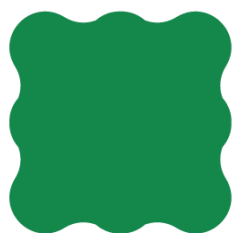


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Impact Stories Bologna

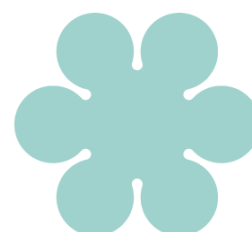


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Creating
Actionable
Futures



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Authors	Konstantina Douka (University of Bologna); Leonardo Cameli (University of Bologna); Cecilia Mazzoli (University of Bologna); Annarita Ferrante (University of Bologna); Claudio Lantieri (University of Bologna)
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Table of Contents

Document Information	2
Table of Contents	3
Executive Summary	4
1. Introduction	6
2. Sandbox city Bologna	7
2.1 The challenges Bologna is facing.....	8
2.2 Urban governance & NEB	8
3. Sandboxing in Bologna	11
3.1 NEB & DumBO.....	13
3.2 Collaborative governance at DumBO	15
3.3. How actors collaborate.....	16
4. Sandboxing at DumBO	18
4.1 Interventions and connective actions.....	19
4.1.1 Creative Tools (maps, performances, site-specific work in STEAM team context and the use of NEB IM).....	22
4.2 Insights.....	24
4.3 First reflections.....	25
5. The impact of CrAFt in Bologna	26
6. Conclusions and Lessons learned	28
Strategies for changing.....	28
The potential of the artistic, cultural and creative sectors.....	29
References	30

Executive Summary

This report tells the story of how the Sandbox city of Bologna is working on a playground of experiments and methodologies to share knowledge and experiences with the other CrAFt Sandbox cities (Amsterdam and Prague) and Reference cities. Bologna has a strong tradition of activism and engagement of communities with collective debates and dialogue.

In the Deliverable D1.4 we introduced the experience of the “City as a Commons” approach in Bologna to understand how the governance of sustainable urban development is organised around that. On the other hand, in the Deliverable 3.4 we explore the sandboxing activities.

Communities from different districts learn to collaborate, sometimes in a more autonomous way through bottom-up approaches, and with the public institutions and the organisations from the third sector. In each Sandbox city, the collaborative governance models inspired by the New European Bauhaus (NEB) have been tested and the results compared.

Collaborative governance models are a mutual focal point for all the pilot projects active in the Sandbox cities.

The key points of this deliverable regarding Bologna are:

- to introduce the pilot case of the DumBO district in Bologna and explain its methodology to implement the actions foreseen for its urban regeneration;
- to report and share the lessons learned from the whole participatory process established with the communities.

The impact of the CrAFt project on “NEBifying” the urban environment has been analysed, with particular reference to the interventions in DumBO, which are described in this document. The concept of “NEBifying” is connected to the observation of the project and the urban regeneration actions around the city through the NEB lens. Through some interventions, like the assessment of the air quality and the urban mobility in the DumBO district, the University of Bologna (UNIBO) Team has gained an understanding of how to better include the NEB values and principles to provide solutions for adapting the process if needed.

Bologna has decided to share the projects and labs that have established themselves as local venues for structured discussions with various urban planning stakeholders. The temporary nature of these spaces fosters new dynamics within local communities, resulting in improved urban planning practices that align with the needs of both residents and the surrounding area. How well the experimental projects and interventions work depends on the

challenges that the cities are facing. Therefore, it is important to review the approach and learn from the results.

Following the metaphor of “sandboxing”, the ‘DumBO district’ pilot has been experimenting with different tools to provide new solutions for a more sustainable, beautiful, and inclusive urban environment. The NEB Impact Model (IM) can be used to discuss and negotiate with the stakeholders in the local sphere, as well as to measure specific indicators. It was observed how the indicators “act” in the specific neighbourhood of Porto-Saragozza (which includes DumBO) and their impact has been reported and analysed. This process serves as an applicable example for other districts and other Sandbox cities.

1. Introduction

Amsterdam, Bologna, and Prague serve as experimental playgrounds, embracing risk to test innovative governance models. They explore new tools and methods to bridge institutions and communities, demonstrating how collaboration can shape diverse urban environments. Bologna, with its strong tradition of public participation, applies the “City as a Commons” approach¹ and Climate City Contract (CCC) to foster engagement. The city participates also in the EU Mission on Climate-Neutral and Smart Cities (EU Cities Mission).

Alongside the University and the Municipality, the Fondazione IU Rusconi Ghigi plays a key role, using co-design and co-production methods to connect public and private stakeholders. The Foundation also supports living labs and alliances across city districts. Through collaborative governance and social participation, the NEB Impact Model (IM) helps these cities to test and refine their strategies in pilot areas. This is not a linear but a dynamic exchange between actors, aimed at creating sustainable, beautiful, and inclusive urban spaces.

The cases we highlight are crucial, both as an inspiration for new co-creation practices and as examples of how the “City as a Commons” approach influences urban life. The sandboxing approach has proven valuable in addressing key challenges: improving air quality in an industrialised area, tackling energy poverty, and using arts and culture to unify creative communities. This effort brings together UNIBO researchers, the Municipality, local associations and foundations (Fondazione IU Rusconi Ghigi) and students, fostering a collaborative and multidisciplinary response to urban challenges.

¹ See section results <https://craft-cities.eu/results/>

2. Sandbox city Bologna

Bologna counts almost 400,000 inhabitants and over 3 million overnight tourist stays per year (4.5 million for the Metropolitan City as a whole), plus many other people using the city, e.g. for work or study activities. Attracting many students from other parts of Italy and from abroad, the young population creates an international atmosphere and a new lifestyle. Bologna also attracts digital nomads thanks to an interesting lifestyle which includes many ethnicities and good connections with other Italian cities.



Figure 1: Panoramic of Bologna city (Source: Opensource)

The city boasts a solid economic and cultural fabric with numerous cultural institutions and cutting-edge companies. The city contributes also to other participative initiatives such as “Amministrazione Condivisa”²(Shared Administration) – a more transparent and open public administration for the citizens with the citizens. Bologna also created a specific Mission related to the

² Formazione amministrazione condivisa
<https://www.comune.bologna.it/partecipa/progetti/formazione-amministrazione-condivisa?sect=informazioni-formazione-amministrazione-condivisa> (Last accessed: April 2025).

implementation of Climate City Contract (CCC) known as “Bologna Missione Clima”.³

2.1 The challenges Bologna is facing

The urban environment is an active system of participation which includes diverse target groups. Different models of collaborative governance coexist. The “City as a Commons” is part of the identity of Bologna and ensures an equal participation in the public dialogue. Policies for a more inclusive city are active through public assemblies. Young people are still not engaged enough in these initiatives because they participate in other forms, such as activism⁴ and activism. Also, the constant stream of students, young digital nomads⁵, and commuters continuously changes the demographic structure of the city.

Since 2014, the city has had many collaborative pacts related to the “City as a Commons” approach. The most notable is the mission called “Bologna Missione Clima” to achieve climate neutrality, and other initiatives promoting collaborative governance models such as the “Collaborare è Bologna” project launched by the Municipality of Bologna in 2014. All these mission initiatives have been formed by the Municipality to engage the citizens towards climate neutrality. The missions implement the CCC through collaborative governance models. It is essential to connect the different actors, including the research sector, and perceive the citizens as active contributors and not just as listeners. The recommendations from citizens should have a direct connection with the decision making centres (in this case the local public administration), so the people living in the space have access to the process and to the decisions.

Another critical point is to engage the different forms of governance in the city and the role of the companies or/and other foundations such as cultural ones and property owners-tenants. The engagement and involvement of these stakeholders is important because it is part of the sandboxing process in Bologna, as well as in the pilot of DumBO, to create collaborative governance models.

2.2 Urban governance & NEB

The sandboxing activities are inspired by Bologna’s strong tradition of public engagement and collaborative governance, rooted in the “City as a Commons”

³ Bologna Missione clima <https://www.bolognamissioneclima.it/> (Last accessed: April 2025).

⁴Artivism focuses on informing audiences and actors on the mobilization of art dynamics permeating the field of action. (Vélez-Vélez, Villarrubia-Mendoza, 2019).

⁵According to Cambridge dictionary. Other definitions nominate digital nomads as the workers that use specific technologies and digital tools (Aroles et al. 2022).

approach. Bologna has led the way in participatory models, such as “Collaborare è Bologna” and “Co-Bologna,” which promote civic collaboration through public labs, local alliances, and open discussions. These initiatives engage citizens in shaping urban spaces and tackling future challenges through co-creation and inclusive processes. This spirit of shared responsibility and collaboration has deeply influenced the design of our sandboxing approach.

Key policies and initiatives related to climate-neutrality and circularity

The Citizens' Assembly is a democratic instrument that aims to directly involve a randomly drawn sample of citizens to help propose and implement municipal policies. The assembly is deliberative, i.e. it is based on a method of dialogue. It is convened at most once a year on a particularly relevant issue. The first City Assembly was convened in 2023 and dealt with the issue of climate change. The Assembly consisted of 100 members. 80 of these were people over 16 years of age resident in the Municipality of Bologna. The remaining 20 were ‘city users’ who habitually visit the city but are not residents. Half of them were university students. By the end of the process, after some resignations or lapses, the Assembly counted 88 members. The Assembly worked on three questions:

- How can an energy transition of the city be promoted by the most impactful climate-emitting sectors, while at the same time guaranteeing the principle of equity and climate justice and counteracting the phenomena of poverty and marginalisation?
- How can institutions and citizens address and contain the city's main climate risks such as heat islands and extreme weather events like floods and droughts?
- Which municipal rules, services and regulations form an obstacle for achieving these objectives?

Key policies and initiatives related to inclusiveness

The city of Bologna engaging with the local communities through tactical urbanism⁶ allows the use of space to be quickly changed with temporary and inexpensive elements, analysing their effectiveness and defining the final adaptive design following the users’ reactions to the space. The aim is to understand how experiments work and identify which aspects need to be changed in the final intervention. The areas chosen for this process typically have

⁶ For more information about the tactical urbanism see also FIU, Cambia il Clima a Bologna, <https://www.fondazioneinnovazioneurbana.it/45-uncategorised/2610-un-clima-di-parte-Cipazione-il-tavolo-di-negoiazione> (Last accessed: April 2025)

traffic and environmental problems and the implementation of tactical urbanism usually results in temporary pedestrianisation. Tactical urbanism leads to a final design that better responds to the needs of the inhabitants and the environment based on suggested improvements from the experimentation period.

A key project for Bologna with the cultural sector as its the main actor was ROCK⁷ (Regeneration and Optimisation of Cultural heritage in creative and Knowledge cities). It saw the participation of 32 international partners including universities, research institutions, companies and European cities, cooperating for the progressive transformation of historic centres plagued by degradation, social conflict and poor liveability through the generation of new environmental, social, economic, and sustainable processes. This project provided valuable suggestions for the engagement of the artistic sector in the actions developed during the 3-year CrAFt project dedicated to the DumBO space.



Figure 2: DumBO space during the regeneration process.UNIBO's photos

⁷ This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730280. ROCK project, University of Bologna <https://www.unibo.it/en/research/projects-and-initiatives/research-projects-horizon-2020/588/696/8674> (Last accessed: October 2024).

3. Sandboxing in Bologna

The idea of sandboxing⁸ was introduced in 2015 in the area of financial technologies as “a safe space in which businesses can test innovative products, services, business models and delivery mechanisms without immediately incurring all the normal regulatory consequences”.⁹ In Bologna it is not only the municipality that has an active role towards climate neutrality but also citizens such as activists, autonomous organisations or associations from the city districts, businesses, artists, and the research and innovation sector. The initiatives that take place in the city are related to the implementation of CCC and are inspired by tactical urbanism. Complex projects are implemented by involving inhabitants from diverse social and economic backgrounds.

A major synergy between the districts is vital. The synergy is related to collaboration for enhanced impact: the combined resources and expertise of local governments, businesses, community organisations, and residents can lead to better solutions than if they operated in isolation. This collective approach fosters innovation and creativity. It requires open communication, trust, and shared goals, which encourage a sense of ownership of the initiatives to shape an active ecosystem of participation.

Bologna as a Sandbox city is currently active in the pilot project DumBO spaces, the Urban Multifunctional District. It is a place in transition where creativity meets social innovation and the community of practice. The old rail yard where DumBO is located is almost 40,000 square metres. The area includes six buildings spread over more than 18,000 square metres, plus 20,000 square metres of outdoor space. DumBo is an ideal example of sandboxing because it includes different types of stakeholders and combines different resources and efforts to provide inspiring experimental solutions, using arts and culture to help regenerate the area.

The connection between the project and citizens happens thanks to activities related to peoples’ interests, such as open-air exhibitions, cultural and training activities, and providing consulting solutions. Formerly unused building structures and vacant lots have been reimaged as dynamic hubs for community

⁸ You can see more details about the meaning of “sandboxing” term in the current edition of the Deliverable- D3.1 - Common Approach to Pilot and Intervention Selection, <https://craft-cities.eu/wp-content/uploads/2023/02/D3.1-Common-Approach-to-Pilot-and-Intervention-Selection.pdf> (Last accessed: September 2024).

⁹ *Ibid.*

⁵ You can see more details about the meaning of tactical urbanism in the current edition of the Deliverable - D 1.4 - City as a Commons CCC Framework, [City as a Commons Climate City Contract Framework - CrAFt \(craft-cities.eu\)](https://craft-cities.eu/wp-content/uploads/2023/02/City-as-a-Commons-Climate-City-Contract-Framework-CrAFt.pdf).

engagement, creative expression, and athletic pursuits, all deeply connected to the local environment.

However, DumBO transcends the notion of a mere temporary multipurpose venue. It represents an initiative that seamlessly blends social cohesion, leisure, artistic expression, innovation, eco-consciousness, and cooperative efforts. In essence, DumBO serves as a catalyst where diverse groups – from civic organisations to enterprises and residents – can intersect, exchange ideas, and cross-pollinate their thoughts, ultimately nurturing fresh and groundbreaking strategies for urban evolution. An example towards that goal is the “DumBO Green District”¹⁰, promoting more green areas by involving different expertise.

DumBO is important for the city because it promotes citizens as active contributors. As DumBO is a space in transition, new forms of collaborative governance may come out of it. Its co-creative approaches are active through the community of practice and innovation, as well as through continuous actions such as free consultation for the cultural industry, a kind of collaborative local economy.

DumBO started as a Collaborative Workspace (CWS) with the possibility of creating a new innovative economy through the contribution of the local cultural industry. Different communities co-exist in DumBO, each one of them with unique initiatives to promote a sustainable, inclusive and beautiful way of living and observing the city. DumBO has been selected as a pilot project for CrAFt because of its many exemplary aspects of a more participatory planning and creative urban regeneration. The approach emphasises the concept of collaboration, collaborative governance and democracy, participatory processes and co-creation.

The pilot case is a place that can inspire the other Sandbox cities because of its pluralistic character and identity. It addresses the processes towards climate neutrality in many public debates, and it is a space of sociability and co-creation. It promotes activities, the most popular of which is “la Fiera Cicloturismo”, an event promoting sustainable mobility and cycling. These initiatives reinforce a collaborative governance approach through activities that engage different target groups starting from temporary residents, workers, inhabitants, visitors, young people and students. For instance, there is a synergy between the main managers of the place, a sort of community of practice, to share and expand knowledge.

¹⁰DumBO Green District, <https://dumbospace.it/dgd/?lang=en> (Last accessed: October, 2024).

The experience from Bologna and its pilot of DumBO can provide valuable insights for Amsterdam and Prague, as well as for other cities that want to follow the paradigm of sandboxing in urban areas. Projects, missions and initiatives that promote urban transformation should emphasise the three NEB principles and values: sustainable, beautiful, together. The governance should be inclusive and engage the citizens by promoting more collaborative tools in everyday practices. In that sense, the sandbox city of Bologna experiments with alternative tools in a transformative urban environment. In order to address these objectives, UNIBO used the New European Bauhaus Impact Model as a tool to discuss and understand specific terms, moreover to proceed with an assessment with a set of indicators that help to better investigate the pilot area.

In Figure 2 the main concepts of the DumBO pilot case are presented in connection with the NEB principles and values.

Project	Sustainability	Aesthetics	Inclusivity	Project type	Governance challenges
DumBO district	Create a greener area to counteract the urban heat island effect.	Maintain the aesthetics in the space and engage more young artists from the city beyond those already active in DumBO.	Engage the citizens in the different initiatives.	Temporary transformation. The project changes based on current needs—short of tactical urbanism	Engage citizens. Coordinate the stakeholders.

Figure 3: NEB Values inside DumBO pilot case

3.1 NEB & DumBO

The DumBO district is an ambitious project which engages all the NEB principles and values: sustainable, beautiful, together. The DumBO case primarily focused



This project has received funding from the European Union’s Horizon Europe Research and Innovation programme under Grant Agreement No. 101056946.

also faces challenges in accessibility and inclusivity. Certain groups, such as families, older adults, and vulnerable individuals, remain less engaged with the space. Although it is close to the city centre, limited public transport connections and incomplete cycling infrastructure contribute to a perception of remoteness. Balancing its creative energy with improved accessibility and inclusivity could further enhance its role as an open and diverse urban space.

The questions that could be transformed into a lesson learned are related to the ways in which the place can get closer to the citizens and the kind of approach that can be adopted by the researchers and citizens, people who live the urban space in everyday life. On the one hand, as a research unit from Southern Europe, a geographic area that already faces the consequences of climate change, UNIBO's research could in the future inspire other co-workers from Amsterdam and Prague, because it provides a new perspective on collaborative governance through the use of the IM and the measurement of impacts. On the other hand, UNIBO is located in the region of Emilia Romagna, with a long history and tradition of participatory processes and tactical urbanism. In other words, this experience enriches the methodology adopted by UNIBO and helps define the new challenges in the new "liquid" and transformative environment to promote collaboration between the different stakeholders.

Something more methodological and related to the IM is a tool that would be nice to explore further for its co-benefits: starting from the environmental/technical performance, it was easier for us to quantify the data, but for the more societal/cultural/governance aspects it still remains challenging to proceed immediately with a quantification - which may not be necessary at all, as we study people's perception in artistic elements and processes, levels of civic participation and engagement. Furthermore, a division of different levels to study the indicators is critical: city, district, building scale.

3.2 Collaborative governance at DumBO

DumBO is not just a temporary multifunctional space. It's a project that combines social integration, entertainment, culture, experimentation, sustainability and collaboration. It includes all NEB principles and values: sustainability, beauty, and inclusiveness. As a structure, it includes associations, businesses and citizens that can collaborate and contaminate each other's ideas, fostering new and innovative approaches to city development. DumBO is an important reality for the city because it promotes the actions of citizens and understands them as active contributors.

Some of the questions that need to be addressed are: How can we engage so many, so different realities? How can we include independent artistic-cultural

flows with more institutional forms? What about the role of the property owners in a city which faces housing problems?

In order to answer these questions, as we analyze in the chapter 4, the research activities focus on the role of the NEB IM as a tool of negotiation with the stakeholders and the citizens.

3.3. How actors collaborate

The DumBO project exemplifies an innovative approach to urban space utilisation, emphasising temporary use and community involvement. This initiative has led to the formation of a Scientific Committee tasked with guiding the co-design process for activities and space utilisation. The committee includes several key stakeholders:

- Comune di Bologna, Dipartimento Cultura e Promozione della città;
- Fondazione IU Rusconi Ghigi (ex FIU) ;
- Legacoop Bologna;
- Performa Architettura + Urbanistica.

These organisations/associations collaborate with start-ups, companies, and other local stakeholders, generating revenue that primarily funds community engagement efforts and programming.

The “Bologna Attiva” project (cited before) has facilitated the establishment of numerous co-working spaces, study rooms, and proximity services, alongside cultural and community activities. The main goal is to reshape DumBO according to the needs of the local community, promoting civic re-appropriation of the area with its industrial appeal. This initiative not only focuses on the project itself but also emphasises the importance of community involvement in fostering a sustainable, inclusive, and transformative urban environment.

However, the project faces financial challenges, particularly regarding its future funding mechanisms. Currently, revenue from rents supports initiatives, but as the project transitions to a new ownership phase, securing funds for ongoing cultural and community activities will be essential.

Insights gained from a study visit to Marineterrein in Amsterdam in February 2024¹², particularly through an observatory walking performance, have informed comparisons between the governance models and cultural roles of both cities.

¹² CrAFt Consortium meeting in Amsterdam, February 2024
<https://craft-cities.eu/events/crafting-tomorrows-cities/> (Last accessed: April 2025).

This reflection highlights the significance of collaborative governance and its potential to enhance community engagement and benefits in urban settings.

4. Sandboxing at DumBO

The concept of sandboxing — experimenting with real-world scenarios in a controlled environment — has been central to the DumBO project. The temporary nature of the concession allows for trial and error, where different approaches to space management, community engagement, and environmental sustainability can be tested and refined. This experimental nature has led to a flexible, adaptive research model, where findings are continually adjusted in response to new insights.

For example, initial studies on sustainable mobility within the DumBO space have led to adjustments in infrastructure design, while insights from community engagement practices can inform new models of collaborative urban governance. The sandboxing approach is particularly effective in dealing with the uncertainties and complexities inherent in urban regeneration projects, where outcomes are often unpredictable and need continuous evaluation.



Figure 5: DumBO Pilot, UNIBO's photos

4.1 Interventions and connective actions

In this chapter, a multi-faceted approach to gathering and analysing data is outlined, combining quantitative and qualitative methods, empirical study, creative tools, and storytelling. It offers a comprehensive framework that integrates different sources of information, stakeholders, and methodologies, especially within a research context.

Below, we break down and analyse these components in detail:

- **Quantitative Data (Open Data, Reports, Surveys)** has provided objective, numerical insights, helping to reveal trends and patterns. Open data sources from DumBO workers and the Municipality, along with structured surveys targeting artists and local communities, ensured transparency and allowed for benchmarking and comparative analysis.
- **Qualitative Data (Reports, Statistics)** has offered contextual depth, helping to explain observed trends beyond numbers. Reports on community practices, organisational culture, and private sector involvement in public properties (e.g. the railway yard) have provided rich narratives to complement quantitative findings.
- **Bibliography & Research Review:** a review of past projects and academic research through online platforms and catalogues has helped identify knowledge gaps, theoretical frameworks, and best practices related to concepts like community of practice and social capital. This approach has ensured new research to be innovative, interdisciplinary, and built upon existing knowledge, particularly through the NEB Impact Model.
- **Interviews, focus groups, and fluid discussions with open-ended questions:** interviews and focus groups with local stakeholders, such as Fondazione IU Rusconi Ghigi, students from UNIBO or community managers from OpenEventeria, and artists from the creative hubs provided a direct connection to the lived experiences of those working in the field. Open-ended questions allowed for fluid, explorative discussions, offering participants the flexibility to share nuanced insights that may not surface through more structured methods. These qualitative methods gave voice to stakeholders, ensuring that their expertise and experiences are central to the research process. Engaging with a community of practice brings practical, grounded knowledge into the academic discourse, highlighting the practical implications of research outcomes. The use of open-ended questions allows for unexpected insights and new ideas to emerge organically.



Figure 6 : DumBO space during the interviews with stakeholders

- **Empirical study of the space and participative observation:** conducting an empirical study through participative observation has provided first-hand data about the physical space and social interactions within it. In this case, students from the STEAM (Science, Technology, Engineering, Arts, and Mathematics) team have been actively involved in these studies since spring 2023, experimenting with different practices under the guidance of UNIBO researchers (Figures 6,7). This immersive method allows researchers to observe interactions, behaviours, and space usage in real time, leading to an in-depth understanding of the dynamics within the study area. By engaging directly with the space, the students contributed fresh, actionable insights to the research process while honing their skills in practical observation.

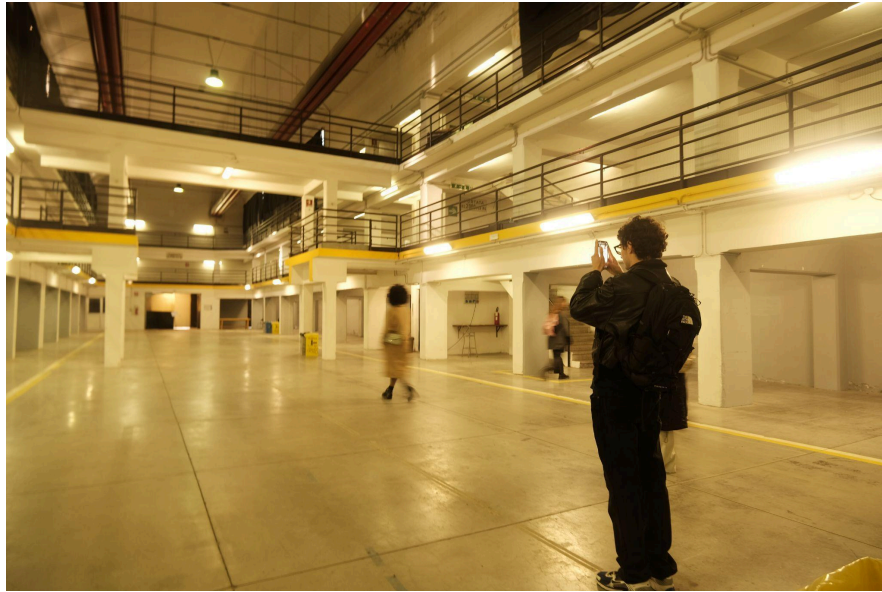


Figure 7 : STEAM team, December 2024. Collection of data. UNIBO's photos

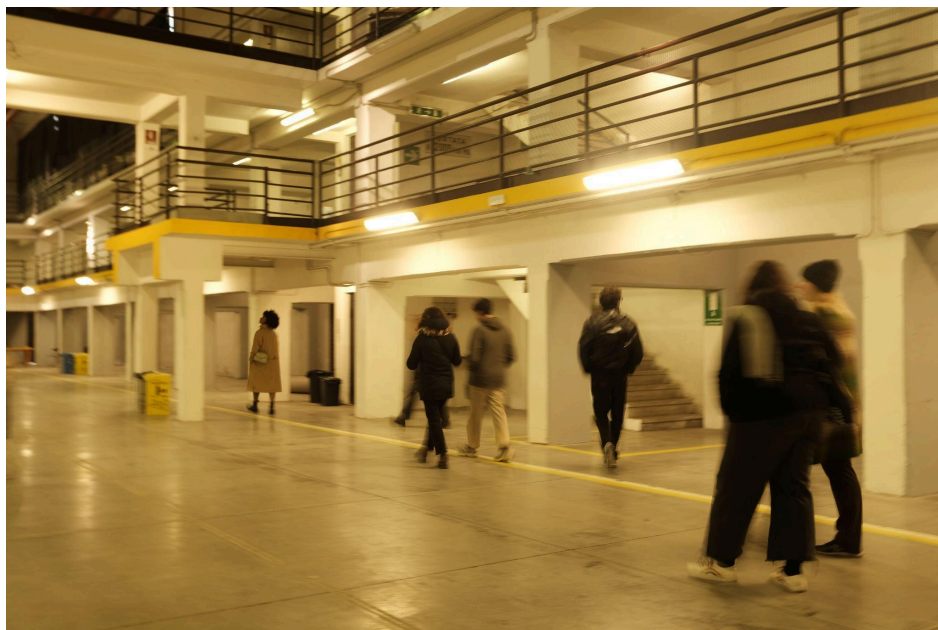


Figure 8 : STEAM team, December 2024. Collection of data. UNIBO's photos

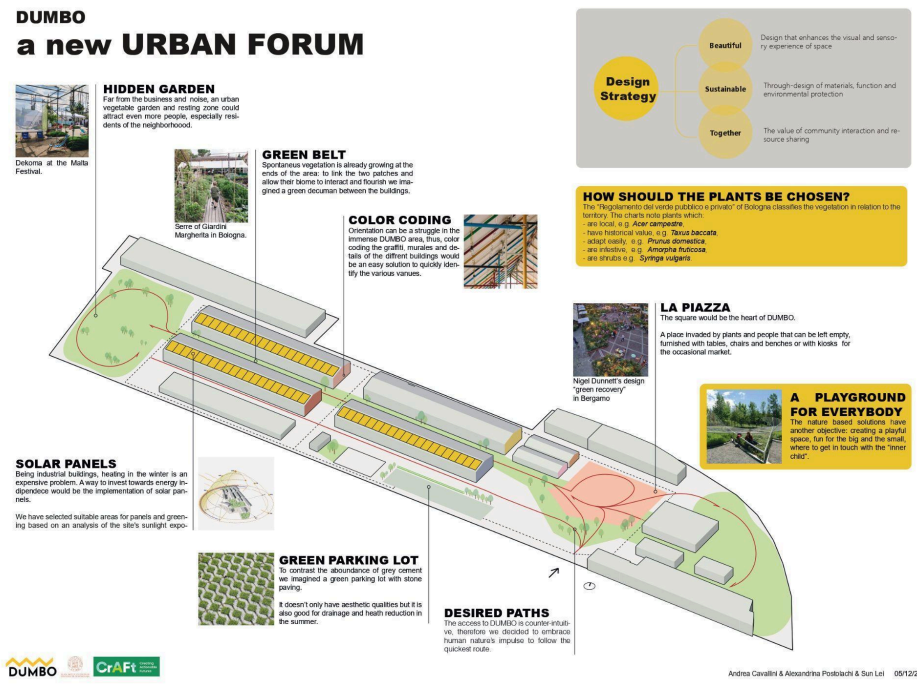


Figure 9 : Outcome from the design workshop during the STEAM team activities, December 2024. The students worked on a new perspective for DumBO space, to include more sustainable elements. This is an original design procedure from the students of UNIBO (Department of Architecture).

4.1.1 Creative Tools (maps, performances, site-specific work in STEAM team context and the use of NEB IM)

Creative tools such as maps, performances, and site-specific work helped visualise spatial, cultural, and community dynamics beyond traditional data methods. The NEB Impact Model was applied to assess environmental performance indicators like sustainable mobility, Life Cycle Assessment (LCA), and land use. In a second phase, the focus shifted to cultural, societal, and governance aspects, translating qualitative insights into quantifiable indicators for better assessment. Storytelling allowed participants, particularly students, to share personal experiences, fostering empathy and deeper community engagement. This method helped translate research findings into accessible narratives, making them more relatable and impactful. Beyond direct interventions, the project engaged with external governance and cultural initiatives (e.g. “Bologna Missione Clima” and “Assemblea Cittadina per il Clima”) through advisory roles and empirical observations. Participation in creative and participatory projects, such as living labs and the European Night of Researchers (Figure 11), provided complementary qualitative data, enriching the broader research perspective on cultural and societal indicators.



Figure 10 : STEAM team, April 2023, site specific performance. UNIBO's photos.



Figure 11 : European Researchers' night¹³, September 2023, UNIBO's photos

¹³ European Researchers' night, edition 2023

<https://corsi.unibo.it/1cycle/Building/notice-board/european-researchers-night> (Last accessed: April 2025).

DumBO is a whole district in the centre of Bologna. As described before, it is a huge area which includes the old train yard and where artistic elements coexist with a unique cultural heritage. Many stakeholder groups operate there, such as foundations, civic organisations, and informal groups like independent artists. Moreover, the area is public property but part of its management belongs to the private sector. Thus, a synergy between public and private is necessary to ensure the openness of the space to society. This area has great potential, but its complexity requires new forms of collaborative governance models.

In order to answer these questions, the research activities use the NEB Impact Model as a tool of negotiation with the stakeholders and the citizens.

4.2 Insights

The interventions provided key reflections on both challenges and opportunities, integrating methodologies such as the NEB IM, participatory observation, creative tools, and stakeholder engagement. A major insight was the need to address multidimensional environment-, culture-, society-, and governance-related impacts. Whereas environmental performance is easier to quantify, cultural and social aspects require qualitative data translation into measurable indicators. For example, community well-being can be assessed through surveys on safety, belonging, or quality of life, while cultural engagement can be tracked via event participation and inclusivity metrics. Measuring societal and governance impacts remains complex, as standard quantitative methods often fail to capture cultural and social change. A mixed-method approach, combining qualitative insights with quantitative frameworks, proved essential for a more comprehensive impact assessment.

The involvement of local stakeholders such as community managers (from organisations and associations of the third sector), researchers, and practitioners from UNIBO proved essential. Open-ended interviews, focus groups, and discussions provided insights into the lived experiences of those directly affected by interventions. The insights in this case are related to the synergy between the private and public sector as the area is property of the Italian Railways (*Ferrovie dello Stato Italiane*). At the same time the management is partially provided by organisations and foundations of the third sector and social economy. This demonstrated that stakeholder engagement is not just a source of data but a key factor in shaping more informed, context-sensitive decisions.

Using creative tools such as mapping, performances, and storytelling revealed the value of alternative methods for both data collection and community engagement. These tools helped communicate complex issues in an accessible way, and they provided new perspectives that traditional research methods

might overlook, e.g. peoples' perception of the urban environment and the role of arts and culture in it. We saw that methodologies from artistic fields, such as the "PhotoVoice" practice,¹⁴ provide significant outputs, e.g. the students and researchers observed the public space together and took pictures, and later discussed them and shared knowledge. We noticed how the different economic and social backgrounds affect our point of view and the proposed design solutions.

Finally, the project underscored the importance of iterative learning. By continuously refining our methodologies based on new insights—whether from empirical studies or stakeholder feedback—we were able to adapt and enhance the effectiveness of our interventions. This iterative approach helped to ensure that our actions were aligned with both the immediate needs of the community and long-term sustainability goals.

Overall, these insights highlight the value of a flexible, integrative approach that combines both measurable and experiential knowledge in order to drive effective, inclusive, and sustainable outcomes.

4.3 First reflections

The sandboxing methodology at DumBO has proven to be an effective framework for understanding urban space reuse. By integrating social science tools, statistical analysis, and an iterative approach, the project has produced valuable insights in the role of temporary concessions in sustainable urban regeneration. This flexible and research-driven methodology offers transferable lessons for similar projects in Italy and beyond. The NEB IM plays a dual role as a measurement and a negotiation tool, structuring indicators such as environmental performance, sustainable mobility, and land use to quantify the impact of interventions. Additionally, non-central actions, while not directly related to core interventions, have expanded the project's perspective, reinforcing the importance of interdisciplinary collaboration and indirect contributions to complex urban projects. As DumBO evolves in response to a transformative and fluid society, key stakeholders—including private entities, cultural associations, and the municipality—envision an increase in green spaces and cultural areas. The project team plays a crucial role in facilitating participatory planning, ensuring that the future development of DumBO remains inclusive and responsive to community needs.

¹⁴ See paragraph 4.1.1.

5. The impact of CrAft in Bologna

The CrAft project provided us with the opportunity to create truly actionable futures by engaging communities, young researchers, students, and local stakeholders. Most of them come from the fields of arts, culture, architecture, urban planning or management. Through this process, we recognised the crucial role that beauty and aesthetics play in achieving sustainability and inclusion in our city. In other words, we explored new ways to live and work better together. Furthermore, collaborating with other Sandbox cities highlighted the importance of alignment in addressing current challenges and the potential to find common solutions.

CrAft taught us a valuable lesson: how interdisciplinarity and multi-scale approaches can enhance the quality of urban environments and facilitate the exchange of best practices across Europe, helping us build a “community of practice.” This open community refers to a network of professionals, researchers, and stakeholders committed to shaping more sustainable, inclusive, and resilient urban spaces. This collective effort helps cities move beyond isolated solutions, fostering a shared vision for the future of urban development.

In the city dimension, the project fosters a sense of empowerment among local communities through the participation of residents in shaping their future. For instance the public initiative of “Bologna Missione Clima” that took place in DumBO was a public invitation to citizens to be more participative and active. By bringing together diverse stakeholders, UNIBO was an active contributor in this Mission and brought some good practices from the CrAft experience. “Bologna Missione Clima” enabled the exploration of creative solutions to urban challenges, inspiring new projects and initiatives that otherwise might not have been possible.

Workshops (for example the workshop of the three Sandbox cities in May 2023 and the European Night of Researchers in October of the same year), discussions, and collaborative initiatives (as presented previously) promoted knowledge-sharing among young researchers, students and the community. It also provided valuable learning experiences for local stakeholders, equipping them with tools to address future urban challenges. In the DumBO space, our research team tested the NEB IM which provided new key elements to improve the quality of the urban district. On the other hand, we understood that the collaboration with the stakeholders was necessary for the research to continue.

Our methodology based on creative tools, such as the NEB IM as a way of negotiation and assessment, interviews, focus groups, and small performances helped to explore together new ways of collaborative governance models and respond to the challenges that contemporary cities are facing.

Through our work in the DumBO space, we had the opportunity to test our scientific skills as researchers and work in very different layers. The most difficult part was to map the territory (in terms of having a quick overview of the area, starting by its morphology and identification of district borders), as DumBO is a complex and huge district, and to report its strengths and weaknesses. Another critical point was to collaborate with all the realities that co-exist in DumBO. We found out that we would not only use the NEB IM as a measurement tool, but that it could also be our “mediator” in discussions with stakeholders and other experts.

The specific impact categories and the indicators helped us to better explain the focus we need to have in our pilot case study, e.g. the environmental performance, the social-cultural aspects, and the governance. We think that the NEB IM the way we used it here (as we reported in the chapter 4), could be an applicable tool for other cities and reinforce the role of research and innovation in the transition era towards climate neutrality.

6. Conclusions and Lessons learned

The valuable collaboration with DumBO has offered insights from diverse fields of expertise. While participants provided crucial data, challenges arose in translating findings into practical applications due to multiscale bureaucracy and stakeholder coordination. Integrating research outcomes more deeply into the area's planning remains essential. A key issue was bridging the gap between academic perspectives and the realities of a privately driven space like DumBO. Strengthening collaboration with organisations, foundations, and the third sector is crucial. Engaging stakeholders from the early stages and facilitating co-creation through collaborative workshops can enhance knowledge exchange. A flexible framework within the NEB IM should accommodate private interests while maintaining adaptability in research metrics.

For example, the study revealed limitations in applying indicators like the ones related to the Life Cycle Assessment (LCA) analysis at the district or city scale, highlighting the need for tailored evaluation tools. Additionally, qualitative indicators related to social, cultural, and governance aspects require more nuanced approaches beyond traditional metrics. Collaborative governance plays a critical role, ensuring diverse stakeholders—public institutions, private actors, and communities—contribute to decision-making. Building trust through transparency and ongoing dialogue fosters meaningful participation, particularly for marginalised groups. A balanced top-down and bottom-up approach, with tools for active community involvement, can improve engagement and urban transformation.

These lessons emphasise the need for adaptive models, inclusivity, and a balance between quantitative and qualitative assessments. Strengthening governance and stakeholder collaboration will help cities tackle environmental challenges, reduce social inequalities, and foster innovation-driven urban development.

Strategies for changing

Strategies for changing are important to improve the research methodologies for tackling the crucial topic of urban spaces upgrade. The DumBO space with its multifunctional role outlined the importance of understanding the problems of the communities and transforming the urban areas into more sustainable and inclusive neighbourhoods through arts and culture.

As we used different methodologies, including the NEB IM, we noticed the necessity to find the right communicative tools and to have a more direct approach when facing local realities.

By using the NEB IM we saw the potential of the tool, on the other hand we don't expect to implement change overnight as the process is long.

Moreover, we need to constantly invite people to participate through creative and innovative actions, provide a more extended training to new members in the research team and/or to external collaborators. Last but not least, each step of the research must be carefully planned in order to better address the project goals and targets and hence lead to significant results.

The potential of the artistic, cultural and creative sectors

The role of the artistic, cultural and creative sectors is valuable for the transition towards climate neutrality. In the city dimension, many interventions related to tactical urbanism mentioned above, see the creative sector contributing with artistic tools such as murals and graffiti to enhance temporary space use. In the district dimension of DumBO, the engagement of local artists communities and independent artists encourage new ideas and artistic and creative expressions inside cultural hubs. The cultural hubs as presented in the pilot have a significant impact on the ecological transition as well. As they are frequented by many people, they can positively influence citizens' behaviour to adopt more circular practices in everyday life.

Arts and culture are ways to regenerate degraded areas considering the identity of the urban landscape, its challenges, peculiarities and strengths. People understand the significant role of arts and culture in climate neutrality, and that is a multilayer approach. People become more open to integrate beauty and aesthetics in their lives and explore new forms of social participation through activism.

References

Allmendinger, P.; Tewdwr-Jones, M. (2002). *Planning Futures, New Directions for Planning Theory*, Routledge, London & New York, 2002, pp.22–23.

Aroles, J., Bonneau, C., Bhankaraully, S.(2022). Conceptualising ‘Meta-Work ‘in the Context of Continuous, Global Mobility: The Case of Digital Nomadism, *στο Work, Employment and Society, Continuous, Global Mobility: The Case of Digital Nomadism, στο Work, Employment and Society*, Issue 1–18.

“Bologna Missione Clima”, <https://www.bolognamissioneclima.it/> (Last accessed: October 2024).

Bologna Welcome, <https://www.bolognawelcome.com/en/press-news/press-release-tourism-in-bologna-in-2022-numbers-economic-impact-and-visitor-preferences> (Last accessed: October 2024).

“Collaborare è Bologna” project, <http://www.comune.bologna.it/collaborarebologna/> (Last accessed: October 2024).

Comune di Bologna, Assemblea cittadina per il clima, <https://www.comune.bologna.it/partecipa/percorsi/assemblea-cittadina-per-il-clima> (Last accessed: October 2024).

Comune di Bologna, La popolazione bolognese nel primo semestre 2023, <https://www.comune.bologna.it/notizie/popolazione-bolognese-primo-semester-2023> (Last accessed: July 2024).

Fondazione Innovazione Urbana (Fondazione IU Rusconi Ghigi) <https://www.fondazioneinnovazioneurbana.it/notizie> (Last accessed: July 2024).

Foster, Sheila and Iaione, Christian, *The City as a Commons* (August 29, 2015). 34 *Yale L. & Pol’y Rev.* 281 (2016), Available at SSRN: <https://ssrn.com/abstract=2653084> or <http://dx.doi.org/10.2139/ssrn.2653084>, pp. 334–349.

Lave, J., & Wenger, E. (1991). *Situated learning. Legitimate peripheral participation*. Cambridge University Press.

“ROCK” project, <https://www.rockproject.eu/> (Last accessed: October 2024).

Thompson, N. (2015). *Seeing power. Art and activism in the twenty-first century*. Melville House.

Vélez-Vélez, R., & Villarrubia-Mendoza, J. (2019). Interpreting mobilization dynamics through art: A look at the DREAMers movement. *Current Sociology*, 67(1), 100-121.

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems thinker*, 9(5), 2-3.