sensoriale di soggetti con specifiche disabilità, attenzione ai temi della sicurezza urbana nella frequentazione degli spazi pubblici, le certificazioni sostenibili dei quartieri, l'accessibilità intergenerazionale fino alla progettazione per la neurodiversità.

Le prime normative sul superamento delle barriere architettoniche negli edifici e negli spazi pubblici hanno catturato l'attenzione su un aspetto fondamentale, non certamente esaustivo, dell'accessibilità. Parallelamente, si è rafforzato l'interesse per i "protocolli di certificazione urbana sostenibile", come GBC Quartieri, LEED for Neighborhood Development e BREEAM Communities, strumenti che mirano a garantire qualità ambientale, efficienza energetica e vivibilità, ma solo recentemente stanno integrando in modo strutturale criteri relativi all'inclusione sociale e alla sicurezza percepita (Acierno & Attaiense, 2017, 2018). Altro ambito emergente e sempre più importante è quello della "sicurezza urbana", non solo nella sua accezione di contrasto alla criminalità, ma come componente fondamentale della qualità della vita, strettamente connessa alla percezione individuale degli spazi pubblici, alla progettazione ambientale e alla possibilità di vivere la città senza timori, in particolare per donne, anziani, persone con disabilità e minori (Sánchez de Madariaga, 2004, 2013, 2020; Acierno, 2003, 2025).

Ulteriore prospettiva imprescindibile per la città inclusiva riguarda la "dimensione generazionale e l'invecchiamento della popolazione che impone un ripensamento dell'organizzazione dello spazio e dei servizi secondo i criteri delle "Age-Friendly Cities", proposti dall'Organizzazione Mondiale della Sanità (WHO, 2007). Una città a misura di anziano diventa automaticamente anche una città accessibile fisicamente, più sicura, più accogliente e più vivibile per tutti. Infine, il riconoscimento della "neurodiversità" – in particolare delle esigenze delle persone nello spettro autistico – si sta affermando come campo innovativo di sperimentazione e progettazione, che procede oltre l'accessibilità fisica prendendo in considerazione anche quella sensoriale e cognitiva (Korpela et al., 2020; Reich & Kaczmarek, 2018; Migliore, 2021).

Alla luce di queste iniziali considerazioni emerge la necessità di integrazione dei sopra elencati diversi livelli di progettazione, all'interno di standard valutativi comuni capaci di rispondere alla pluralità di istanze, che ampliano la cornice teorico-metodologica della progettazione inclusiva.

Il tema è pienamente attuale e catalizza l'attenzione della pianificazione urbanistica agli inizi del terzo millennio ma non è certamente nuovo, in particolare se lo si riguarda attraverso la lente del "diritto alla città", concetto innovativo negli anni Sessanta del secolo scorso che criticava i modelli dell'urbanistica fordista della società industriale svelando le profonde ingiustizie sociali e spaziali che ne erano derivate (Levfebre, 1968). La proposta di questo saggio è di costruire un framework di riferimento tematico che tenga conto del recente dibattito sulla progettazione inclusiva, nelle sue molteplici istanze e declinazioni, ma anche a partire da una doverosa premessa su quanto la tradizione degli studi urbani ci ha lasciato. In tal modo è utile recuperare i ragionamenti, critiche e osservazioni prodotte a metà del secolo XX come necessaria cornice di sfondo delle attuali linee di ricerca sulla città inclusiva.

Utilizzare il concetto di “diritto alla città” formulato nel 1968 da Lefebvre, come strumento di critica alla pianificazione urbanistica contemporanea, pone una solida base di riflessione in grado di ricucire il dibattito di quegli anni con le variegate proposte metodologiche per la progettazione inclusiva a favore di una pianificazione più partecipativa.

2. Approcci teorici alla città inclusiva

L'idea di “città inclusiva” deve intendersi come un campo di riflessione e azione posto all'incrocio tra teoria urbana, giustizia sociale, pianificazione partecipata e diritti umani (Imrie & Hall, 2001; Gehl, 2010). A suo fondamento vi è l'immagine di uno spazio urbano che permette e promuove la partecipazione equa di tutti i cittadini alla vita collettiva, indipendentemente da età, genere, condizione economica, origine culturale o capacità fisiche e cognitive. Tale visione della città si è andata consolidando a partire dalla seconda metà del Novecento, in risposta ai fenomeni di segregazione e isolamento prodotti dall'applicazione del Razionalismo funzionalista.

Henri Lefebvre, nel suo celebre saggio “Le droit à la ville” (1968), introduce il concetto di “diritto alla città” come diritto alla centralità, alla socialità, alla produzione dello spazio da parte degli abitanti. Questo approccio è stato successivamente ripreso e ampliato da David Harvey (2008) mettendo in evidenza il conflitto tra produzione capitalistica dello spazio urbano e i bisogni reali delle popolazioni locali. La proposta metodologica si focalizzava su una visione completamente rinnovata della pianificazione urbanistica, che abbandonava progressivamente il compito tradizionale a lei storicamente riconosciuto, quale strumento tecnico a servizio del land use planning, verso uno strumento di promozione della partecipazione dei cittadini alle politiche e ai progetti di trasformazione della città.

Su questo filone deve riconoscersi molti anni dopo anche il contributo della teoria della “giustizia spaziale”, sviluppata da Edward Soja (2010), geografo urbano e teorico critico, che cercò di evidenziare come lo spazio urbano non sia neutro, ma risultato dell'applicazione delle dinamiche di potere, disuguaglianze e conseguenziali scelte politiche. Secondo questa prospettiva, la giustizia sociale non può essere pienamente analizzata se non si considerano anche le caratteristiche spaziali delle disuguaglianze. Nel suo volume “Seeking Spatial Justice” (2010), si avanza la riflessione sul diritto alla città che deve ampliarsi anche all'equa distribuzione delle risorse, inclusa la possibilità di libero accesso agli spazi pubblici nonché l'opportunità di partecipare attivamente alla produzione dello spazio urbano. La giustizia spaziale diventa in tal modo preconditione fondamentale per l'inclusione urbana.

Su questo stesso filone Susan Feinstein (2010) propone un approccio normativo alla pianificazione, basato su tre valori fondamentali: equità, democrazia e diversità. La giustizia spaziale implica che lo spazio urbano debba essere progettato e gestito in modo da ridurre disuguaglianze, facilitare l'accesso ai beni comuni e riconoscere le differenti

soggettività.

In campo più specificatamente progettuale si sono sviluppati gli approcci orientati alla “universalità dell’accesso”, come l’Universal Design, teorizzato da Steinfeld e Maisel (2012) e il Design for All, promosso a livello europeo. Questi approcci metodologici e operativi mirano a realizzare ambienti utilizzabili da tutte le tipologie di persone, senza necessità di adattamenti successivi o soluzioni speciali. Applicato alla scala urbana, questo paradigma comporta l’adozione di criteri progettuali che tengano conto della pluralità di capacità fisiche, sensoriali e cognitive degli utenti.

L’Universal Design sviluppa la sua proposta su un approccio attento a progettare ambienti, prodotti e servizi accessibili e usabili da tutte le persone, indipendentemente da età, abilità o condizioni temporanee, superando il concetto tradizionale di adattamento per “categorie speciali” (come le persone con disabilità). Si avanza l’idea di una progettazione intrinsecamente inclusiva valida per tutti e che soprattutto si muova sin dalle prime fasi del processo ideativo con questa fondamentale caratterizzazione, promuovendo invece soluzioni intrinsecamente inclusive e integrate sin dalle prime fasi della progettazione. L’Universal Design propone sette principi (uso equo, flessibilità nell’uso, uso semplice e intuitivo, informazioni percepibili, tolleranza all’errore, sforzo fisico contenuto, dimensioni e spazio per l’approccio e l’uso) al fine di costruire un framework tecnico di guida per la progettazione inclusiva

Parallelamente, il concetto europeo di Design for All, promosso dall’European Institute for Design and Disability (EIDD), condivide i medesimi obiettivi pur esaltando i caratteri culturali e partecipativi nella progettazione. Quest’ultimo parte dalla considerazione della diversità umana come valore che può, attraverso la co-progettazione e il dialogo con gli utenti finali, raggiungere soluzioni ottimali nella costruzione dello spazio urbano e garantendo il maggior benessere sociale raggiungibile.

Questi due approcci progettuali hanno avuto il merito di spostare il dibattito scientifico, culturale nonché la prassi operativa, da una visione di superamento delle disabilità al potenziamento e valorizzazione delle stesse a vantaggio di tutta la cittadinanza.

Ancora, negli anni Novanta si affermano nella disciplina urbanistica anche le teorie della “urbanistica collaborativa” (Healey, 1997), secondo cui il processo di pianificazione deve essere negoziato, partecipativo e orientato alla costruzione di consenso tra attori diversi. Alla base di quest’ultimo approccio vi è una visione dell’urbanistica come strumento, non solo tecnico architettonico-ingegneristico ma anche come pratica discorsiva, entro la quale le narrazioni, i conflitti e le visioni dei cittadini determinano il modo di abitare e vivere lo spazio urbano. La proposta di Healey parte dalla constatazione della frammentazione sociale contemporanea e suggerisce di costruire un modello di governance fondato sulla deliberazione pubblica e la costruzione condivisa del sapere in grado di garantire la più ampia inclusione di soggetti pubblici e privati nei processi decisionali che impattano sulle trasformazioni urbane. E’ un ribaltamento dei processi tradizionali top-down, solitamente fondati sul sapere tecnico che detiene il controllo degli strumenti di pianificazione degli usi del suolo, verso processi comunicativi basati sull’apprendimento collettivo.

Infine, all'interno di questo campo di riflessione/azione della pianificazione urbanistica rinnovata, possono essere riconosciuti altri filoni innovativi come l'urbanistica di genere, campo di azione del pensiero femminista, che ha messo in luce come lo spazio urbano sia stato spesso progettato secondo modelli androcentrici, escludendo o marginalizzando l'esperienza e le necessità femminili, in particolare le esigenze di cura e la conciliazione con il lavoro. Più recentemente sono emerse anche le necessità all'interno di un progressivo riconoscimento delle soggettività LGBTQIA+ che reclamano attenzione inclusiva nella fruizione dello spazio indoor e pubblico (UN-Habitat, 2021; Doan, 2015). Il riconoscimento delle soggettività LGBTQIA+ nello spazio urbano implica una progettazione attenta alla sicurezza percepita, alla visibilità e al diritto alla presenza. Si possono citare alcuni tentativi emblematici come la riqualificazione del quartiere Castro a San Francisco e di Schöneberg a Berlino, nei quali la progettazione inclusiva ha permesso di valorizzare gli spazi di aggregazione che sono diventati luoghi dell'identità. Anche in Italia, iniziative come la "Panchina Rainbow" a Torino o il Pride Park di Bologna vanno inseriti entro queste esperienze simboliche, tuttavia manca certamente una pianificazione strutturale che protegga tali soggettività LGBTQIA+ da micro-aggressioni e marginalizzazione.

Non ultime le istanze delle persone migranti, di popoli portatori di tradizioni, culture e necessità differenti da quelle dei paesi ospitanti, che hanno evidenziato ancora una volta la necessità di una progettazione inclusiva delle città.

3. Il diritto alla città e la progettazione inclusiva

La pluralità delle declinazioni di progettazione inclusiva e città inclusiva - dall'abbattimento delle barriere architettoniche a quelle cognitive, dalla progettazione della città sicura a all'urbanistica di genere o all'age-friendly city, dai protocolli di certificazione ambientale agli ecoquartieri - costituiscono ramificazioni e specificazioni di un unico tronco portante del diritto alla città, quale risposta alle segregazioni ed esclusioni operate nei confronti dei meno abbienti, meno giovani, meno performanti che tentano di comprimere le differenze che caratterizzano e arricchiscono l'umanità. Tuttavia, è soprattutto il modello neoliberista, in continuità con quello fordista, a plasmare lo spazio come specchio dell'organizzazione sociale fatto di profonde disuguaglianze che si riflettono nei rapporti sociali e conseguentemente nella produzione/forma dello spazio.

Dunque, rileggere il contributo innovativo del filosofo francese secondo una prospettiva attuale diventa esercizio fecondo di riflessioni e può aiutare a guidare anche l'azione progettuale.

Il messaggio originale e innovativo insito nel diritto alla città è stato recentemente ripreso, soprattutto nel 2018 anno del cinquantesimo anniversario di pubblicazione del volume, dopo alcuni anni di oblio. Il volume ebbe inizialmente negli anni Sessanta e Settanta grande successo e diffusione internazionale, con la traduzione specialmente in

Italia non solo di questo ma anche di altri scritti del filosofo, poi seguita da un declino. Solo negli anni Novanta, a seguito della traduzione in inglese del volume, i concetti innovatori hanno ripreso vigore ed hanno influito non solo sulla ricerca filosofica ma anche sociologica e architettonico-urbanistica, andando a costituire un corpus teorico concettuale sull'analisi spaziale e influenzando diverse discipline e il dibattito politico (Paone, 2019). La riflessione di Lefebvre si sviluppa nella piena dinamica del fordismo che ha informato e costruito le città industriali fino a tutta la prima metà del Novecento: la città fordista industriale è morfologicamente costituita un nucleo centrale, spesso di natura storica che costituisce il nucleo centrale da cui diparte il processo di polarizzazione ed espansione urbana, contenente le funzioni amministrative e commerciali a discapito di quelle residenziali; prossima al centro vi è l'area di conurbazione che comprende i nuclei satelliti della cintura industriale che si sono andati consolidando lungo i principali assi viari che si aprono sul territorio; seguono le aree industriali monofunzionali esterne; aree suburbane che accolgono i flussi migratori di nuova popolazione, appartenente al ceto medio e a prevalente funzione residenziale che gode ancora di una accettabile distanza dai luoghi di lavoro e permette ancora il pendolarismo; oltre questa. La cintura che accoglie popolazioni migranti temporanee che non godono di questo vantaggio posizionale e diventano sacche di degrado e provvisorietà; infine, la cintura suburbana più distante a bassa densità che finisce con perdere tutti i legami con il centro attrattore (Detragiache, 1973; Paone, 2019).

Questo schema di progressiva periferizzazione ha seguito anche i modelli urbanistici del razionalismo funzionalista, di stampo Le Corbusiano, che, spesso malamente interpretati e banalizzati, hanno costruito intrinsecamente un processo-modello di segregazione sociale delle classi meno abbienti, spesso immigrate. Lo zoning praticato nella tecnica urbanistica dominante ha costruito città frammentate, segregate e povere spesso di servizi rendendole non autosufficienti nonostante i buoni propositi progettuali di razionalizzazione che le avevano ispirate. Le teorie urbanistiche che ragionavano su modelli di città-quartiere autosufficienti si sono banalizzate, nella prassi, piegandosi ai lotti fabbricabili rispondenti più alle logiche di rendita che non di integrazione socioeconomica delle nuove comunità. Fino agli anni Sessanta e Settanta la città si è costruita molto spesso sulle grandi macrostrutture residenziali periferiche, le cui politiche abitative tentavano di rispondere alla crescente domanda di alloggi, snaturando la ricchezza dell'articolazione urbana e banalizzandone la complessità.

Scrivendo Lefebvre: «i nuovi complessi saranno segnati da un carattere funzionale e astratto il concetto di habitat portato fino alla sua forma pura dalla burocrazia di Stato» e prosegue e poi sottolinea «nei nuovi complessi si instaura l'habitat allo stato puro, basato su una serie di vincoli. Il complesso residenziale realizza il concetto di habitat, direbbero alcuni filosofi, escludendo l'abitare, ossia la duttilità dello spazio, la sua modulazione, il controllo, da parte dei gruppi e degli individui, delle loro condizioni di esistenza. In questo modo, è l'intera quotidianità (funzioni, prescrizioni, rigido uso del tempo) a iscriversi e manifestarsi nell'habitat» (testo ripreso da Paone, 2019).

In sintesi, il diritto alla città pone in luce il processo accelerato che guida la produzione

dello spazio, in risposta alle esigenze di redditività dell'economia capitalistica, distruggendo la creatività e spontaneità della città e mortificando lo spazio pubblico e la vita comunitaria. La critica di Lefebvre all'urbanizzazione pone in evidenza i processi di periferizzazione degli abitanti, il loro depauperamento in termini di servizi, vitalità e identità urbana a vantaggio di logiche di profitto che mirano ad insediare funzioni commerciali e di consumo nei luoghi centrali e strategici della città. Da qui, il programma politico e di azione del filosofo che auspica una diversa organizzazione della gestione e delle politiche urbane che possa rimettere al centro gli abitanti con le proprie necessità. Oggi, in una conclamata e riconosciuta fase di affermazione di un neoliberismo, che ha continuato sul solco della città postfordista keynesiana esaltando i divari tra ricchi e poveri esacerbando le difficoltà di accesso ai beni primari e comuni di larga porzione della popolazione, il diritto alla città è più che mai valido, nella accezione originaria che si è arricchita delle numerose sfumature di una società complessa ma in egual misura frammentata e segregata.

Le criticità ambientali esasperate dal cambiamento climatico hanno accentuato le ingiustizie spaziali, così come la frammentazione e segregazione spaziale fondata sul censo della città contemporanea hanno amplificato le diseguaglianze e reso ancor più evidente la necessità di una città più inclusiva ed accogliente.

Il "Diritto alla città" è stato formulato come critica all'economia capitalistica che ha prodotto la segregazione della città fordista e post-fordista che li ghettizza determinando difficoltà di accesso ai beni comuni e ai servizi. Il filosofo sostiene che la "città come opera d'arte" deve garantire l'accesso a tutti facendo esprimere la vitalità e la capacità adattiva e immaginative dei cittadini e non essere il prodotto di consumo dei suoi abitanti. La città espressione dell'immaginazione e dei bisogni collettivi e strettamente connessa alla progettazione inclusiva che deve ascoltare i bisogni, garantire partecipazione e fornire strumenti per il co-design degli spazi urbani.

Il diritto alla città è innanzitutto il diritto a partecipare alla vita urbana e a contribuire alla sua trasformazione progressiva e incrementale dei propri bisogni. A tal fine è necessario partire dal riconoscimento delle diverse modalità di percezione e interazione con lo spazio. In questa prospettiva la progettazione inclusiva non è un semplice adattamento dello spazio a "categorie differenti di persone", ma una vera rinegoziazione del diritto all'uso e all'accesso allo spazio.

La città del futuro sarà inclusiva solo se saprà integrare in modo strutturale le sfide ambientali, demografiche e cognitive, adottando un modello di urbanistica partecipativa, adattiva e relazionale.

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In
ter
venti



CWLane Reading Space: Exploring potentials and limitations of temporary urbanism in Hong Kong

Francesco Rossini

Abstract

This paper examines the impact of the first pilot project realised in Hong Kong as part of a research study aimed at reconnecting people with underutilized public spaces through temporary architectural interventions (TAI). Beyond exploring alternative solutions that could positively impact the community, the project challenges the rules, constraints, and guidelines present in government-managed spaces, which are typically implemented through a top-down approach.

The paper outlines the research framework and presents preliminary findings from one of three pilot projects carried out in one of Hong Kong's oldest districts. It details the overall methodology, structured around four interrelated phases: 'Participatory Process,' 'Prototype Implementation,' and 'Process Evaluation.' The fourth phase, dedicated to producing the final report, synthesizes the research findings and offers recommendations for adopting TAI as a strategy to reactivate underutilized public spaces. Additionally, it explores how these temporary interventions can serve as a platform for discussing potential long-term transformations of the selected spaces.

One of the aims of this research is to raise awareness of the impact of this approach, as its temporary nature fosters innovation, adaptability, and responsiveness to social, environmental, and spatial needs, making it a powerful tool in contemporary architectural discourse. The findings will contribute to the Hong Kong Government's current planning initiative, 'HK2030+', aimed at creating a more sustainable and livable environment. Additionally, the results will serve as a valuable reference for public space policymakers in Hong Kong, advocating for the use of site-specific temporary interventions to test alternative spatial arrangements while fostering a critical bridge between municipal authorities and the community.

KEYWORDS:

Making place, Temporary Urbanism, Public Open Spaces, Hong Kong

CW Lane Reading Space: Esplorare potenzialità e limiti dell'urbanistica temporanea a Hong Kong

Questo articolo esamina l'impatto del primo progetto pilota realizzato a Hong Kong nell'ambito di uno studio di ricerca volto a riconnettere le persone con spazi pubblici sottoutilizzati attraverso interventi architettonici temporanei (TAI). Oltre a esplorare soluzioni alternative che potrebbero avere un impatto positivo sulla comunità, il progetto mette in discussione le regole, i vincoli e le linee guida presenti negli spazi gestiti dal governo, che di solito vengono implementati attraverso un approccio top-down. L'articolo delinea il quadro di ricerca e presenta i risultati preliminari di uno dei tre progetti pilota realizzati in uno dei quartieri più antichi di Hong Kong. Descrive nel dettaglio la metodologia generale, strutturata in quattro fasi interconnesse: 'Processo Partecipativo,' 'Implementazione del Prototipo' e 'Valutazione del Processo.' La quarta fase, dedicata alla redazione della relazione finale, sintetizza i risultati della ricerca e offre raccomandazioni per adottare i TAI come strategia per riattivare spazi pubblici sottoutilizzati. Inoltre, esplora come questi interventi temporanei possano servire come piattaforma per discutere potenziali trasformazioni a lungo termine degli spazi selezionati. Uno degli obiettivi di questa ricerca è aumentare la consapevolezza sull'impatto di questo approccio, poiché la sua natura temporanea favorisce l'innovazione, l'adattabilità e la reattività alle esigenze sociali, ambientali e spaziali, rendendolo uno strumento potente nel dibattito architettonico contemporaneo. I risultati contribuiranno all'attuale iniziativa di pianificazione del governo di Hong Kong, 'HK2030+', volta a creare un ambiente più sostenibile e vivibile. Inoltre, le conclusioni forniranno un riferimento prezioso per i responsabili delle politiche sugli spazi pubblici a Hong Kong, promuovendo l'uso di interventi temporanei specifici per il sito al fine di testare configurazioni spaziali alternative e favorire un ponte critico tra le autorità municipali e la comunità.

PAROLE CHIAVE:

Making place, Urbanistica Tattica, Spazio Pubblico, Hong Kong

CWLane Reading Space: Exploring potentials and limitations of temporary urbanism in Hong Kong

Francesco Rossini

1. Introduction

This research builds on two interrelated studies funded by a competitive grant from the University Grants Committee (UGC) of Hong Kong, for which the author served as the Principal Investigator (PI). The first three-year study aimed to investigate why Public Open Spaces (POS) in Hong Kong are insufficient, unevenly distributed across the city, and not often actively used as part of citizens' daily routines. Based on this premise, the author analysed 27 POS in one of Hong Kong's core districts, examining their socio-spatial conditions to assess their function, usage, and role within the urban structure. The findings indicated that a significant percentage of the examined POS suffer from various shortcomings, likely contributing to their low usage and lack of attractiveness (Rossini, 2022).

In the second study, the author sought to investigate whether the implementation of TAI could reveal underlying issues in these spaces by testing short-term revitalization strategies and assessing whether this approach could provide insights for potential long-term improvements. Based on previously collected data, we identified three POS that exhibit key characteristics affecting their usability. These spaces are either forgotten or hidden, disconnected from pedestrian flows, and constrained by rigid spatial layouts. Additionally, they feature passive edges and blank walls, limiting interaction between public and private realms. These locations serve as valuable testing grounds for our research approach, allowing us to explore and address the specific challenges each space presents.

The author believes in the role of design as a key contributor to the success of a place. While design is not the sole determining factor, site-specific solutions and innovative-explorative architectural approaches can significantly enhance the usability of underutilized or dysfunctional public spaces. A novel aspect of the proposed TAI is its site-specific nature, which goes beyond the broader approach of traditional placemaking. While the methods used in these projects can be replicated, the designs are customized to the unique characteristics of each site, ensuring their relevance and impact in specific contexts. The goal is to address common deficiencies they exhibit and enhance key qualities such as accessibility, comfort, and the capacity to facilitate social activities (PPS, 2008).

The concept of Making Place explored in this study emphasizes that place is a dynamic rather than a static entity. Geographer Tim Cresswell (2006) argues that place is not a predefined label of identity but rather enables creative social practices. Transforming

space through collective actions and incremental, small-scale adaptations can have a profound impact on the creation of meaningful places. As previously mentioned, public open spaces in Hong Kong are limited and often underutilized. This study introduces an innovative approach to reengage people with these spaces. By implementing short-term pilot interventions, it seeks to establish an alternative planning strategy that can drive long-term improvements.

The following sections will describe CWLane Reading Space, a TAI designed to promote the alternative use of a neglected public space in the Central district of Hong Kong. The project was implemented in October 2023, and its impact was monitored over five weeks through on-site observations using time sampling methods, as well as data collected from questionnaires and informal interviews. By examining the effects of these TAI on both the spaces and people's behaviour, this research aims to provide a deeper understanding of existing issues and their underlying causes, while also exploring potential policy alternatives (Andranovich and Riposa, 2011).

2. Public Space Relevance and Temporary Urban Strategies

Much of our daily life takes place between buildings—whether commuting, exercising, or meeting friends, we continuously interact with outdoor spaces such as sidewalks, squares, and parks. Amanda Burden (2015), urban planner and former director of the New York City Department of City Planning, emphasized that public spaces are even more important than the buildings themselves, as they shape social interactions and urban experiences. Today, some of the most transformative urban initiatives are happening within these spaces, redefining their role in city life. The discourse on the importance of public spaces has long been a relevant research topic, but in recent decades, it has become a key indicator of quality of life. Over the years several scholars (Carr et al. 1992; Crowhurst-Lennard & Lennard 1995; Banerjee, T. 2001; Gehl, J. 2010, Carmona 2015) have highlighted their importance in various aspects, yet urban transformations driven by top-down planning have often prioritized quantitative aspects over qualitative considerations. As a result, many public spaces fail to adequately meet people's needs, tending to be generic and lacking specificity. While cities have begun to explore new forms of public engagement and adapt existing spaces to contemporary needs (Metha, 2010), recent decades have seen the rise of global urban activism led by citizens, non-profits, and resident associations. These grassroots initiatives have filled gaps in formal planning, providing effective, low-cost solutions that respond proactively to community needs through creative placemaking.

In contemporary practice, architects and urban designers work alongside sociologists and anthropologists to develop strategies that capture a place's identity by mapping its social and urban context. This approach is often integrated with participatory design, fostering direct collaboration with local communities to address citizens' specific needs (Casanova & Hernandez, 2014). Their positive effects could

be manifested at different scales (Marshall et al., 2016), providing temporary use models to reclaim cities' dysfunctional spaces or abandoned areas and allowing solutions to be tested first, which would otherwise be very costly to implement (Leonard, 2015). They are 'tactical' because, as argued by Lydon and Garcia (2015), they use accessible means for achieving pre-set goals while embedding flexibility into the planning and project delivery process. Taking it one step further, these tactical initiatives involve a broader field of action for citizens in a context where public institutions are less responsive to people's needs (Silva, 2016).

The use of placemaking is now an established approach to involve citizens in the transformation of the urban environment. The benefit of these initiatives in the short-term has been discussed at length. While some of these temporary projects might someday become permanent, few studies have examined how these temporary urban interventions could be used in a more systematic way and thereby leveraged as a planning tool for planners and government departments (Wohl 2018). The temporary nature of such interventions offers two key benefits. First, its limited time frame enables experimentation and the testing of solutions that strategically address issues in a flexible manner. Second, it reduces the reluctance of government departments to adopt new strategies, as it allows for the exploration of innovative solutions without requiring a long-term commitment.

In this context, a complementary theoretical approach can offer valuable insight into the interaction between people and public spaces. Drawing on the concept of Prototyping in the Wild (Rogers, 2011) from sociology, this research project explores how design choices and alternative spatial arrangements influence people's behavior on-site. By testing TAI in real-world settings over several weeks, this approach can help identify specific improvements while reassessing Hong Kong's underutilized or dysfunctional public spaces. Ultimately, it promotes an experimental methodology to foster more inclusive urban planning and design.

3. The Hong Kong Context

Public open spaces are a crucial asset in high-density cities, especially in Hong Kong. Given the city's distinct vertical urbanism, particularly in older neighborhoods, these spaces are scarce, making their function even more critical. Over the years, the city's planning strategies have lacked a comprehensive approach to developing this essential urban element (Xue & Manuel, 2001). The limited availability of land, combined with a laissez-faire government approach, has resulted in open spaces being provided at the minimum standard of 2m² per person set by the Hong Kong Planning Department. This has negatively impacted both their quantity and, often, their quality. Most of these spaces were developed using a rigid, top-down approach that applied standard solutions to diverse sites and urban conditions. As a result, these valuable yet often underutilized open spaces do little to meet residents' needs, as they neither foster social interaction nor promote community activity (Figure 1).



Fig. 1 - Chung Wo Lane Sitting-out Area, Central District (Photo by Francesco Rossini).

Moreover, strict regulations and outdated guidelines have discouraged flexible usage (Carlow, 2013), resulting in most public open spaces being designed primarily to meet safety standards and facilitate easy maintenance rather than to enhance user comfort and enjoyment (Lai, 2017, p. 59). Paradoxically, the Hong Kong Government itself acknowledged that open spaces in older urban areas are often “small, fragmented, and sometimes hidden, rendering them unpopular and counterproductive to their intended purpose” (HKGGOV, 2016, p. 33).

Over the course of our three-year study (the first grant), we aimed to clarify this issue by conducting a comprehensive analysis of the socio-spatial conditions of these public spaces. The spatial analysis revealed that factors such as poor accessibility, outdated design principles, the absence of active frontages, and a lack of flexibility in the use of space are some of the reasons that may have contributed to their underuse. The combined use of questionnaires and interviews revealed that on average, 68% of residents expressed the desire to have more active engagement and social interaction in public spaces. Temporary events such as second-hand markets or musical performances were identified as a possible way to generate place attachment and social activities. Interestingly enough, almost 73% of interviewees responded that they would like to be involved in a participatory process to create more enjoyable public spaces in their district (Rossini, 2022).

While the study highlighted some positive aspects, such as small-scale adaptations of the urban environment and intangible narratives tied to public spaces, the data revealed that these spaces fail to foster a diverse and vibrant urban environment, having become

somewhat marginal within the urban structure. This conclusion aligns with Lai's 2018 study, which showed that residents in older urban areas have a generally poor perception of the public spaces in their neighborhoods.

4. Research structure and implementation methods

The research has been structured as three interrelated phases: 'Participatory Process', 'Prototype Implementation' and 'Process Evaluation'. Each phase details several key tasks that combine empirical research methods to fulfil the proposal objectives. These methods include behavioural mapping, trace measures, counting, and tracking public space users as well as techniques for measuring people's perceptions through interviews and questionnaires (PPS 2008). The fourth phase, the production of the final report, will summarise and conclude the research activities.

4.1 Participatory process

The design development of each TAI was planned to be conducted via a two-stage approach. We first planned a series of workshops organized together with community associations and NGOs. The second stage was focused on the realisation of TAI in three selected public spaces, with the goal of putting into practice the knowledge gained during the workshops. In this stage, it was important to maintain effective communication with the community to ensure equitable and effective agreements were reached and to hold people to their commitments. In this phase, key references like the Community Planning Toolkit (2014), Guide to Neighborhood Placemaking in Chicago (2008), and A Playbook for Inclusive Placemaking (2019) were used to shape the participatory process and meet the initial research goals. These resources offer various methods and tools, which were tailored to the specific context of Hong Kong. An important aspect of this phase was organizing community focus groups for each project to assign roles and clarify responsibilities. In principle we planned to have teams of 3-6 people to work on five areas: identifying needs, planning social activities, design and implementation, follow-up strategies, and management.

4.2 Prototype Implementation

The development of each TAI consisted of two phases: organizing a series of community workshops and the actual construction of the prototype. The workshops were designed, as much as possible, to encourage active participation in every stage of the decision-making process and, crucially, to ensure that both the design and execution of the project reflected the community's expectations. The projects' sites were selected based on the assessment done in the first part of the research. All the sites were in the Central and Western District under the management of the Leisure and Culture Service Department (LCSD) of Hong Kong. Although the projects were intended to be temporary, the goal was to design site-specific interventions that addressed each site's dysfunctions and challenges, incorporating input from the community. The

implementation plan for these low-cost interventions included the discussion with the community to coordinate activities, assign roles, and prepare all the documents and initial work for the realization of each project. This included preliminary site inspections, authorization by pertinent government authorities, obtaining materials and construction tools, and organizing actions plans and safety measures.

4.3 Process Evaluation

The Public Space Index (PSI), developed by Vikas Mehta (2014), was used to assess the public spaces before, during, and after the installation of each TAI. We empirically evaluated what Mehta called the five dimensions of public spaces: inclusiveness, meaningfulness, safety, comfort, and 'pleasurability'. The PSI comprises several variables and seeks to capture and measure the physical qualities of the spaces as well as observed behaviour (rated by the research team) and perceptions of public space (rated by users with questionnaires and interviews conducted on-site). The variables, based on a rating scale from 0 to 3, examined the presence of community-gathering 'third places,' the flexibility of the space to suit user needs, and its visual and physical connection to adjacent streets or spaces. By using the PSI, we were able to evaluate the impact that each intervention had on the space and on people's behaviour. The analysis was conducted in all three target areas through multiple field surveys (twice a week) over approximately five weeks for each project. To capture the range of activities and behaviours in public space, the observation plan was elaborated considering both weekdays and weekends. The days were split into four timeslots: morning, lunchtime, afternoon, and evening, from 9 am to 7 pm.

5. CWLane Reading Space

The project was designed to answer the following questions: How can people and underutilized public spaces be reconnected through low-cost architectural interventions? How could temporary architectural interventions promote alternative uses in public open spaces? How can pilot urban projects challenge outdated design guidelines and rigid planning rules?

By addressing these questions, we conceptualized a series of design options that responded to the site's spatial conditions and constraints. The conceptualization phase of CWLane Reading Space lasted over a month, during which the research team developed the project by constructing multiple models and refining the design concept based on community feedback. One of the outcomes of our discussions with residents and shop owners was the idea of using the space in a more active way. Some of them were not even aware of its existence. During our observations, we also noticed an old fridge repurposed as a small community library, managed by a nearby coffee shop. This inspired us to expand on the concept by transforming the space into a dedicated reading area. As a result of our discussions, we conceptualized the project by combining a community library and flexible seating spaces within a single structure.

Fig. 2 - Full-scale 1:1 mock-up of the library shelving system (Photo by Francesco Rossini)



Fig. 3 - Construction of the library in the atrium of the School of Architecture at CUHK (Photo by Francesco Rossini)



The project involved over 250 precisely cut pieces of 18mm plywood, which were assembled on a timber framework of 48mm section. Additionally, we built a full-scale 1:1 mock-up to rigorously test the assembly of all components, with special emphasis on the most challenging element: the custom shelving designed specifically for books. (Figure 2). To finalize the various phases of the project, we primarily utilized the fabrication lab at the School of Architecture, Chinese University of Hong Kong. In addition, the atrium served as a temporary workspace and was transformed over one month

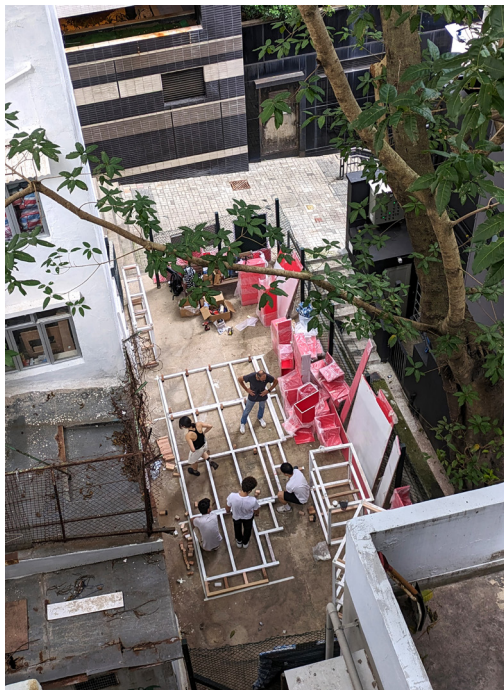


Fig. 4 - The research team assembling the project structure, built with a timber framework of 48mm section (Photo by Giovanna Santoro)

Fig. 5 - The project was preassembled at the School of Architecture and completed on-site in three days by the research team and volunteers (Photo by Giovanna Santoro)

into a dynamic hub for cutting, painting, and assembling components (Figure 3). The overall structure was partially pre-assembled in the atrium and then transported to the site, where it was fully constructed and completed within three days by students, volunteers, and residents (Figures 4,5).

The bright red color and white geometric pattern used in the project were designed to capture the attention of passersby and invite them to explore and make use of a hidden, underutilized pocket space in one of the oldest districts of Hong Kong. As

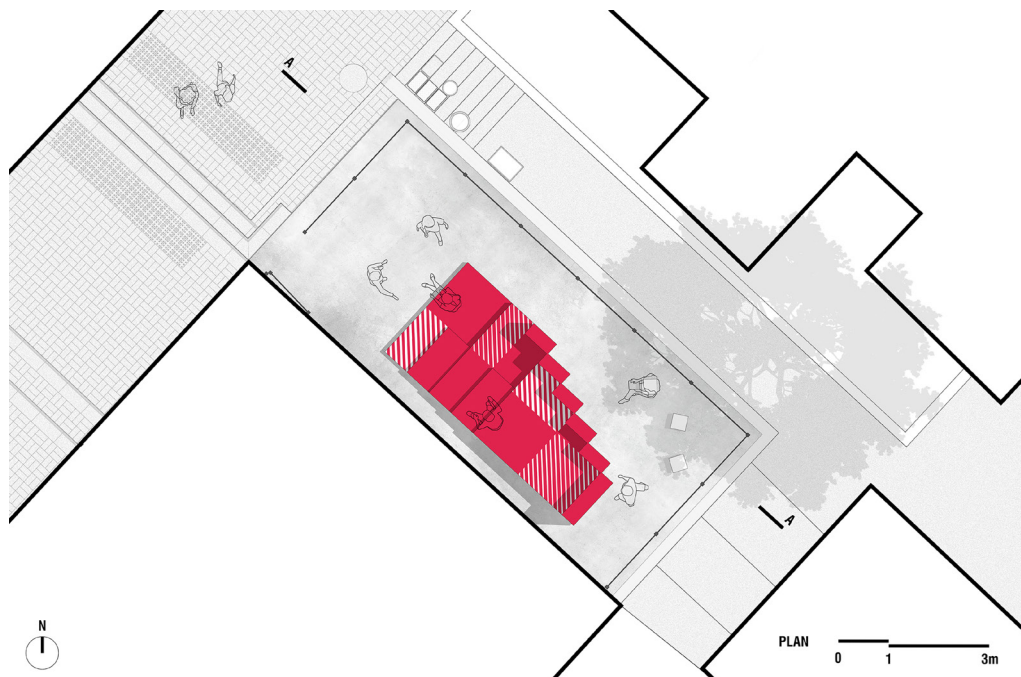


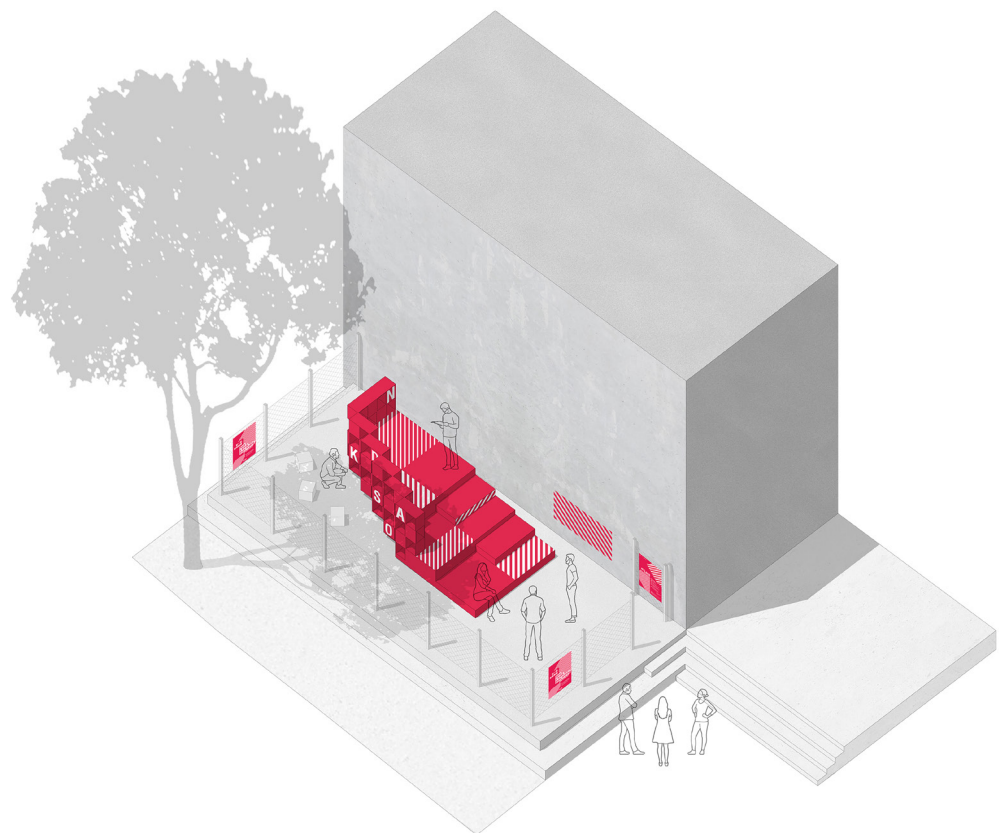
Fig. 6 - CWLane Reading Space, Layout Plan (illustration by Francesco Rossini)

previously outlined, the community library incorporated a series of steps and platforms designed to create flexible, versatile seating areas. The concept of these sequential steps drew inspiration from the stairways and ladder streets scattered throughout this part of the city. Embedded in Hong Kong's cultural and architectural heritage, these urban elements have long served as both essential passageways and informal

Fig. 7 - CWLane Reading Space, Elevation (illustration by Francesco Rossini)



Fig. 8 - CWLane Reading Space, Axonometric view (illustration by Francesco Rossini)



gathering spaces, shaping social interactions and the way residents engage with their surroundings.

The design of the library was characterized by a sequence of interlocking shelves that created a series of setbacks, strategically optimizing the use of space. These shelves accommodated over 350 titles spanning architecture, design, history, philosophy, education, and a diverse collection of children's books. As illustrated in Figures 6, 7, and 8, which highlight the key characteristics of the project, this spatial configuration of the library not only provided additional space for browsing books but also created an intimate reading area near the existing tree. Designed as a community-driven initiative, the library was self-managed by its users and residents for over five weeks, du-



Fig. 9 - The library had a positive impact on the neighborhood, with data showing that a total of 170 books were exchanged during the project's five-week implementation (Photo by Francesco Rossini)

ring which they were encouraged to exchange their preloved books (Figures 9 and 10).

6. Analysis / Findings

During the five weeks of the CWLane Reading Space installation period, we carried out a series of field evaluations, focusing on the three main aspects of this research: participatory processes, implementation, and assessment. Since the methodology involved several steps to engage local residents in the project, we launched a call to action on social media and promoted public involvement through on-site flyer distribution and posters displayed in neighborhood shops. Additionally, we collaborated with two community associations to facilitate the recruitment of volunteers for the project. Despite our initial efforts, we struggled to achieve the level of community participation we had anticipated. Early on, we received support from Very Hong Kong, a local NGO dedicated to activating commu-

Fig. 10 - People visiting CWLane Reading Space during the weekend (Photo by Francesco Rossini)



nity and public spaces, which provided volunteers from its network. However, given the limited involvement of residents, we shifted our strategy toward engaging nearby shop owners, recognizing their potential to foster a more meaningful connection with the project. Our next objective was to involve them and their collaborators at various stages, including the production phase. While they enthusiastically supported the initiative by distributing flyers, promoting it, and offering valuable feedback and suggestions, securing a deeper, more hands-on level of engagement remained a challenge.

In response to these early challenges, we revised our participatory strategy. Rather than continuing with a co-design process, we redirected our efforts to gathering detailed feedback on the types of projects, functions, and activities that local businesses and residents desired for their district. Drawing from this input, we developed a comprehensive concept, which we then presented for a second round of feedback and suggestions. We visited every shop in the area, carrying our laptop and scaled models (at 1:50 and 1:20), to illustrate the concept. During these visits, we engaged not only shop owners but also temporary visitors, regular customers, and residents frequenting nearby cafés and bars, ensuring that a broad range of perspectives informed the project.

This approach facilitated more direct and meaningful conversations about the project, deepening our engagement with the local community. As part of the mobilization process, we established continuous communication with the Leisure and Cultural Services Department (LCSD), conducting multiple site inspections and presenting various conceptual stages of the project. Given our responsibility for all activities within the space, we also had to secure mandatory public liability insurance to cover potential damages—both to the site itself and to individuals—arising from the project's installation and use during the occupation period.

According to the collected data, CWLane Reading Space received an average of 37 visitors

per week, a significant increase compared to its previous lack of use. On weekdays, visitors typically spent between 5 and 10 minutes in the area, while on weekends—when families were the primary users—the average duration increased to 15–20 minutes. In terms of activities, approximately 34% of visitors used the space for sitting, 24% for browsing books, and 8% remained on-site to read. Additionally, 18% of visitors lingered on-site without engaging in any specific activity. Our observations revealed that children were particularly attracted to the library, enjoying the opportunity to play and select books to read on the steps (Figures 11 and 12). We also analysed how users positioned themselves within the

Fig. 11 - The steps have proven to be an excellent place for children to read and play (Photo by Francesco Rossini)

Fig. 12 - A young reader exploring books for children at CWLane Reading Space (Photo by Francesco Rossini)



Fig. 13 - The graphic illustrates how users interact with the space, showing that 31% of people use the existing bench, 28% sit on the steps, and 15% choose the movable cubes (Graphic by Francesco Rossini)

space. The findings showed that 31% preferred sitting on the existing bench, 28% on the steps, and 15% on the movable cubes (Figures 13 and 14).

Data showed that a total of 170 books were exchanged during the five-week installation period. As part of our efforts to promote engagement with the space, we organized an event called "Steps Talks," where several speakers were invited to present their work to the com-

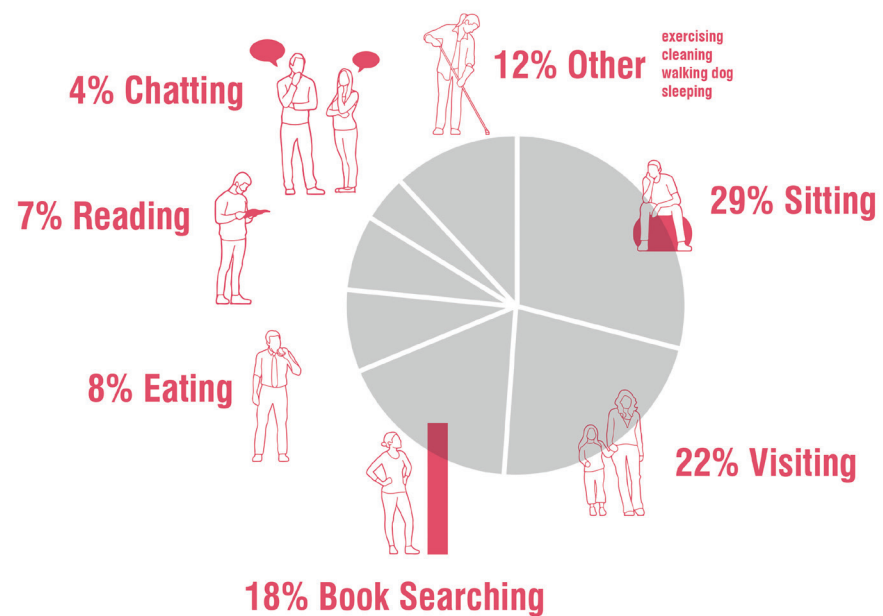


Fig. 14 - The graphic illustrates the main activities observed during the five-week implementation of the project (Graphic by Francesco Rossini)

munity. These casual lectures and discussions served not only as moments of knowledge sharing but also as opportunities to bring architectural discourse into the public realm (Figures 15 and 16). A total of 80 people attended the event, which featured lectures by seven guests from both academia and professional practice.

In comparing the use of the space before and after the installation, the public space index indicated a consistent improvement across all assessed variables. Prior to the implementation of the project, the area was rarely utilized, making it challenging to collect a sufficient number of completed questionnaires. However, during the five-week period, we successfully gathered 32 questionnaires, demonstrating that the space had become significantly more



Fig. 15 - People attending one of the "Steps Talks" lectures (Photograph by Tongyun Zhu Terrie)



Fig. 16 - We organized four events, each comprising three lectures, with an average of 20 participants per session. (Photo by Tongyun Zhu Terrie).

inviting and safer, while also fostering greater social interaction compared to its previous condition.

7. Conclusion

Looking at the overall process, we can conclude that the first TAI achieved most of its objectives, demonstrating that the research approach could effectively contribute to the creation of alternative social spaces for the community. Based on the findings from this initial prototype, a more robust participatory process—or at least different engagement strategies—needed to be tested and tailored to the specific local conditions of each intervention site. We had anticipated broader participation, but we were only able to engage shop owners and their clients (including habitual customers and residents) to a certain extent. As a result, we had to adjust our engagement strategy—an unexpected shift, yet one that proved valuable in developing a more comprehensive understanding of this type of process.

During the development of the concept, navigating the bureaucratic aspects with officials from the Leisure and Cultural Services Department (LCSD) proved particularly insightful, as they kindly supported us throughout the pre-implementation phase. One of the key discussions focused on extending the installation period in the selected public space to five weeks—a timeframe that had never been approved before—since we were informed that the typical occupation period usually lasted only one or two days. In this regard, the project provided valuable insight into the regulations and limitations governing these spaces, including the restriction on the use of movable furniture. As a result, we had to request special permission for the installation of our movable seating cubes within the reading space.

Overall, we were highly satisfied with the outcome of this first intervention. Following the dismantling of the library, we had the opportunity to discuss potential long-term improvements with the Leisure and Cultural Services Department (LCSD) to enhance and encourage

the usage of this hidden yet valuable Sitting-out Area.

In terms of dissemination and reception, the CWLane Reading Space was featured in major online architecture magazines, including ArchDaily, UrbanNext, and Baunetz Campus. Articles on the project have been published in Spanish, English, German, and Italian. Additionally, it was featured in Artribune's newsletter 'Render', accompanied by an interview with the author. The project was presented as a case study at the 14th Biennale of European Towns and Town Planners in Naples in April and at the 36th AESOP Annual Congress in Paris in July. The project garnered significant international recognition, earning a Special Mention at the 2024 Architizer Awards in the Architecture + Knowledge category, as well as an Honorable Mention in the 2024 Design Educates Awards.

In a context like Hong Kong, where public open spaces are limited and often underutilized by the local population, this study explored an alternative approach to reconnect people with these spaces through the deployment of TAI. The objective was to address the underuse and lack of social interaction in public spaces within older urban areas by establishing a participatory mechanism through which these interventions could strategically tackle key challenges at the district level.

The site-specific nature of these pilot projects, combined with their role as catalysts for initiating upgrades and long-term transformations, sought to respond to specific urban conditions, community needs, and regulatory constraints. At the same time, these initiatives contributed to a broader strategic vision, expanding toward a more city-wide operational approach. We hope that this study will help deepen the understanding of how to mitigate common dysfunctions in public spaces while simultaneously enhancing key qualities such as accessibility, comfort, and the ability to facilitate social interaction.

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Hybrid landscapes. A methodology for mapping squatting

Maria Simioli

Abstract

This article explores the issue of urban informality in Southern Italy, proposing a research methodology aimed at initiating a census and mapping the phenomenon. This serves as a preliminary step toward the development of regeneration strategies. Informality is at the heart of a broad international debate, with efforts today focusing on recognizing it as a valuable new paradigm for contemporary cities (AlSayyad, 2004) and as a foundation for constructing a new epistemology of planning (Roy, 2005). In the context of Italy, specifically Southern Italy, the global phenomenon of informality takes on a unique local form—shaped by social, economic, morphological, and contextual factors. This requires an intervention model distinct from the approaches and experiments currently undertaken in the Global South. With this in mind, this article presents the results of research conducted within the PhD program in Architecture at the University of Naples Federico II, titled “The Informal in the Landscapes of Illegal Construction: Latent Values and Transformations in Southern Italy.” The research proposes a shift in perspective, advocating for a proactive approach to the landscapes of illegal construction, rather than focusing solely on restrictive or emergency-driven measures. The case study focuses on the island of Ischia in Campania, taking advantage of the timely opportunity presented by drafting the island's post-earthquake reconstruction plan (PdRI).

KEYWORDS:

Informality, fragile territories, illegal buildings

Paesaggi ibridi. Una metodologia di studio del fenomeno abusivo

Questo articolo affronta il tema dell'informalità urbana nel Mezzogiorno d'Italia, individuando una metodologia operativa e di studio capace di avviare un'operazione di censimento e mappatura del fenomeno propedeutico all'individuazione di strategie di rigenerazione. Il fenomeno dell'informalità è al centro di un ampio dibattito internazionale che oggi cerca di riconoscere nell'informalità il valore di un nuovo paradigma della città contemporanea (AlSayyad, 2004) e le basi per costruire una nuova epistemologia della pianificazione (Roy, 2005). Nel contesto italiano e più precisamente nel sud Italia, il fenomeno globale dell'informalità assume una peculiare e contestuale configurazione locale, morfologica, sociale ed economica, che richiede un modello di intervento non assimilabile agli approcci e alle sperimentazioni che oggi si conducono nei contesti del global south. A partire da queste considerazioni, il contributo raccoglie gli esiti di una ricerca condotta nell'ambito del Dottorato di Ricerca in Architettura dell'Università Federico II di Napoli, dal titolo "L'informale nei paesaggi dell'abusivismo. Valori latenti e trasformazioni nel Mezzogiorno d'Italia", che propone di istituire un progetto che guardi ai paesaggi dell'abusivismo con un atteggiamento non solo più vincolistico ed emergenziale, ma proattivo, con caso di studio il territorio dell'isola d'Ischia in Campania, in concomitanza della fertile occasione del redigendo piano di ricostruzione dell'isola post-terremoto (PdRI).

PAROLE CHIAVE:

Informalità, territori fragili, abusivismo edilizio

Paesaggi ibridi. Una metodologia di studio del fenomeno abusivo

Maria Simioli

Introduzione

1.1 Un fenomeno globale e le diverse latitudini

Le città, rispetto alle sfide emergenti della contemporaneità – di tipo ambientale, socioeconomico e tecnologico – che riguardano i modi e le forme dell’abitare, si configurano oggi con forme di urbanizzazione sempre più insostenibili, creando una polarità difficile da scardinare (Sacchi, 2019). Infatti, mentre la città formale cresce, quella informale prolifera e si amplifica a un ritmo senza precedenti, secondo un processo di *ibridazione* che ne vede il definitivo radicamento nelle metropoli di tutto il mondo, sedimentandosi nell’immaginario collettivo (McGrath, Shane, 2012). Si tratta di una “modernità pirata” (Sundaram, 2010), in grado di sfuggire alle leggi della città, con un carattere di permanenza che contraddice i presupposti teorici dell’informalità, caratterizzata dalla precarietà del possesso, dalla scarsa durabilità dei materiali impiegati e dalla temporaneità (UN Habitat, 2003; Davis, 2006). Oggi, questo carattere di stabilità degli insediamenti, che risulta essere una condizione di estrema criticità, è messo in discussione da tre ordini di fattori: dall’ampiezza del fenomeno, circa il 25% della popolazione mondiale vive in insediamenti informali (UN Habitat, 2020); dai movimenti migratori frutto di instabilità politiche, e che si stanno aggravando per effetto dei cambiamenti climatici, dello squilibrio delle risorse territoriali e per l’intensificarsi delle calamità naturali; infine, dall’emergere di nuovi modelli concettuali per leggere e immaginare le nostre città, che superano il dualismo tra città formale e informale e che richiedono nuovi paradigmi progettuali (Hernandez et al., 2010).

Una contrapposizione duale quella tra formale e informale che perde infatti la sua potenza evocativa quando se ne analizzano gli effetti ad altre latitudini (Koster, Smart, 2019). Gli studi più recenti sul *Global North* (Picker, 2019) considerano l’informalità come “eccezione”, una risposta tattica di alcuni gruppi emarginati (Chiodelli, et al., 2020), con la realizzazione di insediamenti difficilmente distinguibili da quelli formali (Agostini, 2011). In particolare, in Italia, questa ibridazione assume il carattere della produzione edilizia abusiva, consegnando un territorio esito di una selvaggia urbanizzazione, con un sistema infrastrutturale inadeguato, prevalentemente monofunzionale, privo di standard, servizi e attrezzature pubbliche e con una diffusa carenza di spazi aperti (Simioli, 2021).

Le regioni del Mezzogiorno d’Italia ed in particolare la Campania, dal secondo dopoguerra in poi, hanno subito un’intesa e repentina modificazione degli assetti territoriali (Ferraioli, 2003), per esito delle costruzioni ed utilizzazioni del suolo avvenute in assenza o in contrasto rispetto agli strumenti di pianificazione urbanistica

vigente e di tutela paesistico-ambientale (Formato, 2020), con il depauperamento delle risorse ambientali ed ecologiche, l'aumento della vulnerabilità dei territori in relazione alle condizioni di rischio naturale ed antropico e una conseguente perdita dei valori identitari e paesaggistici (ISPRA, 2023). Ci si confronta con gli esiti prodotti dalla selvaggia ed incontrollata urbanizzazione del territorio, con il degrado paesaggistico-ambientale, con il depauperamento delle risorse naturali e con le mutate condizioni di rischio, eredità del fenomeno abusivo. Paesaggi risultato di un'arbitraria giustapposizione e di incongrui accostamenti che nascono in maniera illegittima, e dunque *ibridi* (Zardini, 1996; Krasilnikova & Klimov, 2020). Nel campo tecnologico, il termine ibrido non indica un puro accostamento o un uso contemporaneo di un bene, ma un momento di rottura e di visione del problema, capace di creare una nuova specie (di materiali), e di rispondere ad esigenze diverse. L'ibrido segna dunque un passaggio da una forma data, esistente in natura, ad un'altra, per contaminazione (Zanni, 2012). In questo senso il concetto di ibrido coglie un'attitudine alla trasformazione, una condizione fertile d'interscambio, di relazione, che applicata al paesaggio abusato del Mezzogiorno d'Italia ci consente di ribaltare la prospettiva da cui sono sempre stati traggurati: da "problema maligno" (Barbanente, 2017) a spazi generativi di nuove relazioni e possibilità. Questa prospettiva impone quindi un ripensamento dei tradizionali metodi e approcci, di studio e di progetto, che possa guardare a questi paesaggi non solo come un problema da debellare ma una pratica da cui apprendere (De Nardis, 2024).

1.2 L'informalità come lente interpretativa

Il lavoro di ricerca assume l'informalità come lente interpretativa del fenomeno abusivo per cogliere le potenzialità rigenerative di questi territori in seguito al cambio di paradigma che vede l'informalità come espressione di valori contemporanei e come nuovo strumento di welfare (De Nicola, 2022). L'informalità come fenomeno "spontaneo", che origina dal basso, esito di istanze di una comunità ed espressione di un fabbisogno collettivo, può essere considerato come una *naturale evoluzione* dell'organizzazione dello spazio in grado di accogliere una vasta gamma di cambiamenti e sfide. È possibile tracciare intriganti parallelismi tra i meccanismi evolutivi della natura e lo sviluppo degli spazi urbani, suggerendo che la mancanza di un controllo rigoroso e la convergenza di menti e azioni diverse possono portare ad ambienti in continua evoluzione e adattivi. Dunque, l'informalità urbana e il ventaglio di pratiche che ad essa afferiscono, come *exaptation* (Gould & Vrba, 2008), una metafora che muove dalla biologia. Questo concetto, utilizzato per descrivere quel determinato processo evolutivo degli organismi i quali nello sviluppare un carattere funzionale iniziale cooptano una nuova e imprevedibile funzione indipendente da quella primitiva, è stato introdotto dagli autori S. J. Gould e E. S. Vrba a partire dalla teoria dell'evoluzione di Darwin (Melis, Pievani, 2022). Con il neologismo pre-adaptation

Darwin introdusse la possibilità che in natura il rapporto fra organi e funzioni fosse potenzialmente ridondante, in modo da permettere che un tratto sviluppatosi per una certa ragione adattativa potesse essere «cooptato» o convertito per una funzione anche del tutto indipendente dalla precedente. Un esempio in natura è quello dei volatili che iniziarono ad usare le penne per volare anziché solo per regolare la temperatura. Questa cooptazione funzionale fu rinominata *exaptation*, ed applicata all'architettura sta ad indicare come gli organismi spesso riadattino in modo opportunistico strutture già a disposizione per funzioni inedite. Ciò che consente ai sistemi complessi – specie viventi, organizzazioni, sistemi sociali – di avere successo in un contesto che cambia non sono solo l'adattamento o la resistenza, quanto un'altra proprietà, il «pre-attamento» (traduzione del termine in italiano) come straordinaria capacità di giocare in anticipo, combinando in modo innovativo risorse o caratteristiche già presenti per assicurarsi vantaggi competitivi. È un concetto assimilabile a quello di anti-fragilità (Taleb, 2013): mentre una struttura fragile si disgrega, e una robusta impegna tempo e risorse per restare com'è, la struttura anti-fragile può utilizzare le perturbazioni per crescere e prosperare. Nel panorama in evoluzione della progettazione urbana, i concetti di apertura, incompletezza e crescita organica sono in prima linea per un cambiamento di paradigma (Sennet, 2017). Il sociologo Richard Sennet promuovere un'idea di urbanizzazione più aperta, come un'entità incompleta, errante, contraddittoria e non lineare, in grado appunto di «creare condizioni e procurare possibilità» e che consente «interventi iniziali volti a creare le condizioni per un uso non pianificato della sfera pubblica, che sono punti di partenza per un processo continuo ed aperto» (Sennet, 2022). I paesaggi dell'abusivismo, dunque, interpretati attraverso il criterio dell'informale, sono **paesaggi ibridi** in cui prolifera la possibilità, in grado di esprimere potenzialità latenti, materiali di progetto, frammenti di possibili beni comuni. In questa prospettiva divengono spazi strategici e prioritari su cui intervenire per la rigenerazione del territorio contemporaneo.

2. Un metodo per geografie (in)visibili

2.1 Condizioni aperte e nodi critici

In Italia il fenomeno abusivo ha raggiunto dimensioni macroscopiche e nonostante il fondamentale ruolo che esso dovrebbe ricoprire nel dibattito disciplinare e politico nazionale, non è stata ancora avviata una riflessione sistematica sia sui contenuti e sull'efficacia delle disposizioni normative sia sugli approcci progettuali alla rigenerazione. L'approccio teorico e progettuale verso il tema dell'abusivismo edilizio è innervato in una logica fortemente settoriale, anacronistica e non contestuale; non mancano infatti studi sull'abusivismo ma credibili linee operative tecniche ed istituzionali. Il fenomeno è stato da sempre letto da una prospettiva eminentemente

giuridica-amministrativa (Clementi e Perego, 1985), trascurando le ricadute sociali, economiche, ambientali ed ecologiche che esso produce in quanto problema maligno che interagisce ed interferisce con gli altri sistemi.

Gli strumenti di classificazione e mappatura del fenomeno abusivo si sono avvalsi di categorie descrittive, di necessità, convenienza e speculativo, che, se hanno saputo da un lato cogliere gli operatori della trasformazione abusiva e gli intenti, hanno trascurato di contro le differenze e i tratti peculiari che il fenomeno ha assunto nei differenti contesti geografici. Pertanto, è necessario avviare una precisa opera di mappatura dei territori abusivi – di cui i comuni sono sprovvisti al fine di avviare una lettura attenta alle differenze: forma dell'urbanizzazione, popolazione, usi antropici prevalenti, funzioni e relazioni con il contesto urbano e naturale, valori ambientali e storico-paesistici. Infine, il ritardo nell'evasione delle pratiche di condono. Nelle regioni del Sud Italia, dove il fenomeno dell'abusivismo edilizio ha pesantemente compromesso il territorio, devastando aree enormi in particolare lungo la costa, le case illegali non vengono abbattute (Legambiente, 2021). Molto spesso le istanze restano inevase determinando di fatto uno stallo nella procedura, altre volte all'ingiunzione della demolizione non fa seguito l'intervento della pubblica amministrazione; al condono degli immobili invece non fanno seguito i piani di recupero, che risultano di fatto mai attuati. Dunque, se per i manufatti non condonabili l'unica strada perseguibile è la demolizione salvo in rari casi l'acquisizione al patrimonio comunale del bene, in Campania, può essere utile invece avviare una disamina dello stato di avanzamento delle pratiche istruttorie. Obiettivo principale delle riflessioni condotte è di definire un protocollo metodologico per l'individuazione di linee strategiche e indirizzi progettuali, che possa rappresentare un dispositivo utile per la rigenerazione dei territori abusivi. Documentare l'effettiva situazione di illegalità dei territori e delinearne una mappatura non solo quantitativa ma anche qualitativa è operazione complessa, ma data la particolare diffusione dell'abusivismo edilizio appare tuttavia indispensabile adoperarsi nel rendere più accessibile la sua conoscenza.

2.2 Una metodologia di schedatura del fenomeno abusivo

La ricerca, dunque, identifica una metodologia operativa e di lettura del territorio che si articola in tre macrocategorie, che fanno riferimento a tre fasi temporali: a) elementi di progetto; b) studio delle componenti; c) indirizzi di progetto.

Ci si soffermerà in particolar modo sulla seconda fase del processo, “studio delle componenti”, successiva all'identificazione degli elementi di progetto, come requisiti imprescindibili: i) identificazione di un luogo, ii) individuazione degli attori iii) riconoscimento dell'istanza collettiva.

Lo “studio delle componenti”, riguarda la conoscenza del contesto abusivo, a partire dall'identificazione nel “luogo” selezionato di cosa sia illegittimo, attraverso un'operazione di mappatura e schedatura degli immobili abusivi. Per facilitare il processo

di mappatura, come si evince dall'elenco seguente, questo processo di catalogazione può essere suddiviso in quattro macrocategorie principali, poi suddivise in sottocategorie: (i) Anagrafica di base; (ii) stato dell'abuso; (iii) quadro della pianificazione; (iv) relazioni con il contesto.

(i) Anagrafica di base si riferisce all'identificazione di dati e informazioni che consentono la geolocalizzazione del bene, oltre che la sua dimensione tipologica e d'uso, categorie che servono a comprendere come il fenomeno si differenzi nelle diverse aree geografiche (urbane, extraurbane e rurali).

In particolare le voci della scheda comprendono:

- *identificativo* (numero id): indirizzo, regione, provincia, comune, località;
- *dati catastali*: foglio, particella, sub;
- *uso*: tipologia d'uso se residenziale, (abitazione primaria, secondaria), commerciale (tipo), terziari, etc., se stagionale, temporaneo o permanente.

Possono essere integrati da disegni tecnici (se disponibili), sotto forma di collegamenti ipertestuali.

(ii) Stato dell'abuso riporta le informazioni relative all'eventuale richiesta di condono presentata:

- *Istanze di condono presentate*: numero di istanze, tipo di condono (secondo la L.47/85, secondo la L. 724/94 e la L. 326/03).
- *Epoca di realizzazione*: periodo di realizzazione dell'opera e anno in cui è stato commesso l'abuso. Il dato cronologico può essere fondamentale per l'identificazione attraverso la sovrapposizione di più dati (incrocio di carte storiche, strumenti di pianificazione e carte dei vincoli), per comprendere, laddove non esplicitato, la natura abusiva o meno dell'opera.
- *Tipologia di abuso*: totale difformità dal permesso di costruire, assenza di permesso di costruire, parziale difformità dal premesso di costruire (ampliamento, sopraelevazione, etc.)
- *Stato delle pratiche*: se sono state presentate istanze, se sono da evadere, se hanno ricevuto il parere di alcuni enti preposti al controllo, se sono state evase con parere negativo o positivo.
- *Quantità da sanare*: superficie lorda e volumetria da sanare. Per poter avviare anche una stima economica dell'intervento di demolizione.

Possono essere integrati da disegni tecnici (se disponibili), planimetrie del progetto originario e del progetto presentato all'atto della domanda di condono.

(iii) Quadro della pianificazione, sia vigente che pregresso, consente di verificare immediatamente l'incongruità tra l'opera realizzata e le previsioni di piano.

- *Zonizzazione*: zona omogenee secondo P.R.G. o P.U.C. e verifica di tutti gli strumenti sovraordinati.

- **Vincoli:** Ricognizione del sistema di vincoli presenti.
- **Previsioni e trasformabilità:** Indirizzi e strategie per la trasformazione dell'area all'interno degli strumenti di pianificazione urbanistica.
- **Finanziamenti:** la disponibilità di finanziamenti straordinari (si veda la stagione del PNRR, delle misure straordinarie post-catastrofe, etc.).

(iv) Relazione con il paesaggio

- **Dimensioni principali:** identificare le caratteristiche tipologiche del bene (superficie, altezza, volume, numero di piani, ecc.), e in che relazione si può con il suolo, fuori terra, seminterrati o interrati
- **Sviluppo altimetrico:** definizione dello sviluppo altimetri se lineare, sfalsato (seguendo l'orografia dei luoghi, incassato (con sbancamento), etc.
- **Rapporto con il contesto:** realizzato fronte strada, arretrato con spazio pertinenziale (permeabile, impermeabile, semipermeabile); addossato ad altro edificio o libero su tutti i lati, presenza di recinzioni; relazioni percettive con elementi paesaggistici di pregio; elementi architettonici vernacolari ricorrenti.

Possono essere integrati da disegni tecnici (se disponibili), e foto.

Questa operazione di classificazione degli immobili abusivi (fig.1), ci consente di identificare i caratteri informali del fenomeno abusivo attraverso la definizione di principi insediativi, elementi architettonici e relazioni con il paesaggio e definire gli elementi di indirizzo progettuale come set di regole minime: scelta e disposizione spaziale dei lotti; usi consentiti; rapporti di superficie; Principi di sostenibilità.

Fig. 1 – Schedatura degli immobili abusivi della località Fango del comune di Lacco Ameno dell'isola d'Ischia. La scheda riporta le informazioni suddivise per categorie, i disegni planimetrici e di prospetto allegati alla richiesta di sanatoria con l'individuazione degli abusi. Fonte: elaborazione dell'autrice.



Fig. 2 – Isola di Ischia (NA) in Campania Fonte: foto dell'autrice.



3. Esplorazioni progettuali. Il caso studio dell'isola d'Ischia

La metodologia presentata è stata applicata nell'ambito della ricerca dottorale assumendo la fertile occasione del Piano di ricostruzione dell'isola d'Ischia come caso esemplificativo.

Il fenomeno dell'abusivismo, pervasivo su tutto il territorio ischitano, risulta centrale nelle riflessioni condotte in occasione della redazione del Piano di Ricostruzione dell'isola d'Ischia, in virtù dell'articolo 25 della L.130/2018, secondo cui i contributi finanziari a sostegno dei cittadini colpiti dal sisma saranno erogati solo in caso di legittimità dell'opera. Il Piano di ricostruzione, fondato su principi e obiettivi di eco-sostenibilità degli interventi, di "incremento zero" delle volumetrie e delle superfici urbanizzate, di riduzione dei consumi energetici, di contestuale risanamento dei danni provocati dal sisma, previa definizione dei condoni pendenti, affronta il nodo, cruciale, delle consistenti quantità edilizie oggi esistenti di origine abusiva. Infatti, il piano estende la sua azione ed efficacia anche a quei manufatti che seppur non interessati dal sisma ricadono all'interno della perimetrazione individuata.

In merito all'abusivismo edilizio, il PdRi ambisce a definire una proposta di piani di condono. In prima istanza i piani di condono hanno l'obiettivo di semplificare il processo di istruttoria e definizione delle pratiche di condono, favorendo la demolizione degli immobili non compatibili con le rilevate condizioni di fragilità territoriale. La proposta alla base dei piani di condono, prevede che l'istanza non sia valutata per singole unità immobiliari, ma nell'ambito di un progetto di riassetto che riguardi l'intera unità minima d'intervento (UMI). L'Unità Minima d'Intervento è un ambito territoriale di base, coincidente con l'edificio o l'aggregato edilizio ed i relativi spazi di pertinenza (coperti e

scoperti). L'introduzione delle UMI è finalizzata alla definizione di un progetto organico e complessivo che vada oltre la ristrutturazione dell'edificio, ma che contempli anche lo spazio aperto pertinenziale, nonché di superare la visione del caso per caso. La mancanza di dati certi sul numero di istanze presentate, di quelle rigettate o evase rappresenta una delle principali criticità da affrontare. Il lavoro si è dunque concentrato sulla definizione di un chiaro quadro delle istruttorie presentante. L'area oggetto di approfondimento interessa il comune di Lacco Ameno, situato nella parte settentrionale dell'isola, confinante con i comuni di Forio a ovest e Casamicciola a est e proteso verso il mare a nord. Il comune di Lacco Ameno si articola nelle contrade di Mezzavia, Pannella, Lacco di Sopra, Fundera e Fango; quest'ultima è stata indentificata come area campione per avviare il processo di sperimentazione oggetto della ricerca, in quanto area maggiormente interessata dal sisma del 2017, con ingenti danni agli immobili e, in due soli casi, crolli totali. È stato predisposto uno studio puntuale delle pratiche di condono di circa 20 edifici, attraverso un lavoro di ricerca archivistica presso il comune di Lacco Ameno (fig.2).

Dallo studio e relativa schedatura di tutti gli immobili, analisi dei progetti presentanti e della documentazione integrativa alle richieste di permesso di costruire in sanatoria, sono state elaborate alcune mappe tematiche (fig.3):

- **Stato di avanzamento delle pratiche.** Dal campione di pratiche analizzate si rileva che solo un immobile risulta legittimo a seguito del parere favorevole all'istanza di condono; solo un immobile risulta illegittimo a seguito del diniego alla domanda di sanatoria, e tutti gli altri immobili risultano ancora in attesa di parere.



Fig. 3 – Edifici danneggiati dal sisma del 2017 nella località Fango del comune di Lacco Ameno dell'Isola di Ischia (NA) in Campania Fonte: foto dell'autrice.

Fig. 4 – Dall'alto: stato di avanzamento delle pratiche; identificazione degli edifici irregolari; selezione degli interventi da attuare. Fonte: elaborazione dell'autrice.



- **Identificazione degli edifici regolari, irregolari e parzialmente regolari.** Degli immobili analizzati più della metà sono stati realizzati in difformità al progetto originario presentato per l'ottenimento del regolare permesso di costruire, mentre l'altra metà degli edifici è stata realizzata senza il rilascio della vecchia licenza edilizia. Le difformità constano prevalentemente in sopraelevazioni e solo in piccola parte di ampliamenti consistenti della volumetria.

- **Selezionare gli interventi da attuare.** A valle delle due precedenti analisi è possibile individuare gli immobili soggetti a: a) demolizione con delocalizzazione, b) demolizione parziale delle superfetazioni abusive con recupero e ricostruzione in sito, c) demolizione totale senza ricostruzione. Si prevede la demolizione senza ricostruzione

per le volumetrie non residenziali (ristorante e affitta camere) e per quelle non oggetto di istanza di condono.

L'occasione istituzionale ha rappresentato dunque una fertile opportunità per sperimentare le considerazioni definite sul piano metodologico. L'individuazione dell'area di intervento, come campione esemplificativo della metodologia proposta, è stato propedeutico all'identificazione delle unità immobiliari oggetto di un approfondimento, mediante lo studio analitico delle singole istanze e la loro localizzazione cartografica, con indicazione del livello di conseguimento del titolo abilitativo. Infatti, ai fini sia del corretto dimensionamento delle quantità edilizie necessarie al trasferimento dalla zona 1 che il recupero dei manufatti in sito, sono da computarsi le quantità edificate, determinate considerando esclusivamente quelle legittimamente realizzate o relative a immobili che abbiano ottenuto il provvedimento di sanatoria previsto dalla vigente legislazione.

4. Conclusioni

Non sono mancati studi sull'abusivismo, ma credibili linee operative tecniche e istituzionali che abbiano saputo andare oltre un approccio puntuale, fatto di minuti e isolati interventi di riqualificazione orientati al ripristino delle condizioni di legalità, e di quadri progettuali che non hanno saputo porre le condizioni per un ripensamento complessivo di sviluppo integrato dei territori. Un progetto che è innanzitutto conoscenza. I dati disponibili in materia di abusivismo edilizio sono elaborati a livello nazionale, con informazioni aggregate e percentuali di massima: rispetto al 2008, l'indice di abusivismo è salito di meno di 3 punti nel Nord (da 3,2 a 5,9), di 11 punti nel Centro (da 6,5 a 17,5) e di oltre 20 punti (da 24,6 a 45,2) nel Mezzogiorno (Legambiente, 2021). Non esistono banche dati ufficiali, a nessun livello amministrativo, e le poche mappature esistenti restituiscono in maniera indifferenziata, attraverso un unico retino, realtà completamente diverse. È necessario dunque avviare un lavoro di mappatura e schedatura degli immobili al fine di orientarne il progetto di trasformazione capace di leggere le differenze. Il frame concettuale entro cui definire il fenomeno dell'abusivismo va certamente riconsiderato alla luce delle condizioni economiche, demografiche e normative, dei territori, pur restando una questione nazionale. Allo stesso tempo, la logica vincolistica con cui si è regolata la normativa del condono (L. 47/85, L. 724/94, L. 326/03) andrebbe reinterpretata in chiave di tutela attiva in cui l'urbanistica assuma un ruolo centrale, strategico e propositivo, senza limitarsi al controllo della compatibilità degli interventi a norme giuridiche ed amministrative. Inoltre, le vicende dei condoni edilizi mostrano che, almeno in Italia, quello comunale non è il livello di governo più appropriato per contrastare l'abusivismo. Andrebbero valutate altre soluzioni, coinvolgendo maggiormente autorità sopra-ordinate o anche creando apposite strutture statali, possibilmente di natura tecnica, con poteri e mezzi "speciali" per smaltire tutte le istanze arretrate e procedere con le eventuali demolizioni (Formato, 2020). Infine, potrebbe essere utile per approfondire quanto fin qui svolto, avviare uno studio dei progetti di

completamento necessari al rilascio dell'autorizzazione paesaggistica per la concessione edilizia in sanatoria – impartite dalle Soprintendenze. Le prescrizioni, rinvenute nel parere favorevole rilasciato per gli edifici condonati, possono rappresentare ulteriori materiali di indagine per la definizione di linee guida e indirizzi di riassetto utili sia attraverso la definizione di una tassonomia degli interventi possibili per la rigenerazione dei territori abusivi.

ENDNOTES

¹ Le riflessioni condotte nel caso di studio si inseriscono nell'ambito della convenzione stipulata dal Dipartimento di Architettura di Napoli della Federico II con la Regione Campania per gli studi a supporto del Piano di Ricostruzione dell'isola d'Ischia (PdRi), che interessa i territori dei Comuni di Casamicciola Terme, Forio e Lacco Ameno colpiti dal sisma del 21 agosto 2017. Responsabile scientifico Prof. Michelangelo Russo.

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Enhancing to re-integrate: the regeneration of Castellammare di Stabia's historical and cultural heritage for the development of port-city dialogue

Benedetta Ettorre, Gaia Daldanise, Massimo Clemente, Eleonora Giovane di Girasole

Abstract

The relationship between ports and cities has never been something fixed, but rather a constantly evolving process shaped by developments in industrial processes and the maritime transport sector. Ports and cities grow at different speeds: the former at a faster pace, the latter relatively more slowly.

This phenomenon is most evident in the areas of interaction between port and city, where the needs of port cluster stakeholders and urban actors tend to diverge. This calls for a reorganization of the relationship between port and urban functions, through the planning and design of new spaces and services that simultaneously enhance port performance and urban development, while also promoting the historical and cultural heritage.

Based on this, the study proposes a methodology to support Port System Authorities in strategic planning, through the recovery of architectural heritage and spaces within port-city interface areas. The research, applied to the port city of Castellammare di Stabia (NA), has shown how this approach can help transform port-city interface areas into shared spaces, facilitating a shift from the juxtaposition of spaces and areas to their integration.

The goal is to provide urban and port planners with innovative tools for knowledge, analysis, and decision-making support, capable of guiding the evaluation and planning of interventions with a view to sustainability and integrated development.

KEYWORDS:

Port-city, Port-city interaction areas, Cultural and historical heritage, Sustainable development

Valorizzare per re-integrare: la rigenerazione del patrimonio storico-culturale di Castellammare di Stabia per il potenziamento del dialogo tra porto e città

Il rapporto tra porti e città non è mai stato qualcosa di fisso, ma si configura come un processo in costante evoluzione che si modella con gli sviluppi dei processi industriali e del settore dei trasporti marittimi. Porti e città crescono a velocità diverse: più accelerata la prima, relativamente più lenta la seconda.

Il fenomeno si percepisce maggiormente nelle aree di interazione tra porto e città, dove le esigenze degli attori dei cluster portuali e cittadini tendono a divergere. Ciò richiede una riorganizzazione delle relazioni tra funzioni portuali e urbane, attraverso la pianificazione e la progettazione di nuovi spazi e servizi che migliorino le prestazioni del porto e al contempo lo sviluppo della città, valorizzandone anche il patrimonio storico-culturale.

Partendo da ciò, lo studio propone una metodologia per supportare le Autorità di Sistema Portuale nella pianificazione strategica, attraverso il recupero del patrimonio architettonico e degli spazi delle aree di interazione porto-città. La ricerca, applicata alla città-porto di Castellammare di Stabia (NA), ha mostrato come questo approccio può aiutare a trasformare le aree di interazione in spazi comuni, favorendo il passaggio dalla giustapposizione di spazi e aree alla loro integrazione.

Il fine è quello di dare ai pianificatori urbani e portuali strumenti innovativi di conoscenza, analisi e supporto alle decisioni, capaci di guidare la valutazione e la pianificazione degli interventi in un'ottica di sostenibilità e sviluppo integrato.

PAROLE CHIAVE:

Porto-città, Aree di interazione porto-città, Patrimonio storico-culturale, Sviluppo sostenibile

Enhancing to re-integrate: the regeneration of Castellammare di Stabia's historical and cultural heritage for the development of port-city dialogue

Benedetta Ettore, Gaia Daldanise, Massimo Clemente, Eleonora Giovane di Girasole

1. Introduzione

I porti costituiscono da sempre nuclei di collegamento tra città di mare, centri regionali per i loro hinterland, filtri e ingranditori culturali, economici e sociali (Carpenter & Lozano, 2020). Come nodi sospesi tra dimensione locale e globale e come condensatori di contaminazioni etno-antropologiche, possiedono un'eredità storica notevole messa costantemente a rischio dalle circostanze mutevoli che li caratterizzano.

Come illustra B. Hoyle all'interno del suo studio "Port-City Evolution Model" (1989), fino al XIX secolo città e porto costituivano un organismo unitario il cui waterfront rappresentava il cuore delle attività marittime e degli organi decisionali. Successivamente, il rapido sviluppo commerciale e industriale del trasporto marittimo ha portato ad una metamorfosi sostanziale e ad una conseguente lacerazione dei legami esistenti tra i due ambiti. L'inarrestabile attività dei container e delle merci (Hein & Van Mil, 2019) ha condotto gradualmente alla nascita di aree di sviluppo separate dai porti antichi e al progressivo abbandono degli spazi e degli edifici precedentemente utilizzati (Alemany Llovera, 2010; Andrade et al., 2021). La dismissione dei siti industriali nelle aree di interfaccia tra città e porto ha generato significativi vuoti urbani, dando origine a veri e propri wastescapes lungo le linee di costa delle città portuali (Aliabeve, 2023; Amenta & Attademo, 2023; Vizzarri et al., 2021; Zimring & Corey, 2021). Questi spazi, costituiti da infrastrutture ed edifici abbandonati o sottoutilizzati, rappresentano una sfida e un'opportunità per la trasformazione urbana.

Negli ultimi anni, il dibattito accademico ha evidenziato come la riqualificazione dei waterfront portuali, ossia le aree urbane in prossimità del mare caratterizzate dalla presenza di attività commerciali e industriali, sia diventata una leva strategica per la rigenerazione delle città portuali e la loro integrazione con il tessuto urbano (Balletto et al., 2022; Liu et al., 2023; Üzümcüoğlu & Polay, 2022). Tale trasformazione implica però una ridefinizione delle relazioni porto-città, attivando sfide legate alla coesistenza tra usi produttivi e funzioni urbane, alla resilienza ambientale e alla governance dei processi di trasformazione. In questo contesto, la salvaguardia degli elementi architettonici e morfologici del patrimonio culturale portuale, così come la gestione degli spazi dismessi all'interno delle aree portuali, rappresentano condizioni fondamentali per attivare strategie di riconversione sostenibili e circolari. Nel caso

specifico delle città portuali, il potenziamento della cultura marittima e la rigenerazione dei tessuti urbani rivestono un ruolo cruciale nei processi di sviluppo territoriale, contribuendo significativamente alla costruzione e al mantenimento di un'identità locale e alla valorizzazione delle risorse storiche e sociali.

Studi condotti su alcuni esempi internazionali (Giovane di Girasole & Daldanise, 2021) mostrano come il patrimonio portuale sia ormai ampiamente riconosciuto come una risorsa chiave per definire nuove catene del valore per lo sviluppo locale, ancor di più se il riutilizzo degli stessi viene interpretato secondo la chiave dell'innovazione. In questo contesto, gli elementi culturali, sociali e ambientali sono considerati motori di uno sviluppo urbano sostenibile e inclusivo. Attraverso, infatti, l'integrazione di attività proprie del settore culturale e creativo e di nuove economie legate alla cultura marittima, le aree di interazione porto-città diventano plateau su cui innestare nuove relazioni e funzioni di connessione con il contesto urbano e la comunità, riattivando spazi ed edifici che possono assumere il ruolo di "cerniera" con il territorio (Giovane di Girasole, 2012; Montaresi, 2025).

Sulla riorganizzazione funzionale delle aree in questione sono diversi gli enti che giocano un ruolo decisivo (Regione, Comuni, Autorità di Sistema Portuale, ecc.) e diversi sono gli attori che vi interagiscono, tra cui compagnie di navigazione, spedizionieri, lavoratori del settore terziario, operatori logistici, centri di ricerca, università, società di trasporto, ecc. (Lam & Yap, 2019). Da questa moltitudine di attori e rapporti derivano conflitti in termini ambientali, spaziali e sociali (Clemente & Pavia, 2021) che andrebbero affrontati e gestiti attraverso modelli di governance collaborativa (Clemente & Giovane di Girasole, 2015) capaci di superare la frammentazione decisionale che caratterizza le aree di interazione porto-città. Di fronte a questi fattori tanto fisici quanto governativi, la dialettica tra spazio urbano e spazio portuale si intensifica, rivelando una tensione intrinseca tra l'uso del territorio per fini residenziali, commerciali e ricreativi e l'esigenza di garantire l'efficienza operativa delle attività portuali. In questo, il compito di disciplinare l'assetto del territorio e di migliorare la vivibilità delle aree spetta alla pianificazione urbana, mentre la pianificazione portuale è chiamata ad affrontare sfide multidimensionali legate anche alla logistica, alla competitività economica e alla gestione delle rotte commerciali.

Questa tensione è riflessa e, in parte, affrontata anche nel quadro normativo italiano, che ha visto un'evoluzione significativa negli ultimi anni. Nel 2016 l'approvazione del "Decreto di riorganizzazione dei Porti" (DL 4 agosto 2016, n. 169) attuava un complessivo disegno di riordino, semplificazione e razionalizzazione delle autorità portuali e della governance del sistema portuale lasciando però alle AdSP un ruolo centrale nell'adozione del Piano Regolatore Portuale (PRP) e nella pianificazione delle aree di interazione porto-città. Il DL del 2016 prevedeva in particolare che il Piano venisse adottato dal Comitato di gestione, previa intesa con i comuni territorialmente interessati che si esprimevano solo in ordine alla pianificazione delle aree destinate a funzioni di interazione porto-città. L'aggiornamento introdotto dal DL 121/2021 rovescia completamente la situazione, affidando la pianificazione delle aree di inte-

razione porto-città alla competenza del comune e della regione, che vi provvedono previa acquisizione del parere dell'Autorità di Sistema Portuale. La modifica, così come descritta, mira a promuovere una maggiore integrazione tra le esigenze portuali e lo sviluppo urbano, favorendo una pianificazione più coordinata e partecipata tra le diverse istituzioni coinvolte.

Tuttavia, in alcuni contesti, pianificazione urbana e pianificazione portuale faticano ancora a trovare punti di convergenza e il risultato che deriva dal dialogo tra esse appare come una giustapposizione, un accostamento orizzontale, più che una sovrapposizione reale. Il primo passo per superare questo ostacolo e attivare processi virtuosi di re-integrazione tra città e porto potrebbe essere l'indagine puntuale di ciò che costituisce il caotico substrato delle aree di interazione, in un'ottica che conduca ad una conoscenza e lettura nuova degli spazi e, quindi, alla pianificazione di nuovi scenari per la loro riutilizzazione. Tale processo non si esaurisce nel mero riconoscimento di edifici e spazi, ma comporta la necessità di valutare il loro potenziale in funzione delle scelte di valorizzazione, rigenerazione e "risemantizzazione" (Maspoli, 2016). In questo modo tali aree ed edifici possono diventare terreni comuni, prodotti dall'interazione permanente tra terra e mare, tra luogo e flussi (Carta, 2021).

A partire da queste premesse, emerge una questione centrale che guida la ricerca: su quali aspetti chiave dovrebbe contare un modello di governance collaborativa che punti a supportare la pianificazione e la rigenerazione delle aree di interazione porto-città e ad integrare efficacemente le esigenze del sistema portuale con lo sviluppo urbano sostenibile?

La ricerca ha sviluppato un approccio metodologico che mira ad analizzare, valutare e pianificare la trasformazione innovativa, culturale e sostenibile di edifici storico-architettonici, di archeologia industriale e spazi urbani simbolici all'interno delle aree di interazione porto-città, operando la loro mappatura, analizzando la loro consistenza, ipotizzando e valutando strategie di recupero. L'approccio, costruito e tradotto in ambiente GIS, punta a favorire l'attivazione del potenziale di tali elementi, offrendo una base di conoscenza utile a supportare e promuovere lo sviluppo sostenibile nelle città-porto, valorizzando il patrimonio come leva di innovazione culturale e inclusione sociale e come possibile punto di attivazione per processi di co-pianificazione.

La ricerca prende avvio da un'analisi teorica e operativa delle pratiche di pianificazione e rigenerazione delle aree di interazione porto-città, con il fine di definire una metodologia applicabile in contesti reali. Tale metodologia è stata elaborata nell'ambito della Convenzione "Valorizzazione nei porti di Napoli, Salerno e Castellammare di Stabia: patrimonio storico-architettonico, funzioni portuali e aree di interazione porto-città", stipulata tra il CNR IRISS e l'Autorità di Sistema Portuale del Mar Tirreno Centrale.

L'articolazione del paper si sviluppa come segue: il §2 descrive l'approccio metodologico proposto, con particolare attenzione agli strumenti utilizzati e agli obiettivi perseguiti; il §3 descrive lo stato dell'arte della normativa italiana nell'ambito delle

città portuali e delle aree di interazione porto-città, il §4 presenta l'applicazione della metodologia al caso studio di Castellammare di Stabia; il §5 è dedicato alla discussione dei risultati emersi, mettendo in luce criticità, potenzialità e traiettorie future; infine, il §6 raccoglie le conclusioni, offrendo una sintesi dei principali contributi e delle implicazioni per la pianificazione e la governance delle città portuali.

2. Il censimento per la valorizzazione di edifici e spazi del patrimonio porto-città come possibile strumento per l'attivazione di processi di co-pianificazione

La letteratura e le pratiche recenti evidenziano come negli ultimi anni la pianificazione e la progettazione urbana europea stia considerando in misura sempre maggiore l'utilizzo di strumenti innovativi culture-led per ridefinire i confini urbani pubblici e privati tra porto e città (Abouelmagd & Elrawy, 2022; Chung & Lee, 2021; Daldanise & Clemente, 2022). Questo approccio mira a realizzare spazi collettivi che favoriscano cultura, tecnologia, creatività e collaborazione, contribuendo a ridurre le disparità sociali e a generare nuove opportunità economiche. Per raggiungere tali obiettivi, è fondamentale un approccio integrato che coinvolga autorità portuali, amministrazioni locali e comunità in un processo sinergico. Solo così i porti possono diventare catalizzatori di sviluppo sostenibile e innovazione urbana, promuovendo una maggiore integrazione sociale e ambientale. La ricerca, sulle premesse riportate nel paragrafo introduttivo (§1), ha sviluppato un approccio metodologico per analizzare, valutare e pianificare trasformazioni sostenibili di edifici storico-architettonici, archeologie industriali e spazi urbani simbolici nelle aree porto-città (Ettorre et al., 2023).

La metodologia, illustrata in Fig.1, mira a fornire un supporto concreto ai processi decisionali, uno strumento operativo utile a favorire la possibile attivazione di processi di co-pianificazione all'interno delle aree di interazione porto-città. Lo strumento è concepito non solo come supporto tecnico per la classificazione e la valutazione del patrimonio edilizio porto-città, ma anche come piattaforma di conoscenza condivisa, utile ad attivare un dialogo strutturato tra i diversi attori coinvolti nel processo decisionale. In quest'ottica, il censimento digitale risultante dall'applicazione della metodologia non si configura come un mero inventario, ma come un dispositivo di mediazione, capace di restituire in forma accessibile e comparabile informazioni utili per l'avvio di percorsi di co-pianificazione tra Autorità di Sistema Portuale, enti locali e comunità. La sua struttura flessibile permette inoltre di aggiornare e integrare dati nel tempo, favorendo un processo decisionale dinamico e trasparente.

L'integrazione di strumenti di analisi come Q-GIS, Excel e Looker Studio, ha permesso di costruire uno strumento potenzialmente in grado di facilitare la valutazione dello stato di conservazione, dei possibili interventi di riqualificazione e delle funzioni future degli edifici e degli spazi situati all'interno delle aree di interazione.

Fig. 1 - Approccio metodologico per la costruzione dello strumento (Elaborazione a cura degli autori)



L'approccio metodologico si divide in tre step principali:

Step 1. Analisi delle politiche e delle pratiche, che prevede la revisione della letteratura scientifica e del quadro normativo portuale prevalente dell'ambito selezionato, l'analisi desk dei principali documenti politici e lo studio delle best practices, sia a livello nazionale che internazionale, per identificare i diversi ambiti di analisi.

Step 2. Costruzione di un dataset sul patrimonio storico e architettonico del porto. Questa fase prevede la selezione e lo studio di edifici e spazi di interesse, allo scopo di valutarne il potenziale trasformativo in relazione ai processi di recupero e valorizzazione. La costruzione del dataset prevede che edifici e spazi vengano categorizzati a seconda della rilevanza storico-architettonica e della loro collocazione in aree cerniera tra porto e città.

2.1 Analisi dello stato di fatto, che prevede l'analisi degli edifici e gli spazi selezionati che rilevi:

- destinazione, stato d'uso (in uso, in disuso, dismesso, in abbandono)
- stato di conservazione (buono, medio, cattivo);
- periodo di realizzazione;
- caratteristiche morfologico-costruttive e dati dimensionali;
- tipo di intervento ammissibile da normativa;
- tipologia di area di interazione porto-città;
- tipologia di edificio o spazio: edifici di interesse storico/architettonico, archeologie industriali, edifici cerniera porto-città, landmarks urbani, spazi cerniera porto-città, spazi cerniera con il mare.

2.2 Analisi dello stato di conservazione e individuazione delle tipologie di intervento necessarie: risanamento conservativo, adeguamento sismico ed energetico, ristrutturazione edilizia, manutenzione straordinaria.

2.3 Definizione dei costi parametrici in funzione della tipologia di intervento manutentivo.

2.4 Definizione delle funzioni potenziali a partire dai quadri di valutazione su cultura, creatività e sostenibilità della Commissione Europea (Montalto et al., 2017, 2019),

che prevede l'individuazione di dimensioni essenziali per la rigenerazione delle aree di interazione porto-città, utili per delineare le prospettive di trasformazione di ciascun edificio e spazio. Per ciascuna dimensione si prevede di definire una o più funzioni potenziali (Fig. 2).

In particolare, sono state identificate le seguenti dimensioni e funzioni potenziali:

- “Porto e cultura marittima”, intesa come costruzione di attrazioni o landmarks; presenza di musei e gallerie d'arte, cinema, teatri. In questa dimensione, la funzione potenziale scelta è: Polo di arte, storia e archeologia;
- “Porto, innovazione e creatività”, prevede lo sviluppo di attività o servizi innovativi nei campi di: arte, cultura e dello spettacolo; design e architettura; industria 4.0, start Up, ricerca ed economia marittima. Funzioni potenziali: Industria 4.0 e incubatore di start up, Imprese culturali e creative;
- “Porto, educazione e capitale umano”, prevede l'istituzione di corsi di laurea, master, workshop legati al fare impresa e all'economia marittima, training. Rientra in questa dimensione anche l'implementazione di misure, accordi e partenariati per una pianificazione condivisa porto-città. Funzione potenziale: Università e Centri di ricerca in campo marittimo e dello shipping;
- “Porto, conoscenza e diffusione”, riguarda la capacità del porto di far conoscere le proprie attività. Funzione potenziale: Spazi/edifici di comunità per iniziative porto-città;
- “Porto in transizione”, segnala gli edifici e spazi che per tipologia e tecniche costruttive possono fornire un contributo alla transizione energetica attraverso retrofitting e/o produzione di energia pulita. Funzione potenziale: Retrofitting, produzione di energia pulita e/o mitigazione delle isole di calore.

Step 3. Elaborazione dei dati e strumenti di supporto alle decisioni. Il terzo step vuole applicare le Tecnologie dell'Informazione e della Comunicazione (ICT) alla pianificazione sostenibile delle aree di interazione porto-città. In particolare, lo step prevede la costruzione di un database di informazioni operative documentate all'interno di piattaforme facilmente fruibili da tecnici e membri della comunità. L'elaborazione dei dati avviene attraverso un sistema GIS (Geographic Information

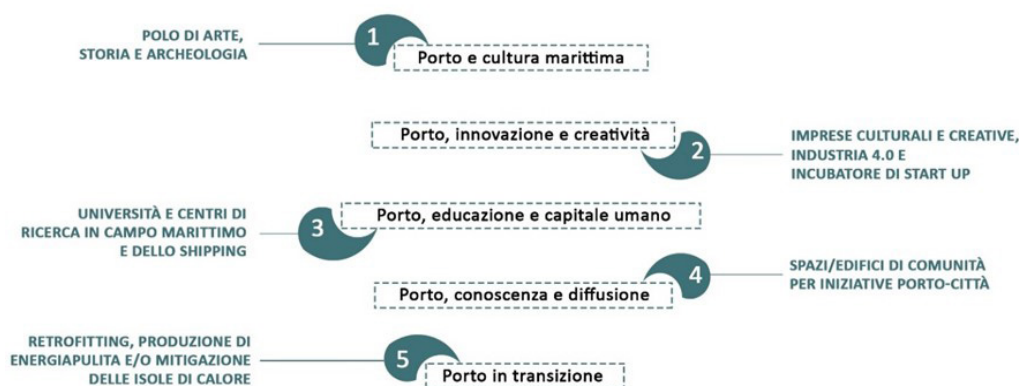


Fig. 2 - Dimensioni di rigenerazione e funzioni potenziali (Elaborazione a cura degli autori)

System), che consente di analizzare e visualizzare in modo interattivo le caratteristiche e le funzioni potenziali degli edifici e degli spazi portuali. Il database GIS integra dati cartografici, architettonici e funzionali, organizzati in layer tematici (es. stato di conservazione, tipologia architettonica, funzioni potenziali, tipologia di area di interazione). Ogni edificio o spazio censito è georeferenziato e associato a una scheda informativa strutturata, contenente dati qualitativi e quantitativi. Il database consente l'esplorazione interattiva delle informazioni, facilitando l'analisi comparativa tra edifici e aree, la valutazione degli scenari di trasformazione e l'identificazione di priorità strategiche per la rigenerazione. Attraverso strumenti di filtro, query e rappresentazione tematica, il GIS si configura come uno strumento tecnico al servizio del dialogo istituzionale e della partecipazione, contribuendo a rendere più accessibili e condivisibili i contenuti progettuali con i vari stakeholder.

3. La pianificazione delle aree di interazione porto-città in Italia tra normativa, governance e sfide territoriali

La letteratura sulla pianificazione delle aree portuali da circa un ventennio si è concentrata sul complesso rapporto che esiste tra città e porto (Hein, 2019; Konwitz, 2020; Pavia, 2015, 2021), spinta dalle numerose esperienze europee di evoluzione delle aree portuali e dalle istanze legate ai progetti di riqualificazione dei waterfront. Tuttavia, il notevole corpus letterario prodotto da geografi, economisti e urbanisti non riesce ancora a trovare una risposta effettiva e soddisfacente nel campo della pianificazione e della normativa.

Nel panorama normativo italiano la Riforma della Legge n.84/94, approvata con il decreto legislativo 4 agosto 2016 introduce il Piano Regolatore di Sistema Portuale (PRdSP), chiamato a contemperare in un unico documento una pianificazione sovra territoriale in grado di connettere le specificità di ogni nodo appartenente al sistema portuale. Al nuovo PRdSP viene associato un Documento di Pianificazione Strategica di Sistema (DPSS), chiamato a pianificare gli obiettivi strategici del primo in coerenza con il Piano Generale dei Trasporti e della Logistica, con gli orientamenti europei della portualità e con il Piano Strategico Nazionale della Portualità e della Logistica. Il ruolo principale del DPSS è quello di definire preliminarmente gli obiettivi integrati (tecnici ed ambientali) dei sistemi portuali, in modo da anticipare i nodi critici della fattibilità amministrativa, tecnica, urbanistica ed ambientale, per pervenire a condivise politiche del territorio e ad una procedura di approvazione del piano più snella, in grado di coordinare la valutazione tecnica ed ambientale del piano stesso. Il DPSS assume una portata strategica notevole, essendo chiamato a definire la visione generale dei nodi del sistema su cui costruire la massima sinergia con il territorio. Al documento vengono affidate diverse funzioni, tra cui quella di individuare e perimetrare le aree destinate a funzioni strettamente portuali e retroportuali (il sotto-ambito porto operativo) e quella di individuare le aree di interazione porto-città e territorio.

Come anticipato nel paragrafo introduttivo (§1), la disciplina delle aree di interazione porto-città ha subito un'evoluzione notevole con l'aggiornamento restituito dal DL 121/2021, che ha modificato in maniera radicale l'attribuzione delle competenze legate alla pianificazione delle suddette aree. Prima dell'intervento, il Piano Regolatore Portuale (PRP) veniva adottato dal Comitato di Gestione dell'Autorità di Sistema Portuale (AdSP), con l'obbligo di intesa con i comuni esclusivamente sulle aree di interazione porto-città. Con la modifica introdotta dal DL 121/2021, la competenza sulla pianificazione delle aree di interazione porto-città è stata trasferita ai comuni e alle regioni, che devono provvedere alla pianificazione previa acquisizione del parere dell'AdSP. Al contrario di quanto accadeva prima della riforma, dunque, sono i comuni a doversi occupare della pianificazione delle aree di interazione. Se questo fattore in un primo momento appare come un'innovazione potenzialmente in grado di snellire la burocrazia e di velocizzare i processi di rigenerazione delle aree di interfaccia tra porto e città, riducendo i tempi di approvazione dei piani e garantendo una maggiore autonomia alle amministrazioni locali, ad un'analisi più attenta emerge un bug che in determinati contesti territoriali può assumere dimensioni macroscopiche: nonostante la separazione delle competenze, il processo resta e deve restare fortemente ancorato ad un principio di condivisione delle scelte. All'AdSP spetta l'individuazione e la perimetrazione delle aree, agli enti locali la loro pianificazione ma la Norma non indica gli strumenti e le modalità per individuarle, né quali siano i caratteri che inducano a riconoscerle (D'Amora et al., 2020). In contesti territoriali complessi, in cui il dialogo tra enti viene reso difficile da sedimentati comportamenti conflittuali, questa mancanza di linee guida può portare a un'inefficace gestione delle aree di interazione (Akhavan, 2017; Cerreta et al., 2021; Clemente, 2014). In risposta a queste criticità, si è diffuso il concetto di co-pianificazione, affermatosi come un processo potenzialmente in grado di affrontare la frammentazione e le tensioni che spesso emergono in queste aree. Come osservato da Hein (2016), un approccio collaborativo risulta essenziale per armonizzare le esigenze urbane con quelle portuali e per garantire uno sviluppo bilanciato capace di favorire tanto la competitività del porto quanto la qualità della vita urbana.

In Italia sono numerosi gli accordi di collaborazione che di anno in anno vengono siglati tra AdSP e comuni, per individuare progettualità, attività e nuovi insediamenti in grado di contemperare al meglio gli interessi legati allo sviluppo dei traffici portuali con le esigenze manifestate dalla comunità. L'obiettivo di queste collaborazioni istituzionali è porre le basi per una nuova crescita socioeconomica delle città portuali, puntando alla loro integrazione dal punto di vista spaziale, funzionale e sociale. Parallelamente, per facilitare il dialogo tra i diversi stakeholder coinvolti, si stanno sperimentando forme di collaborazione pubblico-privata sempre più efficaci, con l'obiettivo di superare le difficoltà delle amministrazioni pubbliche nella realizzazione delle grandi opere e di sfruttare la capacità degli operatori privati di investire nello sviluppo urbano.

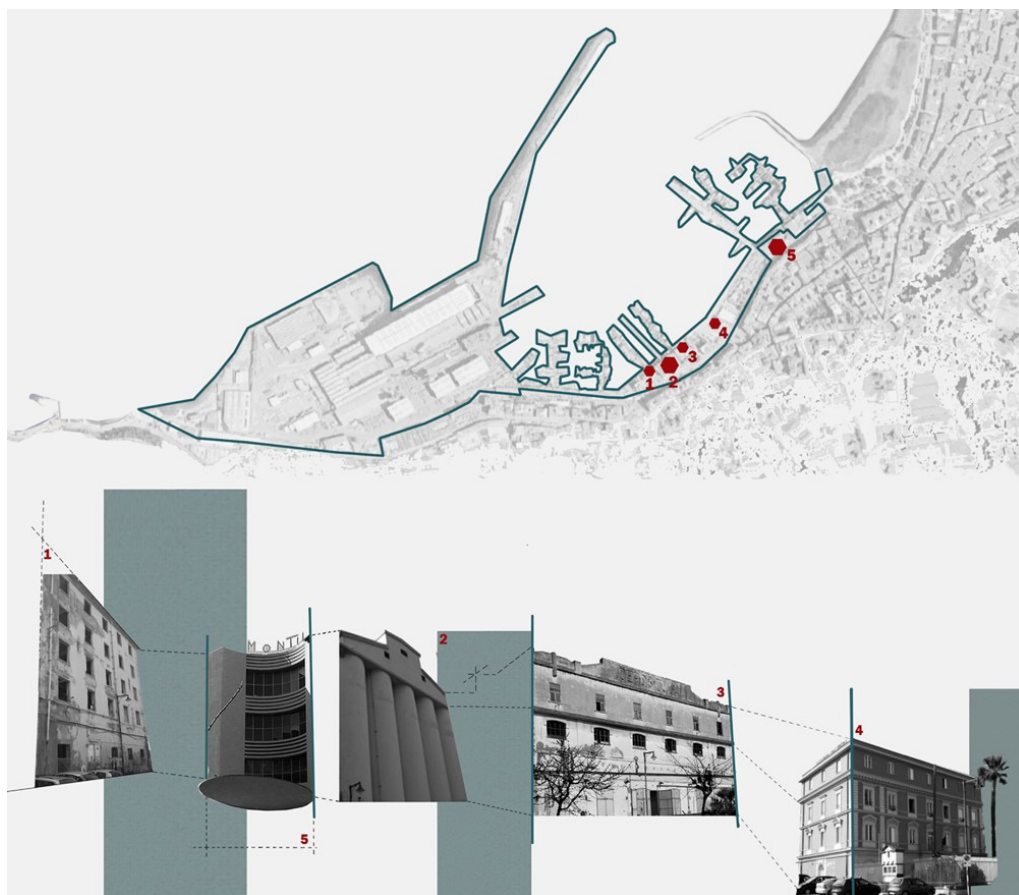
In particolare, alcune realtà portuali come quella di La Spezia, hanno avviato processi

Fig. 3 - Il porto di Castellammare di Stabia (Elaborazione a cura di Benedetta Ettore)

di co-pianificazione. La Giunta Regionale della Liguria ha approvato uno schema di Accordo tra Regione, Comune e AdSP per il nuovo waterfront cittadino. In questo caso l'accordo, di cui si parlava già nei primi anni 2000 ma sottoscritto solo nel 2023, avrà durata pari al tempo necessario per gli interventi in esso previsti, che comprendono anche la programmazione, la progettazione e la realizzazione delle opere di grande infrastrutturazione necessarie all'implementazione della funzione di servizio passeggeri.

Alla luce di queste trasformazioni normative e delle sfide emergenti, risulta necessario dotare i pianificatori urbani e portuali di strumenti innovativi di conoscenza, analisi e supporto alle decisioni, capaci di guidare la valutazione e la pianificazione degli interventi in un'ottica di sostenibilità e sviluppo integrato. Questo approccio consentirebbe di evitare che città e porti si muovano con tempistiche e direzioni divergenti, garantendo una crescita armoniosa e resiliente dell'intero sistema urbano-portuale.

Il paper approfondisce il caso di Castellammare di Stabia (Fig.3), in Campania, non solo perché rappresenta un contesto emblematico nell'ambito dell'Autorità di Sistema Portuale del Mar Tirreno Centrale, ma anche perché attualmente è interessato dalla fase di approvazione sia del Piano Urbanistico Comunale (PUC), sia del Piano Regolatore Portuale (PRP). Il caso, dunque, offre un'occasione concreta per testare l'approccio metodologico sviluppato nell'ambito della Convenzione tra CNR e AdSP volto alla valorizzazione integrata delle aree di interazione porto-città.



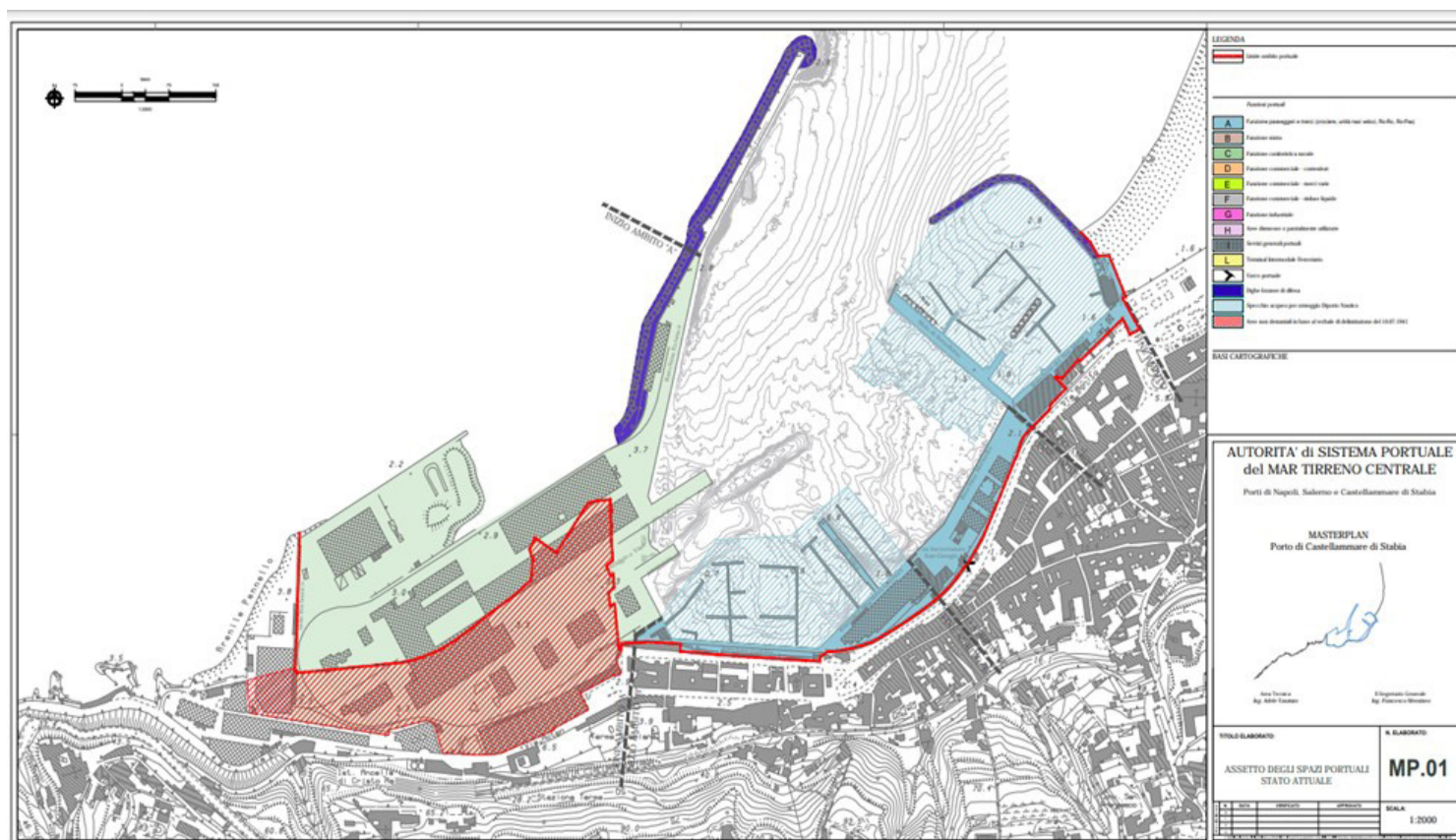
4. Castellammare città-porto: prospettive di sviluppo e potenzialità di rigenerazione

Il Porto di Castellammare di Stabia si trova nella parte meridionale del Golfo di Napoli, in prossimità dell'inizio della Penisola Sorrentina. Porto di rilevanza economica locale, incentra la sua attività principalmente nel settore della nautica da diporto e in quello della cantieristica, grazie soprattutto alla presenza dello storico stabilimento "Fincantieri". Dal 2006 il Porto di Castellammare (Fig.4). è incluso nella circoscrizione demaniale marittima dell'AdSP del Mar Tirreno Centrale insieme ai porti di Napoli e Salerno.

Da sempre l'attività industriale rappresenta un comparto di grande valore economico e occupazionale per la città campana, tanto da portare alcuni studiosi a definire Castellammare come "la città-cantiere" (Bottalico, 2015). La natura industriale della città nasce nel 1783, anno in cui i Borbone decisero di localizzarvi la sede dei cantieri navali. Da quel momento, la città ha legato il proprio destino a questa attività che si sta orientando, in tempi recenti e per motivi legati in prevalenza all'esiguità degli spazi disponibili, verso la produzione di parti di navi militari e nella costruzione di traghetti (AdSP Mar Tirreno Centrale, 2024; Colucci, 2016).

Negli ultimi anni il settore legato alla nautica da diporto, in particolare ai mega e giga yacht, si è sviluppato in maniera esponenziale grazie alla vicinanza del porto di Castellammare alla costiera sorrentina e ai siti archeologici di Pompei ed Ercolano, che ogni anno

Fig. 4 - Assetto degli spazi portuali. Stato attuale. (Fonte: AdSP Mar Tirreno Centrale, 2021)



attirano flussi ingenti di turisti.

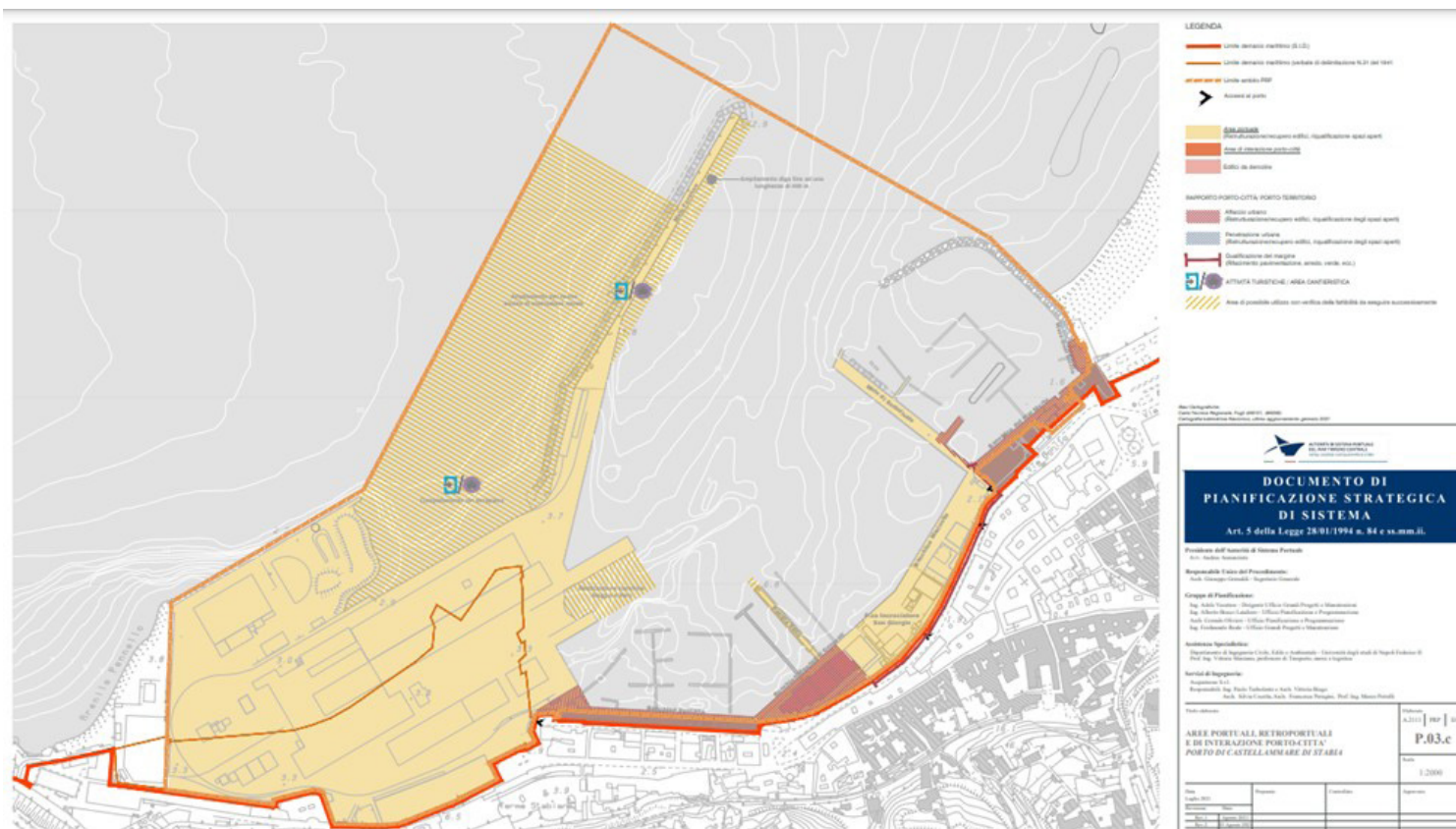
Nonostante la grande importanza che il settore portuale riveste per la città, il Piano Regolatore Portuale vigente risale al 1962, mentre il suo aggiornamento, che rappresenta un'opportunità cruciale per la riqualificazione del porto e del suo rapporto con la città, è in fase di approvazione. Il nuovo piano punta a ridefinire l'assetto delle infrastrutture esistenti e a favorire una maggiore integrazione con il tessuto urbano, tenendo conto delle esigenze sia della nautica da diporto, sia della cantieristica. Tuttavia, il processo di approvazione si sta rivelando piuttosto complesso, data la necessità di superare criticità notevoli legate ai finanziamenti e alle tempistiche di attuazione.

Il Piano Urbanistico Comunale adottato con Delibera di giunta n. 6 del 9 febbraio 2022 e in fase di approvazione, invece, prevede che tutta la fascia del waterfront stabiese sia inclusa all'interno della Zona Territoriale Omogenea F "attrezzature ed impianti di interesse generale" con indicazioni generiche sulla destinazione d'uso degli elementi specifici dell'area: piazza, aree per attrezzature destinate a servizi comuni, parcheggi, ecc. Nella Carta delle Risorse Storiche – Tavola Sud (Tav. QC.09.s) del Piano Urbanistico Comunale di Castellammare di Stabia, sono evidenziate le risorse tutelate ai sensi del d.lgs. 42/2004, dove si può identificare la presenza all'interno dell'area portuale del bene culturale di interesse dichiarato (art. 10) n. 20 – Ex deposito Sali alla via Bonito, da riqualificare e mettere a sistema rispetto a tutti gli altri elementi di pregio presenti sul territorio.

All'interno del Rapporto Ambientale Preliminare¹ del PRP redatto nel luglio 2024 dall'AdSP, si legge che, in ragione delle caratteristiche della struttura portuale e del pregio della città e del territorio che gli si sviluppano intorno, il porto può ambire ad assumere il ruolo di «porta di accesso alla città e al territorio, accogliendo attività turistiche e culturali». All'interno del documento si legge, inoltre che «il porto in virtù della vicinanza al centro storico di Castellammare, è innegabilmente vocato a trasformarsi, almeno in parte, in una «piazza sull'acqua». Ciononostante, nei documenti programmatici dell'AdSP nessun intervento specifico viene previsto per la riqualificazione degli edifici e degli spazi in disuso o sottoutilizzati situati tra porto e città, sebbene questi potrebbero rivestire un ruolo chiave se messi in relazione con i crescenti flussi turistici che continuano ad investire l'area. Ad essere chiarite sono solo le macrocategorie di azioni previste per ciascun ambito (Fig. 5). In particolare, nel DPSS si legge quanto segue: «Nel porto di Castellammare di Stabia, infine, occorrerà studiare, in sede di Piano Regolatore Portuale e/o di progetto di fattibilità dedicato, il recupero del waterfront nell'area su cui sorgono l'edificio dei Silos granari e, a seguire, verso ovest, un magazzino ed una struttura ricettiva dismessa e in cattivo stato di conservazione» (p. 172)².

In linea con quanto indicato dal DPSS, la proposta di PRP persegue diversi obiettivi di sviluppo, di cui si evidenzia il terzo, «Valorizzazione del rapporto porto – città», secondo cui per la realizzazione di un nuovo affaccio a mare in corrispondenza della città storica occorre:

- individuare gli spazi aperti esistenti che possono già essere destinati alla fruizione turistica, ricreativa e al tempo libero, ossia a piazze e slarghi con affaccio sul bacino portuale, e, eventualmente, incrementarli demolendo le costruzioni non più utilizzate e non riutilizzabili;



- definire gli edifici da recuperare a supporto alla funzione portuale turistica e da diporto e ad usi urbani con questi compatibili.

A partire dall'analisi del materiale grafico e documentale fornito dall'Ufficio Pianificazione e Programmazione e dall'Ufficio Demanio dell'AdSP, nonché del recente DPSS, la ricerca ha analizzato il Porto di Castellammare concentrandosi sul suo patrimonio storico e architettonico, selezionando e analizzando un totale di dieci elementi tra edifici e spazi, caratterizzati da una rilevanza storico-architettonica e per la loro collocazione in aree cerniera con la città. Per ogni edificio e spazio è stata effettuata una valutazione completa delle condizioni attuali e dello stato di utilizzo (in uso, parzialmente in uso, in disuso, abbandonato), comprendente valutazioni in loco e una revisione esaustiva della documentazione fornita dall'AdSP.

A dare forza alla proposta è il fatto che dal 2023 la città di Castellammare ricade all'interno della buffer zone del sito UNESCO 829 "Aree Archeologiche di Pompei, Ercolano e Torre Annunziata". In questo contesto, allo stato attuale si sta procedendo alla redazione e all'aggiornamento del piano di gestione del Sito, orientato a una governance partecipata mediante intese con enti territoriali, partnership con soggetti privati, associazioni, fondazioni e imprese, coinvolgendo attivamente i cittadini che sono chiamati anch'essi alla protezione e alla valorizzazione del patrimonio di questo luogo. Il Porto di Castellammare assume un ruolo chiave nell'ambito del progetto, in quanto al suo interno ricade l'unica stazione marittima dedicata al trasporto passeggeri ricompresa nella buffer zone e costantemente attiva, in cui fanno scalo traghetti che raggiungono le isole del Golfo.

Fig. 5 - Aree portuali, retroportuali e di interazione porto-città. Porto di Castellammare di Stabia (Fonte: AdSP Mar Tirreno Centrale, 2021)

Fig. 6 – Tipologia di edifici e spazi del Porto di Castellammare di Stabia (Elaborazione a cura di Benedetta Ettore)



A valle delle analisi effettuate, la metodologia elaborata (§2) è stata calata sul contesto specifico di Castellammare di Stabia. Lo studio ha facilitato la categorizzazione degli edifici e degli spazi (Fig.6) in base alla loro posizione geografica e agli attributi primari. Di dieci edifici selezionati e censiti, otto ricadono all'interno del perimetro dell'AdSP mentre uno, il Cinema Montil, si trova immediatamente al di fuori dello stesso. Proprio quest'edificio, parzialmente in uso e con una funzione socioculturale importante per la città, interrompe la continuità del limite esistente tra porto e città configurandosi come una vera e propria cerniera tra le due parti. Soltanto le tre palazzine in consegna alla Capitaneria di porto, all'AdSP e all'Agenzie delle Dogane hanno una configurazione simile ma le funzioni che vi si svolgono sono tali da non convogliare ingenti flussi cittadini all'interno dell'area portuale e da escluderle dalla categoria dell'affaccio urbano. Dallo studio della morfologia urbana di questo ambito cittadino si è arrivati alla conclusione che tutti gli stabili censiti possono essere considerati come edifici di penetrazione urbana (come indicato nel DPSS), e che quindi l'area di interazione porto-città si presenta malleabile e adatta ad assorbire nuovi progetti volti a ricostruire una visione strategica urbano-marittima coerente e condivisa.

In questa prospettiva, le dimensioni essenziali per la rigenerazione delle aree di interazione porto-città individuate in precedenza (§1) sono state applicate sul caso studio di Castellammare di Stabia proponendo per ciascuno degli edifici e spazi della città-porto una funzione potenziale. Le ipotesi di funzioni riguardano tutti gli edifici fatta eccezione per quelli in cui sono collocate alcune funzioni strettamente correlate alla gestione del porto come sede AdSP, Sanità Marittima, ecc. In particolare:

1) Porto e cultura marittima. Questa funzione è stata proposta per l'ex Magazzino del sale e il Cinema teatro Montil.

2) Porto, innovazione e creatività. La funzione è stata assegnata ai due Magazzini del sale, al Cinema teatro Montil e al Circolo Nautico Stabia Mare Morto.

3) Porto, educazione e capitale umano. Gli edifici adatti ad ospitare tale funzione risultano l'edificio dell'Agenzia delle Dogane, il Cinema teatro Montil e il Circolo Nautico Stabia Mare Morto.

4) Porto, conoscenza e diffusione. Gli edifici scelti per questa funzione sono i due Magazzini del sale, il Manufatto Gruppo Unico Ormeggiatori e il Cinema teatro Montil.

5) Porto in transizione. Tutti gli edifici e gli spazi del porto sono potenzialmente in grado di ospitare questa funzione.

Nella terza fase è stato strutturato il database in formato GIS in cui sono state catalogate tutte le informazioni relative alle caratteristiche chiave e alle funzioni potenziale di ciascun edificio censito (Fig.7).

5. Discussione

Il lavoro ha dimostrato come un censimento strutturato del patrimonio edilizio e spaziale nelle aree di interazione porto-città possa diventare non solo uno strumento tecnico di classificazione, ma anche un possibile dispositivo di mediazione tra i diversi attori coinvolti nella pianificazione urbana e portuale. L'approccio proposto, fondato sull'analisi multidimensionale di edifici e spazi, e sull'uso integrato di strumenti ICT come Q-GIS, Excel e Looker Studio, ha permesso di costruire una piattaforma conoscitiva condivisa, orientata alla co-pianificazione e alla valorizzazione del patrimonio culturale come leva di attivazione di processi di rigenerazione delle aree portuali.

L'esperienza applicata al caso di Castellammare di Stabia ha evidenziato la malleabilità funzionale e urbana che costituisce molte strutture portuali, oggi sottoutilizzate, che potrebbero essere strategicamente ripensate per favorire processi di rigenerazione sostenibile e integrata. Il caso studio ha inoltre messo in luce come alcuni edifici (es. il Cinema Montil) possano agire da cerniere urbane tra il tessuto cittadino e quello portuale, diventando luoghi simbolici per la riconnessione fisica e culturale tra porto e cit-

Fig. 7 – Le funzioni potenziali per gli edifici e gli spazi del Porto di Castellammare di Stabia (Elaborazione a cura di Benedetta Ettore)



tà.

Un aspetto rilevante riguarda la classificazione funzionale potenziale degli edifici, sviluppata secondo le cinque dimensioni individuate: cultura marittima, innovazione e creatività, educazione, diffusione della conoscenza e transizione ecologica. Questa tassonomia, ispirata agli indicatori europei per la valutazione della cultura e della sostenibilità urbana, rappresenta un contributo metodologico innovativo, capace di orientare scenari trasformativi concreti.

Tuttavia, l'applicazione del metodo ha anche evidenziato alcune criticità operative, tra cui:

- la disomogeneità dei dati disponibili, soprattutto per quanto riguarda edifici in disuso o di difficile accesso;
- la necessità di costante aggiornamento della banca dati per garantirne l'efficacia come sistema di supporto decisionale.

Infine, emerge come il censimento digitale possa assumere anche un ruolo abilitante per la partecipazione pubblica, facilitando l'accesso all'informazione e stimolando il coinvolgimento di comunità locali e stakeholders attraverso visualizzazioni interattive e narrazioni territoriali complesse.

Possibili sviluppi futuri potrebbero riguardare il testing dello strumento in contesti portuali differenti per valutarne l'adattabilità; il rafforzamento e l'integrazione di strategie di partecipazione attiva delle comunità locali, anche attraverso piattaforme digitali accessibili e l'integrazione di nuovi dati (es. impronta ecologica, vulnerabilità climatica) per allineare lo strumento alle agende urbane e ambientali europee.

6. Conclusioni

Come evidenziato, nell'attuale dibattito internazionale, la cultura, la creatività e le nuove tecnologie sono priorità strategiche per lo sviluppo sostenibile dei territori, potenzialmente in grado di ridurre le disuguaglianze sociali e incentivare nuove opportunità economiche. Nel contesto italiano, l'effetto simbiotico della valorizzazione del patrimonio culturale potrebbe portare alla definizione di nuove traiettorie di sviluppo urbano sostenibile, in particolare nelle aree di interazione porto-città. Sviluppando una nuova interpretazione e identità degli spazi portuali, è possibile trasformare le aree di interfaccia porto-città in luoghi di sperimentazione culturale e tecnologica per la gestione sostenibile del patrimonio.

Tuttavia, per conseguire simili obiettivi, è necessario attivare modelli di governance che favoriscano la co-pianificazione tra autorità portuali, amministrazioni locali e comunità. La presenza di molteplici attori introduce inevitabilmente conflitti di natura ambientale, spaziale e sociale. Questi conflitti possono essere affrontati solo attraverso una governance inclusiva che incoraggi decisioni condivise e orientate al consenso.

In questo contesto la ricerca ha contribuito a sviluppare un modello operativo per la valorizzazione del patrimonio porto-città, fondato su una metodologia integrata di analisi, classificazione e visualizzazione interattiva del patrimonio costruito. Il censimento digitale, concepito non come semplice inventario ma come strumento strategico per la co-pianificazione, con il fine di permettere una lettura chiara delle potenzialità trasformatrice del territorio. L'a-

nalisi della consistenza e del potenziale trasformativo del patrimonio in un'ottica di recupero e valorizzazione ha permesso di selezionare e individuare gli edifici e gli spazi significativi, l'analisi dello stato di fatto ha permesso di sviluppare ipotesi di interventi e di nuove funzioni potenziali. Il censimento e la catalogazione hanno prodotto un database informativo implementabile, inoltre, la rielaborazione dei dati attraverso il software Q-GIS ha condotto allo sviluppo di un Sistema Informativo Territoriale utile per la messa a sistema delle informazioni relative agli edifici e agli spazi identitari.

Attraverso l'applicazione al caso studio di Castellammare di Stabia, si è riusciti a testare la metodologia che potrebbe essere replicata in altri contesti urbani portuali, soprattutto quelli caratterizzati dalla presenza di un patrimonio dismesso o sottoutilizzato, con potenziale valore culturale, sociale ed economico. Il modello sviluppato è orientato a una pianificazione inclusiva, dinamica e trasparente, coerente con i principi della transizione ecologica e della coesione sociale.

ENDNOTES

1 <https://va.mite.gov.it/it-IT/Oggetti/Documentazione/11317/17030>

2 https://adsptirrenocentrale.it/wp-content/uploads/2021/10/DPSS_RI_Relazione-Illustrativa_Rev3.pdf

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ESG principles and urban regeneration: challenges and opportunities

Antonio Bocca, Lorenzo Massimiano

Abstract

The growing interest in ESG (Environmental, Social, Governance) principles, stimulated by the awareness of climate change and social inequalities, is revolutionising the way cities are designed and managed. In particular, urban regeneration represents a privileged context for the application of these principles, offering the opportunity to rethink urban spaces in a sustainable, equitable and resilient way.

To assess the integration of ESG criteria in urban planning, this contribution adopts an approach that combines a review of scientific literature with the analysis of case studies applying ESG criteria. Subsequently, in relation to European directives and regulations, the compatibility between ESG criteria and existing urban planning instruments was analysed, identifying the opportunities and challenges of their integration.

The contribution proposes a multidisciplinary and integrated approach to the innovation of urban planning tools and sustainability assessment in urban regeneration projects, emphasising the need to involve multiple stakeholders and adopt a shared framework. This holistic approach would allow “stakeholders” and “communities” interests to be properly assessed in relation to contemporary issues and integrated into the urban planning and urban design project from the outset.

KEYWORDS:

Ecological transition, urban development, sustainability



ESG e rigenerazione urbana: sfide e opportunità

Il crescente interesse per i principi ESG (*Environmental, Social, Governance*), stimolato dalla consapevolezza dei cambiamenti climatici e delle disuguaglianze sociali, sta rivoluzionando il modo in cui si progettano e gestiscono le città. In particolare, la rigenerazione urbana rappresenta un contesto privilegiato per l'applicazione di questi principi, offrendo l'opportunità di ripensare gli spazi urbani in chiave sostenibile, equa e resiliente.

Per valutare l'integrazione dei criteri ESG in urbanistica, il contributo ha adottato un approccio che combina la revisione della letteratura scientifica con l'analisi di casi studio che hanno applicato i criteri ESG. Successivamente, in relazione alle direttive e normative europee, è stata analizzata la compatibilità tra i criteri ESG e gli strumenti urbanistici esistenti, identificando le opportunità e le sfide della loro integrazione.

Il contributo propone un approccio multidisciplinare e integrato per innovare gli strumenti urbanistici e per la valutazione della sostenibilità nei progetti di rigenerazione urbana, sottolineando la necessità di coinvolgere molteplici attori e di adottare un quadro di riferimento condiviso. Questo approccio olistico permetterebbe di valutare adeguatamente gli interessi degli *stakeholder* e delle comunità in relazione alle tematiche contemporanee, oltre che integrarli fin da subito nel progetto urbano e urbanistico.

PAROLE CHIAVE:

Transizione ecologica, sviluppo urbano, sostenibilità

A framework for sustainable cities. ESG principles and urban regeneration

Antonio Bocca, Lorenzo Massimiano

1. Introduction

It is essential that the urban rethinking project embraces a culture of integrated and open planning to achieve a balance between environmental, ecological, and socio-economic components. The growing interest in Environmental, Social, Governance (ESG) principles, driven by public attention to the issues of climate change, social inequalities and the role of stakeholders in decision-making processes, is affecting urban regeneration processes (Pucker, King 2022). In alignment with the Paris Climate Agreement and the United Nations' Sustainable Development Goals (SDGs), the integration of ESG principles into urban planning and governance can facilitate the enhancement of urban quality, while simultaneously advancing environmental sustainability, public participation, and social inclusion. This assertion is further reinforced by the recent developments in European policy culture, particularly with regard to proximity, energy, and climate change, as well as the growing emphasis on stakeholder engagement.

The ESG model has its origins in the economic and financial sphere, and has subsequently become an increasingly significant phenomenon. The ESG model is predicated on the notion of evaluating investments not only in accordance with traditional financial parameters, but also in consideration of factors that can have a positive impact on society, including environmental sustainability, ethical considerations, and inclusion (Minkkinen, Niukkanen, Mantymaki, 2024). The origins of ESG principles can be traced back to the 1960s and 1970s, a period characterised by civil rights movements and the growing awareness of environmental issues. These principles have since evolved, first appearing on the international stage in the UN Global Compact's (2004) report, "Who cares wins: connecting financial markets to a changing world". The report primarily focused on the screening, selection and risk assessment of securities in financial portfolios. Subsequently, these parameters were incorporated into the United Nations "Principles for Responsible Investment" (PRI, 2006), a programme designed to provide a clear and unambiguous outline of the requirements for sustainable investment. The document explicitly states the intention to "incorporate environmental, social and governance (ESG) parameters into financial analysis and investment decision-making processes". However, the absence of specific and shared protocols has resulted in a vague and improper use of the term ESG, which is often applied generically to all investments that aspire to environmental or social impact (De Nicolò, 2021; Hill, 2020). Nevertheless, the application of the model's general principles in investment analysis has yielded positive outcomes, prompting companies to enhance their performance across the three categories and thereby indirectly benefiting

EBA Factors		
Environmental	Social	Governance
Emissions	Employee relationship/labour	Ethical considerations
Energy efficiency	Customer relationships	Strategy and risk management
Water usage	Human Rights	Inclusiveness
Waste production	Poverty/famine	Transparency
Biodiversity and ecosystems		
Environmental hazards		

Tab. 1 - The table provides a summary of the factors presented in the EBA report. Source: EBA, 2021.

society. In a study published in 2021, the European Banking Authority (EBA) defined the parameters to be considered in the ESG approach, according to evaluation metrics (Table 1), and then ranked the most virtuous, attractive and sustainable companies.

Furthermore, technological advancement provides a substantial driving force for this process through the introduction of digital twins, the metaverse and blockchain technology (Kabbara, 2023). The utilisation of digital twins has the potential to facilitate the monitoring and optimisation of resource utilisation within urban environments. Connected to data from IoT (Internet of Things) devices, these tools facilitate the analysis of energy consumption, the management of greenhouse gas emissions and the enhancement of urban system efficiency, in addition to ESG criteria. In contrast, the metaverse presents novel avenues for social interaction and engagement, wherein virtual realms can be constructed for interaction and access to public services, irrespective of physical or socioeconomic constraints. Blockchain technology, renowned for its capacity to guarantee transparency and security in transactions, can be harnessed for the administration of urban resources, including energy, as evidenced by its deployment in certain Brooklyn neighbourhoods. This practice not only promotes energy self-sufficiency, but also improves community resilience in the event of power grid outages, thereby demonstrating how blockchain can contribute to more efficient and participatory governance. New technologies thus offer extraordinary potential for the dissemination and improvement of the ESG model applied at the urban scale, not only facilitating the implementation of sustainability-related principles, but also making the monitoring, management and evaluation of urban initiatives in line with these criteria more effective.

This contribution begins with an examination of the evolution of the ESG model and a review of the relevant literature. It then proceeds with a critical analysis of selected experimental practices in the Italian urban context. The aim is to demonstrate how ESG criteria can be regarded as drivers of innovation in urban transformation processes. The objective is to ascertain how the objective of sustainability and the implementation of ESG principles can impact urban regeneration processes and the configuration of public spaces in accordance with a novel open and flexible approach. The contribution is structured as follows: Section 1 outlines the scientific background of the topic, Section 2 sets out the methodology adopted, Section 3 focuses on the application of the ESG principles in the urban context, Section 4 sets out the results obtained, Section 5 is devoted to the debate, Section 6 sets out the conclusions and research perspectives.

2. Methodology

The research was conducted in accordance with a systematic methodology, comprising a series of defined stages. The initial stage of the research involved an analysis of the scientific literature with the objective of gaining an understanding of ESG principles and tracing their evolution. To this end, major academic search engines, such as Google Scholar and Scopus, were utilised through a structured search based on targeted keywords. The search terms included those related to ESG criteria, such as “ESG criteria”, “environmental social governance” and “ESG indicators”, in addition to keywords from the urban context, such as “urban area”, “urban planning”, “urban regeneration” and “city/es”. This approach was adopted in order to ensure comprehensive coverage of the core research topics and to facilitate investigation of their application in the urban context. This phase enabled the identification of existing gaps and the definition of the opportunities offered by the integration of these principles into sustainable urban planning. The report published by the European Banking Authority (EBA) was then studied, in which the main factors through which the three ESG categories are developed were identified, as illustrated in Table 1. This paper established a preliminary foundation for adapting ESG criteria based on economic perspectives to the urban planning discipline. Concurrently, exemplars of the deployment of ESG parameters in an urban setting were sought. Among the case studies analysed, four projects were selected for detailed examination: Masdar City (Abu Dhabi), Songdo International Business District (South Korea) and two Italian examples, the Manifattura Tabacchi in Florence and the MIND (Milan Innovation District). These projects provided a rich context for analysing the use of ESG parameters in urban transformations, elucidating their strengths and weaknesses.

In light of the findings yielded by the case studies, the table originally formulated by the EBA underwent a process of transformation and adaptation. This process entailed the incorporation of more precise and pertinent indicators at the urban level, including the quality of life for residents, accessibility to services, and community participation. Additionally, certain social and governance parameters were redefined to ensure consistency with the characteristics of cities and their sustainable development objectives. Ultimately, this process resulted in the creation of a summary table comparing the EBA’s original ESG factors with those adapted to urban planning. This comparison elucidated the alterations made, and the novel factors introduced, thereby establishing an operational framework for effectively applying ESG criteria in urban contexts.

3. ESG model and urban environment

In consequence of the growing success of the ESG approach and the increased awareness of environmental and social issues affecting our cities, especially in relation to the effects of climate change, there has been an attempt to transpose these principles from

finance to urban planning. This is intended to facilitate the application of criteria of sustainability, social responsibility and good governance to the planning and development of cities.

The advantage of this approach is that it employs a framework of quantifiable and consensus-based parameters, which provide the most objective means of assessing a city or urban plan's performance with respect to sustainability issues. This has twofold value for territories and urban contexts. Firstly, it enables the identification of the strengths and weaknesses of current policies, thereby providing a cognitive framework for understanding the current situation with respect to sustainability. Secondly, it encourages private investment due to the presence of areas with high sustainability criteria.

3.1 Critical Issues and Opportunities

To effectively apply ESG parameters in an urban context, it is insufficient to simply replace the object of investigation by substituting a city for a company. Not all the parameters used to evaluate companies can be directly transferred to the urban environment. Consequently, the adaptation and contextualization of indicators are essential for their meaningful application in urban settings.

The environmental category requires minimal adjustments. The indicators provided by the ESG analysis already permit a comprehensive evaluation of how cities address ecological concerns, including natural resource management, waste reduction, greenhouse gas emissions, and biodiversity conservation. However, expanding the scope of these indicators is advisable, particularly by incorporating a dedicated category for climate change—a factor that has often been overlooked or given superficial consideration.

About the social domain, it presents greater challenges. Many parameters focus on employee well-being and workplace aspects, which are not directly applicable to cities. In order to monitor aspects such as the quality of life of residents, the availability of essential services, social inclusion, community participation and accessibility to infrastructure and services, it is necessary to reconfigure these parameters from an urban perspective.

The governance dimension plays a pivotal role in ensuring that land transformation and management policies are developed transparently and accountably. An ESG analysis of urban projects can facilitate inclusive decision-making processes that engage a wide range of stakeholders, including citizens, businesses, non-governmental organisations and public administrations. While many business-related indicators can be adapted, certain parameters specific to the private sector must be excluded or reformulated for municipal application.

The integration of ESG criteria for the evaluation of territories is still in progress, and no universally accepted protocols have been identified thus far. In financial contexts, companies are assessed using precise, quantifiable metrics that allow for performance rankings and accurate evaluations. Urban planning, however, tends to rely on a more qualitative, generalized approach, where ESG parameters function more as guidelines

for sustainability rather than measurable benchmarks.

In this sense, the measurement of sustainability often relies on established certification protocols, such as LEED (Leadership in Energy and Environmental Design), BREEAM (Building Research Establishment Environmental Assessment Method) and WELL Building Standard. While these protocols are effective, they are overly weighted toward environmental aspects and often focus on individual buildings rather than broader urban contexts. This has the consequence of undermining social inclusion, community participation in decision-making processes and administrative transparency, which are crucial aspects of the ESG dimension that are not reflected in the metrics of traditional environmental certifications.

3.2 Practical applications

The assessment of sustainability in an urban development plan is inextricably linked to both the disciplinary debate and spatial reconfigurations. This is reflected in urban regeneration projects and processes at the national and international levels.

At the international level, the following are worthy of note (Table 2):

- The Songdo International Business District (IBD) in South Korea was constructed with the explicit intention of serving as a model for sustainable urban development. The city of Songdo IBD is equipped with cutting-edge technology, which is designed to attract international companies and investors. Furthermore, the city boasts advanced infrastructure for waste management, mobility, and energy (Songdo IBD, 2024).
- Masdar City (Abu Dhabi) was conceived as a zero-emission and environmentally friendly city, with ESG criteria serving as a guiding framework for both the design and resource management processes. Masdar City is an ambitious, internationally recognised project that exemplifies the pivotal role of ESG integration in sustainable and economically viable urban development (Masdar City, 2023).

The cases illustrate a focus on the ESG model and its potential integration, although

	Songdo International Business District	Masdar City
Environmental	- Green Infrastructure green spaces to mitigate the effects of climate change - Waste Management advanced waste collection and recycling system - Energy Efficiency innovative heating and cooling systems	- Renewable Energy use of solar energy - Energy efficiency materials with low environmental impact - Water Management water reuse and minimising fresh water consumption - Sustainable mobility soft mobility and electric public transport
Social	- Quality of life high quality services - Connectivity advanced public transport and telecommunications systems	- Quality of life green spaces and services - Community social interaction - Social inclusion disability in particular
Governance	- Urban planning attention to community needs - Innovation research to address urban challenges	- Innovation research and development of new technologies - Transparency community involvement

Tab. 2 - International cases. Integration of ESG model with project strategies. Source: Authors' elaboration, 2024.

it should be noted that these are projects that have been developed from the ground up. In contrast, in Italy, where there is a high rate of disused building heritage, the integration of the ESG Model in urban transformations can stimulate debate about the potential for innovation in urban planning tools.

It is therefore pertinent to cite the Italian experiments of the MIND Milano Innovation District and Manifattura Tabacchi projects in Florence, in which sustainability performance is linked to the theme of housing quality. These projects have been selected in the Italian national context for their ability to integrate ESG criteria in large-scale planning, attracting the attention of the scientific community, as demonstrated by the recent conference on the topic within the 20th edition of UrbanpromoGreen (2).

The case of the Manifattura Tabacchi in Florence, which involved public and private actors, aimed to regenerate and enhance a disused industrial area. The historic buildings were functionally and energetically upgraded, and new community spaces were created to promote social cohesion. However, the Manifattura case in Florence focuses mainly on the regeneration of a disused industrial complex, whereas MIND focuses on the regeneration of a part of the city to become a new metropolitan centre.

The MIND project, developed by Arexpo in the Expo 2015 area, represents a comprehensive urban reconfiguration operation that engages in joint intervention in the MIND, Merlata Bloom Milano and UpTown urban areas through the establishment of innovative public-private partnerships. The urban vision has been informed by ESG criteria throughout the design and redevelopment phases. The underlying premise is that the project should function as a biotechnological district, facilitating convergence of companies, start-ups and business incubators. This choice thus demonstrates how the project transcends the boundaries of the district, aspiring to a central role at the local and regional levels (Bellini, 2023; Lendlease et al., 2022). Furthermore, the assessment does not solely focus on the economic and financial impact, but also aims to establish a zero-carbon district powered by renewable energy, with the objective of achieving carbon neutrality by 2040. This underscores the prioritisation of both the “environmental” and the “social”, “governance” criteria, thereby fostering both tangible and intangible relationships (Table 3). These considerations highlight three key performance indicators (KPIs) (3). (i) economic critical mass, that is to say, the productive capacity of a district; (ii) innovation capacity, that is to say, the ability of a district to generate innovative solutions, products or services of high quality and with a significant impact; (iii) diversity and inclusion, that is to say, the guarantee of equal opportunities and equal access to services for the entire community.

The aforementioned indicators, when considered in conjunction with the redesign of the urban area, serve as an exemplary testing ground for identifying the points of tangency between urban planning and ESG. The MIND project is closely integrated with the surrounding neighbourhood, with a particular emphasis on enhancing accessibility and intermodal options for urban travel. To this end, it proposes the

introduction of low-speed outdoor mobility in the vicinity of health facilities and sustainable indoor electric mobility. Furthermore, in alignment with the principles of the 15-minute city, the project aims to facilitate car-free mobility, thereby addressing the specific needs and vulnerabilities of the community, including those related to disability and air quality. Furthermore, the social aspect of MIND is underscored by the cutting-edge wayfinding (intelligent orientation) system, which is designed to surmount architectural impediments (Lendlease et al., 2022).

However, it is within the domain of governance that MIND demonstrates the greatest degree of innovation through the adoption of the 4P (public-private-people partnership) approach, namely collective governance. This approach enables a departure from market-oriented logic (classic public-private partnerships), moving from a focus on financial efficiency to a consideration of social value, with the objective of fostering a welfare economy ecosystem (Lendlease et al., 2022).

It is evident that the decisions made in the “governance/social” domain have implications for the “environmental” dimension, with the objective of achieving absolute zero carbon emissions by 2040. In order to achieve these goals, MIND is simultaneously working on sustainable buildings with LEED Platinum/WELL Gold certification. This will enable the district to benefit from LEED Cities and Communities GOLD certification. In addition, MIND is focusing on atmospheric emissions from mobility, adaptation and mitigation of climate change risks, as well as waste management. MIND aspires to serve as a pilot urban project, wherein the ecological transition proposals put forth by the European Commission can be tested and implemented. The neighbourhood has been designed in accordance with the standards set forth by the Energy Performance of Buildings Directive (EPBD), which mandates that all new construction be classified as nearly zero-emission buildings (nZEB) (Lendlease et al., 2022).

	MIND
Environmental	- Low-impact buildings (use of sustainable materials and renewable energy generation systems) - Sustainable mobility (cycling and walking areas and public transport infrastructure) - Water management (rainwater and wastewater management) - Green spaces (areas to create healthy urban environments)
Social	- Inclusion (universal accessibility and promotion of diversity) This process refers to the wayfinding project, which provides intelligent orientation to overcome architectural barriers, and the 2121 Programme, which facilitates job placement of prisoners in the Lombardy prison system. - Co-creation and co-production processes (see the Social Innovation Academy and MIND Skills Academy projects, which are oriented towards the promotion of networks and skills development). - Community (creation of a place for exchange and relations)
Governance	- Transparency and monitoring (creation of an integrated dashboard describing the KPIs adopted, the reference metrics and the calculation protocol) - Innovation (research and development of new technologies) - Collective governance (4Ps approach: public-private-people partnership)

Tab. 3 - Integration of ESG model with strategies and project actions in the MIND project. Source: Authors’ elaboration, 2024

4. Results

A review of the scientific debate and the use of the ESG approach in experimental practices reveals that it is challenging to ascertain which quantitative factors have been employed, particularly with regard to governance. Although there is an evident orientation towards the sustainability principles of using the three ESG categories, no unambiguous use can be discerned. The failure to adopt standardised ESG parameters reflects a complex reality, which highlights the absence of a shared framework to uniformly apply to urban transformations, as well as the difficulty of applying unambiguous quantitative parameters to projects of a complex nature such as urban planning.

The aim is to integrate these principles in a coherent and systematic manner into urban planning, while maintaining the use of environmental certifications as support tools and developing methodologies to enhance the environmental, social and governance aspects of urban projects. It is intended that urban planning tools will be implemented with the notion of performance. The challenge is to establish an objective and comparable framework for generating value (Croci, 2024) (4). The aim is to utilise ESG criteria to achieve KPIs and develop projects that address climate, environmental and socio-economic challenges. The table 4 presents an initial proposal for the modification and integration of ESG parameters in relation to the urban planning framework, developed from the table provided by EBA.

EBA	Description	ESG in Urban planning	Description
ENVIRONMENTAL			
Emissions	Total GHG emissions; Emissions of air pollutants; Emissions of water pollutants; Emissions of inorganic pollutants; Carbon footprint; Fossil fuel sectors; Reduction policies or initiatives on the use and production of fossil fuels; Compliance with Paris Agreement targets; Reduction policies or initiatives on emissions	Emissions	Total GHG emissions; Emissions of air pollutants; Emissions of water pollutants; Emissions of inorganic pollutants; Carbon footprint; Fossil fuel sectors; Reduction policies or initiatives on the use and production of fossil fuels; Compliance with Paris Agreement targets; Reduction policies or initiatives on emissions
Energy efficiency	Energy consumption intensity; Use of renewable sources of energy	Energy efficiency	Energy consumption intensity; Use of renewable sources of energy
Water usage	Water consumption intensity	Water usage	Water consumption intensity
Waste production	Production of hazardous waste; Reusability/Recyclability	Waste production	Production of dangerous waste; Reusability/ Recyclability
Biodiversity and ecosystems	Soil degradation; Biodiversity and Ecosystem services; High biodiversity value outside protected areas; Operations affecting IUCN Red; List species and/or national conservation list species	Biodiversity and ecosystems	Soil degradation; Biodiversity and Ecosystem services; High biodiversity value outside protected areas; Operations affecting IUCN Red; List species and/or national conservation list species
Environmental hazards	Heatwaves; Water scarcity; Floods; Coastal erosion; Wildfires	Environmental hazards	Heatwaves; Water scarcity; Floods; Coastal erosion; Wildfires
		Green Development	Nature-based solutions, circular economy, green infrastructure

Tab. 4.1 - Comparison of ESG factors from the EBA report and the integration of ESG factors in urban planning. Source: Authors' elaboration, 2024 (5).

Tab. 4.2 - Comparison of ESG factors from the EBA report and the integration of ESG factors in urban planning. Source: Authors' elaboration, 2024 (5).

SOCIAL			
Community/society	Relations with local communities (networks); Social impact of products and services	Community/society	Relations with local communities (networks); Social impact of products and services
Employee relationship/labour standards	Freedom of association and right to organise; Forced labour; Minimum age and child labour; Equal representation; Equal remuneration; Discrimination; Human capital management and employee relations (training and development opportunities); Workplace health and safety.	Citizen relationship	Community engagement
Customer relationships	Customer protection and product responsibility; Personal data security and privacy; Rights of customers to obtain information about ESG factors; Quality and innovation in customer relations.	Social inclusion	Creating inclusive communities, promoting citizen participation in decision-making
Human Rights	Contribution to human rights Projects	Accessibility	Intermodal public transport; sustainable mobility; Presence of high-quality secondary and high schools;
Poverty/famine	Contribution to poverty reduction	Living quality	Urban health and safety
		Equity	Reducing social and economic inequalities, promoting equity in access to services and opportunities

GOVERNANCE			
Ethical considerations	Integrity of conduct/conduct frameworks; Values and ethics; Bribery and corruption	Ethical considerations	Developing policies to promote social inclusion and overcome the main factors of segregation
Strategy and risk management	Strategy implementation, operational execution and monitoring; Internal controls and risk management policies and procedures	Investment in technology sectors of the digital economy and services	Presence of Digital twin; DSS Digital Support System
Inclusiveness	Discrimination	Social inclusiveness	Creating inclusive communities, promoting citizen participation in decision-making;
Transparency	Observance of disclosures of information rules and practices	Reporting Systems	Environmental classifications, digitisation assessments;
		Multi-level governance	Partnership relations with other municipalities at regional, national and international level; Inter- and intra-regional relations
		Collective governance	Public-private-people partnership
		Redevelopment of building heritage	Relatively high rates for building renovation
		Sustainable finance	Green bold to finance sustainable urban projects, compensation mechanisms to reduce the environmental footprint of urban projects
		Diversified market	Presence of large industrial enterprises and developed service sectors

5. Debate

The integration of ESG criteria into urban planning presents a significant challenge, yet it offers the potential to construct more sustainable, resilient, and inclusive cities. In order to achieve this, it is necessary to move beyond a simple assessment and to transform these principles into concrete actions. Such an undertaking will necessitate a multidisciplinary approach and a long-term vision. The preceding paragraphs illustrate the potential of ESG criteria in urban planning and territorial governance tools. Nevertheless, this potential will only be actualized if they are effectively implemented, striking a balance between sustainability and socio-economic development.

Recent initiatives undertaken by the European Union (EU) and national governments illustrate the capacity of ESG principles to inform not only the assessment of public projects, but also the shaping of financing strategies and the subsequent implementation and management phases. It is evident that the Urban Agenda, as promoted by UN-Habitat, and ESG criteria are concepts that are closely related and complementary. Both are aimed at promoting sustainable and inclusive urban development. The common goals of these concepts include the promotion of social inclusion, environmental protection and good governance, as well as the pursuit of stakeholder engagement and transparency in reporting progress.

The design and regeneration of public spaces must be guided by guidelines that consider both the role of spatial configuration and ESG factors in their provisions for sustainable urban development (Bocca, 2024). In this sense, ESG criteria, in relation to EU funding for the implementation of KETs (Key Enable Technologies), promote the definition of methodologies, frameworks and standards aimed at initiating urban regeneration processes and increasing their degree of sustainability.

Moreover, if sustainability certifications are predominantly at the building scale, it is essential to ensure that investments are profitable and attractive at the urban scale. This can be achieved by issuing Green Bonds to finance sustainable urban projects and by activating compensation mechanisms to reduce the environmental footprint of urban projects. The sustainability of a city is contingent upon a multitude of factors that extend beyond the individual building. These include mobility, waste management, land use and air quality. Consequently, it is possible to upgrade the building stock and to promote a culture of sustainability, as well as to activate sustainable urban regeneration processes. The resulting framework provides a dynamic understanding of processes and how they can act as enablers for city planning, beginning with urban design and urban transformation processes. It can be argued that the introduction of innovative financial instruments represents a crucial step towards the creation of more sustainable, resilient and liveable cities.

This necessitates a re-evaluation of conventional paradigms, with an emphasis on sustainability and well-being, in conjunction with existing urban planning regulations and practices. The aforementioned projects demonstrate that it is feasible to prioritize sustainability, but this necessitates a reassessment of the prevailing operational approach, commencing with territorial governance and the development and management of urban interventions. While the implementation of ESG criteria has thus far been confined to sustainability asses-

smements, the challenge is to integrate project actions that align with ESG criteria with urban planning and spatial governance tools.

Moreover, the principal mandatory ESG regulations are designed to pursue specific environmental, social and governance outcomes, as set forth in the Sustainable Finance Disclosure Regulation (SFDR) (7), as well as possible environmentally sustainable investments in other sectors (8). This necessitates an interdisciplinary competence on the part of the institution for the implementation of European directives, in order to: (i) reinforce the strategic dimension of plans by encouraging urban regeneration processes; (ii) overcome cascading planning in favour of a coherence criterion.

Furthermore, the involvement of stakeholders in the context of urban development necessitates the co-creation of solutions for the definition of sustainability objectives, with the objective of establishing a broader and more inclusive consensus around urban development projects. In order to increase transparency in decision-making, this approach requires the implementation of accessible and user-friendly data, economic reporting procedures and participatory decision-making processes.

The strategic planning of urban and territorial regeneration processes will be supported by the integration of urban, environmental and economic factors, facilitated by the use of advanced analytical tools. In accordance with this rationale, the notion of conformity is transcended to articulate novel forms of value in alignment with the principal European directives (9). In this regard, the utilisation of digital representations of the built environment can facilitate the monitoring of both the planned and actual built environment, due to the integration of data sets and the support of inter-port activities (Sinead, 2024). This necessitates the establishment of conditions conducive to “strategic urban agility” through the integration of a flexible approach into the regulatory, planning, design, and operational dimensions of urban regeneration processes (Dall'Orso, 2023; Sendra, Sennett, 2021). Although this is readily applicable in urban planning instruments such as the Sustainable Urban Mobility Plan (SUMP), the Sustainable Energy and Climate Action Plan (SEAP), the Urban Green Plan, and the Climate Change Adaptation Plan, the issue remains to be explored in the drafting of general urban plans and implementation plans.

The incorporation of ESG criteria presents a significant opportunity. The incorporation of these criteria into urban planning can facilitate the attraction of sustainable investments, enhance urban resilience, and advance more equitable and inclusive urban development. The incorporation of ESG criteria into urban planning processes would facilitate a multidisciplinary approach, enable the setting of quantifiable targets and promote coherence between different policies, thereby addressing climate challenges. Recent research has highlighted the complexity of the relationships between the phases of a project (planning, construction, life cycle) and its multidimensional impact (10). This scenario presents a challenge to those involved in urban regeneration (policy makers, investors, planners) to rethink their approaches (Cadamuro Morgante, Oppio, 2022).

6. Conclusions and research perspectives

The preceding section highlighted the difficulties associated with the application of ESG criteria in the context of urban planning and spatial governance instruments. The need for an innovative planning system that can facilitate sustainable and resilient urban regeneration requires a convergence of policies affecting land governance across sectors and institutions (Ricci, Mariano, 2022).

Furthermore, urban areas are undergoing a rapid digital transformation, which is enabling the development of innovative technologies and citizen services in novel ways. The integration of digital twin technology with ESG requirements represents a promising avenue for enhancing decision-making support in the implementation of new urban infrastructure (Kljaić et al., 2024). This is connected to the awareness of AI issues and, as a result, the capacity and procedures used to assess the impact of adopted environmental and social sustainability and regeneration policies. It is thus imperative to identify the material issues and metrics to measure them (Minkinen, Niukkanen, Mantymäki, 2024). The aforementioned cases illustrate how the EU taxonomy and European sustainability reporting standards can serve as the basis for a consistent and granular collection of information. This information can be integrated into digital twins to serve as a multipurpose sustainability data platform (Dovolil, Svitek, 2024).

However, urban plans, which are often shaped by external intervention choices, may prove to be among the least effective factors in determining the configuration of spaces (Mascarucci, Bocca, 2024). This underscores the importance of studying how specific actions, evaluated through analytical tools such as ESG criteria, influence the processes of configuration of territorial and urban space.

The recent period has been characterised by the expansion of the green bond market and the potential for greenwashing. In this context, the measures set out in the PNRR (National Recovery and Resilience Plan) represent the principal operational framework for the advancement of ESG principles with a view to a gradual decarbonisation (net-zero). The challenge is to translate this approach from the corporate domain to the real estate sector, and indeed to the territorial scale, without compromising its effectiveness.

The integration of ESG principles can facilitate the overcoming of cascading planning, thereby strengthening the strategic dimension of urban plans in accordance with the principles of reuse, urban regeneration and sustainability. The objective is to establish new connections between ESG assessments and public value, thereby initiating monitoring and sustainable development processes for territories and cities. This entails identifying the synergies and trade-offs between the various dimensions of sustainability. This approach allows for the evaluation of investments in urban regeneration processes, social sustainability to be easily compared with EU requirements and directives, as well as risks. This would not only ensure efficiency, but also reduce risks and improve the standards of design processes.

In this regard, the proposed EU instruments, including green public procurement (13) and sustainable public-private partnerships, establish the integration of ESG parameters as a fundamental aspect of the implementation of urban projects and services. Consequent-

ly, the success of urban development hinges on the ability of local authorities to adopt a forward-thinking approach that encompasses the formation of novel collaborative partnerships. The incorporation of ESG criteria into the strategic dimension of urban planning instruments and the utilisation of the institution of urban compensation can facilitate greater flexibility in urban plans at each institutional level. This necessity is driven by both public policy objectives and market demands. The adoption of sustainable principles facilitates the exploration of numerous opportunities, including: (i) the reinforcement of the strategic dimension of urban plans (reuse, urban regeneration, land consumption) and (ii) the advancement of the urban planning function, which is not only capable of planning but also of assessing the impact of projects on the basis of environmental, territorial, economic and financial sustainability.

The effectiveness of the ESG system in urban regeneration projects depends on its ability to adapt to the specificities of each context. When applying these criteria to public administrations, a more structured approach based on indicators aligned with the EU taxonomy is needed to evaluate plans, programmes, policies and strategies. The future challenge is to identify performance criteria to trigger public-private partnerships aimed at initiating urban regeneration processes and designing innovative urban planning instruments. In this sense, the use of AI can help to identify and proactively address risks related to climate change, where ESG factors - according to algorithms and predictive models - promote sustainable finance and value creation objectives.

The concept of sustainable urban planning is not static; rather, it necessitates a flexible and adaptive approach that can respond to the challenges posed by climate change and the needs of local communities. Moreover, the incorporation of new financial instruments, in conjunction with environmental compensation mechanisms, represents a strategic lever for incentivising investment in sustainable urban regeneration projects. This comprehensive approach enables the interests of stakeholders and communities to be duly considered in relation to contemporary issues and incorporated into the project. The contribution posits that through a multi-actor, multi-disciplinary and multi-scalar approach, open spaces can be regenerated from present environmental resources and components as a driver for sustainable development. The integration of environmental, social and governance considerations into urban planning decision-making processes would facilitate the achievement of equitable, inclusive and environmentally friendly urban growth, thereby ensuring that cities can address climate challenges in an effective and supportive manner.

ENDNOTES

1. The term "stakeholder engagement" is defined as the systematic process of involving an organisation's key stakeholders on matters of relevance. For further details, please refer to the following source: Paravano, Locatelli, Trucco (2024).

2. For a comprehensive analysis of the two case studies, please consult the conference proceedings of the 20th edition of UrbanpromoGreen-Progetti per il paese, held on 7 November 2023 in Florence. The conference, entitled "ESG Criteria and Tools for Spatial Planning and Governance: Reflections on Experiences, Opportunities, Risks and Challenges," will feature in-depth discussions on the aforementioned case studies. In addition to presenting a number of case studies, the workshop examined the relationship between ESG criteria and urban planning tools at various scales. In particular, it analysed the potential

impact of the ESG approach on urban attractiveness, sustainability and inclusiveness. [<https://urban-promo.it/2023/eventi/esg-e-strumento-di-governo-del-territorio/>].

3. A KPI (key performance indicator) is defined as a performance indicator for evaluating the success of a project or programme. KPIs provide a focus for strategic improvement on an analytical basis, thereby facilitating improved decision-making (Weilkiens et al., 2016; KPI, 2022).

4. For further details, please refer to the report by Croci E. (2024), 'Measuring ESG criteria at the urban scale', published by the Green Building Council Italia on 21 March 2024. [<https://gbcitalia.org/wp-content/uploads/2024/03/GBCESGCroci.pdf#page=5.00>]

5. The table presents a comparison between the ESG factors identified by the EBA and potential additional factors that could be included to enhance the applicability of these factors within the context of urban planning. The table was compiled by the authors using the following sources: EBA (2021); Guo and He (2024); Rossinsky (2024).

6. This section will examine the evolution of the sustainability rating system, from the initial versions of BREEAM, LEED and CASBEE, up to the most recent certifications, including CASBEE Urban Development, BREEAM Communities, LEED Neighbourhoods, Green Star Communities, LEED for Cities and LEED for Communities.

7. In this context, reference is made to EU Regulation 2019/2088, which establishes the regulatory framework for sustainability reporting in the funded services sector.

8. The Taxonomy EU Reg. 2020/852 is referenced, as it proposes a framework for defining an activity as genuinely eco-sustainable and for facilitating sustainable investment.

9. This document refers to the 2015 Paris Agreement, the European Nearly Zero Energy Building (NZEB) Directive, the 2010/31/EU Energy Performance Building Directive (EPBD), and the Green Deal ecological and energy transition framework.

10. The research project, entitled "ESG framework for sustainable urban regeneration", was developed by the SUR Lab (Sustainable Urban Regeneration Lab, Bocconi University) under the scientific direction of Prof. Croci Edoardo. Further details may be found at <https://surlab.unibocconi.eu/publications/sur-lab-position-paper-series>

11. Bonds can be classified according to their nature. Green bonds are designed to finance projects with a positive impact on the environment. Sustainability bonds, meanwhile, are intended to improve education, health and gender equality. Sustainability-linked bonds represent an innovative tool for aligning financial interests with sustainability interests. Social bonds, in contrast, combine financial return with social return. Finally, transition bonds are designed to finance the transition to more sustainable, low-carbon practices (Bellini, 2023a).

12. For further discussion, see Donato L. (2022), 'The long march of ESG factors. Between regulation and the market', *Bancaria*, no. 3, pp. 35-46. [https://www.astrid-online.it/static/upload/04-d/04-donato_35_46.pdf]

13. Green Public Procurement (GPP) represents an instrument of environmental policy that is designed to foster the development of a market for products and services with a reduced environmental impact. This is achieved through the leverage of public demand, thereby contributing in a significant manner to the realisation of the objectives set out in major European strategies, such as the Resource Efficiency or Circular Economy strategies. [<https://gpp.mite.gov.it/Home/CosaEGPP>]

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Overcoming architectural barriers in public cultural places

Maurizio Francesco Errigo, Irene Poli

Abstract

This paper presents reflections resulting from research and experimentation activities on the theme of cultural accessibility, with a particular focus on accessibility in public services such as museums, galleries, and exhibition spaces. Accessibility is considered in its various dimensions, including social and economic aspects, with particular attention to digital communication, which often constitutes a significant barrier to accessing services. Museums must be accessible and usable in all their public areas by all visitors. This includes ensuring that individuals with various disabilities can fully enjoy the visit and its services, with special attention to sensory disabilities in the design of exhibitions (Mallgrave, 2015). The main objective of this study is to demonstrate how a well-designed project, developed within the domains of architecture and urban planning, can address universal accessibility issues by applying innovative regulatory requirements, analyzing national and international case studies, and fostering effective collaboration between the local authority managing the property and the university as the hub of the design activity. The paper supports this reflection by illustrating proposals submitted to the 2022 Call for Projects by the Ministry of Culture's General Directorate of Museums, aimed at eliminating physical, sensory, and cognitive barriers in cultural spaces. The projects focus on three museums in the city of Viterbo: two public institutions (Museo dei Portici and Museo Civico) and one private museum (Museo Colle del Duomo). The proposals were developed according to the principles of Universal Accessible Design, targeting a broader audience and recognizing individuals with disabilities as active members of society. A key outcome of the research is the rapid development of a universal accessibility project with a planned three-year implementation timeline. This initiative includes workshops designed to disseminate results, enhance cultural heritage, and raise awareness of accessibility issues among schools and urban associations (Leveratto, 2015). The study also highlights the significant partnership between academic research and design projects in response to institutional Calls for Projects. This collaboration underscores the potential for integrating academic knowledge into practical solutions to improve accessibility in cultural spaces. Interesting and innovative is also the experimentation of Laboratory of Permanent Accessibility that engage a lot of participants in the design principals and goals.

KEYWORDS:

Accessibility, Cultural Heritage, Urban Design

Superare le barriere architettoniche negli spazi pubblici culturali pubblici

Abstract

Questo documento presenta le riflessioni scaturite dalle attività di ricerca e sperimentazione sul tema dell'accessibilità culturale, con particolare attenzione all'accessibilità nei servizi pubblici come musei, gallerie e spazi espositivi. L'accessibilità è considerata nelle sue varie dimensioni, compresi gli aspetti sociali ed economici, con particolare attenzione alla comunicazione digitale, che spesso costituisce una barriera significativa all'accesso ai servizi. I musei devono essere accessibili e utilizzabili da tutti i visitatori in tutte le loro aree pubbliche. Ciò include la garanzia che gli individui con diverse disabilità possano godere appieno della visita e dei suoi servizi, con particolare attenzione alle disabilità sensoriali nella progettazione delle mostre (Mallgrave, 2015). L'obiettivo principale di questo studio è dimostrare come un progetto ben concepito, sviluppato nell'ambito dell'architettura e dell'urbanistica, possa affrontare le problematiche dell'accessibilità universale applicando requisiti normativi innovativi, analizzando casi di studio nazionali e internazionali e promuovendo una collaborazione efficace tra l'ente locale che gestisce la proprietà e l'università come fulcro dell'attività di progettazione. Il documento supporta questa riflessione illustrando le proposte presentate al Bando 2022 della Direzione Generale Musei del Ministero della Cultura, finalizzate all'eliminazione delle barriere fisiche, sensoriali e cognitive negli spazi culturali. I progetti riguardano tre musei della città di Viterbo: due istituzioni pubbliche (Museo dei Portici e Museo Civico) e un museo privato (Museo Colle del Duomo). Le proposte sono state sviluppate secondo i principi dell'Universal Accessible Design, rivolgendosi a un pubblico più ampio e riconoscendo le persone con disabilità come membri attivi della società. Uno dei risultati principali della ricerca è il rapido sviluppo di un progetto di accessibilità universale con una tempistica di attuazione prevista di tre anni. L'iniziativa comprende workshop progettati per diffondere i risultati, valorizzare il patrimonio culturale e sensibilizzare le scuole e le associazioni cittadine sui temi dell'accessibilità (Leveratto, 2015). Lo studio evidenzia anche l'importante collaborazione tra ricerca accademica e progetti di design in risposta ai bandi istituzionali. Questa collaborazione sottolinea il potenziale di integrazione delle conoscenze accademiche in soluzioni pratiche per migliorare l'accessibilità degli spazi culturali. Interessante e innovativa è anche la sperimentazione del Laboratorio di Accessibilità Permanente che coinvolge molti partecipanti nei principi e negli obiettivi della progettazione.

PAROLE CHIAVE:

Accessibilità, patrimonio culturale, progettazione urbana

Overcoming architectural barriers in public cultural places

Maurizio Francesco Errigo, Irene Poli

1. Introduction. Public city and Cultural heritage accessibility

The paper presents the reflections resulting from research and experimentation activities on the theme of cultural heritage accessibility, with reference to accessibility aimed at public services such as museums, galleries, exhibition spaces.

Aware that public services must be accessible and usable by all in all their public areas, visitors with different types of disabilities must also be able to fully enjoy the visit and the services, considering sensory disabilities in the design of the facilities. In fact, accessibility must be understood in a plural sense, from the social to the economic, including digital communication, which is often a real barrier (Focault, 2001).

The paper is divided into four parts: the first part defines the scientific introduction and the state of the art of cultural heritage accessibility in the different approaches; the second part illustrates the three projects' experimental methodology, and the design criteria; the third part explains innovations goals and main results and the final part describes the discussions and the conclusions derived from the realization of one of the projects.

The paper supports the reflection with the application of some projects proposed for participation in the call for projects of the Italian Ministry of Culture, General Directorate of Museums, for the elimination of physical, sensory and cognitive barriers in cultural places, developed in 2022. The projects concern three museums in the Italian city of Viterbo, a medium-sized city in the Lazio region. Two museums are public, the *Museo dei Portici* and the *Museo Civico*, and one is private, the *Museo Colle del Duomo*. The projects have been designed according to the Universal Accessible Design approach, considering a wider audience and people with disabilities as an active part of society.

Urban planning has always had "strong and precise responsibilities" in providing concrete answers to the claims of rights emerging from the territory, and in contemporary times the Right to accessibility emerges as a primary social instance within the broader Right to the city. The marginal connotations of the contemporary city (Ricci, 2017) highlight, in fact, the social and territorial disparities and imbalances and have amplified, over time, the framework of pre-existing deficiencies. This "new urban question" (Ricci, 2017) requires the implementation of a new urban welfare aimed at guaranteeing all the local communities settled, through a widespread territorial presence and endowment of the public city, all the fundamental rights and to respond to the changed demands of an increasingly heterogeneous population (Secchi, 2013).

However, the provision, although necessary, is not sufficient to guarantee the right to accessibility. If on the one hand, urban planning has among its prerogatives that of making the public city accessible from an urban point of view, of flows and travel methods,

having to increasingly move towards ethical and sustainable models of infrastructures and transport services, public and collective, non-polluting, economic and eco-compatible, on the other hand it must go beyond its boundaries by integrating more specifically design, technological and social references to guarantee such accessibility to all types of population and city users in the field, in the awareness that "the place that can truly be said to belong to everyone, the non-discriminatory, non-selective, non-alienating place is accessible" (De Rubertis, 1994). This requires the implementation of an integrated and interscalar process that activates actions of social inclusion through a regeneration strategy based on identity peculiarities to connect the "space of flows" and the "space of places" (Castells, 2014).

In particular, special attention and sensitivity must be paid where the public city concerns contexts of ancient structure and cultural heritage assets, which constitute the common goods of identity and which must be considered as such so that they are open and inclusive, so that "the spaces of all can also be the spaces of each" (Van Eyck, 2002). Social inclusion actions are therefore understood as "services" that bring about systemic changes in the way of making and living cultural heritage, helping to rebuild in a sense of identity and community and ensuring better social infrastructure for the territory (Dantini, 2012). Accessibility to cultural heritage is understood, as explained in paragraph 2.1, in physical, sensorial, cognitive, economic terms, starting from the awareness of the profound connection between the valorization of historical-cultural identity, quality and sustainability of urban contexts and opportunities for socio-economic development, recalling in this case the broad debate on the topic of the economic valorization of cultural assets (Casini, 2020).

It therefore also implies the removal of barriers that hinder the enjoyment of museums, historical sites, and monuments for people with disabilities, the elderly, and other vulnerable categories, overcoming inequalities and re-establishing physical and social cohesion, as cultural heritage plays a significant role in the construction of personal and collective identity, and inclusive access to such spaces is crucial to avoid social exclusion and discrimination. Cultural heritage, in its identity dimension, produces meaning and its "broadened" enjoyment is directly linked to the concept of social inclusion, as a place where equality is guaranteed, and for this reason it is necessary to ensure the best conditions of accessibility and enjoyment, fulfilling the emancipatory function of culture (MiBACT, 2021). In this sense, in the legal sphere, many European countries have enacted their own legislation that recognizes the equal rights of persons with disabilities, in accordance with the International Convention on the Rights of Persons with Disabilities, approved in 2008 by the United Nations.

2. Experimental methodology between project and research. Design Criteria

The methodology is based on the axiom that "the project is the creative synthesis of the different needs, where what is done to remove barriers assumes, like many

other functional needs, the role of normal providence intended to ensure, for all, the best use of the good” (Carbonara, 2002). It follows what is contained in the Guidelines for overcoming architectural barriers in places of cultural interest (Italian Ministry, 2008) which take into account the new disability model identified in the United Nations Convention on the Rights of Persons with Disabilities (UN, 2008), the meaning of which also becomes the key to define the concept of “architectural barrier” including, therefore, elements of the most varied nature, which can be the cause of perceptive, as well as physical, limitations or particular conformations of objects and places that can be a source of disorientation, fatigue, discomfort or danger (Irace, 2024). The methodology is that of Universal Design, an inclusive and multidisciplinary methodology capable of building a museum project accessible in multiple forms and entry systems, which allows choosing the ways of enjoying the same contents without creating social differences between users, without or with disabilities.

The study was conducted to effectively respond to the accessibility problems of cultural heritage by exploiting the possibility of finding the necessary financial resources through a call for proposals from the Italian Ministry of Culture. The methodology is that of Universal Design, an inclusive and multidisciplinary methodology capable of building an accessible museum project in multiple forms and access systems, which allows choosing the ways of enjoying the same contents without creating social differences between users, with or without disabilities. The method of conducting the studies is participation since in the implementation of the various phases of analysis and study the actions were agreed between universities, municipal administration, schools and third sector associations demonstrating how a robust listening phase can lead to useful and shared design phases. English: The results are very interesting because they have allowed both to completely review the museum exhibition adapting it to all disabilities, and to work on technological aids capable of expanding accessibility and promoting cultural promotion, and above all to experiment with some cultural and scientific innovations, such as the creation of the Permanent Accessibility Laboratory (LAP), which is a three-year project that will end in June 2026, an interactive laboratory that allows schools and third sector associations to be aware of crucial issues of accessibility to cultural heritage. The research question has been significantly expanded during the implementation of the project and has been integrated with scientific contributions from other disciplines that have allowed the objectives and goals of the project to be strengthened. The study, the design carried out and the innovations in progress are particularly important because they expand the very concept of accessibility to cultural heritage, extending it from the merely physical to the sensorial and cognitive and allowing a constant expansion of awareness on the topic through the three-year activity of the LAP.

The paper illustrates some projects object of the participation in the Call of the Italian Ministry of Culture (MIC), General Directorate of Museums, for the removal

of physical, sensory and cognitive barriers of places of culture. The design intervention for the elimination of architectural barriers (physical, sensory and cognitive) starts from a multidisciplinary approach and inter-institutional cooperation. The proposals were promoted by the Municipality of Viterbo (ref. Department of Quality of Urban Spaces - Arch. Emanuele Aronne) and by the Department of Planning, Design and Technology of Architecture of the Sapienza University of Rome (Prof. Maurizio Francesco Errigo, Prof. Laura Ricci, Prof. Carlo Martino, Prof. Irene Poli, Prof. Luca Ruzza); with Alessio Patalocco Atelier. The proposals were also conceived with the collaboration of the Italian Multiple Sclerosis Association (AISM) and with the psychiatry group of the BIOMORF Department of the University of Messina. This cooperation network has already been collaborating for some years on the research “Psycho Urbanism. City, care of space and social interaction” project financed by Sapienza University with funds from the National Research Program and aimed at improving accessibility in the historic center of Viterbo. It has already developed through several training courses (University of Enna Kore 2018, International training course “Universal and Inclusive Design for better human environments”, University of Rijeka March-May 2021) and some workshops.

The projects concern three museums in the city of Viterbo, two public: the Museo dei Portici admitted to funding and the Museo Civico, and one private: the Museo Colle del Duomo. The projects were drawn up following the Universal Accessible Design approach, taking into account a wider audience and considering people with disabilities as an active part of society (Council of Europe, 2009).

The theme of disability has also been extended to users with temporary impediments, as this is no longer considered as a single permanent clinical condition, also including people with food intolerances, the elderly and families with children; accessibility is understood with different meanings, from the social to the economic one and with particular attention to digital communication which often constitutes a real barrier to the accessibility of a service. They are aimed at five user profiles: 1. Able-bodied people 2. Heart patients, pregnant women, people with strollers, convalescents or people with plaster casts, obese, elderly, children, etc. 3. People with reduced or impaired ability to move, 4. Persons in wheelchairs. 5. People with sensory disabilities, i.e. individuals unable to use one or more senses (visually impaired, blind, deaf, autistic...), who show difficulty or to move independently in unstructured open spaces or without perceptive clues, or identify obstacles along the way, or identify objects useful for mobility (e.g. lift buttons) or identify acoustic signals or and which show a feeling of isolation from the external environment (Francucci, 2016).

Cultural Heritage and accessibility. The redesigned Museums to solve structure, use, access and services problems

The museums participating in the Call of the MIC were: 1) the Museo dei Portici; 2)

Museo Civico di Viterbo, 3) Colle del Duomo Diocesan Museum, all three located in the historic center of the city of Viterbo, a municipality in the Lazio region of Italy, the capital of the main province. It is approximately 100 kilometres north of Rome, on the Via Cassia, and it is surrounded by the Monti Cimini and Monti Volsini. The City, in its early history, conquered and absorbed the neighboring roman town of Ferento, and during the 11th and 12th centuries was surrounded by medieval walls, still intact. The entrance to the walled historic city center is to date through ancient gates.

In the evaluation of the case studies on which to carry out accessible design, it was decided to select some museums that showed tangible suffering in relation to the different forms of accessibility envisaged by the MIC Call for proposals, namely the physical disability of the Museo Civico and the Museo Colle del Duomo and the cognitive disability of the Museo dei Portici. The funded project, that of the Museo dei Portici, therefore, mainly intervenes on physical, sensorial and cognitive accessibility using case studies that have become best practices at a national level. The selected case studies were the Museo Tattile Statale Omero in Ancona which developed a universal design with particular attention to the tactile reproduction of the cultural heritage present in the museum and to the use of the Braille method for the description of the contents, the Museo Nazionale Romano which developed museum knowledge paths carried out in collaboration with some pediatric hospitals; the Museo del '900 in Naples which also developed a strong connotation of tactile experience, the Pinacoteca di Brera which instead developed forms of olfactory accessibility to the paintings.

The Museo dei Portici, recently inaugurated (2021), is housed inside the valuable Palazzo dei Priori, a monument symbol of the civic power of the city of Viterbo, initially conceived as the residence of the Governor of the heritage of San Pietro in Tuscia, only in 1510 it became the seat of the Priory (Gimma, 2001). In addition to the main floor of the building, with some rooms that can be visited, there is the exhibition itinerary of the Museo dei Portici, a branch of the Luigi Rossi Danielli Civic Museum. Inside the Museum are two admirable works by Sebastiano del Piombo, a pupil of Giorgione: the Flagellation (1525), originally in the Church of Santa Maria del Paradiso and the Pietà (1512-1516), destined for the Botonti Chapel in the Church of San Francesco alla Rocca, both in Viterbo. The Pietà is considered the painter's masterpiece, testimony to the fruitful collaboration with Michelangelo Buonarroti.

The Museo Civico di Viterbo, named to Luigi Rossi Danielli, an archaeologist from Viterbo since 2011, is located in the former convent annexed to the Church of Santa Maria della Verità, dating back to the 12th century. The Museum, inaugurated in 1912, transferred to these spaces in 1955 and renovated in 1994, houses find from archaeological sites in the area and an art gallery. The exhibition itinerary is spread over three floors, with works and collections specifically connected to the territory and the history of Viterbo, according to a chronological scan in two large phases, on the ground floor and in the cloister the Ancient Ages, on the upper floors the Middle Ages and the Modern age (Marson, Pogliani, 2022).

The Museo Colle del Duomo was created in some spaces, originally in disuse, of the Cathedral of S. Lorenzo, in the jubilee year 2000 by will of the Episcopal Curia, with the aim of preserving and enhancing the significant heritage of the diocese of Viterbo. The museum itinerary is organized into three Sections: 1) the Archaeological Section which allows you to retrace the history of the hill of the Cathedral and therefore of the city of Viterbo since ancient times, houses artefacts from the Villanovan and medieval periods; 2) the historical-artistic section; 3) the sacred art section which enhances the importance of the diocese of Viterbo over the centuries, houses three types of artefacts: the sacred vestments (of the Bishops of Viterbo and some Popes, even very ancient, such as the robe of San Bonifacio from the 12th century), reliquaries, chalices and objects used for religious functions made of precious metals between the 15th and 20th centuries.

The three Museums, valuable architectural complexes and custodians of testimonies, paintings and sculptures, from medieval and renaissance times of national and international importance, localized into the historic center of Viterbo, present however problems specific to the places of cultural heritage, although diversified, related to accessibility, in terms of structure, use, access and services (Errigo et al., 2024).

The Museo dei Portici was fully accessible for physical disabilities while it had not developed any project over the years to overcome cognitive and sensorial barriers, the Museo Civico and Colle del Duomo, which are developed on different levels, also showed important problems in physically overcoming architectural barriers. The wayfinding system, digital accessibility and remote enhancement were design practices completely neglected in the three museums.



Fig. 1 - On the left, the non-accessible exhibition of the Civic Museum (Photo edited by Maurizio F. Errigo)

Fig. 2 - On the right, the physical accessibility of the Museo dei Portici (Photo edited by Maurizio F. Errigo)

3. Innovations, goals and main results

The projects are based on a concept of Universal Accessible Design taking into account an expanded user base and considering people with disabilities as an active integral part of society (Steinfeld, Maisel, 2012). The theme of disability has also been extended to users with temporary impediments, as this is no longer considered as a permanent clinical condition only, also including people with food intolerances, the elderly and families with children; accessibility is understood with different meanings, from the social to the economic one and with particular attention to digital communication which often constitutes a real barrier to the accessibility of a service. The museum “must be accessible and usable in all its public parts to all visitors” (AA.VV, 1995), visitors with various types of disadvantages must be able to fully enjoy the visit and the services, with attention to sensory disabilities in the design of the installation (UN, 2008).

The Guidelines for overcoming architectural barriers in places of cultural interest take into account the new model of disability identified in the United Nations Convention on the Rights of Persons with Disabilities, the meaning of which also becomes the key to defining - in a broad and articulated way - the concept of architectural barrier including elements of the most varied nature, which can be the cause of perceptual limitations, as well as physical ones, or particular conformations of objects and places that can be a source of disorientation, fatigue, discomfort or danger (Ciaccheri, Fornasari, 2022).

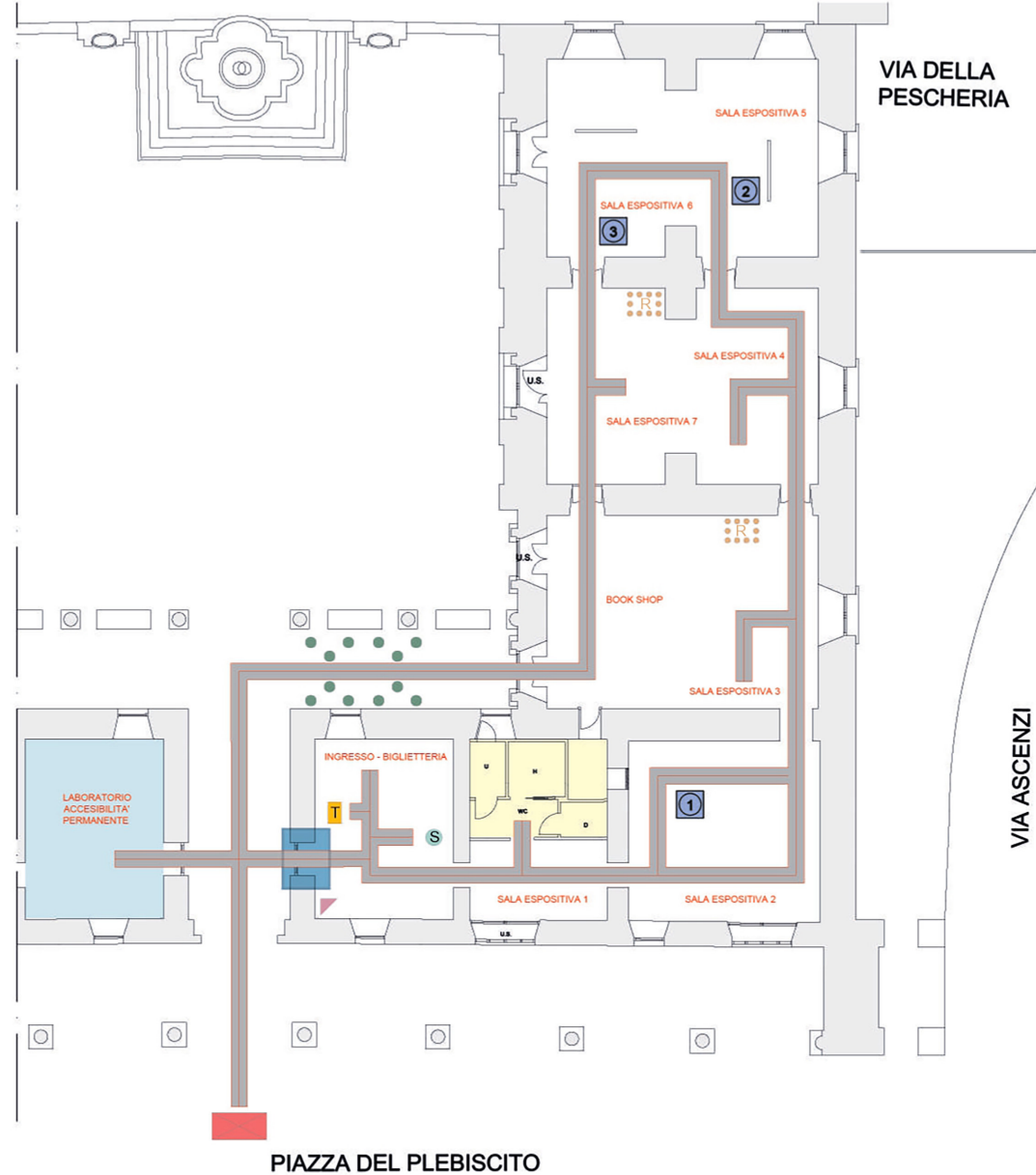
The goal is to arrive at a unique museum path, passable and perceptible in multiple co-present modes; it must guarantee the public easy use and a pleasant stay; accessibility, in addition to creating environments free of architectural, cognitive and sensory barriers, must allow environmental comfort, creating a situation of safety and autonomy and paying attention to the qualitative aspect of the design, even more central if it relates to cultural heritage. The transformation of protected buildings into museums must take place in compliance with their intrinsic characteristics; an approach of conscious temporariness to avoid invasive actions and ensure the reversibility of the interventions of functional adaptation of the structures. (Accolla, 2009).

In compliance with the MIC Ministerial Guidelines on museum planning, the interventions, for all the three museums, have been divided into macro-areas aimed at improving accessibility from the outside, reachability and access to itineraries and services, the improvement of horizontal and vertical itineraries, staff training and museum enhancement.

The fulfillment of the accessibility requirement, even in the context of historical value in which the museums are inserted, must in any case be achieved through temporary works or, alternatively, with auxiliary equipment and mobile equipment that is not permanently anchored to the building structures. The reversibility of the works guarantees the protection of the asset itself, because it allows the original condition to be restored at any time, without any damage. For accessibility from the outside, in

Fig. 3 - The Museum Project Plan

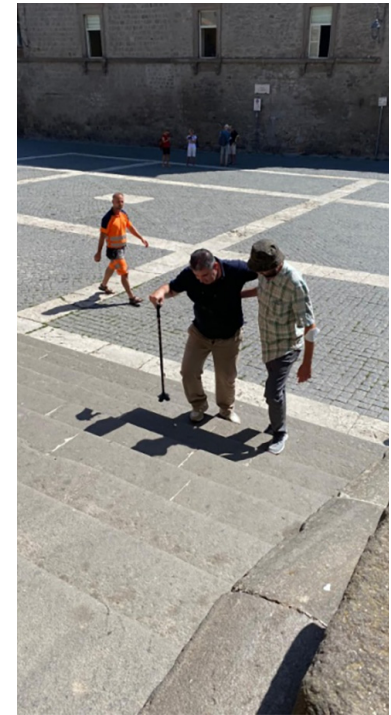
MUSEO PORTICI - PLANIMETRIA PIANO TERRA



LEGENDA

- | | | | | | |
|---|--|---|---------------------------------------|---|--|
|  | AREA RISTORO |  | NAVETTA |  | RIPRODUZIONI TATTILI |
|  | ADEGUAMENTO ILLUMINAZIONE |  | NUOVO INGRESSO | | 1. FLAGELLAZIONE
Sebastiano Del Piombo |
|  | SISTEMA SMART DI PROFILAZIONE UTENTE
CAPACE DI SWITCHARE IL SISTEMA DI ORIENTAMENTO |  | MAPPA TATTILE | | 2. PIETA'
Sebastiano Del Piombo |
|  | PERCORSO LOGES |  | LABORATORIO ACCESSIBILITA' PERMANENTE | | 3. PERGAMENA DEL PRIMO CONCLAVE
1267-1271 |
|  | WAYFINDING PER IPOVEDENTI CON BRAILLE
E SISTEMA DI ORIENTAMENTO ACUSTICO |  | ZONA RIPOSO CON APPOGGI ISCHIATICI | | |

Fig. 4 - Non-accessible external entrance and accessible internal entrance of the Colle del Duomo Museum (Photo edited by Maurizio F. Errigo)



agreement with the Municipality, the creation of a connection between the three Museums is envisaged via a system of electric shuttles which will leave from the parking area outside Porta Faul and stops at the Valle Faul lift (for access to Colle del Duomo), Piazza Crispi (for access to the Museo Civico) and Piazza del Plebiscito (for access to Museo dei Portici). The shuttles will be designed for easy ascent and descent for people with disabilities and will be connected to tactile, sound and visual paths that will lead the visitor to the entrance door to the museums.

With reference to the design of the signage (wayfinding), it should be noted that redundant information that can cause confusion and anxiety will be avoided, in fact the signage will be designed in order to put the visitor at ease, be decipherable by the greatest number of people, as well as be consistent, in terms of images and meaning, with all forms of communication present. Attention will also be paid to graphics (messages and signals must be short, legible and understandable, attention to colors, creation of visible signals even 10 meters away), to the placement of signs (they must not be hidden, they must not be an obstacle to mobility, attention must be paid to the height and the right lighting), also through the pictograms, i.e. easily recognizable graphic signs. Entrance to the museums will be suitably marked, with visible and recognizable elements, albeit coherent and non-invasive with respect to the urban context of reference, which unambiguously indicate their location and direct the visitor towards the start of the museum itinerary.

Clarity of communication must be privileged, unnecessary complexity eliminated to maximize the readability of essential information. In order to enhance multi-sensory perceptions, three-dimensional scale reproductions of the main exhibits are

envisaged, relief reproductions of pictorial works, audio-guides video, open wi-fi to download applications and access cultural content in a digital environment (virtual reality, augmented use) which will be implemented and made available (even remotely: podcasts, brochures). Where possible, the works will be relocated at an adequate height for greater visibility, even for children.

The LAP Laboratory of Permanent Accessibility will be implemented, in collaboration with the Department of Social Policies of the Municipality of Viterbo, the Planning, Design, Technology of Architecture Department of Sapienza University of Rome, and with the various associations of disabled people present in the area together with the associations.

The LAP, located in special rooms accessible from the outside, therefore through independent access routes to the museums, is an accessibility laboratory, a place where inclusive training courses are tested for the five user profiles defined in the design; particular attention will be dedicated to some categories of users with special difficulties in accessing museum areas (Cetorelli, Guido, 2021; Cetorelli, Guido, 2017).

The LAP, whose activities have been going on for about a year, is an inclusive cultural project/process, within which the following laboratory activities are envi-



Fig. 5 - LAP- Lesson on urban accessibility for primary school (Photo edited by Maurizio F. Errigo)

saged:

- Tactile knowledge, through the construction of tactile tools and through the decoding of the tactile language used in museum spaces;
- Chromatic knowledge, through appropriate color laboratories connected to the emphasis on information;
- Simple knowledge, through a decoding and simplification of the language curated in the various museum displays;
- Knowledge and/or training, with the creation of learning places based on educational seminars and conferences or on techniques for setting up or restoring finds or canvases;
- Intuitive knowledge, i.e. training courses for children and users with sensory disabilities;
- Open knowledge, study and knowledge days for prison inmates.

The LAP therefore provides training and knowledge opportunities on three different user profiles: 1 School children 2. Users with sensory disabilities (visually impaired, blind, deaf, autistic...) 3. Prisoners. For each of these categories, cognitive paths of experimentation of the museum experience will be created.

This in the awareness that the museum as an institution at the service of society and its development can build its own credibility and authority, to relate with the governing bodies of its territory and with the community, also on the issue of cultural accessibility. This makes it possible to initiate projects capable of operating in a system of relationships to help grow the culture of accessibility and inclusive design (Vanolo, 2024).

Some slogans summarize the specificity of the LAP: an accessible museum is a learning environment; an accessible Museum creates innovation; an accessible Museum interprets the city that contains it; an accessible Museum is a place of participation.

Fig. 6 - The enjoyment of the tactile works installed at the Portici Museum. (Photo edited by Maurizio F. Errigo)



4. Discussions and Conclusions

The projects presented, conceived in an integrated and inter-institutional way, as well as the various moments of inclusive planning and management envisaged, make it possible to forcefully demonstrate the importance of developing interventions having first defined together listening, discussion, management and monitoring strategies: the quality of the urban lies not only in the endowment of services and spaces, but in the quality of the experience that makes them accessible.

This is why “the issue of accessibility cannot be dealt with only at the building scale but, in order to make our cities and territories places accessible to all, it is necessary that the operations of adaptation of the individual spaces are framed within a planned process, as components of a coherent and larger-scale strategy” (INU, 2019).

The United Nation Convention on the Rights of Persons with Disabilities, ratified by the Italian Parliament in 2009 (UN, 2008), precisely identifies disability as “the result of the interaction between persons with impairments and attitudinal and environmental barriers, which prevents their full and effective participation in society on a basis of equality with others”. According to a definition by Roberto De Rubertis “the place that can truly be said to belong to everyone is accessible, the non-discriminatory, non-selective, non-alienating place” (De Rubertis, 1994) while that place can be characterized as psychotropic which induces sensations on the individual who is experiencing it of conscious or unconscious discomfort and discomfort in its crossing. Studies carried out have shown that living and growing up in the city, while on the one hand results in greater benefits from a purely physical point of view, on the other hand makes individuals more vulnerable to certain alterations of the psychic framework. This happens mainly because the city produces a high amount of stress dictated by various factors such as the urban habitat, the sense of isolation and alienation, the continuous exposure and proximity to unfamiliar faces. All this causes the so-called “psycho-social stress”, which can have different effects in relation to the individual who experiences it (minor in the able-bodied, while instead they can become very pronounced in those with previous psychiatric pathologies).

The dimension of city life has been studied in a timely manner by the social psychologist Stanley Milgram who, in an article published in 1970 in the journal *Science* (Milgram, 1970), explains the result of his research through the concept of “Urban Overload”, i.e. the incapacity of a system to interpret external inputs either because they are too many or because they are too fast. Milgram’s studies were forerunners of the research carried out between 1980 and 2000 in which the relationship between the individual and the qualities of the space that surrounds him is analysed.

The sensoriality in particular, as understood in the terms of the research, ap-

appears to be fundamental for subjects with psychiatric pathologies and in particular for subjects with autism spectrum disorder. It therefore requires a study, a cataloguing, a proposal for improvement to transform these psychotropic places into truly more accessible places, from various points of view. Understanding Milgram's overload, as well as from the point of view of psychosocial inputs also with purely physical, aesthetic inputs: seeking and living in beauty must be the primary objective of the accessible city.

These considerations take on additional significance when dealing with cultural heritage, such as museums in this case, within the historic centre. Historic centres, "true historical, environmental and productive ecosystems that have contributed to building the wealth and beauty of our country" (Galuzzi et al. 2019), are guardians of the culture of communities and, for this reason, necessarily usable and accessible by all (Poli, 2023). Recent studies highlight, in these contexts, the coexistence of divergent trends, which take on specific characteristics depending on the physical and socio-economic connotations to which they refer, such as touristisation, squatting and gentrification, as opposed to musealisation, degradation and depopulation: "pitfalls of old and new types, in the face of which existing regulations show their weakness and inability to offer adequate solutions" (Ancsa-Cresme, 2017), and which require new and more up-to-date skills of interpretation, planning and financing (Poli, 2023). The projects funded by the Ministry, focused on museum complexes and specifically on accessibility, move in precisely this direction, in the awareness that the regeneration of historic centres and the livability of the city in general, necessarily passes through the strengthening of inclusiveness, and so of the accessibility (Cetorelli, Papi, 2024).

This project has given rise to a series of parallel activities: some meetings are planned to present the activities that will involve the communities involved in the project and that will include the presentation of the results by the teachers belonging to the PDTA; a series of conferences on the topics of accessibility have been held in municipal volunteer days or in cultural festivals organized in the city of Viterbo; several publications have been produced on the case studies of the research, published in scientific and class A Anvur journals; the results of the research have been presented in some national and international conferences and further forms of dissemination of the initiative are planned; approximately 620 children from nursery school, 300 children from primary school, 40 children from secondary school, approximately 140 educators and approximately 900 members of third sector associations have been involved in the educational activities.

The proposed interventions, in fact, have proven to be highly significant, capable of generating a tangible improvement in the conditions of physical, sensorial, and cognitive accessibility in relation to the objective of expanded fruition, as a strategically relevant theme of the museum's mission (Talu, Tola, 2018).

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Investigating Transformations Of Public Places In Planned Urban Developments: Inter-relationship between Related Parameters & Sub-Parameters

Ipsita Shee, Sanjib Nag, Soumen Mitra

Abstract

Transformations are critical indicators of developmental direction & growth pattern of an urban area. *Public Places (PP)* are democratic spaces, where the common citizen has free access. *Planned Urban Developments (PUD)* are designed & developed to help direct uncontrolled growth or over-densification of cities. *Transformations of PPs in PUDs* are a neglected area of scrutiny due various factors including lack of temporal data and assumptions that PUDs follow a pre-decided trajectory of development without any resistance to original master plans. As is evident from existing literature, *Transformations of PPs in PUDs* are an important area of study in the current scenario. Therefore, a research work has been initiated to understand such *Transformations* and help direct them in desired directions. It is established that parametric studies are effective methods for analysing such *Transformations*. Following this, in this paper, an attempt is made to establish the inter-relationship between the identified Parameters & Sub-Parameters, through the process of Systematic Literature Review (SLR), and prioritization with Expert Opinion Survey (EOS). Parameters and Sub-Parameters is identified using SLR. Thereafter, an EOS was conducted to ratify & prioritize the Parameters and Sub-Parameters to arrive at a final set. The paper ultimately arrives at a set of three Parameters (Accessibility, Activity & Amenities) and six related Sub-Parameters which affect the *Transformations PPs in PUDs*. The final set of Parameters & Sub-Parameters can become a spring-board for future researchers aiming to study similar Transformations. Understanding these developmental directions, especially for PUDs can be critical to driving development along intended lines. The forthcoming part of the overall study will focus on testing the final set of Parameters and Sub-Parameters through selected case studies in the state of West Bengal, India, where at least five new PUDs have been developed by the State Government, which are in various stages of its developmental journey.

KEYWORDS:

Transformations, Public Places (PP), Planned Urban Developments (PUD), Parameters, Sub-Parameters

Indagine sulle trasformazioni dei luoghi pubblici nei progetti di sviluppo urbano pianificato: interrelazione tra parametri e sottoparametri correlati

Abstract

Le trasformazioni sono indicatori fondamentali della direzione dello sviluppo e del modello di crescita di un'area urbana. I luoghi pubblici (PP) sono spazi democratici, liberamente accessibili ai cittadini comuni. Gli sviluppi urbani pianificati (PUD) sono progettati e sviluppati per aiutare a indirizzare la crescita incontrollata o l'eccessiva densificazione delle città. Le trasformazioni dei PP nei PUD sono un'ambito di studio spesso trascurato a causa di vari fattori, tra cui la mancanza di dati temporali e l'ipotesi che i PUD seguano un percorso di sviluppo prestabilito senza alcuna resistenza ai piani regolatori originali. Come emerge dalla letteratura esistente, le trasformazioni dei PP nei PUD è invece un tema importante nello scenario attuale. Pertanto, è stato avviato un lavoro di ricerca per comprendere tali trasformazioni e contribuire a indirizzarle nella direzione desiderata. È stato stabilito che gli studi parametrici sono metodi efficaci per analizzare tali trasformazioni. Di seguito, in questo documento, si cerca di stabilire l'interrelazione tra i parametri e i sottoparametri identificati, attraverso il processo di revisione sistematica della letteratura (SLR) e la definizione delle priorità con un sondaggio di opinione degli esperti (EOS). I parametri e i sottoparametri sono identificati utilizzando la SLR. Successivamente, è stato condotto un EOS per ratificare e dare priorità ai parametri e ai sottoparametri per arrivare a un insieme finale. Il documento arriva infine a un insieme di tre parametri (accessibilità, attività e servizi) e sei sottoparametri correlati che influenzano i PP di trasformazione nei PUD. L'insieme finale di parametri e sottoparametri può diventare un punto per i futuri ricercatori che intendono studiare trasformazioni simili. Comprendere queste direzioni di sviluppo, in particolare per i PUD, può essere fondamentale per guidare lo sviluppo secondo le linee previste. La parte successiva dello studio complessivo si concentrerà sulla verifica dell'insieme finale di parametri e sottoparametri attraverso casi di studio selezionati nello stato del Bengala Occidentale, in India, dove il governo statale ha sviluppato almeno cinque nuovi PUD, che si trovano in varie fasi del loro percorso di sviluppo.

PAROLE CHIAVE:

Trasformazioni, Luoghi Pubblici (PP), Sviluppi Urbani Pianificati (PUD), Parametri, Sotto-Parametri

Fig. 1 - Urban Transformation at Biswa Bangla Gate Area at Newtown, Kolkata between 2011 & 2024. Source: Google Earth Historical Imagery, accessed on 21.10.2024



Investigating Transformations Of Public Places In Planned Urban Developments: Inter-relationship between Related Parameters & Sub-Parameters

Ipsita Shee, Sanjib Nag, Soumen Mitra

1. Introduction & Relevance

Transformations can be defined as fundamental change in inherent functioning of a system. In the urban context, they are critical indicators of the developmental direction & growth pattern of an urban area. Urban Transformations can take many forms: social, economic, physical, technological, political, institutional, and environmental (Maassen and Galvin 2019). In fact, urban history cannot be explained without reflecting on the inertia that exists in city transformations (Bosselmann 2008). Urban Transformation is an umbrella term for all spatial changes to an urban area, happening over time. Examining these Transformations of a place can provide vital insight into its developmental direction. However, due to the lack of sustained temporal documentation, transformational studies are challenging to undertake. For the current research work, ‘Transformations’ is defined as “Cumulative changes to a place over time.” For the overall study, primarily spatial transformations will be in focus.

Public Places (PP) are democratic spaces in any urban setting, where the common citizen should ideally have free access. Although, there is no absolute consensus on the definition of ‘Public Places (PP)’ among experts, a set of commonalities run through them, namely: (a) Access – A public place has free access to all its citizens and users, without profit or discrimination; (b) Activities – A public place exhibits vibrancy through a multitude of different yet harmonious activities; (c)

Ownership – A truly public place (in most cases) is owned by the government i.e.; they are public property; (d) Democracy – A public place encourages democratic use of spaces. The benefits of adequate and vibrant public places is well established through research and there is adequate literature on the same (Beck 2009) (Carmona, Magalhães and Hammond 2008) (Habitat 2015) (PPS 2016). Citizens can work, play, eat, relax, socialize, and shop in these shared spaces, thereby becoming an integral part of their lives. They are irremovably tagged to the Quality of Life of the citizens and instrumental to the overall success of cities themselves (Beck 2009). Vibrant PPs help build a sense of community, culture, and identity. Beyond the social and health benefits, these places are promising locations for economic activities, com-

Fig. 2 - Benefits of PPs | Source: Authors



munity congregation and tourism promotions. PPs are more prone to Transformations (often in the negative direction) as compared to privately-owned spaces (Nel and Landman 2021). Transformations of PPs depend not only on private landowners, but also public/ joint ownership, governance, and market forces. Multiple evidences of negative transformation like encroachment or over-commercialization of open public places have been documented in urban developments across the world. Although, PPs are a much-researched domain, their rapid degeneration and commercialization calls for more probe into their Transformations. For the current research work, 'Public Places are defined as "Areas in an urban settlement which is accessible to the general public, having a multitude of activities and owned by the Government, i.e., it is public property." The overall study will primarily focus on publicly owned open public places, accessible to the public.

Planned Urban Developments (PUDs) are habitations which are conceived, based on some specific requirements. They include road facilities, drainage, open space, mass management patterns, and so forth. From the ancient to the modern times, the history of planned cities is as old as the history of cities themselves. PUDs help direct uncontrolled growth, sprawl, or over-densification of cities. The inherent planning is expected to account for better civic amenities, controlled densities, reduced housing shortages, improved transport networks & visual attractiveness. However, as cities expand at break-neck speeds & urbanization spirals out of control, planning for cities has become indispensable. For example, in India, there are around 495 cities (population 1,00,000 or above) of which, not more than 75 are planned (Census of India 2011). PUDs are studied to a lesser extent than their organic counterparts, since they are considered to be "already planned" and expected to follow a pre-decided trajectory of development without any resistance to the original master plans. For the current research work, Planned Urban Developments will be defined as "Any development, in an urban area, which has been planned, partially or in its entirety, based on specific requirements."

Transformations of PPs in PUDs are an important area of study in the current scenario. Yet, they are scanty due to various reasons. Firstly, the lack of temporal documentation, makes these kinds of longitudinal research difficult. Secondly, PPs in PUDs are considered to be bound by robust Development Control Regulations (DCRs) and therefore not prone to much change. Thirdly the delineation of the extent of PPs, even in PUDs is challenging due to overlap of activities. Land-use based classifications and delineations do not work since PPs cut across many land uses including public, semi-public, institu-

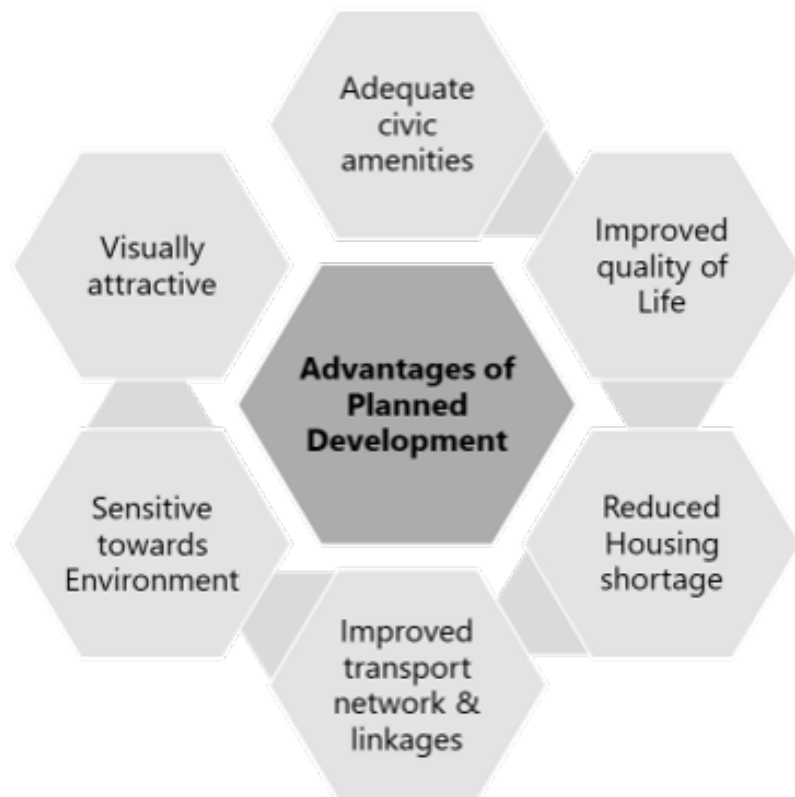


Fig. 3 - Advantages of PUDs | Source: Authors

tional, transportation, recreational, vacant land etc. Specifically, the transformational journey of PPs in PUDs have not been critically and adequately studied thus far. To amend this knowledge gap, a research has been initiated which will focus on investigating the Transformations that happen in PP of PUDs. It is established that parametric studies are effective methods for analysing such Transformations.

Following this, in this paper, an attempt has been made to establish the inter-relationship between the identified Parameters and Sub-Parameters, through the process of prioritization. First, Parameters & their related Sub-Parameters which affect the Transformations of PPs in PUDs were identified through Systematic Literature Review. Subsequently, to establish their inter-relationship, a process of prioritization was followed. For this, an Expert Opinion Survey (EOS) was designed through purposive sampling. This final set can then become a spring-board for all future researchers aiming to study the Transformative processes for any PP in a PUD through field studies. An increased understanding of the PPs in PUDs is the intended outcome of the overall research work, to help direct their Transformations in desired directions. The forthcoming part of the overall study will also focus on testing the final set of Parameters and Sub-Parameters through selected case studies in the state of West Bengal, India, which has at least 5 new PUDs, developed by the State Government, which are in various stages of their developmental journeys.

2. Methodology & Discussion

Transformations and similar processes, in the context of urban developments, happen due to changes in sets of Parameters. The Parameters may span across various dimensions from physical to environmental and from economic to cultural aspects (Hölscher and Frantzeskaki 2021). A 'Parameter' can be defined as "*Any of a set of physical properties whose values determine the characteristics or behaviour of something* (Merriam Webster Dictionary n.d.)." To establish an inter-relationship between the Parameters & Sub-Parameters, the following steps were followed:

1. *Identification of Related Parameters* –A set of five Parameters were identified from Systematic Literature Review for each of the terminologies (Transformations, PPs, PUDs). Some of the parameters were found to be recurrent in all the three terminologies. Next, Parameters were identified for the combined terminologies (Transformations of PPs, PPs in PUDs). Intersection of lists of above-mentioned parameters for the combined terminologies revealed the final set of possible parameters. Figure 5 (Parameter Identification from Literature Study) elaborates on the same.

2. *Identification of Related Sub-Parameters* - A set of six Sub-Parameters were identified for each of the five Parameters from relevant literature Section 2.2 and Table

2 (Identified Sub-Parameters from Literature Study) elaborates on the identified Sub-Parameters.

3. *Establishment of Inter-relationship of Identified Parameters & Sub-Parameters Through Prioritization* – An Expert Opinion Survey (EOS) was conducted to ratify & prioritize the Parameters and Sub-Parameters to arrive at a final set. Section 2.3 elaborates on the same.

The following illustration elaborates the steps discussed in graphical format.

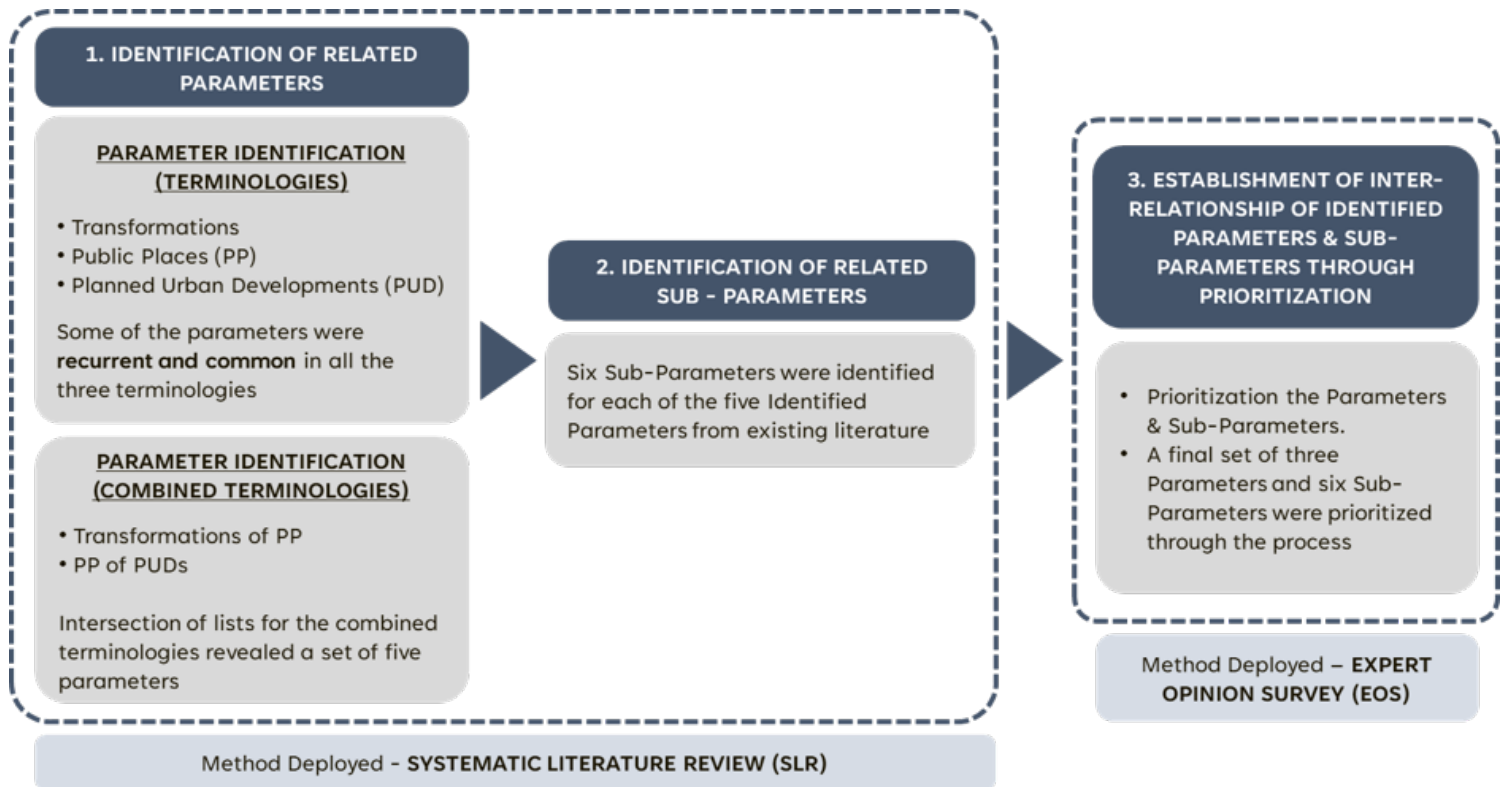


Fig. 4 - Methodology for Finalization of Parameters & Sub-Parameters | Source: Authors

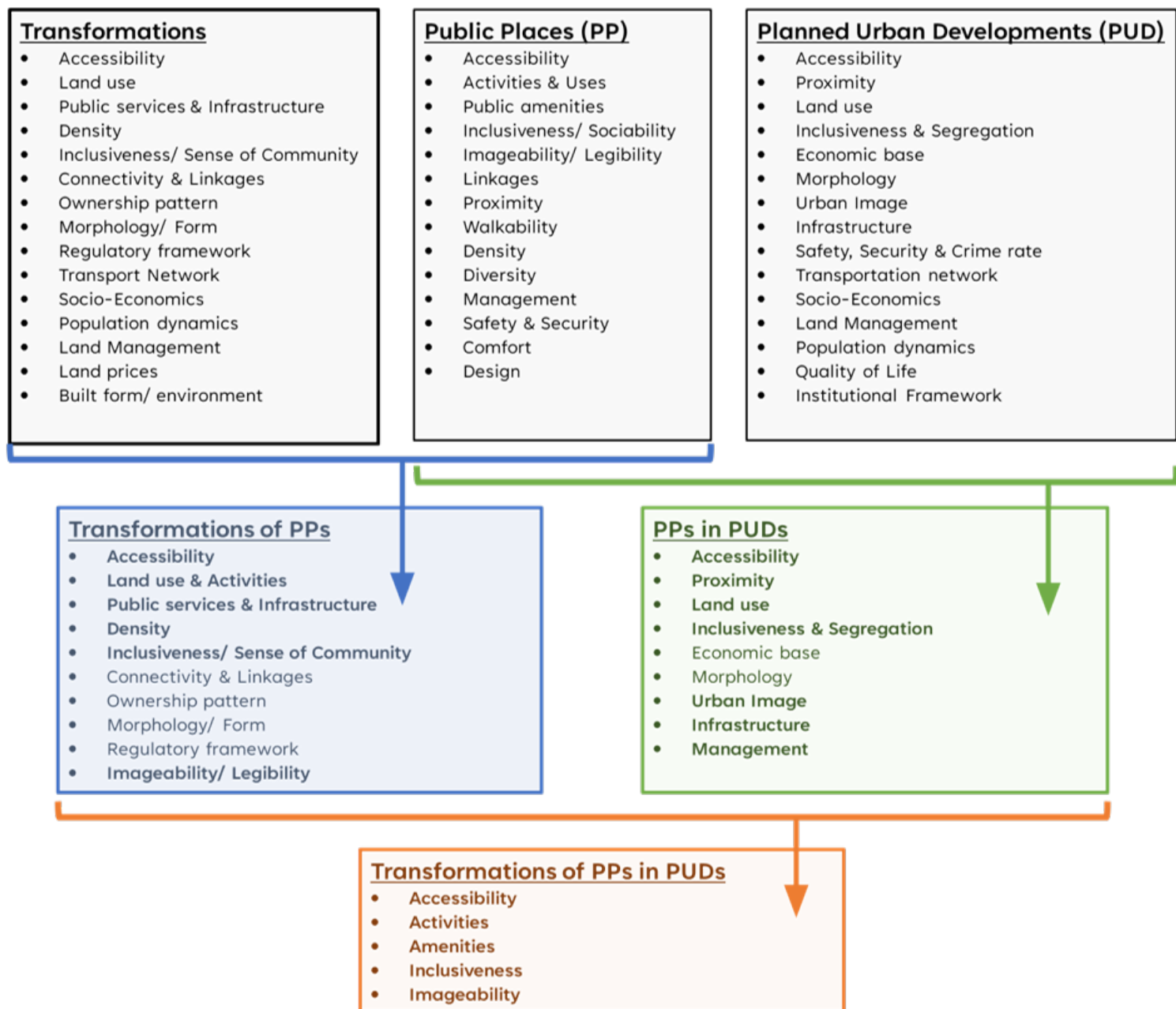
The following sub-sections elaborate on the process conformed to and the outputs thereof.

2.1. Identification of Related Parameters

Systematic Literature Reviews (SLR) are an effective method of identifying related parameters for a particular area of scrutiny. For complex processes like Transformations, which are affected by a multitude of parameters, it is critical to do an SLR. Extensive literature study was conducted to identify the possible Parameters for each of the terminologies (Transformations, PPs and PUDs) (Shee, Nag and Mitra 2024). For each Parameters, a minimum of three authentications from relevant literature was sought. It was observed that some of the Parameters were

common and recurrent in all the three terminologies. Next, further literature study was conducted to identify possible Parameters for the combined terminologies (Transformations of PP and PP in PUDs). It was additionally observed that identified Parameters coincided with initial recurring and common parameters, thereby reinforcing their selection. The intersection of the lists of above-mentioned Parameters for the combined terminologies revealed the final set of possible Parameters. It was observed that the following five parameters lied at the intersection point, recurring in all the literature studied: *P1 – Accessibility; P2 – Activity; P3 – Amenities; P4 – Inclusiveness and; P5 – Imageability.*

Fig. 5 - Parameter Identification from Literature Study | Source: Authors



Identified Parameters	Definition & Explanation	Referred Literature
P1 - Accessibility	<i>Accessibility refers to the ease with which a site may be reached, providing a measure that evaluates the relative opportunity for contact or use (Castree, Rogers and Kitchin 2013)</i>	<i>(Dinçer, Akyüz and Elike 2022) (Surya, et al. 2020) (Jigyasu 2014) (Gomes 2017) (Arslanli, Unlukara and Dokmeci 2011)</i>
P2 – Activity	<i>Activities are the basic building blocks of a place, as having something to do gives people a reason to come to a place (Pasaogullari and Doratli 2004). Activities are important in the link between people and public space because they make it concrete. (Rajabi and Shrifian 2022)</i>	<i>(Mehta 2014) (Carr, Francis, et al., Needs in Public Space 2007) (Farhan, Abdelmonem and Nasar 2018) (Gehl 1998) (Turaga, et al. 2019) (Kongphunphin and Srivanit 2020)</i>
P3 – Amenities	<i>Amenity is defined as the 'contributions of the environment to the enjoyment of life (Corney, Ives and Bekessy 2015)</i>	<i>(Hölscher and Frantzeskaki 2021) (Köroğlu and Ercoşkun 2006) (Lopes, Cruz and Pinho 2019) (Baker, Guaralda and Chitrakar 2014) (Ramay, et al. 2009)</i>
P4 – Inclusiveness	<i>Inclusiveness is where the activities and discussions in its development and use processes are open to all (Akkar 2004).</i>	<i>(Mehta 2014) (Landman 2015) (Shukla and Chhabra 2022)</i>
P5 - Imageability	<i>Quality of a place that makes it recognizable, memorable, and distinct from other places, determining the character and identity of city space (Lynch 1960).</i>	<i>(Kim and Park 2016) (Moulay and Ujang 2016) (Jawaid, Pipralia and Kumar 2016)</i>

Tab. 1 - Authentication of Parameters for Transformations of PPs in PUDs | Source: Various Publications collated by Authors

2.2. Identification of Related Sub -Parameters

Based on the literature studied, a further set of Sub-Parameters for each of the identified Parameters were identified. The literature on the same is extensive and an elaborate list of thirty Sub-Parameters (six for each of the Parameters) were identified.

For *Accessibility*, walkability was one of the most important Sub-parameters, achievable by thoughtful design or redesign which is critical to creating vibrant public places with healthy social interactions (Giles-Corti, et al. 2005) (Khaleghimoghaddam 2023). Other important Sub-Parameters which were recurrent in existing literature included universal design elements, locational aspects, pedestrian & vehicular circulation and catchment area (Shukla and Chhabra 2022) (Zhang, Lu and Holt 2011) (Church and Marston 2003) (Pasaogullari and Doratli 2004). Availability of different modes of transport is also considered to be an important Sub-parameter driving overall accessibility to PPs. Accessibility is greatly influenced by the availability and connectivity to public transport (Terefe and Hou 2024). Similarly, car use facilities affect the accessibility of older adults to public places, particularly open parks, and playgrounds (Kou, et al. 2021).

For *Activity*, one of the most important Sub-Parameters which featured frequently in the existing literature was the multiplicity of uses & activities. This diversity of uses may be measurable by indicators like intensity of temporal use, spatial use, diversity of users etc (Spaces 2023). Other Sub-Parameters identified included volume of commercial activities, density, land use etc. Density, measurable by crowding, is often seen as a deterrent

in public places like busy streets yet they are crucial to encourage active participation (Wen, Kenworthy and Marinova 2020).

For *Amenities*, various Sub-Parameters were identified from literature including existing infrastructural levels, cleanliness & physical conditions, surveillance & visibility etc. Presence of physical infrastructure like seating and shades promote social interactions and social behaviour in various forms (Dudek 2019). Likewise, cleanliness, safety, surveillance indicate the overall upkeep of a public place and are considered imperative aspects. The presence of graffiti, surrounding built structures, signages etc. are all effective indicators for these Sub-Parameters (Shukla and Chhabra 2022).

For *Inclusiveness*, the level of interaction, the diversity of users and the footfall are important Sub-Parameters featuring in existing literature. Inclusiveness is also understood in some literature as being barrier-free in design (Siu, Wong and Xiao 2020). However, although this aspect is captured by the Sub-Parameter: 'Diversity of users,' in general, a more holistic approach to Inclusiveness is more desirable.

For *Imageability*, important Sub-Parameters included legibility, presence of landmarks, distinctiveness & sense of place. Existing literature proves that there is a very strong & positive co-relation between imageability and sense of place (McCunn and Gifford 2021) (Shamsuddin and Ujang 2008) Another important Sub-parameter was distinctiveness which was found to directly affect the imageability & likeability of a public place (Zamanifard, et al. 2018).

Identified Parameters	Identified Sub-Parameters
P1 – Accessibility	P1A - Walkability
	P1B - Universal Design Elements
	P1C - Modes of Transport
	P1D - Location
	P1E - Catchment Area
	P1F - Circulation
P2 - Activity	P2A - Multiplicity of activities
	P2B - Volume of commercial/ economic activities
	P2C - Density
	P2D - Land use
	P2E - Land value
	P2F - Utilization of Space throughout the day
P3 - Amenities	P3A - Cleanliness
	P3B - Surveillance
	P3C - Physical Infrastructure
	P3D - Street Furniture
	P3E - Visibility
	P3F – Physical Condition
P4 - Inclusiveness	P4A - Diversity of users
	P4B - Footfall
	P4C - Level of Interaction
	P4D - Comfort
	P4E - Safety
	P4F - Group Activity
P5 - Imageability	P5A - Legibility
	P5B - Presence of Landmarks
	P5C - Layout
	P5D - Height & Scale
	P5E - Distinctiveness
	P5F - Sense of Place

Tab. 2 - Identified Sub-Parameters from Literature Study | Source: Various Publications collated by Authors

2.3. Establishment of Inter-relationship between Identified Parameters & Sub-Parameters

Based on existing literature study, a set of five Parameters and thirty Sub-Parameters (six for each Parameter) were identified affecting the Transformations of PPs in PUDs. Such a large number of Parameters & Sub-Parameters will make it challenging to infer any purposeful deduction in any future study. Additionally, to establish any meaningful inter-relationship between the identified Parameters, they need to be prioritized (ranking in order of their relative importance or impact) first. For this study, since the decision-making is based on highly specific domain knowledge, an Expert Opinion Survey (EOS) was chosen as the preferred survey method. A total of 52 responses were received from Domain Experts from industry, research & academia, which is a reasonable sample size for EOS (Bruce, Langley and Tjale 2008). The Experts were chosen through a purposive, non-probability sampling technique. The chosen experts had extensive expertise of working in the Development and allied sectors. The Experts were contacted by the researcher and briefed about the research premise before the being requested to take the EOS. The survey contains a total of 11 questions which can primarily be broken down into 3 parts. As per convention, Part 1 focussed on profiling of the Expert Respondents.

- **Part 1: Respondents' Profile** - The first section deals with basic questions on the location, affiliation, and expertise of the respondents. A healthy mix of experts from industry (57%) & academia (43%) were observed. Almost half of the Respondents (47%) are practising Urban Planning & Management while 33% of the experts are practising Architecture. The remaining are from allied fields like Environment, Sustainability & Social Sciences within the larger realm of Development Management.

- **Part 2: Prioritization of Parameters** - The second section has one question, meant to prioritize the five important Parameters affecting the Transformations of PPs in PUDs. The question enquired the Expert's opinion on which out of the five identified Parameters play an important role in assessing the Transformations of PPs in PUDs. The question is designed in the form of a 5-point Likert's scale (with 5 being very important and 1 being not at all important), to quantify the relative importance of the identified Parameters and thereby prioritize them.

- **Part 3: Prioritization of Sub-Parameters** - The third section has 5 questions, pertaining to each of the identified Parameters. Each question lists a set of six identified Sub-Parameters and asks the Experts to suggest the most important ones, in the context of the current research work. The Experts were given the liberty to vote for more than one Sub-Parameter, based on their knowledge and expertise. The results of these questions suggest the most important Sub-Parameters for each of the identified Parameters.

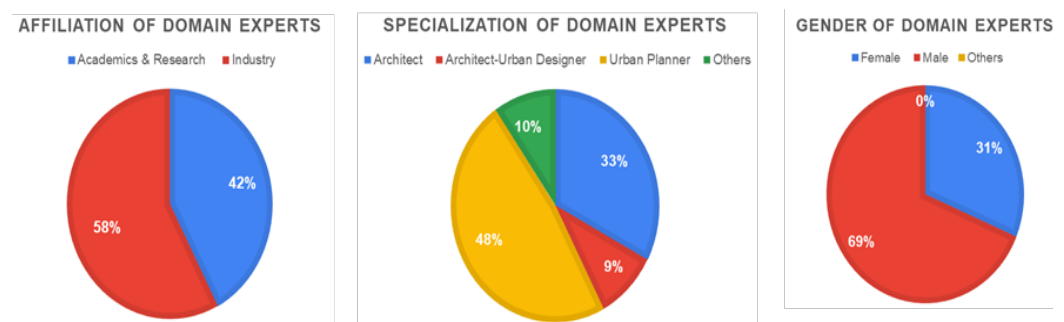


Fig. 6 - Respondents' Profiles in EOS | Source: Authors

The following sections elaborate on the results and inferences related to the prioritization of Parameters & Sub-Parameters.

2.3.1 Prioritization of Parameters

Based on existing literature study, a set of 5 Parameters were identified: *P1 – Accessibility*; *P2 – Activity*; *P3 – Amenities*; *P4 – Inclusiveness*; *P5 – Imageability*. These five Parameters were then prioritized based on the EO survey. The responses were collated & analysed through a Total Score (summation of the individual scores) & Mean Score (a measure of central tendency). Accessibility, Activities and Amenities emerged as the 3 most important Parameters. Additionally, for these three Parameters, more than 80% of the Respondents had voted them as either Very Important or Important, to double-check the prioritization.

$$\text{Total Score (Px)} = 5*a + 4*b + 3*c + 2*d + 1*e$$

$$\text{Mean Score (Mx)} = P_x/n$$

where,

P_x = Total score,

M_x = Mean score

a = No. of Respondents according a score of 5 (Very Important) to the Parameter

b = No. of Respondents according a score of 4 (Important) to the Parameter

c = No. of Respondents according a score of 3 (Moderately Important) to the Parameter

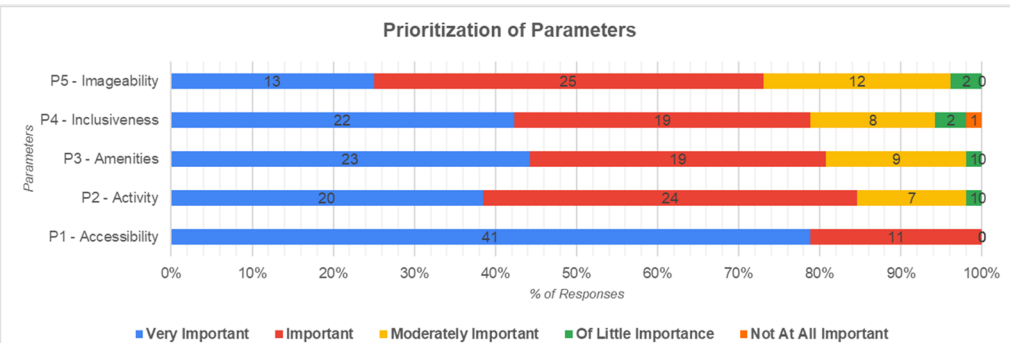
d = No. of Respondents according a score of 2 (Of Little Importance) to the Parameter

e = No. of Respondents according a score of 1 (Not at All Important) to the Parameter

n = No. of Respondents (52 in this case)

Score allotted	5	4	3	2	1		
	Very Important	Important	Moderately Important	Of Little Importance	Not At All Important	Total score	Mean score
	(a)	(b)	(c)	(d)	(e)	P_x	M_x
P1 – Accessibility	41	11	0	0	0	249	4.79
P2 – Activity	20	24	7	1	0	219	4.21
P3 – Amenities	23	19	9	1	0	220	4.23
P4 – Inclusiveness	22	19	8	2	1	215	4.13
P5 – Imageability	13	25	12	2	0	205	3.94

*Numbers indicate the number of responses received.



Tab. 3 - Total Score & Mean Score for Parameters | Source: EOS by Authors

Although the SLR identified Inclusiveness and Imageability as parameters, the EOS accorded more importance to Accessibility, Activity and Amenities, to assess the Transformations of PP in PUDs. Therefore, the following section focuses on the prioritization of Sub-Parameters for only these three Parameters.

2.3.2 Prioritization of Sub-Parameters

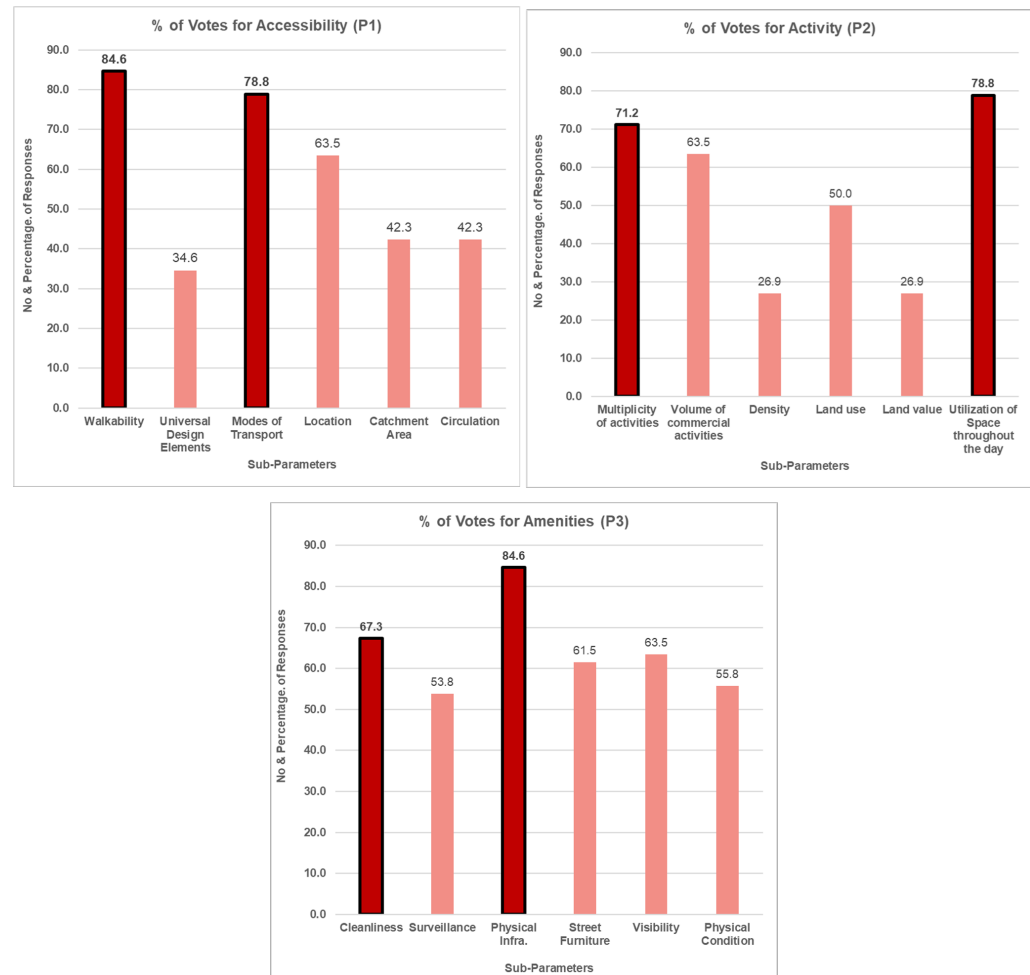
The Sub-Parameters which were identified from literature study were also prioritized through the EOS. For the process of prioritization, the percentages of votes were calculated and analyzed. Expert respondents could vote for a single or multiple Sub-Parameters, based on their understanding. Only those Sub-Parameters were chosen which received a total and clear majority of 2/3rd or 66.6% of the votes. A 2/3rd majority is generally considered to be a clear majority because of its high threshold requirement for consensus as compared to simple measurement (which is 50%+1). A simple majority also does not account for the margin of error (Strass 2018). The following Table presents collated data.

Sub-Parameters Prioritization for “Accessibility (P1)”			
#	Sub-Parameter	Number of Votes	% of Votes
1	Walkability	44	84.6
2	Universal Design Elements	18	34.6
3	Modes of Transport	41	78.8
4	Location	33	63.5
5	Catchment Area	22	42.3
6	Circulation	22	42.3
Sub-Parameters Prioritization for “Activity (P2)”			
#	Sub-Parameter	Number of Votes	% of Votes
1	Multiplicity of activities	37	71.2
2	Volume of commercial/economic activities	33	63.5
3	Density	14	26.9
4	Land use	26	50.0
5	Land value	14	26.9
6	Utilization of Space throughout the day	41	78.8
Sub-Parameters Prioritization for “Amenities (P3)”			
#	Sub-Parameter	Number of Votes	% of Votes
1	Cleanliness	35	67.4
2	Surveillance	28	53.8
3	Physical Infrastructure	44	84.6
4	Street Furniture	32	61.5
5	Visibility	33	63.5
6	Physical Condition	29	55.8

Tab. 4 - Sub-Parameter Prioritization through EOS | Source: EOS by Authors

The bar charts below explain the results in a graphical format. For Accessibility (P1), the prioritized Sub-Parameters were Walkability and Modes and Transport. For Activity (P2), the prioritized Sub-Parameters were Multiplicity of activities and Utilization of space throughout the day. For Amenities (P3), the prioritized Sub-Parameters were Cleanliness and Physical Infrastructure.

Fig. 7 - Sub-Parameter Prioritization through EOS | Source: Authors



2.3.3 Establishment of Inter-relationship

Based on the above study, a total of three Parameters and six Sub-Parameters were identified and ratified with respect to Transformations of PPs in PUDs. The following chart lists the Final list of prioritized Parameters and Sub-Parameters affecting the Transformations PPs in PUDs.

Walkability is a measure of pedestrian environment measurable through a host of metrics ranging from ease of use to visual interest (Lo 2009). It has been established to be an important Sub-Parameter to assess the Accessibility. Walkability can be measured by the presence of pedestrian infrastructure as well as the Pedestrian count. Modes of Transport and their integration has also been established as an important Sub-Param-

Final Parameters	Final Sub-Parameters
P1 - Accessibility	P1A - Walkability
	P1C - Modes of Transport
P2 - Activity	P2A - Multiplicity of activities
	P2F - Utilization of Space throughout the day
P3 - Amenities	P3A - Cleanliness
	P3C - Physical Infrastructure

Tab. 5 - Final List of Related Parameters & Sub-Parameters | Source: Authors

ter where their multiplicity plays an important role (Jefferson 1996). The modal split and their relative volumes can prove to be important indicators to measure the overall accessibility. Similarly, for the Parameter, Activity, Multiplicity of activities, which is an indicator of the diversity of uses and functions of a PP, has been established as an important Sub-Parameter (Tamašauskaitė 2020). The Utilization of a PP throughout the day rather than only for a specific time has also been established as a significant Sub-Parameter. This multiplicity of activities along with their spatial arrangement and diurnal utilization are important to effectively measure the usage of PP in a PUD. For the Parameter Amenities, Cleanliness is an important Sub-Parameter since it provides a pleasing and inviting environment which is crucial for a vibrant PP (Mehta 2014) (Pasaogullari and Doratli 2004). The presence of proper and adequate Physical Infrastructure, measurable by the presence of proper lighting, street furniture, public restrooms etc. has been established as an important Sub-Parameter. Beyond analysing the actual presence of infrastructure and undertaking a condition survey, the perceived cleanliness and usability of the amenities is also important. In conclusion, these Parameters and Sub-Parameters have been identified to be recurrent in existing literature as well as ratified and prioritized through EOS and are therefore established as related Parameters and Sub-Parameters in the Transformations of PPs in PUDs.

3. Conclusion & Way Forward

The analysis of the Transformations of PPs is tied up with the analysis of its wider setting: the city (TUNÇ, 2003). Understanding these developmental directions, especially for PUDs can be critical to driving development along intended lines. Transformational studies of PPs in PUDs are scanty due to a multitude of reasons, some of which were stated earlier. In the history of the existence of an urban area, it is likely to have gone through various spells of densification, sprawl, specific interventions, growth and decline to contribute to its overall Transformation. It is extremely challenging to capture these changes holistically. One possible remedy, specifically, in the case of PPs in PUDs can be to first compare the current scenario with the original master plan and look for changes/deviations. For such studies, these Parameters and Sub-Parameters can be critical to field test and study the on-ground Transformations of PPs & PUDs.

The final set of prioritized Parameters and Sub-Parameters can then also become a spring-board for all future researchers aiming to study the Transformative processes for any PP in a PUD. In the context of post-independent, (1947 onwards) urban India, all major metropolises have developed new PUDs in its fringes to tackle the problem of burgeoning population and growth: New Delhi (Gurgaon, Noida), Mumbai (Navi Mumbai), Kolkata (Bidhannagar, Newtown), Bhubaneswar, Ahmedabad (Gandhinagar) and many others. 50 years hence, these PUDs and specially their PPs have experienced significant Transformations, often deviating from their

original master plans. The study can become a good starting point to investigate the genericness or the specificity of these Transformations.

The forthcoming part of the overall study will also focus on testing the final set of Parameters and Sub-Parameters through selected case studies in the state of West Bengal, India. Post independence, at least 5 new PUDs have been developed by the State Government, which are in various stages of their developmental journeys. This makes West Bengal apt for a holistic study. A set of four PPs in Saltlake (Bidhannagar) and Newtown are being finalized for the field studies.

Further avenues of research can also include probing the causes of such Transformations as well as understanding the fundamental differences in nature of Transformations of PPs in PUDs in comparison to unplanned urban developments. The study can also extrapolated to other geographies as well as other historical, cultural, and socio-economic contexts.

Finally, after understanding the nature of these transformative processes, recommendations and strategies can be formulated to guide such Transformations in desired directions.

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Fantastic Urbanities. Imaginary cities and urban cultures in the *Final Fantasy* saga between world-building and immersiveness

Barbara Ansaldi

Abstract

Video games merge storytelling, interactivity, and world-building to create imaginary urban spaces that convey identity and meaning. Game cities are tangible expressions of world-building and reflect social, cultural, and spatial dynamics that enhance player immersion through the internal coherence of the game world. Immersion relies on the sensation of “being inside” a living, dynamic world shaped by social networks, conflicts, and transformations. Game cities exist at the crossroads of art, urbanism, and literature, enabling active and temporal exploration of places by blending and reworking real and fantastic elements. The Japanese game series *Final Fantasy* exemplifies these traits, crafting worlds and cities that are not mere backdrops but complex organisms where discovery, exploration, and interaction with the environment and its inhabitants fuel a collective imagination and sense of belonging within the game universe. Cities and territories in *Final Fantasy*—such as Midgar and Spira—serve as laboratories of fantastic urban imagination, intertwining archetypes, utopias, and dystopias, subverting and recombining scales and forms, revealing humanity’s fears and aspirations, and offering a rich panorama of suggestions that expand our perception of possibility.

KEYWORDS:

fictional cities, Final Fantasy, world building, urban visions, representation

Urbanità fantastiche. Città immaginarie e culture urbane nella saga di *Final Fantasy* tra *world-building* e immersività

Abstract

Il videogioco fonde narrazione, interattività e *world-building*, generando spazi urbani immaginari capaci di veicolare identità e significati. Le città videoludiche sono espressioni tangibili del *world-building* e riflettono dinamiche sociali, culturali e spaziali che contribuiscono ad aumentare l'immersività del giocatore grazie alla coerenza interna del mondo di gioco. L'immersività si fonda infatti sulla capacità di suscitare la sensazione di "essere dentro" un mondo vivo e dinamico, caratterizzato da una rete di relazioni sociali, conflitti e trasformazioni. Le *game city* si situano tra arte, urbanistica e letteratura, permettendo un'esplorazione attiva e temporale dei luoghi, fondendo, mescolando e rielaborando elementi reali e fantastici. La serie di videogiochi della nipponica Square Enix, *Final Fantasy*, incarna appieno queste caratteristiche, costruendo mondi e città che non sono semplici sfondi, ma organismi complessi, dove la scoperta, l'esplorazione e l'interazione con l'ambiente e i suoi abitanti alimentano la costruzione di un'immaginazione collettiva e di un senso di appartenenza all'universo di gioco. Città e territori in *Final Fantasy*, come nel caso di Midgar e Spira, fungono da laboratorio sull'immaginario urbano fantastico, dove si intrecciano archetipi, utopie e distopie, vengono sovvertite e/o ricombinate scale e forme, rivelando tanto le paure quanto le aspirazioni dell'umanità e offrendo un panorama ricco di suggestioni capace di espandere la nostra percezione del possibile.

PAROLE CHIAVE:

città immaginarie, Final Fantasy, world-building, visioni urbane, rappresentazione

Urbanità fantastiche. Città immaginarie e culture urbane nella saga di *Final Fantasy* tra *world-building* e immersività

Barbara Ansaldi

Introduzione

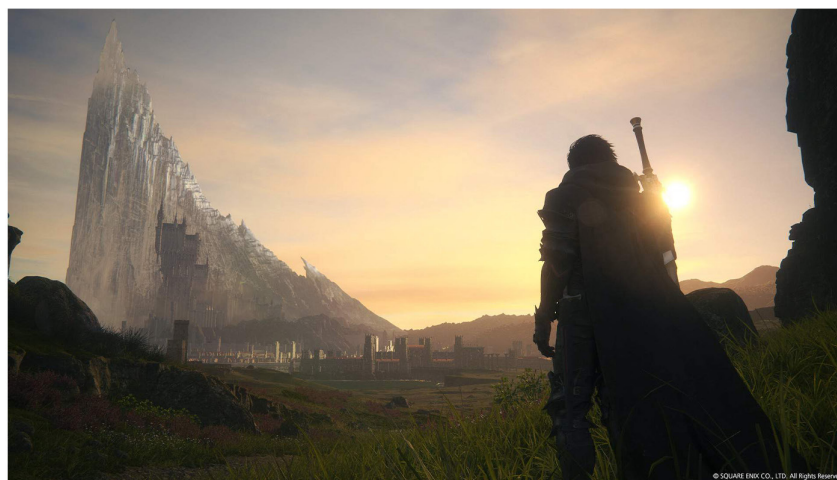
Il videogioco si configura come un medium complesso, nel quale narrazione, interattività e creazione di mondi (*world-building*) si integrano nella definizione di spazi narrativi e simbolici credibili e strutturati secondo logiche interne coerenti. Al loro interno, città, territori e paesaggi, seppur fittizi, costituiscono strutture visive e spaziali capaci di veicolare significati, identità e memorie condivise. Proprio per questa sua natura, il videogame ha saputo mettere in luce gli aspetti più visionari e paradossali dell'architettura e dell'urbanistica, contribuendo alla costruzione di un immaginario collettivo fantastico sulla città, in particolare quella del futuro (De Domenico, 2013), in una complessità multidisciplinare che coinvolge geografia, filosofia, teoria dell'architettura, scienze sociali e urbanistica. In particolare, il *design* di città d'invenzione consente l'emergere di forme inedite di rappresentazione dell'immaginario, nelle quali dimensione fantastica, utopica e mitopoietica si traducono in topografie articolate, pratiche spaziali e sistemi coerenti di segni. Non a caso, nella letteratura scientifica è possibile rintracciare studi in cui il design di città virtuali diventa strumento attivo di riflessione critica e sperimentazione (Nijholt, 2017), come nel caso del Videogame Urbanism studio della Bartlett School of Architecture (UCL), dove le tecnologie per la progettazione di ambienti virtuali vengono impiegate per esplorare scenari urbani alternativi, comunicare le trasformazioni future della città a nuovi pubblici e mettere in discussione le strutture che governano l'urbanistica contemporanea (Pearson & Youkhana, 2020), aprendo la strada a mondi improbabili e impossibili, spazi essenziali per l'innovazione, capaci di alimentare e influenzare l'immaginario collettivo (Holland & Roudavski, 2016). In tale contesto, il disegno, nella sua più ampia accezione, assume un ruolo centrale poiché esso «non esaurisce le proprie potenzialità nella rappresentazione di elementi finalizzati alla costruzione, ma è innanzitutto la concretizzazione di una visione, la prefigurazione della trasformazione di uno spazio e la proiezione di un'idea» (Conte & Machetti 2011, p. 205). Il videogioco, infatti, «può essere inteso come nuova forma di narrazione visiva il cui principale linguaggio espressivo è il disegno, che diventa 'corpo' e 'modo' della comunicazione» (Attademo, 2023, p. 16). Il contributo si focalizza sulla rappresentazione di mondi e città visionari dell'universo di *Final Fantasy*, incarnazione visiva del *world-building* alla base dell'universo narrativo, e sulle connessioni che emergono con società, cultura urbana e dinamiche spaziali.

1. World-building, lore e immersività nell'esperienza videoludica

L'immersività è di sicuro la caratteristica peculiare dell'esperienza videoludica, ritenuta l'aspetto fondante da game designer e ricercatori nel campo dei videogiochi (Brown & Cairns, 2004; Calleja, 2011), e imperniata a sua volta sul principio di "posizione soggettiva ludica incarnata" (Vella, 2016, p. 3), ovvero sull'identificazione del giocatore con la figura dell'avatar (Taylor, 2002; Grodal, 2003; Gee, 2008). Inoltre, la coerenza interna e la credibilità del mondo immaginario sono fondamentali ai fini dell'immersività (Murray, 1997, pp. 107-109; Wolf, 2017, p. 204): ogni elemento, dal paesaggio alle regole sociali, deve infatti rispondere a un ordine sistemico riconoscibile per assicurare il coinvolgimento immersivo del giocatore.

Sin dalle origini, la saga di *Final Fantasy* ha incarnato perfettamente tale capacità del videogioco di immergere il videogiocatore in un universo narrativo complesso, affidando proprio al *world-building* un ruolo centrale. Ogni capitolo numerato della serie principale si distingue, infatti, per la costruzione di un mondo articolato e caratterizzato da una mitologia complessa, in cui città, territori e paesaggi non fungono solo da sfondo alla narrazione, ma si impongono come veri e propri protagonisti dell'esperienza videoludica, tanto da compensare o far passare in secondo piano persino trame deboli o non estremamente originali. A partire dal primo videogioco dalla grafica in pixel, pubblicato nel 1987 da Square per la console Famicom, fino al più recente e visivamente spettacolare *Final Fantasy XVI*, uscito nel 2023 (fig. 1), si sono succeduti mondi, ambientazioni e sistemi simbolici differenti, ognuno dotato di una propria mitologia, geografia e struttura sociopolitica. In molti casi, queste narrazioni vengono ulteriormente espanse attraverso capitoli aggiuntivi, *prequel*, *sequel*, contenuti scaricabili, missioni secondarie (le cosiddette *side-quests*), film, libri o giochi da tavolo, contribuendo alla stratificazione della *lore* [1] e alla costruzione di un immaginario articolato su più media, dunque, transmediale (Jenkins, 2008). Questi mondi non vengono puntualmente descritti a priori ma raccontano la propria storia attraverso il *level design* stesso, le interazioni con gli oggetti, le missioni o i dialoghi con i personaggi; il mondo si rivela gradualmente al

Fig. 1 – A sinistra, screenshot tratto da *Final Fantasy I* (1987, Square); a destra, screenshot tratto da *Final Fantasy XVI* (2023, Square Enix).



giocatore che si muove al suo interno, scoprendone un frammento alla volta; lo respira, ne testimonia e vive le dinamiche esplorando i luoghi e indagando il loro funzionamento. In questo senso, il mondo di gioco è la storia del gioco, se cambia, cambia con lui la trama. Il *world-building*, infatti, acquisisce non di rado una maggior centralità rispetto alla trama stessa: la costruzione di un mondo consente di sviluppare parallelamente trame distinte afferenti allo stesso universo ma, al contempo, le singole narrazioni possono essere comprese senza necessariamente conoscere le altre. J. R. R. Tolkien è stato il pioniere di questo concetto: la Terra di Mezzo, infatti, accoglie narrazioni diverse, racchiuse nei suoi romanzi (*Lo Hobbit* del 1937 e *Il Signore degli Anelli* del 1954-1955) e ha aperto la strada a una categoria di titoli cinematografici e videoludici che rientrano pienamente in quella che Umberto Eco ha definito “neomedioevo fantastico” (Eco 1986, p. 63), ovvero le rivisitazioni immaginative, proprie della cultura popolare, di idee, tropi ed elementi associati al Medioevo (a queste appartiene anche il mondo di Valisthea in *Final Fantasy XVI*) (fig. 2).

Sebbene il termine *fantasy* sia inteso come “l’impulso a distaccarsi dalla realtà consensuale” (Hume 1984, p. 30), e sia solitamente posto in contrapposizione al realismo, esiste in realtà una relazione più profonda e complessa tra mimesi e *fantasy*: il *world-building* del genere fantastico, infatti, adotta, rielabora e ricontestualizza rappresentazioni riconoscibili di elementi del mondo reale (Ansaldi, 2020, p. 48) e si fa espressione di diverse organizzazioni socioculturali (Huber, 2005, p. 2), che, anche se codificate come “altre” rispetto al mondo che riconosciamo come nostro, sono a questo intrinsecamente collegate. La differenza sta proprio nell’accezione munariana di fantasia, la quale «non deve tenere conto della realizzabilità e del funzionamento di ciò che ha pensato [...]: è libera di pensare qualunque cosa, anche la più assurda, incredibile, impossibile» (Munari, 1977, p. 21).



Fig. 2 – Mappa del mondo di Valisthea di *Final Fantasy XVI* (2023, Square Enix).

2. Visioni di città: leggere e interpretare la *game city*

«Le città come i sogni sono costruite di desideri e di paure, anche se il filo del loro discorso è segreto, le loro regole assurde, le prospettive ingannevoli, e ogni cosa ne nasconde un'altra [...]»

Italo Calvino, *Le città invisibili*, 1972, pp. 49-50.

Konstantin Dimopoulos definisce le *game city* come «luoghi che esistono da qualche parte tra arte, ingegneria, *urban planning*, letteratura, *game design*, cinema e architettura» (Dimopoulos, 2020, p. viii) e i videogiochi sono intesi come narrazioni interattive o “cinema ri-mediato” (Eskelinen, 2001). La città fantastica videoludica ha di fatto un chiaro antecedente nella rappresentazione urbana nel cinema del genere distopico e fantastico, che, sin dai suoi albori, ha saputo costruire spazi immaginari capaci di evocare meraviglia, inquietudine e riflessione. Già in pellicole come *The Cabinet of Dr. Caligari* (1920), con la sua architettura distorta ed espressionista, *Things to Come* (1936) e la sua New York verticale e tentacolare, il cinema ha delineato modelli di città fittizie ma profondamente evocative e credibili. Ancora, nel capolavoro del muto *Metropolis* (1927) di Fritz Lang a essere protagonista è il funzionamento della macchina onirica urbana in termini architettonici, con le utopie e le distopie dell'era delle macchine (Bruno, 2002, p. 21), un modello di riferimento per altri pilastri del genere come *Blade Runner* (1982) e la sua celeberrima visione stratificata e claustrofobica di una Los Angeles del futuro (fig. 3), riproposta in una veste nuova nel più recente *sequel* del 2017.

In un certo senso, i *game designer* hanno travalicato i confini dello spazio cinematografico, dando la possibilità allo spettatore di diventare esploratore attivo e di scoprire gradualmente il mondo di gioco in prima persona. Inserire in un film la mole di informazioni che un giocatore acquisisce attraverso l'esplorazione di un mondo virtuale risulterebbe impossibile, perché incompatibile con i vincoli temporali e narrativi propri del linguaggio cinematografico. Al contrario, il videogioco si distingue per una temporalità dilatata e modulabile, in cui – soprattutto nei giochi di ruolo e negli *open world* – è il giocatore stesso a gestire il ritmo dell'esperienza. Ciò spesso avviene in modo indipendente rispetto alla progressione della trama principale, privilegiando la scoperta, l'immersione e l'interazione con le ambientazioni rispetto alla linearità narrativa. Oltre tutto, non sempre le ambientazioni ci vengono rivelate nella loro interezza (Attademo, 2023, p. 35): possiamo esplorarne talvolta solo dei brani, senza poter nemmeno consultare una mappa completa del luogo. Se in letteratura il lettore è chiamato a fare un ingente sforzo immaginativo per visualizzare le ambientazioni in cui la storia si sviluppa, negli ambienti videoludici, il giocatore è chiamato a superare i confini imposti dal *game design* creando proprie immagini mentali degli spazi inaccessibili per poter ricostruire una visione globale degli scenari a partire dai frammenti esplorati.

Per quanto possano spingersi nella più sfrenata immaginazione, le *game city* restano intimamente legate alle città reali: i *game designer* traspongono le nostre aspettative sui centri urbani e sulla vita nelle città nelle dimensioni virtuali (astratte, esotiche, uto-

Fig. 3 – Fotogrammi di titoli cinematografici. Da sinistra verso destra, dall'alto verso il basso: *The Cabinet of Dr. Caligari* (1920) di Robert Wiene; *Things to Come* (1936) di William Cameron Menzies; *Metropolis* (1927) di Fritz Lang; *Blade Runner* (1982) di Ridley Scott.



pistiche, storiche o distopiche) dei videogiochi, sovvertendo e/o ignorando all'occorrenza logiche e buone pratiche della progettazione urbana per innescare specifiche reazioni emotive, fondendo così conoscenza del reale, urbanistica immaginaria ed *environmental storytelling*. Le città videoludiche possono anche configurarsi come proiezioni delle nostre paure riguardo alle fragilità e alla vivibilità dei sistemi urbani: esse, infatti, dimostrano quanto sia facile generare un ambiente urbano deviante attraverso distorsioni di scala e paradossi urbani. Quest'inquietudine crea visioni di un'architettura a volte ripetitiva e omologata, a volte caotica e incontrollata, dando vita alternativamente a "non-luoghi" anonimi e uguali, o a *junkspace* (Koohlas, 2006) spazio spazzatura, o diventando rappresentazione del potere attraverso forme di monumentalità (De Domenico, 2013, p. 181).

Come osservano Vella e Krista (Vella & Krista 2018), riprendendo Aarseth (2001), l'approccio semiotico all'architettura — secondo cui l'ambiente costruito può essere letto come un testo carico di codici culturali, sociali e ideologici — si applica anche alle città fittizie nei videogiochi. Richiamandosi a Jencks (Jencks 1980, pp. 72-74) e Soja (1989, p. 6), Vella e Krista sottolineano che tali spazi, lungi dall'essere neutrali, riflettono visioni ideologiche del vivere urbano, rendendo leggibili nelle città immaginate le stesse dinamiche di potere, memoria e cultura che strutturano le città reali. Ancora, come afferma Schweizer (2013), la città immaginata e quella reale condividono alcune somiglianze che ne rendono possibile il confronto e la condivisione di metodologie di lettura. In tal senso, qualsiasi lettura della città, reale o fittizia che sia, non può ignorare — per usare i termini di Henri Lefebvre (1991) — la dimensione "rappresentazionale" dello spazio "vissuto", la quale definisce pratiche, funzioni e stili di vita in un complesso organismo in cui i processi sociali plasmano le geografie, ma le geografie a loro volta plasmano i processi sociali, definendo la cultura urbana dei luoghi.

Edward Soja spiega inoltre come le tre componenti della triade spaziale lefebvrina siano in grado di produrre rispettivamente spazi reali, spazi immaginati e spazi reali-e-immaginati: questi ultimi legano la nostra concreta e reale esperienza delle città con le concezioni derivanti dalle rappresentazioni urbane 'mediate' (Soja, 1996, pp. 10-11), instaurando una relazione 'trialettica' con le pratiche spaziali. Trasponendo questa lettura alle città videoludiche, come suggerito da Attademo (2023, pp. 22-23), potremmo leggere: il first space come lo spazio prodotto dal world-building; il second space come la rappresentazione dello spazio progettato e modellato dai game designer, con regole, vincoli narrativi e ludici; il third space come lo spazio esperito dal giocatore, "espanso", caricato di significati aggiunti e arricchito dall'immaginazione personale: coinvolgimento emotivo e immersività danno dunque vita a una nuova, soggettiva e personale esperienza dello spazio.

3. Dinamiche urbane e ruolo simbolico delle città nei mondi di *Final Fantasy*

Come più volte evidenziato, le città in *Final Fantasy* non sono semplici sfondi di gioco: sono espressione e manifestazione del *world-building*, il cui palinsesto morfologico è frutto di dinamiche sociali, culturali, economiche e politiche. Non solo: esse rivestono una funzione di centralità rispetto al paesaggio e, come afferma Norberg-Schulz (1985, p. 31), per ricoprire tale ruolo la città “deve possedere una qualità figurale in relazione al paesaggio circostante” cioè deve possedere una forma chiaramente delimitata e visibile che faccia orbitare visivamente l’ambiente circostante attorno a sé. Tale centralità rende l’insediamento un ‘punto di arrivo’, la meta verso cui orientiamo il nostro viaggio, e ciò è ottenuto mediante il contrasto con le immense distese rurali che caratterizzano il paesaggio al di fuori dei confini urbani: in questo senso, i mondi di *Final Fantasy* prediligono configurazioni urbane pre-industriali o in via di industrializzazione, come nel caso del continente di Spira di *Final Fantasy X*, dove la popolazione vive per lo più in villaggi o piccoli insediamenti; inoltre, le città, nella maggior parte dei casi, accrescono la loro potenza accentratrice grazie a impianti geometrici e/o fortemente simmetrici,



Fig. 4 - In alto, Midgar in uno screenshot tratto da *Final Fantasy VII* (1997, Square); in basso, Insomnia in una vista a volo d’uccello tratta da *Final Fantasy XV* (2016, Square Enix).

spesso ulteriormente rimarcati da imponenti mura, come nel caso della Midgar di *Final Fantasy VII* o la Insomnia di *Final Fantasy XV* (fig. 4).

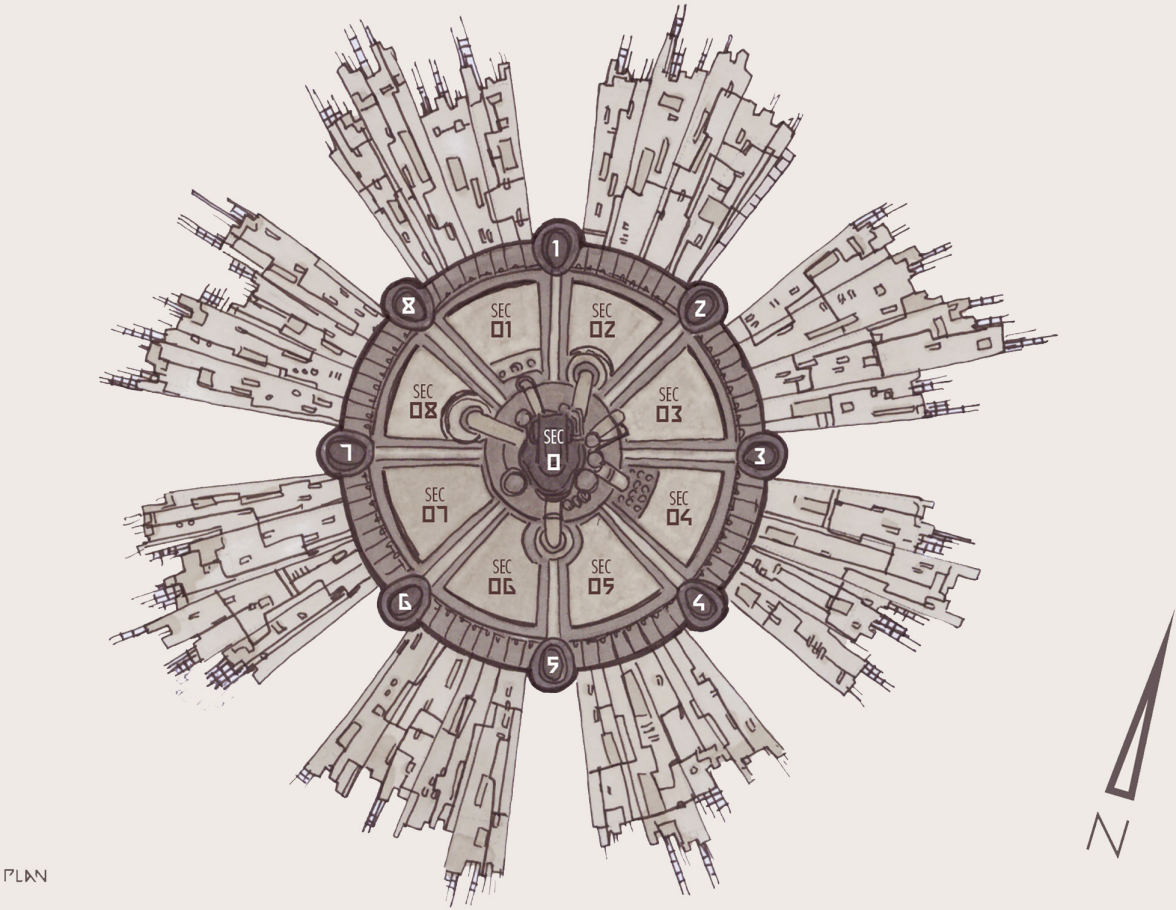
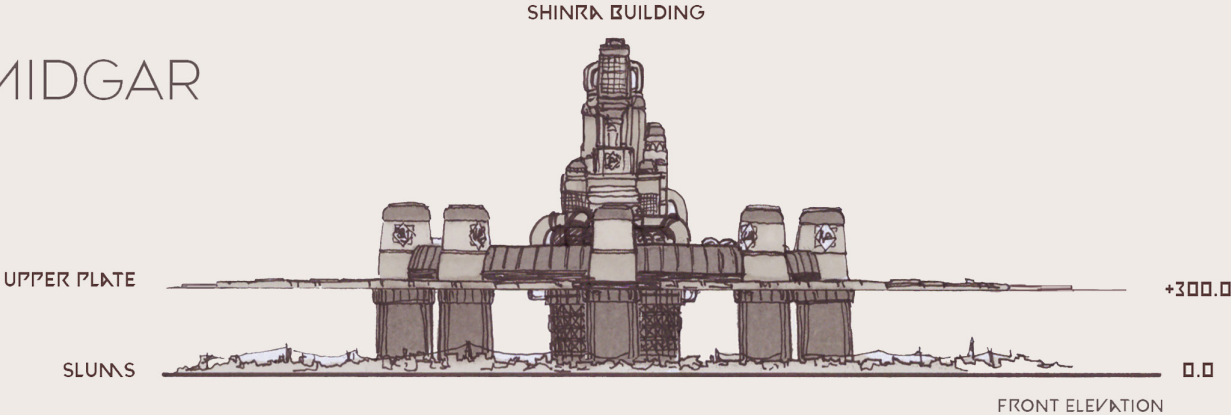
Fig. 5 - Midgar in uno screenshot tratto da Final Fantasy VII Remake (2020, Square Enix).

3.1. L'incubo distopico di Midgar

Final Fantasy VII, probabilmente il capitolo più acclamato e fortunato della serie, ha avuto nella megalopoli distopica di Midgar (fig. 5). Reiterando il conflitto archetipico tra natura e avanzamento tecnologico, i protagonisti sono impegnati in una lotta contro la Shinra, colossale mega corporazione – un emblema ricorrente dell'immaginario *cyberpunk* [2] – responsabile dell'estrazione e dello sfruttamento indiscriminato dell'energia Mako, estratta dalla linfa vitale del pianeta Gaia, attività che non solo ha compromesso gravemente l'equilibrio ecologico del mondo, ma ha generato forte disuguaglianza sociale a Midgar. Oltre a connettersi direttamente con tematiche ambientali contemporanee (Cash, 2023), la centralità dell'energia Mako nella trama del videogame è da interpretarsi tenendo attentamente conto della complessa storia del Giappone con l'energia nucleare (Hutchinson, 2019). Il recente *remake* pubblicato da Square Enix riprende fedelmente l'impianto narrativo originario, rielaborandolo in chiave contemporanea: in questa nuova versione, viene conferita una maggiore profondità all'interazione tra i personaggi e il contesto ambientale e sociale che li circonda, con un'attenzione marcata all'esplorazione delle dinamiche socioculturali già presenti, seppur in forma embrio-



MIDGAR



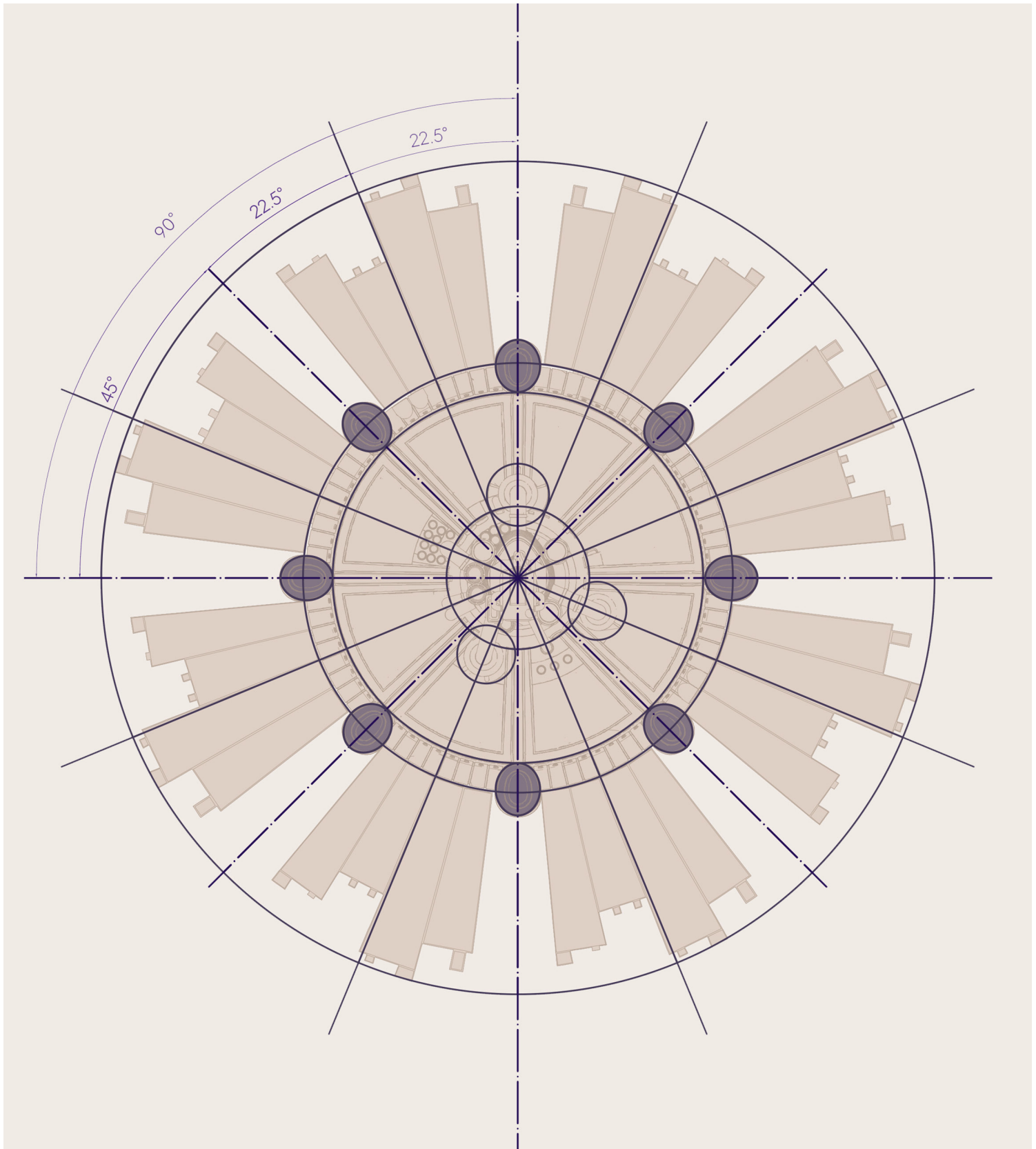


Fig. 6a - Pianta e prospetto concettuali di Midgar, in cui è possibile apprezzare la relazione tra la piattaforma e i bassifondi, nonché la collocazione dei reattori Mako e dei settori radiali. Elaborazione dell'autrice.

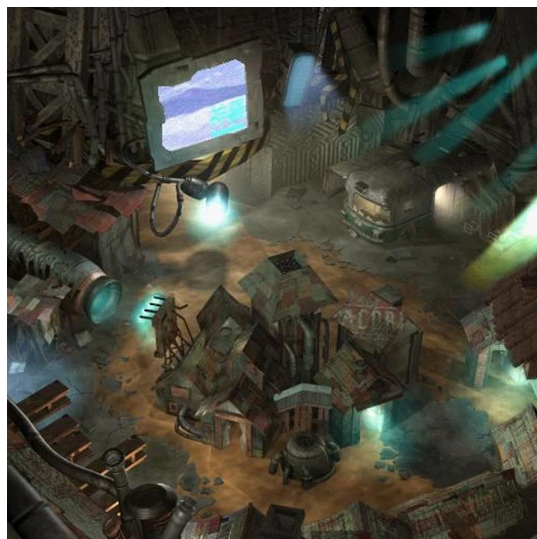
Fig. 6b - Analisi geometrica della pianta di Midgar. Elaborazione dell'autrice.

nale, nel titolo originale. Midgar si presenta come una distopia stratificata *dieselpunk* [3] (Tommasino, 2020) archetipo della città-macchina (De Domenico, 2013, p. 188), strettamente connessa all'entità dominante della Shinra, la quale incarna gli aspetti più oscuri e decadenti di un ordine mondiale fossilizzato su dinamiche di potere, ideologie e prevaricazione. La rappresentazione della città si fonda su un impianto fortemente simbolico: l'estetica retrofuturista cela un'organizzazione spaziale che richiama sia il principio di sorveglianza permanente teorizzato da Jeremy Bentham nel Panopticon (Bentham, 2001), sia la struttura pianificata e gerarchizzata delle Città Giardino di Ebenezer Howard. Le infrastrutture della Shinra costituiscono l'ossatura portante di Midgar, a partire dalla quale si sviluppano i "settori" radiali – destinati a ospitare la popolazione privilegiata e i lavoratori dell'azienda – ancorati a un nucleo centrale dominante. Questa parte della città si erge su una piattaforma sospesa, la cui configurazione visiva e simbolica è determinata dalla presenza imponente dei reattori Mako, che ne costituiscono l'orizzonte sia fisico che ideologico (fig. 6a-6b). Al di sotto, si dispiega l'ammasso informe dei bassifondi, un conglomerato urbano caotico e degradato, simbolo della disparità socioeconomica e della marginalizzazione prodotta dalla stessa logica di potere della Shinra. Le abitazioni dei bassifondi del settore 7 sono costruite con gli scarti della piattaforma sovrastante: baracche di lamiera, tubature di risulta e carcasse di metallo arrugginite si affastellano in un tessuto urbano disordinato, privo di qualsiasi razionalità pianificatoria (fig. 7).

3.2 Insediamenti urbani nel continente di Spira: tra ritualità, rovine e memoria

Fig. 7 - I bassifondi del settore 7. Nello screenshot a sinistra: la veste originale in *Final Fantasy VII* (1997, Square); a destra, la suggestiva versione proposta in *Final Fantasy VII Remake* (2020, Square Enix), in cui è possibile apprezzare la relazione spaziale con la piattaforma sovrastante.

Final Fantasy X è ambientato nel mondo fittizio di Spira, un continente ispirato a motivi culturali e paesaggistici asiatici (Mecheri, 2023) e tormentato dalla ciclica distruzione portata da Sin, una gigantesca e mostruosa creatura che si manifesta ciclicamente come forza distruttrice. Sin incarna la dimensione mitopoietica e religiosa alla base

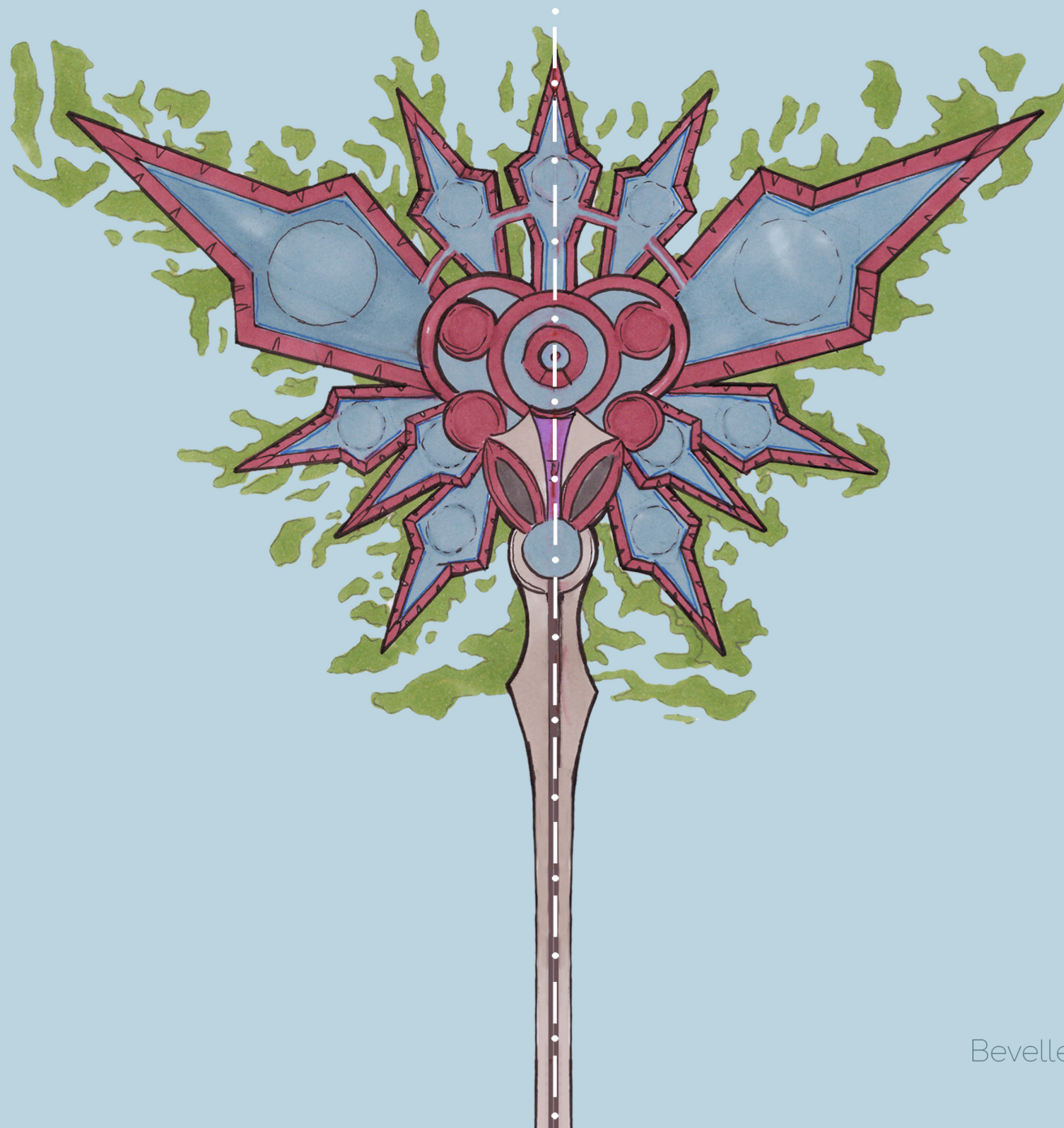


dell'universo narrativo di Spira: la sua esistenza costringe gli abitanti a vivere nel perenne incubo del suo ritorno, affidando la propria salvezza all'ordine religioso di Yevon e agli Invocatori – praticanti le arti magiche – i soli ritenuti in grado di interrompere la catena di distruzione e garantire il ritorno temporaneo della cosiddetta “Calma”, un periodo di pace che segue la ciclica sconfitta di Sin. Questo processo di liberazione si articola attraverso un pellegrinaggio rituale che conduce gli Invocatori e i loro Guardiani a visitare i templi disseminati nelle principali città o villaggi di Spira.

La Spira finora descritta – e in cui viene catapultato il giocatore – paga le conseguenze della rottura di una millenaria convivenza tra arti magico-spirituali e tecnologia che aveva dato vita ad immense città-macchina. Nel corso dei secoli, infatti, la rivalità tra le due maggiori città aveva lentamente logorato gli equilibri nel continente: da una parte Zanarkand, legata alla tradizione della magia e della spiritualità, dall'altra Bevelle sempre più orientata all'avanzamento tecnologico e all'uso di macchine. Le tensioni sfociano in conflitto bellico tra le due città in cui ad avere la peggio è Zanarkand. A un passo dalla sconfitta, il suo leader, Yu Yevon, compie quello che è forse l'atto più poetico e originale della narrazione: per preservare la memoria della sua città chiede agli Invocatori e alla popolazione di abbandonarsi a un sonno eterno al fine di evocare una versione onirica di Zanarkand e rendere la città “eterna”. Al termine della guerra, di fronte all'immane distruzione causata, le macchine vengono bandite e la religione prende il sopravvento. Mille anni dopo, Spira si è trasformata in un insieme di terre desolate in cui la popolazione vive principalmente in piccoli insediamenti urbani o villaggi rurali dominati – spiritualmente e architettonicamente – dalla presenza del tempio e che gravitano intorno a pochi poli urbani, quali Bevelle e Luca. Ogni insediamento (come Besaid, Kilika e Luca) diventa non solo nodo logistico e narrativo del viaggio, ma anche luogo di condensazione di significati simbolici, sociali e politici, attraverso cui il giocatore è in grado di decodificare il world-building dell'universo di Spira. Bevelle (fig. 8), capitale religiosa del continente, si presenta come una città-macchina/città-fortezza dall'impianto cen-



Fig. 8 – Vista aerea di Bevelle in uno screenshot tratto da Final Fantasy X (2001, Squaresoft).



Bevelle

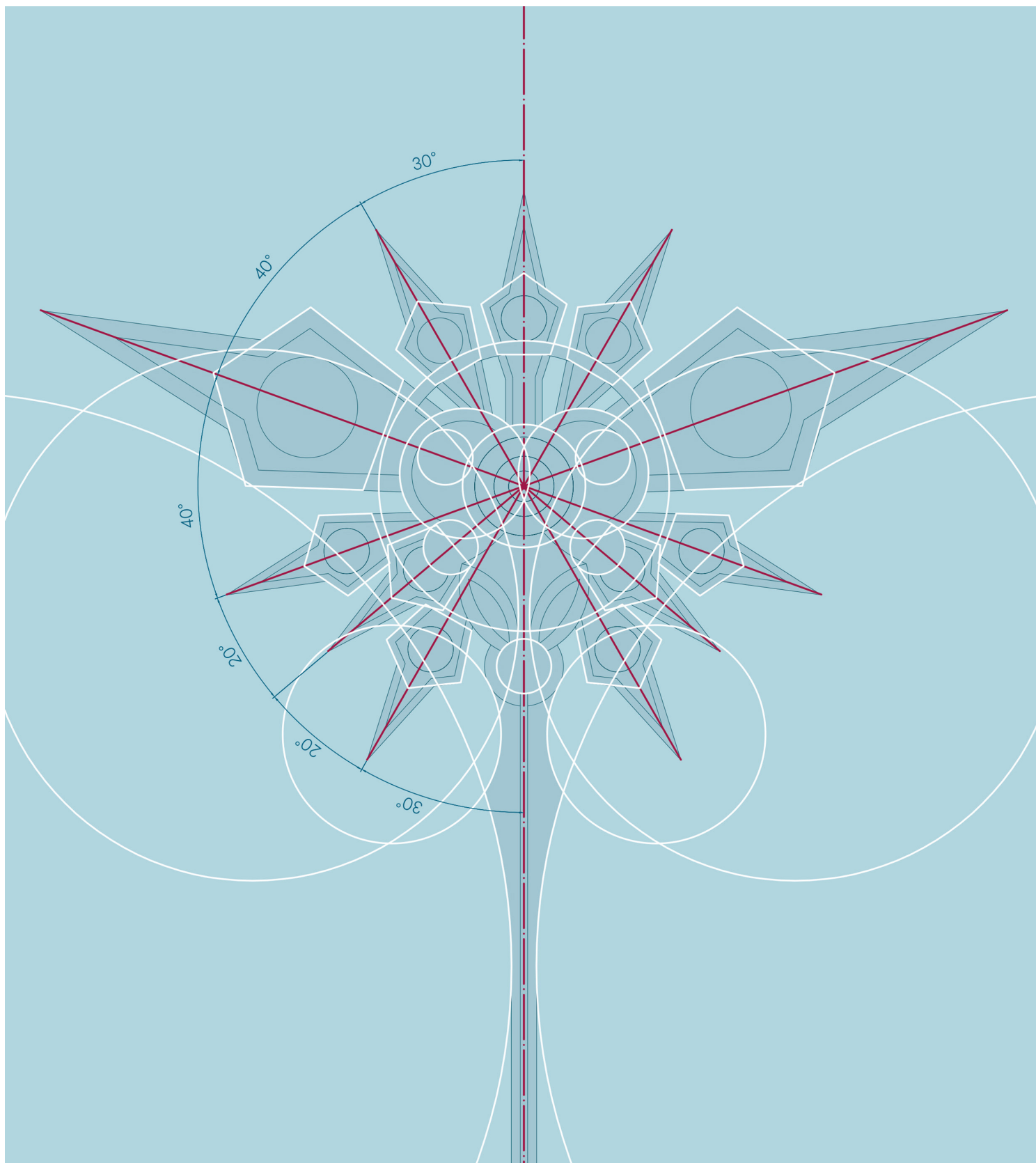


Fig. 9a – Pianta stilizzata di Bevelle. Elaborazione dell'autrice.

Fig. 9b – Analisi geometrica della pianta di Bevelle. L'impianto è basato sull'intersezione di circonferenze, mentre gli elementi che si dispongono in maniera radiale intorno al centro hanno come matrice geometrica il pentagono. Elaborazione dell'autrice.

Fig. 10 – Viste panoramiche di Zanarkand. In alto, la città prima della distruzione; in basso, la città mille anni dopo. Screenshot tratti da *Final Fantasy X* (2001, Squaresoft).

trale geometrico e simmetrico (figg. 9a-9b), capace di richiamare al contempo forme organiche e archetipi storicizzati. Simile a una ziggurat “meccanica”, Bevelle fonde in maniera ossimorica elementi e archetipi medievali — come torri, mura e ponti levatoi — con architetture futuristiche derivate dal possesso esclusivo di tecnologie avanzate. La città instaura inoltre un legame profondo con l'acqua, sia come elemento simbolico sia come risorsa strategica, imponendosi come fulcro religioso, economico e politico del continente di Spira.

Zanarkand, un tempo metropoli futuristica dall'architettura ispirata alle forme del passato, è invece ridotta a un ammasso di rovine e si offre al giocatore esclusivamente mediante sequenze cinematografiche in CGI e sequenze esplorative limitate a poche aree (fig. 10). Zanarkand recupera e alimenta l'immaginario collettivo delle rovine belliche costruito dal cinema, dalla letteratura distopica e la fotografia urbana (Ansaldi & Scarioni, 2023): lo scenario provoca nello spettatore sensazioni contrastanti, oscillanti tra disagio e fascinazione, rese ancor più intense nelle sequenze che la mostrano com'era prima della sua distruzione in alcuni passaggi della narrazione. Il suo appellativo, “a city of light that never sleeps”, è un palese ed esplicito riferimento alla Grande Mela, mentre i *concept* e le poche immagini della città nel suo periodo di splendore strizzano l'occhio ad alcuni disegni di fantasie architettoniche Yakov Chernikov (fig. 11).

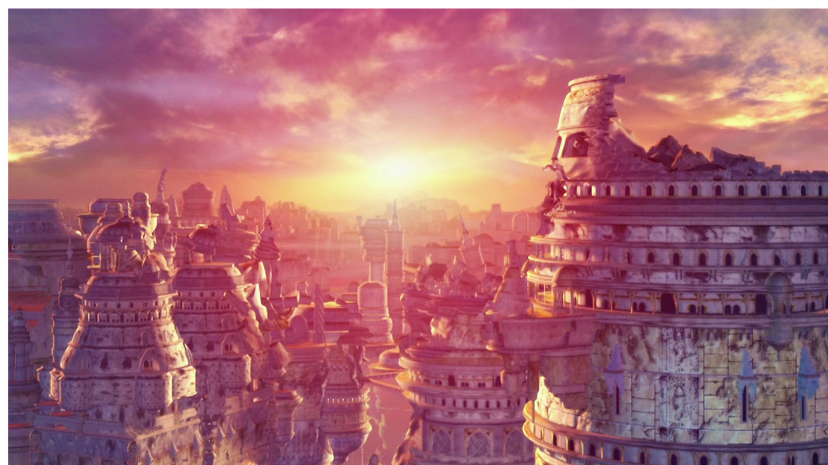




Fig. 11 – – Nella colonna di sinistra, due disegni di architetture fantastiche di Yakov Chernikov; nella colonna di destra, un concept iniziale di Zanarkand e uno screenshot tratto da una sequenza filmica presente in Final Fantasy X (2001, Squaresoft).

Nel contrasto tra la sacralità di facciata e l'ipocrisia della sontuosa città-fortezza di Bevelle e le angoscienti, decadenti rovine di Zanarkand possiamo avvertire una tensione drammatica, ovvero la consapevolezza che la coesione del mondo così come lo conosciamo è più fragile di quanto possa sembrare, come se ogni edificio sventrato o in fatiscente rovina ci ricordasse che l'ordine sociale potrebbe crollare da un momento all'altro, proprio come i resti decadenti di un luogo che un tempo dava per scontata la sua permanenza e centralità.

Conclusioni

Il videogioco mette in scena rappresentazioni di città immaginarie, fantastiche, futuristiche o distopiche, supportate da un *world-building* che conferisce loro coerenza e credibilità e, soprattutto, che ne definisce il grado di immersività. Tali città sono parte attiva della trama, luoghi le cui caratteristiche sono essenziali per i conflitti e le contese della storia, diventando essi stessi protagonisti, intervenendo e modellando — oltre che inquadrando — l'azione (Abbott, 2016, p. 11). Le rappresentazioni urbane proposte dai videogiochi possono dunque aprire il nostro immaginario a nuove modalità di pensiero: analizzando e scomponendo queste città virtuali, che percorrono traiettorie parallele a quelle del mondo reale, emergono scelte creative dei game designer che, pur distanti dall'approccio degli urbanisti, risultano stimolanti per il modo in cui rielaborano archetipi, segni, forme e simboli.

Il ruolo dell'immaginazione è fondamentale nei processi di concettualizzazione, di vi-

sione e di costruzione dell'immaginario urbano, poiché mette in discussione la realtà, ridefinisce le nostre concezioni spaziali e offre alternative possibili (Dunn, 2019, p. 376). In questo quadro, la rappresentazione delle città in *Final Fantasy* si configura come un linguaggio iconico che agisce a livello subconscio, collegando i significati architettonici e urbani a più ampie riflessioni sociali. Inoltre, le distopie che popolano i paesaggi urbani della saga danno forma visibile alle paure, alle ansie e ai desideri che caratterizzano le città e le società moderne.

La rappresentazione di città e architetture diventa un modo per sperimentare nuove spazialità, dinamiche urbane e paradossi, rilevandone al contempo criticità, scale impossibili e parallelismi la realtà, fungendo al contempo da monito e da ispirazione. Queste visioni “[...] possono dare vita a universi di fantasia tangibili, evidenziando le energie dei luoghi e le connessioni con la memoria” (De Domenico, 2013, p. 203) e rivelando come i limiti tra finzione e non finzione siano molto più porosi di quanto comunemente si creda.

Note

[1] Il termine *lore* è utilizzato per designare un insieme articolato di narrazioni, credenze, codici e simboli condivisi all'interno di una comunità o di un universo diegetico, che ne strutturano l'identità culturale e ne regolano le dinamiche interpretative. Nel contesto videoludico, la *lore* assume appunto una funzione fondativa di infrastruttura culturale nel *world-building*, agendo come una struttura semiotica che connette ambientazioni, eventi, personaggi e topografie attraverso una rete coerente di significati.

[2] Dall'Enciclopedia Treccani: “genere narrativo in cui temi legati alla realtà delle società postindustriali (cibernetica, robotica, telematica, realtà virtuale, biotecnologie, clonazione) vengono elaborati fantasticamente nel segno di un'ideologia contestataria, di ribellione e critica sociale, affermatosi negli Stati Uniti nel corso degli anni '80 grazie soprattutto al romanzo *Neuromancer* (1984) di W. Gibson e a un'antologia di racconti di autori vari pubblicata da B. Sterling nel 1986, *Mirrorshades*”.

[3] Il *dieselpunk* è un sottogenere retrofuturista riconducibile al *cyberpunk* che combina elementi storici e culturali dell'era compresa tra gli anni '20 e '50 del Novecento (particolarmente il periodo tra le due guerre mondiali e la Seconda guerra mondiale) con tecnologie anacronistiche e immaginifiche, spesso alimentate da carburanti fossili come il diesel — da cui il nome.

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Customising training actions by learning from the territory through an applied methodology to improve green and smart competences in vulnerable target groups of European rural areas

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Abstract

Background: Tailoring the training actions for the green and digital transition in Europe's rural areas necessitates evidence-based and context-sensitive methodologies.

Objective: Grounded on the NewEcoSmart (NES) project's pilot studies in Italy, Portugal and Spain, this article presents a structured, place-based approach to improve green and digital competences among adults over 45 years of age from rural areas, to promote job reintegration and accessibility to services in three pilot sites.

Methodology: mixed-methods design has been employed, integrating multi-layered territorial diagnostics using GIS mapping, demographic and labour market data and environmental asset inventories with stakeholder mapping, co-design workshops and recurrent validation loops.

Results: Diagnostic analyses across the three pilot sites revealed site-specific assets and challenges, enabling the co-creation of tailored training modules that embed GreenComp sustainability capacities and DigComp digital skills within local case studies. Initial findings display improved liaison between training content and participants' needs, reinforcing inclusive engagement and practical uptake of green-smart practices.

Conclusion: The methodology's highlight on learning from territory ensures measurability and potential to transfer to other rural contexts, offering policymakers and practitioners an adaptable framework to inform EU rural development and lifelong learning initiatives. By linking policy imperatives with grounded territorial insights, this approach supports sustainable, locally owned pathways for adult upskilling in the habitat sector.

KEYWORDS:

green infrastructure; spatial data model; green competences; digital competences; rural adult learning; territorial diagnostics; co-design; NewEcoSmart approach

Personalizzare le azioni formative imparando dal territorio attraverso una metodologia applicata per migliorare le competenze green e smart in gruppi vulnerabili delle aree rurali europee

Abstract

Contesto: Adattare le azioni di formazione per la transizione verde e digitale nelle zone rurali europee richiede metodologie basate su dati concreti e sensibili al contesto.

Obiettivo: Sulla base degli studi pilota del progetto NewEcoSmart (NES) in Italia, Portogallo e Spagna, questo articolo presenta un approccio strutturato e basato sul territorio per migliorare le competenze verdi e digitali degli adulti di età superiore ai 45 anni delle zone rurali, al fine di promuovere il reinserimento lavorativo e l'accessibilità ai servizi nei tre siti pilota.

Metodologia: Si è utilizzato un approccio metodologico misto, che integra una diagnostica territoriale multilayer basata su mappature GIS, dati demografici e sul mercato del lavoro e inventari delle risorse ambientali con l'individuazione di stakeholders interessati, workshop di co-progettazione e processi di feedback in itinere.

Risultati: Le analisi diagnostiche condotte nei tre siti pilota hanno rivelato le risorse e le sfide specifiche di ciascun sito, consentendo la co-creazione di moduli di formazione su misura che integrano le capacità di sostenibilità GreenComp e le competenze digitali DigComp all'interno di casi di studio locali. I primi risultati mostrano un miglioramento del collegamento tra i contenuti formativi e le esigenze dei partecipanti, rafforzando l'impegno inclusivo e l'adozione pratica di pratiche green-smart.

Conclusione: L'enfasi della metodologia sull'apprendimento dal territorio garantisce la misurabilità e il potenziale di trasferimento ad altri contesti rurali, offrendo ai responsabili politici e agli operatori un quadro adattabile per informare le iniziative dell'UE in materia di sviluppo rurale e apprendimento permanente. Collegando le esigenze politiche con conoscenze territoriali concrete, questo approccio sostiene percorsi sostenibili per il miglioramento delle competenze degli adulti nel settore dell'habitat.

PAROLE CHIAVE:

infrastrutture verdi; spatial data model; competenze green; competenze digitali; apprendimento rurale degli adulti; diagnostica territoriale; co-progettazione; approccio NewEcoSmart

Customising training actions by learning from the territory through an applied methodology to improve green and smart competences in vulnerable target groups of European rural areas

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1. Introduction

The European Union supervenes a resolute roadmap to orient the member states towards a twin transition which focuses on the green and digital aspects and reinforces such actions as part of the post-pandemic recovery and resilience structure (European Commission, 2020). European Green Deal constitutes the core of this endeavour, fortifying the position of the EU regarding climate neutrality as of 2050, focusing on dismantling economic growth off resource use while guaranteeing that no site and individual will be left behind (European Commission, 2019). Digital Education Action Plan 2021–2027 adjunctly strives to incorporate digital solutions within training and education perspectives, which incentivises high-quality, inclusive and accessible digital education to reinforce the citizens with the capabilities deemed vital for a gradually digitising society (European Commission, 2021a). Such prominent *modi operandi* gained practicality via the five-year European Skills Agenda, which was formed in 2020 to provide reinforcements regarding improving and actualising talents on individual and corporate levels by harnessing the Upskilling Pathways concept for adults and improved Vocational Education and Training (VET) plans (European Commission, 2020).

EU-wide rural territories confront perpetual difficulties such as the decline in demographics, relatively low per capita Gross Domestic Product (GDP) against urban territories, incompetence in digital connectivity and in accessing education and public service means (European Commission, 2021b). Not surprisingly, such a toll creates an unbalanced effect on vulnerable target groups -older adults, low-skilled workers, the long-term unemployed and socially or digitally excluded groups- since their inclusion into public training services is negatively affected by physical remoteness, financial barriers, limited technological exposure and reduced mobility (Cedefop, 2022). Solving such a multilayered equation on fragility demands holistic methodologies that surpass standard concepts.

The intertwinement of environmental sustainability and digital innovation delivers the notion of green smart competences, which can be interpreted as a compact ensemble of knowledge, skills and practices guiding people towards thriving in low-carbon practices and harnessing digital means for ensuring process optimisation and innovation. The GreenComp framework, as an EU approach, voices twelve vital capacities for sustainability, ranging from systems thinking to futures literacy, for

approaching ecological and social challenges (European Commission, Joint Research Centre, 2022). Concurrently, DigComp 2.2, the Digital Competence Framework for Citizens, also articulates five capacity areas with eight-stage proficiency: information and data literacy; communication and collaboration, digital content creation; safety, and problem-solving; and is also designed in a way to ensure a solid reference for digital education practices (Ferrari, Punie, & Redecker, 2021).

1.1. The NewEcoSmart project

In response to such a policy framework, the NewEcoSmart (NES) project (August 2023 – July 2025) stands as a prominent medium for targeting social innovation and digital empowerment, focusing on adults over 45 in rural areas, aiming to equip them not only with the skills to adeptly navigate green and digital transitions in their professional capacities but also to explore new vocational avenues in the Habitat sector (NewEcoSmart, 2023). Concurrently, it fosters social entrepreneurship skills, crucial for adopting innovative production and consumption methodologies aligned with Circular Economy principles, resonating with contemporary business paradigms (NewEcoSmart, 2023). It also aligns with the European Union's Green Deal and Digital Single Market strategy, aiming to strengthen employability in burgeoning economies, and aspires to contribute long-term to creating safer, more economical, and healthier solutions, including digitally and energy-efficient infrastructures. Such an innovative approach breeds circular and socially responsible practices within habitat-related micro-enterprises with the responsive approach of boosting communities and promoting social inclusion, coherent with the European Pillar of Social Rights (CETEM, 2023). In this comprehensive framework, this article contemplates on place-based learning theories (Lave & Wenger, 1991; Gruenewald, 2003) and propounds a “learning from territory” methodology operating as a systematic determinant of natural, infrastructural, and socio-economic assets and challenges in the territories and functions as an auxiliary for designing training content with stakeholders to develop green and smart competences. The methodology is practised within a NES pilot process and aspires multiple aspects like i) developing a multi-layered determination structure for territories through incorporating GIS-based connectivity maps, demographic data, labour market indicators, and environmental asset inventories; ii) engaging relevant local actors from municipalities, NGOs, business settings in inclusive workshops to determine the gaps and challenges and collaborate in the development of training priorities, iii) designing and practising tailored training modules and blending GreenComp and DigComp elements with territory-specific case studies, iv) ensuring the validation and refinement of the approach through recurrent feedback loops, jointly considering process metrics and learning outcomes.

The NewEcoSmart project ambitiously targets social innovation and digital empowerment, focusing on adults over 45 in rural areas, aiming to equip them not only

with the skills to adeptly navigate green and digital transitions in their professional capacities but also to explore new vocational avenues in the Habitat sector. Concurrently, it fosters social entrepreneurship skills, crucial for adopting innovative production and consumption methodologies aligned with circular economy principles, resonating with contemporary business paradigms.

Complementary to the authenticity of holistic sources scrutinising the adult learning concept in urban or sectoral settings, a relatively low number of studies examine the liaison of green competences, and rural fragility the number shrinks pertaining to analysing the abbreviatory effect of territorial diversity on training uptake and impact (Education and Training Monitor 2024). Furthermore, policy considerations frequently dissociate sustainability and digital frameworks and tend to overlook their synergies in promoting green and smart competencies. This study proposes a multilayered, operable methodology within the NES project to collaborate in the determination and creation processes and ensures liaison between policy frameworks and hands-on practice and suggests an iterative pattern for policymakers and practitioners in this field.

The project aligns with the European Union's Green Deal and Digital Single Market strategy, aiming to strengthen employability in burgeoning economies, and aspires to contribute long-term to creating safer, more economical, and healthier solutions, including digitally and energy-efficient infrastructures.

1.2. Objective and structure of the contribution

This article subsequently tracks the very efforts within the broader framework of the EU strategy and articulates the European Green Deal, Digital Education Action Plan, Skills Agenda and Rural Vision (European Commission, 2019, 2020a, 2021a, 2021b). Such an endeavour is complemented with the elucidation of the theoretical and conceptual cornerstones and instils the GreenComp (Bianchi et al., 2022) and DigComp (Riina et al., 2022) frameworks and the pedagogical rationale regarding place-based adult learning. Consecutive sections point to the methodological influx, including multi-vector territorial data collection, stakeholder mapping and profiling, inclusive co-creation workshops, and recurrent feedback loops. Empirical results from three pilot sites are also presented, along with territorial diagnostics, mapped capacity gaps, and elaborate examples of tailored training modules. The article contemplates the policy implications, the potential of transferring the concept to other rural contexts and methodological limitations. The asserted, broad vision is concluded with recommendations for prospective studies and suggestions regarding the integration of learning from the territory” approach into conventional policies on EU rural development and lifelong learning practices.

The purpose this article is to develop a methodology for the framework analysis underpinning a customised training matrix that is grounded on the evidence available for three pilot sites in different rural areas of Italy, Portugal and Spain. In this contribution,

we present the methodology for the framework analysis of the legal and deontological framework for Information and Communication Technology (ICT) research and development, including its application to the pilots and to more fragile target groups. It also includes a part dedicated to ethical and professional conduct principles in the design, and deployment of Innovative approaches and ICT tools applied to NES use cases, as well as an overview of the legal considerations and recommendations on data collection, monitoring, storage and security of personal data for NES use cases. Moreover, this paper presents an overview of the results emerging from the application of the methodology to the pilot sites is provided. The limit of this approach lies in the availability of complete data sources for some specific items, that may depend upon the collection at local level. Finally, recommendations on the data collection required to apply NES methodology and on the subsequent implementation of targeted green and digital transition training approaches for rural areas are discussed.

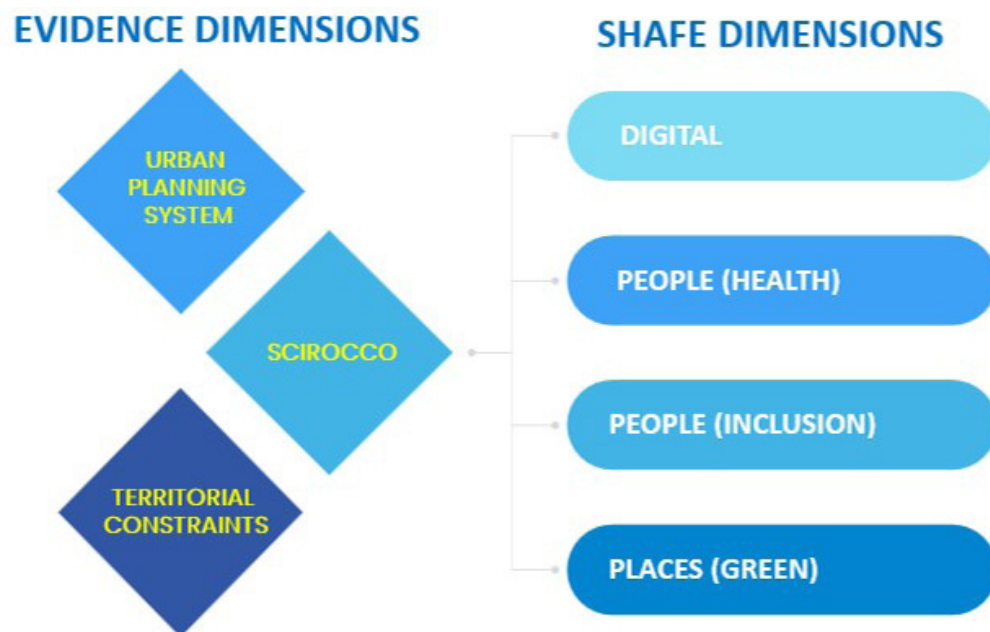
The effort of the proposed approach is to contribute to address as much as possible the complexities influencing the evolution of the local ecosystem towards the green and digital transition through customized training plans. This article propounds the robust NES structure advanced through the alignment of EU-wide policy imperatives with factual territorial analyses and secures a measurable, context-sensitive model for reinforcing the most fragile rural communities in Europe with green and smart competences to accommodate the breakthrough in EU vision for an interregional, inclusive and fair transition.

2. Background

The approach we implemented was based on a mixed methodology where we integrated a data search and analysis grounded on available sources with evidence emerging from the interaction with the local community stakeholders (Fig. 1).

NES project is grounded in the SHAFE concept – Smart Healthy Age-Friendly Environments –, aiming at developing, validating, and implementing an innovative and sustainable approach to strengthen digital and green skills and competences of over 45 in rural areas. The SHAFE community has been supporting the SIRENE project (www.sirene.eu) for the elaboration of a workable framework for investment and the broad adoption of high-quality smart living solutions, combining the housing sector, green and ICT infrastructure. The framework also includes a Blueprint examining validated good practices on responsive, inclusive, smart, age-friendly living environments that were categorised under six main topics - Policy and Funding, Social Innovation, Health and Social Sciences, Community Intervention and Care, ICT for independent living, Information technology, Urban transformation, Housing, Architecture and Design - taking inspiration from the eight domains of the WHO Age-friendly environments approach and identified as key to comprehensively address the expertise and areas of intervention that are relevant to the field of SHAFE. The transversal analysis of the six

Fig. 1 - Evidence-based approach to a green and digital training matrix



domains that was also carried out in the Blueprint highlights the ones that appear as key features of good practice in the field of SHAPE.

In particular, the application of an assessment tool for NES, provided an overview of the three pilot sites, which differ in terms of maturity, showing a heterogeneous sociocultural context that influences the training approach for supporting the transition towards a green and digital ecosystem.

The analysis of the three case studies focused on the collection of socio-demographic data and questionnaires addressed to the local stakeholders. The aim was to identify the composition and social characteristics of the local communities, highlighting their demands. It was essential to integrate this mainly social analysis with research on the physical conditions of the territories involved, to understand the criticalities and development opportunities linked to morphological, hydrographic, vegetational, agronomic, infrastructural, regulatory and planning assets. The local development of the analysed territories and, consequently, the training programmes that constitute the final objective of the project, are closely linked to the transformability conditions determined by the existing material resources and by the normative framework that regulates land use, ranging from integral protection to conservation and valorisation. In a context of vulnerable inland regions, characterised by the outflow of the inhabitants and the economic and social criticalities caused by the abandonment of agriculture and land care, it is essential to understand the current transformative trends. The challenges of the areas examined in the case studies are mainly depopulation and the demographic ageing resulting from the lack of job opportunities and housing deprivation, accentuated by the scarcity of essential services. In addition to these socio-economic problems, there are also issues linked to a physically fragile territory, widely marked by hydrogeological risk, due to poor soil maintenance caused by the abandonment of agricultural activities

and natural reforestation. NES project refers to the concept of “habitat” in terms of preferred or usual surroundings of the natural and anthropic places where human activities take place and develop, including the built environment. Within this concept, the observation of local economic sectors includes both landscape and valorisation of natural resources as well as activities relying on human skills and capacities. Such natural resources, coupled with the built environment and related artefacts represent the “habitat sector” present at local level. Indeed, NES territories stand out for the considerable value of their landscape and environmental resources, the quality of their agri-food products and their tourist attractiveness, as well as for their furniture industry. All these important and dynamic sectors count many companies dealing with tourism, wines, footwear, construction materials, furniture, and upholstery, directly and indirectly generate jobs and impact on the entire local economies.

The parallel ongoing processes of de-anthropisation has been igniting a vicious cycle of demographic decline and a progressive decrease in the local supply of services. This situation is the main cause of housing deprivation and one of the main obstacles to development. Consequently, NES pilot sites appear as ambivalent areas, characterised by socioeconomic weakness and environmental fragility on the one hand, and by historical and landscape wealth and agro-productive and manufacturing and tourism potential on the other.

Inland areas in Southern European countries share common problems of imbalance and marginalisation, with high social costs for the provision of essential services such as education, health, and public transport. The unsustainable cost of services in low-density territories is an outcome of marginalisation, feeding a vicious circle. Inland areas in countries such as Italy, Spain and Portugal are crucial for national development due to issues related to the provision of services, increased hydrogeological risk, loss of landscape values, alteration of ecosystem balances and depletion of local culture. Moreover, the limited utilisation of the territorial potential of these vast areas has a negative impact on the national economy. Therefore, focusing attention on internal areas to identify policies that promote local development, in line with European Community guidelines, requires a comprehensive analysis of the physical, functional, and infrastructural characteristics of the territory, in addition to the socio-demographic assessment. The European Community, in pursuing territorial cohesion, has adopted a place-based policy, concentrating actions and strategies on territorial peculiarities, including natural and institutional resources and relational networks, both material and immaterial, of places.

The three different level of maturity, ranging for the minimum score 5 of Pacentro and Maiella Madre (Pilot site 1) to the maximum score of 25 of Adelo Area (Pilot site 3), with Ayuntamiento Yecla (Pilot site 2) which discloses a score of 10, positioning in the middle, were combined with the different layers emerging from the structured data analysis.

Fig. 2 - On the right, the physical accessibility of the Museo dei Portici (Photo edited by Maurizio F. Errigo)

3. 3. Legal framework for ICT research for the habitat sector

Since 2007, the promotion of spatial information infrastructures in Europe has been driven by Directive 02/2007/EC 'INSPIRE' (INfrastructure for Spatial InfoRmation in Europe) (<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32007L0002>). According to this directive, Member States are required to develop technologies, metadata, cooperation agreements between authorities, and adopt standards to produce accessible spatial data. The primary goals are to support the decision-making process and ensure environmental sustainability. The implementation of these new tools has enabled network users to collect and publish various types of georeferenced data, including texts, photographs, videos, sounds, or measurements of physical quantities such as atmospheric temperatures, creating extensive archives accessible to other users. This has resulted in an unprecedented growth of real-time information, often referred to as big data.

The applications of these technologies are diverse, ranging from cartography creation (e.g., OpenStreetMap) to real-time monitoring of the effects of disasters and the development of digital archives. Their use in urban planning offers considerable advantages. These include the efficient collection and analysis of demographic, environmental, economic and infrastructure data, the ability to virtually model and simulate cities, foster public participation, efficiently manage resources, and improve urban mobility. In addition, the implementation of smart infrastructures, informed decision-making based on data analysis and operational optimisation all contribute to making cities more resilient, economically attractive and sustainability-oriented. In sum, the integration of ICT in urban planning promotes efficient, sustainable, inclusive, and resilient cities.

In this context, GeoApps play a crucial role in expanding and streamlining the management of spatial knowledge, offering user-friendly tools that are highly valuable for the collection and management of built heritage. The utilization of geographic information systems (GIS) in planning procedures is intricately linked with the evolving goals of spatial planning and governance. Such ICT approaches enable spatial analysis, enabling the efficient assessment of the location of infrastructure and resources. By integrating multiple data such as demographic, topographic and economic data, they offer a comprehensive view of the urban context. Advanced visualisation tools, such as interactive maps, facilitate the communication of planning information in a clear manner. GIS tools also support simulations and future scenarios, helping urban planners assess the impacts of decisions. They simplify resource management, optimising the use of space and improving sustainability. By monitoring changes over time, they provide a valuable tool for assessing the effectiveness of planning policies. With advanced analytical tools, GIS supports informed decisions based on accurate data. In summary, the use of GIS improves the accuracy, efficiency and sustainability of urban planning decisions by addressing urban development challenges in an integrated way.

The evolution of ICT in this context is closely tied to the ethical utilization of open

data. In the European Union (EU), the public sector stands out as one of the most data-intensive sectors, generating vast amounts of data known as public sector information (PSI) or government data. This encompasses various data types such as geographical information, statistics, weather data, research project outcomes, and digitized books from libraries. 'Open' public data refers to PSI that is easily accessible and can be widely reused, often under non-restrictive conditions.

According to the 'European Strategy for Data' (2017), data has become a crucial resource for economic growth, job creation, and social progress. Data analysis facilitates process optimization, decision-making, innovation, and the prediction of future events. This global trend holds enormous potential in various fields, including healthcare, food safety, climate, efficient resource use, energy, intelligent transportation systems, and smart cities. The focus is particularly on improving healthcare, creating safer and cleaner transport systems, generating new products and services, reducing the costs of public services, and enhancing sustainability and energy efficiency.

The adoption of open data ensures that all data available to the organisation is easily accessible to anyone who wants to use it, be it citizens, businesses, other organisations or internal contacts in different areas or services. This has several advantages, including improved organisation and management, avoiding unnecessary costs related to duplication of effort in producing information already shared by other entities. In addition, there is an improvement in the quality of data through a process of homogenisation, which favours the timely updating and completeness of information.

4. Methodology of the framework analysis

In NES project we developed a matrix where the gaps emerging from each pilot community along SHAFE domains have been matched and focused on the identification of the key features of the applicable domains for each of them, thus ensuring that an operational approach towards the green and digital transition is supported at policy and strategic level through a personalised Social Innovation Framework.

Towards this end, the required social innovation concepts, methods and skills has been transferred by NES integrated training tools to support entrepreneurs to identify potential business opportunities, funding, and investment around SHAFE, and creating alliances and synergies between stakeholders and ecosystems towards co-design of policy actions.

This multi-layered approach to training is in line with the features that are explicitly mentioned by the World Health Organisation (WHO) in reference to SHAFE initiatives and require all societal levels to be involved, at community and strategic level: free from physical and social barriers and supported by policies, services and infrastructure that promote health and allow people to maintain their full mental physical capacity throughout their entire life or for as long as possible.

NES matrix model has been elaborated in the effort to provide to policy makers a tool

Fig. 3 - The Museum Project Plan

for the integration of all available evidence that could contribute to define a strategy to reskill and upskill the local workforce for digital and green skills and competences.

The matrix consists of SHAFE dimensions against the evidence dimensions coming from the data available for each pilot site. Through the matrix it is possible to follow the different layers of the digital and green transitions, in the effort of deriving specific training content addressing local needs (Tab. 1).

Tab. 1 - The matrix integrating SHAFE dimensions with locally relevant evidence

EVIDENCE DIMENSIONS	SHAFE DIMENSIONS				
	DIGITAL	PEOPLE (HEALTH)	PEOPLE (INCLUSION)	PLACES (GREEN)	
Readiness to change	Place at local offer	Health promotion	Service availability and accessibility	Environmental protection	
Structure & Governance	Adoption of smart tools for organization management	Wellbeing at the workplace	Horizontal and distributed governance models in place	Governance priorities clearly identified in strategic planning	
Digital Transformation	Availability of broadband, smart working stations and spaces, shared databases	Integration of digital tools with health-care and integration of social activities	Stability and accessibility of digital services	Green city design and transition for built environment and businesses spaces	
Funding	Dedicated funding for the digital and green transitions (on environmental certification for industry)	Dedicated funding for the digital and green transitions (on environmental certification for industry)	Dedicated funding for the digital and green transitions (on environmental certification for industry)	Dedicated funding for the digital and green transitions (on environmental certification for industry)	
Removal of inhibitors	Strategic planning of actions for multi-stakeholders' social engagement to create systematic feedback loops	Strategic planning of actions for multi-stakeholders' social engagement to create systematic feedback loops	Strategic planning of actions for multi-stakeholders' social engagement to create systematic feedback loops	Strategic planning of actions for multi-stakeholders' social engagement to create systematic feedback loops	
Citizen empowerment	Social engagement for interactive socio-cultural and literacy initiatives to action the green and digital transitions at local level	Social engagement for interactive socio-cultural and literacy initiatives to action the green and digital transitions at local level	Social engagement for interactive socio-cultural and literacy initiatives to action the green and digital transitions at local level	Social engagement for interactive socio-cultural and literacy initiatives to action the green and digital transitions at local level	
Innovation management	Creative hubs for innovation	Creative hubs for innovation	Creative hubs for innovation	Creative hubs for innovation	
Stakeholder Capacity Building and Development	Interdisciplinary and multi-stakeholders training	Interdisciplinary and multi-stakeholders training	Interdisciplinary and multi-stakeholders training	Interdisciplinary and multi-stakeholders training	
Territorial urban plans	Implementation of large-scale territorial information system	Elaboration of strategic environmental assessments	Interviews with representatives of institutions and the implementation of big data on ecological themes	Creation of a large-scale ecological network	
Sectional urban plans (landscape, etc. risks...)	Creation of an information database on ecological and cultural risks and potentials	Assessment of natural risks related to landscape and environmental elements	Inter-municipal workshops to reduce the population vulnerability and territorial risks	Definition of multi-disciplinary studies and actions aimed at reducing environmental risks	
Local plans	Subsidiarization of urban spaces	Study of the impact of urban actions on the social fabric	Dissemination of quantitative data related to local and sub-local level issues	Good design interventions to reduce safety in green design	
Hydrogeological risk	Digital risk monitoring	Evacuation plans	Dissemination actions and communication to the community on hydrogeological risks	Interventions to secure the territory	
Landscape and environmental production	Digital risk monitoring	Mapping actions	Dissemination actions and communication to the community on environmental risks	Actions to enhance and protect ecological networks	
Landscape and cultural assets	Mapping historical and cultural characters	Enhancement of cultural ecosystem services	Living labs with local actors and institutional bodies	Development of strategic plans for heritage defense	
Rural-natural environment	Digital adaptation of land-use map	Enhancement of environmental ecosystem services	Dissemination events on agricultural qualities of the territory and local products	Creation of a green infrastructure linking the agricultural sector and high-value natural areas	
Anthropic environment	Implementation of a municipal scale geodatabase	Enhancement of local services	Definition of socio-demographic data related to the city's characteristics	Urban regeneration of critical areas	
Degraded areas	Digital mapping of critical urban issues	Functional rehabilitation of abandoned spaces	Urban regeneration workshops with citizens	Actions to revitalize degraded areas and rehabilitation of quarries	
Mobility system	Identification of existing pathways and cycle paths	Removal of structural barriers on the road	Dissemination of information on accessibility of public spaces according to local needs	Implementation of sustainable road systems linking local and supra-local points of interest	

4.1 NES regulatory-planning framework

The collection of digital data presupposes an in-depth knowledge of the reference territory and the instruments through which it is governed and planned. For this reason, a guide sheet has been drawn up to interpret the different levels of territorial planning and governance at different scales, considering the regional/district (macro), supra-municipal (meso) and municipal (micro) levels. This is crucial as it is impossible to adapt a spatial analysis without a clear and precise picture of the regulatory instruments governing the area under study.

The objectives of the NES regulatory-planning framework are as follows:

- Provide a picture of the existing planning tools at different scales;
- Integrating land use data from sources for a clear territorial interpretation;
- Highlight the existing relationship between distinct aspects of the rural-urban fabric;
- Identify the possible lines of planning-normative implementation with an ecological approach.

The analysis will also be split into specific study areas, relating to the natural-rural system, the anthropic system and the mobility system.

4.2. Guidelines for data collection through the NES spatial data model

To obtain comparable data across diverse geographical locations, it is essential to establish a common spatial data model that serves as a standardized framework for consistent research. This geographical approach involves defining specific data categories with precise descriptions, enabling the retrieval of relatable information across various contexts and enhancing our understanding of the territory. The primary goal of the proposed spatial data model framework is to analyse existing legal constraints, the planning system, the rural and natural environment, anthropic elements, and mobility connections. This entails defining the morphological and functional characteristics of the case studies.

The objective of the spatial data model is basically to localise in space information

		SCALE		
		Regional/district	Supra-municipal	Municipal
RURAL-ENVIRONMENTAL SYSTEM	Landscape protection	Regional Landscape plans (Piano Paesistico) District urban plan (PTC L'Aquila)	Territorial constraints (punctual laws, buffer zones)	-
	Land use	Corine Land Cover, specific regional or district tools	Territorial land use plan	Local land use plan (from municipal urban plan)
	River basin	Regional water and risk management plan	Main river basins recognition	-
	Environmental network	Protected national and regional parks recognition, Natura 2000's SCI and SPA, natural-rural elements' system	Green Community studies	Local rural and green public areas (municipal urban plans)
ANTHROPIC SYSTEM	Cultural-landscape heritage	Regional protected sites	Recognition of relevant cultural and landscape elements	-
	Regeneration areas	District tourist-environmental regeneration areas	-	Local transformability areas, renewable built heritage
	Community facilities	Provision of territorial services (hospitals, universities...)	-	Local services and infrastructures
	Tourist facilities	Cultural and hospitalities facilities, district tourist routes	Territorial system: tourist facilities	Areas for hospitality and recreational activities
MOBILITY SYSTEM	Train-airport mobility	Regional and district mobility plans	Territorial intermunicipal connections	-
	Car mobility	Mobility system plan	-	Existing and planned mobility
	Slow mobility	-	Eventual cycling lane plans	Cycling lanes/sustainable mobility plans

Tab. 2 - NES regulatory-planning framework useful to analyse various assets in the governance system (elaboration of I. Pistone and A. Acierno)

linked to single elements in space or to the distribution of a specific phenomenon over the territory, in order to characterize and map spatial features in relation to the uses and interests of society, analysing the ecological and social elements of territory at various scales and highlight their potential, in an ecological, economic, tourist and social perspective (Neteler & Mitasova, 2004). This allows to produce maps and measurements of various site-specific elements to know better the territorial assets and benchmark different study cases (Sharma, 2021).

The implementation of the spatial data model should consider the spatial accuracy of the collected information. In the research process, digitization is necessary for redrawing elements from source images in raster format, requiring high-resolution files to ensure effective decoding of the coastal interface in the compared case studies. Introducing the concept of the minimum mapping unit (MMU), which represents the smallest reliably identifiable element within a map, becomes crucial (Buckley, 2008). This parameter plays a significant role in both data collection and actual map production, facilitating a skimming process among the analysed and produced data based on the scale of the final output. Given that scale influences geographic data analysis, spatial analysis needs to evaluate scale components through minimum mapping units, as they determine the level of information provided on the studied characteristics and established interrelationships at different scales. In the proposed spatial data model, aerial photographs of the study area typically form the reference base, allowing for the consideration of medium to high values of MMUs. This approach facilitates the integration of a comprehensive open data framework describing various elements of the territory, thereby identifying the primary assets of the urban green infrastructure.

	LAYER	DESCRIPTION	ATTRIBUTES	GEOMETRY
Basic layers	Aerial photograph	Most recent and accurate orthophoto to analyse the territory	/	/
	Georeferenced topographic maps	Base maps describing landscape elements (topography, built environment, roads, etc.)	/	Line
Legal constraints	Landscape constraints	Regional or territorial constraints to protect areas with relevant landscape value	/	Polygon
	Hydro-geological risks	Areas where different degrees (very high-high-medium-low) of natural hazard insist	*Landslide hazard *Flood hazard	Polygon
	Buffer zones	Filter zones between a landscape asset or specific infrastructure (e.g. roads) and the surrounding area	/	Polygon
	Punctual constraints	Regulatory constraints protecting an asset in the territory	/	Point
Rural-natural environment	Protected areas	Natural parks and protected zone according to regional, national or supranational regulations	*SCI-SPA *National parks *Regional parks	Polygon
	Vegetated surfaces	Areas with various kind of vegetation, both private and public, used for agricultural or community scopes	*Rural areas *Fruit trees *Public gardens or parks *Urban forestation	Polygon
	Water areas	Basins that are connected to the study areas and could be valorised in an integrated way	*Rivers *Lakes *Underground rivers	Polygon Line
Anthropic environment	Functional zoning	Land use of the areas within the urban fabric of reference	*Residential areas *Productive areas *Commercial areas *Hospitality areas *Mixed areas	Polygon
	Cultural elements	Various components of the cultural system of the area, both exposed or underground sites	*Historic centres *Archaeological remains or sites *Relevant buildings	Polygon
	Public facilities	Buildings that are intended for community uses and that can be managed by public bodies but also private users	*Universities *Schools *City Hall *Public libraries *Museums *Social centres *Hospitals *Parking spots	Point Polygon
	Degraded areas	Zones or specific buildings that could be regenerated and reintegrated for public utility purposes	/	Polygon
Mobility system	Train links	Rail connections inside and outside the municipal boundary	*Municipal lines *Extra-municipal lines	Line
	Road links	Connections for cars with different speed limits	/	Line
	Soft mobility	Electric tramway and cyclo-pedestrian routes	*Electric tramway *Cycle lanes *Pedestrian routes	Line

Tab. 3 - Framework for the NES spatial data model: each layer represents a specific kind of data to gather (elaboration of I. Pistone and A. Acierno)

5. Results

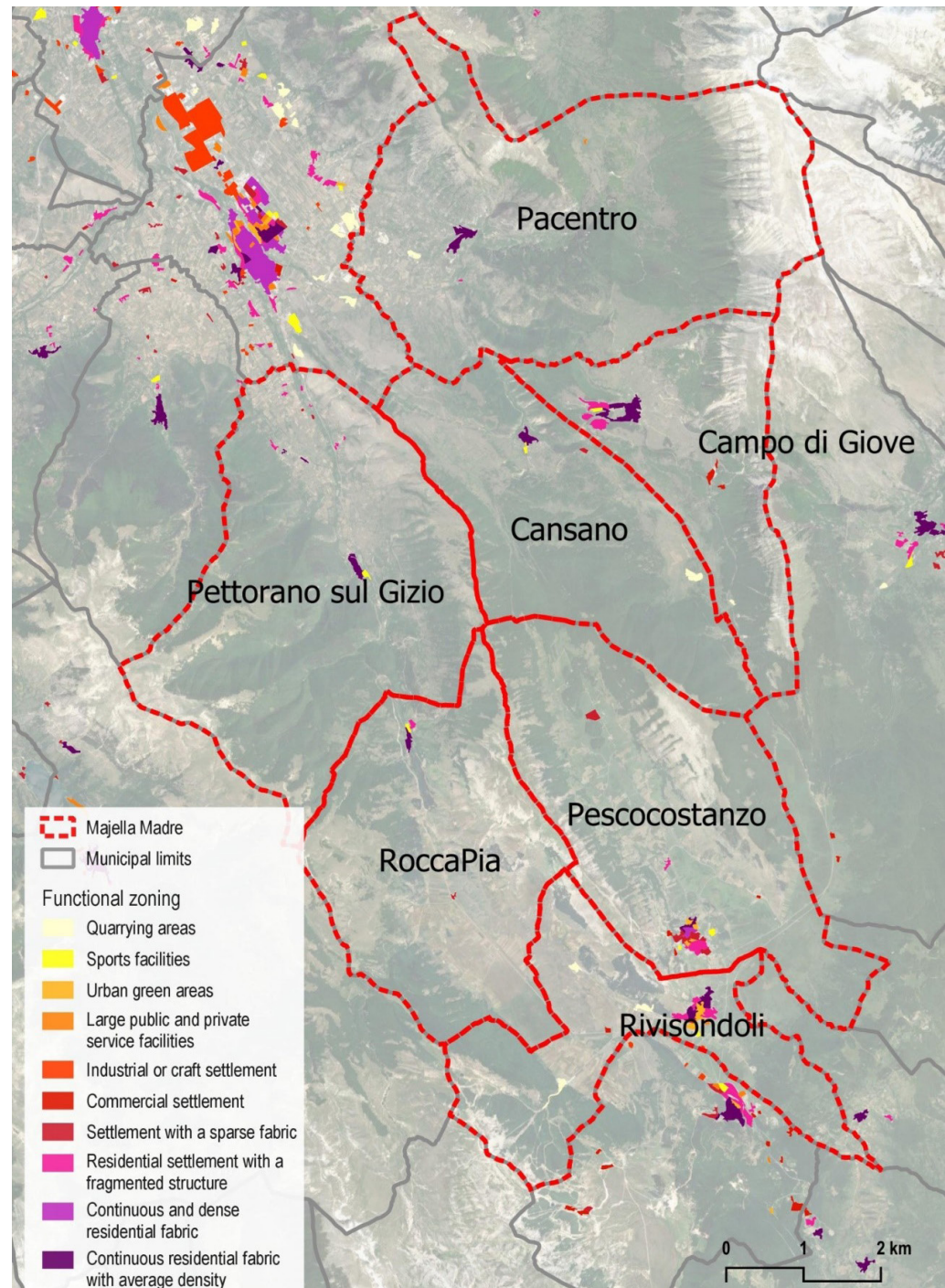
5. 1. Pilot study 1: Pacentro and Majella Madre Community (ITALY)

According to the town planning of Pacentro, the Guiding Vision aims to promote the practical implementation of the National Strategy of Green Communities. This initiative takes advantage of the inherent wealth of the municipal environment, characterised by abundant forest and water resources. Pacentro, with its unique characteristics, has the potential to serve as a valuable testing ground for strategic analysis, potentially extending its influence to a wider inter-municipal context and strengthening other locally significant economic sectors. At its core, the overarching idea is to articulate a strategic planning perspective in line with the principles of the European Green Deal (European Commission, 2019). This involves seizing the opportunities outlined in the National Strategy for Green Communities and translating them into actions that are consistent with a multifunctional policy of territorial enhancement. This comprehensive policy takes into account various interrelated aspects, including hydraulic and hydrogeological impacts, landscape, environmental and ecological values, activities, pressures, infrastructures and elements to be protected and enhanced. These include sustainable tourism, recreational activities and quality agricultural production.

Approximately 86% of the territory of Pacentro, or 6,209 hectares out of a total of 7,217 hectares, is within the Maiella National Park, as provided for by Article 12 of Law 394/91. It is also subject to the provisions of the existing Regional Landscape Plan (2004). In addition, there are areas within the Natura 2000 network, located within the boundaries of the Park, designated as Special Protection Areas (SPA) and Sites of Community Interest (SCI). Each site has a comprehensive framework that includes geographical and administrative details, a general overview of its characteristics and a list of habitats and species of Community interest, complete with assessments of their conservation status and the main threats to the site. Anyway, the overall vulnerability of the territory of Pacentro is underlined by the provisions of Royal Decree no. 3267/1923, which places 90% of the municipal territory under hydrogeological and forestry restrictions.

The rural-natural environment of the Pacentro region has a crucial role in the development of the whole area, considering its wide surface in the municipal and territorial context. In terms of land distribution, the agricultural areas, which include arable land, temporary crops, olive groves, pastures and complex plots of land, together with areas with important natural spaces, cover a total of 2,689 hectares, or about 37% of the total area of the municipality. Wooded and semi-natural areas, ranging from forests to scrubland, including extensive coniferous and other small pine forests that encroach on the urban fabric, cover about 4,478 hectares, or about 62% of the municipality's territory. In particular, most of the woods, pastures and permanent grasslands are owned by the town of Pacentro, accounting for about 77% of the municipal territory, or about 5,061 hectares out of a total of 7,210 hectares.

Fig. 2 - Very few zones are actually urbanised in the Majella Madre territory (elaboration of I. Pistone and A. Acierno)



The anthropic environment mainly revolves around the urban centre of Pacentro, while numerous scattered residences dot the agricultural landscape, particularly along the cultivated terraces facing the Peligna valley. The Maiella and Morrone mountains remain largely uninhabited, with the exception of the Passo San Leonardo ski resort, which is contrasted by numerous abandoned dry-stone huts, tangible remnants of the historic sylvo-pastoral use of the mountain slopes. The state of many

of the buildings in the historic centre of Pacentro reflects the situation in various Apennine regions. Many privately owned buildings are abandoned, in a state of disrepair, with outdated systems and significant structural deterioration. Identifying the rightful owners is often impossible, as they may be deceased, relocated or simply uninterested in carrying out essential renovation or maintenance work. This poses a significant challenge to local authorities, resulting in a significant decline in urban quality and risks to public safety and hygiene. Overall, the surface occupied by settlements is minimal compared to the extensive agricultural and sylvo-pastoral areas, accounting for less than 1% of the municipality's territory.

The mobility system is concentrated on the SS 487, which starts from Caramanico Terme and Sant'Eufemia a Maiella, crosses the San Leonardo Pass, reaches Pacentro and then joins the SS 17 at Sulmona. In the area at the foot of the Maiella, near the San Leonardo Pass, the Fonteromana provincial road 54 joins the state road 487 to link up with the municipality of Campo di Giove. At Pacentro, the SP12 Frentana connects the SP487 to Cansano and Campo di Giove. Finally, to the north, the provincial roads 112 Ancinara and 13 Morronese connect Pacentro to Sulmona.

The Pacentro area focuses mainly on agriculture and artisanal activities in the territory. The crisis of the industrial development model, which over the years has affected all the inland areas of Abruzzo and, more generally, the whole of the Apennines, has gradually raised awareness of the possibility of a new economic trajectory based on tourist flows with an accentuated environmental and historical-cultural dimension. The creation of the Maiella National Park has also contributed to this awareness. As a matter of fact, the productive settlements in the area are basically outside the perimeter of Majella Madre: only a few scattered poles of commercial, rather than productive, matrix are located in the south-eastern areas of the district.

5. 2. Pilot study 2: Montemor-o-Velho (Portugal)

The municipality of Montemor-o-Velho, situated within the Centre Region and Baixo Mondego sub-region, is involved in the ongoing establishment of the Coimbra Metropolitan Area. This area encompasses 14 municipalities, Abrunheira, Arazede, Carapinheira, Gatões, Liceia, Meãs do Campo, Montemor-o-Velho, Pereira, Santo Varão, Seixo de Gatões, Tentúgal, Verride, Vila Nova da Barca and Ereira. The area covers an area of 229 km², ranging from predominantly urban areas like Arazede and Carapinheira to predominantly rural areas such as Abrunheira and Tentúgal.

The legal framework at urban level is based on PMOTs (Planos Municipais de Ordenamento do Território) and on the PDM (Plano Director Municipal). The latter establishes the spatial structure model of the municipal territory, constituting a synthesis of the local development and planning strategy, integrating national and regional indications with the local project axes, limiting the impacts exerted on the relative region.

As part of the research conducted by the National Institute for Environment and Water (INAG) in order to conduct a process of analysis and revision of the list of vulnerable zones, a total of 60 underground aquifer systems were examined with regard to the risk of agricultural contamination. Of these, 15 areas considered to be at potential risk were identified as vulnerable zones. Of these, three fall within the municipal territory of Montemor: Verride, Aluviões do Mondego and Tentúgal.

The municipality of Montemor-o-Velho possesses a very significant range of heritage values. In addition to fortified settlements, churches, chapels, manor houses, farms, traditional houses, among others, there are also a number of interesting sites and complexes that have the potential to become a resource and tourist attraction in the municipality. Indeed, the municipality is home to substantial traces of its architectural and archaeological past, dating back to the Neolithic period, despite the presence of poorly planned settlements that have greatly altered the original status of the area's settlements.

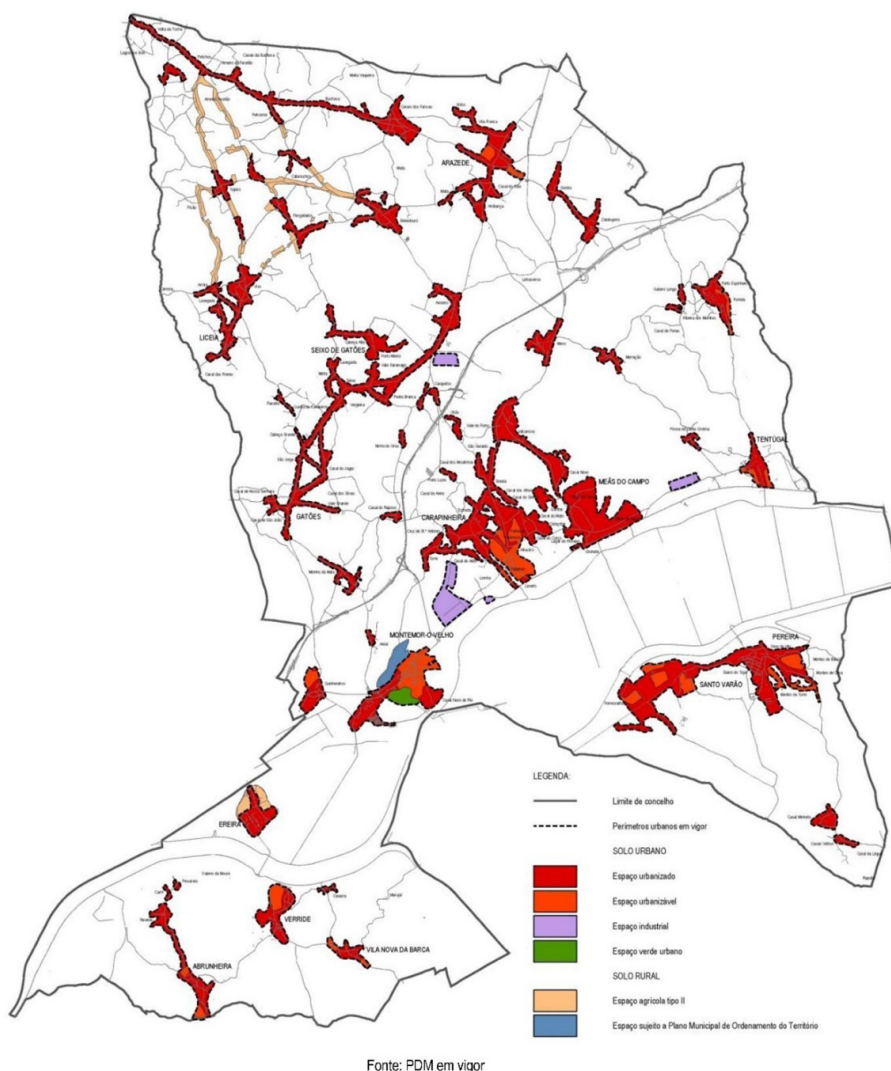


Fig. 3 - Productive and rural use of the Montemor-o-Velho area (source: Montemor-o-Velho website)

In the municipal sphere, there is a growing awareness of the importance of defending the cultural and built heritage, with not only occasional interventions, but also with the safeguarding of complexes and sites with a value of their own or a frame value. This municipality has a long agricultural and livestock history, with family farms and a prevalent polyculture practice.

In summary, the municipality has a strong agricultural tradition, but infrastructural changes have created tensions between farmers and institutions, highlighting the need for greater diversification of agricultural activities and investment in sustainable alternatives. In the Baixo Mondego sub-region, maritime pine forests predominate, occupying about two thirds of the territory, followed by eucalyptus and oak. In Montemor-o-Velho, maritime pine also dominates, constituting the species with the greatest spread. We also find mixed stands of pine and eucalyptus, as well as stretches of oak and other broadleaf trees, although less frequent.

In more recent times, the residential fabric of the municipality of Montemor-o-Velho has been impacted by the attraction of the surrounding large urban centres, which has inevitably caused a demographic decline and contributed to the abandonment of many dwellings. The dwellings in the municipality are mainly of the conventional type, accounting for 99.5% of the total, while non-conventional dwellings make up an insignificant share.

With regard to the geographical distribution of public facilities, it should be noted that the best quality facilities are located in the central part of the municipality, with the Abrunheira area being the second best equipped, followed by Arazedo, Pereira and Verride. Overall, Montemor-o-Velho has a good endowment of public facilities in relation to its demographic size, but there are still areas that need to be adapted to respond more effectively to the current and future needs of the resident population.

At the local level, the road network of the municipality of Montemor-o-Velho is basically composed of three hierarchical levels, differentiated according to their respective administrative category. These are the roads integrated in the National Fundamental Network -

Main Road (IP) - according to the PRN2000 in force; the former National Roads (ex EN), downgraded according to the PRN2000 (or through a protocol that transfers them to the Municipality), which become part of the Municipal Network; finally, the remaining Municipal Network, composed of roads and routes (EM, CM and unclassified roads).

The industrial structure of Montemor-o-Velho presents itself as rather fragile, with an overall limited economic impact on the municipality. Despite this situation, the sector has slightly increased its importance in terms of employment, involving approximately one third of the active workforce. According to the most recent data, among the various activities in the secondary sector, manufacturing is the main source of employment, with a focus on the food industry and the production of non-metallic mineral materials, followed by construction. Between the transition from the old to the new millennium, there was a significant growth in employment in the secondary sector, mainly attributable to an increase in workers in the construction sector. There are ongoing

projects to develop an alternative commercial zone in Pereira/Santo Varão and to optimise the existing industrial area in Tentúgal. These initiatives, if completed, would not only improve working conditions and support infrastructure for businesses, but also respond to the growing demand for better environmental and urban living standards.

5. 3. Pilot study 3: Ayuntamiento Yecla (Spain)

The urban planning system in Yecla is based, at the municipal level, on the PGMO (Plan General Municipal de Ordenación). At a regional level, the following have been considered:

- Strategic Plan of the Region of Murcia (2007-2013)
- Industrial Plan of the Region of Murcia 2008-2013
- Guidelines and Territorial Planning Plan of the Region of Plateau

At the municipal level the current PGMO has established the following strategies based on a main territorial model.

The important ecological and landscape values of the municipality of Yecla make it necessary to actively enhance an important proportion of the municipal area, proposing the limitation of urban uses and betting on the preservation of these soils. On the other hand, maintaining the economic dynamism of Yecla implies the need to foresee significant residential and industrial growth. Making these factors compatible requires a territorial model with significant growth around the current urban center of Yecla, continuing the traditional compact model that has characterized the city, and that allows work along the lines of urban sustainability.

A very relevant part of the municipality's land is protected with some figure of a higher nature than the PGMO itself, although this aims to resolve the discontinuities that occur between these high-value spaces. It is important to highlight the risk of flooding, which has a very important effect on the northern area of the municipality, with the intention of preserving the risks that this may pose to the population. The model assumes the maintenance of the main positive features of the current territorial model: concentration of urban areas in the central area of the municipality, preservation of landscapes and valuable rural spaces subject to some type of risk with special attention to the risk of flooding in the northern and southern areas of the core, and consolidation of the city of Yecla as an attractive industrial enclave specialized in its immediate surroundings.

The risk of flooding is considered very important in the municipality of Yecla due to its extension but of a low type in relation to its attendance. These usually occur as a consequence of rainstorms and storms associated with “cold drop” phenomena. The cause of the large occupation of flood-prone areas is because they are basins endorheic with very wide channels with a very small height of the water table. This has as a consequence the damming of water masses by the enclosures of homes dispersed,

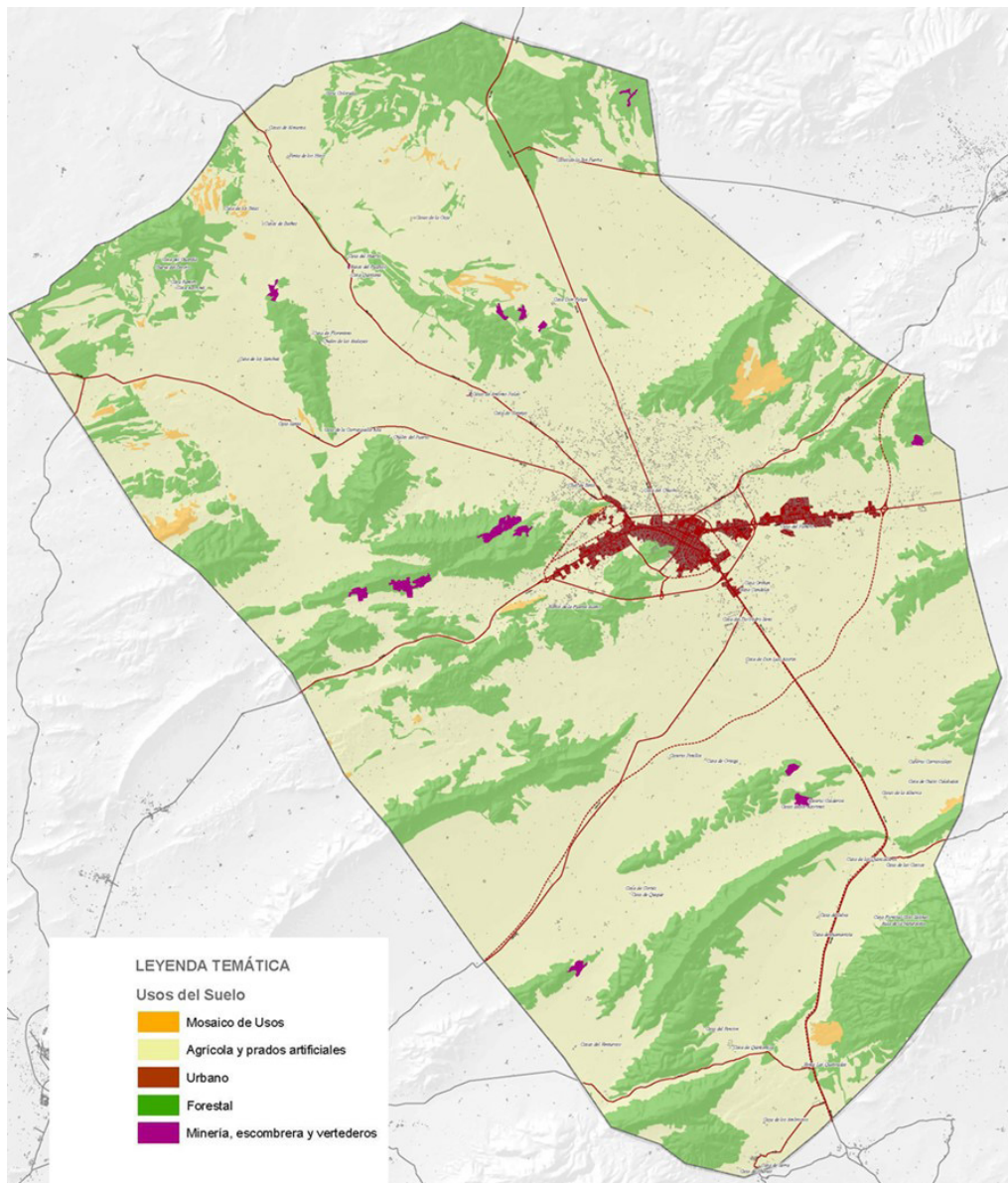


Fig. 4 - Land use of Yecla. The main part of territory is agricultural (80%) with some forestall and often protected areas. In the urban center are concentrated the residential and commercial activities while in the east and west of it are located the industrial ones. Moreover with purple color are showed the mining activities, waste dumps and landfills (source: Ayuntamiento Yecla website)

causing local avalanches of water due to the overturning of fences and walls, and flooding ground floors and basements.

Protected areas constitute the main network of places with natural and cultural values that require protection, and measures have been or are being adopted for their conservation.

The analysis of the Physical Environment shows the high landscape, agricultural and cultural value of the municipal area of Yecla. This richness of the Yecla landscape requires treatment careful with regard to the implementation of new urban growth, infrastructures and activities. The high dynamism economic of the municipality, and especially the agricultural modernization of the two recent decades, has not profoundly altered the coherence of the adequacy of the agricultural and forestry uses to the physical structure of the landscape.

The 2001 Census of the National Institute of Statistics shows for the municipality of Yecla, which currently has a stock of 12,592 homes, a high level of empty homes (18%). In rural areas, where there are 478 registered homes, the percentage is similar (19%). The typologies of collective housing with common free spaces (block with patio) and in open blocks are scarce. There are few buildings with more than six floors. The majors concentrations of commercial and office premises are located around the Town Hall and the main streets. A regular urban fabric of small dimensions, where the blocks have an average dimension of fifty meters on their shortest side, and 120 on the long side, which coincides with the horizontal development of the hillside on which they are located.

There are no degraded areas in the municipality except for some mining areas out of the urban center. There are some quarries out of the urban center.

The Interurban Road Network in the municipality so far includes only one national highway, the National N-344, which connects Valencia and Almería through the Murcian plateau. This becomes a ring road around the center of Yecla (T-424). Likewise, the road network is completed with three first-level regional roads that extend outside the limits of the Autonomous Community. They are the R-424, which connects with Pinoso, and the R-425, with Villena, both municipalities in the province of Alicante; and the R-426, which connects with Almansa, in the province of Albacete. The network is completed radially with three third-level regional roads (Fuente Álamo, Montealegre del Castillo, and RM-A26 roads). In the future, a state highway (A-33) is planned, included as a high-performance road in the 2004 PEIT, following a route parallel to the N-344, which will connect the A-30 Madrid–Murcia highway and the A-31. Madrid–Alicante, to Fuente La Higuera, also connecting with the A-35 highway to Valencia inland. This connection will improve intercity connections significantly.

The municipality has a population structure clearly concentrated and polarized around the center of Yecla with 35,052 inhabitants as of 2021. In recent years there has been significant population growth, due to the growth of the labour market and the increase of immigration, although currently this growth trend seems to be decreasing. The economic activity of the municipality is concentrated on the main axes of Commerce/Repair and Manufacturing Activity. The two activities appear closely linked to the furniture industry, a characteristic of the local economic fabric. Agricultural activities extend over 80% of the Yeclan territory. The main agricultural use is the vineyard, accompanied by olive groves, cereals and fruit trees. The daily residence-work relationships clearly show the role of the municipality as an attraction for labour in its environment, while in contrast the proportion of the local population that works in neighbouring areas is small. Then main 2 industrial areas of Yecla are located on the east and west of the urban center along the main roads.

6. Recommendation on implementation of targeted green and digital transition for rural areas

NES methodology builds on the availability of open data platforms and the results of its application to NES pilots in Italy, Portugal and Spain has been highlighting the limits

due to the data gaps existing at local level. The **first recommendation** is to strengthen the dataflows entering open platforms from rural areas, to ensure that targeted analysis can be carried out across different layers to support evidence-based planning towards the digital and green transitions.

Social norms and ethical values differ across countries and cultures. Considering the very nature of the rural areas in terms of sociocultural context and digital maturity is pivotal to ensure social value and equitable implementation of the green and digital transitions.

The **second recommendation** is to define context-sensitive approaches to ensure that pilot activities for example in terms training for of green and digital skills is targeted towards all the stakeholders that are relevant to ensure adoption and scale-up in the medium and long term. Reskilling and upskilling especially for older adults require cross cultural cooperation and exchange of good practices in innovation ecosystems.

The **third recommendation** is ensuring that potential barriers to cross-cultural cooperation overcome possible cultural mistrust by managing different cultural values. General legal and ethical frameworks for digital technologies should be embedded and operationalised in local pilots through stakeholders engagement.

7. Conclusions

Rural areas differ in terms of both geographical and sociocultural context and for their digital maturity. In order to ensure social value and equitable implementation of the green and digital transitions, and evidence-based approach is very important. The definition of context-sensitive approaches are pivotal to ensure that pilot activities for green and digital skills are adopted and scale-up in the medium and long term. Indeed, potential barriers to cross-cultural cooperation are overcome only taking into account different sociocultural values.

NES methodology for evidence-based training pilot design builds on the information provided by local stakeholders combined with information available open data platforms. Its application to NES pilots in Italy, Portugal and Spain has been highlighting some potential emerging priorities that could be considered at local level to develop comprehensive training strategies.

The dataflows entering open platforms from rural areas ensure targeted analysis that can be carried out across different layers to support evidence-based planning towards the digital and green transitions. The accuracy level of such analysis depends upon the quantity and quality of available data at different scales, hence the need to feed open platforms the best way possible.

The applied methodology here presented, provides the ground to identify adequate tools to address both common and specific training needs expressed by NES pilots in the framework of the habitat sector towards the selected trainees, for strengthening their capacity on digital and green skills and ignite locally valuable dynamics for sustainable development.

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Collaborative GIS for sustainable waste management: the case of Ulaanbaatar in 3R4UB

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Abstract

The paper is included in the international project “The 3Rs for a sustainable use of natural resources in Ulaanbaatar - 3R4UB”, which develops an innovative method to enhance collaboration between citizens and public authorities in sustainable waste management. Ulaanbaatar (UB), the capital of Mongolia, faces serious challenges due to rapid urbanisation and fragmented planning that lacks tools to integrate social, environmental, and infrastructural dynamics. The city is divided into three areas: the planned city (Soviet legacy), the spontaneous city (the informal settlements of the “gher”), and the city in transition (between planned and spontaneous city).

The research proposes the “Ulaanbaatar Spatial Sustainable Waste Management” (UBSWM) approach, which includes spatialising data and information based on GIS tools. The combination of quantitative data (e.g., the number of infrastructures and waste streams) and qualitative data (photographic reportage and awareness-raising strategies in schools) facilitated a multi-scalar narrative of urban dynamics, enhancing the cultural diversity of UB. The results obtained, including an open-access platform on ArcGIS StoryMaps, offer a replicable model to address the challenges of sustainable waste management in similar urban contexts, promoting collaborative planning of more sustainable and equitable public spaces. The study is guided by the research question: How can a spatial and collaborative GIS-based approach support circular and sustainable waste management in transitional urban contexts such as Ulaanbaatar?

KEYWORDS:

Collaborative planning; circular economy; sustainable waste management; GIS; awareness

GIS collaborativo per la gestione sostenibile dei rifiuti: il caso di Ulaanbaatar in 3R4UB

Abstract

Il contributo rientra nel progetto internazionale “The 3Rs for a sustainable use of natural resources in Ulaanbaatar – 3R4UB”, che sviluppa un metodo innovativo che valorizzi la collaborazione tra cittadini e autorità pubbliche nella gestione sostenibile dei rifiuti. Ulaanbaatar (UB), capitale della Mongolia, affronta gravi sfide dovute alla rapida urbanizzazione e ad una pianificazione frammentata priva di strumenti capaci di integrare le dinamiche sociali, ambientali e infrastrutturali. La città è divisa in tre aree: la città pianificata (retaggio sovietico), la città spontanea (gli insediamenti informali delle “gher”) e la città in movimento (città in trasformazione tra città pianificata e città spontanea).

La ricerca propone l’approccio “Ulaanbaatar Spatial Sustainable Waste Management” (UBSWM), che prevede un approccio basato sulla spazializzazione di dati e informazioni basato su strumenti GIS. La combinazione di dati quantitativi (es. numero infrastrutture e flussi di rifiuti) e qualitativi (reportage fotografico e strategie di sensibilizzazione nelle scuole) ha facilitato una narrazione multi-scalare delle dinamiche urbane, valorizzando le diversità culturali di UB. I risultati ottenuti, tra cui una piattaforma open access su ArcGIS StoryMaps, offrono un modello replicabile per affrontare le sfide della gestione sostenibile dei rifiuti in contesti urbani simili, promuovendo una pianificazione collaborativa di spazi pubblici più sostenibili ed equi. Lo studio si sviluppa a partire dalla seguente domanda di ricerca: in che modo un approccio collaborativo e spaziale basato su GIS può supportare la gestione sostenibile e circolare dei rifiuti in contesti urbani in transizione come Ulaanbaatar?

PAROLE CHIAVE:

Pianificazione collaborativa; economia circolare; gestione sostenibile dei rifiuti; GIS; sensibilizzazione

Collaborative GIS for sustainable waste management: the case of Ulaanbaatar in 3R4UB

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1. Introduction

The current global environmental challenges call for a deep and urgent revision of policies, governance models, and natural resource management tools towards a circular economy (CE) model, in line with the Sustainable Development Goals (SDGs) defined by the United Nations. In this scenario, circular waste management (Memon, 2010) emerges as one of the fundamental pillars for responsible, far-sighted, and sustainability-oriented spatial planning (Esposito et al., 2023).

According to Geissdoerfer et al. (2016), CE is a regenerative system that minimises the use of resources and the generation of waste, emissions, and energy loss by tightening material and energy cycles. The integration of CE principles into waste management systems can foster economic growth by synergistically combining the pillars of sustainable development - economic, environmental, and social - through the recovery of energy and materials from waste, the design of durable products and the extension of the useful life of systems, for the benefit of present and future generations (Sharma et al., 2021).

However, political, technological, and public involvement issues may hinder the transition to the CE model (Adami & Schiavon, 2021). In particular, the lack of a centralised platform to promote CE and fragmented regulatory systems can be detrimental. Furthermore, weak global demand for environmentally superior technologies, inadequate technical capacities and limited financial resources represent technological barriers (Sharma et al., 2021).

Waste continues to be perceived as such by the public (Hawkins, 2006), whereas in the circular bioeconomy it represents a valuable resource (Geirdal et al., 2021). Changing the perception to 'waste-as-a-resource' in the mind of the average consumer may be a lengthy process, but it could lead to the mindset and market shift needed to fully value biomass where possible (Neofotistos et al., 2023).

In this perspective, applying integrated waste management to municipal services is a key component of the CE, including all phases, from collection in households, streets and markets to disposal in landfills. The main objective of an Integrated Solid Waste Management (ISWM) system is to ensure environmental benefits, economic efficiency and social acceptability by integrating the different phases of waste management - from collection and separation to treatment, recovery and disposal - to optimise the use of resources (Gurjar & Gaur, 2022).

The planning and monitoring of these phases rely on the use of geospatial technologies, such as Remote Sensing (RS), Geographical Information System (GIS) and Global

Positioning System (GPS), to optimise routes, locate storage and disposal sites, and manage waste flow (Gurjar & Gaur, 2022). In particular, the use of GIS can be an advanced tool to improve the effectiveness of ISWM, especially in developing realities such as Ulaanbaatar (UB) in Mongolia, by providing crucial information on waste generation, collection routes, site selection for landfills, and identification of the most suitable areas for waste-to-energy conversion projects (Sakshi et al., 2023). In addition, the integration of RS and GIS provides valuable data for waste composition analysis, landfill stability assessment, and environmental impact analysis, helping to improve the overall efficiency and sustainability of waste management (Singh, 2019).

In this context, in order to implement both the integrated waste management process and the perception of ‘waste-as-a-resource’, citizen involvement through citizen science approaches is crucial. Citizen science can help overcome public participation barriers and provide useful data for research and policy (Vohland, et al. 2021; Tauginienė et al., 2020; Mitchell et al., 2017) in a collaborative planning perspective (Healey, 2003).

This is the framework for the ‘3Rs for a sustainable use of natural resources in Ulaanbaatar (3R4UB)’ project, funded under the European SWITCH-Asia programme, which has the primary objective of transferring a sustainable approach for municipal solid waste management specifically adapted to the urban context of Ulaanbaatar (UB). The 3R4UB project applies the CE and citizen science approach as a key strategy to promote waste management through the implementation of innovative processes, moving beyond the traditional linear ‘produce-consume-dispose’ model in favour of a CE that values the reuse and recycling of materials.

Particular attention is devoted to the creation of concrete opportunities for the development of circular supply chains at the local level by applying citizen science principles in the definition of training and awareness strategies.

Within the project, the CNR research group has defined the following objectives: 1) to identify settlement functions in relation to the waste masterplan through 3 categories of urban settlement (planned city, spontaneous city, city in transition); 2) to influence and monitor residents’ behaviours through schools (students, teachers and families revolving around the educational system); 3) to identify ecological-settlement assembly mechanisms starting from the spatial reading with respect to the urban fabric, both stationary and not.

In this perspective, the use of GIS systems proves to be an indispensable analytical tool for understanding and managing the complexity of waste flows – understood as resources within the urban fabric, providing crucial support for effective and collaborative spatial planning. Indeed, the integration of spatial data enables to visualisation of critical environmental issues and to design targeted and localised interventions in harmony with the planning of the 3 city types defining Ulaanbaatar.

With this in mind, the contribution aims to investigate how a spatial approach can support sustainable waste management integrated with efficient urban planning through a collaborative GIS of visual narration and data interpretation. Within this complex framework—characterised by the intersection of environmental urgency, technological

potential, and the need for civic engagement—the research addresses a central question:

How can a spatially-informed and collaborative GIS approach contribute to transforming municipal solid waste management in transitional urban contexts such as Ulaanbaatar, by embedding circular economy principles and citizen involvement into planning processes?

This question positions the project beyond the boundaries of technical experimentation, situating it within broader scientific debates on spatial justice, post-socialist urbanism, and participatory governance. By explicitly linking geospatial technologies with inclusive planning practices, the study aims to explore new methods of urban intervention capable of producing not only operational efficiency but also cultural and institutional innovation.

In the following section, the socio-territorial context of Ulaanbaatar in Mongolia is examined (§2), followed by a description of the methodological approach (§3) ‘Ulaanbaatar Spatial Sustainable Waste Management’ (UBSWM). In the following paragraphs, the results in terms of the approach and spatialised data are described (§4) and the research steps are discussed in the conclusions (§5).

2. The city of Ulaanbaatar: an urban context in transition

Ulaanbaatar, the capital and largest city of Mongolia, is home to ca. 1,77 mln. people. As of today, it consists of six central administrative districts and three peripheral districts. Known locally as UB, it is situated in the Tuul River valley at an elevation of ca. 1,300 meters (4,300 feet), and the coldest capital in the world by average yearly temperature. As discussed below in this section, location, internal migrations, Mongolian nomadic culture, and climate contribute to UB’s unique development and current urban challenges.

From a theoretical perspective, the selection of Ulaanbaatar as a case study is rooted in its significance as a paradigmatic example of a transitional urban context. The city reflects key dynamics of post-socialist transformation, where centralised planning legacies coexist with increasing informality and fragmented governance (Karthe et al., 2022; Duurenbayar, 2016). Moreover, the persistence and expansion of informal ger districts situates UB within a broader discourse on urban informality and the hybridisation of urban forms in the Global South and post-socialist Asia (Park et al., 2019; Miller, 2013). These conditions make UB an emblematic terrain for investigating how spatial tools and collaborative governance mechanisms can support more inclusive and adaptive forms of urban management. The city’s extreme climate, environmental vulnerability, and rapid demographic shifts further amplify the relevance of a spatialised and citizen-driven approach to waste governance. Founded in 1639 as a nomadic Buddhist monastic center, UB changed locations 29 times before settling in its current spot in 1778. In 1924, after the establishment of the Mongolian People’s Republic, it became Mongolia’s capital and was renamed Ulaanbaatar. Soviet-era urban planning began in the 1950s, replacing tradi-

tional ger (portable nomadic tents) districts with Soviet-style flats. As we will see, Ulaanbaatar, a relatively young and rapidly evolving metropolis, faces significant environmental and management challenges, intrinsically linked to accelerated urbanization, the widespread presence of informal settlements without adequate infrastructure, and a municipal transport, heating, and solid waste management system that presents significant inefficiencies. To understand UB's current context, we will now briefly take a look at the city's development in the 20th century.

The "Urban Development Master Plan of Ulaanbaatar" serves as the foundational document for the city's territorial, architectural, and spatial planning policies. Ulaanbaatar's first general plan, developed in 1954 (see Fig. 1) with the Soviet Design Institute, aimed to guide growth until 1974 for a projected population of 125,000. The plan facilitated the construction of key infrastructure, including the city center, the small ring road, and sections of the large ring road. However, by 1960, the population had already reached 180,000, prompting an early revision. The second general plan (1961) projected a 20–25-year horizon with a target of 250,000 residents, leading to the development of a 3,900-hectare urban area along the Tuul River. It enabled the construction of 19 residential districts (later expanded by three more) and boosted the housing stock by 79% compared to 1960. Nevertheless, by 1975, Ulaanbaatar's population had soared to 348,700, underscoring persistent underestimations of migration, particularly from rural herders.

The third plan (1975) sought to control population growth by developing satellite cities like Nalaikh and Baganuur and introducing migration limits. Still, within two years, 100,000 new residents arrived, far surpassing the estimated 35,000. A fourth plan followed, but by 1986, with a population of 492,000 and amid political and economic transition post-1990, planning efforts weakened, and urban density management was largely abandoned.



Fig. 1 - First general plan of Ulaanbaatar city (source: Ulaanbaatar National Archives)

Fig. 2 - First (1954), second (1963), third (1975), fourth (1986) general plan of Ulaanbaatar city. (source: <https://development.ub.gov.mn/uploads/The-second-volume-of-UB-master-plan.pdf>)

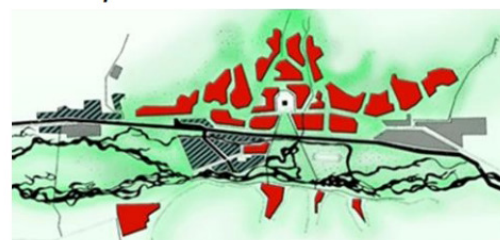
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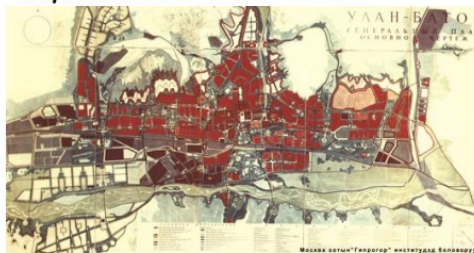
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Дүрслэл 4.

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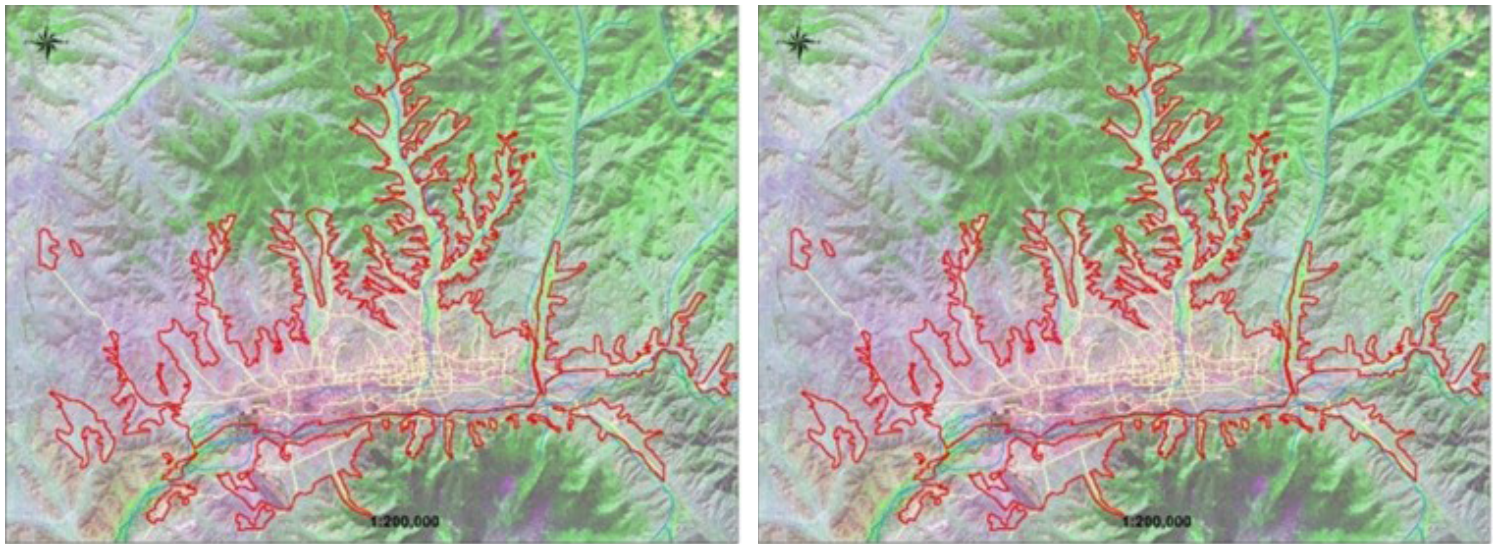
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The fifth master plan (2002-2020), the first to involve Mongolian experts significantly, proposed ambitious concepts but remained mostly theoretical. Uncoordinated growth, especially in ger districts, alongside the rise of private vehicles, strained the city's infrastructure and environment. The sixth master plan, approved in 2013, attempted to address these issues but, by 2018, had achieved only 29.6% implementation due to weak enforcement across organizational levels, resulting in few tangible outcomes. To confer an idea about the dimension of UB's urban sprawl, and the difficulties related to its management, we can take a look at the development of the city's area and perimeter (see Fig. 3a and 3b).

In fact, after Mongolia transitioned to democracy in the early 1990s, the city continued to experience rapid population growth due to migration from rural areas. Many of the new rural migrants settled in informal ger districts, contributing to their further expansion (Park et al., 2019). These districts reflect Mongolia's nomadic heritage, as many migrants continue to live in traditional gers, preserving aspects of their nomadic lifestyle despite the challenges of urbanization. Informal quarters, which make up much of Ulaanbaatar's area, spread across the flatlands around the city center and extend into the valleys to the east, north, and west, as well as climbing the steep hillsides (Miller, 2013; Duurenbayar, 2016). A blend of urban and nomadic cultures is evident in these areas, where many ger residents own cars and have electricity. However, while most ger districts have public schools and are connected to the city centre through busses (privately run companies whose network and frequency are problematic - Bayartsetseg, 2015) and one paved main road, basic infrastructure remains lacking, including sewage systems, diffused paved roads, and heating beyond carbon stoves. This fusion of modern conveniences



with traditional living conditions highlights the complexities of Ulaanbaatar's rapid urban growth and planning efforts.

With nearly half of Mongolia's population residing in UB, the city serves as the cultural, industrial, and financial heart of the country. Yet, it continues to struggle with integrating social, environmental, and infrastructural needs amidst rapid urban growth and a history of fragmented planning (Karthe et al., 2022). Today, UB faces significant challenges from its rapid urbanization. The city can be divided into three distinct areas: the planned city (Soviet legacy), the spontaneous city (ger districts), and the city in transition (struggling to bridge the two).

The ger districts, while embodying Mongolia's nomadic heritage, also contribute to environmental issues, such as severe winter air pollution, due to a lack of infrastructure and heating systems. Ulaanbaatar's main environmental problems stem from the high

Fig. 3a - On the left, map of the expansion of Ulaanbaatar city, 10,730 ha as of 1990 (source: Bolormaa et al., 2019).

Fig. 3b - On the right, map of Ulaanbaatar city expansion, 39,235 hectares as of 2020 (source: Bolormaa et al., 2019).



Fig. 4 - A ger settlement area near the large ring road, March 2025 (source: author's own picture)

levels of air pollution caused by carbon-burning domestic heating stoves, heat-only-boilers (HOBs) in ger districts, and thermal power plants, compounded by the city's location in a valley and its cold climate, as well as the increasing number of private cars, driven by the lack of an extensive public transport system and a road network designed for a much smaller population.

In January 2025, Mongolia's Parliament approved the seventh general plan for Ulaanbaatar, setting a 2040 development vision focused on sustainability, adaptability, and smart growth. This plan addresses decades of unplanned expansion that have harmed quality of life. It aligns with policies like Vision-2050 and the National Regional Development Concept, aiming to decentralize the population, promote sustainable urbanization, enhance infrastructure, and reduce pollution. Recent initiatives (2024–2028) focus on creating a "20-minute city," relocating institutions, expanding public transport, and improving green spaces and water systems. Key projects include constructing a new ring road, introducing a Metro line and tram network to ease congestion, and addressing air pollution through the construction of a fifth Thermal Power Plant, development of an off-grid energy system, and building a waste incinerator.

In this context, our research proposes the 'Ulaanbaatar Spatial Sustainable Waste Management' (UBSWM) approach, using GIS-based spatialisation of quantitative and qualitative data to construct a layered narrative of UB's socio-urban dynamics. In light of this complex and fragmented urban scenario—marked by deep socio-spatial inequalities, informal growth patterns, and infrastructural vulnerabilities—the need emerges for planning tools that can operate across multiple scales and engage a diversity of actors. It is within this frame that the 3R4UB project introduces an innovative methodological approach, aiming to spatialise waste-related dynamics and foster collaborative governance mechanisms capable of responding to Ulaanbaatar's transitional condition. The following section outlines the structure and rationale of this approach.



Fig. 5 - Mixed urban settlement types in UB, here a ger district (right) borders with a planned city district (left) and a 'city in transition' (a new road being built and newly built high-rise buildings near school 154 – number 52 and 154 are school buildings).

3. Ulaanbaatar Spatial Sustainable Waste Management (UBSWM): methodological approach

Building on the historical and spatial reconstruction of Ulaanbaatar presented in the previous section, the following chapter outlines the methodological approach developed to address the city's complex urban dynamics through collaborative and spatialised waste management strategies.

The methodological approach underpinning the research, called 'Ulaanbaatar Spatial Sustainable Waste Management' (UBSWM), aims to initiate a collaborative planning process (Healey, 2003) to map waste flows in detail within different urban areas, strategically identify waste eco-hubs (understood as new neighbourhood-level facilities) and develop concrete operational models for the implementation of CE principles adapted to the specific context of UB. The methodological framework of UBSWM can be positioned within the broader tradition of action research and participatory spatial planning. In particular, it draws on principles of collaborative mapping (Chambers, 2006) and co-production of knowledge (Turnhout et al., 2020), where spatial analysis is not only a technical tool but a catalyst for dialogue between stakeholders. The use of GIS is therefore not limited to data processing but is embedded in a broader effort of citizen science (Vohland, et al. 2021) and community empowerment. By involving local communities, schools, and institutional actors in data collection, interpretation, and restitution, the approach aims to produce shared knowledge that can inform sustainable, place-based waste governance. In this sense, the UBSWM is conceived not only as a methodological device, but also as a relational infrastructure, enabling a multivocal reading of the territory and activating new alliances between space, knowledge and decision-making.

The methodological framework (Fig. 6) of the project is rooted in the framework of the Sustainable Development Goals (SDGs) defined by the United Nations, taken as a guiding reference to orient strategic, methodological and operational choices. In particular, four SDGs were selected as priority macro-goals, by virtue of their relevance to the environmental, social and economic issues faced in the urban context of UB: SDG 8 - Decent work and economic growth; SDG 11 - Sustainable cities and communities; SDG 12 - Responsible consumption and production; SDG 13 - Climate action.

The above mentioned SDGs are operationally declined in the design of the working method: they orient the construction of the location criteria, guide the definition of the spatial priorities and inspire the design of the communication and training contents conveyed through the StoryMap platform. This methodological approach was supported by an important preliminary collection and analysis of heterogeneous data, from official sources (National Statistics Office NSO of Mongolia, UB Statistical Yearbook), direct field mapping activities, satellite data and remote sensing sources, as well as documents and technical reports produced by international cooperation and third sector organisations. In particular, materials provided by the Deutsche Gesellschaft

für Internationale Zusammenarbeit (GIZ), the Asian Development Bank (ADB), the Japan International Cooperation Agency (JICA), as well as local NGOs active in the promotion of waste separation practices and environmental awareness in marginal areas (Oppido, Ragozino, & Esposito De Vita, 2023) of the city were used.

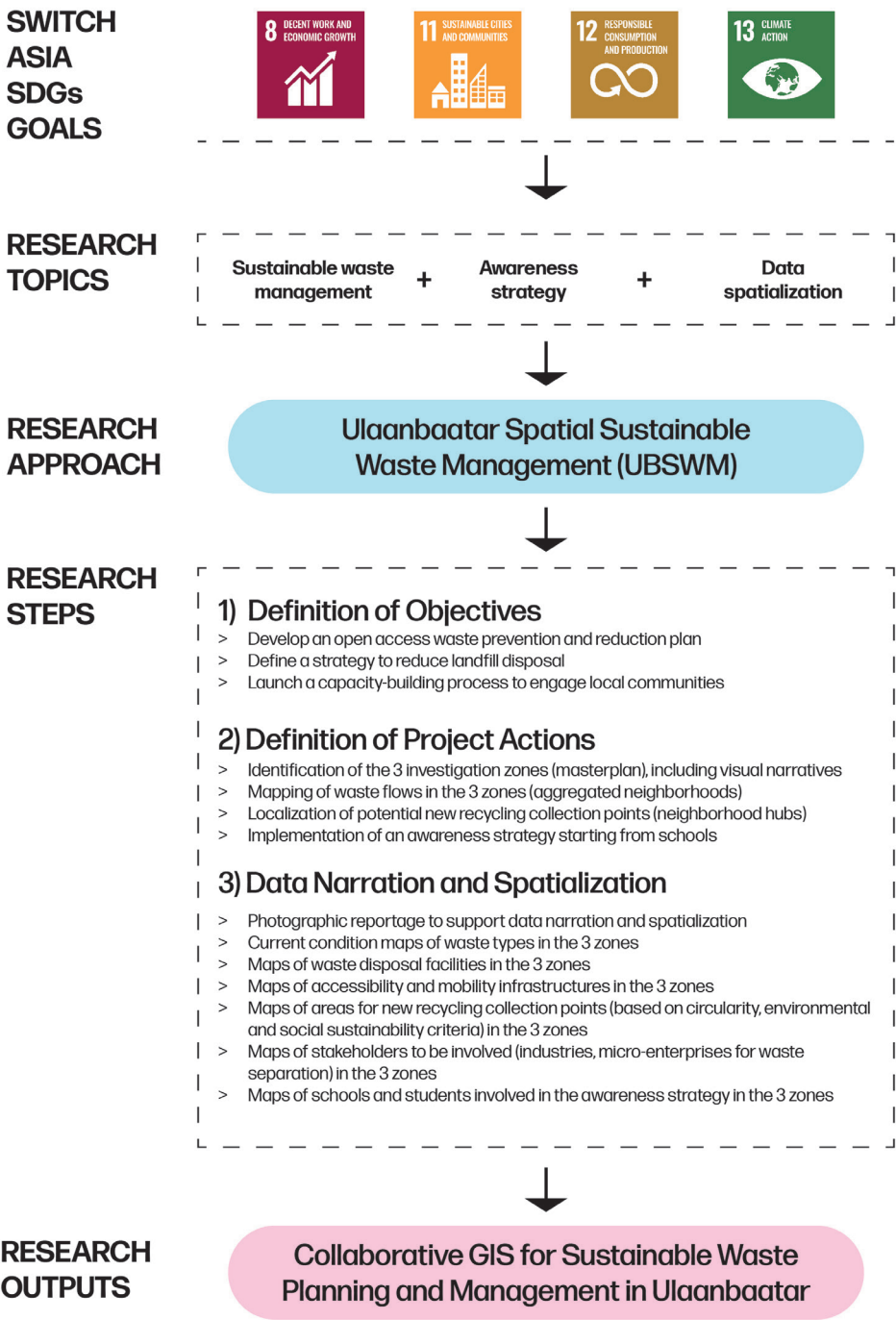


Fig. 6 - Ulaanbaatar Spatial Sustainable Waste Management UBSWM (author elaboration)

The central operational tool for the integrated spatial analysis has been GeoDB GIS, allowing the superimposition and combination of information layers referring to the circularity criteria defined by the project. The research path is developed according to three distinct but closely interconnected phases, which progressively define objectives, actions and restitution tools. The first phase focused on the definition of the project objectives, a founding moment through which the strategic assumptions of the plan are clarified. These include the construction of an urban plan for waste prevention and reduction that is usable in an open access format and designed to be scalable on a neighbourhood basis, alongside the formulation of a strategy aimed at significantly reducing landfill disposal. This is complemented by the activation of a capacity building process, oriented towards the active involvement of local communities in waste management processes. This approach explicitly recalls the principles underlying the co-production of knowledge (Turnhout et al., 2020), which emphasise the shared construction of knowledge through dialogue between institutional actors, technicians and inhabitants.

The second phase concerned the construction of project actions and operational mapping, starting with the identification of three pilot areas within the urban master-plan of UB, selected for their morphological and functional heterogeneity, as well as for the different incidence of phenomena related to waste production and treatment. These areas were associated with a spatial survey process supported by visual narratives, aimed at reconstructing aggregate waste flows on a neighbourhood scale. The analysis made it possible to strategically locate new waste collection points (eco-hubs), designed to optimise accessibility and improve the efficiency of the system. At the same time, an environmental awareness strategy was defined and launched, with an initial focus on educational institutions, conceived as key presidia for the activation of virtuous practices and the dissemination of sustainable behaviour. This operational phase was guided by an approach that integrates spatial analysis and participation, according to the logic of collaborative geodesy and inclusive planning practices (Fraser et al., 2006).

Finally, the third phase (output) outlines the moment of restitution and interpretation of the results, through a data spatialisation process that combines cartographic visualisation and territorial narrative. In this phase, the photographic reportage becomes an essential tool to complement and amplify the critical reading of the collected data, favouring a multilevel representation of the observed urban conditions. The production of thematic maps - relating to the actual state of waste in the three areas, the existing plants, the mobility network and the areas suitable for the location of eco-hubs (particularly in the schools where the awareness strategy was tested) - is accompanied by the construction of a visual and interactive narrative, hosted in the Story-Map platform. In this environment, the data are also made readable to non-specialist audiences, reinforcing the communicative and pedagogical function of the project. This integration between technical data and visual storytelling draws inspiration from

the principles of urban narrative mapping (Perkins, 2008) and the experiences of urban data storytelling (Graham & Zook, 2015), which are capable of rendering the complexity of local dynamics through a dialogic synthesis between different but inter-dependent forms of knowledge.

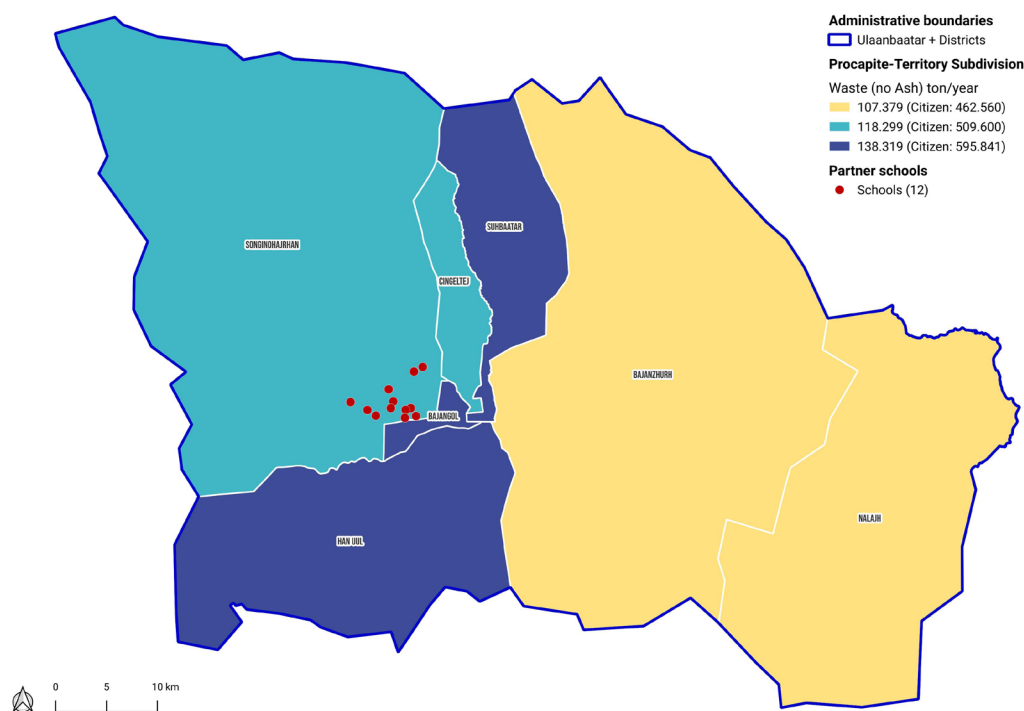
4. Results

Among the results of this research, to round off the methodological path, special attention was paid to the construction of a narrative device capable of rendering not only the spatial complexity of the phenomena observed, but also the cultural, social, and symbolic specificities that characterise the urban settlements of Ulaanbaatar. From this perspective, the StoryMap developed on the ArcGIS platform does not represent a simple cartographic visualisation tool, but takes the form of a true interactive storyboard, in which quantitative data, images, narratives and interpretations are interwoven to build a multi-level and shared representation of the urban context (Gurjar & Gaur, 2022; Sakshi et al., 2023). The development of the StoryMap was based on a database composed of official open-access sources, such as those of the National Statistics Office of Mongolia, the UB City Master Plan, and publicly accessible environmental databases supplemented with datasets provided by researchers from partner universities in UB. All the data collected have been previously processed in the QGIS environment, chosen to guarantee interoperability, traceability, and accessibility within an open-source logic (Gurjar & Gaur, 2022).

The use of cartographic narrative allowed us to highlight the profound heterogeneities that characterise Ulaanbaatar's 'city within a city': high-density neighbourhoods, ger settlements with a strong identity, and transition areas with fragmented infrastructure. The creation of a collaborative GIS specifically designed to support sustainable waste planning and management in the city of UB is one of the main outputs. The thematic maps provide a clear and detailed representation of the distribution of urban settlements and waste streams, providing a solid information base for planning targeted and localised interventions (Sakshi et al., 2023). The analysis of the overlap of the different information layers makes it possible to identify the most critical urban areas, such as suburbs characterised by ger settlements, and to suggest concrete solutions to improve the efficiency and sustainability of the waste management system. The cartographic narrative developed within the project aims to render, in visual and analytical form, the multiple spatial, social and infrastructural dimensions that make up the complex urban geography of Ulaanbaatar. The maps produced are conceived as interpretative devices capable of guiding the reading of the detected phenomena, supporting the decision-making process, and strengthening the dialogue between stakeholders, thus contributing to a more conscious and inclusive planning.

A first (data) map (Fig. 7 - Mapping Waste per Capita and Educational Engagement in Ulaanbaatar's Districts) shows the demographic distribution cross-re-

ferenced with waste generation and disposal flows, highlighting the areas of highest environmental and social concern. The data used (Tab. 1 - Definition of the collection project assumption. Procapite-Territory Subdivision (3R4UB)) is sourced from the city's official Master Plan and from open-access statistical databases, including Mongolia's national portal and the CityPopulation platform . Scaling down, in order to better observe the area where the schools involved in the project are located, a number of key maps are produced to better explore the issues addressed. Beginning with the map (Fig. 8), Ulaanbaatar's Three Urban Forms: Planned City, Spontaneous City, and City in Transition, which offers a comparative reading of the planned city, the informal city (composed mainly of ger settlements), and the city in transition. Through data collected on-site through fieldwork and integration with qualitative sources, this representation intends to capture the different urban morphologies and the relationship systems that structure them, making spatial discontinuities and levels of accessibility to services visible.



AREA	DISTRICT	CITIZEN	WASTE (no ash) ton/year
1	Baganuur + Bagahangai + Bayanzurh + Nalaib	462.560	107.379
2	Bayangol + Han Uul + Suhbaatar	595.841	138.319
3	Chingeltei + Songinohairhan	509.600	118.299
		1.568.000	363.996

Fig. 7 - Above, mapping Waste per Capita and Educational Engagement in Ulaanbaatar's Districts

Tab. 1 - Below, definition of collection project assumption. Procapite-Territory Subdivision (3R4UB)

An important emphasis of the work is dedicated to infrastructure for mobility and accessibility, with a map (Fig. 9 - Mapping School Reachability and Urban Mobility: Student Distribution and 15-Min Walkable Area) describing the network of public transport by road (buses, stations, stops), mobility by rail (railway lines and stations), the distribution of car parks and airports, up to the identification of isochrones, with the starting point of the schools involved in the project, showing areas potentially reachable in fifteen minutes (Moreno, 2021) of walking. These representations allow us to assess the possibility of logistical integration of eco-hubs and the coherence between the infrastructure network and collection strategies.

Finally, special attention is devoted to the specialised land uses (Fig. 10 - Mapping Specialised Enclosures and School Networks), starting with waste disposal plants and landfills, along with other specialised enclosures, represented in relation to the settlement system to bring out how these enclosed places are grafted into the planned city and how the city in transition tends to locate itself where new facilities are built.

Together, these representations contribute to the construction of a multilevel thematic atlas, which does not merely describe the state of affairs but also suggests operational scenarios and adaptive configurations. The maps are also designed to be integrated into the ArcGIS StoryMap platform, with the aim of returning data through an accessible visual narrative, capable of generating engagement, understanding, and participation.

The work carried out in QGIS made it possible to structure the geodatabase according to thematic levels consistent with the circularity criteria, which were subsequently exported and narrated through the dynamic interface of ArcGIS StoryMap. In this environment, it was possible to integrate interactive maps, photographic content, and explanatory texts, facilitating not only a technical but also an experiential reading of the territories analysed (Neofotistos et al., 2023).

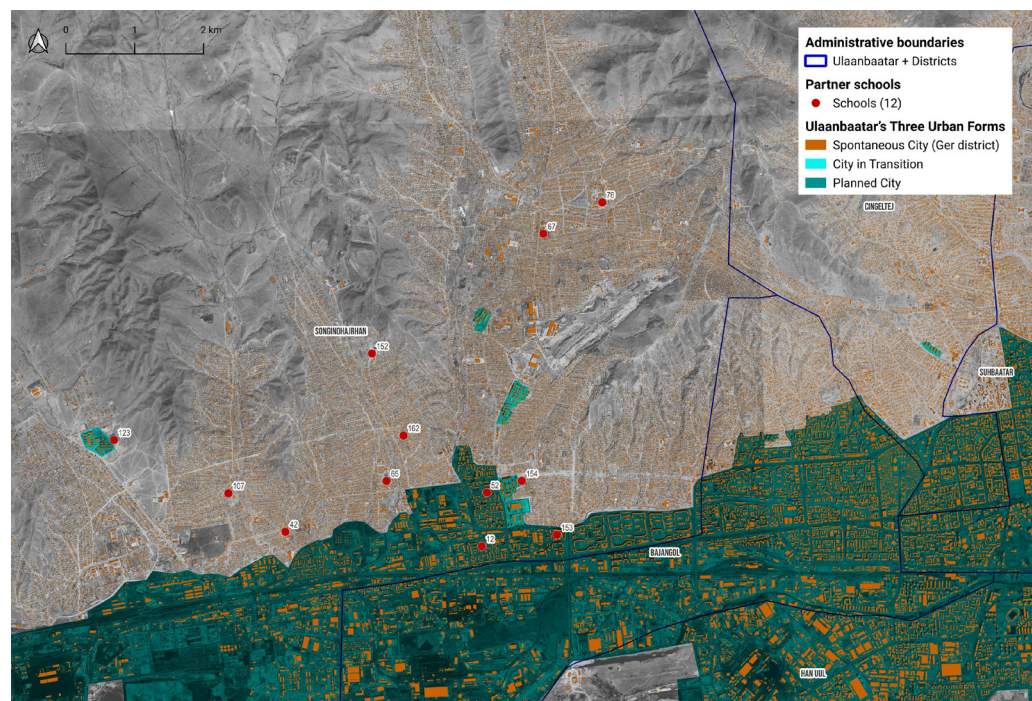


Fig.8 - Ulaanbaatar's Three Urban Forms:Planned City, Spontaneous City, and City in Transition

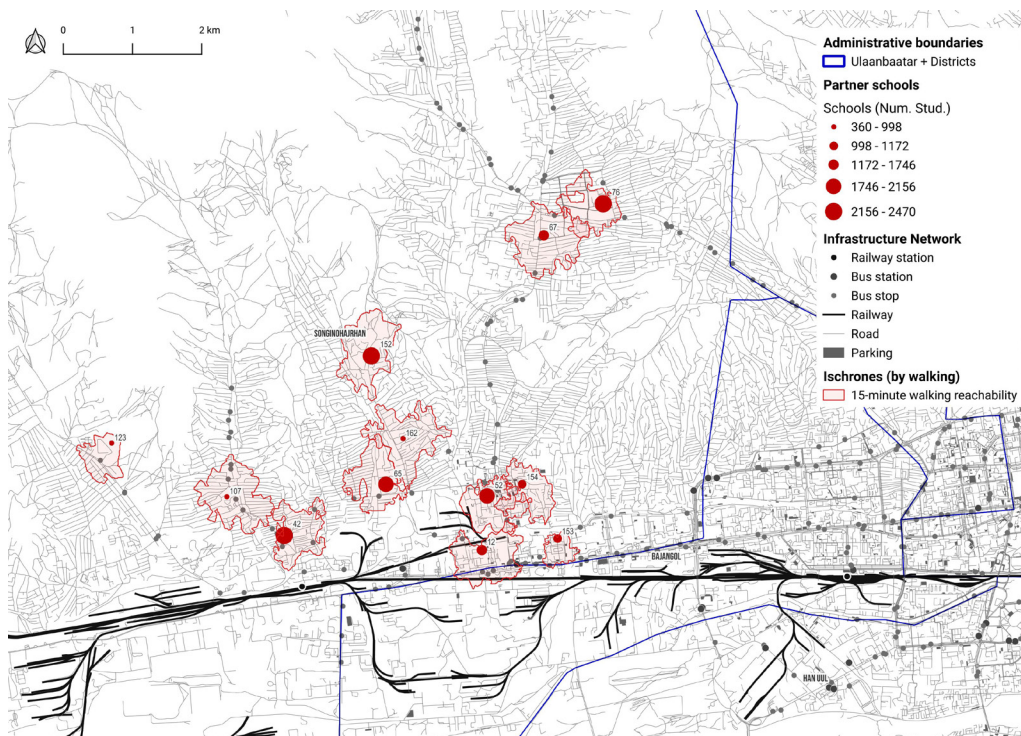
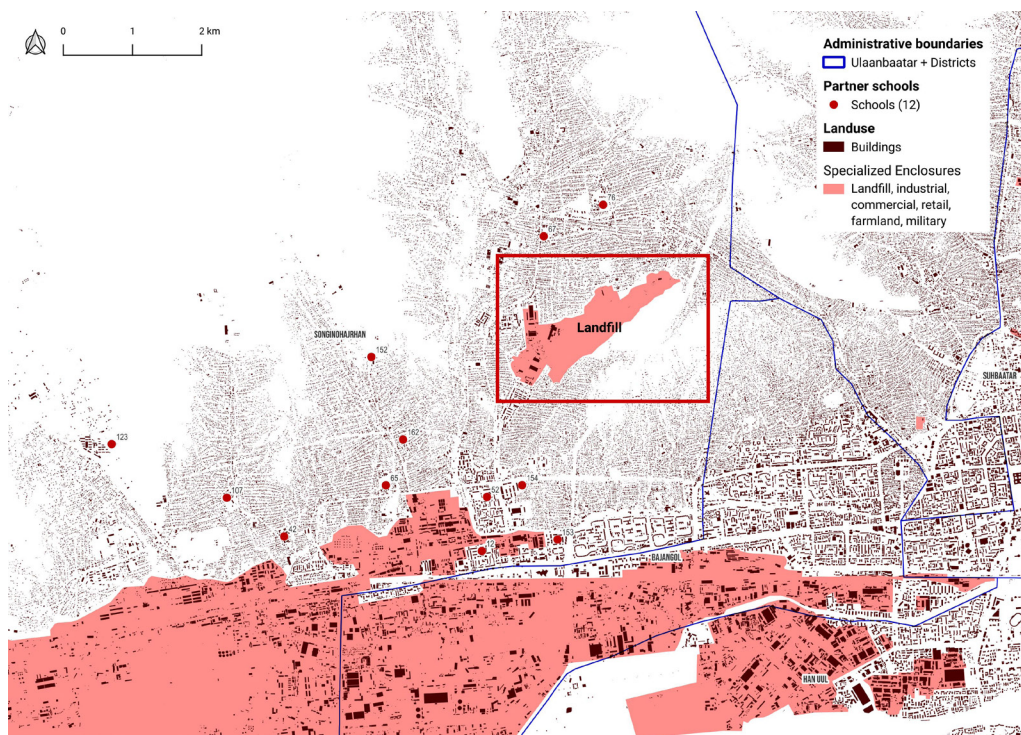


Fig. 9 - Above, mapping School Reachability and Urban Mobility: Student Distribution and 15-Min Walkable Areas

Fig. 10 - Below, mapping Specialized Enclosures and School Networks



The pilot project implemented at the school level represented an important test-bed for testing circular economy models in a circumscribed and controlled context. The introduction of eco-hubs in schools produced significant preliminary results, showing a considerable in-

crease in separate waste collection and greater environmental awareness in both students and their families. In parallel, a waste management plan integrating communication and participation tools was developed, managing to actively involve more than 25,000 students and their households. The awareness-raising campaigns implemented have played a crucial role in promoting the adoption of sustainable practices such as recycling and upcycling within the school community and, by extension, in the wider urban context.

Since its initial stages, the research adopted a participatory approach, with the aim of maximising local ownership of the results and ensuring the active involvement of all decision-makers in the institutional capacity-building process. Proactive collaboration was promoted between local authorities, relevant government agencies and various stakeholders, in order to jointly assess the impact of the adopted measures on the waste management sector and to raise awareness of the existing barriers and specific needs of the UB context. A significant achievement in this direction was the creation of an integrated partnership model, based on the collaboration between the Italian research institute CNR IRISS, the Municipality of Ulaanbaatar, the Mongolian government agency Fresh Water Resources and Nature Conservation Centre (FWRNCC) and the Italian technical partner Metellia Servizi. This model facilitated the broadening of the participation of all relevant stakeholders and the creation of a platform oriented towards the sharing of resources, skills and responsibilities.

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This model facilitated the broadening of the participation of all relevant stakeholders and the creation of a platform oriented towards the sharing of resources, skills, and responsibilities. The spatial tools developed, particularly the thematic maps, go beyond their descriptive function and represent a first step toward the construction of a decision support system for circular economy planning. By visually integrating quantitative and qualitative data, these maps act as a shared knowledge base that can inform local waste management strategies and foster policy-making processes aligned with collaborative planning theory, enabling more inclusive, evidence-based, and territorially grounded actions.

5. Concluding remarks

The overall results of the research conducted within the 3R4UB project present a potentially replicable model for addressing the complex challenges of urban solid waste management in cities with similar socio-economic and urban planning characteristics to UB. The UBSWM approach, which synergistically integrates the use of advanced GIS tools, the adoption of participatory planning practices, and the implementation of targeted outreach strategies,

shows promise for the realisation of a more sustainable, inclusive, and equitable municipal solid waste management system. The project strongly emphasises the crucial role of active local community involvement and structured collaboration between citizens and public authorities as determining factors for the long-term success of waste management initiatives. The 3R4UB project significantly contributes to local capacity building at different levels by providing technical and management skills to the relevant authorities while promoting the growth of environmental awareness within the population. The methodological framework of UBSWM can be positioned within the broader tradition of action research and participatory spatial planning. It draws on principles of collaborative mapping (Chambers, 2006) and co-production of knowledge (Turnhout et al., 2020), where spatial analysis is not only a technical tool but a catalyst for dialogue between stakeholders. The use of GIS is therefore not limited to data processing but is embedded in a broader effort of citizen science (Vohland et al., 2021) and community empowerment. By involving local communities, schools, and institutional actors in data collection, interpretation, and restitution, the approach aims to produce shared knowledge that can inform sustainable, place-based waste governance.

Future perspectives of the project include the development of multi-scalar models based on the use of GIS and the intention to extend the application of the tested model to other cities in Mongolia, with a focus on the potential role of schools as privileged laboratories for sustainability education. One of the follow-ups of this research will be the development of an ArcGIS StoryMap platform, which will integrate maps, multimedia content, and narrative text to create an interactive and engaging representation of the findings, ensuring the transparency, shareability, and replicability of the sustainable waste management model developed for UB.

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Climate-resilient urban development: analyzing global approaches through a systematic literature review

Ashish Kumar, Soma Arora, Anand Prakash

Abstract

This study conducts a systematic literature review on climate-resilient urban development, examining governance frameworks, participatory planning, and technological advancements in adaptation strategies. Thirty-eight peer-reviewed articles from Scopus, ScienceDirect, and Emerald Insight have been analyzed. The study identifies key theoretical models and policy frameworks shaping urban resilience. Findings show a shift from conceptual resilience frameworks (2014–2017) to empirical, data-driven governance models (2018–2024), with an increasing role of digital simulation, GIS-based risk assessments, and nature-based solutions. Participatory governance emerges as crucial, with bottom-up approaches yielding higher success rates. The research on the Global South remains limited, necessitating localized governance models and further integration of smart city technologies. This review offers policymakers and urban planners valuable insights to enhance climate adaptation strategies in rapidly urbanizing regions.

KEYWORDS:

Climate resilience, Urban governance, Sustainable development, Participatory planning, Systematic literature review

Sviluppo urbano resiliente al clima: analisi degli approcci globali attraverso una revisione sistematica della letteratura

Abstract

Questo studio conduce una revisione sistematica della letteratura sullo sviluppo urbano resiliente al clima, esaminando i quadri di governance, la pianificazione partecipativa e i progressi tecnologici nelle strategie di adattamento. Sono stati analizzati trentotto articoli peer-reviewed da Scopus, ScienceDirect ed Emerald Insight. Lo studio identifica i principali modelli teorici e i quadri politici che danno forma alla resilienza urbana. I risultati mostrano un passaggio da quadri di resilienza concettuali (2014-2017) a modelli di governance empirici e basati sui dati (2018-2024), con un ruolo crescente della simulazione digitale, delle valutazioni del rischio basate su GIS e delle soluzioni basate sulla natura. La governance partecipativa emerge come cruciale, con approcci dal basso verso l'alto che producono tassi di successo più elevati. La ricerca sul Sud globale rimane limitata, rendendo necessari modelli di governance localizzati e un'ulteriore integrazione delle tecnologie smart city. Questa rassegna offre a politici e pianificatori urbani spunti preziosi per migliorare le strategie di adattamento al clima nelle regioni in rapida urbanizzazione.

PAROLE CHIAVE:

Resilienza climatica, governance urbana, sviluppo sostenibile, pianificazione partecipata, revisione sistematica della letteratura

Climate-resilient urban development: analyzing global approaches through a systematic literature review

Ashish Kumar, Soma Arora, Anand Prakash

1. Introduction

The growing challenges of climate change have necessitated the development of adaptive and resilient urban strategies. Urban areas, home to more than half the global population, are particularly vulnerable to climate risks such as extreme weather events, rising sea levels, and environmental degradation. As cities continue to expand, there is an urgent need to focus on climate-resilient urban development and climate governance to reduce the impacts of climate change on urban populations.

Climate-resilient urban development has become a pivotal focus in urban planning and governance, addressing the dual challenges of rapid urbanization and increasing climate-related risks. The concept of climate resilience refers to the ability of a system, community, or city to anticipate, absorb, adapt to, and recover from the adverse impacts of climate hazards, as outlined by the IPCC (2014). This concept integrates ecological, social, and infrastructural dimensions to ensure sustainability, especially for vulnerable populations. Urban resilience, a key component of this discourse, goes beyond reactive adaptation to incorporate proactive measures that embed resilience into urban systems, including land use, housing, governance, and public health services. Scholars like Mitchell et al. (2015) have highlighted the importance of responsible urban land use, governance, and planning in reducing vulnerabilities with a focus on less-developed nations, while socio-ecological systems theory (Folke, 2006) emphasizes the interconnectedness of artificial and natural systems in achieving long-term resilience. Apart from this, governance structures are important in shaping urban resilience strategies (Plessis et al., 2023).

The increasing volume of research on climate-resilient urban development necessitates a structured knowledge synthesis. This literature review delves into the academic discourse surrounding climate-resilient urban development and the governance frameworks necessary to ensure sustainable, adaptive urban environments. The previous studies have delved into the resilience frameworks and governance models; there is still a dearth of studies focusing on a comprehensive review integrating participatory planning, technological innovations, and governance structures (Hardoy et al., 2019; Liang, 2021). To address this gap, this study adopts a systematic literature review (SLR) methodology (Jesson et al., 2011) to ensure a rigorous selection and analysis of relevant studies. By systematically reading and reviewing 38 academic articles from Scopus, ScienceDirect, and Emerald Insight, this research identifies key broad themes, frameworks, and governance mechanisms critical to understanding and enabling climate resilience in urban environments.

The search for relevant studies involved the use of key terms such as "climate-resilient

urban development," "climate governance," and "urban resilience." The articles were systematically reviewed, utilizing Open Knowledge Maps to organize and analyze the data effectively. The review began with an initial pool of 90 articles, which was narrowed down to 38 key papers after a detailed examination of abstracts, titles, and keywords. These selected studies contribute valuable insights into the frameworks, models, and tools employed in climate-resilient urban planning and governance.

Section 2 discusses the SLM methodology and selection criteria for the reviews. Section 3 discusses the key findings of the governance framework, the participatory planning mechanism, and the resilience models. Section 4 discusses the current research's emerging trends, challenges, and gaps. Section 5 deals with policy recommendations to enable suggestions related to resilience to be incorporated into urban governance. Ultimately, the study aims to provide a detailed policy-relevant analysis and review of climate-resilient urban development to bridge theoretical and empirical insights for urban planning and policymaking.

2. Methodology

The detailed methodology is explained below:

2.1 Materials and Data Collection

This study employs a systematic literature review (SLR) approach to analyze research on climate-resilient urban development to ensure a structured, transparent, and replicable synthesis of existing knowledge. The SLR technique was chosen over a traditional or a narrative review to provide a more objective and comprehensive synthesis of relevant studies. This technique also helps reduce the risk of selection bias while enhancing the reliability of findings. The current study follows the already established SLR protocols, particularly PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Page et al., 2021). PRISMA is a widely utilized evidence-based methodology with a standardized framework for conducting systematic reviews. The technique ensures a transparent selection criterion, structured screening, and comprehensive reporting of findings. The PRISMA guidelines also ensure that articles' identification, inclusion, and exclusion are conducted systematically, further allowing for reproducibility and minimizing bias in study selection. The study also considers theoretical and procedural insights from Xiao & Watson (2019). They outline best practices for conducting systematic reviews in the social sciences, especially regarding database search strategies, keyword selection, and thematic categorization. Their work delineates the importance of a structured review framework to identify key research gaps and develop a well-defined conceptual understanding and compilation of literature.

Also, the study includes Geissdoerfer et al. (2017), highlighting the role of systematic literature reviews in interdisciplinary research, particularly in emerging

fields such as climate resilience, governance, and urban planning. Their methodological contributions focus on enhancing analytical depth, deepening analytical insights by mapping key authors, network mapping of key authors, and thematic clustering, all of which are crucial for identifying dominant trends and theoretical advancements in climate-resilient urban development. We followed a systematic process for literature review using a structured methodology to ensure rigor, transparency, and replicability. The review was conducted in various stages, including framing research questions, identifying relevant literature, applying relevant selection criteria, screening and extracting data, and conducting a thematic analysis of the selected studies.

The primary objective of this review was to identify key areas of themes in climate-resilient urban development, models, and frameworks related to it. The study examined participatory planning mechanisms, technological advancements, and urban governance strategies that contribute to urban resilience-building.

A comprehensive literature survey was conducted across three major academic databases, i.e., Scopus, ScienceDirect, and Emerald Insight. The initial search got us 90 articles, which were refined through title, keyword, and abstract screening, ultimately leading to a final selection of 38 key papers. Boolean operators (AND, OR) were used to improve search results by making the search more precise and relevant.

The study followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol to ensure methodological rigor and transparency. The review process consisted of four stages. In the identification phase, 90 articles were retrieved using targeted keywords across three databases. During the screening phase, duplicates and irrelevant records were excluded through title and abstract review, narrowing the list to 50 articles. In the eligibility phase, full-text reviews were conducted using defined inclusion and exclusion criteria. Finally, in the inclusion phase, 38 articles were selected to form the final dataset for thematic analysis. To ensure a focused and relevant search, we have used keywords: Climate resilience, urban resilience, climate-resilient urban development, urban governance, sustainable urban planning, participatory planning, and climate adaptation.

2.2 Selection Criteria and Inclusion/Exclusion Process

To ensure the review's relevance, credibility, and methodological rigor, a set of inclusion and exclusion criteria was applied during the screening process. These criteria were designed to filter studies that meaningfully contribute to understanding climate-resilient urban development and eliminate sources lacking empirical, theoretical, or policy relevance. The final selection was made after carefully reviewing abstracts and full texts using these parameters (Table 1).

Inclusion Criteria	Exclusion Criteria
Peer-reviewed journal articles (2014–2024) to ensure credibility and relevance.	Conference papers, book chapters, and non-peer-reviewed sources to maintain scholarly rigor.
Studies on climate-resilient urban development, governance frameworks, participatory planning, and adaptation strategies.	Studies focused only on rural resilience without discussing urban governance or planning.
Empirical research, theoretical frameworks, and policy-oriented studies provide data-driven insights and recommendations.	Research lacking empirical evidence or policy relevance in urban climate adaptation.

Tab. 1 - Inclusion and Exclusion Criteria for Study Selection
This Table outlines the criteria for including or excluding research articles in the systematic literature review, ensuring scholarly rigor and thematic relevance to climate-resilient urban development. (Source: Authors' elaboration)

2.3 Screening and Data Extraction

This process involved a multi-step screening and refinement to ensure relevance and clarity of objectives as shown in Figure 1. Initially, we identified 90 articles, but after title and abstract screening, 50 studies were finalized for full-text review, from which 38 papers were selected for final analysis. A PRISMA flow diagram, as shown below, to secure clarity in study selection, shows the systematic inclusion and exclusion process. To ensure clarity in study selection, this research utilized Open Knowledge Maps, a visual knowledge discovery tool, to map thematic clusters and identify key research trends. This approach facilitated the systematic categorization of literature based on citation networks, author collaborations, and thematic relevance. The visualization enabled a structured understanding of the academic landscape surrounding climate-resilient urban development, helping to highlight significant research gaps and emerging trends.

The final set of 38 studies was drawn from the following databases:

Scopus Database (17 articles) – These covered themes such as community consultation in climate-resilient housing (Tran et al., 2014) and integration of nature-based solutions in Mediterranean cities (Padilla et al., 2020).

ScienceDirect Database (19 articles) – These explored topics such as constructing climate-resilient cities through empirical models (Liang, 2021) and eco-efficient transformations in post-industrial urban areas (Josh, 2022).

Emerald Insight Database (2 articles) – These include studies on participatory planning for climate-resilient urban development (Hardoy et al., 2019) and identifi-

Fig. 1 - PRISMA Flow Diagram Illustrating the Study Selection Process
This diagram outlines the four stages of article selection—identification, screening, eligibility, and inclusion—used to finalize the 38 studies analyzed in this review. (Source: Author's elaboration from PRISMA 2020 flow diagram (Page et al., 2021))

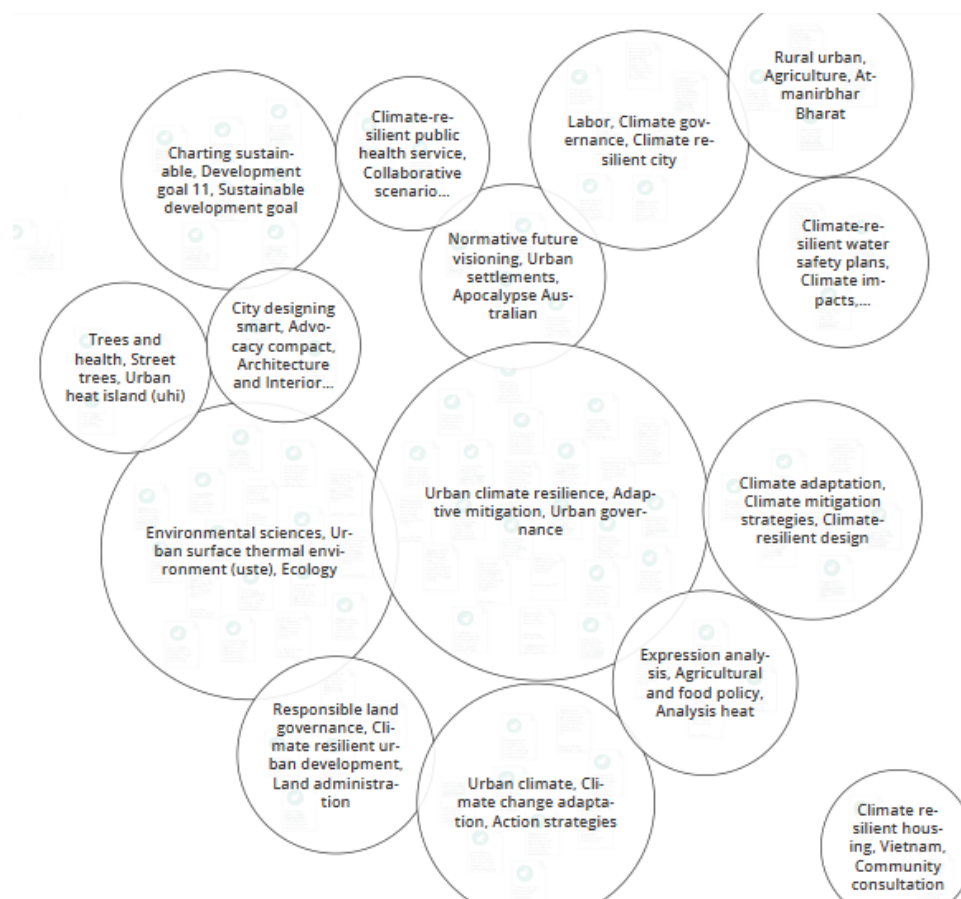
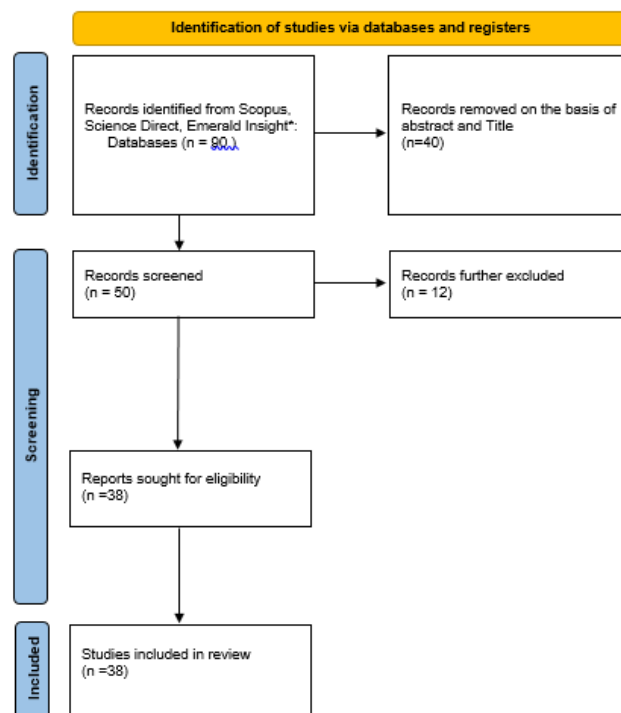


Fig. 2 - Thematic Clustering of Climate-Resilient Urban Development Literature Using Open Knowledge Maps
This visualization shows the major themes, citation networks, and author clusters derived from the 38 reviewed studies, aiding in identifying dominant research trends and gaps. (Source: Generated by authors using Open Knowledge Maps (<https://openknowledgemaps.org>))

cation of governance indicators for climate resilience (Hossain et al., 2024).

A comprehensive summary of the 38 reviewed articles, including their authors, publication years, and research aims, is presented in Appendix A (Table A1). These studies serve as the foundation for the following thematic and quantitative analysis.

2.4 Data Analysis and Thematic Categorisation

A qualitative content analysis was also conducted to arrange the reviewed literature into three major themes systematically. The first theme was participatory governance, which examined the role of community engagement and co-production of resilience strategies, showing how inclusive decision-making processes enhance urban resilience. The second theme was resilience indicators, which focused on the key metrics used to measure the effectiveness of urban resilience frameworks to enable policymakers to evaluate adaptation strategies and measure progress in climate governance. The third theme was urban sustainability models, which explored approaches integrating ecological, social, and infrastructural resilience strategies to highlight the need for holistic urban planning to mitigate climate risks. Apart from the content analysis, open knowledge maps were used to visualize major research trends, theoretical frameworks, and gaps in the literature. This approach provided insights into the evolution of climate resilience research within urban governance by mapping influential studies, identifying key contributors, and highlighting emerging areas of scholarly interest.

3. Results

The result section has been divided into two parts, distinguishing between quantitative and qualitative insights. The quantitative part of this section provides a statistical overview of the reviewed articles, including publication trends, thematic categorization, and journal distribution. The quantitative part presents qualitative findings, focusing on key themes such as participatory planning, urban governance, and climate resilience frameworks.

3.1 Quantitative Analysis of Reviewed Literature

This section presents the quantitative results of the systematic literature review, focusing on publication patterns, disciplinary distribution, and methodological approaches. The analysis includes a breakdown of temporal trends, journal domains, and the types of research designs employed across the selected studies. These insights help map the evolution and scope of research on climate-resilient urban development.

3.1.1 Temporal Distribution of Publications

The Table 2 shows the publication timeline from 2014 to 2024, showing a growing scholarly interest in climate-resilient urban development. The number of relevant studies increased significantly after 2018 in response to heightened global policy efforts such as the Paris Agreement (2015) and SDG 11 (Sustainable Cities and Com-

Tab. 2 - Timeline of Scholarly Publications and Policy Developments on Climate-Resilient Urban Development (2014–2024)

This Table shows the evolution of academic interest in climate-resilient urban development alongside key international policy milestones from 2014 to 2024. (Source: Authors' elaboration based on reviewed literature and global policy documents)

Year	Number of Publications	Key Research Trends & Policy Developments
2014	3	IPCC Fifth Assessment Report highlights urban climate risks.
2015	4	The Paris Agreement was signed, emphasizing climate adaptation strategies.
2016	5	UN Sustainable Development Goal 11 (Sustainable Cities and Communities) was formally adopted.
2017	6	Early studies on urban governance and land-use planning emerged.
2018	8	Research growth in participatory planning and resilience frameworks.
2019	9	Hardoy et al. (2019) highlight participatory planning methods.
2020	10	Post-COVID-19 urban climate policies gain prominence.
2021	12	Liang (2021) studies empirical models for climate resilience.
2022	14	Increased integration of governance frameworks with climate adaptation.
2023	15	IPCC Sixth Assessment Report reinforces urban climate adaptation.
2024	17	Peak publications on governance indicators & resilient cities (Hossain et al., 2024).

munities; UN, 2016).

3.1.2 Distribution by Journal and Research Domain

Thirty-eight peer-reviewed articles were selected and published in 15 journals spanning urban planning, climate adaptation, and governance studies. The most frequently represented journals include: From Sustainable Cities and Society, there were six articles focusing on integrating climate resilience in urban policies. From Urban Climate, five articles focused on climate change adaptation in city planning. Four articles from the Journal of Environmental Policy & Planning focused on Governance frameworks for resilience-building. From Cities, there were four articles focusing on Participatory planning and community-driven climate adaptation.

3.1.3 Classification of Research Approaches

The reviewed studies have diverse research approaches, i.e., quantitative, qualitative, and mixed-method methodologies. Of the 38 selected articles, 14 are about empirical or quantitative methods, focusing on statistical analyses and measurable climate adaptation outcomes. There are 16 articles concerning the qualitative case

studies highlighting the context-specific nature of climate resilience planning through in-depth explorations of governance frameworks, participatory planning, and community adaptation strategies. Eight studies for the theoretical or conceptual frameworks offer analytical frameworks and models that contribute to the broader engagements on urban resilience.

3.2 Qualitative Analysis of Global Approaches

This section summarizes the qualitative findings derived from in-depth thematic analysis of the 38 selected articles. It explores key conceptual models, governance frameworks, participatory mechanisms, and technological interventions shaping global climate-resilient urban development. The analysis is structured around dominant themes and recurring strategies observed across case studies and empirical research.

The first theme highlights the governance and policy frameworks for climate resilience, mentioning the role of national and municipal governance in shaping climate adaptation policies. Studies like Mitchell et al. (2015) and Plessis et al. (2023) highlight the importance of institutional frameworks and policy mechanisms in enabling urban resilience. Also, urban resilience indicators (Hossain et al., 2024) are identified as a critical tool for monitoring policy effectiveness, ensuring that adaptation measures are data-driven and measurable.

The second theme highlights participatory planning and community engagement, mentioning the increasing role of community consultation in resilience-building efforts. Studies by Tran et al. (2014) and Hardoy et al. (2019) showcase how collaborative decision-making enhances climate adaptation strategies, especially in cities with bottom-up governance models. These studies suggest that cities adopting decentralized, community-driven governance structures exhibit higher success rates in climate adaptation than those reliant on centralized decision-making.

The third theme discusses integrating nature-based and technological solutions, exploring the growing role of nature-based solutions (NBS) in urban resilience planning. Studies like green-blue infrastructure (Rau, 2024) and sponge cities (Padilla et al., 2020) show how ecological approaches contribute to flood mitigation and urban cooling. Also, the emergence of digital simulation and GIS-based risk assessment tools (Verde et al., 2024) is transforming urban climate adaptation strategies, enabling data-driven decision-making for infrastructure planning and disaster risk reduction.

The analysis of journals and articles has revealed key patterns and trends in climate-resilient urban research, with a shift from theoretical to empirical studies, a shift and divide between policy-oriented and technical solutions, and geographical disparities in research representation.

A remarkable thing from theoretical to empirical research has been noticed, and this is evident over time. A few earlier studies (2014–2017) focused on conceptualizing resilience frameworks, laying the theoretical groundwork for climate adaptation. However, recent studies (2018–2024) emphasize empirical validation and real-world implementation, setting a growing demand for data-driven and policy-relevant solutions in urban

resilience planning.

The review also clearly distinguishes between policy-oriented and technical solutions in published studies. Research on governance-related issues is more prevalent in policy-focused journals, such as the *Journal of Environmental Policy & Planning*, emphasizing institutional frameworks and regulatory approaches to climate adaptation. Compared to this, technological and spatial analysis studies dominate urban planning journals, such as *Urban Climate*, where research focuses on GIS-based assessments, infrastructure modeling, and climate adaptation technologies.

A significant geographical disparity exists in the literature concerning North America and Europe dominating climate-resilient urban research. These regions have numerous studies on governance models and technological adaptation, but a critical gap exists in Global South urban resilience research. Studies on Africa and South Asia (e.g., Plessis et al., 2023; Kasusu et al., 2024) are underrepresented, but these regions face high climate vulnerability and unique governance challenges. This gap seriously necessitates more localized research and policy interventions to address the specific resilience needs of rapidly urbanizing cities in the Global South.

The identified keywords in this study showcase the core thematic areas of climate-resilient urban development. These keywords have been systematically derived based on the reviewed literature. These keywords capture the fundamental concepts that define climate resilience in urban settings, and their relevance is supported by key studies that emphasize their significance.

The terms climate resilience and urban resilience are central to this study as they describe the capacity of urban systems to adapt to and recover from climate-induced stress. Few pathbreaking studies, such as IPCC (2014) and Mitchell et al. (2015), present how resilience frameworks are essential for reducing vulnerabilities and ensuring long-term urban sustainability.

Sustainable urban development is another critical theme, showing the intersection between environmental sustainability and urban resilience strategies. Few studies, such as Liang (2021) and Hardoy et al. (2019), present how cities can integrate sustainability measures with climate adaptation efforts to create more livable and future-proof urban environments. The concept of participatory planning is another key element emphasizing the role of community engagement in shaping climate adaptation strategies. Studies by Tran et al. (2014) and Hardoy et al. (2019) highlight the importance of inclusive governance models, where local stakeholders actively contribute to urban resilience initiatives.

Last but not least, climate governance has played a significant role in structuring urban resilience efforts. Studies by Plessis et al. (2023) and Hossain et al. (2024) explain the institutional mechanisms, policy frameworks, and governance structures that enable cities to respond effectively to climate challenges.

3.2.1 Participatory Governance Models

Climate-resilient urban development has gained utmost importance as cities strive to adapt to increasing climate challenges. Various models, frameworks, and tools have been designed to enhance resilience, addressing land governance, vulnerability assessments, participatory planning, and nature-based solutions.

One of the key aspects of climate resilience is land governance and urban planning. Mitchell, Enemark, and Van Der Molen (2015) have emphasized the role of responsible land management in reducing urban vulnerabilities. They have highlighted that effective land-use planning is important for sustainable urban development. Similarly, Cai, Page, and Cvetkovic (2021) have explored the application of Geo-ICT tools for vulnerability assessments, showing how spatial data analytics can enhance climate risk evaluations in urban areas.

Another important critical aspect is climate impact analysis in urban design. Addabbo et al. (2023) present a Paris-based model that combines climate adaptation strategies with local urban planning, bringing out the need for context-specific resilience actions. Regarding industrial transformation, Yan (2024) studies how climate governance policies drive sustainable industrial practices. Similarly, Rau (2024) presents the concept of sponge cities, advancing the need for combining green-blue infrastructure with traditional grey systems to enhance urban climate resilience.

A key strength of resilience is community involvement in adaptation strategies. Various studies across the globe have highlighted the importance of participatory governance models, showing how bottom-up planning leads to more sustainable and inclusive urban resilience initiatives. Tran, Phong, and Mulenga (2014) conducted a comparative analysis study in Vietnam to show how community consultation in housing design improves climate adaptation. Similarly, Hardoy et al. (2019) depict how participatory action research in Latin American cities collaborates to foster urban planning into climate resilience. Stollnberger et al. (2020) again illustrate the importance of social sustainability in urban design, emphasizing that inclusive community profiling is essential for effective adaptation policies (Ho et al., 2022). These studies show the trend and shift towards decentralized governance, where local stakeholders actively shape urban resilience policies.

3.2.2 Climate Resilience Indicators

Global studies have focused on climate governance and policy implementation, showing how legal structures support urban resilience. Plessis, Steyn, and Rantlo (2023) give a case study analysis of Southern African cities, discussing how municipal governments include climate policies in their legal frameworks. Hossain et al. (2024) also introduce a governance indicator model necessitating the key metrics for assessing climate adaptation effectiveness. Similarly, Tanner et al. (2009) argue that effective governance is critical to building adaptive capacity, particularly in Asian cities vulnerable to climate change.

3.2.3 Urban Sustainability Themes

A growing body of academic literature also focuses on nature-based solutions (NBS) as a key strategy to combine ecological resilience into urban planning. Padilla, Mok, and Paz (2020) have stated the importance of NBS in Mediterranean cities, showing how green infrastructure enhances climate adaptation. Similarly, Croce et al. (2021) explore the impact of green roofs and permeable pavements, clearly stating how urban surface modifications can improve climate resilience.

Urban resilience also applies to public health and sanitation. Climate risks exceed water, sanitation, and hygiene (WASH) systems vulnerabilities, demanding integrated climate adaptation strategies. Marcus (2023) explores barriers in aligning public health policies with climate-resilient WASH initiatives, particularly in the Lake Victoria Basin.

Innovative urban design approaches are also becoming increasingly valuable for climate resilience planning. Kraus and Scharf (2019) present a Vienna-based case study showing how GREENPASS technology complements and enables climate-sensitive urban architecture. Also, Mitchell et al. (2015) state the importance of combining land governance with urban sustainability to ensure that climate adaptation is embedded within long-term urban planning.

3.3 Similarities and Differences in Global Approaches

The literature surveyed for this study exhibits both similarities and differences in thematic focus, methodological approaches, and regional representation. The studies can be categorized into five major themes based on their contributions to climate-resilient urban development, as shown below:

There are 12 studies, viz 1, 3, 5, 7, 11, 12, 19, 20, 22, 23, 27, and 30, provide detailed discussions on conceptual models and assessment methodologies used to evaluate climate resilience in urban settings. These studies present theoretical and empirical insights into resilience planning.

Participatory Planning & Community Engagement – Six strides, viz. 2, 4, 6, 14, 15, and 26, focus on community participation, stakeholder consultation, and inclusive urban development in climate adaptation strategies. They present how decentralized decision-making enhances resilience.

Climate Governance & Policy Evaluation – 5 studies, viz. 8, 10, 16, 21, and 25, explore governance structures, legal frameworks, and policy enforcement mechanisms. These studies examine how national and municipal governments integrate climate resilience into urban governance models.

Empirical Case Studies & Regional Focus – There are a total of 4 studies, viz. 9, 12, 17, and 24, that analyze climate resilience strategies through city-specific case studies from various regions across the globe, such as Latin America, Southeast Asia, and Southern Africa, providing real-world evidence of adaptation efforts.

Socio-Ecological Models & Ecosystem Vulnerabilities – 3 studies, viz. 13, 18, and 28, use integrated socio-ecological models to assess urban vulnerabilities, presenting the interplay between environmental, social, and economic factors in climate resilience

planning.

Despite thematic overlaps, the reviewed studies in the paper differ in regional focus, methodological approach, and resilience strategies as shown below:

Regional Focus: Some studies, such as 2, 8, 9, and 24, deal with case studies from Latin America, Southern Africa, and Southeast Asia, whereas some others, such as 5, 13, and 22, explore European resilience frameworks, such as in Paris and Vienna.

Methodological Approaches: Several studies, such as 1, 7, and 19, depend on mathematical models and spatial analysis, whereas some other studies, such as 3, 4, and 6, discuss participatory methods and community-driven adaptation strategies.

Sector-Specific Focus: The studies, such as 9, 12, and 20, examine the role of urban health, WASH (water, sanitation, and hygiene) systems, and cross-sectoral planning, whereas some others, such as 1, 15, and 28, discuss green infrastructure, ecosystem services, and urban greening.

Governance vs. Technological Approaches: Articles 8, 10, and 18 explore policy implementation and legal frameworks, whereas 17 and 22 discuss technical urban planning systems and municipal regulations.

Nature-Based vs. Technological Innovations: Some studies, such as 2, 3, and 13, examine nature-based solutions (NBS) such as green roofs and urban parks, whereas others, such as 15 and 21, discuss smart cities, eco-city models, and digital simulation tools as urban adaptation solutions.

While Adobe stated that studies collectively contribute to the discourse on climate resilience, it is important to see how well their findings align with the stated research objectives. The following section presents the paper's key objectives, i.e., identifying governance frameworks, participatory planning mechanisms, and technological solutions, which are systematically addressed by the results.

The study aims to identify key governance structures, participatory planning mechanisms, and technological solutions in climate-resilient urban development. The findings have systematically categorized the various studies into policy-based adaptation strategies, community engagement in resilience planning, and technology-driven climate adaptation solutions, ensuring they align well with the study's objectives. To provide a brief and structured overview, the Table 3 maps the research objectives to specific studies, showing how the findings support the study's objectives.

Objective	Supporting Findings	Key References
Identify major governance frameworks	Policy-based adaptation strategies	Plessis et al. (2023), Hossain et al. (2024)
Assess participatory planning	Role of community engagement	Hardoy et al. (2019), Tran et al. (2014)
Explore technological and nature-based solutions	GIS tools, Green-Blue Infrastructure	Verde et al. (2024), Rau (2024)
Address research gaps in the Global South	Lack of studies on African and South Asian cities	Kasusu et al. (2024), Plessis et al. (2023)

Tab. 3 - Mapping of Study Objectives to Supporting Research Findings in Climate-Resilient Urban Development
This Table links the core objectives of the current study with the themes and findings from selected literature, highlighting governance frameworks, community participation, technological interventions, and regional research gaps. (Source: Authors' synthesis based on reviewed literature)

Urban resilience indicators (Hossain et al., 2024) have been identified as crucial in monitoring policy effectiveness and ensuring that climate adaptation measures are data-driven and measurable. Also, the importance of participatory governance models has been stressed with studies showing that bottom-up governance structures (Hardoy et al., 2019; Tran et al., 2014) lead to higher success rates in resilience-building efforts.

Based on the research gaps identified in governance structures, participatory models, and technological advancements, there is a need for further research and exploration. The following hypotheses can be framed in order to serve as a foundation for future research:

Hypothesis 1: Cities that implement bottom-up governance structures will show higher resilience to climate impacts as witnessed by participatory planning studies (Hardoy et al., 2019; Tran et al., 2014).

Hypothesis 2: Combining nature-based solutions (NBS) with digital simulation tools will enhance the effectiveness of urban adaptation strategies, as witnessed in studies on Green-Blue Infrastructure (Rau, 2024) and GIS-based assessments (Verde et al., 2024).

Hypothesis 3: Developing countries need localized policy frameworks rather than replicating models from the Global North, as recommended by governance gaps identified in Plessis et al. (2023) and Kasusu et al. (2024).

3.4 Timeline of Publications

The emergence of research on climate-resilient urban development has been through a distinct trajectory, seeing a shift from early conceptual models to quantitative and interdisciplinary frameworks over time, as shown below:

The period from 2014 to 2017 saw the early conceptualization and community consultation phase. During this time, research mainly focused on community-driven adaptation strategies and local governance frameworks. A notable study during this time by Tuan Anh Tran et al. (2014) has explored community consultation in climate-resilient housing in Vietnam, specifically dealing with the role of local participation in shaping urban resilience.

The period from 2018 to 2020 saw the Governance & Policy Integration phase. During this phase, studies expanded into land governance, participatory planning, and urban public health. Research focused on municipal decision-making processes and dealing with the role of governance structures in climate resilience (Mitchell et al., 2015; Hardoy et al., 2019).

The period of 2021–2022 saw the Quantitative & Data-Driven Approaches drive phase, where a shift was seen towards empirical modeling and vulnerability assessments. Zifeng Liang (2021) applied difference-in-differences modeling to study the climate-resilient city construction in China, marking a transition toward quantitative analysis in

resilience planning.

The period of 2023–2024 witnessed an interdisciplinary and integrated Resilience Strategies phase. Recent studies emphasized public health, ecosystem-based adaptation, and sustainable urban design. Research in Southern Africa and Latin America also explored localized adaptation models, bridging environmental, social, and infrastructural resilience strategies (Plessis et al., 2023; Hossain et al., 2024).

3.5 Analysis of Journals and Articles

The systematic review covers a diverse range of peer-reviewed journals, each contributing to understanding climate-resilient urban development. The distribution of articles across different journals, along with their key thematic areas and research priorities, is shown below (Tab. 4).

The dominance of governance and participatory planning studies within the journals listed in the Table above, such as Journal of Environmental Policy & Planning and Cities, denotes the growing emphasis on institutional adaptation mechanisms and stakeholder involvement. Meanwhile, technological and data-driven approaches have also become prevalent in urban sustainability-focused journals, such as Urban Climate and Sustainable Cities and Society. These findings present that climate-resilient urban development research is interdisciplinary, combining inputs from policy studies, environmental science, and urban planning.

Journal Name	Number of Articles	Key Research Themes
Sustainable Cities and Society	6	Integrating climate resilience into urban policies
Urban Climate	5	Climate adaptation strategies in urban planning
Journal of Environmental Policy & Planning	4	Governance frameworks for climate resilience
Cities	4	Participatory planning & community-driven adaptation
Environmental Research Letters	3	Urban climate vulnerability assessments
Urban Sustainability	2	Green infrastructure & ecosystem-based adaptation
International Journal of Urban Planning	2	Urban governance & regulatory mechanisms

Tab. 4 - Top Journals Publishing on Climate-Resilient Urban Development and Their Thematic Contributions
This Table presents the distribution of the 38 reviewed articles across peer-reviewed journals, highlighting the dominant thematic areas addressed by each publication outlet. (Source: Authors' compilation based on systematic literature review)

4. Conclusion and Future Directions

This systematic literature review underlines the increasing academic focus on climate-resilient urban development, with key focus areas such as governance frameworks, participatory planning, and technological innovations as key pillars of urban adaptation. Over the years, the research landscape has evolved from conceptual discussions on urban resilience to empirical and data-driven approaches that combine climate adaptation strategies into urban governance. The review presents that while governance and policy-based solutions have gained utmost attention, emerging trends point toward a growing interest in nature-based solutions (NBS), digital risk assessment tools, and interdisciplinary resilience strategies.

Despite all these advancements, several critical gaps remain in the literature. First, the research on climate resilience is heavily concentrated in North America and Europe, while cities in the Global South, such as Africa and South Asia, remain underrepresented (Kasusu et al., 2024). Given these regions' unique urbanization patterns and climate vulnerabilities, future research must focus on context-specific adaptation strategies rather than applying Global North models universally. Second, although urban health systems play a crucial role in climate resilience, there is limited integration of public health considerations within climate adaptation frameworks. Issues such as WASH (Water, Sanitation, and Hygiene) infrastructure and climate-induced health risks are often sidelined in resilience planning (Marcus, 2023), necessitating further exploration of cross-sectoral approaches incorporating health and urban climate governance.

Also, technological advancements in AI, GIS-based risk assessments, and digital simulation tools remain underutilized in urban resilience research and policy implementation. While some studies (e.g., Verde et al., 2024) highlight the potential of data-driven adaptation strategies, their practical application in real-world policymaking remains limited. Future research should explore how emerging smart city technologies can enhance climate adaptation efforts and strengthen urban resilience through predictive modeling and automated decision-making processes.

From a policy perspective, the findings of this study suggest several key recommendations for urban planners, decision-makers, and climate policymakers. First, strengthening governance frameworks is essential to institutionalizing climate resilience at the local and national levels. Cities must develop adaptive governance models that utilize climate risk assessments in urban policy decisions while ensuring regulatory coherence across sectors. Second, enhancing community participation in climate adaptation planning is crucial. Research shows that bottom-up governance structures and collaborative decision-making yield higher success rates in resilience-building efforts (Hardoy et al., 2019; Tran et al., 2014). Policymakers must create mechanisms for local stakeholder engagement, particularly in marginalized communities disproportionately affected by climate risks.

Also, using technology-driven and nature-based adaptation strategies should be a

priority. Cities must integrate digital risk assessment tools, AI-based climate forecasting, and NBS such as urban green infrastructure into their long-term resilience plans. Investing in climate-smart infrastructure that combines green and grey solutions can significantly enhance urban resilience while providing co-benefits for public health, biodiversity, and social equity.

This study presents the multidimensional nature of climate-resilient urban development, requiring an interdisciplinary approach that merges governance, community engagement, technological innovation, and ecological restoration. Although significant progress has been made in developing policy frameworks and adaptation strategies, future research must bridge the gaps in geographical representation, health-climate linkages, and digital resilience tools. By adopting localized, evidence-based, and inclusive adaptation approaches, cities worldwide can build sustainable and climate-resilient urban futures that effectively respond to evolving environmental challenges.

Appendix A: Reviewed Literature on Climate-Resilient Urban Development

Sr. No.	Literature	Aim
1	David Mitchell, Stig Enemark, Paul Van Der Molen - <i>Climate Resilient Urban Development: Why Responsible Land Governance is Important</i> (2015)	To discuss how rapid urbanization and climate change increase vulnerability in urban areas, focusing on the role of responsible land governance and land-use planning in promoting resilience and reducing vulnerabilities in less-developed nations.
2	Tuan Anh Tran, Tran Phong, Martin Mulenga - <i>Community Consultation for Climate Resilient Housing: A Comparative Case Study in Vietnam</i> (2014)	To examine the role of community consultation in developing resilient housing through case studies in Hue and Da Nang, Vietnam, highlighting gaps in urban governance and the importance of social relationships for resilience.
3	Wiriya Puntub, Stefan Greiving - <i>Advanced Operationalization Framework for Climate-Resilient Urban Public Health Care Services</i> (2021)	To propose a framework combining collaborative scenario planning and composite indicators to assess public health services' climate resilience in Khon Kaen, Thailand, emphasizing urban development and climate interactions.
4	Jorgelina Hardoy, Ebru Gencer, Manuel Winograd - <i>Participatory Planning for Climate Resilient and Inclusive Urban Development</i> (2019)	To highlight participatory planning methods in Latin America's small- and medium-sized cities to develop inclusive, climate-resilient urban development strategies through engagement with local stakeholders.

Tab. A1 - Summary of Reviewed Literature on Climate-Resilient Urban Development
This Table provides an overview of the 38 selected studies, summarizing key authors, publication years, and research aims relevant to climate-resilient urban development. (Source: Authors' compilation based on systematic literature review)

Sr. No.	Literature	Aim
5	Nicola Addabbo, Maria Fabrizia Clemente, Laura Quesada Ganuza, Riwa Abdel Khalek - <i>A Framework for Climate Resilient Urban Design: The Case of Porte de Montreuil, Paris</i> (2023)	To propose a methodological framework integrating climate impact analysis and local community needs to promote adaptation, mitigation, and resilience in Paris's Porte de Montreuil district.
6	Zipan Cai, Jessica Page, Vladimir Cvetkovic - <i>Urban Ecosystem Vulnerability Assessment for Climate-Resilient City Development</i> (2021)	To introduce a socio-ecological modeling approach using Geo-ICT to assess urban ecosystem vulnerability, applied to Nanjing, China, supporting urban resilience through data-driven policy and planning.
7	Zifeng Liang - <i>Assessment of the Construction of a Climate Resilient City: An Empirical Study Based on the Difference in Differences Model</i> (2021)	To empirically assess climate-resilient city construction using a difference-in-differences model, focusing on the interaction of urban policies and environmental change.
8	Anél Plessis, Nicolene Steyn, John Rantlo - <i>City-Level Law and Action for Climate-Resilient Development in Southern Africa</i> (2023)	To review eight cities in four southern African countries and evaluate how local governments utilize their powers for climate-resilient urban development, analyzing political and legislative efforts in climate adaptation and mitigation.
9	McEvoy, D., Iyer-Raniga, U., Ho, S., Mitchell, D., Jegatheesan, V., Brown, N. - <i>Integrating Teaching and Learning with Inter-Disciplinary Action Research in Support of Climate Resilient Urban Development</i> (2019)	Combine teaching and interdisciplinary action research to address urban challenges and enhance the Solomon Islands' adaptive capacity.
10	Marcus, H. - <i>Engaging the Health Sector in Climate-Resilient WASH Development</i> (2023)	To analyze barriers to integrating public health in climate-resilient WASH development, focusing on the Lake Victoria Basin, and suggest interdisciplinary collaborations for better adaptation outcomes.
11	Kraus, F., Scharf, B. - <i>Climate-Resilient Urban Planning and Architecture with GREENPASS Illustrated by the Case Study 'FLAIR in the City'</i> (2019)	To describe the GREENPASS technology for climate-resilient urban planning and its application in Vienna's first GOLD-certified residential building, focusing on green infrastructure's impact on thermal comfort, water retention, and carbon sequestration.

Sr. No.	Literature	Aim
12	David Mitchell, Stig Enemark, Paul Van Der Molen - <i>Climate Resilient Urban Development</i> (2015)	To propose ways that responsible governance of land tenure and effective land-use planning can reduce vulnerability, improve environmental sustainability, and support climate-resilient urban development.
13	Nicola Addabbo et al. - <i>A Framework for Climate Resilient Urban Design</i> (2023)	To propose a methodological framework integrating climate impact analysis with local planning priorities for resilient urban design, applied to Paris's Porte de Montreuil redevelopment.
14	Silvia Croce et al. - <i>Urban Surface Uses for Climate-Resilient and Sustainable Cities</i> (2021)	To review urban surface solutions and their environmental, social, and economic benefits in creating sustainable, resilient cities.
15	Zipan Cai et al. - <i>Urban Ecosystem Vulnerability Assessment for Climate-Resilient City Development</i> (2021)	To present an approach using socio-ecological modeling and Geo-ICT tools for assessing urban ecosystem vulnerability in Nanjing, China, to aid climate-resilient urban planning.
16	Mattia Leone, Jeffrey Raven - <i>Multi-Scale and Adaptive Mitigation Design for Climate-Resilient Cities</i> (2018)	To develop design methods addressing urban resilience through sustainable urban regeneration and retrofitting strategies across different scales.
17	Jorgelina Hardoy et al. - <i>Participatory Planning for Climate Resilient Urban Development</i> (2019)	To engage local governments in participatory planning for developing climate-resilient strategies in small-to-medium Latin American cities.
18	Anél Plessis et al. - <i>City-Level Law and Action for Climate-Resilient Development in Southern Africa</i> (2023)	To assess how local governments utilize legal powers for climate resilience and analyze challenges in governance strategies in Southern African cities.
19	Serene Ho et al. - <i>Community Profiling for Inclusive Urban Climate Adaptation</i> (2022)	To describe methods for gathering contextual data for inclusive climate-resilient urban planning, focusing on marginalized communities in the Solomon Islands.
20	Tendai Kasusu et al. - <i>Navigating Urban Planning and Management in Africa</i> (2024)	To explore evolving urban development frameworks in Africa, focusing on climate resilience and sustainable policies for cities.
21	Md. Maruf Hossain et al. - <i>Identification and Prioritization of Climate-Resilient Urban Governance Indicators</i> (2024)	To identify key indicators for urban governance that enhance accountability and climate resilience in Bangladesh.

Sr. No.	Literature	Aim
22	Sara Verde et al. - <i>Environmental Data, Modeling, and Digital Simulation for Evaluating Climate Adaptation Strategies</i> (2024)	To present workflows and protocols for evaluating urban adaptation strategies through digital modeling, with a case study of Marianella in Naples.
23	Hannah Marcus - <i>Engaging the Health Sector in Climate-Resilient WASH Development</i> (2023)	To explore barriers hindering the health sector's role in developing climate-resilient water, sanitation, and hygiene (WASH) systems in the Lake Victoria Basin.
24	Joshua Long, Jennifer L. Rice - <i>From Sustainable Urbanism to Climate Urbanism</i> (2018)	To critically assess the transition from sustainable urbanism to climate urbanism, focusing on social justice and urban climate action challenges.
25	Thomas Tanner et al. - <i>Urban Governance for Adaptation: Resilience in Ten Asian Cities</i> (2009)	To evaluate governance frameworks in Asian cities coping with severe climatic risks and building resilience.
26	Zifeng Liang - <i>Assessment of the Construction of a Climate Resilient City: An Empirical Study Based on the Difference in Differences Model</i> (2021)	The effect of the pilot policy of "Climate Resilient Cities" on regional climate resilience in China will be evaluated using the Difference in Differences model.
27	Jiale Yan - <i>Climate Governance and Industrial Ecological Transformation</i> (2024)	To explore the impact of climate governance actions on industrial ecological transformation, primarily through the climate-resilient city construction pilot policy.
28	Stefan Rau - <i>Climate Resilient Sponge Cities – Concepts and Tools to Integrate Green-Blue and Grey Systems</i> (2024)	To discuss integrating green-blue infrastructure with grey systems for urban resilience against flooding, heat, and other climate-related hazards.
29	Marielisa Padilla, Sophie Mok, Brenda Vaccari Paz - <i>Using Nature-Based Solutions to Create More Climate-Resilient, Green and Livable Mediterranean Cities</i> (2020)	To examine the use of Nature-Based Solutions (NBS) to enhance climate resilience and livability in Mediterranean cities like Castellón and Cannes.
30	Romana Stollnberger, Ernst Gebetsroither-Geringer, Ulrike Magerl - <i>Integrated Qualitative and Quantitative Analysis of Causal Urban Food-Water-Energy Relations towards More Climate-Resilient Cities</i> (2020)	To analyze the interrelations among food, water, and energy sectors and their integration to enhance urban climate resilience.

Sr. No.	Literature	Aim
31	Jobin Josh - <i>Importance of Reclamation of Post-industrial Areas Near Cities, Challenges to Overcome, and How It Changes City into Smart Cities</i> (2022)	To explore the reclamation of post-industrial areas and their role in transforming cities into eco-efficient, smart cities.
32	Eleanor Tonks, Sean Lockie - <i>Urban Transformation: From Single-Point Solutions to Systems Innovation</i> (2020)	To advocate for systems innovation in urban transformation to face climate change, focusing on low-carbon solutions and applying nature-based solutions.
33	Liz Root, Erwin van der Krabben, Tejo Spit - <i>Bridging the Financial Gap in Climate Adaptation: Dutch Planning Through a New Institutional Lens</i> (2015)	To examine spatial planning mechanisms for funding climate-resilient infrastructure.
34	Katrin Hagen et al. - <i>How to Make Existing Urban Structures Climate-Resilient?</i> (2021)	To discuss retrofitting strategies for dense urban areas with green and blue infrastructure.
35	Parfait Iradukunda et al. - <i>Integrated Multicriteria Decision Analysis in Climate-Resilient Infrastructure Development</i> (2023)	To review decision-making approaches for developing resilient infrastructure in flood-prone areas.
36	Arman Hashemi - <i>Climate Resilient Low-Income Tropical Housing</i> (2016)	To evaluate construction strategies for climate-resilient, low-income housing in tropical areas.
37	Tuan Anh Tran et al. - <i>Community Consultation for Climate Resilient Housing</i> (2014)	To examine community involvement in designing climate-resilient housing in post-disaster scenarios.
38	R Fleck et al. - <i>Urban Green Roofs to Manage Rooftop Microclimates: A Case Study from Sydney, Australia</i> (2022)	To study the performance of green roofs in mitigating urban heat island effects.

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Structural Examining of Gentrification through Brownfields Regeneration in Downtown Areas: the Case Study of Old Transportation Sites in Tabriz City

Akbar Hamidi, Martina Bosone, Ana Peric

Abstract

The regeneration of brownfields in inner cities is a critical urban policy tool but often raises complex debates about gentrification, particularly in transforming downtown areas. This study investigates the drivers and key actors shaping gentrification dynamics associated with the redevelopment of former transportation sites in the central district of Tabriz city, Iran. Focusing on the Aysan Project - a flagship redevelopment plan transforming a disused inter-city transport hub into a 33-storey multifunctional complex—the research explores how regeneration processes may trigger socio-spatial changes and displacement risks. Methodologically, the study combines a Delphi survey of 19 local experts with structural analysis techniques (Micmac program and Mactor software) to identify and map key multidimensional variables and stakeholders. Results reveal that dominant forces - such as state-led investments, policy-making, and private-sector involvement - are central to regeneration dynamics, while community actors remain marginal. Approximately thirty institutions influence brownfield redevelopment, with semi-state organizations and public authorities emerging as the most powerful actors. The findings highlight a strong convergence among key actors around objectives like public-private partnerships, real estate value enhancement, and rent-oriented exploitation of urban spaces, while consensus on mitigating spatial segregation remains limited. From a broader perspective, brownfield gentrification in downtown Tabriz appears tightly linked to the political economy and state-led urban strategies

KEYWORDS:

Gentrification, urban regeneration, brownfields, multidimensional evaluation, multi-stakeholder approach

Analisi strutturale della gentrificazione attraverso la rigenerazione delle aree dismesse nei centri urbani: il caso degli ex siti di trasporto nella città di Tabriz

La rigenerazione delle aree industriali dismesse nei centri urbani è uno strumento fondamentale della politica urbana, ma solleva spesso complesse discussioni sul fenomeno della gentrificazione, soprattutto nelle aree centrali in trasformazione. Questo studio analizza i fattori trainanti e gli attori chiave che modellano le dinamiche di gentrificazione associate alla riqualificazione di ex siti di trasporto nel distretto centrale della città di Tabriz, in Iran. Concentrandosi sull'Aysan Project - un piano fondamentale per la trasformazione di un ex snodo di trasporto interurbano in un complesso multifunzionale di 33 piani - la ricerca esplora come i processi di rigenerazione possano innescare cambiamenti socio-spaziali e rischi di espulsione degli abitanti.

Dal punto di vista metodologico, lo studio combina un'indagine Delphi con 19 esperti locali e tecniche di analisi strutturale (programma Micmac e software Mactor) per identificare e mappare le variabili chiave multidimensionali e gli attori più influenti. I risultati rivelano che le forze dominanti - come gli investimenti statali, la pianificazione politica e la partecipazione del settore privato - sono centrali nelle dinamiche di rigenerazione, mentre gli attori comunitari restano marginali. Circa trenta istituzioni influenzano la riqualificazione delle aree dismesse, con le organizzazioni semi-statali e le autorità pubbliche che emergono come attori più potenti.

I risultati evidenziano una forte convergenza tra gli attori principali su obiettivi come le partnership pubblico-private, l'aumento del valore immobiliare e lo sfruttamento redditizio degli spazi urbani, mentre il consenso sulle strategie di mitigazione della segregazione spaziale rimane limitato. In una prospettiva più ampia, la gentrificazione delle aree dismesse nel centro di Tabriz appare strettamente legata all'economia politica e alle strategie urbane guidate dallo Stato.

PAROLE CHIAVE:

Gentrificazione, Rigenerazione urbana, Aree dismesse, Valutazione multi-dimensionale, Approccio multi-stakeholder

Structural Examining of Gentrification through Brownfields Regeneration in Downtown Areas: the Case Study of Old Transportation Sites in Tabriz City

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1. Introduction

Most of the central parts of major cities, which generally have historical-cultural value, have been exposed to various regenerative interventions. Given this point, there is intense competition between multiple stakeholders and actors include private developers, civil sector, and municipal authorities to control and occupy the profitable urban spaces in downtowns. More broadly, national and local actors have tended to focus on market-driven regeneration rather than community-led initiatives (Holmes, 2024; Perić, 2019; Gray & Mooney; 2011). In this sense, community orientations are crucial manifestations of urban regeneration which lead to limit and non-gentrification, especially in brownfields sites (Earley, 2025; Toura, 2024). Conversely, market and government-promoted brownfield regeneration foster possibilities of gentrification development (Risager, 2022; Wernstedt & Hanson, 2009), and intensify its injustice consequences (Holmes, 2024). These arguments elucidate that many driving forces are active in brownfield regeneration (henceforth, BR) and they often prefer build luxurious and flagship projects instead of former affordable land uses. By focusing on these issues, the current research examines the regeneration milestones and key actors of the old transport sites as a typical brownfield in downtown Tabriz city.

There has been plethora of prior study on gentrification and regeneration relationship (Earley, 2025; Holmes, 2024; Butler, 2009; Porter & Shaw, 2009) whilst, there is nascent literature considering the role of brownfield regeneration in gentrification process. In this regard, Butler (2009) stated that gentrification is a sibling for urban regeneration and both of them are universal concepts. Similarly, regeneration is a euphemism for justifying gentrification (Porter & Shaw, 2009). Most common definition of gentrification has raised by Hackworth (2002, p. 815): “the production of urban space for progressively more affluent users”. All in all, gentrification has long been a staple of urban regeneration policies and threat of displacement is an inseparable consequence of this phenomenon (Holmes, 2024). Turning now to BR outline, urban regeneration projects are chiefly considered a tool for reforming the inner cities (Fisher, 2011; Lee et al., 2017; Lehmann, 2018). More precisely, the functional transformation in the vulnerable neighborhoods of the central fabrics is intensified through gentrification (Ozturk, 2020). Nevertheless, brownfields are potential resources for the implementation of urban redevelopment projects, and in advanced economies, the regeneration of unused and abandoned sites is considered an effective

ve strategy in urban planning (Ahmad et al., 2019). As in the initial stages, urban regeneration was developed based on revitalization of brownfields in areas with suitable public transportation facilities (Lehmann, 2018).

Brownfields including abandoned railway spaces and terminals in city centers, contain a wide range of potential economic and development capacities, which causes the involvement of several stakeholders in the acquisition, demolition, and renovation of these lands. Besides, BR within downtown areas is a means for reusing former derelict sites as well as shaping public spaces. This suggests that potential brownfields could be essential factors for successful regeneration (Frantál et al., 2015; Zheng et al., 2014), but under the various influential incentives, regeneration of these lands might bring many intricate challenges. It is necessary to assess brownfields as a fundamental prerequisite for sustainable urban regeneration (Liu et al., 2019).

Brownfields mostly are the direct output of mutual relations between places, and social and ecological processes (Bjelland, 2002). First of all, due to environmental concerns, the BR became the main tool in urban land policies (De Sousa et al., 2009). Even so, BR compensates for the ecological pressures and resolves the obvious contradiction between unused land and sprawl growth (Kang & Hua, 2007), but also regeneration projects often threaten the diversity and social mixing in the neighborhoods and old fabrics (Lehmann, 2018). However, the BR is considered a catalyst for social and spatial transformation through economic mobilization, healthcare protection, and housing renovation (Yeol et al., 2016; Greenberg et al., 2001). On the other hand, social justice is closely related to the phenomenon of brownfield gentrification (henceforth, BG) (Gegic & Husukic, 2017). Thus, BR might extend the influx of higher-income residents and the displacement of low-income residents (Fisher, 2011), which leads to forced displacement and social inequity in the surrounding areas (Gegic & Husukic, 2017). Briefly put, urban regeneration may support the interests of influential urban groups to displace the working class and obtain surplus through land use changes (Camerin, 2019). However, urban regeneration able to mitigate gentrification risk and benefit to community stakeholders (Earley, 2025).

Another line of thought on BR, the effect of tourist quantities, and the booming of real estate value on the resident's quality of life and affordable housing have been emphasized (Lestegás, 2019). Therefore, in urban regeneration policy, the issue of gentrification threats is vitally important (Lehmann, 2018). Correspondingly, social capital can disintegrate due to the lack of systematic urban investment and gentrification in the shadow of regeneration. Such adverse potentials can be associated with lower levels of sustainability and spatial justice (Stanley, 2009). However, gentrification does not occur for a single reason and cannot be explained by capital flows or government support alone.

With the previous in mind, the undertaking study aims to measure the drivers of regeneration and identify the key actors of the old terminal site of Tabriz city as a disused inter-city public transport hub, which according to the planning, will be used as a 33-story concrete skyscraper. It can be said that one of the biggest plans

for the redevelopment of transportation brownfields is in the central districts of Iranian cities (www.m8.tabriz.ir). At the same time, a collection of rundown parcels and unstable buildings can be seen in the functional radius and vicinity of this regeneration flagship project (Hamidi et al., 2024). Hence, the main questions addressed in this paper are: a) what are the most significant factors for gentrifying the study area brownfields? b) which actors and forces play a major role in these interventions? And c) what are the superior goals of the actors involved in BR?

This research is divided into five main sections. Section 2 addresses conceptual overview; Section 3 includes the research method and study area features; Section 4 describes findings; Section 5 elaborates discussion; and the last part focuses on conclusion.

2. Research conceptual overview: gentrification-oriented of brownfields regeneration

In urban regeneration literature, underused, abandoned, partially occupied, and often contaminated lands (Alker et al., 2000) called brownfields, are creating intense challenges for urban management (Frantal et al., 2015). In the same way, deteriorated sites and buildings are often neither visually attractive nor aesthetically valuable, which are considered multidimensional obstacles to the social, economic, and environmental development of neighborhood (Turecková et al., 2022). Additionally, many existing brownfields are remnants of former industrial, agricultural, military, transportation, religious and social activities that have recently lost economic importance (Krzysztofik et al., 2019; Turecková et al., 2019). After successful regeneration, these areas might become residential neighborhoods, retail centers, office blocks, industrial-style facilities, parks and green spaces, studios, recreational areas, etc. That is to say, the strategy of BR, which is the idea of urban land recycling and recovery, can bring previously developed barren lands back into the urban land use circulation system. In brief, BR is a vital tool for sustainable urbanization (Wei et al., 2025). Therefore, the redevelopment of these lands is a win-win strategy for both the economy and the environment and can improve the quality of the environment and mitigation of urban sprawl (Kang & Hua, 2007). The typical brownfields are divided into five main categories which include industrial, mining, military, transportation, and land-fill (Wei et al., 2025).

In all, the UR toolkit involve a wide variety of stakeholders, combination of policies, regulations, public participation and different research issues (Perić, 2016; Krejčí et al., 2016; Wei et al., 2025). Likewise, the BR plays a crucial role in rejuvenating urban areas by fostering population growth and attracting fresh investments (Raco, 2003). Thus, to improve the residents' welfare in vulnerable neighborhoods and worn-out fabrics, more systematic support for the BR is undeniable (Turecková et al., 2022). In

contrast, BR will be a highly effective way to increase the value of adjacent properties (De Sousa et al., 2009), state-driven spatial segregation, and state-led gentrification (Lees & Ferreri, 2016). Correspondingly, it will lead to slum clearance (Mitchell & Heynen, 2009), and build up rentier megamalls (Rastad Borojini et al., 2022).

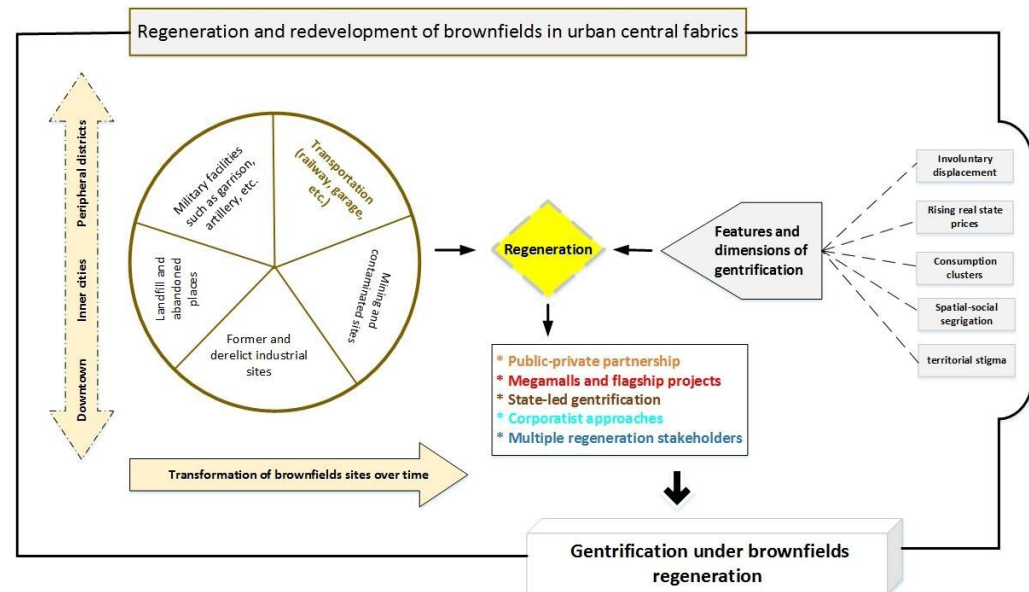
The simplest definition of gentrification is "the process by which working-class neighborhoods are revitalized by middle-class homebuyers, landlords, and professional developers" (Smith, 1982). However, since the beginning of the 20th century, rapid expansion of gentrification has taken place on a global scale (Smith, 2002; Slater 2009; Lees, 2012). So far, various types of this approach such as residential, commercial, and recently industrial gentrification have been proposed in urban studies (Pratt, 2009). Dominant accounts of gentrification refer to a combination of the "rental gap" theory (Smith, 1996), "cultural specificity" (Lees, 2003), tenancy patterns, and the period of built-up environment. Whereby affluent beneficiaries minimize their investment risks by delaying renovation as much as possible, and then capture the growing market (Pratt, 2009). More precisely, gentrification occurs when the rent gap is widely sufficient to make it profitable for investors to return to the central districts and create urban regeneration (Smith, 1996; Slater, 2017).

In some way, under property-led gentrification, the prevalent principle of "buy cheap and sell expensive" assets (Pratt, 2009) is implemented. Consequently, gentrification takes place in former working-class neighborhoods and cheap land. This dynamism may cause significant residential and employment displacement following the increase in rents and housing costs (Brenner & Keil, 2017). Another line of thought on BR demonstrates that the commercialization of neighborhoods is accelerated through speculative real estate factors (Kim, 2016). Thus, commercial gentrification often occurs in the abandoned land uses of old urban areas. In brief, the gentrification process does not begin with the migration of people, but it is formed by the capital flows toward the neighborhood, and these trends determine where and how the investment and displacement of the population takes place (Smith, 1979). In the 1970s and 1980s, there were intense political conflicts over gentrification displacement. For instance, Hartman (1974), focused on the resistance of disadvantaged groups to post-war urban revitalization, particularly the state-led gentrification of social housing (Lees & Ferreri, 2016).

Ultimately, the goals of BR with focusing on gentrification could be divided from the establishment of new centers (for business) to the protection, reuse of former industrial areas, and cleaning of slums or rundown neighborhoods. Furthermore, the effects of urban regeneration are deeply varied and have different consequences for social groups. Similarly, a BR project may boost a neighborhood's economy through commercial activity and increased property values for the benefit of owners, while the poor groups may be subject to voluntary displacement (due to rising rents) or forced displacement (capital accumulation). More specifically, the large-scale BR projects have become routine features of urban regeneration policies and these sort of transformations able to push out longtime residents through gentrification (Wernstedt &

Hanson, 2009). By concentrating on discussed points, we have drawn the conceptual framework of the research (Fig. 1).

Fig. 1 - Conceptual framework of the research. Source: the Authors



In this framework, the relation between gentrification approaches, variables, regeneration components, and actors, as well as types of brownfields, have been specified holistically. In this view, brownfield regeneration and gentrification inextricably linked to vast forces involved in derelict districts. Furthermore, private sector and state forces are primarily persuading commodification and profitability in this context.

3. Research method

3.1 Study area

Tabriz is the capital city of East Azarbaijan province, located in the northwest of Iran. The geographical coordinates of Tabriz city is 46°18' east longitude and 38°04' north latitude. The population of this city, according to last national census, was equal to 1,508,993 people. Moreover, Tabriz is the sixth largest city in Iran (Statistics Center of Iran, 2020). As a second-tier city with a significant industrial, cultural and historic heritage, it has been faced with completely deteriorated fabrics and regeneration actions (see Hamidi et al., 2024). Specifically, there are four major regeneration projects in the central district of Tabriz city such as the Atiq, Citadel, Miyarmiyar and Aysan projects which have been implemented, or are under construction. In view of this, redevelopment of the old transportation center, such as former bus terminal, (Aysan project) is considered the flagship urban brownfield regeneration in downtown Tabriz city and located between Golestan community garden and Tabriz Grand Bazaar (as a world legacy), being close to other regeneration schemes. Hence, as a regeneration project in the

Inner city, redevelopment of these brownfields was recognized as a main alternative for traditional business centers and advanced services that are looking for profitable spaces in the urban cores (Fig.2). This transport center was established in the early 1970s to manage daily inter-cities travels.

Then, this hub has been subjected to mass renewal interventions since the 2000s, which lead to considerable land use transformation, particularly regarding affordable housing properties, hand crafts enterprises and retail-based activities.

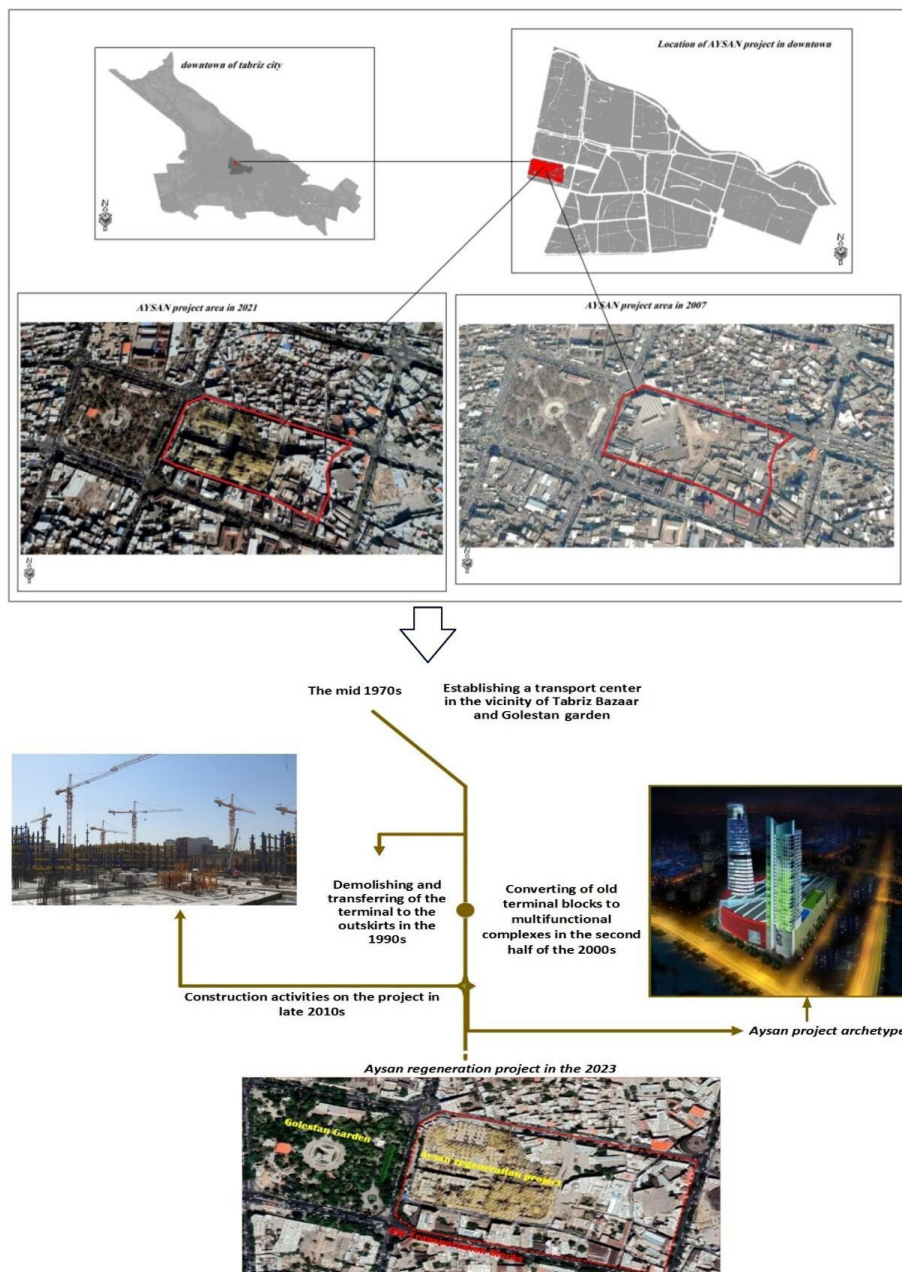


Fig. 2 - Location and key regeneration milestones of Aysan project. Source: the authors.

Consequently, a growing disparity in socioeconomic indicators between neighborhoods around this regeneration project (e.g., Gajil and Shanaz) has emerged during the 2010s. Thus, the primitive signs of gentrification are observing in surroundings (Hamidi, 2023). Notably, over the past two decades, the derelict transportation hub has undergone massive regeneration. More recently, community stakeholders launched a campaign against authorities and developers in order to save their investments and completion of the project. In addition, private and state sectors are in charge of project financing in all regeneration phases (demolition-construction-completion).

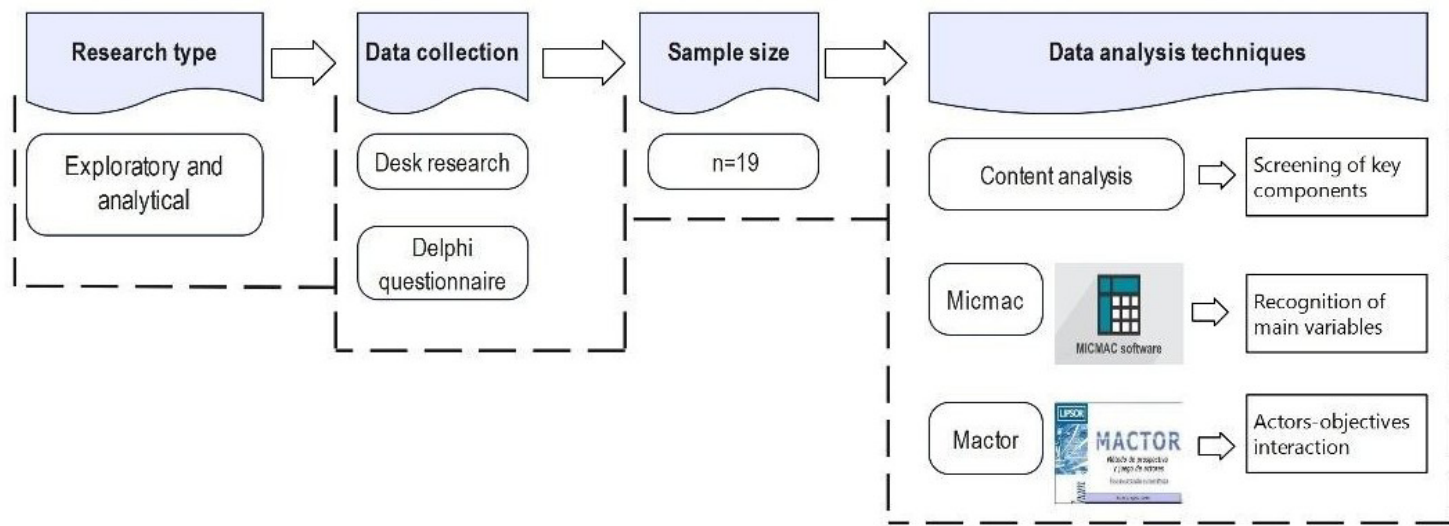
Generally speaking, the Aysan project is being built in an area of 450,000 m² in the central district of the city to create a commercial-entertainment-office-service space in a particular way. In other words, this macro multi-functional complex with 1180 commercial units will be the largest shopping center in Iran. To elaborate, the 1st to 4th floors are allocated to commercial and retail uses, the 4th floor includes restaurants, a water park, and cultural stores, afterwards, the 25th to 27th floors are hotels and residential services. Then, the last floor will be a leisure unit and other floors will be office facilities. Based on underpin planning, the old transport core of Tabriz city will be converted into a 33-story concrete skyscraper (under construction), among the types of uses mentioned for it, only the number of commercial units is 1180. If each unit has only 10 visitors per day, at least 11,000 daily trips will be imposed by its business units alone in this busy district (<http://tadbirsahel.com>). Fig. (2) represents the process of demolishing and renovating of study area.

3.2. Data collection

The current study has an exploratory and analytical approach: it is focused on identifying which actors and catalyzers have a significant effect on the brownfields gentrification in the central districts of Tabriz cities. Initially, by implementing a holistic survey of both the brownfield regeneration and gentrification, then, conducting a content analysis we defined key components related to stakeholders and brownfields issues. The second stage of the research methodology process included the document collection and review of brownfields regeneration and gentrification sources in study area (formal statistics, technical reports, websites) to extract pertinent data. In the same way, the official government reports, statistics and censuses, real estate notebooks, and neighborhood studies documents of Tabriz city, especially its central fabrics, were reviewed. Resulting from the combination of these phases, we outlined a general framework and background discussion about the changes that have emerged in the downtown area and the prevailing actors and perspectives of regeneration policies that shaped the features and forms of brownfields transformation. Next, the Delphi questionnaire technique (Zhao et al., 2023) was used as another data collection tool. Afterward, research questionnaires were conducted in the second half of 2022 with 19 respondents (experts and specialists) who were directly or indirectly involved and affected by the "Aysan" project. The sampling

method was purposeful and snowballed, which was done based on respondents' availability and the introduction of other experts by them. The content of the questionnaire was discussed to emphasize the challenges that had occurred up to that time. Complementary to this, the main emphasis and the content of the questionnaire was on the driving forces of gentrification caused by regeneration, which was raised with respondents for taking and receiving constructive comments. Finally, the key actors and priority targets were classified according to the matrix of basic variables (Fig.3).

Fig.3 - Matrix sum and Variables Stability. Source: the authors.



3.2. Data analysis specification

Data processing was done through two prevalent futuristic techniques which are largely used to illustrate structural connection and network links of complex issues: Micmac (Matrix of cross-impact multiplications applied to a classification) and Mactor (Matrix of Alliances and Conflicts consists of Tactics, Objectives, and Recommendations). Both of these techniques consist of several interrelated steps to estimate input data. In many instances, scholars have identified these methods as a means to draw attainable, feasible and preferable scenarios in urban issues (Darmastuti et al., 2022). For doing this, creating a relevant cross-impact matrix is considered the first and foremost step. Furthermore, the divergence and convergence matrix are key phase which are done in different way. As we shall see, both of these technical programs adopting a classification pattern to calculate components rank and weight via binary comparison but variables rating and rely on patially different spectrum. As we shall see, both of these technical programs adopt a classification pattern to calculate components rank and weight via binary comparison but score rating and variable arrangement partially rely on a different spectrum (<http://en.la-prospective.fr/>). In this view, the Micmac program was used to determine the impact and relationships of each gentrification variables in downtown Tabriz. Scoring in this method

is between 0 and 3; Thus, "0" means the least influence, and "3" means the most influence and role in the matrix of mutual influences (www.micmacprospective.com).

As well as, to recognize the key players and main goals of BR in the study area, Mctor program (Ahmed & Abdelkadir, 2009) as an appropriate foresight research type was applied. There are 5 spectrums in the actor-actor matrix (between 0 and 4): the score "0" means that two actors do not influence each other or the influence of one on the other is small. Next, a score of "1" indicates the ability of one actor to interfere even a little with another. In the third case (score 2), an actor may threaten or compromise the policies of another actor. The number "3" means that one actor can threaten the mission or strategies of another actor. As a result, a score of "4" evokes the most severe possible state, that is, an actor may endanger the existence of another actor (www.mactorprospective.com). In the actor-goals matrix, scoring is done between -4 and +4. In short, the higher assigned weight means that the target has a high priority for the actor and vice versa. Besides, the negative score indicates the actor's opposition to the target (Godet, 2006; Godet & Durance, 2011).

4. Findings

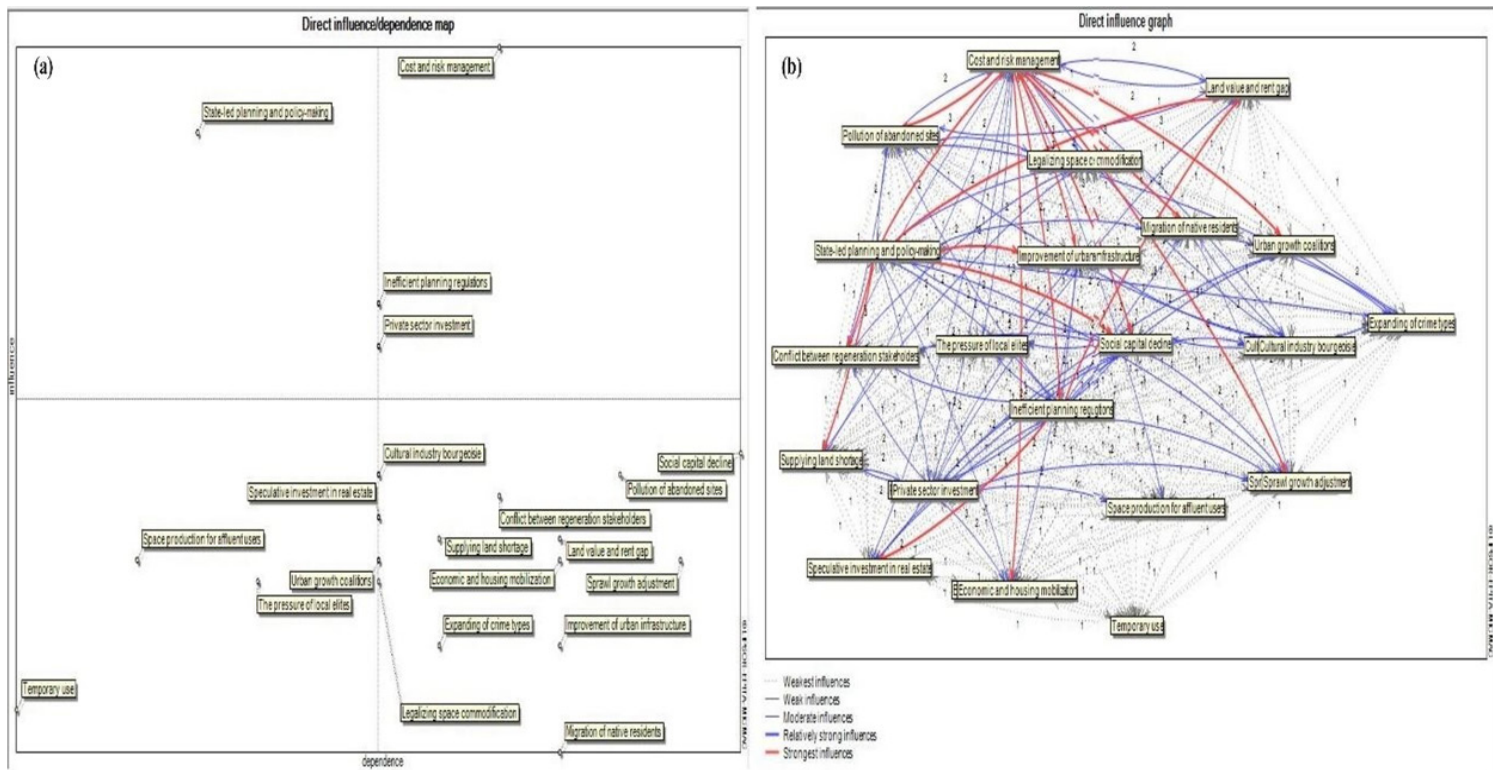
4.1 Key multidimensional variables of BR in downtown Tabriz city

This section provides detailed findings about the key multidimensional variables of brownfields gentrification in downtown Tabriz city, which act as the main driving forces, and were examined and analyzed through the matrix of mutual effects. Initially, the number of variables was estimated to be 21 based on the literature and research context. Then, the data related to each of the variables was entered into the Micmac software. Table (1) indicates descriptive information of the variables.

The highly critical stage of the mutual effects matrix depends on the estimation of the distribution of the key multidimensional variables in the quadrant graph. In quarter I, the variable investment and government policy is considered the most influential case. Primary results highlight that the variables of inefficient planning rules and private sector investment have an intermediate state; not only seem to be an influential but also they can be called bilateral variables. By concentrating on quarter II, risk and costs management has a complete bimodal state; which means that it has both an influential and dependent role. Then, in the third segment, dependent and influencing variables are placed, which constitute the majority of the discussed variables. Therefore, quarter III has shown that the multitude of factors that impact BR are: social capital decline, pollution of brownfield sites, conflict between regeneration

Tab 1 - Matrix sum and Variables Stability. Source: the authors.

		of rows	columns
1	Private sector investment	30	22
2	State-led planning and policy-making	40	19
3	The pressure of local elites	19	20
4	Conflict between regeneration stakeholders	23	24
5	Legalizing space commodification	19	22
6	Urban growth coalitions	20	22
7	Space production for affluent users	20	18
8	Land value and rent gap	21	25
9	Speculative investment in real estate	22	22
10	Cultural industry bourgeoisie	24	22
11	Migration of native residents	11	25
12	Social capital decline	25	28
13	Economic and housing mobilization	20	25
14	Improvement of urban infrastructure	16	25
15	Inefficient planning regulations	32	22
16	Sprawl growth adjustment	20	27
17	Supplying land shortage	21	23
18	Pollution of abandoned sites	24	26
19	Expanding of crime types	16	23
20	Cost and risk management	44	24
21	Temporary use	13	16
	Totals	480	480
	Iteration	Influence	Dependence
1		99%	93%



stakeholders, increase in land value and rent gap in deteriorated areas, lack of land supply, sprawl growth, quality of infrastructure in target areas, expansion of urban crime types, mobilizing of housing and migration of native residents from the central context. Lastly, in quarter IV, some autonomous or indifferent variables have been distributed, which include temporary uses, creating space for the affluent, and pressure on local elites. Regarding this, some variables such as cultural industry bourgeoisie, urban growth coalitions, speculative investment in real estate, and justifying of space commodification overlap in distribution and placement between the third and fourth part of the quadrant map (Fig. 4-a).

To be more precise, the scope and degree of interaction between 21 variables are shown in a comprehensive network (Fig. 4-b). In particular, the risk and cost management, state-driven investment and policies, rent gap, and private sector activities have been recognized to be more powerful and effective drivers in the brownfields gentrification of the study area. Afterward, variables such as inefficient planning mechanisms, levels of social capital, and the bourgeoisie of cultural industries visualize influential roles in the mentioned process. On the contrary, temporary uses and space production for the upper classes represent a minor and partial role in these trends.

4.2 Key players and objectives of BR in the central district of Tabriz city

This part has revealed the key players and objectives of the brownfield regeneration around the old transport zone of Tabriz city with the gentrification approach. First of

Fig.4 - Direct influence and dependence between variables: a) quadrant map; b) network graph.divergence between actors.

all, it should be said that six main actors can be identified in the process of BR in the study area: 1) urban governance institutions (city council and municipality), 2) private sector 3) public sector (state), 4) semi-state foundations, 5) civil institutions, 6) Residents (owners, tenants and other users). To begin with, the matrix of direct and indirect influences (MDII) is explained. Notably, two major indicators are taken into account in this matrix: a) Li indicates the degree of direct and indirect influence; b) Di shows the

level of direct and indirect dependency. As the table in Fig.5 demonstrates, the quasi-state cooperatives (45 points), and the public sector (41 points) were the most effective actor.

On the other hand, residents and owners were recognized as the least effective actors with 5 points. Regarding the effectiveness coefficient, the category of residents and civil organizations with 43, and 38 scores respectively show the highest level of dependency. Instead, the semi-governmental cooperatives are ranked last with 23 points in this context.

As mentioned previously, there are four segments in terms of influential

MDII	Urban gov	Private	State	Semi-state	Civil	Residents	Li
Urban gov	6	6	6	6	7	7	32
Private	7	7	7	6	9	9	38
State	7	7	7	6	10	11	41
Semi-state	8	9	7	6	11	10	45
Civil	4	4	4	4	5	6	22
Residents	1	1	1	1	1	1	5
Di	27	27	25	23	38	43	183

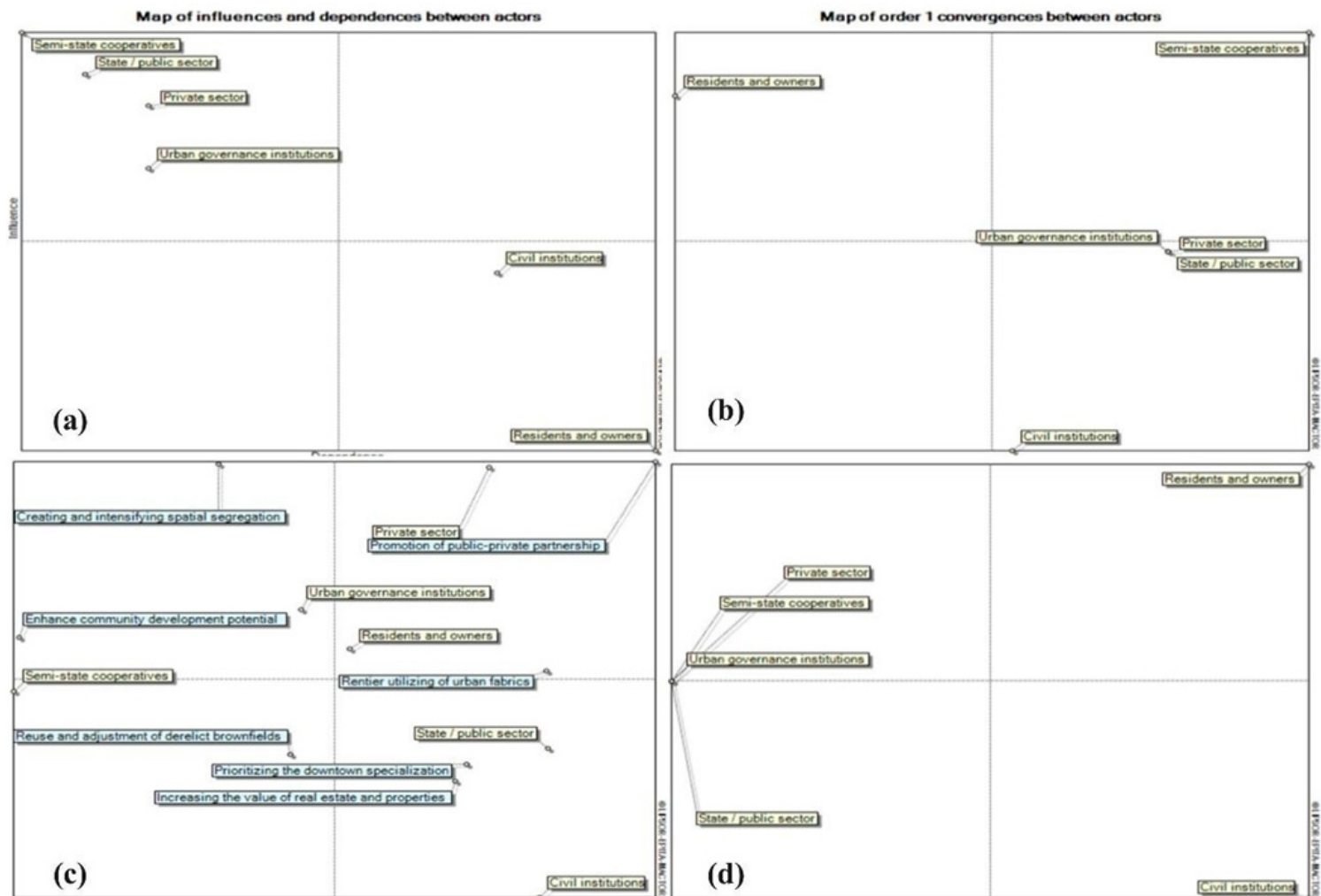
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NS	Urban gov	Private	State	Semi-state	Civil	Residents	Sum
Urban gov		-1	-1	-2	3	6	5
Private	1		0	-3	5	8	11
State	1	0		-1	6	10	16
Semi-state	2	3	1		7	9	22
Civil	-3	-5	-6	-7		5	-16
Residents	-6	-8	-10	-9	-5		-38

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Fig.5 - Matrix of direct and indirect influences (MDII) and Net scale of influences (NS).

and dependency figures among identified actors: the first quarter belongs to dominant or superior actors, which in this research includes quasi-governmental cooperatives, the public sector (state), the private sector, and urban governance institutions. The second quarter consists of twofold actors, even so, no actors are seen in this area. Then, the third quarter includes defeated and dependent actors, which are civil organizations and residents and owners in this category. Finally, the fourth quarter includes independent actors, and there is no remarkable activism in this arena (Fig. 6-a). Another important category to the key players and the goals of the brownfields gentrification is the degree of "convergence between actors". As Fig. (6-b) illustrates, the most convergence is observed between the three actors of the private sector, public sector and urban governance institutions, including municipality and city council. There is the least convergence between the actors related to the component of residents and quasi-state cooperatives with other actors. The objectives of research about the actors and according to key multidimensional variables are stressed: promotion of public-private partnership; rentier utilizing of urban fabrics; increasing the value of real estate; creating and intensifying spatial segregation; prioritizing the downtown specialization; enhance community development potential; eventually, reuse and adjustment of derelict brownfields. To a large extent, the intensification of socio-spatial segregation has been relatively agreed upon by most of the actors. As actors-goals relationship map depicts position of actors



about the goals. Based on Figure (6-c), the goals of intensifying spatial separation and promoting local development potential are less distant from the component of local governance institutions and, therefore more affected by these actors.

Moreover, the issue of divergence between key players about goals is also considerable (Fig. 6-d). The spatial distribution of private sector actors, quasi cooperatives and urban governance has occurred in the same segment. Whereas, the actors of civil institutions and citizens demonstrate the greatest interval and divergence with other actors.

Besides, in figure (7-a), the histogram of maximum amount of direct and indirect influence matrix between actors or players is depicted. As in the previous graphs of current section, quasi-state cooperatives have a value equal to 1.9, which is at the top of the brownfields gentrification organizer in downtown Tabriz. Then, the public sector with a score of (1.8) can be seen in the graph that these two actors have acted very powerfully alongside each other and in parallel and seem undisputed. Afterwards, the private sector with a coefficient of 1, urban governing bodies (0.9), civil institutions (0.3) and residents and owners (0.2) were placed respectively. Following this, in Figure (7-b),

Fig. 6 - Structural network map: a) influences and dependences between actors; b) convergence between actors; c) actor's/objectives relationship; d) divergence between actors.

the yellow color indicates the actor's agreement and blue highlight means the actor's opposition to targeted goals. Notably, the category of rentier utilizing urban fabrics has received more attention from actors (score. 18). To explain more simply the level of opposition and agreement of the actors to each of the goals, the "scale and measurement of competitiveness" tool can be used (Fig. 7-c). For instance, applying this tool for the objective of "promoting public-private partnership" indicates that the whole actors are agreement with this goal, and no activist has had a negative reaction to the promotion of mixed partnership in regeneration of old transport brownfields (currently, "Aysan" project).

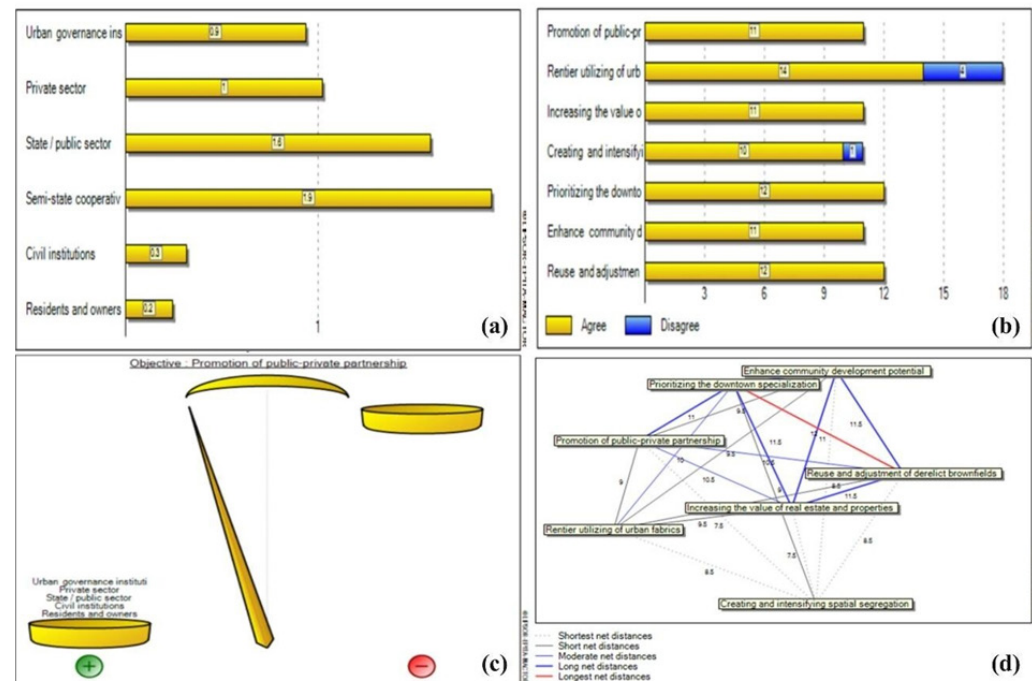


Fig. 7 - Weighted graphs; a) histogram of MMDII's competitiveness; b) histogram of actor's implication towards its objectives 2MAO; c) MDII competitiveness scale; d) net distances between objectives.

5. Discussion

Above all, the relationship between key players of brownfields gentrification and actor's opposition to each of the goals is strictly complicated. Indeed, different views are relatively seen behind key factors/actors of BR in the study area. For instance, civil groups have represented strong disagreement with space commodification goals as a tangible pattern of BG in the study area. These approaches and influential actors make brownfields regeneration benefits become more unaffordable, inaccessible and exclusive for low-income stakeholders and other disadvantaged social groups (e.g., immigrants, working class). Similarly, this idea has been extended by Camerin (2019), who implied to utilization of urban spaces for production of surplus and displacement of

working class under revitalization projects. As discussed earlier, the issue of reusing derelict brownfields besides the specialization of central cores has also appeared most invariably among the actors. In other words, merely intensifying spatial separation and rentier exploitation of the urban space are challenged by the actors. At the same time, the lowest weighted value is assigned to the same goal (spatial separation). However, another angle on this debate in prior literature depicts that resistance movements to injustice objectives of brownfields gentrification have emerged in deprived neighborhoods (Uysal, 2012; Lees & Ferreri, 2016). Moreover, the promotion of public-private partnerships is strongly emphasized by citizen and the private sector. The findings demonstrate the complexities of relationships between key actors in the gentrification process. In this scenario, stakeholders chiefly indicate more inequitable intervention power in the BR process. In addition, the goals that are placed in the radius of direct and indirect influence of public sector are: a) rentier exploitation of urban context; b) increasing the value of real estate, and c) prioritizing the specialization of downtown. In the same way, Tan & Altrock (2016) stated that real estate-oriented redevelopment strategies are widely adopted in the inner contexts and brownfields by private and public sector due to their superior location and high commercial value. Whitman also (2006), stated that achieving maximum investment profits is followed by the beneficiaries, particularly the private sector. Needless to say that the adjustment of abandoned sites has been considered a crucial goal among most of the involved actors. On the whole, there is a significant convergence between state-private sector-local governance and, they have completely formed a triangle of key preeminent forces for the BG in study area (Fig. 5). As Perić (2019) point out that ignorance of public-based values, powerless planning professionals, state and private sector superiority are significant issues in BR regarding stakeholder's relationship.

To clarify and better understand the distances between the goals derived from the results, it can be referred to Figure (7-d). To simplify, there is a distinctive interval between the goals of downtown specialization and adjustment of derelict brownfields (reverse importance). Then, the changes direction of goals has not converged and aligned. Likewise, there is a significant gap between the goals of promoting public-private partnerships, increasing the value of real estate, and local development capacity. In fact, the shortest observed distance between the intensification of spatial segregation and rent-oriented exploitation of brownfields in study area. Complementary to these interpretations, most of previous studies revealed homogeneous issues in terms of Inner city regeneration (Lees, 2003; De Sousa et al., 2009; Kim, 2016; Brenner & Keil, 2017; Gegic & Husukic, 2017).

In principle, the public sector, private, local governance institutions, and to some extent, quasi-governmental cooperatives have little distance from each other. Consequently, they follow similar goals and the objectives that have high convergence with each other are more likely to occur in the future. On the other hand, civil institutions are focused on a separate area, and citizen activists and residents are also placed in a distinct segment, which indicates that they are obviously different from other actors. In

this regard, Earley (2025) has emphasized that the community-led factors could limit gentrification under regeneration policies. On the contrary, Gebremariam et al. (2019), considered traditional land use planning, legal instability, lack of eco-friendly measures, insufficient infrastructure, and market restrictions as the most prevalent obstacles to the brownfields regeneration without gentrification.

6. Conclusion

Several conclusions chiefly emerge from this research analysis; first of all, the brownfields have been transformed under the influence of various political, economic and institutional catalyzers, and traces of gentrification can be seen in the regeneration measures carried out on the old transport site of Tabriz city. Following this, the recognized drivers in BG process represent the existence of a deep connection between political economy and the ruling system in the form of state-oriented gentrification. To simplify, the BG of study area is under the comprehensive monopoly of major indicators such as investment, policy-making and management mechanisms. From the above, it is clear that regeneration projects for regenerating brownfields are dependent on the mentioned elements. In contrast, the variables that are based on citizens' participation, non-governmental decision-making, and civil organizations' roles have had little effectiveness, hence they have a secondary priority among gentrification players. In other words, the effect of civil and residents' involvement is considered less meaningful during BR actions.

Secondly, it has been established that some of the components reveal a dual and intermediate reaction in transforming old transport hub into luxurious and magnificent complexes in downtown Tabriz. Additionally, most of the components that have socio-cultural basis are in a dependent state. In this regard, the conflict between multiple stakeholders and how to guide them determines the urgent need to change of current approach, and on the other hand, specifically how to adjust the collapse of social capital – it is considered to be an indispensable social component– depicts the partial importance of social issues in regeneration process of the study area. Furthermore, physical components such as the quality and form of brownfield sites, infrastructure and physical characteristics of the land are mainly dependent and considered the output of dominant political-economic factors. Thirdly, the evidence presented has shown that more than 20 key multidimensional variables in interaction with each other directly and indirectly organized the brownfields in study area under current perspectives. Besides, there is some overlap and interdependence between the variables. Nevertheless, most of the identified variables have played a secondary role in BG of old transport sites.

Finally, it can be concluded that almost thirty actors and institutions are involved in the regeneration of each large-scale dilapidated site in study area. With a concentration

on the type of activities performed by the discussed earlier actors taken into account, the large number of influential interveners can be examined in six major categories, which are explained in detail in the previous section. Concerning semi-governmental cooperatives and the public sector have been placed at the top of the pyramid of key actors and have been introduced as the most powerful actors. More precisely, if the actors of brownfields gentrification are placed in a vector, on one side of it there will appear powerful actors and on the other side, weak actors with a limited role (citizens). In addition, most of actors were unanimous in emphasizing public-private partnership, rentier utilizing of brownfields and raising the value of real estate through the "Aysan" regeneration project. Indeed, government-promoted brownfield regeneration foster possibilities of gentrification development in this area. Conversely, there has been a poor consensus to adjust the spatial separation of regenerative measures. To put sum, BG actors placed a strong emphasis on profitable objectives in downtown Tabriz city.

Regarding research outputs, the main innovation of this paper is the structural and multi-dimensional analysis of a critical regeneration project in downtown Tabriz, which could be considered as a practical case in the whole of Iran. Moreover, in this research, a set of actors, goals, strategies and key multidimensional variables affecting the process of BG were identified and analyzed by relying on foresight methods. Thus, this paper widely explained a valuable method for examining of the contradictable interventions based on uncertain occasions and holistic attitudes, which might be developed worldwide, particularly nationwide. Moreover, there are limited studies conducted to resolve the complexities of interdependences and relations between BG actors, variables, goals and regeneration process. Given the domains of actors effects and stakeholders relationship in this research, future studies need to address the potential spillovers from uneven brownfields regeneration in a broader context.

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Decision Support Tools for Urban Regeneration: Collaborative Approaches and Tools for the Evaluation of Equitable and Sustainable Wellbeing

Francesca Nocca, Martina Bosone, Manuel Orabona, Pasquale Galasso

Abstract

For decades, Gross Domestic Product (GDP) was considered the main indicator for measuring the progress of nations. However, although GDP is useful for analysing economic growth, it is not sufficient to describe the real wellbeing of people and communities. Today, it is increasingly evident that the development of a territory has to consider also socio-cultural, environmental and relational dimensions, going beyond mere economic growth. In this perspective, the concept of Equitable and Sustainable Wellbeing (BES), developed by ISTAT in 2010, assesses people's quality of life through an articulated set of indicators, categorized into 12 domains, capable of representing the complexity of wellbeing.

In this context, the aim of the proposed research is to investigate the community's perceptions about the places it associates with conditions of 'wellbeing' and 'non-wellbeing' and the factors that most influence them. To this aim, starting from a literature analysis on existing approaches and tools for the assessment of wellbeing and from the outcomes of a participatory process involving the local community through surveys and focus groups, this study proposes a multidimensional evaluation framework (called P-BESq, the italian acronym for "Perception of Equitable and Sustainable Wellbeing in Neighbourhoods") consisting of 83 subjective/perceptual indicators to support the existing objective/quantitative ones for the assessment of the quality of life in cities on a neighbourhood scale from the community's point of view.

This framework provides an operational tool to integrate existing evaluation frameworks, based on objective/quantitative data, to support more inclusive urban transformation processes.

KEYWORDS:

Urban Regeneration, Decision Support Tools, Equitable and Sustainable Wellbeing, Multidimensional evaluation, Subjective/perceptual indicators

Strumenti di supporto alle decisioni per la rigenerazione urbana: Approcci e strumenti collaborativi per la valutazione del benessere equo e sostenibile

Abstract

Per decenni il Prodotto Interno Lordo (PIL) ha rappresentato l'indicatore principale per misurare il progresso di una nazione. Tuttavia, sebbene utile per analizzare la crescita economica, il PIL non è sufficiente a descrivere il benessere reale delle persone e delle comunità. Oggi è sempre più evidente come lo sviluppo di un territorio debba considerare anche dimensioni socio-culturali, ambientali e relazionali, andando oltre la semplice crescita economica. In questa prospettiva si colloca il concetto di Benessere Equo e Sostenibile (BES), elaborato dall'ISTAT nel 2010, che valuta la qualità della vita delle persone attraverso un insieme articolato di indicatori, suddivisi in 12 domini, capaci di rappresentare la complessità del benessere.

In questo contesto, l'obiettivo della ricerca qui proposta è quello di indagare le percezioni della comunità rispetto ai luoghi che loro associano a condizioni di "benessere" e "non-benessere" e ai fattori che maggiormente ne influenzano la percezione. A tal fine, partendo da un'analisi di letteratura su approcci e strumenti esistenti per la valutazione del benessere e dagli esiti di un processo partecipativo che ha coinvolto la comunità locale attraverso sondaggi e focus groups, il presente studio propone un quadro di valutazione multidimensionale (denominato P-BESq, acronimo di "Percezione del Benessere Equo e Sostenibile nei Quartieri") costituito da 83 indicatori soggettivi/percettivi a supporto di quelli oggettivi/quantitativi esistenti per la valutazione della qualità della vita nelle città a scala di quartiere dal punto di vista della comunità.

Questo quadro offre uno strumento pratico ad integrazione dei quadri valutativi esistenti, basati su dati oggettivo/quantitativi, a supporto di processi di trasformazione urbana più inclusivi

PAROLE CHIAVE:

Rigenerazione Urbana, Strumenti di Supporto alle Decisioni, Benessere Equo e Sostenibile, valutazioni multidimensionali, indicatori soggettivo/percettivi

Decision Support Tools for Urban Regeneration: Collaborative Approaches and Tools for the Evaluation of Equitable and Sustainable Wellbeing

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1. Introduction

The quality of the city directly influences the wellbeing of its inhabitants: well-designed spaces can foster physical, mental and social wellbeing, reduce inequalities and promote inclusion (Prescott-Allen, 2001; Stiglitz et al., 2010).

For decades, Gross Domestic Product (GDP) has been considered the primary indicator of a nation's progress. However, while this economic measure is useful for analyzing productive growth, it falls short in describing the real wellbeing of people and communities.

Today, more and more studies and concrete experiences show that the development of a territory cannot be assessed merely based on economic wealth but has to take into account social, environmental, and relational factors. Designing for wellbeing means not only ensuring accessibility and safety, but also creating places that, for example, foster social interaction and promote experiences that enhance quality of life.

The concept of Equitable and Sustainable Wellbeing (herein BES, as the Italian acronym), developed by ISTAT (Italian National Institute of Statistics) in 2010, emerged from the need to measure people's quality of life using a comprehensive set of indicators that encompass health, education, job quality, social cohesion, and environmental sustainability, going “beyond GDP”. This represents a methodological shift and also a cultural transformation that views territories not just as economic units but as socio-cultural ecosystems where wellbeing can be collectively fostered. Addressing this challenge requires public policies that are more people-centered, participatory evaluation tools, and a new vision of progress grounded in sustainable development that balances equity, sustainability, and quality of life.

The aim of this paper is to propose an evaluation framework for assessing the quality of life in cities from a subjective and community-based perspective (on the basis of the Equitable and Sustainable Wellbeing concept developed by ISTAT).

After the literature and grey review (Section 2) on community wellbeing evaluation, the methodology is described (Section 3) and a multidimensional evaluation framework is proposed (Section 4). In Section 5 the proposed evaluation framework is discussed. Then limitations and future steps of the research are discussed (Section 6).

2. Literature review

Several studies show that the daily experience in the city - from travel time, to

leisure opportunities, to the social interactions that the city allows - is reflected in life satisfaction and individual wellbeing. Design and planning “for people” is a topic already emerged in the past century in studies by some important urbanists, architects and policy-makers (Lazzati, 1984; La Pira, 2017; Dossetti, 2014; Geddes, 1915) who highlighted the importance of building a “city of man on a human scale”. Gehl (2010) emphasizes the importance of prioritizing the “city for people,” arguing that focusing on human-centered planning fosters more vibrant and inclusive urban spaces, with positive spillover effects on culture and community cohesion.

Integrating the human dimension in the evaluation of wellbeing in cities means recognising that the physical form and social life of cities are inseparable: cities that are designed for people perform better not only in environmental or health indicators, but also in measures of citizen satisfaction and thus overall wellbeing.

Which tools can provide empirical evidence of the relationship between city quality and community wellbeing? Which evaluation tools? These questions are addressed in the following paragraph through the analysis and discussion on the literature review about the evaluation of wellbeing in cities.

2.1. Systematic literature review: the PRISMA method

A systematic literature review on the evaluation of perceived wellbeing in cities by community was conducted as part of this study to identify key aspects and the state of art in this field.

This systematic literature review adopted the Moher et al. (2009) Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method, resulting in a four-step process: identification of studies, screening, eligibility and inclusion (Figure 1).

Figure 1 shows the phases of the systematic search process for the literature review on the evaluation of perceived wellbeing in cities by community. In each step, the number of scientific sources selected is indicated.

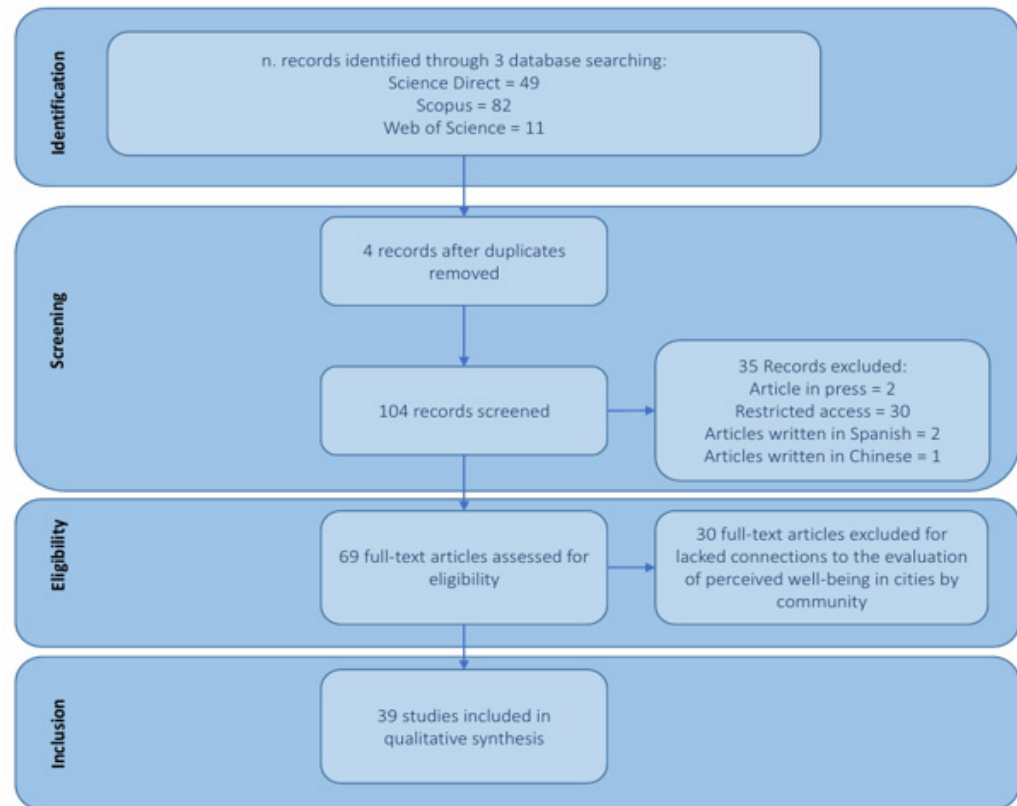
In the identification phase, three mainstream databases, including Web of Science, Scopus and ScienceDirect, were chosen as the research sources. The articles search was performed by title, abstract and keywords, using Boolean operators 'OR' and 'AND'. The keywords used for the articles search were organized in this combination: ("evaluation" OR "assessment" OR "co-evaluation") AND ("community" AND "perception" AND "wellbeing").

In the screening phase, some filters were adopted:

- only article in English are selected;
- articles in press were excluded;
- only open access articles were considered.

No filters were applied to the search for articles based on publication date. In the eligibility phase, all publications were examined by titles, abstracts and keywords. To avoid omitting important knowledge, another analysis was conducted on the content of

Fig. 1 - Systematic review phases: the PRISMA Flow



initially unsuitable articles. Papers unrelated to perception and evaluation of wellbeing were excluded.

Thirty-nine papers were assessed for eligibility and thus included in a qualitative synthesis.

In the inclusion phase, content analysis of these publications was then conducted to elicit relevant topics and perspectives on the evaluation of perceived wellbeing in cities by community. They are discussed in the following section.

2.2 Literature review on the evaluation of perceived wellbeing in cities by community

The evaluation wellbeing in urban areas has gained nowadays increasing attention in the academic and policy debate. The concept of wellbeing goes beyond economic growth and incorporates multiple dimensions, including health, environmental sustainability, and social equity (Stiglitz et al., 2010; Prescott-Allen, 2011; United Nations, 2012). As cities become the primary centers of economic production and population growth, they also generate substantial social and environmental challenges. The need to balance economic activity with ecological preservation and community cohesion has led to the development of multidimensional evaluation frameworks, balancing objective data (e.g. income, health) and subjective dimensions (e.g. life satisfaction, safety

perception) (Diener, 2006; Kangmennaang & Elliott, 2023). This literature review explores key theoretical frameworks and empirical contributions about community wellbeing evaluation, focusing both subjective and objective indicators to assess urban sustainability and inclusivity.

Pioneering efforts like the Stiglitz-Sen-Fitoussi Report and Istanbul Declaration highlighted the necessity of subjective indicators in gauging citizens' lived experiences (Stiglitz et al., 2010; Prescott-Allen, 2001). Frameworks such as BES (ISTAT, 2015; 2024), the OECD Better Life Index, and the Arcadis Sustainable Cities Index reflect this evolution, encompassing domains from health and education to governance, green space access, and subjective wellbeing (OECD, 2011; Arcadis, 2022). In particular, the BES framework developed by ISTAT in 2010, identifies 12 key domains that structure a comprehensive approach to wellbeing evaluation: Health, Education and Training, Work and work-life Balance, Economic wellbeing, Social relationships, Politics and Institutions, Safety, Subjective wellbeing, Landscape and cultural heritage, Environment, Innovation, Research and Creativity, Quality of Services. These domains reflect a recognition that prosperity must be measured in holistic terms, accounting for social cohesion, environmental conditions, and personal fulfillment.

Empirical research shows that physical and social urban environments greatly influence wellbeing. Access to green areas, walkability, and sustainable mobility correlate with improved physical and mental health, particularly among women and the elderly (Vert et al., 2019; Hu et al., 2025). Regeneration efforts like riverfront or cycling infrastructure upgrades increase social cohesion, satisfaction, and physical activity (Vert et al., 2019; Marquart et al., 2022).

Subjective safety, environmental aesthetics, and social capital further impact community resilience and individual flourishing (Ward et al., 2021; McCrea et al., 2019). Perceived environmental deprivation can exacerbate stress, especially in disadvantaged populations (Ho et al., 2020; Elwell et al., 2018). Social infrastructure, such as school support and housing conditions, also plays a protective role (Rodríguez-Rivas et al., 2023; Ward et al., 2021).

Studies emphasise the importance of integrating community perceptions through participatory methods like concept mapping, stakeholder engagement, and community-based interventions (Mehdipanah et al., 2013; Schlemm et al., 2025; Blackwell & Colmenar, 1999). Locally grounded assessments of ecosystem services and wellbeing dimensions ensure more inclusive, culturally relevant urban planning (Tavano Blessi et al., 2016; Adeyemi et al., 2022; Schlemm et al., 2025).

Innovative models like ecotherapy and “edible landscapes” redefine wellbeing by reconnecting people with nature and fostering place-based identity and resilience (Farrier et al., 2019; Isham et al., 2025). Gendered and youth-specific approaches also emerge as key, considering differential impacts of urban design on various groups (Martin-Storey et al., 2018; Blackwell, 2023).

Indices like the Global Liveability Index (The Economist Intelligence Unit, 2025), Mercer's Quality of Living (Mercer, 2024), the Happy City Index (Institute for Quality

of Life, 2025), and Knight Frank's City Wellbeing Index (Knight Frank, 2025) attempt to quantify urban wellbeing across multiple domains but often rely on national data or overlook intra-urban disparities. Participatory GIS, real-time perception surveys, and mixed-method designs help bridge these gaps (Bateman & Muñoz-Rojas, 2019; Schlemm et al., 2025).

Smart city initiatives integrating digital tools, mobility platforms, and inclusive governance mechanisms can further enhance wellbeing if grounded in local realities and equity considerations (Nikitas et al., 2019; Bateman & Muñoz-Rojas, 2019). However, green infrastructure must go beyond aesthetics, offering functional benefits like improved air quality, biodiversity, and emotional refuge (Marquart et al., 2022; Ho et al., 2020).

Finally, wellbeing assessments must go beyond disciplinary silos, integrating subjective insights, ecological metrics, and cultural narratives. A city's capacity to foster wellbeing depends on inclusive governance, resilient infrastructure, and an ability to reflect its inhabitants' values and lived realities (Montgomery, 2013; Greco et al., 2015; Wood et al., 2013).

Integrating objective indicators with subjective evaluation allows for a more comprehensive understanding of urban sustainability and inclusivity. Future research should focus on refining participatory methodologies and developing adaptable wellbeing indices that reflect local contexts and evolving societal needs. By incorporating community perspectives into policy frameworks, cities can move towards the achievement of more equitable and sustainable wellbeing goals. A holistic approach that incorporates health, safety, education, environmental sustainability, and social cohesion is essential for stimulating resilient urban environments that prioritize human flourishing (VanderWeele, 2017). However, today these frameworks are mainly focused on quantitative and objective indicators, neglected the subjective/perceptual aspects which are essential to fully capture the complexity of urban wellbeing.

3. Methodology

The main objective of this research is to develop a framework for evaluating quality of life in urban contexts through a subjective/perceptual, community-based perspective. This approach is intended to integrate existing quantitative frameworks and to support and guide urban transformation processes and projects. The framework builds on the concept BES developed by ISTAT, which defines wellbeing as a multidimensional concept encompassing 12 key domains (see Section 2.1).

Unlike the ISTAT framework, which is designed for application at the national and metropolitan city levels, the evaluation framework proposed here operates at the urban scale, with particular attention to both the city and neighborhood levels (see Figure 2). This dual-level approach acknowledges that wellbeing is shaped not only by conditions at the broader city level, but also—and often more significantly—by the

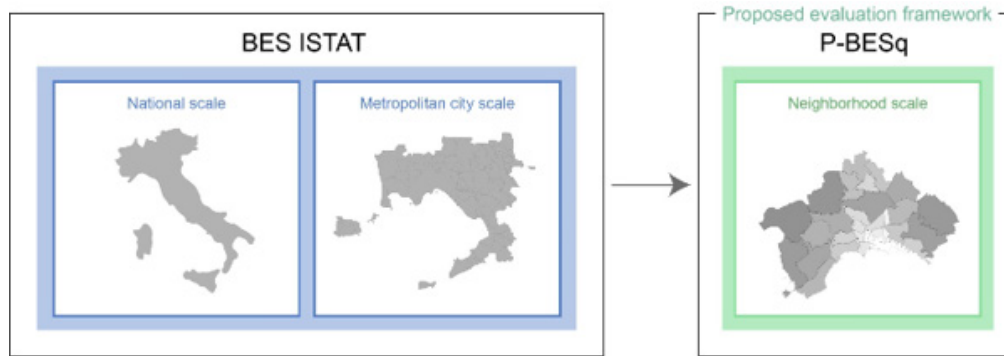


Fig. 2 - The proposed evaluation framework (P-BESq): territorial scale

local environments in which people live their daily lives.

Neighborhoods represent the most immediate spatial context of individual and collective experiences, and as such, they are fundamental units of analysis for capturing the granular variations in quality of life across different areas of the same city (McElroy et al., 2021). Factors such as access to services, perceived safety, social cohesion, and environmental quality can vary substantially from one neighborhood to another, influencing residents' perceptions of wellbeing.

According to the BES approach, quality of life extends beyond health status and economic conditions, encompassing a wide range of factors that influence everyday life in urban environment. However, as aforementioned, the ISTAT BES framework provides a valuable system of objective (and mainly quantitative) indicators at the national and metropolitan city levels. These indicators alone are not sufficient to fully capture the complexity of wellbeing as experienced within urban environments. Objective metrics - such as air quality, crime rates, or access to services - provide essential information, but they do not account for how such aspects are perceived or experienced by locals. They are necessary, but not sufficient. For example, it is important to know how much green spaces are available in a city, but it is equally important to understand whether and how these spaces are actually used and valued/perceived by the community. Similarly, low crime rates do not necessarily imply a strong sense of safety among locals.

Therefore, a comprehensive evaluation of wellbeing has to combine objective data with subjective/perceptual ones. As highlighted by ISTAT (ISTAT, 2024), wellbeing is about what happens, but also about how people experience and interpret it.

In this perspective, this study proposes an evaluation framework (named P-BESq, Italian acronym of "Percezione del Benessere Equo e Sostenibile nei Quartieri") consisting of subjective/perceptual indicators for supporting the existing objective/quantitative ones (as BES) in the evaluation of the quality of life in cities at neighborhood scale (Figure 3). These indicators represent a parameter for measuring the community perception of wellbeing in relation to many factors (linked to the aforementioned 12 domains) in the city that may influence the quality of life.

Community perceptions - commonly referred to as 'soft' data - provide a critical lens

for interpreting real needs and everyday experiences. These insights complement ‘hard’ data, which is typically quantitative. Integrating subjective and perceptual indicators introduces the human dimension into wellbeing evaluations, enabling a more holistic and context-sensitive evaluation.

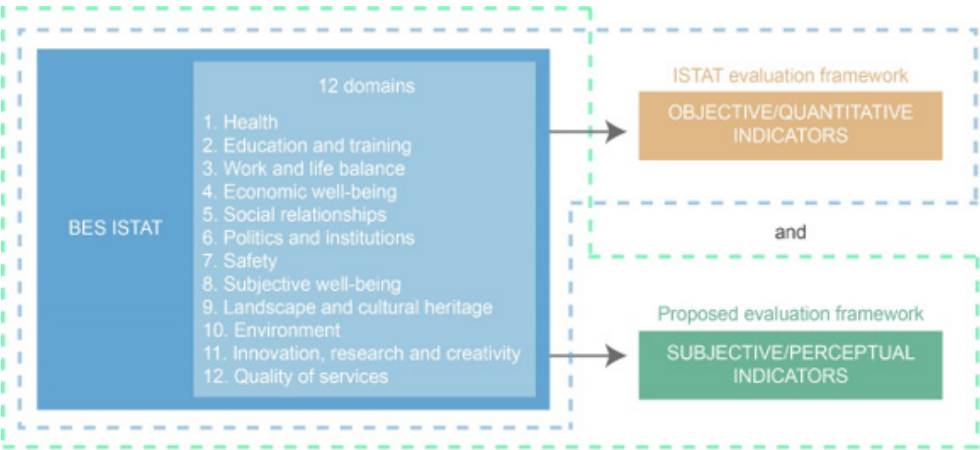
The framework is structured around the 12 BES domains and integrates subjective-perceptual indicators identified through both the literature review (see Section 2.1) and a participatory process involving the local community via surveys and focus groups, conducted both in person and online. This participatory component was designed to identify which aspects of urban life are most closely associated with wellbeing, as perceived by the community itself. To support this, a collaborative map (named “BES Co-Mapping” available at <https://arcg.is/1T9jrv1>) was developed using an online geolocation tool (ArcGIS Survey123). The tool enables the georeferencing of survey responses, providing a spatial representation of the places and factors that residents associate with conditions of ‘wellbeing’ and ‘non-wellbeing’ within the urban environment.

4. The proposed evaluation framework

In Table 1, the P-BESq multidimensional evaluation framework is provided including a set of 83 subjective/perceptual indicators grouped in the 12 BES domain. The first column indicates the domain ID, the second column indicates the specific domain to which each indicator refers, providing essential context for understanding the data. The third column is referred to the indicator ID number, a unique identifier assigned to each indicator, which facilitates the cataloging and consultation of the framework. In the fourth column, the indicator itself is reported, representing a concrete measure of an aspect of the analyzed domain. The fifth column indicates the function of each indicator, where the sign ‘max’ means that a high value of the indicator contributes to a high wellbeing (positive correlation) while the sign ‘min’ means that a high value of the indicator contributes to a low wellbeing (negative correlation). The unit of measure for each indicator

is the Likert scale (Likert, 1932), as this scale allows the evaluation of behaviors and opinions that would otherwise be difficult to capture. However, besides the Likert scale, the binary scale can also be valid, as it allows the assessment of dichotomous situations such as the presence or absence of a certain perception.

Fig. 3 - The proposed evaluation framework (P-BESq): domains and indicators typology



Tab 1 - The subjective dimension of BES: the proposed multidimensional evaluation framework (P-BESq)

Domain ID	Domain	Indicator ID	Indicator	Function
1	Health	1.1	Level of perceived correlation between own physical health condition and the quality of the urban context	max
		1.2	Level of perceived correlation between own psychological wellbeing condition and the quality of the urban context	max
		1.3	Level of trust in the local healthcare system (general practitioner, consulting room, local surgeries)	max
		1.4	Level of perceived correlation between the possibility of being affected by disease in the future and the quality of the urban context	min
		1.5	Level of satisfaction with the supply of local public spaces for outdoor sports	max
		1.6	Level of perceived correlation between presence of local urban gardens (if any) and personal wellbeing	max
		1.7	Level of perceived correlation between taking care of urban gardens (if any) and personal wellbeing	max
2	Education and Training	2.1	Level of satisfaction with the proximity from own home to the education services (i.e. schools)	max
		2.2	Level of satisfaction with the physical accessibility to the education services (i.e. schools)	max
		2.3	Level of satisfaction with the local supply of cultural activities (i.e. cinema, theaters, museums)	max
		2.4	Level of satisfaction with the proximity from own home to cultural activities (i.e. cinema, theaters, museums)	max
		2.5	Level of satisfaction with the physical accessibility to cultural activities (i.e. cinema, theaters, museums)	max

Domain ID	Domain	Indicator ID	Indicator	Function
3	Work and work-life Balance	3.1	Level of satisfaction with the job opportunities offered by the city of current living	max
		3.2	Level of satisfaction with the provision of community-based leisure activities (i.e. artistic laboratory, reading groups, heritage walking, outdoor cinema)	max
		3.3	Level of satisfaction with the availability of spaces for smart working	max
		3.4	Level of satisfaction with the urban environment quality at the workplace	max
4	Economic wellbeing	4.1	Level of satisfaction with the access to the housing market compared to expectations	max
		4.2	Level of perception of fair (economic) access to local public transport (i.e. prices, subsidies)	max
		4.3	Level of perception of fair (economic) access to public local healthcare services (i.e. prices, subsidies)	max
		4.4	Level of satisfaction with the relationship between own income and the quality of public services provided	max
5	Social relationships	5.1	Level of perception of the degree of social cohesion in own neighbourhood (trust, cooperation, mutual respect)	max
		5.2	Level of perception of inclusion in local relationships, resources and opportunities	max
		5.3	Level of concern about being excluded from local relationships, resources and opportunities	min
		5.4	Level of sense of belonging to the local community	max
		5.5	Level of satisfaction with the usability of local public spaces (i.e. parks, squares) as meeting and relationship places	max

Domain ID	Domain	Indicator ID	Indicator	Function
6	Politics and Institutions	5.6	Level of trust placed in neighbors for relationships (collaboration, mutual help, and safety)	max
		5.7	Level of satisfaction with the involvement in activities of public interest (i.e. civic events, volunteering)	max
		5.8	Level of perceived correlation between presence of public interest local activities (i.e. civic events, volunteering) and personal wellbeing	max
		5.9	Level of perception of effective cultural/social integration between local communities and minority groups	max
		5.10	Level of willingness to financially support local activities of public interest (i.e. crowdfunding)	max
		5.11	Level of trust in Third Sector organisations active in the territory	max
		6.1	Level of satisfaction with the degree of citizen involvement in local public decision-making processes	max
		6.2	Level of perception of the effectiveness of policy decisions on urban development (planning, regeneration)	max
		6.3	Level of perceived transparency in decision-making processes of local urban development policies	max
		6.4	Level of perceived accessibility to digital services of public institutions	max
		6.5	Level of perception about the capacity of institutions in receiving citizens needs	max
7	Safety	7.1	Level of perception of safety in the neighborhood by day	max

Domain ID	Domain	Indicator ID	Indicator	Function
		7.2	Level of perception of safety in the neighborhood by night	max
		7.3	Level of perception of safety at pedestrian crossings	max
		7.4	Level of fear of being a victim of crime (i.e. theft, vandalism)	min
		7.5	Level of perceived trust in local law enforcement agencies as guarantors of urban safety and collective wellbeing	max
		7.6	Level of concern about the presence of criminal activities (drug dealing, vandalism, fights)	min
		7.7	Level of perceived correlation between criminal event and public lighting	max
		7.8	Level of perception of safety when walking alone at night in the city	max
8	Subjective wellbeing	8.1	Level of satisfaction with the quality of the neighbourhood's public spaces for relaxation, leisure and socialising	max
		8.2	Level of satisfaction with the accessibility to the neighbourhood's public spaces for relaxation, leisure and socialising	max
		8.3	Level of satisfaction with the proximity of the neighbourhood's public spaces for relaxation, leisure and socialising	max
		8.4	Level of trust in Local Social Plans	max
		8.5	Level of perceived correlation between the effectiveness of Local Social Plans actions and the improvement of quality of life	max
		8.6	Level of perceived alignment between own lifestyle needs and the opportunities provided in the urban context	max

Domain ID	Domain	Indicator ID	Indicator	Function
9	Landscape and cultural heritage	9.1	Level of satisfaction with the state of conservation of local cultural heritage	max
		9.2	Level of satisfaction with the maintenance of the built heritage in the neighborhood	max
		9.3	Level of satisfaction with the care/maintenance of local public spaces (i.e. parks, squares)	max
		9.4	Level of perception of the neighborhood's aesthetic quality	max
		9.5	Level of willingness to attend local cultural events	max
		9.6	Level of satisfaction with participation in local cultural events	max
		9.7	Level of interest in the protection/valorization of cultural heritage in the neighborhood	max
		9.8	Level of willingness to care for the valorization of cultural heritage in the neighborhood	max
		9.9	Level of willingness to care for local public spaces	max
10	Environment	10.1	Level of perception of air quality in the neighborhood	max
		10.2	Level of concern about the local effects of climate change (such as heat waves, flooding, or loss of urban greenery) in relation to the liveability of the neighbourhood	min
		10.3	Level of perceived accessibility to local urban green areas considering architectural barriers	max
		10.4	Level of perceived accessibility to local urban green areas considering physical distance	max

Domain ID	Domain	Indicator ID	Indicator	Function
		10.5	Level of perceived accessibility to local urban green areas considering continuity of pedestrian routes	max
		10.6	Level of perceived equal and fair (physical) access for vulnerability groups to local urban green spaces (children, elderly, people with disabilities, low income families)	max
		10.7	Level of satisfaction with the maintenance of local green areas	max
		10.8	Level of usability of local green areas	max
		10.9	Level of perception of visual pollution (e.g., barriers) in the neighborhood	max
		10.10	Level of perception of noise pollution (e.g., traffic) in the neighborhood	max
11	Innovation, Research and Creativity	11.1	Level of physical accessibility to co-working spaces in the neighborhood	max
		11.2	Level of physical accessibility to innovation spaces (incubators/accelerators, fab labs, etc.) in the neighborhood	max
		11.3	Level of perception of technological training opportunities	max
		11.4	Level of effective participation in innovation, research, and creativity projects	max
		11.5	Level of interest in innovation, research, and creativity projects	max
12	Quality of Services	12.1	Level of satisfaction with the local public transportation	max
		12.2	Level of satisfaction with the distance to the essential neighborhood services	max

Domain ID	Domain	Indicator ID	Indicator	Function
		12.3	Level of perception of equal and fair (physical) access to public transportation	max
		12.4	Level of perceived ease of access to administrative digital services	max
		12.5	Level of satisfaction with waiting times in local public services	max
		12.6	Level of perception of the efficiency of local bureaucracy	max
		12.7	Level of physical accessibility to local emergency and support services (medical, social, psychological)	max
		12.8	Level of satisfaction with the efficiency of the local public healthcare services	max
		12.9	Level of satisfaction with local childcare services (i.e. nurseries, preschools, after-school programs, daycare centers)	max

5. Discussions

The proposed evaluation framework consists of 83 subjective/perceptual multidimensional indicators covering all the BES domains. These indicators were deduced by identifying the corresponding perceptual indicator of each quantitative/objective indicator proposed by BES (where possible) and by integrating additional indicators emerging from a critical analysis of the literature review. This framework aims to complement the quantitative/objective indicators of ISTAT BES with perceptual indicators. It does not aim to evaluate people's quality of life in absolute terms but rather to assess quality of life in relation to the city and urban space. The goal is to understand wellbeing or lack thereof within specific cities and neighborhoods, supporting urban transformation decisions through a human-centered approach.

Each indicator describes an aspect of wellbeing that can be positively or negatively affected by urban organization. In turn, people's perceptions of urban spaces can shape how these spaces are used and influence their transformations, including informal ones. Perceptions are always the result of an integration between objective and subjective elements, which is why the proposed evaluation framework integrates the objective indicators already included in the BES.

While all indicators could fall under the 'subjective wellbeing' domain due to their

perceptual nature, they have been categorized based on the domain of the predominant factor generating the perception.

Most indicators (i.e. “1.5 Level of satisfaction with the supply of local public spaces for outdoor sports”, “2.1 Level of satisfaction with the proximity from own home to the education services (i.e. schools)” and “5.5 Level of satisfaction with the usability of local public spaces (i.e. parks, squares) as meeting and relationship places”) directly describe the relationship between citizens' perceptions and the various factors of urban space that influence them.

Some indicators could belong to more than one domain; however, they are included in the domain deemed most relevant for describing the phenomenon. Classifying the indicators into domains facilitates the analysis of the data, but their real usefulness emerges when they are interpreted in relation to each other. This allows for a more integrated assessment of wellbeing in cities based on the perceptions of their residents. For instance, Indicator 10.4 “Level of perception of fair access to green spaces for all social groups” was included in the ‘Environment’ domain because of its link with accessibility to green spaces, but it could also be included in the ‘Social relationships’ domain because of its link with inclusion. Similarly, “Level of perception of the degree of social cohesion in own neighborhood (trust, cooperation, mutual respect)” is included in the “Social relations” domain, but could also be linked to “Subjective wellbeing”.

Additionally, only indicators referring to the natural environment are considered under the “Environment” domain. The built environment is instead included in the “Landscape and Cultural Heritage” domain.

Some indicators are based on assessing the “level of perceived correlation.” Unlike the previous ones, these indicators explore individuals’ perceptions of direct correlations in various contexts. For example, they examine the perceived link between personal wellbeing and the quality of the urban environment, such as the connection between one’s physical health or the risk of future illness and urban conditions context (i.e. indicator 1.1 “Level of perceived correlation between own physical health condition and the quality of the urban context” and indicator 1.4 “Level of perceived correlation between the possibility of being affected by disease in the future and the urban context”). They also investigate the perceived correlation between specific urban features—like the presence of local urban gardens—and individual wellbeing (Indicator 1.6 “Level of perceived correlation between presence of local urban gardens (if any) and personal wellbeing”). Additionally, these indicators consider perceptions of relationships between different urban aspects themselves, such as the link between criminal events and public lighting (i.e. indicator 7.7 “Level of perceived correlation between criminal events and public lighting”). Finally, they assess how people perceive the effectiveness of existing policies in improving quality of life, such as the impact of Local Social Plans (indicator 8.5 “Level of perceived correlation between the effectiveness of Local Social Plans actions and the improvement of quality of life”).

This type of indicator goes beyond merely assessing perceptions of specific urban features; it examines citizens’ awareness of how these features impact their quality of

life. Such indicators are especially valuable as they reveal dimensions that objective measures alone cannot capture. However, it is important to recognize that perceptions of these correlations vary significantly based on cultural, socio-economic, and personal experiences. This variability makes comparisons across different territories challenging unless the data are properly contextualized and supplemented with additional information - gathered through direct engagement with the relevant communities - to accurately interpret their meaning in diverse contexts.

Considering the indicators related to “physical accessibility”, such as those included in the domains “Education and training”, “Environment” and “Quality of services”, the meaning is inspired by that defined by ISTAT, which interprets accessibility as the proportion of a population segment (e.g., residents) relative to the minimum distance to a given service. However, in the P-BESq framework, accessibility is also considered in relation to the concepts of equity and social justice, which translate into aspects that go beyond the purely physical, as in the case of indicators “4.2 Level of perception of fair (economic) access to local public transport (i.e. prices, subsidies)” and “4.3 Level of perception of fair (economic) access to public local healthcare services (i.e. prices, subsidies)”, which instead express the possibility of accessing services based on economic availability.

Other indicators related to equal and fair access highlight the possible gap between objective data and perception: it is not just a question of knowing whether an urban green space is physically close to where people live or whether the neighborhood is well served by public transport, but also of understanding whether citizens actually perceive these places as accessible, usable and safe (i.e. indicator 10.6 “Level of perceived equal and fair (physical) access for vulnerability groups to local urban green spaces (children, elderly, people with disabilities, low income families)” and indicator 12.3 “Level of perception of equal and fair (physical) access to public transportation”).

It is important to note that perception across domains may have direct implications for both physical and psychological health. The framework is therefore not focused on quantitative behavior data (e.g., hours of sport practiced), but rather on individuals' subjective perception of that behavior (e.g., satisfaction with the availability of outdoor public spaces for sport). The goal is to investigate how people perceive the quality of their experiences and the resulting wellbeing, rather than simply measuring what they do or how often they do it.

The proposed framework is intended for policymakers, local administrations, urban planners, researchers, and community stakeholders seeking a more nuanced understanding of urban quality of life. It targets those moving beyond strictly quantitative assessments by incorporating subjective and perceptual dimensions of wellbeing as experienced by communities. In particular, this framework can be a useful decision-support tool for urban governance and planning actors who recognize the value of integrating citizens' lived experiences into policy design and evaluation, enabling more effective strategies based also on community needs and perceptions, not just economic/quantitative data.

In this perspective, urban stakeholders are seen as community-holders, not just resource users, but resources themselves. The framework can contribute to achieve a more inclusive, responsive, and sustainable urban development providing a tool that allows to integrate objective with subjective/perceptual indicators in decision-making processes. This approach shifts from individual interest to collective interest, where each community member becomes a "prosumer" - a producer of values, not just a user - contributing to co-creation actions (Boeri et al. 2016; Izvercianu et al. 2014).

In this perspective, the community-holder role is essential to ensure active participation and interaction among citizens and with institutions, enabling the identification of shared needs and strategic planning. Each citizen can contribute by leveraging their individual skills, promoting social cohesion (Turchi & Messina, 2019).

Tools for collecting data from community to populate this framework play a central role. By using mobile apps and interactive web tools, for example, a socio-technical network (Lamb et al., 2000) can be developed where citizens co-create shared knowledge to inform urban regeneration efforts aligned with community needs. Geographic Information Systems (GIS) can support this process by collecting and mapping both quantitative and qualitative data (De Toro et al., 2020), ensuring interoperability across heterogeneous databases.

Together with urban data analytics platforms, GIS enables the integration of official indicators (e.g., income, education, health, transport, air quality) with more complex spatial topics, including subjective and perceptual data. This enables a spatially explicit, multidimensional representation of urban wellbeing, which is valuable for scenario analysis and informed decision-making (Goodspeed, 2020; Batty, 2013).

For instance, ArcGIS Survey123 is a mobile and web-based platform that allows the design and administration of tailored surveys, integrating closed and open-ended questions, rating scales, and, significantly, the ability to collect geographic information (e.g., the exact location marked by the user on a map or recorded via GPS). Recent GIS developments move beyond static mapping, offering dynamic and participatory data production. Participatory GIS platforms (PGIS), geo-referenced online surveys, social sensing, and data storytelling tools (e.g., ArcGIS StoryMaps) provide interfaces where objective data and perceptions coexist and reinforce each other. These interfaces help co-create data as a participatory, place-based social process. This feature proved particularly valuable for mapping citizens' perceptions of specific places or neighborhoods, linking responses (i.e. regarding themes such as safety, accessibility to green spaces, quality of services, social cohesion) directly to spatial indicators already present in the BES framework.

Through the use of ArcGIS Survey123, the large-scale data collection (both online and in face-to-face settings) is simplified, thanks to compatibility with mobile devices. Furthermore, this tool directly integrates collected data into GIS environments, accelerating analysis and visualization processes through interactive dashboards and thematic maps.

The user-friendly interface encourages participation and enhance citizen engagement

even among individuals with limited digital skills. The use of ArcGIS Survey123 can enable the transformation of perceptual data into spatial information, thereby improving the territorial analysis and understanding of urban wellbeing. Furthermore, it can facilitate the creation of a shared digital environment where citizens, local administrations, and stakeholders can collaborate and co-produce knowledge that supports effective urban governance.

Combining these tools enables the development of hybrid evaluation systems that integrate quantitative and qualitative data, which are collected, processed, and visualized within shared digital platforms. The results can be presented through interactive dashboards and thematic maps, effectively highlighting priority areas for intervention.

Although this type of evaluation framework involves collecting data directly from individuals, its primary goal is to provide a comprehensive assessment of community wellbeing by aggregating individual responses. This approach ensures that the results accurately represent the needs and expectations of the community within a specific context. It is therefore clear that this approach can produce different results both within the same community (depending on the characteristics of the sample analysed) and between different communities (due to the different urban factors that influence respondents' perceptions).

The statistical quality of the data collected, i.e. their “fitness for use” in terms of user needs, is linked to seven dimensions that provide a structured method for assessing the quality of a particular set of statistics. These seven dimensions are: Relevance, Accuracy, Credibility, Timeliness, Accessibility, Interpretability, Coherence (Siciliani et al., 2015).

Much like any other survey-based measure, it is clear that subjective wellbeing data can be affected by the measurement methods adopted. All measures suffer from errors, even the most objective measures used in “hard” sciences. According to Bradburn, Sudman and Wansink (2004), these errors could be failures in memory, lack of appropriate motivation, failures in communication and lack of knowledge.

This bias can be overcome through a dynamic and evolutionary approach to assessment, i.e. one that can be repeated over time, including more and more users and diversifying their characteristics, but above all providing for processes of sharing and discussing the results with them in order to use the feedback received as input for improving the next assessment step.

The fundamental prerequisite for making the proposed framework operational is the direct involvement of citizens as the target group, who are given an active role as co-producers of knowledge, establishing a continuous dialogue with them in order to gather their perceptions of wellbeing and non-wellbeing in urban contexts.

While objective data derive from available institutional sources, subjective data is collected directly from the community through qualitative and quantitative survey tools.

In this context, data collection may involve both direct interaction between the interviewer and the interviewee through face-to-face interviews (gathering testimonies and observations that may reveal aspects not detectable through the collection of hard data alone) and indirect interaction using digital and interactive tools. Questionnaires

and surveys are key tools for collecting data on citizens' individual perceptions of the various domains of the BES. Through these tools, it is possible to obtain detailed information on aspects such as subjective wellbeing, perceived quality of services, perceived safety and other relevant factors that influence people's daily lives.

To further explore the data collected, focus groups and interviews can be conducted. These qualitative techniques offer the opportunity to explore citizens' opinions and experiences in more detail. By involving community representatives, local associations and other stakeholders, it is possible to contextualise responses and identify priority issues, making the assessment process even more relevant.

6. Conclusions

This study proposes an evaluation framework including subjective/perceptual indicators intended to complement existing objective frameworks for evaluating Equitable and Sustainable Wellbeing (BES) in urban areas. While traditional metrics provide essential data on material conditions - such as infrastructure, air quality, and economic indicators - they often fail to capture how communities actually experience and perceive their urban environment. The proposed framework addresses this gap by introducing 83 subjective/perceptual indicators across 12 BES domains, providing a nuanced understanding of wellbeing that integrates community point of view into urban planning and policy-making.

By systematically collecting and analyzing subjective/perceptual data - through surveys, participatory mapping, and focus groups - the proposed framework enables policymakers to identify hidden challenges and prioritize interventions that align with community needs.

However, as a limitation of the framework, subjective indicators are inherently context-dependent and may require careful calibration to ensure comparability across different neighborhoods or cities.

Of course, other aspects also contribute to people's wellbeing such as, for example, their physical health, satisfaction with their economic condition, their job and their work-life balance. However, these aspects were not included in the evaluation framework as they are not related to a direct influence of urban factors on them. Furthermore, the framework is conceived as a support tool for decision-makers in the elaboration of development strategies capable of considering, and thus satisfying, the needs expressed by citizens. Labour policies or issues related to physical wellbeing require targeted decisions and concern issues that are too specific to be solved by urban-scale strategies.

Additionally, the dynamic nature of community perceptions calls for iterative data collection and adaptive governance models.

The proposed evaluation framework can be enriched and further developed through the elaboration of composite indices capable of concisely expressing complex phenomena, as in this case. The index allows quantitative and qualitative aspects to be aggregated

and can also be visualized through maps

Ultimately, this study highlights the critical need to bridge the gap between quantitative and qualitative approaches in evaluating urban wellbeing. By complementing objective metrics with community perceptions, cities can overcome traditional top-down planning, fostering development that is more inclusive, responsive, and centered on people's lived experiences. This framework offers a practical tool to operationalize the concept of wellbeing extending beyond measurable outcomes to encompass how individuals perceive, experience, and actively shape the places they call home.

This aligns with the broader shift toward a participatory governance, where citizens are not merely beneficiaries of urban policies but active co-creators of their own wellbeing. A next step of the research could be to test and refine this framework in diverse urban contexts.

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Events, conferences,
exhibitions

Milano celebra l'Art Decò a cent'anni dalla proclamazione dello *Stile 1925*

di Francesca PIROZZI

La mostra *Art Déco. Il trionfo della modernità*, in corso al Palazzo Reale di Milano dal 27 febbraio al 29 giugno 2025, a cura di Valerio Terraroli, ricorre nel centenario dell'*Exposition internationale des arts décoratifs et industriels modernes* tenutasi a Parigi nella primavera del 1925, e nel celebrare questo storico evento espositivo, evidenzia il ruolo centrale giocato dall'Italia nel definire l'identità dello stile Decò, affermando il livello qualitativo, l'originalità e l'importanza delle arti decorative italiane nel mondo e ponendo le basi del futuro *Italian Design* e del *Made in Italy*.

La mostra di Parigi vide la luce, infatti, quando oramai l'Art Nouveau – lo stile moderno che nel primo decennio aveva segnato l'architettura e tutte le declinazioni dell'arte, in Europa e oltreoceano –, cedeva il passo a una nuova grammatica estetica internazionale che gettava un ponte tra la tradizione e i linguaggi figurativi delle Avanguardie e che, proprio dal nome della grande mostra parigina, ricevette l'appellativo di *Art Déco* o *Stile 1925*. Si trattò, in realtà, di uno sguardo diverso sulla realtà, che affondava le proprie radici nelle Secessioni mitteleuropee, per affermarsi nel primo dopoguerra e dominare incontrastato durante tutti gli anni Venti, prima di esaurirsi con la grande crisi economica del 1929 e l'avvio dei Trenta. Se infatti, inizialmente, la relazione con il Liberty è di continuità, rapidamente si determina tra l'idealismo art nouveau e il razionalismo decò una contrapposizione radicale. Il nuovo paradigma traeva ispirazione dal mondo dell'industria, e non più dalla Natura, la linea spezzata e scattante si sostituì a quella sinuosa, a colpo di frusta, e le rigide geometrie degli ingranaggi, le forme svettanti dei grattacieli, il fulgore delle cromature e delle luci elettriche, il colore disinvolto e antinaturalista presero il posto degli andamenti morbidi e avvolgenti, degli accostamenti tonali e delle cadenze asimmetriche d'ispirazione giapponese.

se che avevano pervaso il repertorio formale precedente. Come scrive Valerio Terraroli: «il Déco è glamour, fascino, ritmo meccanico, linea saettante, è la ricerca inesausta del piacere di vivere. L'immaginario di un mondo, o meglio di una parte di mondo, che ha cercato di affrancarsi dalla feroce banalità del quotidiano, di obliare l'esperienza della guerra, di riscattare ed esaltare il proprio ruolo economico e sociale, di identificare la bellezza con il lusso, l'eleganza e lo stile di vita, dimentico, più o meno consapevolmente, di ballare sull'orlo di un vulcano».

Attraverso un ricco percorso espositivo, articolato in sezioni tematiche, essa presenta al pubblico circa 250 preziosi manufatti di varia natura: dall'alta sartoria all'oreficeria e agli accessori, dalle opere pittoriche e scultoree agli arredi e ai complementi in legno, metallo, pietre dure, vetro, ceramica, tessuto, ma anche vetrate e mosaici che rimandano agli ambienti eleganti di alberghi, stabilimenti termali, cinema-teatro, stazioni, grandi residenze borghesi ed esclusivi mezzi di trasporto, come aerei e transatlantici. Il progetto espositivo comprende, inoltre, una sezione dedicata all'architettura ferroviaria déco, con un *focus* sul Padiglione Reale della Stazione Centrale di Milano, realizzato in collaborazione con la Fondazione FS Italiane, e un fuori-mostra al Museo delle Arti Decorative del Castello Sforzesco, che ospita una selezione di porcellane di Gio Ponti provenienti dal Museo Ginori di Sesto Fiorentino, così da offrire un ulteriore approfondimento sulla straordinaria produzione ceramica dell'epoca. Anche l'allestimento, arricchito da *frame* cinematografici, riproduzioni di *affiche* e riviste, fotografie d'epoca e installazioni multimediali curate da Storyville, tende a restituire, attraverso il racconto dei luoghi e dei modi di vivere, il clima e le atmosfere dell'Europa degli anni Venti: un periodo segnato da fragilità e contraddizioni, ma anche capace di esprimere ottimismo, gioia di vivere e una forte spinta al progresso, alla modernità e alla ricerca della bellezza, trascendendo i confini geografici e le categorie produttive e artistiche.

Grazie alla collaborazione con numerose istituzioni e collezioni museali italiane – tra cui il Museo Ginori di Sesto Fiorentino, il Museo Internazionale delle Ceramiche di Faenza, la Wolfsoniana di Genova, la Fondazione Vittoriale degli Italiani di Gardone Riviera e i musei milanesi del Castello Sforzesco, Poldi Pezzoli, Palazzo Morando e della Scienza e della Tecnologia *Leonardo da Vinci* – la mostra ospita numerose eccellenze della manifattura del Bel Paese, che ebbe tra i suoi guru personalità della cultura come Gabriele D'Annunzio e che seppe esprimere una sintesi perfetta tra tradizione artigianale e innovazione formale e tecnologica. Ne sono esempio, tra



Fig. 1 - Gio Ponti, *La casa degli efebi*, 1924, maiolica, Società Ceramica Richard-Ginori

gli altri, i vetri, i ricami e i mobili di Vittorio Zecchin, le sculture di Adolfo Wildt, l'ebanisteria di Ettore Zaccari, gli argenti di Renato Brozzi, le sculture *animalier* di Sirio Tofanari, le glittiche di Alfredo Ravasco, gli arredi di Tomaso Buzzi, già protagonisti dell'arte e del design alle biennali e alle esposizioni italiane che, dal decennio precedente, avevano decretato la consacrazione del nuovo stile.

Ma tra tutti, è senza dubbio la ceramica il settore che meglio documenta, in questa esposizione come in quella del 1925, il grande talento italiano di quell'epoca. Non a caso la mostra parigina vede trionfare gli italiani al Grand Prix capitanati da Gio Ponti, premiato per il monumentale orcio a fasce e sproni in maiolica *La casa degli efebi*, e da Galileo Chini, che ottiene il prestigioso riconoscimento con i vasi in maiolica e grès e con il fregio di piastrelle in maiolica a lustro *Giardino con fagiano dorato*, prodotti dalla Fornace San Lorenzo. E a rappresentare questa eccellenza sono esposti a Palazzo Reale, tra l'altro, il pannello di Chini di ascendenza *klimtiana*, *Allegoria della Primavera*, la sorridente Coppa delle violette di Duilio Cambellotti, il piatto con la conturbante Gorgona di Achille Calzi, i vasi con motivi zoomorfi e le plastiche ispirate al mito di Diana di Pietro Melandri, le creazioni in terraglia smaltata di rosso – nel 1931-35 l'autarchia impediva d'importare altri colori, perciò quello era l'unico a disposizione delle manifatture italiane – di Guido Andlovitz e di Angelo Biancini per la S.C.I. e quelle di Giovanni Gariboldi per la Richard-Ginori, le raffinatissime plastiche di Francesco Nonni e Anselmo Bucci, tra cui il gruppo plastico del *Corteo orientale* e poi un tripudio di maioliche, terraglie e porcellane ideate da Ponti per la Richard-Ginori, tra le quali spicca il centrotavola per le ambasciate, progettato nel 1925-27 con la collaborazione di Tomaso Buzzi, per la manifattura di Doccia.

Tutti questi esempi sono a testimoniare le principali fonti di ispirazione, dall'antico all'esotico, delle arti decorative italiane intorno agli anni 1925, e ne denunciano – come scrive Terraroli – le «assonanze sia con modelli, diciamo, neoclassici, sia con ammiccamenti a certe forme cubisteggianti o a soluzioni di sapore futurista, ma di fatto sono lo specchio di un chiaro orientamento della cultura bor-

Fig. 2 - Francesco Nonni e Anselmo Bucci, *Corteo orientale*, 1925, maiolica a lustri e oro a terzo fuoco



ghese del primo dopoguerra a addomesticare le formule proposte dalle avanguardie, comprese quelle avanzate dalla prima ondata del Futurismo, riportandole in un orizzonte di evasione, divertimento, piacevolezza, stile, certo moderno, ma depurato di qualsivoglia carica provocatoria e, ancor di più, rivoluzionaria».

Notevoli sono nondimeno le declinazioni austriache e soprattutto quelle francesi dell'Art Decò, che si distinguono per la propensione al pezzo unico, eseguito a mano con materiali originali e preziosi ed esecuzione impeccabile, riflesso di una concezione mondana ed elitaria della bellezza, contraria alla standardizzazione produttiva e del mercato, che invece, con l'avanzare del Razionalismo e la crisi economica di fine decennio, prenderà il sopravvento. Val la pena citare, tra gli altri, gli smalti policromi su rame a motivi geometrici di Camille Faurè, le sofisticate illustrazioni di Ertè, i vetri stampati di Renè Lalique, le decorazioni su porcellana di Sèvres di Louis-Jules Trager, le figure danzanti in bronzo con inserti polimaterici di Demetre Chiparus e per tutte l'opera scelta – accanto al *Ritratto di Wally Toscanini* dipinto da Alberto Martini – come emblema di questa mostra, il gruppo bronzeo *Fauno che insegue una ninfa* di Pierre Le Faguays. La scultura, esposta per la prima volta a Parigi nel 1925, fu acquisita da Gabriele d'Annunzio per la sua casa mausoleo sul lago di Garda come ornamento delle stanze della Prioria e collocata su un lato corto della grande tavola nella sala da pranzo detta di Cheli – dal nome della testuggine appartenuta al Vate e fusa in bronzo da Renato Brozzi, ivi conservata insieme a gruppi di tartarughe e pavoni dello stesso autore –, come allegoria della passione ferina contrapposta all'ascetismo frugale, divenendo l'emblema della duplice natura dell'animo poetico e della sintesi sublime tra Poesia e Arte.



Fig. 3 - In alto, Alberto Martini, *Ritratto di Wally Toscanini*, 1925, pastello su carta

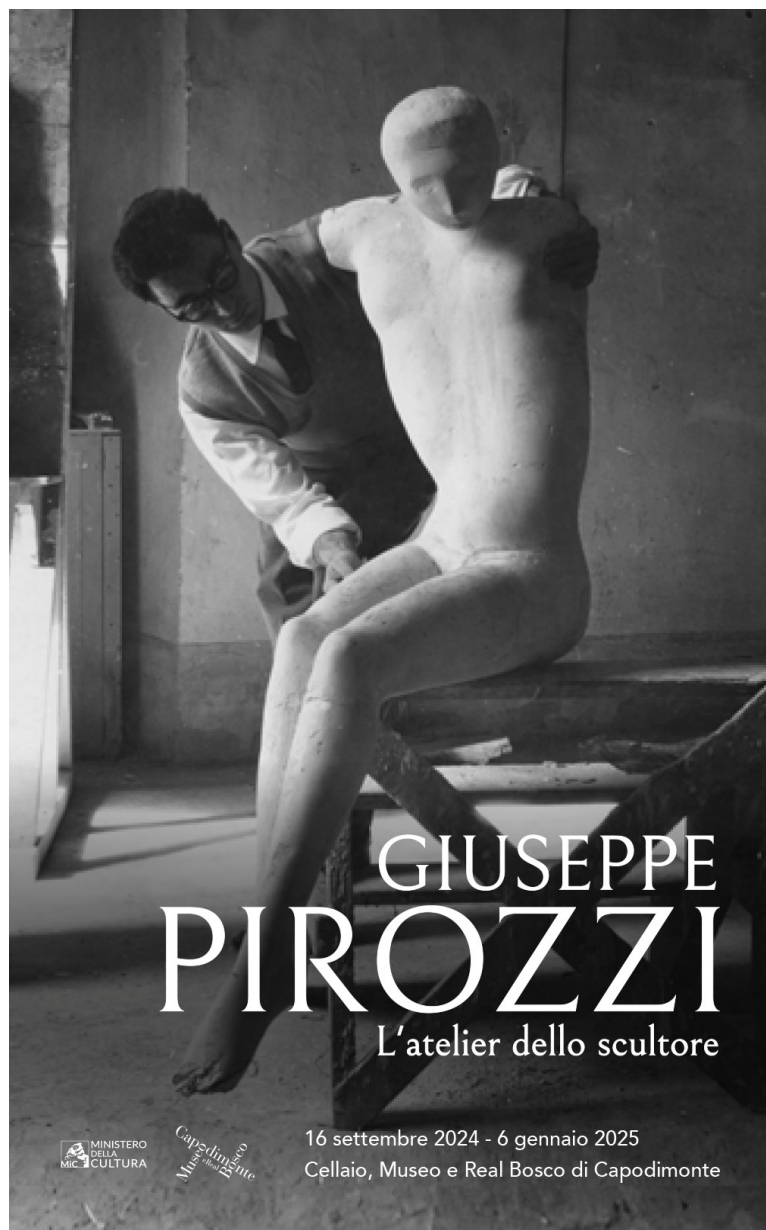


Fig. 4 - In basso, Pierre Le Faguays, *Fauno che insegue una ninfa*, 1925, bronzo

L'atelier dello scultore

di Francesca PIROZZI

Fig. 1 - Locandina della mostra
"Giuseppe Pirozzi. L'atelier dello
scultore"



Spazio di vita e di creazione, luogo polivalente in cui nascono le idee e dove il frutto della sensibilità e del pensiero dell'artista prende forma e consistenza materica, fucina in cui si produce arte, ma anche

spazio espositivo dove le opere si conservano, in attesa di altre destinazioni, e sono esposte a un pubblico ristretto di committenti, collezionisti, visitatori, un po' officina e un po' museo, un po' laboratorio alchemico e un po' salotto, luogo fisico e simbolico, spazio di confine fra pubblico e privato, l'atelier dell'artista è da sempre uno spazio emblematico nel mondo dell'arte e, con le sue specificità, rappresenta una sorta di autoritratto/autobiografia dell'artista. Così se per quest'ultimo esso si configura come una sorta di rifugio interiore nel quale godere della libertà dai vincoli della banalità del quotidiano, per l'estraneo che vi si appresta esso può assumere le sembianze di un affascinante labirinto di presenze che spesso, nel caos e nella densità delle tracce artistico-oggettuali, esemplifica l'idea romantica del lavoro misterioso e folle del genio creativo.

Da una simile suggestione nasce l'idea della mostra *Giuseppe Pirozzi. L'atelier dello scultore*, in corso a Napoli, nello storico edificio del Cellaio, nel Museo e Real Bosco di Capodimonte, dal 16 settembre 2024 al 6 gennaio 2025. Nel 2023, proprio in occasione di una visita allo studio dello scultore da parte dell'allora direttore di Capodimonte, Sylvain Bellenger, prende infatti il via il progetto di offrire al grande pubblico il privilegio dell'esperienza di un percorso intimo e allo stesso tempo inedito attraverso sette de-

cenni di vita e di storia creativa dell'artista. Portato avanti grazie al lavoro di Maria Tamajo Contarini, Luciana Berti e Patrizia Piscitello, il progetto è accolto con entusiasmo dal nuovo direttore della prestigiosa istituzione museale, Eike Schmidt, che riconosce all'artista il merito di aver significativamente «contribuito al rinnovamento della scena napoletana, recependo e rielaborando le tendenze internazionali attraverso un percorso straordinario di oltre sette decenni» e fa della mostra il suggello del suo nuovo incarico napoletano, confermando anche l'acquisizione alla collezione del Museo e Real Bosco di Capodimonte di sette opere donate dall'artista, tra cui una grande scultura installata en plein air, in prossimità del Cellaio, e realizzata in bronzo grazie al generoso sostegno di Gianfranco D'Amato, membro dell'Advisory Board di Capodimonte e appassionato mecenate e amico dell'artista da oltre trent'anni.

Maestro della scultura contemporanea, Pirozzi è presente sulla scena artistica nazionale dalla metà degli anni Cinquanta del Novecento, con una produzione ininterrotta e prolifica, declinata in svariati media e linguaggi, primariamente ma non esclusivamente scultorei, e con una densa attività espositiva, costellata da positivi e autorevoli riscontri critici e da importanti incarichi pubblici in quanto vincitore di concorsi nazionali. La sua attività artistica ed espositiva prende avvio nel 1954, con la frequentazione del Corso di Scultura dell'Accademia di Belle Arti di Napoli con opere dalla personale impronta figurativa – come *Figura seduta*, accanto alla quale è ritratto da ragazzo nell'immagine guida della mostra – cui subentra dagli anni Sessanta il linguaggio informale, con la sperimentazione di nuovi materiali (cemento, amianto, piombo). Nel 1960 ottiene la cattedra di Plastica



Fig. 2 - G. Pirozzi, Onda alta, 1974, foto di A. Benestante



Fig. 3 - G. Pirozzi, Psiche come testimonianza, 1983, foto di A. Benestante

Fig. 4 - G. Pirozzi, *Rappresentazione verticale*, 2006, foto di A. Benestante



al Liceo Artistico di Napoli e nel 1964 diviene docente dell'Accademia di Belle Arti, dove insegna fino al 2001. Alla metà del decennio riemerge l'elemento figurativo e dagli anni Settanta prende avvio la produzione di piccole sculture-gioiello in argento accanto a quella prevalente delle opere maggiori in bronzo fuso a cera persa. Espone in rassegne d'arte e mostre personali in musei e gallerie nazionali e internazionali e le sue sculture entrano a far parte di collezioni private e museali in Italia e all'estero. Nel 2000 è insignito del titolo di Accademico Scultore dell'Accademia Nazionale di San Luca. Dagli anni Duemila sino ad oggi prosegue la sua esperienza artistica in continua evoluzione



Fig. 5 - G. Pirozzi, *Figura* (nell'atelier dell'artista), 1959, foto di L. e M. Pedicini

privilegiando come *medium* la terracotta.

Questo lungo cammino di ricerca è rappresentato in mostra da una selezione di circa ottanta opere, costituite in gran parte da sculture, oltre che da piccolo corpus di grafiche, selezionate in modo da tracciare un percorso antologico completo che evidenzia la sperimentazione delle tecniche, delle forme e dei linguaggi espressivi utilizzati dall'autore. Il progetto mira così a ricreare un dialogo intimo con le sculture – provenienti in gran parte dallo studio dell'artista, ma anche da varie collezioni museali e private –, così da offrire al pubblico l'occasione di leggere l'opera d'arte in una dimensione prossima a quella del contesto originario in cui è venuta alla luce e di ritrovarvi le tracce del modo personale dell'artista di sentire, pensare e abitare il mondo.



Fig. 6 - G. Pirozzi, *Colloquio intimo (nell'atelier dell'artista)*, 1959, foto di L. e M. Pedicini

AB OVO - Il mistero del principio

di Francesca PIROZZI

Dalla *Venere di Willendorf*, archetipo preistorico della Grande Madre, al monumentale trompe-l'œil di JR intitolato *Nascita*, installato nel 2024 alla Stazione Centrale di Milano, il tema della nascita, della rinascita, del mettere al mondo, come occasione per riflettere sull'atto che inaugura e dà origine all'esistenza e sul significato profondo della vita stessa, ha attraversato l'intero corso dell'espressione artistica dell'uomo, rivelando credenze, atteggiamenti e bisogni emblematici di epoche e contesti diversi.

In età contemporanea e in ambito filosofico è grazie al pensiero femminile, e in particolare grazie alle riflessioni di grandi pensatrici, come Hannah Arendt, che questo tema conquista la centralità di una condizione cruciale per l'essere umano, in quanto proprio all'evento natale è riconosciuta la valenza di iniziare qualcosa di inedito all'interno di un mondo già configurato, di segnare un nuovo inizio, un incipit che coincide con la libertà del singolo, e quindi di prospettare nuovi orizzonti di rinascita e speranza, divenendo così un chiaro indizio di «un nuovo mondo nel mondo esistente».

All'interno di una simile prospettiva la mostra *Ab Ovo - Il Mistero del Principio* – nata dalla proficua collaborazione tra l'associazione culturale *ContemporaneaMente* APS, presieduta da Gerardo Fiore, e la direzione artistica della PIMAC¹ - Pinacoteca d'Arte Contemporanea Città di Montoro, nella persona dell'artista Eliana Petrizzi, tenutasi tra dicembre 2024 e gennaio 2025 alla PIMAC di Montoro (AV), nell'ambito della rassegna *Montorocontemporanea*, patrocinata dal Comune di Montoro – travalica i confini del mero evento artistico-espositivo per proporsi come invito a una riflessione profonda sul tema della nascita, che vada oltre la consueta narrazio-

Fig. 1 - Ellen G., *Be reborn in the present moment*, 2024



ne biblica della natività cristiana per abbracciare significati più ampi, di natura esistenziale, etica e filosofica. Si tratta, in altri termini, di un'occasione unica per meditare sul concetto del principio, attraverso la lettura e i linguaggi personali – che spaziano dalla pittura alla fotografia, dal *papier collé* alla scultura, dall'*assemblage* alla pittoscultura – adottati da ventisei artisti contemporanei nelle cui multiformi creazioni la nascita si rispecchia come espressione dell'unicità di ogni singolo individuo e come palesarsi dell'inedito. In mostra, nelle splendide sale della PIMAC, le opere di: Elio Alfano, Antonio Bergamino, Raffaele Boemio, Antonio Caporaso, Giovanni Cavaliere, Franco Cipriano, Ugo Cordasco, Anna Crescenzi, Giovanni Cuofano, Diana D'ambrosio, Luca Daniele, Adriano Eccel, Tonia Erbino, Ellen G., Loredana Gigliotti, Angelina Kuzmanovic, Pino Latronico, Jacopo Naddeo, Arturo Pagano, Luigi Pagano, Eliana Petrizzi, Maria Sara Pistilli, Angelomichele Risi, Franco Sortini, Ernesto Terlizzi, Gennaro Vallifuoco.

Scrivere la curatrice, Eliana Petrizzi: «La nascita è per tutti la prima e più straordinaria esperienza di accesso alla vita. Eppure, il pensiero occidentale si è perlopiù soffermato sulla morte come unico mistero e condizione fondamentale dell'essere al mondo; un'interpretazione della morte che ha portato in evidenza lo statuto esistenziale dell'Esserci umano come “essere-per-la-morte”, per usare il linguaggio heideggeriano. [...] Rinascere a questa vita in una forma nuova implica la capacità di rielaborare l'esperienza grazie ad un sapere dell'anima che, interrogandosi sul senso di ciò che si è vissuto, favorisce una trasformazione del proprio modo di organizzare e decodificare l'esperienza esistenziale del venire e del restare al mondo. Si tratta di un processo che richiede innanzitutto di riparare le ferite inferte da ideologie distruttive, da un ambiente disfunzionale, da esistenze antropologicamente degradanti, cronicamente sfiduciate; per provare a superare il delirio d'impotenza che attanaglia il nostro tempo».



Fig. 2 - A. Kuzmanovic, *Sujet IV*, 2022



Figg. 3 e 4 - Mostra Ab ovo alla Pinacoteca Contemporanea di Montoro, foto di J. Naddeo



Fig. 5 - F. Sortini, La stanza di Leda, 2024

In un momento storico segnato da crisi, incertezze e repentini cambiamenti, il compito dell'artista è più che mai quello di palesare attraverso il linguaggio visivo della poesia e della fantasia forme possibili di vita al di là di quelle contingenti, in tal senso la narrazione artistica della nascita si offre all'osservatore come metafora positiva della volontà consapevole e responsabile di darsi un nuovo inizio e della possibilità di guardare al futuro con occhi diversi, immaginando possibili scenari alternativi e lavorando perché si realizzi ciò che riteniamo più compatibile e coerente col destino dell'uomo.

ENDNOTES

¹ La PIMAC, con sede nel Palazzo della Cultura, nella frazione S. Bartolomeo di Montoro, nasce nel 2024 per offrire al territorio una preziosa occasione di confronto e di crescita, attraverso proposte culturali atte rappresentare alcune tra le espressioni più interessanti del panorama artistico contemporaneo nazionale e internazionale. Essa raccoglie una pregevole collezione permanente di opere contemporanee, frutto della donazione degli artisti che hanno esposto nella rassegna Montorocontemporanea, nata nel 2015 da un'idea di Gerardo Fiore, con lo scopo di promuovere iniziative socio-culturali dedicate in particolar modo alle giovani generazioni.



Fig. 6 - E. Petrizzi, Alfa, 2005

La stradina dell'arte nel contesto storico urbanistico della collina del Vomero in Napoli e la relazione con gli interventi di fine '800 e primo '900."

di Mario COLETTA

Via Annibale Caccavello , un antico sentiero dell'acropoli vomerese di Napoli da pedonalizzare nel tratto fiancheggiante il complesso monumentale di Castel Sant'Elmo e convertire in "Stradina dell'arte".

Iniziativa culturale intrapresa da un comitato di artisti, architetti, urbanisti, sociologi, geologi, letterati e storici (accademici e non) della quale Aldo Capasso. ha posto la prima pietra con l'apertura del centro espositivo: "la stanza dell'arte"

Relazione di Mario Coletta presentata in un pubblico incontro cittadino svoltosi in Napoli nella sala consiliare Silvia Ruotolo, V Municipalità / Vomero , in data 25 ottobre 2024. dal titolo:

"La stradina dell'arte nel contesto storico urbanistico della collina del Vomero in Napoli e la relazione con gli interventi di fine '800 e primo '900."

Il colle sovrastante la città di Napoli da settentrione traeva denominazione di Sant'Erasmo da un cenobio basiliano eretto al suo vertice nel X secolo, in età ducale.

Da Sant'Erasmo si pervenne a Sant'Eremo e successivamente a Sant'Elmo,

In cima al colle ragioni di sicurezza avevano fatto erigere, parallelamente al cenobio, una torre di vedetta spaziente sull'ampio golfo della città marinara, che aveva generato la sua seconda denominazione : "Belforte",

Il cenobio e la torre hanno dato vita ad un nodo di polarizzazione, un "presidio" che ha accompagnato lo sviluppo della città dal basso medioevo al presente, caratterizzando le metamorfosi dei suoi ruoli attrattivi.

Presidio paesaggistico, ecologico ambientale, di salvaguardia della salute, della sicurezza militare, della fede, della scienza, della tecnica, della cultura, della civiltà, dell'urbanità , dell'economia imprenditoriale, commerciale e finalmente dell'arte.

In età angioina Carlo, duca di Calabria, figlio di Roberto II d'Angiò, fece

erigere nel 1325, dai padri Certosini, in sostituzione del cenobio basiliano il complesso monastico della Certosa di San Martino, dandone l'incarico agli architetti Tino da Camaino ed Attanasio Primario, in forme gotiche in larga parte scomparse quando il complesso fu assoggettato ad una ricostruzione restaurativa ad opera di Cosimo Fanzago tra la fine del secolo XVI e l'inizio del XVII.

Il complesso religioso, con l'incameramento dei beni ecclesiastici seguiti all'Unità nazionale, espulsi i Certosini, passò al demanio dello Stato che, nel 1866 lo convertì in sede di Museo Nazionale.

Analoghe vicissitudini interessarono il torrione di avvistamento fiancheggiante il cenobio basiliano.

Roberto II d'Angiò, nel 1329 ordinò che sul demolito sito della torre fosse edificato un "Palatium Castrum": una fortezza sede occasionale della corte nei mesi estivi o nelle circostanze di turbolenze politiche.

I lavori furono conclusi nel 1343 ad opera della regina Giovanna I d'Angiò.

La TAVOLA STROZZI datata 1465- 1475, in età aragonese, ne documenta l'immagine, fasciata da una lussureggiante vegetazione di orti e giardini, puntellati dai primi insediamenti patrizi seguiti all'esempio dei dinasti che avevano preso ad edificare sulla collina di Poggioreale una propria sede di "delizie".

Nella successiva età viceregnale, ad opera di Don Pero da Toledo, le mura urbane erette dagli Angioini e potenziate dagli Aragonesi nella città bassa presero, senza inglobarlo, il Castel Sant'Elmo, convertendolo in "città della militare", le cui bombarde vennero più indirizzate verso i baricentri della città consolidata (Piazza mercato e porto, fonti di possibili insurrezioni popolari) che verso i retrostanti territori agricoli protetti dalla più accidentata caratterizzazione morfologica dei siti.

Tra il 1537 ed il 1546, avvalendosi dell'ing. Militare SCRIVA' di VALENCIA, il viceré Don Pedro di Toledo consolidò il fortilizio angioino inglobandolo in una massiccia costruzione a pianta stellare, priva di torrioni, fasciata da un profondo fossato scavato nel tufo, accogliente al suo interno la sede di un castellano, una cappella religiosa, una guarnigione militare, un tribunale ed una prigione.



Fig. 1 - Tavola STROZZI Veduta d'insieme e particolare della collina Belfiore (dominata dal complesso monumentale San Martino – Castel Sant'Elmo)

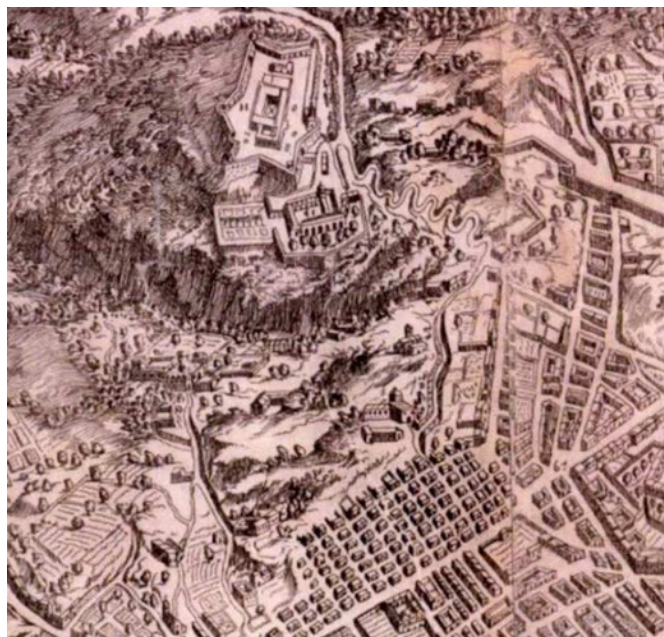


Fig. 2 - Veduta a volo d'uccello della città di Napoli di Antony LAFRERY (particolare)



Fig. 3 - Giulio BELLINO (1569)
Veduta prospettica di Napoli dal
mare.



Fig. 4 - HOENAGEL Particolare
delle vedute prospettica di Napoli da
Occidente.



Fig. 5 - BARATTA (1629) Veduta di
Napoli a volo d'uccello
(particolare)

Tra la città bassa ed il vertice della collina, in sostituzione degli orti e dei giardini fu predisposta la realizzazione dei “Quartieri Spagnoli” (acquartieramento delle truppe).

La stradina pedonale che sin dall'età angioina aveva preso a risalire il colle di San Martino (cosiddetta PEDAMONTINA) collega da oriente il complesso monastico della Certosa alla recinzione di Castel Sant'Elmo, per continuare a settentrione con la viabilità campestre interpodereale, il cui primo tronco viene a coincidere l'attuale via Annibale Caccavello, la proposta “Stradina dell'arte”.

La veduta della città di Napoli di Antony LAFRERY (1566) ne testimonia coerentemente lo stato di essere. Gli effetti paesaggistici che ne derivano sono leggibili attraverso le vedute prospettiche della città di Napoli incise da Giulio BELLINO (1569) e di HOENAGEL (1598).

Una più autorevole testimonianza storico urbanistica tardo rinascimentale della città ci è fornita dalla veduta a volo di uccello di A. BARATTA (1629) e di P. MIOTTE (1648) che sovrappone alla rappresentazione una mistica processione dei santi protettori della città con al centro la Vergine Maria, grati per l'avvenuto superamento della crisi politica provocata dalla rivolta di Masaniello.

Le vedute settecentesche di HOMAN (1727) e di Paolo PETRINI (1748) chiudono il ciclo delle rappresentazioni paesistiche urbane per lasciare spazio alle più scientifiche documentazioni topografiche del CARAFA, duca di Noja (1775) e di Antonio RIZZI-ZANNONI (1790), che concorre ad evidenziare la timida presenza della viabilità agricola che corre lungo il perimetro settentrionale del fortilizio, dando concreta testimonianza alla preesistente “stradina dell'arte” (primo tratto della attuale via Caccavello).

La cartografia del secolo immediatamente successivo trova in Napoli una sede privilegiata, grazie all'opera pionieristica del RIZZI-ZANNONI che produce una preziosa documentazione topografica dell'intero territorio del Reame borbonico di Napoli (1799), fonte primaria di istituzione del Reale Ufficio Topografico della Guerra, reso operante sino ad un decennio dall'avvenuta Unità Nazionale (1828-

1873).

È dagli inizi del XIX secolo che l'attenzione al territorio collinare periurbano di Napoli è stata posta l'attenzione dei topografi di elevata capacità documentaria, da Giosuè RUSSO(1815) che delinea una pianta della città immediatamente a valle della reggenza francese di Gioacchino Murat, (foriera di autorevoli interventi innovativi istituzionali ed infrastrutturali) evidenziando la sentieristica rurale a servizio dei preesistenti casali agricoli di Antignano, Due Porte ed Arenella, sui cui suoli di pertinenza verrà a realizzarsi l'addizione urbana del nuovo rione VOMERO.

Indicazioni riprese da CLARKE e BRADE' nella "Naples" incisa a Londra nel 1835, riproposte da Bruno CALAO nel 1844 e sviluppate nelle produzioni di cartografi operanti all'interno dell' Ufficio Topografico della Guerra, hanno costituito la base conoscitiva del territorio fiancheggiante da Nord Ovest il complesso religioso militare di San Martino (convertito in sistema Museale), sulla quale, a quasi fine secolo, veniva a rivoluzionarsi l'uso agricolo del suolo ed il connesso sistema insediativo rurale, convertendolo in tessuto urbano, trapianto di "città nuova" nella trama viaria, nella rete infrastrutturale sotterranea e soprattutto negli innovativi sistemi tecnologici di rapido diretto collegamento con la città di valle, storicamente consolidata, tramite funicolari preannunziate come "ascensori inclinati" da Lamont Young, il fantasioso elaboratore di una sofisticata pionieristica rete metropolitana interessante l'intero tessuto metropolitano di Napoli sino alle soglie del litorale flegreo.

Le operazioni di risanamento intraprese dopo il micidiale colera che aveva colpito la città, costituì l'occasione propizia per promuovere interventi di nuova urbanizzazione nei territori agricoli collinari fascianti da Nord Est la collina di San Martino. Interventi concretamente affrontati ad opera della Banca Tiberina che, acquisite le aree gravitanti sui borghi agricoli di Due Porte, Antignano, Arenella e Vomero, antecedentemente alla esplosione colerica, elaborò il primo piano- progetto di intervento urbanistico edilizio nel 1885, incentivato dalla già decretata realizzazione di due funicolari, commissionate un quinquennio prima agli ingegneri FERRARI e GIGLIOCO.



Fig. 6 - P. MIOTTE (1648) Veduta di Napoli a volo d'uccello (particolare)



Fig. 7 - J. B. HOMAN (1727) particolare Veduta di Napoli a volo d'uccello



Fig. 8 - Paolo PETRINI (1748) particolare veduta di Napoli a volo d'uccello



Fig. 9 - G. CARAFA duca di Noja (1775) Carta topografica di Napoli. Particolare della zona collinare Castel Sant'Elmo – San Martino.

Giancarlo ALISIO è la principale fonte di informazione sulle vicende urbanistiche ed architettonico - costruttive caratterizzanti l'attuazione del Piano Progetto della città nuova "Vomero - Arenella" che ne graficizza la processualità delle fasi realizzative.

Procedendo dall'ampliamento del Piano della Banca Tiberina (1886), allo stato di essere dei lavori al 1889, quando alla Banca Tiberina subentrò la Banca d'Italia, nel 1910 fu elaborato un nuovo piano di attuazione, seguito nel 1911 da un piano di ampliamento.

"Nel 1911, scrive Giancarlo Alisio (nel volume *Il Vomero*, Electa Napoli, 2000, pag. 109), fu redatto dal Comune un nuovo piano – peraltro non approvato – al fine di completare gli interventi nel 1886, che, pur ridimensionati, non erano stati eseguiti per le avverse congiunture economiche. Il risanamento era perseguito, ancora una volta, mediante la demolizione dei fabbricati nel centro più antico e la creazione di un'efficiente rete fognaria; l'ampliamento interessava Fuorigrotta, Piedigrotta, il Vomero, S. Eframo, Ottogalli e l'Arenaccia. I quartieri per i quali era previsto un maggiore impegno erano Fuorigrotta - Bagnoli, ed il Vomero, di nuovo distinto, quest'ultimo, in due parti: la prima (il Vomero), in rapporto al risanamento edilizio relativo agli altri quartieri della città, la seconda (Arenella – Belvedere), quale semplice ampliamento.

Nel 1914 l'ing. Francesco De Simone è incaricato dall'Amministrazione Comunale di redigere un Piano Regolatore localizzante la definitiva rete viaria, il costruito e le aree da destinare a verde pubblico ed attrezzato

Piano adottato e disatteso in quanto mai definitivamente approvato ritenuto, dall'Alisio, "uno dei migliori strumenti urbanistici previsti per Napoli per l'acutezza dell'analisi sulla città e delle proposte per il Vomero":



Fig. 10 - G. CARAFA duca di Noja, Veduta prospettica di Napoli, particolare della zona collinare Castel S. Elmo-S. Martino

"La maggiore e graduale espansione dell'abitato dovrà avvenire verso l'occidente sia invadendo l'altopiano delle colline, dove ha limiti estesissimi, sia completando la sistemazione della zona media lungo i margini di esse colline, già progredita con i signorili rioni Principe Amedeo, Parco Margherita ecc, sia ingemmando di rade variopinte villette signorili, e non deturpando, con enormi casamenti tutte le pendici delle colline, da quelle di S. Elmo al promontorio di Posillipo, invadendo questo in ambo i versanti, e sia infine estendendosi nella leggendaria

e radiosa plaga Flegrea, la quale, perciò, non doveva mai essere inquinata nella sua veste di luce dal colosso industriale dell'Ilva"

Il piano individuava, con destinazione a verde parco, una fascia di territorio snodantesi lungo le aree "a valle della via Madonna della Libera a Belvedere, fino a raggiungere il giardino dell'omonima villa ed il tratto superiore di via Aniello Falcone. L'area vincolata continuava ad un livello inferiore da Calata S. Francesco verso la Floridiana e villa Lucia, proseguendo, quindi, nell'area della Santarella e della villa Palazzolo e collegandosi, oltre il Petraio, agli orti ed ai giardini di S. Elmo e della certosa di S. Martino, per poi estendersi, sull'opposto versante della collina, sino a via Salvator Rosa". (G. Alisio, op. cit. p.114).

Seguirono i Piani Regolatori Generali del 1939, del 1957, del 1975 e delle varianti di fine secolo, strumenti di ampliamento urbanizzativo e di nuova infrastruttura viaria (Tangenziale), ferroviaria (Metropolitane), di nuove strutture amministrative (centro direzionale) e di ampliamento dei servizi sanitari (Nuovo Policlinico), impianti sportivi (Stadio San Paolo), universitari (Politecnico), scolastici e ricreativi (Parchi zonali), condannando a verde le aree morfologicamente non appetibili dalla attesa edificatoria che ha preso a spaziare a ruota libera nell'incuria dei vigilanti e nella moltiplicazione degli incontrollati processi di edificazione spontanea (abusivismo di cosiddetta "Necessità") e dilatazione dei processi speculativi edilizi e fondiari ad opera di avventurosi imprenditori richiedenti libero spazio all'arte del costruire, alla disubbidienza civica riassumentesi nel detto di un imprenditore edile venuto a "confidenziale rapporto" con Roberto Pane:

"I Piani Regolatori servono solo a chi non si sa regolare! Ma chi si sa regolare"

Ed a Napoli, soprattutto nel Vomero, sono stati davvero molti a sapersi regolare!

La "stradina dell'arte" fa oggi da separazione tra la città della rinascimentale e la città risorgimentale; una persistenza storico urbanistica caratterizzata da un ruolo apparentemente marginale di spartiacque tra un passato più o meno remoto (di architetture monumentali, religiose politiche e militari, egemoniche, visitate dall'arte nel loro storico determi-



Fig. 11 - A. RIZZI- ZANNONI (1790) Carta topografica di Napoli, particolare della zona collinare Vomero- Arenella.



Fig. 12 - Giosuè RUSSO (1815) Particolare pianta Topografica della città di Napoli



*Fig. 13 - W. B. CLARKE, T. BRANDLE
Particolare della planimetria "Naples"
incisa a Londra nel 1835.*

narsi, sino a convertirsi in patrimonio sociale, culturale e, più recentemente, turistico) e tra un presente più o meno recente indossante l'abito più modesto, andatosi progressivamente a lacerare, della città borghese, subentrata ad una realtà contadina, costellata di modesti borghi agricoli presidiati da case padronali che avevano progressivamente smarrito i fasti decorativi delle originarie ville patrizie. Una campagna che, convertitasi in città, nella approssimata amministrazione delle sue risorse produttive, paesaggistiche e di presidio della salute, ha dismesso l'abito contadino per indossare quello dell'imprenditore improvvisato che, convertendo il "fare" in "affare" ha preso le distanze dai modelli storico urbanistici delle città capitali ai quali si erano ispirati (Londra, Vienna, Parigi, Barcellona ecc...) ignorandone le istanze migliorative ed esaltandone quelle speculative che ne informavano la stessa ragione di essere, a immotivata denominazione di "Risanamento".

sostenuta da una immotivata denominazione di “Risanamento”.

Sotto il profilo amministrativo nel 1809 il dinasta francese Gioacchino Murat aveva istituito il “Circondario Avvocata” accogliente al suo interno i villaggi Vomero , Santo Stefano, Arenella, Case Puntellate, Gonnarone. Due Porte, Cangini e Guantari.

Durante il periodo dittatoriale retto da Giuseppe Garibaldi, nel 1960, fu decretato un avvio di urbanizzazione del Circondario Avvocata per la costruzione di alloggi salubri per la componente operaia della popolazione.

Il decreto non ebbe alcuna attuazione ma aprì gli occhi alla nascente imprenditoria speculativa urbanistico - edilizia che già attuava i suoi primi interventi nelle principali città della Italia unificata: Torino, Firenze, Milano e Roma.



Fig. 14 - Bruno CALAO (1844) Pianta di Napoli particolare zona Vomero – Arenella

Roma.

La speculazione fondiaria posta in essere dalla nuova imprenditoria organizzatasi in consorzi finanziari anche a Napoli aveva preceduto quella edilizia; in questa ottica la Banca Tiberina aveva fatto incetta di buona parte delle aree agricole contornanti i borghi insediativi distribuiti nelle zone collinari della città di Napoli ancora prima che fosse esplosa l'epidemia colerica che avrebbe motivato la ragione principale di essere dell'intervento urbanistico -edilizio nelle medesime, coinvolgendo in senso negativo anche il costruito architettonico ed artistico delle ville patrizie, e delle fabbriche religiose (ecclesiastiche e monastiche) pre-

sidianti il territorio dell'intervento cosiddetto "risanativo".

Il rione nuovo del “Vomero –Arenella” nella concezione progettuale tardo ottocentesca , pure avendo il pregio di non configurarsi come una asettica proliferazione di insediamenti periferici, bensì di una “addizione urbana”, ha avuto come utenti le classi sociali emergenti della borghesia artistica, professionale, imprenditoriale e commerciale in progressivo economico avanzamento, lasciando in ombra sia le classi nobiliari che avevano costellato il sito di amene ville patrizie e luoghi di delizie immerse in lussureggianti parchi esaltanti le amenità paesaggistiche , sia le classi del proletariato contadino andatesi convertendo in personale operaio e di servizio per le attività manutentive, commerciali e turistico ricettive.

La toponomastica sia dei nuovi tessuti viari che di quelli preesistenti , subentrata a valle degli interventi costruttivi del nuovo rione Vomero – Arenella, ha privilegiato soprattutto gli artisti (pittori, scultori, architetti, musicisti, letterati ecc.) che hanno operato storicamente nella città di Napoli rispetto a quelli della contemporaneità anche ivi residenti, in memoria dei quali sono state apposte tardive epigrafi commemorative sui fronti principali delle loro abitazioni.

Prima dell'intervento urbanistico pianificato dalla Banca Tiberina, l'accesso al sito destinato ad accogliere il nuovo rione Vomero – Arenella era raggiunto quasi esclusivamente da una rete di percorsi pedonali definiti salite, gradoni, calate ecc. (i principali dei quali sono denominate: “l' Infrascata, i Cacciottoli, la Pedametina, Il Petraio, Calata S. Francesco. la Salute, Salita Arenella e Salita Due Porte”) arrampicantesi lungo le pendici collinari per raggiungere e collegare i villaggetti rurali del Vomero, di Antignano e di Arenella e gli insediamenti minori di Santo Stefano, Cacciottoli, Gonfalone, Case Puntellate e Due Porte, e per servire da supporto insediativo a ville patrizie e rurali oltre che i complessi monumentali religiosi del cenobio di San Martino e della cittadella fortificata di Castel S. Elmo, i cui primi rudimentali accessi, precariamente carrabili, ricalcavano persistenze di antiche viabilità colleganti i Campi Flegrei alle aree densamente produttive della Campania foelix, rivitalizzate come “vie nove” ovvero “via della canapa” nel corso del XVIII secolo, collegante i territori elevatamente produttivi della canapa (Fratta Maggiore) ai siti della macerazione, (insediamenti lacustri), della prima lavorazione (cordami) al porto di Pozzuoli per l'imbarco verso i Paesi anglosassoni.

Via Miano – Agnano, (oggi via Pigna e via Jannelli) ricalcando un antica

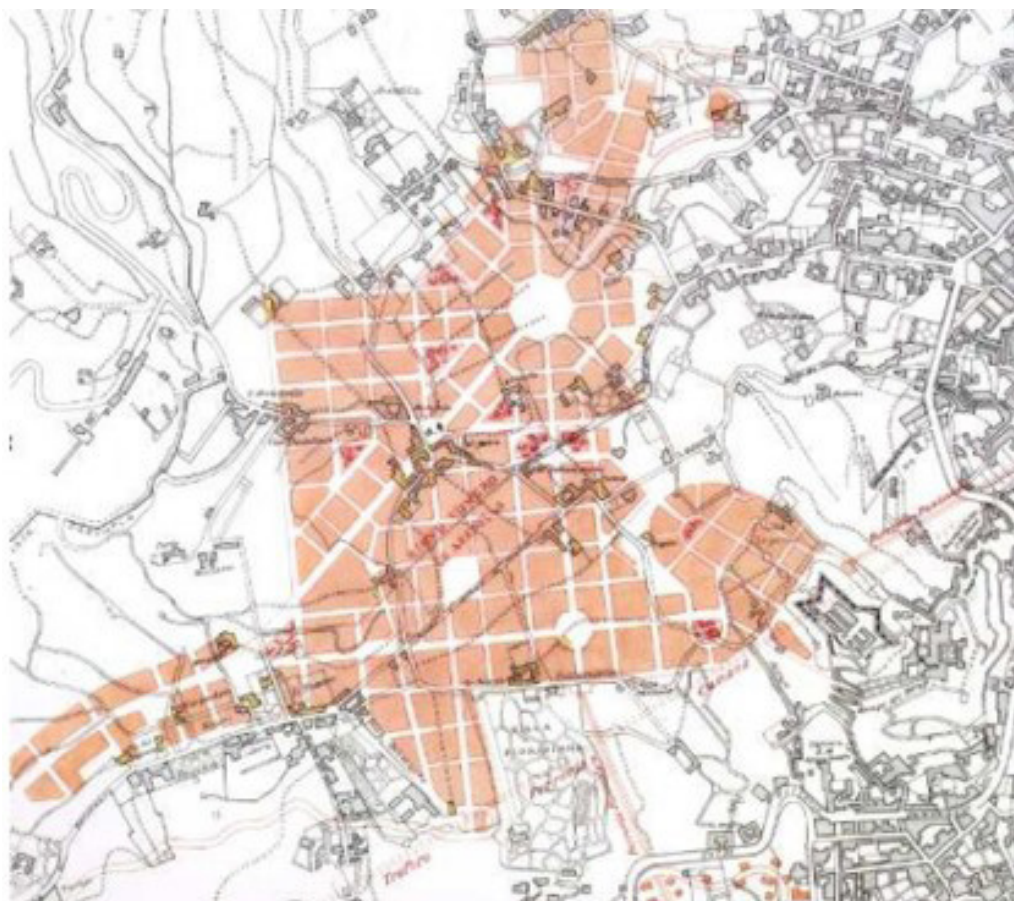


Fig. 15 - Ufficio Topografico della Guerra (1853) Planimetria di Napoli, particolare zona Vomero- Arenella



Fig. 16 - Ufficio Topografico della Guerra (1873) Planimetria di Napoli, particolare zona Vomero - Arenella

Fig. 17 - Piano della Banca Tiberina per la realizzazione del nuovo rione "Vomero – Arenella" da collegare alla Napoli storica tramite due funicolari commissionate dal Consiglio Comunale nel 1880. (Fonte G. Alisio: "Il Vomero", Electa Napoli 2000)



viabilità romana pervenutaci in sporadici tronchi di persistenze archeologiche, ha fatto da supporto agli insediamenti rurali che solo in parte sono sopravvissuti alle operazioni di densificazione edilizia che hanno irriverentemente urbanizzato la collina del Vomero comportando la cancellazione anche di buona parte delle residenze patrizie e soprattutto il ricco patrimonio di verde consistente nei giardini che le coronavano.

A favorire la nuova urbanizzazione della collina hanno contribuito soprattutto i nuovi collegamenti con la città storica, ad iniziare dalla realizzazione delle infrastrutture viarie carrabili promosse dai dinasti francesi a decorrere dal primo decennio del secolo XVIII, la principale delle quali fu il corso panoramico separante a mezza costa la città storica dagli insediamenti collinari del Vomero, l'attuale corso i cui lavori, avviati nel 1852 dal re Ferdinando II di Borbone, furono conclusi ad unità nazionale avvenuta, contemplando la variazione toponomastica da "Regina Maria Teresa" a "Vittorio Emanuele".

Detto corso, di straordinario interesse paesaggistico, dipartendosi dall'antica serpeggiante via dell'Infrascata (odierna via Salvator Rosa), la prima arteria che consentiva l'accesso anche carrabile, a traino animale, alle vil-



Fig. 18 - (20 Febbraio 1889) Stato dei luoghi al momento della liquidazione della Banca Tiberina con l'indicazione delle proprietà dei suoli e dei fabbricati. (fonte G. Alisio)

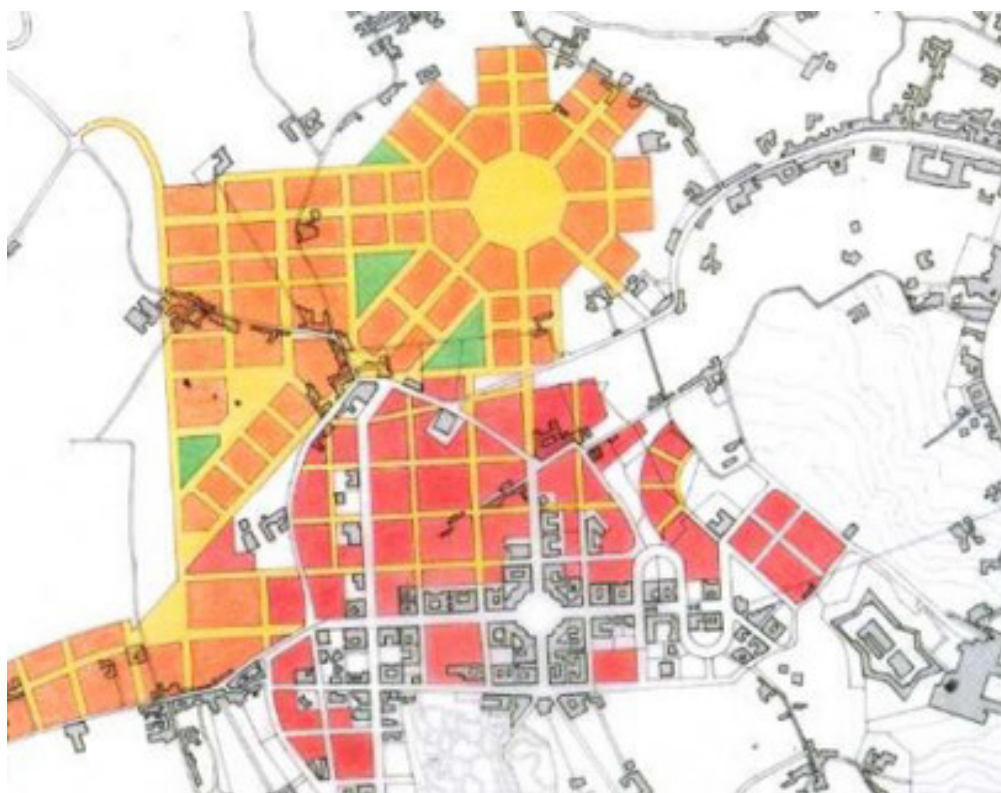


Fig. 19 - (1911) Piano di ampliamento del nuovo rione Vomero - Arenella proposto dalla Banca d'Italia. (fonte G. ALISIO)

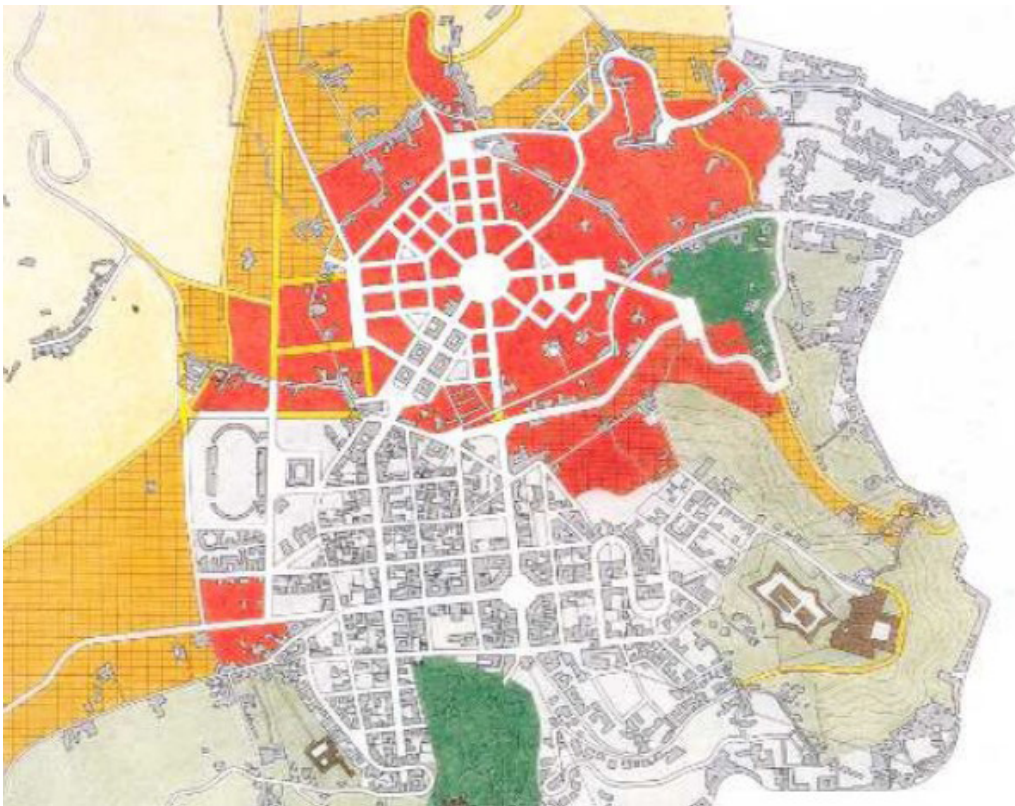
le ed agli insediamenti rurali rimontanti la collina del Vomero - Arenella , sovrastata la scacchiera dei “Quartieri Spagnoli” realizzati dall’intervento urbanistico del viceré spagnolo Don Pedro da Toledo, continua il suo percorso sino a collegarsi con il sistema di gallerie praticate sotto la collina di Posillipo in età romana per consentire l’accesso litoraneo Domizio alla città di Napoli.

Il corso fa da supporto infrastrutturale ai tanti percorsi rampanti che degradano verso la città consolidata e rimontano, più faticosamente , le sovrastanti fasce collinari; un luogo paesaggisticamente eccezionale lungo il quale trova insediamento il patrimonio abitativo della borghesia cittadina di più consolidato prestigio sociale e culturale, servito a metà strada anche dai collegamenti della funicolari che hanno giocato un ruolo fondamentale nella urbanizzazione del nuovo quartiere collinare garantendo un rapidissimo collegamento con il tessuto urbano antico , storico e moderno, prossimo alla soglia meno felice della contemporaneità.

La prima ad essere realizzata fu la funicolare di Chiaia, iniziata nel 1887 ed entrata in esercizio nel 1889, azionata a vapore, predisposta per il trasporto di 300 persone, proprietà della Banca Tiberina che ne aveva preso



Fig. 20 - (1914) Piano regolatore redatto dall'ing. F. De Simone : rete viaria, abitazioni e verde pubblico, (fonte G. ALISIO)



*Fig. 21 - P.R.G. di Napoli (1939),
Indirizzi di sviluppo urbanistico per il
nuovo rione Vomero -Arenella (Fonte
G. Alisio)*

a carico la realizzazione e successivamente l'aveva trasmessa nel 1898 alla società privata "Ferrovie del Vomero" per essere successivamente municipalizzata nel 1972.

La seconda, la funicolare di Montesanto, entrata in funzione nel 1891, azionata a vapore, anche essa di originaria appartenenza alla Banca Tiberina registrò i medesimi passaggi di proprietà della prima, approdando al demanio municipale nel 1972.

La terza funicolare, collegante la collina del Vomero al cuore politico amministrativo, sociale, culturale e commerciale della città (Municipio, palazzo Reale, Teatro San Carlo e piazza Plebiscito) entrò in esercizio trenta anni più tardi, nel 1928, denominata "Centrale" anche perché la sua stazione di partenza si ubicava a metà strada tra le prime due; abilitata al trasporto di 450 passeggeri, è stata municipalizzata nel 1976 ed ha costituito la sostanziale premessa per un accelerato processo di urbanizzazione con parallelo incremento demografico dell'acropoli vomerese.

A decorrere dalla seconda metà del secolo scorso hanno avuto attuazione le ultime grandi arterie di comunicazione infrastrutturale viaria (tangenziale) e ferroviaria (reti metropolitane urbane) che hanno accorciato le distanze relazionali intercorrenti tra il Vomero, la città storico-antica consolidata ed il territorio conurbativo degli insediamenti periferici.

Il Vomero, città nella città, mortificato non tanto dagli strumenti urbanistici che sono seguiti al piano disatteso di Francesco De Simone, e che, pur riuscendo a godere di ufficiale approvazione, non solo non hanno avuto la forza di indirizzare una oculata crescita organica strutturale, infrastrutturale, politico amministrativa, insediativa, sociale, economica, artistica e culturale alla città di Napoli ed alla sua duplicazione collinare ma hanno lasciato nelle loro maglie orditive ampi margini alle spontaneità interpretative dei regolamenti normativi (aperti a facili flessibili aggiornamenti) che hanno consentito le più massacranti operazioni speculative all'edificato rionale anche di recente realizzazione, con processi di sostituzione e di soprelevazione, a spesa delle sedi viarie in progressivo metrico restringimento e degli spazi inedificati interni ai blocchi condominiali assoggettati a progressiva elevazione e densificazione edilizia.

Operazioni che hanno devastato e distrutto non solo buona parte degli insediamenti nobiliari antichi ancora presidiati il territorio segnato dal più elevato tasso di panoramicità, ma che hanno anche deturpato buona parte dell'edificato a villini di raffinata architettura di stile floreale, neoromanico e neorinascimentale, di fine ottocento e di inizio novecento, progettati dai più fantasiosi architetti partenopei, in linea con le più significative espressioni del neo liberty internazionale ed abitati da personalità emergenti della letteratura, dell'arte, della cultura e della scienza.

La conversione in strutture museali delle architetture monumentali religiose e laiche di S. Martino e di Castel Sant'Elmo, privilegiate stazioni paesistiche dominanti la scena del golfo partenopeo, ha moltiplicato, a partire dallo scorso decennio, la loro frequentazione da parte di un turismo anche internazionale, progressivamente aperto agli interessi storici, paesaggistici e culturali, grazie alla agevole possibilità di accesso da parte delle viabilità su ferro (metropolitana collinare e funicolari) convergenti su Piazza Vanvitelli assunta a baricentro della città vomerese e da essa dipartentesi, anche pedonalmente, in direzione del complesso monumentale che domina il sistema collinare, privilegiando via Annibale Caccavello, la stradina che ancora conserva pressoché inalterato il suo primitivo tracciato tardo medioevale, tanto povero di ricchezza insediativa quanto ricco di persistenze storico urbanistiche, divenuto un itinerario preferito delle peregrinazioni turistiche, culturali ed ambientali, e pertanto particolarmente vocazionato a configurarsi come "stradina dell'arte", la prima pietra della quale è stata posta da Aldo Capasso che su di essa ha aperto, all'imbocco della cittadella di S. Elmo, la sua "stanza dell'arte", un cenacolo di arte e cultura che attende di uscire "fuori", per dar vita ad una più libera palestra di saperi aperti al dialettico e produttivo confronto tra passato e presente.

Nel concludere riteniamo pienamente condivisibile quanto ha scritto Giancarlo Alisio 25 anni prima che prendesse vita la iniziativa di convertire via Caccavello in “stradina dell’arte”:

“In via Annibale Caccavello, il Vomero conserva, meglio che altrove, la sua immagine antica, in uno tra i pochi episodi ricchi di suggestione che ricordano ancora il fascino del quartiere : al n. 10, di fronte al palazzetto Tramontano, costruito nei primi decenni dell’Ottocento, si apre l’ingresso della settecentesca villa Giannone architettonicamente insignificante, ma ricca di interesse ambientale; essa è fiancheggiata, sulla destra, dal giardino di villa Salimbeni e, sulla sinistra, dalle rampe del Petraio. Qui s’innestava anticamente via Torione S. Martino: cancellata in buona parte dagli interventi ottocenteschi, il suo tracciato riappare oltre via Solimena. Sorpassata una palazzina neorinascimentale ed un brutto edificio di speculazione, unica nota stonata in questo contesto, oltre il giardino di villa Fermariello, bella costruzione neorinascimentale sormontata da una torretta, si apre una stradina tra muro di tufo, villini e l’alta muraglia di recinzione di castel S. Elmo; da essa, oggi sbarrata da un cancello, ma un tempo collegata ai gradoni del Petraio, si godono ancora splendide vedute sul golfo e sulla città adagiata lungo la collina”.

La collina del Vomero, prima di convertirsi in città è stato un “luogo” abitato dalla natura, generosa dispensatrice di elevate amenità paesistiche, di un clima eccezionalmente confortevole e di particolari formazioni geologiche e geopedologiche convergenti in una sintesi di valenze estetiche, produttive e di salvaguardia della salute, premesse idonee a garantire anche ottimali investimenti abitativi.

Il Vomero, prima di diventare “città” è stato anche abitato dall’arte, che ha lasciato tracce di sé nelle ville patrizie che architetti locali ed internazionali hanno preso ad edificare lungo i declivi verdeggianti della fascia collinare, stazione della più elevata suggestione paesistica mirante Napoli, il suo golfo, le sue isole, il Vesuvio ed i rilievi montani dei Lattari che lo contornano.

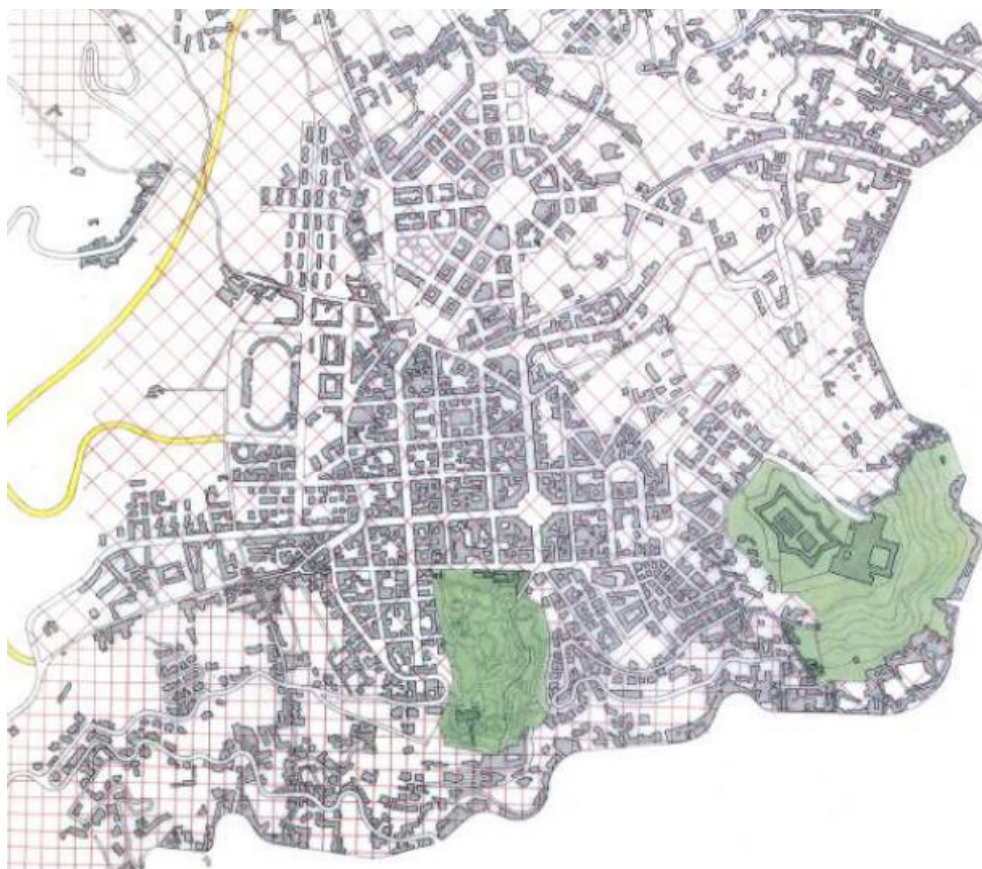
La tavola Strozzi ne documenta la loro puntiforme presenza in età protorinascimentale.

L’arte ha continuato ad abitarla nei secoli successivi, rimontando la collina nelle pause territoriali anche meno paesistiche, con architetture signorili andatesi progressivamente a convertire, come già accennato, in case padronali presidiando i borghi rurali che, a decorrere dai secoli XVIII e XIX, hanno preso ad insediarsi nei loro pressi, senza alterare le valenze estetico decorative del costruito architettonico fasciato dal verde colorato e ridente di confortevoli giardini.

Il tutto prima che partissero le operazioni urbanistico- edilizie del cosiddetto “Risanamento”.

Ad operazioni “risanative “ avviate con l’impianto planimetrico a griglie geometriche, non proprio rispettose dell’andamento morfologico dei siti, l’arte ha ripreso insediamento sulla collina dando vita, nelle fasce ancora interessate dalla panoramicità, ad un costruito di rinnovata valenza artistica, commissionato da una classe sociale culturalmente più evoluta (letterati, poeti, scienziati, accademici, politici, scultori, musicisti, commediografi ecc.) avvalentesi di una fiorente nuova scuola di architetti che hanno preso a realizzare pregevoli villini e palazzetti in stile neo liberty, neo romanico e neorinascimentale che hanno ridato respiro artistico e decoro abitativo ad insediamenti che hanno avuto anche il merito di operare , nel pieno rispetto topico dei siti, sia la ricucitura organica delle persistenze infrastrutturali ereditate dalla storia (sentieri, rampe, salite, gradonate ecc..) colleganti i borghi insediativi rurali e le ville che li presidiavano, sia l’utilizzo ottimale della nuova viabilità sociale su ferro realizzata a prevalente supporto della duplicazione urbana (funicolari).

Con gli eventi bellici che hanno concluso il ventennio fascista, l’arte ha ri-



*Fig. 22 - P.R.G. di Napoli (1958) ,
Indirizzi di sviluppo urbanistico per il
nuovo rione Vomero -Arenella (fonte
G. Alisio)*



preso ad abbandonare il Vomero, scacciata da quei processi speculativi che hanno interessato, come protagonisti, disinvolti operatori, maestri nel tradurre il “fare” in “affare”, indossando l’abito a “doppia faccia” dell’imprenditore edile spregiudicato e dell’amministratore politico interessatamente accomodante.

Svuotando di significato anche le più illuminate prescrizioni della pianificazione urbanistica attuata esclusivamente tramite “profittevoli varianti”, si è proceduto non solo a riempire i vuoti intervallanti il costruito, adeguatamente ripotenziato fino al volumetrico raddoppio delle sue originarie cubature, ma si è parallelamente provveduto ad interventi di sostituzione edilizia sacrificando persino larga parte degli edifici dotati di valenze storiche ed architettoniche e convertendo in aree edificabili anche il patrimonio artistico dei giardini che li contornavano, intervenendo parallelamente a favorire la moltiplicazione della rete viaria carrabile di accesso e servizio interno ai cosiddetti “parchi residenziali”, comprimendone la dimensione delle carreggiate, nella piena discordanza con le prescritte distanze tra i fab-

Fig. 23 - Stratificazione storica del costruito nel rione Vomero Arenella dal 1885 al 1974, (fonte G. Alisio)

bricati.

I risultati che ne conseguono sono sotto gli occhi di tutti:

- a) La congestione insediativa provocata dalla intensificazione progressiva dei traffici carrabili e dalla parallela crescita del degrado igienico sanitario derivante dall'inquinamento ambientale;
- b) la progressiva cancellazione delle aree a verde pubblico attrezzate ad attività ludiche per l'infanzia ed ad aree di socializzazione e di respiro ecologico per gli anziani;
- c) l'esponentiale crescita della popolazione residente, non proporzionata alla dotazione dei servizi e delle infrastrutture atte a garantire la dovuta sostenibilità ambientale;
- d) la messa definitivamente al bando di buona parte delle persistenze storico insediative anche nelle aree di più elevata valenza paesistica;
- e) la disordinata proliferazione dei servizi commerciali indifferenziati, non contrassegnata da una adeguata rete dei parcheggi necessitante al loro insediamento;
- f) La disfunzione dei servizi infrastrutturali e dei sottoservizi non rapportata alla incontrollata lievitazione delle abitazioni ed alla conseguente domanda di vivibilità degli abitanti;
- g) la deturpazione estetica del paesaggio di immediata prossimità alla centralità urbana seguita a seguito della realizzazione dei raccapriccianti svincoli dell'autostrada urbana (cosiddetta "tangenziale") che, a differenza delle funicolari e della rete ferroviaria interrata (metropolitana collinare) ha prodotto più danno che profitto alla vivibilità nella città collinare.

Il tutto equivale, culturalmente, ad una pressoché sistematica messa al bando dell'arte che aveva trovato alloggio nella collina, accompagnandone la processualità storico insediativa, lasciando in eredità al presente solo la toponomastica delle sue arterie viarie principali e talune targhe commemorative affisse sulle pareti eterne dei fabbricati che hanno preso a memorizzare la nascita e la morte dei personaggi che vi hanno soggiornato.

Dai conteggi effettuati sulle toponomastiche stradali del Vomero (fonte A. La Gala, *"Il Vomero e l'Arenella"*, Guida editore, Napoli 2002) è emerso che agli artisti sono riservate 107 dediche (ai pittori 54, ai musicisti 27, agli scultori 17, agli architetti 9), quasi la metà del totale, seguiti dai militari insigniti di medaglie d'oro (29), dagli accademici (25), dai politici (16), dagli umanisti (12), dai religiosi (10), dai costruttori (3), dai filantropi (2) e dagli sportivi (1).

Si potrebbe procedere ancora a lungo nella rassegna delle disfunzioni

che hanno interessato la poco confortevole storia urbanistica del Vomero nell'ultima metà del secolo scorso; circostanze che hanno condotto l'amico e collega Giancarlo Alisio a chiudere la pubblicazione sul "Vomero" con suo peraltro innaturale pessimismo: *"A questo punto non si può scrivere la storia di un quartiere ma registrare soltanto la cronaca di un massacro"*.

Per noi la conclusione deve essere diversa, non deve dare spazio alla semplice rassegnazione che porta alla resa del pensare, del fare e dell'essere.

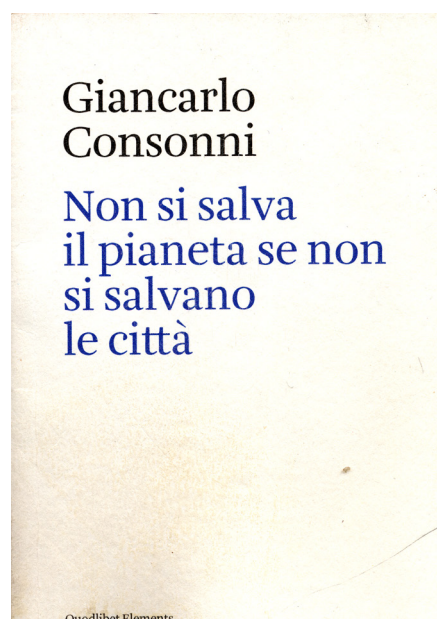
Occorre reagire con le armi di cui si dispone e, nella circostanza, impegnarsi perché venga restituito all'arte un suo rinnovato abitare sulla collina urbanizzata del Vomero, dedicando al suo reinserimento un tratto della strada dedicata ad Annibale Caccavello che Giancarlo Alisio aveva definito la meno contaminata dagli interventi incautamente ristrutturativi che *"conserva, meglio che altrove, la sua immagine antica ... tra i pochi episodi ricchi di suggestione"*.

Opinione pienamente condivisa da Antonio La Gala, ripresa e sviluppata dal comitato di artisti, architetti, urbanisti, sociologi, geologi, letterati e storici che hanno dato vita alla proposta in argomento: *riservare al tratto inizialedi Via Caccavello liberata dal traffico veicolare, a manifestazioni espositive di arte contemporanea ed a confronti dialogici di ampio spettro culturale, una sorta di strategico ingresso aperto a tutti quanti, cittadini e turisti, si accingono a visitare i complessi museali di castel Sant'Elmo e San Martino.*

Book reviews

Non si salva il Pianeta se non si salvano le città
Giancarlo CONSONNI
Quolibet Elements, Macerata 2024

di Tiziana COLETTA



Il saggio di Giancarlo Consonni: “Non si salva il pianeta se non si salvano le città” accoglie una stimolante sintesi delle principali riflessioni dell’autore su uno dei contesti più discussi sulla cultura del vivere la città, nel suo essere e nel suo definirsi processualmente, materiale ed immateriale, dalle origini del pensiero filosofico ai dibattiti culturali seguiti nel diversificarsi degli assunti disciplinari che hanno caratterizzato l’evolversi del sapere umanistico, scientifico, letterario ed artistico senza trascurare la matrice poetica che ne ha caratterizzato il succedersi delle contestualità evolutive.

La città materializzata nei suoi assunti strutturali ed infrastrutturali esce dai ristretti perimetri del costruito per divenire espressione del sociale, dell’economico e del politico, aprendosi ad ancora inesplorate testimonianze del vissuto, dove il bello e l’utile si confrontano in termini concettuali del sapere orbitando in più vasti orizzonti che hanno visto come artefice protagonista l’homo sapiens, nel succedersi delle sue attitudini ad osservare, riflettere, pensare, valutare e programmare il suo “modus vivendi” nell’evoluzione del “fare città”.

Il filosofo antico, teorizzatore della città, si guarda attorno confrontandosi con il vasto campo abitato dagli interrogativi che gli pone il territorio che lo accoglie, lo nutre, lo diverte e lo stimola ad intraprendere il percorso della conoscenza di se stesso e di quanti lo rendono partecipe del suo essere oggetto e soggetto di una comunità che gli orbita attorno, con la quale stabilire rapporti di partecipata condivisione di regole comportamentali.

Il saggio di Giancarlo Consonni si articola in cinque capitoli, il primo dei quali “Città e natura: due doni minacciati” parte da molto lontano, esplorando le prime forme binate del concetto filosofico indirizzato alla città: forma e sostanza, interiorità ed exteriorità, il costruito ed il vissuto rivisitato attraverso le testimonianze più antiche trasmesse dalla cultura greca ellenica ed ellenistica concorrenti nella definizione della “polis” intesa come centro di organizzazione della vita nelle sue espressioni etiche ed estetiche mirate al perseguimento di un comune godimento sensoriale

coniugante il bello e l'utile, il corpo e l'anima inteso come portale di fondamentale accesso alla felicità.

Aristotele con il suo trattato sulla "Politica" è chiamato in campo come capofila di una nutrita schiera di studiosi che hanno posto la problematica del fare e del vivere la città al centro del pensiero filosofico antico.

La città, scrive *"è una comunanza di famiglie e di stirpi nel viver bene; il suo oggetto è un'esistenza pienamente realizzata e indipendente è questo, come diciamo, il vivere in modo felice e bello. E proprio in grazia delle opere belle e della vita associata si deve ammettere l'esistenza della comunità politica"*

Di qui la denominazione "polis" della città greca che definisce le trame orditrici del pensiero urbanistico compendiate quanto la civiltà romana tenderà a scindere in "Urbs" (intesa come aggregato fisico coniugante il costruito e l'infrastrutturato : "il fare città") ed in "Civitas" (intesa come l'insieme dei cittadini che popolano, abitano la città e vi operano all'interno in termini di "convivenza civile"). Concetti ripresi e sviluppati dalle fiorenti scuole di pensiero promotrici della civiltà rinascimentale.

Nell'intervallo si ambientano le isolate voci di pensatori del secondo medioevo: filosofi, letterati, poeti ed artisti che hanno posto le premesse di un futuro sapere, espressione contestativa dello schiavizzante regime feudale negante ogni forma di libera espressione emancipativa del produrre, del vivere, del pensare e dell'essere, azzerante l'accesso a qualsiasi forma partecipativa investente le decisioni sul bene comune per eccellenza: la città.

Germogli del futuro sapere vengono ad indirizzare le istituzioni comunali richiamando in essere i significati non cancellabili della "urbanità" intesa nella più ampia accezione del vivere la realtà urbana in allargato senso comunitario, mirato al godimento di un benessere etico ed estetico e quindi politico, che trova nella ricerca della felicità lo scopo condiviso del ben edificare, abitare e vivere la realtà urbana, patrimonio di comune appartenenza.

Con riferimento alle "Laudationes urbis" medioevali un riscontro analogico della ricerca di "urbanità" è riassunto nel richiamo al "Costituto" del comune di Siena volgarizzato nel 1309-1310 che recita *"intra li studii et solitudini e' quali procurare si debiano per coloro, e' quali 'anno ad intendere al governo de la città, è quello massimamente che s'intenda la belleca della città (perchè la città dev'essere onorevolmente dotata et guarnita (tanto) per cagione di diletto et allegreca (ai forestieri, quanto) per onore, prosperità et acrescimento de la città et de' cittadini di Siena"*.

Elementi che fanno da corollario riferimento agli affreschi senesi raffiguranti il buono ed il cattivo governo della città. Indirizzo ripreso negli statuti comunali che hanno aperto la strada ai fondamenti emancipativi della popolazione urbana ancora afflitta dalle schiavizzanti consuetudini del feudalismo medioevale.

Il Consonni, in un sintetico ma espressivo regesto storiografico degli studiosi di matrice aristotelica relativamente alle problematiche urbane, chiama ad argomentare sei personalità del libero pensiero, i cui contributi sono stati espressi in saggi

pubblicistici spazianti dalla età protorinascimentale a quella pressoché contemporanea.

Il primo significativo contributo è ascritto a Dante Alighieri che, in parallelo temporale del “Costituto” senese, nel “Convivio” (1304-1307) affronta il tema della necessità dello stare insieme per perseguire l’obiettivo del ben vivere la città mercé il superamento delle barriere che ostacolano il raggiungimento della felicità. *“come un uomo a sua sufficienza richiede compagnia domestica di famiglia, così una casa a sua sufficienza richiede una vicinanza ; altrimenti molti difetti sosterrebbero impedimento di felicità. E però che una vicinanza (a) sé non può in tutto soddisfare, conviene a soddisfacimento di quella essere la cittade”*

Il secondo contributo è di Giovanni Botero, che nel 1588 pubblica in tre volumi il saggio: *“Delle cause della grandezza e magnificenza della città”*, intendendo per città *“una ragunanza di uomini ridotti insieme per vivere felicemente”*. Richiamo aristotelico posto in essere per contrastare quanto espresso nel suo trattato politico “Il principe” esaltante il governo politico della città imposto dalla supremazia militare, dalla violenza il cui limite è dal Consonni individuato *“nell’assenza, nel suo pensiero politico, della questione di come assicurare il fiorire della città come luoghi atti ad accogliere e far progredire la vita associata”*.

Il terzo contributo è assegnato a Gianbattista Vico, formulatore della “Bellezza Civile”, espressione della nobiltà di animo ispirante forme e ruoli delle città storiche che, non allontanandosi dalle motivazioni aristoteliche e dalla precettistica vitruviana dell’Ordo, Mensura e Numerus, ripropongono le dimensioni e la “Interazione dialogica tra persone diverse”.

Il quarto contributo è assegnato al filosofo giurista Domenico Romagnosi autore del saggio: *“Dell’indole e dei fattori dell’incivilimento con esempio del suo risorgimento in Italia”* edito a Milano nel 1832, che introduce il concetto di città organica che “si deve riguardare come una vera persona morale avente una cert’anima con un certo corpo, mossa da particolari circostanze di un dato tempo, di un dato luogo, con date tradizioni, con date abitudini, con date opinioni e con determinate esterne relazioni”, precisando il concetto dell’incivilimento in definitiva consiste nel “progressivo miglioramento della convivenza civile”.

Il quinto contributo trova come titolare Carlo Cattaneo, allievo del Romagnoli che nella definizione della “magnificenza civile” riallacciandosi a quanto teorizzato dal Botero (Delle cause e della magnificenza della città) e dal Vico (Scienza nuova) apriva il capitolo della “Bellezza urbana” favorita dall’ascesa della classe borghese che andava erigendo la scena urbana come *“teatro in cui tutti i cittadini potevano <rappresentarsi>, luogo aperto alla partecipazione sociale e politica, eretta a cellula elementare della concezione federale dello stato”*.

Il sesto contributo è assegnato ad un architetto urbanista, Giovanni Michelucci, che concentra l’attenzione sulle città dell’Europa cristiana evidenziandone gli aspetti già esplorati dal Cattaneo.

Nel suo libro su Brunelleschi (edito nel 1972), si esprime in termini di “città

teatro, teatro città”, dove la vita diviene rappresentazione a se stessa, valutata come “il condensato segreto della bellezza civile” conseguita dalle città europee che “acquisiscono pienezza di senso solo se nutrite di urbanità”.

Il saggio del Consonni conclude il suo primo capitolo con una rapida esplorazione delle “ragioni” che hanno condotto alla crisi contemporanea, sopravvenuta con la caduta della tensione all’abitare condiviso e all’urbanità”.

Tra le “ragioni” emergono le negative ricadute della rivoluzione tecnologica che, nel sistema delle relazioni, ha visto le reti (trasporti e telecomunicazioni) prendere il posto della “radura” come principio strutturante i rapporti tra la sfera pubblica e quella collettiva favorendo *“l’affermarsi delle relazioni a distanza su quelle della prossimità, con una conseguenza rilevante: il proliferare di disconnessioni che sfasciano i luoghi laddove regnava la regola dell’interlocuzione e dell’aggregazione armonica”*.

Altra “ragione” è individuata *“nell’assurgere della proprietà privata a entità giuridica priva di vincoli, depositaria di una libertà incondizionata (a cominciare dallo jus aedificandi che nella consuetudine e nella giurisprudenza si è affermata come diritto connaturato alla proprietà del suolo)”*.

Conseguentemente, deduce l’autore, nell’Italia degli ultimi trentenni *“il destino delle città ... è stato progressivamente consegnato nelle mani degli investitori immobiliari. I quali hanno così potuto imporsi come regolatori dei rapporti sociali e del diritto di appartenere alla città”* divenendo *“promotori di uno scardinamento dell’urbanità”*, comportando irresponsabili arretramenti anche nel fare politica, nella semplificazione forzata della complessità funzionale e sociale, nella produzione di mortificanti uniformità spaziali e funzionali, tipologico costruttive e astrazioni contrastanti con il carattere morfologico dei siti e con le coordinate del vivere tradizionale.

“Il risultato è la caduta delle capacità degli insediamenti di accogliere la vita associata e di nutrirla di senso, come anche di raccontarne l’essenza”.

La forzata omologazione ha estremizzato gli atteggiamenti culturali nei confronti di una natura, impropriamente oscillanti tra la razionalità di un habitat destinato alla esclusiva finalità di alimentazione e l’astrazione insediativa generatrice di una nuova utopia *“che ha partorito visioni disurbane quando non antiurbane (dai disurbanisti russi a Le Corbusier)”*.

Con i conflitti bellici che progressivamente hanno preso a minacciare gli equilibri naturali delle città, il Consonni propone una mobilitazione mirata a conseguire due obiettivi:

“che ogni attacco militare alle città venga riconosciuto come crimine contro l’umanità” e *“che nella Dichiarazione universale dei diritti umani venga inserito il principio della difesa dell’urbanità quale conquista irrinunciabile della storia umana”*.

Concludendo : *“non si salva il pianeta se non si salvano le città. Occorre ripartire dall’abitare come modo consapevole e responsabile di essere sulla terra consapevoli che artificio e natura si completano e si illuminano a vicenda”*.

Il volume procede con il secondo capitolo intitolato “Abitanti, ovvero tessitori di urbanità” articolato in quattro significativi paragrafi :1) Il vincolo tra le generazioni; 2) La mancata difesa della città; 3) In che mani è il destino della città? ; 4) Coniugare libertà e responsabilità.

“ Il vincolo tra le generazioni”è affrontato partendo dalla definizione latina dell’abitare, intendendo “Incola” come sintesi aggregativa di “in” e “colere”; il primo termine inteso come un pronome introduttivo ed il secondo come verbo dai molteplici significati, dal “coltivare” al “mantenere”, “abbellire” sino a “venerare”. “Un universo semantico di cui in età contemporanea si è perso la traccia”.

Il termine “abitante, comparso nel linguaggio italiano a decorrere dal basso medioevo, derivante dal latino “habitare”, frequentativo di “habere”, introduce il concetto di un bene inteso come possesso trasferibile agli eredi: Interlocuzione riproposta nel già citato discorso di Giorgio La Pira *“Il valore della città”tenuto a Ginevra alla sessione del Comitato internazionale della Croce Rossa, in data 12 aprile 1954: testo che ha ispirato “la Carta Urbana Europea II Manifesto per una nuova urbanità” approvato dal Consiglio d’Europa nel 2008, recitante. “Le città europee appartengono ai cittadini che le abitano, sono come un bene economico, sociale e culturale che deve essere trasmesso in eredità dalle generazioni future”.*

“La mancata difesa della città” riprende ancora una volta il su citato discorso di Giorgio La Pira, ritenuto di drammatica attualità ; “tragedie, annota il Consonni, che si stanno consumando in Ucraina e nel conflitto israele - palestinese (dove ad una sconsiderata azione terroristica si risponde con un massacro della popolazione civile)”.

A riguardo il La Pira scriveva: “Gli Stati hanno il diritto di distruggere le città? Di uccidere questa unità di viventi ?, veri microcosmi in cui si concentrano i valori essenziali della storia passata e veri centri da cui si irraggiano i valori per la stessa storia futura-, che costituiscono il tessuto intero della società e della civiltà umana? La risposta, secondo noi, deve essere negativa! Le generazioni attuali non hanno il diritto di distruggere una ricchezza che è stata loro affidata in vista delle generazioni future”.

“In che mani è il destino della città?

Ci si chiede, nel terzo capitolo, se la città è veramente dei cittadini; domanda a cui le molteplici risposte trasmettono imbarazzanti messaggi dal negativo bilancio, anche in ragione dei distinguui seguiti alle espressioni di <Città pubblica> che in Italia ha preso piede tra gli urbanisti e ora anche in ambito giuridico” operando un distinguo tra le abitazioni ed i servizi; le prime amministrate dagli investitori immobiliari e i secondi dai politici preposti ad “assicurare congrue dotazioni di servizi, quando non addirittura , il funzionamento della macchina comunale”.

In conclusione *“si è lasciato e si lascia che a disegnare i quadri di vita ed i sistemi che li sorreggano sia la coppia costituita dalla tecnologia dei trasporti (con la mobilità su gomma protagonista) e dalla rendita derivante dai beni immobili è infatti la coppia tecnologia/rendita fondiaria a determinare le tendenze insediative, le gerarchie*

funzionali e le gravitazioni entro dinamiche definibili cioè da una logica sempre più metropolitana (ovvero soggetta a progetti che ridisegnano incessantemente sia la distribuzione delle attività umane nello spazio che la topografia sociale): un quadro di forze orientato dal mercato capitalistico e da una logica sempre più improntata all'estrazione selvaggia di sopraprofiti."

Il capitolo si conclude con i due significativi paragrafi: a) Coniugare libertà e responsabilità, richiamando un proverbio medioevale tedesco rilanciato da Max Weber nel suo saggio "Le città" (edizione italiana di Enzo Paci, Milano 150) "L'area delle città rende liberi" in quanto "fucine di cultura e di bellezza ... incubatrici della moderna democrazia"; b) Logica rigenerativa vs logica estrattiva che riprende il pensiero urbanistico di Ulisse Gobbi (1852 – 1940) sulla opportunità di trasferire dal privato al pubblico la proprietà dei suoli sui quali fondare ed espandere la città, argomenti richiamati nella "Carta urbana europea".

Segue il capitolo III intitolato "*Bellezza e convivenza civile*", articolato in quattro paragrafi: 1) "le ragioni della bellezza: la lezione di Leon Battista Alberti"; 2) "Misura e dignità come espressione dell'interazione virtuosa fra dovere e dono"; 3) "Ospitalità e affabilità come fondamenti della convivenza civile"; 4) "Le città vanno armate di convivenza civile".

Procedendo con il metodo delle esplorazioni onomastiche storiche, il termine "composizione" è fatto derivare dalla latina "concinnitas", intesa da Cicerone e Quintiliano come indagine sulla bellezza, concetto ripreso nel rinascimento da Leon Battista Alberti nel "De re aedificatoria" per illustrare la "venustas" in architettura, coniugando la sfera estetica alla sfera sociale in termini di armonica concertazione: "*Le manifestazioni dei più vari campi della vita pubblica: diritto, vita militare, religione etc. senza le quali la società civile cessa sostanzialmente di esistere, una volta private della magnificenza dell'ornamento ... si riducono ad operazioni vuote e insulse.*"

Leon Battista Alberti anticipa il concetto di "bellezza civile", rilanciato, tre secoli dopo da Gianbattista Vico. Costruire una casa bella corrisponde a costruire un pezzo bello della città che la accoglie..

Nel secondo paragrafo è ripreso e sviluppato il concetto di "bellezza d'insieme", da crearsi collegialmente, superando "l'ossessione del possesso e dell'esibizione (il corpo, l'abbigliamento, gli oggetti)" tipici di atteggiamenti narcisistici. Il più delle volte a discapito del contesto che si presume di qualificare con esibizionistiche espressioni di presunti ammodernamenti.

Nel terzo paragrafo la chiave di lettura riparte da quanto scritto dall'Alberti: "Se è vero il detto dei filosofi, che la città è come una grande casa, e la casa a sua volta una piccola città, non si avrà torto sostenendo che le membra di una casa sono esse stesse piccole abitazioni" e prosegue con l'analisi binomiale di "intimità e condivisione" strutturanti sia l'abitazione che la città; concetti ripresi e sviluppati quattro secoli più tardi da Ildefonso Cerdà nella "Teoria generale dell'urbanizzazione" (pubblicata a

Madrid nel 1867).

Coniugando “interno ed esterno” col binomio pubblico e privato, la città ritrova il suo significato di “teatro”, “gli edifici vengono così ad assumere il ruolo di <dramatis personae> e lo spazio urbano su cui insistono è sottoposto a tensioni e linee di forza simili a quelle che si generano su un palcoscenico. In tal modo la <concimitas> non è confinata nell’architettura dell’edificio ma investe i luoghi dell’abitare condiviso, introducendo nuove declinazioni della bellezza in senso dialogico e teatrale. Da ciò nasce un ulteriore arricchimento dell’abitabilità e del senso di ospitalità dei luoghi urbani”.

La piazza centrale e quelle di quartiere divengono i nodi che polarizzano le relazioni fisiche e sociali della città storica, matrice dell’urbanistica organica che prende le distanze dal filone interpretativo fondato su un astratto ed asettico razionalismo. Riflessione questa avviata da Piero Bottoni nel suo progetto (non realizzato) per il quartiere Gallarate a Milano, fondato sul concetto di “strada vitale” che, allontanandosi dalla razionalistica strada corridoio di Le Corbusier, assume il ruolo prioritario del ridisegno organico della città.

Concetto riproposto da Louis Kahn che, nel 1971, ridefinisce la strada urbana come una delle prime istituzioni della città. “La strada urbana è una stanza che esprime un patto ... l’urbanistica può cominciare ... cercando di reintegrare la strada dove la gente vive, impara, compra e lavora nel ruolo di stanza comunitaria”.

Il quarto paragrafo “le città vanno armate di convivenza civile” riparte dal rilancio del concetto di “Bellezza urbana” con l’annotazione di Leon Battista Alberti: *“la bellezza fa sì che l’ira distruttrice del nemico si acquieti e l’opera d’arte venga rispettata.”* Definizione ben lontana dalle tendenze manifestate dall’urbanistica contemporanea che contempla la dispersione insediativa azzerando qualificatamente le distanze tra città e campagna ponendo l’attenzione, nel migliore dei casi, a prendersi cura delle “infrastrutture primarie (acqua, luce, gas, fognature, viabilità, trasporti, telefonia ecc.) e alle infrastrutture secondarie (servizi sociali, dalla scuola alla sanità)”, ignorando *“le infrastrutture della socialità: quell’insieme di elementi (non solo fisici) da cui dipende non poco la qualità delle <relazioni di prossimità> e in generale la qualità urbana delle formazioni insediative. ... Armare le città di convivenza civile è questa la strada da perseguire”*.

Il capitolo IV argomenta su: “*Questione delle abitazioni e gestione dell’habitat*” articolato in quattro paragrafi. 1) La questione delle abitazioni secondo Friedrich Engels; 2) Assicurare la casa a tutti: un problema sparito dall’agenda politica; 3) Problemi della casa e urbanità: un’unica questione politica; 4) La carta dei luoghi come condizione della convivenza civile.

Nel primo paragrafo è lumeggiato, in sintesi, l’atteggiamento anticapitalistico di Engels che pole in essere un’attenta analisi delle condizioni insediative seguite al progressivo avanzamento della civiltà industriale, lamentando l’assoluta carenza di abitazioni per le classi operaie; fenomeno tanto corretto nell’analitica conduzione

quanto ideologicamente condizionato nelle proposte radicali avanzate, utopicamente esploranti sconvolgimenti politici fondati sul buon esito della rivoluzione del proletariato. *“La soluzione è nell’abolizione del modo capitalistico di produzione e di sussistenza da parte delle classi operaie ... ciò può naturalmente farsi solo a condizione che siano espropriati gli attuali proprietari o siano occupate le loro case da parte dei senza tetto o degli operai che in precedenza vivevano ammassati in numero eccessivo nelle loro abitazioni; e non appena il proletariato avrà conquistato il potere.”*

Nel secondo paragrafo è chiamato in campo un opuscolo di Piero Bottoni : “La casa a chi lavora”, pubblicato nel 1945, un saggio indirizzato ai politici non contaminato da pregiudizi ideologici; un messaggio rivelante una rinnovata sensibilità civica emersa a seguito del cambiamento di regime politico amministrativo del Paese a valle del ventennio dittatoriale.

Indirizzo seguito dal Piano Ina-Casa (1949 – 1963) e dalla legge 167 del 18 aprile 1962, contemplante investimenti pubblici per la realizzazione di alloggi per i ceti meno abbienti della popolazione lavorativa. Provvedimenti che comunque non hanno messo in bilancio il perseguimento di una qualità urbana, entrata in argomento con il D.M. del 2 aprile 1968 che, con l’introduzione degli “standard urbanistici” intendeva porre argini al degrado insediativo urbano “Argini che vanno più che mai difesi contro l’aggressività degli operatori immobiliari che da tempo ne richiedono la rimozione”.

Il sapere urbanistico, professionale ed accademico, ha comunque ignorato uno degli obiettivi fondamentali del fare città: coordinare urbanità ed inclusione. L’autore, a proposito di tale vuoto sostanzialmente culturale, lamenta che , anche in sede accademica “pesa la separazione tra architettura e urbanistica consumatasi in Italia a partire dagli anni settanta del secolo scorso, con un primo risultato, tuttora perdurante: il riconoscimento della centralità del disegno urbano, inteso a promuovere inclusione, urbanità e bellezza, come parte essenziale della pianificazione territoriale. In una pretesa di scientificità (e di neutralità) la ricerca e l’insegnamento in ambito urbanistico si sono concentrati sugli aspetti gestionali, sui processi decisionali, sugli attori e sulla messa a nudo delle <retoriche>, ovvero sulle strategie discorsive che accompagnano la redazione dei piani e la prassi urbanistica:”

Il terzo paragrafo evidenzia le due criticità cui sono pervenuti i modelli insediativi: *“La sostenibilità ambientale”* e *“La sostenibilità sociale”*, lamentando che in particolare la seconda è ignorata a tutti i livelli dalle forze politiche sia di governo che di opposizione. “Con il disgregarsi delle comunità si è smarrito il senso di essere parte di un consorzio civile la cultura e la politica sono venute meno a un loro ruolo primario. Il vuoto derivante è stato occupato dal mercato, che non si è limitato a incamerare risorse collettive in forma di rendita, ma è stato lasciato libero di plasmare i quadri di vita prosciugandoli delle relazioni vitali”.

Il quarto paragrafo passa dall’analisi delle disfunzioni alla definizione di proposte per avviarle a soluzione: “Bisogna affrontare il nodo della separazione che si è generata tra <cives> ed <incola>, fra il cosiddetto <cittadino> e <l’abitante>, inteso

come il soggetto che, in un'adeguata relazione con gli altri, si prende cura, per quanto nelle sue possibilità, di un luogo, di un aggregato, di un contesto, di un paesaggio, consapevole di cosa comporta creare, difendere e far fiorire un habitat, *“e giunge a proporre una rivitalizzazione dell'art. 9 della Costituzione Italiana con l'integrazione dei seguenti due commi: 1) “sostiene l'attività e i soggetti che si prendono cura dei contesti rinnovandone l'abitabilità, la bellezza e il senso; 2) Tutela le città e promuove tutto quanto può infondere qualità urbana e ricchezza relazionale agli insediamenti umani”*.

Il quinto capitolo si intitola: “Urbanità e cura della terra” è articolato in cinque paragrafi, tutti sostanzialmente propositivi.

Il primo: *“Dare risposta alla crisi riproduttiva della società”*, nel constatare che l'attenzione socio politica tende a trovare il proprio baricentro nella questione ecologica; il Consonni ritiene indispensabile porre la stessa in relazione a quelle del lavoro, della casa, dell'inclusione, della coesione sociale, del diritto alla città, della difesa, della promozione dell'urbanità e della bellezza civile, concludendo che: *“La crisi demografica che caratterizza l'Occidente opulento, in questa fase storica è una vera e propria crisi della compagine sociale. Affrontarla equivale a definire orizzonti, strategie e priorità della politica, mettendo al primo posto la cura dell'habitat e della sua ospitalità per tutti i ceti sociali ... Una società che non si prende cura della sfera riproduttiva è destinata ad andare incontro a pesanti lacerazioni, quando non alla sua fine”*.

Il secondo paragrafo interessa *“Il rafforzamento reciproco di urbanità e sicurezza”* in termini della sostenibilità sociale contemplanti: a) L'inclusione e la coesione degli aggregati insediativi; b) le qualità delle relazioni sociali che gli assetti fisici degli insediamenti possono contribuire ad instaurare; c) il mantenimento e la crescita della bellezza civile”.

In definitiva *“con oculate scelte urbanistiche e di disegno urbano, occorre armare l'habitat di convivenza civile e di urbanità. in questo modo il consorzio sociale può coltivare la crescita culturale collettiva e, nei suoi stessi modi di vivere e di presidiare i luoghi, assicurare da sé, per quanto possibile, la sicurezza”*.

Il terzo paragrafo è specificamente indirizzato a *“Ridare vita alla bellezza civile”*, lamentando il prevalere di valori esclusivamente economico – speculativi del fare città, nella voluta ignoranza delle componenti estetiche ridotte il più delle volte ad esclusive espressioni narcisistiche auto celebrative di operatori tecnici esaltanti il non ben definito concetto di millantato adeguamento artistico culturale, discutibilmente espresso dalla progettazione architettonica avulsa dal contesto ambientale, storico e paesaggistico; l'autore giunge alla conclusione che *“La bellezza civile, che si esprime negli aggregati insediativi e nei paesaggi umanizzati, la le sue radici in una tensione collettiva volta a migliorare la convivenza civile: Tornare a coltivarla è il modo per arricchire di senso la scena della vita quotidiana e per dare qualità all'abitare”*.

Il quinto paragrafo, intitolato: *“Società e politica: riportare al centro il bene comune”*,

riassume i caratteri fondamentali delle tematiche analiticamente esplorate dall'autore nei singoli capitoli del volume, indirizzando ai politici preposti a gestire e promuovere il "fare città" il riepilogo conclusivo delle sue considerazioni: *"Ogni intervento di trasformazione dell'ambiente fisico va in direzione del fare o disfare città e del fare o devastare i paesaggi. Per questo le scelte urbanistiche hanno portata squisitamente politica e conseguenze sul fronte dell'incivilimento. Il ritardo in questo campo di chi ha il compito di gestire la Cosa pubblica scaturisce da una carenza più ampia che alligna nel corpo sociale. Se ne esce solo con la riconquista di una consapevolezza condivisa ed estesa sulla posta in gioco e sulla coerente messa a punto di strategie e politiche degli interventi volte a promuovere la convivenza e la bellezza"*.

Conclude il volume una ricca e bene articolata bibliografia esplorante i diversi campi del sapere, da quello storico letterario a quello filosofico scientifico, da quello tecnico artistico a quello socio politico, tutti culturalmente interessati alla problematica del "fare città", armandola di "urbanità, sicurezza, bellezza e convivenza civile.