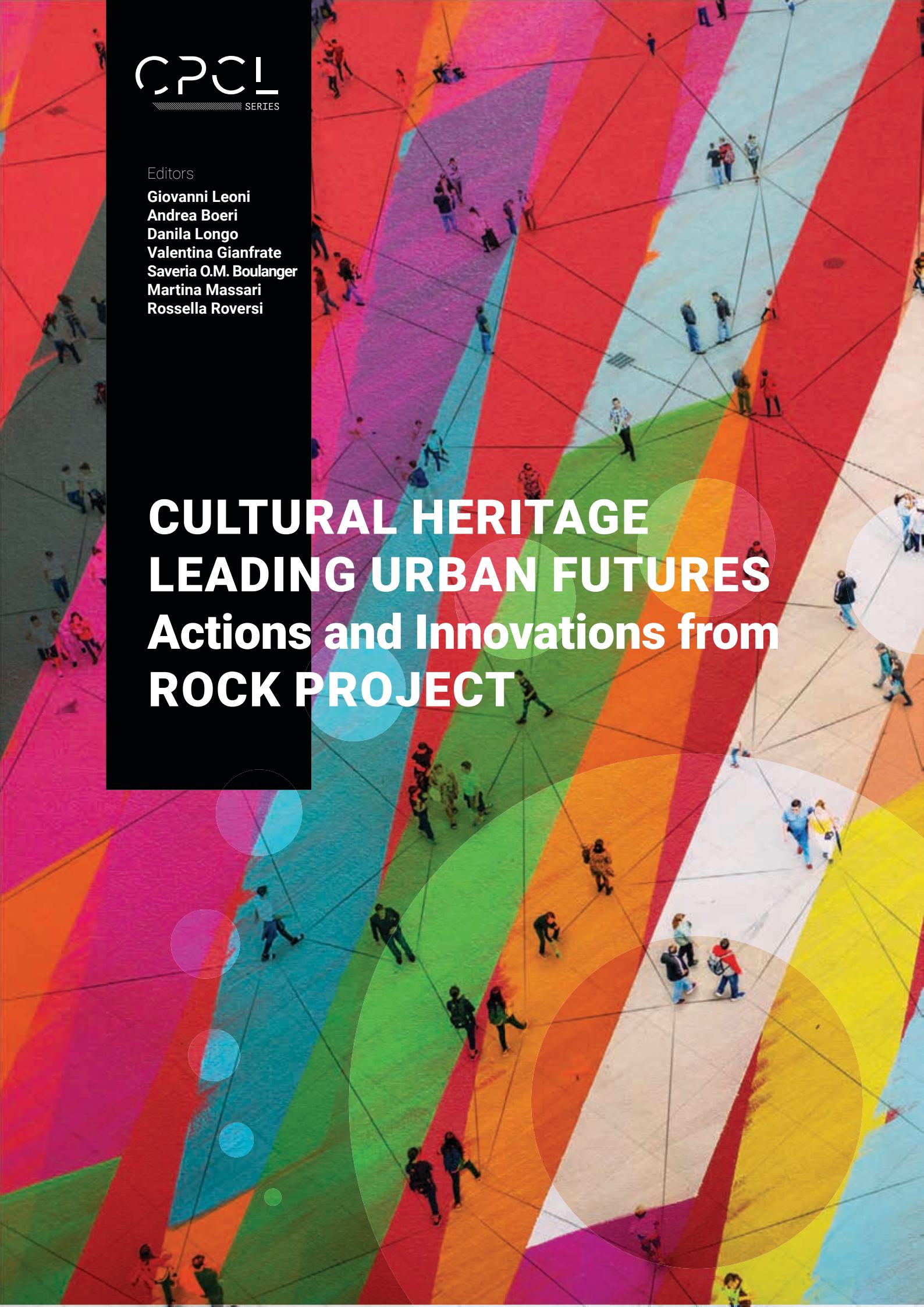


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CULTURAL HERITAGE LEADING URBAN FUTURES

Actions and Innovations from ROCK PROJECT





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Regeneration and Optimization of Cultural heritage in creative and Knowledge cities

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ROCK

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COORDINATOR

Comune di Bologna

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ROCK



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The ROCK project sees historic city centres as laboratories to demonstrate how Cultural Heritage can be an engine of regeneration, sustainable development and economic growth. ROCK approach foresees the systemic and flexible application of a series of role-model practices in the testing sites of three Replicator cities, to turn historic city centres afflicted by physical decay, social conflicts and poor life quality into Creative and Sustainable Districts.

This book provides an overview of the project, extracting themes, material and final remarks from the Open Knowledge Week "Cultural Heritage Leading Urban Futures", held on 27-30 October 2020. Over the past three years, ten ROCK cities – Athens, Bologna, Cluj-Napoca, Eindhoven, Lisbon, Liverpool, Lyon, Skopje, Turin, and Vilnius – together with service providers and knowledge brokers have tested and advanced numerous soft and hard tools, collaborative approaches aimed at shaping sustainable, heritage-led urban futures. This book shows their shared results, best practices and lessons learnt from interdisciplinary research, innovative action, dissemination of knowledge and creation of new synergies at European level.

DISCLAIMER

The sole responsibility for the content of this publication lies with the ROCK project and in no way reflects the views of the European Union.



Piazza Rossini, Bologna photo by Margherita Cardilli

Introduction

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ROCK– Regeneration and Optimisation of Cultural heritage in creative and Knowledge cities”–(grant agreement n° 730280) is a Horizon 2020 project, funded under the Work Programme 2016-2017 Climate action, environments, resource efficiency and raw materials, topic Cultural Heritage as a driver for sustainable growth (SC5-21) as part of the call Greening the Economy, third Horizon thematic pillar on Societal Challenge. Within its almost four years of activities, the ROCK project engaged 33 partners across 13 different European countries, ranging from institutions such as municipalities and universities, research centers, local associations, cities networks and technology providers. Bologna started the process, being the Municipality the project coordinator and the University the scientific guidance, thus strengthening an already proven collaboration.

Within this framework, the project’s field of investigation foresaw the release of CH from purely financial logics (e.g., support for heritage in terms of patronage on the one hand, the subordination of any action on heritage to an immediate economic advantage on the other) in order to insert it in broader economic and development processes: both social economy and increase in knowledge, creativity and overall quality of life.

ROCK project focused on historic city centres, intended as living laboratories where demonstrating how Cultural Heritage (CH) can become an engine of regeneration, sustainable development and economic growth, in line with the necessary climatic transition. ROCK project aimed at overcoming the idea of CH as an asset subject to accessory and isolated interventions and policies, only treated in its functional dimension with the objective to regain an investment with its reuse, but it can be the engine of an “adapting” reuse in which values are brought back to the entire community in its tangible and intangible dimensions. As part of

the complexity of cities, CH is dynamic and its inclusion in urban policies must consider its evolution in time and in parallel with the community producing and using it.

The ROCK project chose the city as a field of action and research, mainly because of the density of problems it poses in relation to the CH valorisation and conservation. More specifically, it has focused on historic European cities considered as a viable model and an alternative to the processes of metropolisation and gentrification of any urban reality. A model for a city of social inclusion, knowledge and creativity.

The project envisioned an innovative, collaborative and systemic approach to promote the effective regeneration and adaptive reuse in historic city centres by implementing a repertoire of successful CH-led regeneration initiatives, already tested in the Role-Model cities and inserted in the Replicator cities environment not as a mere reproduction but with a guided mentoring approach. A series of role-model practices were implemented in three testing sites in the cities of Bologna, Lisbon and Skopje, supporting the transformation of historic city centres afflicted by physical decay, social conflicts and poor life quality, into Creative and Sustainable Districts.

ROCK proposed a change of perspective in the development and reading of CH-led regeneration processes implying a new attitude in re-building community of practices and cultural ties.

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The most important aspect of the transformation processes triggered by the ROCK project, is the ability to activate collective actions aimed at capturing in every act of urban modification a dynamic construction of CH for all. To be effective, the process implies that each action is based on social inclusiveness, universal accessibility and open knowledge. Indeed, the undertaken actions do not affect specific cultural realities, but they intercept and cross a large number of citizens, among specialists and non-specialists.

In this sense, the public spaces of the historical city centres represent a temporary instrument contributing to the mediation of differences, the creation of arenas of intercultural negotiation and dialogic co-creation, and the generation of a sense of belonging and care for the cities' common goods. At the same time, underused buildings became new cultural epicenters for the renewal of the local community memories. Neglected resources are renovated, and new services are developed in a collaborative effort among the local ecosystem of stakeholders, the institutions, the Universities and citizens themselves.

The main result of ROCK consisted in the development both of a methodology and of an operational framework (cultural, technological, managerial), valuable and effective in different urban realities. The

application of these two shared elements has started and will continue to facilitate the comparison and collaboration between the 10 ROCK cities without inhibiting the site-specificity of places and communities, and without imposing a unique and standardized interpretative and operational model. A balance has been sought on the one hand between the sharing of methods and values in a European perspective and, on the other, between the respect and enhancement of the specificities of places, attributing to the term "place" a broad interpretation that includes its physical, social, political, cultural and memorial structure.

This result was achieved thanks to the implementation of pilot actions, supported by specialized and innovative skills, which are not only able to intercept all the cultures of the city but also to redefine themselves by supporting processes of empowerment in a circular process. This generates a constant, mutual transfer of knowledge between specialized knowledge and ordinary "skills" of the "citizens", i.e. every actor operating in the city, whether his presence is stable or temporary.

The implementation followed an action-research approach, tackling the daily and ordinary life of the city, strongly neglected by the design cultures in the recent decades in favor of more striking themes and of greater communicative effect.

The project activities started in January 2017 and ended in December 12. The present book comes at the end of the project and intends to provide final reflections and an overview of the activities carried out over the years, without representing a detailed scientific or documentary account.

The first section of the book is aimed at the general presentation of the project. In the first part, the organizational and management efforts that allowed the development of a fruitful cooperation among all the involved partners and the opportunity to share knowledge, competences, skills and experiences are highlighted. The second part introduces the main theoretical and scientific premises of the research as well as the developed scientific and disciplinary results, described further in the volume, but mainly focuses on the innovative research-action-research methodology, that subverts the consequential logic typical of the modern design process. The research-action-research in ROCK, represents a dynamic way to create new paths of knowledge to rethink the evolution of historical centers and prepare them for future challenges. In this perspective, the upgrade achieved by the ROCK project involves bringing the theme of CH back to the heart of primary political choices, placing the issue of memories and cultural identities of communities at the foundation of every economic and social program. Therefore, ROCK is putting on the spot the cascading role of identifying key piloting actions having impacts on the entire society.

The second section is dedicated to the storytelling of the implementation of cities actions: a repertoire of successful heritage-led regeneration initiatives related to the 7 Role-Model cities (Lyon, Turin, Liverpool, Vilnius, Cluj, Athens, Eindhoven) that tested the replicability of their strategies in 3 Replicators cities (Lisbon, Skopje, Bologna). After the description of the methodological framework and the project strategy, a catalogue of ROCK Cities Actions resumes the most significant interventions to identify the enabling conditions, technologies and communication measures able to maximize the impacts. The project has involved more than a thousand people across knowledge creation, co-designing, co-construction and co-developing the future of CH in the cities. The impacts of this process include socio-economic outcomes in the rediscovering and reactivation of urban areas and their urban cultural heritage in previously neglected spaces, setting an important precedent in the new practices of citizen involvement and heritage valorization. In this perspective, the demonstration areas of the Replicator cities are transformed into experimental labs where a systemic transformation process is implemented and monitored to be eventually synthetized into three site-specific Integrated Management Plans (IMPs), aggregating shared principles, local strategies with site-specific CH-led regeneration tactics.

The third section deals with the outputs related to the three main domains of innovation: organizational innovation, technological innovation, social innovation. Thanks to ROCK, cities had the opportunity to adopt technological tools and to develop unique capabilities to harness their distinctive potential through an innovative mix of technology, citizens and community engagement, physical transformations, new uses and activities. The flexible implementation methodology, the variety of solutions and the multiple scenarios co-developed and tested within the project offer other cities in Europe replication possibilities to capitalize on local cultural potential through innovation, communities, entrepreneurship and digital technologies, all brought together in the open innovation ecosystem.

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The third section includes an Innovation Portfolio displayed in tables, aimed at presenting ROCK tools and their added value for stakeholders and potential users.

During the ROCK Open Knowledge Week "Cultural Heritage Leading Urban Futures", the final ROCK conference, a special room for displaying innovations was available: it was possible to visit the virtual booths of ROCK partners presenting technological solutions and discover relevant EU projects focusing on cultural heritage.

The conference, to whom the last contribution of section 3 is addressed, marked the closure of the ROCK project. It was held online on 27-30 October 2020, due to the pandemic Covid emergency that prevented

the possibility to organize events in presence. The conference was transformed into a virtual journey in which participants delved into innovative solutions that demonstrate how cultural heritage can be the driving force behind urban sustainability.

The book conclusions point out the role of CH in urban sustainability and the related topics, considered essential by ROCK to its fulfillment, such as Access, Sustainability and Innovative Partnerships. The contribution closes addressing climate change issues that are impacting on communities and their environment and impose future challenges on CH: another example on how societal and urban transformations require a global and interdisciplinary approach for facing future threats and CH may play a leading role in urban futures.



ROCK PROJECT

Presentation of the Project

Francesca Bruni, Municipality of Bologna

Osvaldo Panaro, Municipality of Bologna

The Knowledge City and the Creative City concepts have been the underlying principles that have guided the formulation of the ROCK project since 2016, engaging the two main city institutions, the Municipality on the one side, with the role of project coordinator, and the University of Bologna on the other one, providing scientific guidance, in leading the implementation of such an articulated project, that has allowed to seal new partnerships both at the city level and at the international one.

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ROCK - Regeneration and Optimization of Cultural Heritage in creative and Knowledge Cities - has indeed represented a great opportunity for fruitful cooperation for all the partners that were involved in working together, defining a series of activities, adopting a multidisciplinary approach and sharing competences, skills and tools.

Indeed, ROCK has brought together 33 organisations across 13 different European countries. It has involved 10 major European cities and 2 city networks, Eurocities and Iclei, supported by Universities, among which our prestigious University of Bologna, as well as research centres, business organisations and technology providers, all committed to demonstrate how Cultural Heritage can be a driving force for cities in supporting their development policies, and bringing multifold benefits to cities and society at large.

This wide range of partners has brought together different excellences and expertise throughout Europe in order to share their own experiences and results: accessibility to cultural heritage, environmental sustainability, participatory practices and the promotion of new partnerships and collaborations have been the key principles underlying the development of the project.

All this would not have been possible without the contribution of the European Union, through its Horizon 2020 programme for research and innovation, that has allowed these organisations to work together for almost 4 years, sharing research findings, practices, expertise and know-how towards the identification of innovations that have been tested on the ground, in real urban contexts.

Over the past four years, ten ROCK cities – Athens, Bologna, Cluj-Napoca, Eindhoven, Lisbon, Liverpool, Lyon, Skopje, Turin and Vilnius – have worked with service providers and knowledge brokers to experiment and advance numerous tools and approaches aimed at shaping sustainable, heritage-led urban futures.

ROCK is a concrete example of how the European Union can bring tangible benefits to cities, which have become, during ROCK, living laboratories, where innovative solutions to new challenges have been conceived and experimented, to make our cities livelier and more cohesive, using cultural heritage as a main lever.

As a matter of fact, for some time now, Europe has no longer been just an affair of foreign policy, but a fundamental dimension of city government. Similarly, after a long process during which cities have struggled to be recognised as key interlocutors by European institutions, Europe itself has now recognized the crucial role of cities, and the fact that they should play a proactive and positive role in guiding the definition of European policies.

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This is because they are the places where policies are put into practice and where the epochal changes we are experiencing are most visible and impacting on people, and at the same time they are the spaces where the greatest number of resources, both economic and intellectual, are concentrated. They therefore play a major role in responding to the global challenges of our time, such as climate change or the production and management of cultural heritage.

In order to be effective, however, cities cannot remain individual entities, but alliances, such as networks of cities, must be enhanced, since they can provide new input to imagination and allow the sharing of experiences, knowledge and innovative tools.

ROCK has provided an exceptional example of this, allowing to start and strengthen strategic alliances with other actors and cities across Europe that share the same challenges and the same ideals, in this case around the topic of Cultural Heritage, which has been put at the centre of a circular process capable of giving birth to new and unexpected generative processes in our complex and delicate urban settings.

As regards the city of Bologna, culture and cultural heritage have been driving forces for recovery also during these last difficult months.

Since the lockdown, Bologna has redesigned summer activities and cultural initiatives of the city and the whole territory, to adapt to the new situation.

The opening and unconventional use of spaces for different uses and different audiences, the discovery of what we have called hidden treasures of the city and the provision of a variety of cultural experiences have been core elements in ROCK. During these almost four years of ROCK project, different types of actions have been carried out in our European historical centers, each one inserted in a global vision, concurring to achieve integrated targets and objectives and according to the vocation of single spaces. In Bologna for example, within the frame of the University Area, we have tested innovative "green" strategies for urban regeneration, such as the case of Piazza Rossini, transformed from a parking lot to a new space for human and urban relations. Together with many citizens and university students, we have co-created and co-designed collaborative and participatory pilot projects that will redefine the next future of culture, in terms of sustainability and accessibility.

On the other hand, in a fascinating capital as Lisbon, the action of ROCK has been concentrated on empowering residents of the Marvila and Beato district, geographically and culturally separated from the rest of the city, by making their story part of the narrative through the Interpretive Center, born in the local library and acting as a cultural center where local people's memories are stored and protected in order to bring people closer to local history and local cultural heritage.

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Moreover, in the urban context of Skopje, ROCK brought different actors and stakeholders to work together for the regeneration and protection of the city centre, mainly around the area of the historic Old Bazaar, also testing new technological solutions in order to revive areas almost completely disappeared, like the old Jewish Ghetto, or enhancing cultural heritage through high quality events like the Light Festival, started thanks to the fruitful knowledge exchange with other ROCK cities.

Consequently, the excellent results achieved within the three Replicator cities, as well as in the other cities involved in the project, do not represent the "conclusion" of our activities: the experiments carried out in recent years are rather a "new beginning" to continue the complex paths of urban regeneration in historic centers. In particular, in this moment of serious difficulty worldwide, we will make our best to share and exploit what we have learned during this incredible experience.

To end up, a thank you to those who have made this possible, a thank you to those who have worked on it, a thank you to those who believe in it, a thank you to Europe!

Motivational

is Unlocked

innovation
and great communication
lead to a City -
we need to identify
existing models + ideas
orange
disruptive

INFLUENCE

Maximize your work
partner = open source
or network with
the private sector!

VALUES

OPEN DATA

Technology allows
citizens to report
problems
Participatory Budgets

IRAKKIO

STRONG TEAM
WORK ON
ENGAGING CITIZENS

A citizen will
make a decision
to make something
happier than before

Our team provides
opportunities for
collaboration based
on people & their mutual
value requests so
using our skills

Problem:
Challenge is
getting people
to begin.

- to break it up
- making systems
more user friendly
(hard challenge - no easy)

Changing the
middle path +
traditional views
of public servants
in city hall

The City Council
needs convincing
that non-traditional
paths to new
ways are really valuable/
practical tools!

changes
not those
not high

INFLUENCE →

conviction
decide
decide

g

fitting role
but for a particular
thing it

IRAKKIO

GETTING CITIZENS
TO TALK ABOUT
WHAT THEY NEED

People need to
work together
and help one another
to come up with
ideas to make it
all to work /

LICEN

BUREAUCRACY
can be

IRAKKIO

VALUES

the public
service trying
to become
smarter

INFLUENCE

DECIDE

A Great Team-Play for a Great Challenge: the ROCK Project from the Management Perspective

Silvia Bartoloni, Municipality of Bologna

Pamela Lama, Municipality of Bologna

Giuliana Mazzocca, Municipality of Bologna

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More than four years have passed since when, together with the University of Bologna, we decided to take the opportunity to work on what would have been an extremely challenging but, at the same time, a truly enriching experience for all the people that have been involved in it, unveiling, since its very beginning, its potential of generating new and sometimes unexpected results, as the ones narrated in this publication.

If, on the one side, the University took the scientific leadership of the project, on the other side, the Culture and City Promotion Department of the Municipality of Bologna, through its International Relations and Projects Office, accepted the challenge of coordinating such a complex and ambitious project, as ROCK is, whose conception had started from a real need of the city, and whose resolution required the adoption of an interdisciplinary and inter-institutional approach since the very proposal preparation phase.

This need turned out into the creation of a "ROCK office", an open working area which was set-up at the municipal premises, bringing together both University and municipal staff to collaborate on a daily basis, to share know-how, expertise and different approaches and methodologies, and to find the best solutions for the accomplishment of the common aim.

As a matter of fact, since the proposal was conceived, it was evident that innovative structures were needed to modernize traditional working relationships, by putting the different realities on the same level, facilitating collaboration among the variety of actors involved, while changing mind-sets and breaking the traditional silos, speeding up the often too

long procedures in order to lighten the bureaucratic loads, which often characterise the action of the public sphere.

Managing a Consortium of 32 organisations from 13 countries across Europe - 33 if we count one partner which terminated its participation prior to the project's end - is not a simple task, considering not only the high number, but also the different geographical origin and cultural characteristics of the partners, as well as the different types of beneficiary organisations: technology providers, public administrations, universities, networks, non-profit entities, each with its own background, expectations and different levels of acquaintance with the H2020 programme and its governing rules.

On the other hand, the variety of partners, while representing a complexity in terms of management, coordination and monitoring of progress, also proved to be the strength of a project that aimed to unveil the potential of Cultural Heritage to trigger positive changes in very delicate, controversial and composite urban contexts, which required the deepening of a variety of transversal themes and the implementation of a whole series of different actions. This aspect also required a great effort in terms of adopting continuous communication and feedback mechanisms to monitor project activities and the use of resources, both at the level of the individual partner and at the level of the Consortium as a whole. The constant communication with partners, as well as the availability for supporting individual organisations in respecting deadlines and in responding to the contractual and financial requirements of the Programme, also through the provision of training sessions and assistance, has been challenging for the management team, which have nevertheless guaranteed a smooth project implementation, a good flow of information within the Consortium and a timely identification of criticalities.

It is evident that this complexity requires a longstanding experience in EU project management, as well as a variety of skills and the continuous acquisition of new knowledge. An example was given by the introduction, by the H2020 Programme, of an Ethics Review Procedure, which brought to the inclusion of a specific Work Package dealing with Ethics Requirements, and which included the realisation of periodic Ethics Checks, two of which undergone and successfully overcome by the ROCK project, to evaluate the project's compliance with the Programme's guidelines in terms of ethical issues and, concerning data treatment, with the new GDPR Regulation entered into force. This required the activation of specific expertise on the topic and the provision of adequate training for both the management team and the partnership, to comply with these new requirements.

Needless to say, the project initial workplan had to be adjusted along the project life with 5 amendments, and extended in duration also to

cope with the actual worldwide sanitary emergency situation, reflecting the complexity of a project whose different components are strictly interrelated in what has been defined as a circular process. Similarly, ROCK working group experienced several changes, with beneficiaries going through re-organisational processes, and cities changing their political assets.

Evidently, it has been harder to reach the targets within the given contractual and time framework at the Coronavirus era, when the pandemic has considerably slowed down the completion of actions whose implementation was taking place right in those public places where people could no longer go.

This has required not only the setting-up of adequate and flexible mechanisms for anticipating and reacting to complex situations and unforeseen events, like the one we are living today, but also mutual cooperation and a strong commitment of the partnership, which has been nurtured and grown along with the project development. A sudden and great creativity effort at transversal level has been requested to the whole consortium, but the consolidated fruitful group collaboration deeply helped partners in finding alternative ways of working together and in converting many of the project events to a different - often online - format, once more fostering the acquisition of new skills and competences.

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To sum up, the capability of putting in place a constant and effective communication flow within and outside the Consortium and the setting-up of procedures for periodically monitoring progresses at the overall project and single partner's level, while assessing the quality of project's achievements, has been a key asset of the management team, as well as the multidisciplinary collaboration of the specifically created ROCK task force group, supporting partners, in particular cities, in overcoming the most complex situations, working together to find possible solutions.

From local experiences to European stages, knowledge sharing and collaboration permeate the whole project, definitely being one of the main success factors of the ROCK experience.



Cultural Heritage as a Common

Giovanni Leoni, University of Bologna

In H2020 the topic of Cultural Heritage (CH) entered not as a protagonist but rather as an articulation of other subjects that in the vision of the programme seemed evidently more urgent and, one might say, dominant. The resulting tensions have been considerable and with both negative and positive implications, all the more evident in research programmes related to cities and landscapes.

The most obvious negative aspect has been CH's subordination to a financial logic during the H2020 programme's design phase, seeing heritage as a cost – in a logic of patronage or public investment – instead of as a possible trigger for beneficial economic processes, both for the financial economy and above all for the social economy.

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The prevailing desire to make CH actions attractive to the business world has also, on the one hand, attributed to the development of CH-related technologies a predominantly non-instrumental role but rather of guiding cultural programmes, and on the other hand has too often converted cultural policies on the city and the territory to marketing. A return to the market that at the end of the programme does not seem to be winning and seems to have led the European Union to a reorientation of the topic, as we shall now discuss.

However, it cannot be denied that there has also been a process of redefinition of the CH field, not determined by a central direction but instead a result of the projects implemented and supported by the H2020 programme, and that, while there is inevitably still no articulated conclusion, has led to the spread of practices and experiments that are also highly innovative.

The ROCK Project has the ambition to have contributed all it could to this innovative action, and is presented at the end of its activities in this light.

The project has of course developed specific scientific and disciplinary results described in this volume, but we do not believe that its main value derives from a sole identity determined by scientific consistency.

The project was conceived as a research-action that subverts the consequential logic typical of the modern design process: development by specialists usually based on images; verbal discussions of several subjects, specialised or otherwise; the implementation phase – inevitably specialised – and finally (maybe) a public debate on what has been achieved.

The ROCK project had the ambition, dealing with small daily urban issues, to subvert this relationship between conception and implementation entrusted to specialists on the one hand and public debate on the other, with two methodological and operational purposes.

First of all, do not attribute principles of an assertive nature to the city but rather investigate the potential dimension of the existing by looking for innovation as much as conservation and enhancement in the density of the city, in its latent yet unexpressed energy that can still be unleashed. On a material level this means entrusting the transformation not to grand, extraordinary visions of what the city has never been, but rather to ordinary, daily strategies that assign new uses, meanings and shared values to the existing. On an immaterial level this means leveraging the constant interpretive and, consequently, transformative action that every citizen performs by living/building the city in the collective ritual of daily existence. An interpretation/transformation that, combining individual biography and collective processes, certainly does not exclude markedly creative and innovative outcomes.

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The second purpose, therefore, is the experimentation of a project that incorporates processes of empowerment, of deliberate self-disempowerment of the institutional political actor and specialised knowledge. This empowerment is aimed at seeking a land of uncertainty and invisibility, a city of the excluded. Exclusion not necessarily due to weakness and sometimes as the result of a deliberate desire to exclude oneself from a topic or process that is not of interest or that is considered extraneous by certain actors. Any action of inclusion of those who move in this territory of uncertainty is in itself a relevant political objective but can also lead to an unexpected and qualifying transformation of the city. And this is because typically those who are excluded and invisible to planning and to specialised participation are not elsewhere or different from the city, but rather perhaps account for its majority.

This methodological and operational precondition is not easy to implement in the context of a project financed by the European Community, which, as such, cannot be an action that is freewheeling and with uncertain results but must rightly be subject to well-determined procedures and logics.

The risk was therefore one of seeing a regulatory culture prevail that, moreover, is perhaps the most solid and dominant among the cultures in force in the European Community.

However, if the field of research-action is the city, it is not possible to "normalise" Cultural Heritage for the simple reason that it is not possible to "normalise" places and life for how it takes place in different places. And this because every place is specific, as is the life that takes place there, generating or modifying it. And what makes a place with its life Cultural Heritage is exactly its specificity.

So the challenge of the ROCK Project, as a network of cities, was to establish a field of shared values that gave life to different sets of strategies, actions and policies, with the aim of finally finding a common methodology capable of not breaking the subtle balance between what places can share – values, tools, technologies – and what is and must remain specific and necessarily different place by place.

What the ROCK Project has clearly displayed as necessary is this uneasy balance between a sharable "European" methodology and the understanding, respect and ability to take advantage of what is site-specific in CH and in communities producing it. And this uncertain space between general legislation and local circumstances is a purely political space, not technical.

These are the reasons why, going back to the starting point of the project, we tried to structure it around a set of key concepts intended to guide the actions that were gradually planned, but also to let ourselves be gradually redefined by the actions themselves and their consequences.

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First key concept: a specific adaptation of the circular city model to CH based on what we see as a possible actualisation of the role model represented by the historical European city intended as a powerful topical alternative to metropolitan transformation against what we should define as a forced metropolisation of every urban entity. To do this, we need to replace the idea of CH as a brake on city transformation with the idea that CH is an ongoing creative process extended to intangible values, an agent for the transformation of the cities. This can happen if we take remembrance and innovation not as conflicting actions but as a dual combined action of CH co-creation and co-production.

This connection between CH and creative economy leads to the second key concept: stop committing culture to financial or marketing logics, considering it simply as a cost to be sustained only if possible, as if it were a luxury item (to always be cut first) and place culture back in its proper place, at the centre of urban policies, as the template for any political action in a logic of social economy that means conceiving culture as every city stakeholder's sustained action to create value and common good out of the ordinary affairs of a city.

Transforming culture into an agent for social and economic development leads to the third key concept: first to ease the processes of cultural

exchange to understand the specific characteristics of a place and of a community and then use data and technology, of course, but always subjected or better commeasured to the specificity of the individual place and community. A site-specific use of technology and data according to which technologies are subjected to cities and communities and not vice versa.

This sense of measure about technologies combined with the right that every citizen has to access, share and use the best of what a city is able to produce leads to the fourth and last key concept: taking the task of translating the principles of universalism and local life forms from one to the other. Developing a bottom-up cosmopolitanism as the foundation of a new kind of citizenship interpreting internal and external migration in cities in a logic of transient citizenship, upholding the elements of positivity and enrichment of a city's identity.

Circular model for CH, culture as the core and the template of politics and policies in cities, site-specific technologies, cosmopolitan citizenship: these were the four key concepts to start with. Then what happened happened and is still happening in Rock cities, and this book offers an overview, though certainly not exhaustive.

The Rock project has a programmatically uncertain outcome, but we hope it crossed or maybe triggered some favourable processes in the valorisation, innovation and transformation of cities. We learned so much from the cities involved and from their actions, practices and policies – and of course their people – that we must thank them for their decisive contribution.

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Today we are on the threshold of the new Horizon 2021-2027 programme. In this programme, CH seems to be able to play a more important role if we judge from an evolution that started with the European Year of Cultural Heritage, taken up again with initiatives such as the Horizons for Heritage Research - Towards a Cluster on Cultural Heritage held in Brussels in March 2019, finally leading to the establishment of a cluster entitled Culture, creativity and inclusive society where CH seems able to play a lead role. And the inclusion of culture in a series focused equally on creativity and social inclusion is significant. The close connection between heritage-related actions and political actions shifts the topic of culture from a marginal accessory back to an essential component of the primary political action of local governments. What is remarkable is that this didn't happen before.

After all, if we reverse its typical historical perspective, Cultural Heritage is nothing more than the physical and testimonial persistence of policies implemented over time. In the processes that drive and govern their constant transformation, cities, regions and landscapes are, in a circular way, producers and products of cultures, actions of confirmation or

contrast of consolidated, recognised, institutionalised values, but also of unexpected, random, disturbing materialisations. Cultural Heritage is generated in the non-unique process of a multiform appearance of cultures and is consolidated by subjecting itself to subsequent acts of recognition or disregard, conservation or cancellation.

Culture, if seen as a constant action of production of common values and assets in the modification of the human-made space by each of its actors, is not just a policy among others, much less a set of ancillary actions to be supported according to budget availability, but rather a primary political act connected with the generative process of organised space.

It is pivotal to monitor cultural transformations as they happen, be it the restoration of a valuable building or the construction of a peripheral road. It is necessary to shift the focus of actions onto Cultural Heritage, away from the mere economic restoration of excellence – which is always and, in any case, deserving of unmatched support – and work for the construction of a widespread Cultural Heritage, conceived as the result of public and constantly updated private actions that may offer more solid foundations of sustainability, greater potential for the common well-being and opportunities for new creative entrepreneurship.

H2020 has given us many good, technical answers and excellent, powerful tools. Let's hope that Horizon Europe 2021-2027 will be able to bring us some new, well-thought questions, a new capability to subordinate our technical skills to the specificity of places and communities.



FIND OUT MORE

The ROCK circle (ROCK Circle - credits for the artwork: Margherita Ascari, Zhai Dewei) <https://www.youtube.com/watch?v=Rh4l53CAERI>

Graphic recording and live scribing video at Open Knowledge Week "Cultural Heritage Leading Urban Futures", the ROCK final virtual conference for city officers, policy-makers, urban researchers, cultural actors and civic changemakers. By Nowhere.

Day one: https://www.youtube.com/watch?v=l_g6hjCwl_U

Day two: <https://www.youtube.com/watch?v=tn0r0j7p82s>

Day three: <https://www.youtube.com/watch?v=06NW2xYiUql>

Day four: <https://www.youtube.com/watch?v=2cAFBqx21is&t=163s>

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ACTING IN THE CITIES

Potential City and Real Utopia. Figures of Thought for an Action Research

Andrea Borsari, University of Bologna

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Is it possible to rethink the phenomenon of city and the policies that concern it according to the guidelines that the Rock project has attempted without also questioning the conceptual frameworks, or rather the practices and forms of habitual thought that have focused on it? More specifically, how should we proceed, if we wanted, as Giovanni Leoni effectively summarises in this final report of the study, to reactivate the model of the historical European city without forcing it into a teleology of metropolisation, subtracting its cultural dimension from the imperatives of financial results and marketing to subvert the hierarchy of conception and realization entrusted to specialists, to open up to everyday strategies that lead the existing to new uses and to trigger a reciprocal relationship between universal principles and local forms of life and to develop a bottom-up cosmopolitanism that makes temporary citizenships an enrichment of the cities' identities? Similarly, what steps should be taken to reorient the vision of the city as an infrastructure of material and immaterial infrastructures, which Vando Borghi writes of here, from the economic to the social field and resolve its ambivalence in favour of opportunities for the growth of individuals and communities? The adequate answer, as far as the conceptual dimension and the reference framework of the theoretical-practical tools are concerned, seemed to be that of accompanying the research with a reflection and a redefinition of the categories through which it was interpreted, both in the sense of understanding and performing. In other words, it was necessary to shift the point of view, setting aside an ideational dimension placed before

acknowledging reality and making the findings of the research feedback on its own modalities of detection, thus activating a self-reflective and recursive procedure, as Tim Ingold recently recommended in his reflection on making.

Reflecting this methodology, here we chose to take up two notions that we have tried to formulate or redefine over the course of the research, those of "potential city" and "concrete utopia". In both cases we are dealing with a conception of effectuality that recalls what continues to act and to renew itself without exhausting itself because it exists only in the form of a process, only insofar as it is effective, it produces effects in time and in the world as opposed to the passive acceptance of empirical reality, the superficial level of events.

Potential City

Highlighting the "potential city" means adopting cognitive and experiential strategies aimed at depersonalising the automatisms, the obviousness and the self-evident forms of relationship with the urban landscape in order to bring out the plurality of possible looks at it and its many potential aspects and developments that thus become visible. Starting from the definition of the term "potential" in the context of the Ouvroir de littérature potentielle (OuLiPo) or workshop of potential literature, as a "search for new structures or schemes that can be used by writers" or "constraints" that allow for the creation of new forms of expression and the treatment of the usual subjects in new manners, we can identify some complementary ways of approaching the reality of the city. Some vectors of these and their corresponding strategies for possible exploration are suggested below, all in the aesthetic-philosophical sphere, both as a relationship with the artistic disciplines and with the forms of narration and as a reflection on the modalities of perceptive-sensitive relationship with the world.

The first is to investigate how the city effect is produced, the imaginary or mindscape that accompanies the experience of cities and urban culture. Thanks to this it becomes possible to retrace the different images of cities that have been provided by art, literature, philosophy and photography followed by comics and graphic novels, cinema and television over the last century and a half, abandoning static models of perception and taking on the shape of an extremely variegated matter, addressing to the so-called "megacities" and "post-metropolises", "global cities" and "world-cities", overcoming the urban dimension as a form of life even beyond the physical limits of the city, to the most remote corners of the planet. The second vector aims to focus on the cinema of the big city, starting in particular from the films that shaped the urban experience from the 1920s onwards and allowed large masses of people to metabolise the

acceleration, the synchronisation of time and the contrast between subjective time (and culture) and objective time (and culture) that take place within it thanks to the specific film genre called "symphony of the big city" or City film. While, in short, we can attribute to Paul Strand (*Manhatta*, 1921) the first draft of the genre as a documentary reconstruction of the life of a city, to René Clair (*Paris qui dort*, 1925) the introduction of the narrative dimension and the vision of cinema as a time machine, to Walter Ruttmann (*Berlin. Die Symphonie der Großstadt*, 1927) the use of editing for the circular construction of the city's circadian rhythm and to Ďiga Vertov (*The Man with the Camera*, 1929) for the critical opening with the representation of the point of view that produces the sequence of images within the film itself and with the emphasis on the possibility of indicating different outcomes of the same reality, the film on Paris by the Brazilian director Alberto Cavalcanti (*Rien que les heures*, 1926) allows identifying a framework of choices in the gaze on the city that set apart in an exemplary manner both the medium to be privileged (while painting had already used many different eyes and produced very different images, cinema is more suitable because it is in mimetic harmony with the movement and life of the city) and the inclusion of an element of social criticism in the genre (the refusal to make "elegant life" its focus opting instead for a camera that sinks into the slums). This sort of "elementary grammar" shaped the rich array of possible images of the city throughout the course of film history all the way to the present day.

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A third vector concerns the great plurality of histories that are generated among the archipelagos of contemporary cities, such as New York, São Paulo, Mumbai and Shanghai, and cross them without limiting themselves to statistical surveys, to the diversity of impressions between residents and tourists and to the contrasts that arise, keeping in mind – according to the perspective of the different ethnoscapes linked to global migrations – that there are (at least) two different narratives for each city: the official history and the unofficial history. The first is mostly written with euphoric and jubilant tones, the second is transmitted orally, linked to the circulation of migrants, more sober but destined to last. While wars, inequalities and climate change will make mass migrations the most significant phenomenon of the early 21st century, making these secret histories of cities accessible will be crucial to understanding it.

The fourth vector results from the practice of "exercises of estrangement." Within the OuLiPo, Georges Perec was the author who most closely dealt with the relationship with urban space, the city, the home and the living dimension, as shown in his *Species of Spaces* (1974) but also in the unfinished project of *Lieux* and the various Attempts at Description from a precise observation point within Paris. Specifically, Perec invites us to reset our presumed knowledge, to "proceed slowly, almost stupidly", to force ourselves "to see more flatly", to observe the ordinary as if it were exotic. Through real exercises of estrangement that make the usual

foreign, he teaches us to "decipher a piece of the city" without "trying to find a definition of the city too quickly": "to continue until the place becomes improbable, until you feel, for a brief moment, the impression of being in a foreign city, or better yet, until you no longer understand what happens and what doesn't happen, until the whole place becomes foreign, and you no longer even notice that all this is called a city, a street, a sidewalk...".

Lastly, purely as an example of a starting point for further study, we can point to some already completed experiences of "looking at the other" (e.g. the point of view of "reverse ethnography" through the eyes of some foreigners from Africa who settled in Bologna for a certain period of time, in the early stages of the great migrations that are still underway) or the "gaze of the other" (another example, the maps of "urban ethnography" traced by following the paths of the marginal) and the contrasting images of the city that could be systematised in a possible parallel reading of TV detective series set in Bologna (on the one hand the nocturnal city, ironically styled along the lines of NYPD and crisscrossed by the great flows of the criminal economy, migration and global processes à la Lucarelli-Coliandro 2006-2018, and on the other hand the provincial one, still, all things considered, Pupi Avati's film like and reassuringly sad even in its most transgressive expressions, à la Macchiavelli-Sarti 1991-1994).

Real Utopia?

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First established as an imaginary geographical space, an island or an ideal city, a perfect term of comparison for the inadequacies of the world, then as a place projected into the future as prospective compensation for present miseries – welfare instead of poverty, knowledge instead of ignorance, freedom instead of oppression – in the last century utopia went through the whole parabola that goes from aspiration to realisation on earth to its overthrow in total control over individuals and their potential and in the dystopia of nuclear or social and climatic-environmental catastrophe. For some time now, however, the closure of the horizon to the present of the lives of each of us that has resulted – as exclusive attention to the irredeemable time of the transience of our bodies and our biography – has shown many cracks, for example in the form of the "retrotopia" proposed by the sociologist Zygmunt Bauman, a nostalgia for the certainties of the past to which to entrust the hopes for improvement, but also of the "realisable utopias" which the architect Yona Friedman has written of, for small, self-sufficient critical groups, or the "utopias for realists" suggested by the historian Rutger Bregman, an agenda of practical goals to disrupt the lack of alternatives to the hegemony of neoliberal thinking, and the "everyday utopias" developed by legal scholar Davina Cooper, which seek to trigger transformative politics

by creating situations where conventional practices are implemented in non-conventional forms.

In this context, is it possible to rethink the oxymoronic tension between seemingly opposing terms contained in the non-place of utopia and the dense and resilient presence of concreteness? Is it possible to think of a "concrete utopia"? To this end, it is necessary first of all to oppose an unsalvageable conception of reality, an idea of the world we have in front of us as a granitic whole that moves in a direction already decided by the way it is made, in order to privilege its porosity, its openings, the interweaving of different layers and possibilities. In other words, it is a question of searching the present for all the unexpressed possibilities that it contains, the latencies, the possible developments that every place and every moment can reveal. A "being already of the not yet" to say it with the paradoxical expression of the spirit of utopia. Something in the urban dimension that can be translated into an exercise of estrangement with respect to the habitual vision that we have of single spaces of the city and of the architecture, as well as of the forms of relationship between people that take place in them and that they prescribe – a sort of gaze devoid of pre-judgements, that goes back to early childhood experience – to identify the scars of what they have not been and could have been, and together the traces of what they could be and express, altering the usual relationships. But also in an exercise of shifting the point of view, placing ourselves in the visual angle of the different actors involved, paying attention to the tacit forms of presence of people as well as things, transforming the background given for obviousness into the foreground of our focus. In the same way, it becomes possible to identify and carry out a series of circumscribed actions that interrupt the usual perceptions, disrupt the given order, release unforeseen energies and impose different and better perspectives. In short, the passion for the concrete utopia places us in relation with the attention to the potential city that is already around us.



Culture in the City. Infrastructures and Real Utopias, in Three Steps

Vando Borghi, University of Bologna

Infrastructures of connectivity

We live in a space deeply encoded by a sort of global infrastructure. We continually experience its effects on the ordinary scale of our daily lives, and indeed it is precisely that daily dimension in which the global infrastructure imposes itself in the format of the natural objectivity of things and the inexorable way with which they are in relation to each other. These infrastructures are inextricably tangible – railway or motorway networks, oil and gas pipelines, Internet backbones, extractive plants, containers and goods warehouses – and intangible – the Internet of Things, consumer profiling data, logistics models, standards that establish measures, formats, intensities. A multiplicity of infrastructures constantly at work, increasingly synchronised with each other and particularly pervasive in our forms of life. Socio-technical systems in which forms of extra-state power, much more agile and faster than the public actor, penetrate and significantly affect its ability to regulate. From the containers in which goods reach any place in the world to the software and online platforms through which, for example, we order those goods; from credit cards with a systematic thickness of 0.76 mm to be used in any ATM in the world to the security standards of buildings and homes: every aspect of our lives bears the signs of the presence of infrastructure effectively functional to the production and control of connectivity.

In fact, connectivity and the social imaginary through which it takes shape are a historically determined and therefore changeable product. The peculiarity of our time consists precisely in the synchronisation between the imaginary of connectivity and the factory-world, that is, the international division of labour and the global value chains that this global infrastructure allows. In this sense, the pandemic, or rather, as

pointed out a few weeks ago in an editorial by the authoritative Lancet, the "syndemic" (a situation in which viral dynamics combine with non-communicable diseases and their social determinants, reproducing and further exacerbating inequalities), is dramatic counter evidence of this historical peculiarity: it is proving devastating (also) to the extent that it affects the very socio-material heart of life forms in the times of infrastructure capitalism, or in other words connectivity.

Infrastructures and/of experience in the city

Things, but, we have said, at the same time relationships between things, infrastructures are not identifiable merely with the technical and organisational properties that characterise them and with the services and objects that they are able to deliver and distribute. Indeed, they play a decisive role in the way individuals experience reality. A version of experience where the dominant cultural programme, oriented towards the unlimited expansion of humanity's reach and the configuration of the world as entirely available has achieved a particularly advanced degree of development, also thanks to infrastructures and their synchronisation.

The city plays a central and at the same time ambivalent role in the space of global infrastructure. Its centrality is expressed in relation to the social imaginary of connectivity. Infrastructure of infrastructures, the city is a space where the social imaginary of connectivity manifests itself, both in the physical and in the immaterial dimension, in daily experience. Both a prerequisite and a product of the continuous mobilisation of infrastructure, this imaginary finds its own space of choice in the city. In the city, the social imaginary of connectivity is practised, interrogated, investigated, narrated, manipulated and modified. In fact, cities are the places where it seems most possible to take part in that imaginary and actively contribute to its production, reproduction and transformation. In other words, the city is the primary space where this imaginary is explicitly made the object of cultural elaboration.

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However, precisely in the process of elaborating culture and its spatialisation in the city, the ambivalence that characterises the relationship between the global infrastructure and the city itself emerges, as we have said. In this context, in fact, the relationship between the imaginary of connectivity and the city can be interpreted based on a polarisation that, as always, is configured in reality in a much more spurious and intricate way. On the one hand, that relationship takes the form of an operation belonging to what Boltanski and Esquerre have called the "economy of enrichment". As in the technical process with which a metal is "enriched", the latter makes use of the spatialised culture in the city to increase (enrich, in fact) the value of things and existing practices.

An economy based on the exploitation of the past (real or invented, in turn the object of elaboration in the contemporary social imaginary: the centrality of storytelling), the evidence of which can only be found by combining distinct sectors and areas of activity and usually not linked in the analysis: from the arts to trade in ancient objects, from museums to the luxury industry, from artistic craftsmanship to promoting local heritage and tourism. In this sense, the relationship between the imaginary of connectivity and the urban dimension is configured as a value extraction operation substantially similar to – albeit empirically different from – that which at other latitudes presents itself as extraction of raw materials, in the literal sense.

On the other hand, in the relationship between imaginary and global infrastructure there is a different way in which the process of elaborating culture and its urban spatialisation take shape. Consistent with the historical vocation of the city ("city air makes free"), the conditions for the development of this second logic of relationship between culture and space can be found within the same dynamics just described, though buried in potential or non-systematic forms. These are the possibilities for the exercise of culture understood as a specific capability, what the anthropologist Arjun Appadurai calls "capacity to aspire", that is, the ability to imagine the future, the spaces we live in, social relationships, our activities, the structure of the daily life in which we put our lives in forms other than those that dominate the imaginary of connectivity.

Real utopias: practical inquiry and capacity to aspire

The work of practical inquiry conducted by the Rock project took place precisely on the terrain of this second polarity of the configuration of the relationship between space and culture. It sought to take the perspective of concrete utopias, investigating "the potential dimension of the existing", writes Giovanni Leoni, "relying on ordinary, quotidian strategies". Consistent with the design of the Rock project, much programmatic and practical energy was spent in the construction of participatory processes focused on the transformation of specific places in the city. In this regard, it should be stressed that the results must be commensurate with the complexity of the field of intervention. In fact, the "capacity to aspire" is a social product and not a natural data point, and furthermore it is not equitably distributed socially. Unlike a few decades ago, in international programmes there has been a growing emphasis – often more formal than substantive – on participation as a key and essential element of any urban transformation project. However, the application of this emphasis has often been trapped in a misunderstanding. The latter consists in the adoption of participatory logics based on the idea that the main difficulty

is providing the concrete opportunity to participate, and that citizens, with all their social, cultural, economic differences etc., will naturally take advantage of this opportunity offered to them. In fact, the public's interest in exercising its critical and judgemental responsibilities – this is what effective participation consists of – cannot be assumed as a starting point, a natural endowment of citizens. Rather, it is itself to be considered as a possible result in a practical inquiry.

In this sense, the logic of concrete utopias assumed in the context of the Rock project moves – with all the effort that this entails and the strategic and tactical uncertainties inevitably linked to institutionally complex contexts – in a direction opposite to the extractive polarity of the relationship between culture and space that we mentioned above. The latter also relies on the involvement of social actors, but configuring it (in terms of what can be defined as an activity of extraction of connectivity) in a manner that is purely functional to operations of territorial branding and the promotion of the heritage of urban spaces. In this framework the city itself becomes a physical and experiential platform that, like the virtual ones which the gig economy rests on, behind a smart window of openness and participation, in fact conceals a relational dynamic where the rules are given and where citizens are involved in problem solving (to provide data and information; to consume pre-packaged goods or services) but never in problem setting, i.e. the public sphere where problems are defined and interpreted.

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In contrast, the logic of concrete utopias operates in the awareness that it is necessary to act based on the idea that culture and participation strengthen each other. The "capacity to aspire" is built by creating the conditions through which it can be exercised, consolidated and expanded, starting from concrete places and situations. This implies, among other things, a different approach to technologies and the use of the enormous amount of data that they can produce, oriented towards a "site-specific use of technology and data", again recalling the words of Giovanni Leoni, "according to which technologies are subjected to cities and communities and not vice versa". It becomes critical to focus attention on what Amartya Sen identified as the "informational bases" of decision-making processes: What kind of knowledge contributes to defining what needs to be considered? Is it only coded knowledge, only technical knowledge that is mobilised or is the knowledge related to the experience of the problems being acted on also considered? What languages are enabled? Which persons are called upon and can speak about what the meaning and object of an action will be and what may instead fall into the shadow of legitimate indifference? It is clear that the perspective of concrete utopias is part of that conception of development – i.e. the paradigm of urban and territorial development – that the "self-subversive" development economist Albert Hirschman called "possibilism".

From this perspective, when approaching social reality it is worth pursuing specificity, uniqueness and the unexpected rather than delving exclusively into logics focused on approximation of the probable. In fact, it is a matter of expanding what is perceived as possible, thus favouring processes of knowledge in which the transformative value is emphasised more than that of control.

On the same terrain on which a powerful social imaginary is at work reproducing both processes of extraction of connectivity and individual motivations to take part in them cooperatively, it is evident that there are no shortcuts to experimenting with different strategies of combining culture and space. It is about contributing to the elaboration of different social imaginary, where the many potentials are wasted or marginalised in a imaginary subjected to strict extractive logics. These same international research funding programmes incorporate the ambivalence we mentioned, and it could not be otherwise. However, where there is ambivalence it means precisely that there is no determinism – neither scientific, nor social, nor technological – and there remains room for manoeuvring to bring out the critical abilities that are structural components of social life and not the exclusive property of scientific knowledge. By tracking these abilities, channelling their potential into practical inquiries, it is possible to put them to work in the construction of concrete utopias. It is worth insisting on.



Piazza Rossini, Bologna photo by Martenito Caporilli

Contribution of Co-Creation in Urban Regeneration Processes

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Contemporary cities can be considered as complex systems subject to dynamic and unpredictable global phenomena, with variable impacts on the built environment.

This is even more true in the case of historic cities, stratified organisms of material and immaterial heritage where users interact at different times and in different ways with the precious and vulnerable context.

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The ROCK project interprets the historic centers of the European cities as dynamic parts of these, as living laboratories where new models of urban regeneration can be tested, starting from the tangible and intangible cultural heritage. The ROCK experimentation of regeneration actions focused, in particular, on public open spaces, whose fruitive and performance value allows - through co-design and participatory decision-making processes - to improve both the social inclusion and the competitiveness of the city at international level (Boeri et al., 2019).

The EU project fit into this framework, proposing a research-action-research methodology oriented towards the regeneration of a portion of the historic city (Gianfrate et al., 2020). The regeneration process has been developed in a circular manner, combining the two key-concepts of creative city and city of knowledge (Carrillo, 2005), focusing on their dynamic interrelations [Fig.1].

This approach was based on the implementation of experimental actions in real environments through the Urban Living Lab "device", identifying systems of actions and reactions capable of producing collective value. Moreover, enhancing the performance of cities, increasing their resilience and citizen awareness. Following implementation, actions are monitored on the basis of selected key performance indicators to highlight possible corrective measures or changes.



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This iterative method is repeated several times to refine the actions, gather feedback and improve the strategies of the cities' public management, planning and cultural policies accordingly.

The ROCK project applied and integrated this methodology by testing pilot actions in a real environment, considered as a dynamic ecosystem, in order to make the perception and experience of the city open to all, in a universal way. ROCK provided new ways of accessing cultural heritage and promoting transparency and the perception of collective assets as shared heritage [4-5].

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The workshop of participatory practices on cities, a model followed by the ROCK project, focused on activities of observation, design and experimentation (fig.2, fig.3, fig.4): a transversal path to accompany regeneration, to develop new ideas for the valorisation of heritage, to



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experiment with new practices, the unconventional use of spaces, the creation of services and the promotion of some experimental actions, through a phase of listening and co-design and a second phase of experimentation and reflection on the results and impacts and a sharing of policies of collaborative management of the areas under research (Longo, 2019).

The experience of U-Lab (based on listening and co-design) and U-Atelier (based on co-construction) was one of the main applications of ROCK action-research methodology oriented towards a new paradigm combining climate change adaptation needs with the urban regeneration of a city's historic centre [Fig.5, Fig.6].

A process of community involvement (U-Lab) creates a local participatory decision-making Ecosystem of Stakeholders (Institution, University and research area, association, students, citizens, companies) by relating



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new and existing blueprints, enabling co-designed and co-construction workshops based on cross-fertilization among several disciplines (U-Atelier) (Gianfrate, Longo, 2017).

This approach has been successful in fostering alternative interventions in historical contexts, introducing innovative issues into the public debate: from accessibility of heritage, to greening of public spaces, from the unconventional use of spaces, to the creation of networks of cultural production.

The experiments attracted actors who had not previously been considered or involved in formal co-creation processes (as communities of practice), in a shared and collective effort to build a set of actions to be carried out on the area with the main objective of transforming it into an accessible, sustainable and innovative district.



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The U-lab process was therefore an attempt to provide methodological guidelines for the construction of a cultural district with a co-designed approach, which holds firmly to the themes of protection and enhancement of cultural heritage, but aimed to support the innovative vocations (already present and not enhanced) that must necessarily intertwine with the users of these areas of the cities. The approach was based on systematic and iterative actions of co-creation, experimentation and evaluation, facilitating the activation of new relationships and the strengthening of existing synergies, producing solutions. With these experiences ROCK wanted to set up a permanent open laboratory in the cities involved in the project, capable of defining over time and in an interactive and collaborative manner, appropriate spaces for listening, narration, representation and the production of new urbanity (Hopkins, Ferri, 2015).

In this context, historic centres are intended as extraordinary laboratories where testing innovative CH-led strategies, where new models of urban strategies and practices are tested to demonstrate how tangible and intangible CH – considered as a common good - can be a powerful

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engine of regeneration, sustainable development and economic growth for the whole city.

During the running of the ROCK project, a set of demonstration actions were carried out in the three Replicator cities (Bologna, Lisbon and Skopje), in order to test the replicability and effectiveness of the approach and of the related models successfully implemented in seven Role cities.

48 At the time of co-design, therefore, followed the time of construction as a moment of active participation, that one consisting in "collective construction site" [Fig7, Fig.8]. This is a form of an innovative urban laboratory which, involving citizens in "temporary communities of practices" aimed at the design and construction of architectural temporary sites, uses professionalism and appropriate technologies, in order to implement relational dynamics and social activation. The two moments of participation, and particularly that of the "collective construction site", are new contexts of action in which individuals have the shared goal to complete a project [Fig.9]. This operation was essential in ROCK for self-recognition in the production process and in the reconstitution of a collective vision. After the phases of co-creation, the community became more cohesive and provided the experimentation, testing the correspondence of the results with the expected forecasts and starting a new design process. The social innovation generated by community's participation in co-design and self-construction of temporary architectures couldn't be a factor of urban regeneration if it weren't accompanied by an institutional recognition.

Under the pressure of these bottom-up social activation initiatives, a virtuous path of mutual learning between institutions, directly involved in this project, and communities of technicians and citizens was launched, in the logic of facilitating social inclusion.



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The regeneration operations through temporary interventions in self-construction was useful for public administrations to test city transformation procedures and strategies [Fig.10]. This was possible through monitoring the reactions of citizens and users, verifying results and planning structured and innovative actions that open new reflection fronts through a circular research-action-research approach, specific of the ROCK project. The methodologies implemented in the co-design and co-construction processes have proved to be effective in providing communities of citizens with new capabilities, new tools that facilitate their empowerment. These urban and human capabilities were functional to generate further processes of social activation aimed at urban regeneration [Fig.11]. Moreover, small-scale temporary structures were functional to a constant verification and therefore to a greater correspondence between objectives and results (Sassen, 2012).

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In this scenario, the small and widespread size of interventions allows to be replicated and applied in different urban contests, optimizing the benefits to spread to a broader area with a cost-effective strategy.

This research suggests also as open issued the role of co-creation teams, including architects and urban planners, in co-design and co-construction processes both in informal and in formal city, and the role of institutions in facilitation of bottom-up actions.

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A Pathway from Research-Action-Research to Integrated Management Plan

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In ROCK, cultural heritage is meant as a unique and powerful engine of regeneration and sustainable development but also of economic growth, starting from local assets and resources. ROCK Cities present a vast array of contextual values, experiences, legacies that were taken as a reference to start from, to define the on-site interventions to be implemented locally. This approach is based on a circular urban system model that implies the connection of initially separated urban "systems" - related to cultural, knowledge, green, regeneration, security, creativity dimensions. The circularity (Vernay, 2013) is strongly based on a continuous feedback loop, that shaped a research-action-research methodology (Boeri et al., 2019; Gianfrate et al., 2020), a continuous and dynamic investigation movement, in which speculation and practice, knowledge and action can never be separated.

These actions entail soft and technological enabling actions: on the one hand as technical, organizational and administrative intervention, on the other they include informal and spontaneous inputs. This is an approach that worked with the city as if it was a real laboratory, hosting micro scale experiments, pop-up architectural interventions, small installations, unconventional uses of public spaces and alternative proposals for cultural events in the city.

From Regenerative scenarios to research-action-research

The process started with the research, a planning moment where the actions were co-defined and designed together with local stakeholders, they were identified from the role model cities, but they also were technically assessed by local authorities. The whole range of actions fit into three thematic Regenerative scenarios, emerging from the knowledge of the context of the cities - related to accessibility (Dane et al., 2020), sustainability, and new collaborations.

The three thematic Regenerative scenarios represented a real moment of self-reflection for cities, linking the ongoing local political agendas with innovative actions and aligning actions in relation with the most pressing local needs. The Regenerative scenarios allowed to contextualise the definition of the main actions to be implemented in the cities and to verify their effectiveness through Research-Action-Research methodology.

The following phase foresaw the implementation of actions in the ROCK cities. They spanned from co-design experiences, events and performances with cultural formal and informal operators, temporary installations, small-scale experimentations, until also prototypes of urban services. The actions were then monitored with sensors, ethnographic observation, questionnaires, feedback were collected with the goal of re-defining and improving the interventions, but also to gather useful dynamic data and more importantly to eventually inform policy makers with the knowledge acquired.

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Such knowledge acquired, in terms both of methodologies and real outcomes, needed to be organised again, this time within a policy framework. In fact, ROCK believes that decision makers can benefit from the data, from the results and the outcomes collected during the research action application, as they are evidences both of the effectiveness and of the failures associated with each initiative, and they allow their progressive adjustments and an increasing capacity-building of policy makers and also practitioners. This allows them to face new societal and environmental challenges associated with cultural heritage.

Implementation of actions, a pilot in Bologna

This methodology was applied to Skopje, Lisbon and Bologna. The latter has chosen as its ROCK pilot area, a highly dense artistic and historic district: Zona-U, the main university district situated in the medieval city and crossed by a major street, via Zamboni, hosting important material and immaterial heritage. For the city of Bologna, it was an opportunity to consolidate ways of operating in the public space of historical centers with a shared approach among institutional, cognitive, extra-institutional

actors, resident and non-resident, temporary users of the central areas of Bologna, first of all students, to tap into their creative potential.

The historical center of Bologna has a long history of changes and transitions generated by its actors, temporary users, material and immaterial heritage (Orioli, Massari, 2020). The project was able to act in this context, even conflictual (Scandurra et al., 2009), being also able to define a new model of collaboration between university, public administration and citizenship.

With the ROCK project, the dynamics of transformation of the historic center of Bologna have become the subject of a research project, which has deepened the role of cultural heritage as a generator of local practices, multiplier of values and connector of levels, actors and spatial forms, to the point of even changing the policies of the city.

This change is shown by some successful experimentations of the project in Bologna, such as the experiments that provided Piazza Rossini with a temporary installation. It was designed and built with students who transformed part of the area usually used for parking into a green space, proposing an unexpected perception of the area and restoring the trace of the ancient churchyard of the San Giacomo Maggiore Church. The temporary experiment was successfully embraced by the citizens, leading to the decision from the municipality to turn it into a permanent solution for the pedestrianization of the space. This is just one of many examples of the leverage effect of ROCK actions towards some stable changes in the city.

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Eventually, this process was organised in a systematic way for the definition of ROCK Integrated Management Plan (IMP). The IMP aimed at re-structuring the work and lessons learned from the implementation, in a medium-to-long-term vision for the local development and management of Cultural Heritage.

Integrated Management Plan, the structure and aims of the plan

The process of research-action-research performed in ROCK, required eventually to re-structure the lessons learned and experimental evidences, into a general policy and operative framework. The aim was to provide cities with both a strategic vision and an operative method to achieve a balance between preservation of the built environment and sustainable growth. The IMP starts from the idea of the already existing UNESCO Management Plans but it was tailored to ROCK project language, target and objectives.

Starting from these premises, IMP learned from the local experimentations, was fed by the contextual background provided by the Regenerative Scenarios and delivered a transformative vision for the Cultural Heritage of the three ROCK Replicator Cities, Bologna, Lisbon and Skopje.

The Integrated Management Plan is meant as the strategic and operative framework descriptive and prescriptive of multilevel heritage-led regeneration strategies (Boeri et al. 2019).

It has three main objectives:

- to increase the knowledge about regenerative processes linked to CH
- to define the different steps needed to activate the regenerative processes
- to offer continuous updating about innovative actions and initiatives linked to CH realms.

The structure of the plan reflects the circular attitude of experimenting, learning from the experimentation and turning the results into new knowledge that becomes the basis of recalibrated or new experimentations, in an iterative process. Experimentations in ROCK cities in fact, entails a wide range of site-specific actions, with different results obtained, outputs and outcomes. The idea of the IMP is to organize this large and contingent amount of contents in a shared knowledge and functional framework, to be useful as an operational tool for different targets.

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Following this, the IMP has been intended to inform policy makers but also to engage cultural operators and local decision makers in a coherent and shared framework of action of CH regeneration. It represents an opportunity for Public Administrations to acquire new skills, to gradually and collaboratively transform the setup of public spaces and better prefiguring the long-term effects.

Moreover, the University can benefit from the plan to allow the establishment of new partnerships, to enlarge transdisciplinary research, to better anchor research to real-life, and finally to empower the “third mission”, the set of activities by which the universities interact directly with society and their reference territory.

Bologna IMP

A first pilot of the IMP was applied to the experimentations performed in Bologna.

The scheme of the IMP introduces the “principles”, that reflect the mid-term strategic visions for the three ROCK pillars, emerged as the guiding elements of the regeneration process of the Cultural Heritage areas



PRINCIPI

Gli elementi guida del processo di rigenerazione della zona universitaria del centro storico di Bologna



PRIORITÀ STRATEGICHE

Definizione di priorità progettuali identificate sulla base dei 3 principi di ROCK; sono costruite a partire dalla trasformazione di quello che è emerso dai tavoli tematici locali e riguardano un livello politico/strategico, riferito al patrimonio culturale del centro storico della città

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COSTRUIRE UNO SPAZIO DI INCLUSIONE

In cui le esigenze delle persone disabili diventano linee guida per tutti

INFORMARE PER ABILITARE

Fornire informazioni oggettive per consentire l'autovalutazione dell'accessibilità

CONSERVARE PER INNOVARE

Interpretare le istanze di conservazione come spinta all'innovazione

COSTRUIRE UNO SPAZIO SOSTENIBILE

Per innescare, attraverso esperienze dirette, comportamenti sostenibili che assumano il patrimonio culturale come un bene comune

RIUSO CIRCOLARE

E adattivo del patrimonio per la gestione e uno circolare delle risorse

VERDE E TECNOLOGIE IN AZIONE

Infrastrutture verdi come elementi connettivi degli ecosistemi urbani degli spazi pubblici

COSTRUIRE UNO SPAZIO DI RELAZIONE

Perseguire l'accesso attivo di diversi gruppi di persone a spazi e offerta culturale

PIÙ PUBBLICI, DIVERSI PUBBLICI

Favorire la crescente moltiplicazione di situazioni - interazioni - da cui ci si può aspettare una possibile "produzione del pubblico"

PROGETTARE RELAZIONI

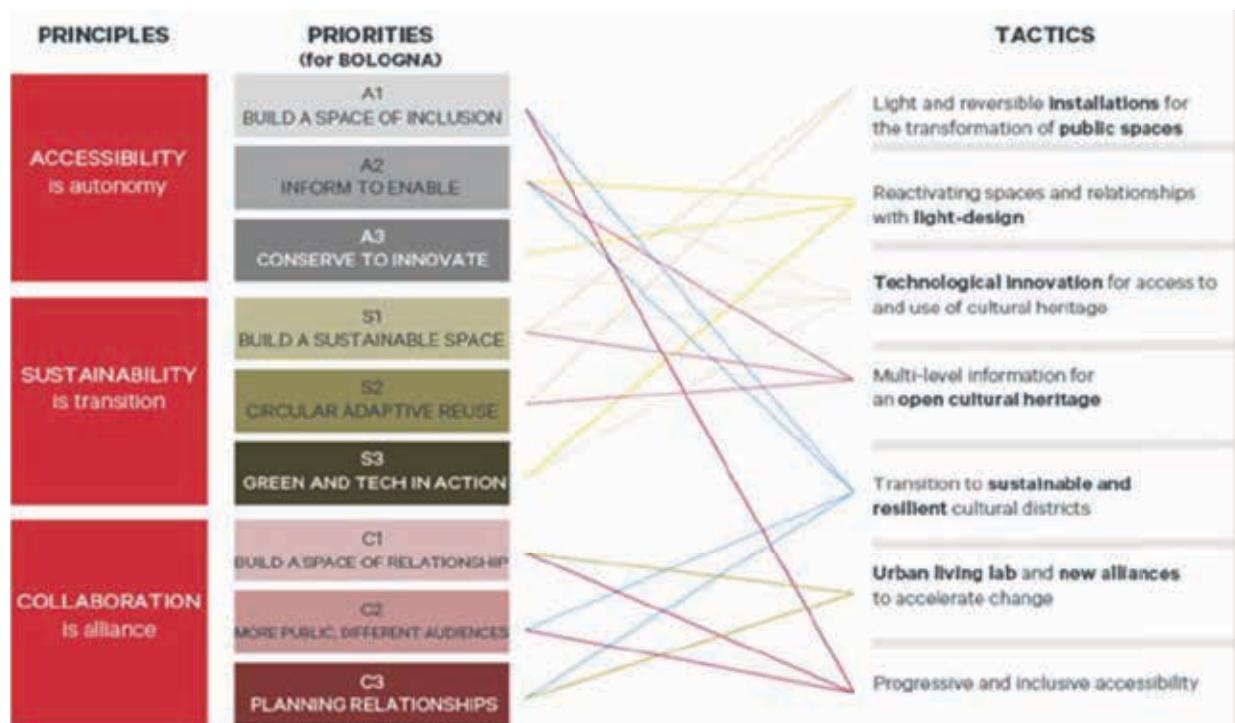
Mettere in rete attori di filiere diverse (istituzionali e non) per la co-produzione di valore urbano.

1

involved in the ROCK project: Accessibility, Collaboration, Sustainability. A specific definition to each principle has been given, in relation to ROCK local experiences: Accessibility is autonomy, the autonomy to choose and fully live the opportunity offered by the city; Collaboration is alliance, between all the actors of the processes; Sustainability is transition, in politics and behaviours towards green economy, green energy and social inclusion. Principles are shared by all the cities because they represent the baseline of all the ROCK Cultural Heritage-led regeneration strategies.

Fig.1

ROCK Credits: Nowhere



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The following component of the plan is devoted to the “priorities” (Fig.1), addressing the strategic level. They are strongly contextual, different from a city to another, because they emerge from the particularities of the material and immaterial context and from the instances emerged during the participatory phases (i.e. in the local laboratory U-lab in which emerged needs and design input).

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The operative part of the IMP is described with the “tactics” level. Tactics describe the process derived from the key actions of re-activation and re-generation, especially those with a high transferability degree. Here the attempt is to codify the different steps taken during the actions design and implementation, to register barriers and enabling factors and to translate them into a very practical set of recommendations.

This part concerns the operative level of the Integrated Management Plan, that stands between actions themselves and the strategic priorities. Tactics are contextual to each city, depending on their specific experiences and lessons learnt. Within the pilot plan for Bologna (Fig.1), the tactics imagined concerned:

- Light design for more livable and accessible spaces
- Light and reversible installations for the transformation of public spaces
- Technological innovation for the access and use of cultural heritage
- Multilevel information for an open cultural heritage
- Urban Living Lab and new alliances to accelerate change
- Transition towards sustainable and resilient cultural districts
- Progressive and inclusive accessibility

Fig.2

the scheme represents the IMP for Bologna, with the connections among principles, priorities and tactics.
Credits: Martina Massari

Each tactic was described in its different enabling elements: the involvement techniques, the obstacle to overcome, the evaluations and possible data resulted, the inspiration case studies and the local plans to which they can be linked.

Eventually, the IMP systematizes the different actions and initiatives which involved the CH in the demonstration areas of the cities. The actions involved mostly the public space of the historic city, which has been transformed from being an inactive asset to an active resource and engine (Dvir 2003) of urban innovation.

The work of knowledge-construction of the IMP for the university area of Bologna, has highlighted the capacity of the space and its sediments of knowledge to be able to trigger, generate, promote and catalyze innovation in the city, in a complex process that includes people, relationships, values, tools and social and environmental infrastructure.

Conclusions

The experience of action-research in ROCK - of knowledge-building and co-design first and experimentation and prototyping later - has highlighted both the complexities and the opportunities that arise from a regeneration process that simultaneously derives and generates urban relational capital between spaces and people.

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IMP most innovative aspect is its systematisation of an iterative work methodology, from the research (Regenerative Scenarios, contextual knowledge, mapping) to the action (implementation of local experimentations) back to the research, to eventually define a policy framework perspective

The Pilot Plan applied to the city of Bologna, which provides for coordination at different levels with the programming and planning tools, has been the stimulus to identify which forms of integration were on the one hand more suitable to fit into the regulatory system and the consolidated planning of the city, and on the other hand to be flexible enough to follow the evolutionary framework of urban processes.

This approach might be capable of defining in an interactive and collaborative way, appropriate spaces for the production of new urbanity for the university area and consequently for the historic center: an open and permanent laboratory.

In this laboratory, cultural heritage can become a living engine to rethink the evolution of historic centers and prepare them for future challenges, an attempt at providing a methodology for the co-design of a cultural and sustainable cities.

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ACTING IN THE CITIES

Introduction to Cities from Role-Replicator Exchange to Mutual Learning

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ROCK considers cultural heritage as an engine for sustainable growth in European cities. The approach proposed by the project implies dismantling the specialist idea of cultural heritage understood exclusively in terms of conservation. Cultural heritage - especially in its public and unused or underused spaces - is seen, instead, as an incremental and ever-changing repository of value that can drive both spatial and behavioral change. This change occurs in ROCK through incremental experiments based on a continuous exchange between local practices, administrative action and cognitive reflection, giving shape to a research-action-research methodology.

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The research-action-research is neither an inductive empirical model, nor a deductive approach. On the contrary, it is a dynamic way to create new paths of knowledge to rethink the evolution of historical centers and prepare them for future challenges. It starts by analyzing the urban context, assessing constraints (conservation, social, environmental and organizational constraints) and identifying existing good practices which can be transferred and locally adapted. It then implements a pilot intervention, co-designed with the support of local administrations, stakeholders and citizens. Such action is then evaluated in its impacts, starting a new phase of investigation aimed at defining a plan of sustainable management of cultural heritage, based on scientifically validated actions.

Timeline: context setting, understand our cities in more details

As we knew, cities are lively ecosystems and priorities can change quite fast when operating at local level. It was therefore important to understand the strengths, weaknesses, challenges faced, objectives and resources from the 10 cities before starting any of the mentoring activities. The needs assessment survey for Replicator cities and resources assessment survey for Role Model cities was created in this aim: collect needs and strengths, organise matchmaking between ROCK cities and collect local examples of initiatives linked to cultural heritage and urban regeneration to be shared later in the Open Knowledge Portfolio. It gave us a clearer picture of the cultural heritage landscape in the 10 ROCK cities and allowed us to better understand their learning needs and what they wanted to share with the other cities.

The core idea behind mentoring activities was that Replicator cities would benefit from experiences of Role Model cities to adapt successful and validated practices to their local contexts, as well as to formulate adequate responses to problems already faced by other cities.

Eurocities produced guidelines that were intended for cities and partners to have a better idea of things ahead. The guidelines provided advice and support on how to use the methodology of 'mentoring' and 'work shadowing' as two different tools for improving the implementation of Replicator and role-model cities' policies and/or projects.

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In ROCK, mentoring is understood as Replicator cities learning from Role Model cities and their local experience (i.e. what worked, what did not work, what could be done differently) for overcoming existing problems, by building an understanding of the issues, situations and challenges and exploring new ideas, options and solutions. Work shadowing on the contrary is a method to learn and exchange professional experience and knowledge about good practice and initiatives in a Role Model city. It involves one or two persons from Replicator cities spending a period of time with experts from a Role Model city working in the same field or on similar projects, observing what they do in their professional role, and how.

Cities were set up, the mentoring process could start.

In November 2017, the first work shadowing visit was organised in **Turin**. For two days, the three ROCK Replicator cities learned how the former factory town, heavily affected by the industrial crisis in the 1980s, reinvented itself as a city of art and culture with heavy investment in culture and knowledge.

The visit also focused on the promotion of new forms of collaboration with residents when it comes to local cultural heritage. Cities learned that the strategic plan of the city of Turin aimed to rethink the identity of the city and managed to create a single vision, mainstreaming cultural heritage in all other development policies of the city. The industrial history of the city has been used as a key asset to develop contemporary artistic projects. Cross-sectorial work is important but its results take time to emerge, so it requires long term commitment. 'Contemporary art torino piemonte' is a good example of actors pulling resources together to become more visible, to raise funding and profile the city as an international hub for contemporary art. Data collection and monitoring on a constant basis are important to systemise and harmonise the system, and collate layers of data to understand the past, present and future of the city.

A few weeks later, delegates of the three Replicator cities met again in **Eindhoven** for the second work shadowing visit of the project. Eindhoven suffered a lot from the bankruptcy of its main employer, the electronics company Philips, which left its hometown in the 2000s. Eindhoven was at the time considered more as an industrial place than a real city, but the city capitalised on its legacy and used it for its renaissance.

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Transforming the former Philips factories into a creative and cultural quarter made Eindhoven a major technological and industrial hub. StrijpS is now considered an urban rejuvenation success story, and the Brainport region surrounding Eindhoven one of the most innovative regions worldwide.

The main challenge for Eindhoven at the time was to position itself as a location with potential in the creativity and innovation sectors. To do so, Eindhoven has mastered the living lab approach to innovation, where the facilitation of trial uses real life situations as part of the design process. This approach was for instance used in the regeneration process of the NRE-area, where the former gas-supply factories of Eindhoven were located. The redevelopment of this area was managed in an organic way, with as little legislation as possible, and in strong cooperation with the end-users (i.e. future residents of the area).

Replicator cities Bologna, Lisbon and Skopje got inspired by this method of trial and error: cities are labs, and therefore can apply the same

principles as in any start-up company when it comes to testing new tools and initiatives.

In the French city of **Lyon**, UNESCO World Heritage since 1998, where Replicator cities met for the third time in December 2017, the historic city centre contributes to the city's demographic vitality, with 12% of the population living and working in the area. This number is even rising, as a fairly young and dynamic population has settled down in the historic centre in the last 20 years. The backside of the coin is that this population has a relatively similar profile and the area is becoming less and less diversified, with gentrification problems adding to the mix.

To study the effects of these tendencies on the inhabitants, Lyon introduced in 2017 the Urban Observatory, as part of its objectives in the framework of ROCK. Citizens living and working in the historic city centre and directly concerned by the issues at stake discuss in focus groups with city leaders and planners to find concrete solutions on how to observe these phenomena and best measure them. This collective creativity allows to preserve the continuous modernisation and dynamism of the city centre, while protecting its historical value.

The Urban Observatory, its process and its method has inspired other ROCK cities: after a visit organised in December 2017 in Lyon, participants from Bologna, Lisbon and Skopje decided to deepen the topic of participatory processes and involvement of citizens in cultural heritage management. In Bologna, the objective was to better detect and understand the signs of transformation occurring in the Zamboni area during the ROCK project and beyond. The Lyon Urban Observatory represented a very interesting model for Lisbon as well, as a way to study the interactions between cultural heritage and the community living in the Marvila district, where Lisbon was developing its Living Lab. The need to involve the local community was fundamental also in Skopje, where the Skopje Urban Living Lab started to take shape as a hub of actions, introducing new models of work and collaboration.

All these examples and lessons from the work shadowing visits were gathered in reports, later shared among the ROCK community and used by cities for inspiration and future actions, especially in the replicator cities where next the mentoring visits started.

For each demonstration area in replicator cities, a local roadmap was drafted by the institutions in charge of the implementation process, together with the stakeholders involved. The roadmap template aimed to help the replicator cities in identifying and highlighting local challenges, vulnerabilities, and physical and social barriers in the demonstration area. This process allowed them to plan, monitor and implement the changes they envisage to achieve the

transformation. The template was later updated when the transformation process became more concrete.

The preparatory visits in Role Model cities ran in parallel to the mentoring and work-shadowing visits, representing an early step of the actual implementation process. Each Role Model city was invited to reflect upon their own specific challenges towards the implementation phase through a standard questionnaire, considering the following aspects: 1) local context specificities; 2) pre-identified initiative to be implemented (if already existent step-by-step plan); 3) implementation location; 4) foreseen objectives; 5) expected results/ impacts, 6) coordinating planning tools, 7) partnership type and the governance schemes (identification of relevant stakeholders); 8) relation with on-going/ past implemented actions, as well as 9) available resources (financial, human resources, time, technological).

According to the baseline contextual information from each city survey, a series of on-site support visits were organised in all Role Models, being aimed at validating the baseline status and conditions for the implementation. Each meeting was organised into separate sessions, tackling operational issues related to the implementation process, followed by site-visit/s, aimed at getting an insight into potential implementation locations.

The first preparatory visit was hosted by the city of **Vilnius** in October 2017. During the preparatory visit, Vilnius has set its implementation objective towards evaluating the social impact of cultural-led projects through emotional mapping and measuring opinions, thought and preferences of citizens, tourists expressed through social media channels. Finally, the generated data should set the basis for an innovative decision-making supporting tool, giving recommendations on effective management of the spaces and cultural events.

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The preparatory visit in Eindhoven was organised in October 2017 and it was co-hosted by Eindhoven Municipality and Eindhoven University of Technology (TU/e). Within ROCK framework, the city of Eindhoven proposes to monitor and assess the impact of large-scale cultural and creative events in the Strijp-S area, in order to provide necessary feedback for improving citizens' life conditions and set the background for attractiveness-driven policies. Eindhoven planned the testing of people flow analytics tools ("Trace Annotator" program, based on GPS sensors, provided by TU/e) during three different events: Dutch Design Week, Glow Festival and the King's Day. The key point highlighted by the city of Eindhoven is to analyse the data of sound/ noise pollution, air pollution (collected through existing sensors in Strijp-S and the rest of the city) and people flow during large cultural events and investigating the heatmaps during the events to evaluate the impact of these events on the

quality of life. The end goal is to offer citizens, users and residents localized information about sound level control, as well as air quality.

The preparatory visit hosted by the city of **Liverpool** in October 2017 brought together different local actors at the city level as potential stakeholders for the ROCK project. Among the most pressing challenges, Liverpool stressed on the high urge for citizens and tourists to perceive and become conscious of the tremendous value of Liverpool's cultural heritage, especially the one related to UNESCO's World Heritage Sites (WHS) status recognition. In the framework of ROCK, Liverpool city planned to address the connectivity challenge in the WHS and its buffer zone by creating connections with the city centre 3D-model provided by Royal Institute of British Architects as a supporting tool for developing an Augmented Reality (AR) tour to encourage historical and cultural heritage exploration of the World Heritage Site.

The preparatory visit in Turin was organised in November 2017, together with the work-shadowing visit. The discussions related to the preparation of the implementation process brought together representatives from the Municipality of Turin and Urban Center Metropolitano Torino, being centered around planning the implementation of the crowd monitoring instrument (Location-Based Analytics provided by DFRC sensors). In the framework of ROCK, Turin aims at generating data analysis providing real-time insights on activity/ mobility patterns during large-scale cultural events of the city. During the visit, the city already identified some potential areas for the sensors' deployment (i.e. Piazza di Castello, Barriera di Milano neighbourhood, etc), during large-scale events (such as the Weekend of Contemporary Arts, Turin International Book Fair, etc).

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The preparatory visit in **Cluj-Napoca** was organised in November 2017, with representatives from Cluj-Napoca Municipality and ARIES Transylvania. The discussion was focused on understanding how the LBA sense (Location based analytics sensors for large crowd monitoring) will interact with the city's large-scale cultural events, such as: Jazz in the Park festival, Untold festival, Transylvania International Film Festival and cultural outdoor events. In the framework of ROCK, Cluj-Napoca aims at deploying the LBA sense for generating data analysis, providing real-time insights on activity/ mobility patterns within the monitored area for a better understanding of the city' transformation during large-scale events. The city has already identified several zones in the historical centre which form a larger area of polarization for tourists and locals alike (Unirii Square - main square for socio-cultural activities and events, Central Park with the Casino building - The Urban Culture Center, Cluj Arena and the Polyvalent Hall). The visit was meant to define the preliminary local context for the first sensors' installation.

The preparatory visit hosted by the city of **Athens** in late-November 2017 has been kick-off with a short presentation from the city side, focused on the Democracy and Consultation processes, in which SynAthina plays a very important role, as being a community platform bridging on trust and citizens engagement for the improvement of the quality of life of in their neighbourhoods. Despite its role as a Model, the city of Athens still faces important challenges in respect to the low promotion and understanding of the city's building identity and its interesting history (referring mostly to the "modern history" dating back from 70-years ago). The key point highlighted as being essential for the city of Athens was the increased visibility and promotion of CH assets, showcasing the two models of Victoria Square project (an area-based solution for social integration with diversified activities) and the Municipal Market of Kypseli (a social project of transformation into a community-based open and free space for everyday cultural/ creative engagement, cultural celebrations and artistic productions).

The last preparatory visit was hosted by the city of **Lyon** in early December 2017, together with the work-shadowing visit. The city of Lyon is perceived as a "playground", where Cultural Heritage (CH) is positioned in the framework of three main directions: scientific approach, social inclusion and political approach. Within the framework of ROCK, Lyon has two main goals: 1) advancing the Heritage Observatory work by upgrading the it with a quantitative approach through focus groups and meetings organized in collaboration with UrbaLyon (Lyon linked third party) and 2) upgrading the Light and lightscape model from 2 perspectives: a) permanent lighting (territorial lighting approach) and light cacophony (mostly related to private lighting).

ΚΥΨΕΛΗ
ΜΑΘΗΣΗΣ





The ROCK cities task force: furthering the exchanges between cities

Starting from the 7 pre-selected Role Models (Athens, Cluj-Napoca, Eindhoven, Liverpool, Lyon, Turin, and Vilnius) which have succeeded to use cultural heritage as an enabler for local regeneration processes, ROCK tested the replicability of the spatial approach and of successful models addressing the specific needs of historic city centres in three Replicator cities (Bologna, Lisbon and Skopje). Initially designed as a mentoring process from Role Model to Replicator cities, ROCK approach quickly shifted towards a collective-driven exchange methodology based on thematic clustering. Overcoming their initial role as Models, the ten cities closely interacted in a mutually exchange process, aimed at enhancing the potential for developing new local economies, as well as strengthening local governance capacities and efficiency.

In order to go beyond the distinction between Role Models and Replicators and to engage all cities in a mutual process, ROCK adopted two layers in relation to the activities performed by cities: the INTER-ACTION layer (based on exchange and knowledge transfer among the cities) and ACTION layer (oriented towards the design of specific action plans for each city concerning the demonstration and implementation activities resulted from the initial Roadmap and the results of the INTERACTIONS). In this context, the Cluster approach proved to be a suitable solution for addressing common challenges and learning needs; its results being definitive for the temporary transformation and pilot actions experimented through the ACTION layer (the phase of Implementation & Demonstration).

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Starting from the cities' learning needs (to solve gap closures, overcoming shortfalls in policy, legal procedures and management structures related to heritage regeneration processes) and resources assessment (internationally recognised case-studies and successful experiences on heritage-led regeneration approaches), the Clusters approach adopts a new transfer and exchange methodology, coordinated by EUROCITIES, URBASOFIA and UNIBO. This newly created framework is based on a clear understanding of the local context of each city (from different critical perspectives such as: politics, governance, traditional culture of planning, etc), fostering the adaptation of successful practices and models in accordance to the specificity of each city's local context.

The Clusters approach sets out a framework for exchange and further collaboration and to continue efforts in heritage-led regeneration processes and scale up these initiatives and implement actions, through five defined Clusters related to Cultural Heritage, as follows:

- ROCK CLUSTER 1. Participatory approach and social inclusion;
- ROCK CLUSTER 2. New governance models for creative, sustainable and circular cities;
- ROCK CLUSTER 3. New technologies and tools for CH access and safety perception;
- ROCK CLUSTER 4. New financing and business models;
- ROCK CLUSTER 5. New approaches to green-oriented city growth.

Finally, the need to connect and overcome a one-way transfer process (Role Models mentoring the Replicators) has proven to be a highly effective methodology for sharing thematic knowledge and successful practices related to cultural heritage-led urban regeneration, adapted to concrete learning needs and common tackled challenges of cities.

Supporting the Role Model Cities in their implementation process meant primarily, setting up a common orientation framework for the process of upgrading ROCK models to the next level, as well as testing ROCK tools and technologies into different cities' contexts. The approach followed two main steps: 1) preparation phase based on mapping the baseline status and conditions for the on-site implementation through a set of questionnaires, preparatory visits, and implementation plans (delivered during the first 18 months) and 2) implementation phase (during the entire project lifetime). Besides the one-to-one assistance for each Role Model City, URBASOFIA has also facilitated the dialogue between technology providers and city representatives, in order to define the most suitable approach for tools deployment.

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Lessons from cities exchanges

As the project advanced, the exchange between Role Model and replicator cities evolved and became less unidirectional. Cities became keener on these exchanges because they realised they always had something to share or something to learn from their peers. Cooperation and contact with other municipalities have been crucial aspects of the ROCK project and have allowed exchanges of experiences between cities on various aspects of the project. These moments of exchanges and encounters made the 10 ROCK cities grow together and not only share but upgrade their model. During the different meetings and visits, cities also showed solidarity, mutual help and support and learned together about best practices but also mistakes to avoid and good tips to remember.

For successful exchanges and transferability of practices to happen between cities, one must be flexible and adapt to local context and local cultures. This is how ROCK cities connected to each other, but not only. They also reached out to other cities in Europe, and the ROCK cities task force made sure that the lessons learnt by the ROCK cities were also useful for the other cities, including the Eurocities membership (which is about 150 cities). The lessons and experiences from the project will be carried on after its end, in other projects or simply by nurturing the network and connections that were created between cities. In the end it is also a lot about personal contacts and relations, and about sharing good moments together. A number of partnerships have been created at local level thanks to the ROCK project, which also created connections with new people and new ways of working.



A Shared Framework for ROCK Cities

ROCK conceptualizes an innovative circular urban system model – the ROCK Circle – composed of both social and technical elements, using different elements to facilitate organizational, technological and social innovation and accelerate transition towards sustainable city growth: use of new technologies (or providing a new use for existing ones), inclusion of stakeholders' knowledge, modification of materials flow, change of organisational practices and mutual influence with institutions.



FIND OUT MORE

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For a visual explanation of the ROCK Circle, click on the following link
<https://www.youtube.com/watch?v=Rh4I53CAERI>

Graphic recording and live scribing video at Open Knowledge Week "Cultural Heritage Leading Urban Futures", the ROCK final virtual conference for city officers, policy-makers, urban researchers, cultural actors and civic changemakers. By Nowhere.

Day one: https://www.youtube.com/watch?v=l_g6hjCwl_U
Day two: <https://www.youtube.com/watch?v=tn0r0j7p82s>
Day three: <https://www.youtube.com/watch?v=06NW2xYiUql>
Day four: <https://www.youtube.com/watch?v=2cAFBqx21is&t=163s>

As highlighted in the UNESCO reports in 2016 and 2017, cities need to connect sustainable development and cultural heritage according to several objectives and strategies:

1. Building on the power of culture to promote human and inclusive cities, through the transformation of cities in human-centered, inclusive, creative and innovative, while fostering peaceful and tolerant societies;

ACCESSIBILITY

1. UNIVERSAL ACCESSIBILITY
2. ECONOMIC ACCESSIBILITY
3. ACCESSIBILITY AS USABILITY
4. ACCESSIBILITY AS DIALOGUE

SUSTAINABILITY

1. SUSTAINABILITY AS BEHAVIOR CHANGE
2. SUSTAINABILITY AS RESILIENCE
3. SUSTAINABILITY AS ABILITY TO TAKE CARE

IMPROVEMENT OF NEW COLLABORATION

1. PROMOTION OF NEW COLLABORATION
2. SUPPORT FOR NEW CULTURAL PRODUCTIONS
3. PROMOTION OF THE CULTURAL OFFER
4. CONTAMINATIONS
5. ATTRACTION FOR NEW PUBLICS

1

2. Improving the quality of the built and natural environment through culture by making cities compact and at human scale; considering climatic sustainability, resilience and green actions; making public spaces more inclusive; safeguarding urban identities;
3. Integrating culture in urban policies to foster sustainable urban development through a sustainable local development, enhancing rural-urban linkages, improving urban governance, creating new financing methods for urban development.

According to this framework of objectives, ROCK Circle focuses on cities as living engine in which CH can boost the development of innovative approaches by creating new values in an equitable and democratic way. In fact, the objectives of the ROCK circle are aligned to three major topics: Accessibility, Sustainability and Collaborations.

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1. Accessibility. Intended as the capacity of the urban system and of cultural heritage to be accessible to everybody in terms of physical accessibility (also considering disabilities), as well as of immaterial accessibility. In fact, ROCK project deals both with different rates and intensities of physical disabilities (to move, to see, to hear) and of non-physical ones (to understand, to recognise as element of identification), but also to different understanding and usages of spaces due to the different target groups and cultures (children, teenagers, families, elder, immigrants). In addition the project considers the possibilities of different typologies of "access" to CH: not only a physical access by person (to experience a place), but also using the potentialities given by digital and ICT technologies (web, virtual and augmented reality).

2. Climatic sustainability and resilience. Intended as the capacity of urban systems and cultural heritage to be sustainable in term of mitigation and adaptation to climate change as well as social and economic sustainability, while deepening some specific points of analysis: CH management issues, actions for mitigating and adapting to climate change (e.g. actions of greening), social understanding, civic engagement and CH caring.

Fig.1

The three topic of the ROCK Circular Model

3. Improvement of new Collaborations. To boost the process of creating new ways of collaboration among stakeholders and users with the aim to transform them into prosumers (active producers of new values). In fact, CH is often perceived as something that cannot be touched by citizens, as a good only needing protection, while, several authors argue that instead CH is the arena where new creative and cultural bottom up productions can be boosted. Supporting the creation of new typologies of unconventional collaborations can, in consequence, trigger this process.

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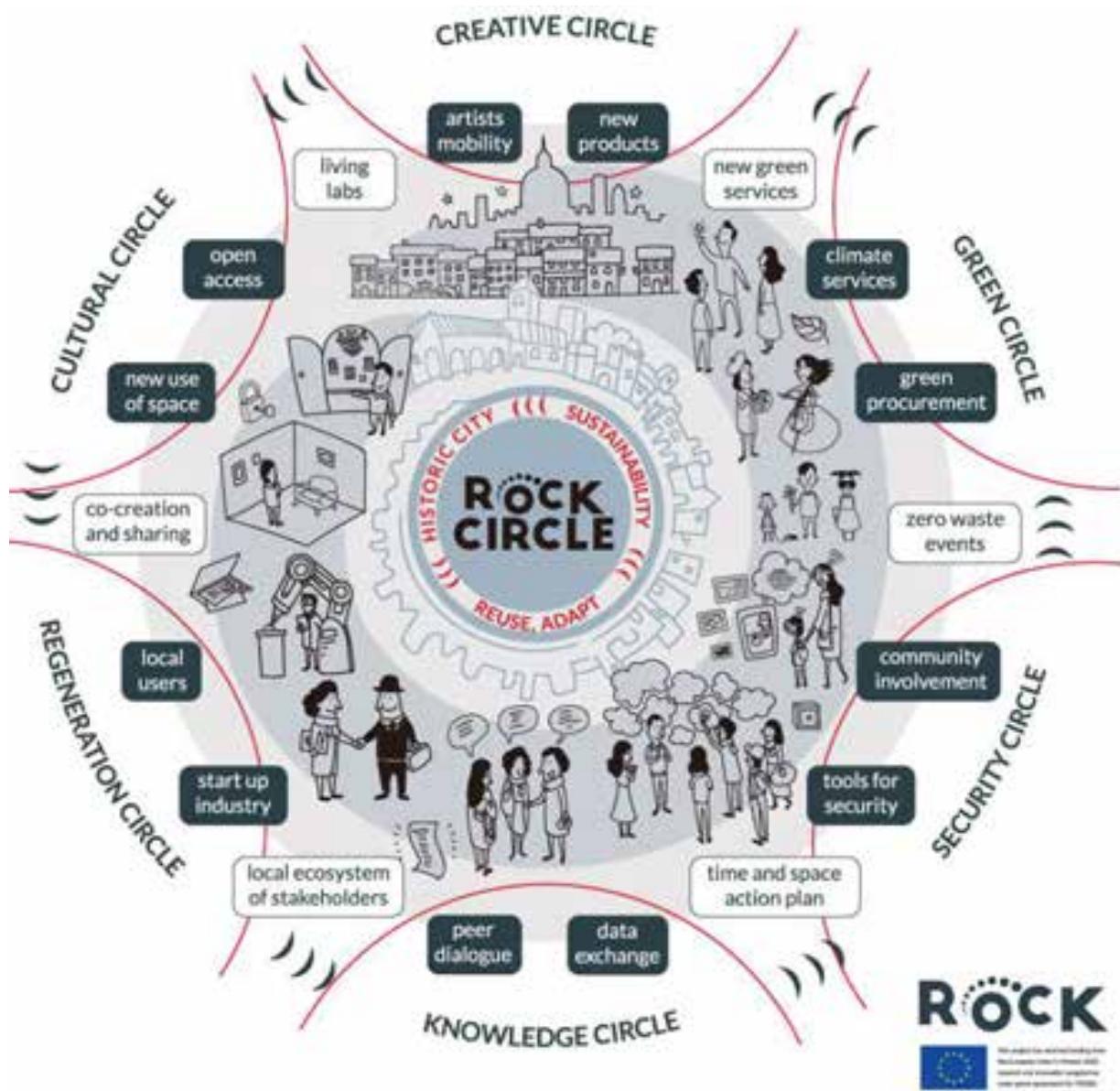


Fig.2

ROCK Circle (credits for the artwork: Margherita Ascoli, Zhai Dewei)



Tactile maps photo by Margherita Caprilli

Accessibility to Cultural Heritage: ROCK Design Approach

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Giovanni Ginocchini, Fondazione per l’Innovazione Urbana

The interpretation of accessibility concepts elaborated and tested during ROCK project offered the opportunity to explore, with a prototyping approach, the accessibility as a design tool. The needs, special requirements and individual and collective requests collected during ROCK Living Labs experiences, have been translated firstly into new design criteria and then applied into services, products and new uses related to Cultural Heritage and cultural contents.

But mainly, following its collaborative and sustainable approach, ROCK supported a progressive cultural shift about accessibility, assuming it as empowerment, putting in evidence the necessity to foster culture democracy, autonomy and self-determination connected to Cultural Heritage valorization and fruition.

The project intends to act according to shared objectives of accessibility, sustainability and new collaborations, adapting these challenges to the socio-cultural and economic characteristics of the cities involved. Working and collaborating with different groups (vulnerable people, disabled associations, cultural institutions, cultural operators) ROCK strengthened the individual and collective awareness of the right to access goods or services within one's own community. Accessibility is assumed as an initial prerequisite for anyone to reach:

- sites and activities of collective interest;
- culture as a common good and its activities imbued with symbolic value. Accessibility is understood as the possibility for urban communities and citizens to have access to content, acquire new skills, exchange and relationship opportunities, use services and goods that meet their needs and desires, integrating proactive stakeholder involvement in all aspects of the design and creation of urban services/products/solutions;

- heritage as a mix matching of different elements, as a dynamic reality that strengthens the contexts of proximity and the exchange of knowledge between actors from different backgrounds and skills;
- cultural heritage (CH) to strengthen the identity and the values of places and people. ROCK created a balance between the protection of consolidated CH assets and the generation of new ones. This new heritage is the result of an open innovation process activated through co-design and co-realization initiatives (i.e. in the Living Labs, during the Hackatons, emerged during local contests for creative people) in which the various actors (public sector, world of research, formal and informal communities, local and supralocal entrepreneurs) contribute to the transformations of urban contexts and share them through experimentation, useful to express the real potential of spaces.

Accessibility to culture and heritage implies physical and material access to infrastructure and sites and perceptual access requiring an understanding of the symbolic meanings inherent in cultural products and activities.

ROCK puts in action experimental solutions recognizing these rights for all people and citizens to actively participate in the public life and the reduction of disparities in CH accessibility: the right to accessible spaces (in the case of Lyon, through its urban lightscape or Athens, assumed from the beginning of the project as a Role Model due to its effort in barrier-free historic environment) ; the right to cultural life (in Cluj and in Bologna) intended as production and fruition of culture, events and initiatives organised in the city, promoting the co-design of cultural and intercultural contents, and the active participation to cultural/artistic specific and a-specific contents; the right to user-friendly information and communication systems, adopting an inclusive and universal communication in the Project's official channels but also improving the comprehension and recognition of every different language existing in the city, formal or informal, public or private, during events and initiatives promoted by the different ROCK cities (in the old bazaar of Skopje with a virtual guide about the different groups that animated the neighbourhood, or in the Marvila district in Lisbon through an Interpretation Centre for the recovering of people memories).

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ROCK fostered a multidomain innovation perspective in its approach to accessibility:

- social, about new experiences in Cultural Heritage contexts, considering especially the impacts on the quality of life for vulnerable groups.
- technological, focussing on that enabling technologies able to democratize the use of the city, adopting innovative and transferable

solutions and ICT-enabled elements, to ensure a large scale access to city services

- open, to improve the accessibility and autonomy of people in sharing knowledge, data and cultural contents, and adopting inclusive communication and languages for all.

The ROCK approach starts from the drafting of a shared framework to support the development and systematic use of the knowledge of the various actors involved and the identification of barriers that create a gap between the stated urban objectives and the actual practice related to accessibility. Through the definition of strategic focal areas ROCK cities addressed this gap, developing an integrated strategy at urban scale, capable of systematizing the circulation of information between various actors, starting from intermediate subjects (associations, disability manager, specific institutions) to end users, to understand collective needs and generate socio-cultural values.

In this perspective, the inhabitants, in a universal perspective, are a primary point of reference to which every choice of action for sustainable urban transformation must be addressed.

In line with the European Disability strategy 2010-2020 which provides the framework for empowering people with disability to fully participate in society and ensure they can enjoy their fundamental rights, ROCK during its pilot actions promoted the participation of disabled people in leisure activities, cultural fruition, social services linked to CH and to achieve the transition from institutional to community based care.

This transition considers accessibility to Cultural Heritage as the physical-material access and perceptual access, which means the comprehension of products and cultural activities' symbolic meanings. The combination of these two typologies brings the user to the understanding of meanings related to historical heritage accepted and elaborated by people involved with them.

During ROCK, the integration of accessibility concept have been pervasive merging creativity and protection needs with the aim to generate new values and knowledge, promoting diversity and education. The adoption of a multi-factor vision (multi-stakeholders, immaterial and material CH, physical transformations, new services) becomes enabling for the study of the accessibility at urban scale and allows the proposition of urban design solutions aimed at impacts not only quantitative (the number of disabled and vulnerable citizens and visitors in a CH place, the number of accessible events etc.), but also qualitative (considering the effects that these operations can generate on the components of the city system) in terms of new knowledge and awareness about the design for all principles.



LEARN MORE

Lyon was awarded with the Accessible City Award in 2018

<https://www.theacropolismuseum.gr/en/content/visitors-disabilities>

http://nws.eurocities.eu/MediaShell/media/2019_ROCK_Booklet_3_Bologna.pdf

<https://rockproject.eu/news-details/159>



Sustainability and Cultural Heritage

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Sustainability and cultural heritage: Insights from Lisbon

Roberto Falanga

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Introduction: ICSUL in the ROCK project

The Institute of Social Sciences at the University of Lisbon (ICSUL) is one of the academic partners of the ROCK project. ICSUL's commitment towards cultural heritage-led regeneration has been developed through the application of an innovative community-based action research with local stakeholders and residents on the eastern side of Lisbon, in a demonstration area across the neighbourhoods of Marvila and Beato. Acknowledging that the optimization of tangible and intangible heritage was based on goals of social inclusion and participation for more effective solutions, we approached the demonstration area by triangulating qualitative and quantitative methods (i.e. participant observation, interviews with key actors, and both intensive and extensive surveys). Data were collected and made available in open access through scientific and policy publications.

The creation of the Lisbon Living Lab in partnership with the Lisbon city council provided needed conditions to promote a wide array of initiatives and to implement three major actions: one Pop-Up based on the reuse of empty stores led by the local NGO Rés do Chão; the co-design of an edible garden named "garden for all" by the local NGOs Muita Fruta and Coletivo Warehouse; and the creation of a new interpretive Centre of Beato and Marvila in the public library, co-led by the city council and ICSUL.

Sustainability and cultural heritage in a changing world

Cultural heritage-led regeneration in deprived urban areas is a broad concept that combines – at least – two main areas of inquiry and intervention. On the one hand, the potential role of tangible and intangible cultural heritage as a catalyst of identity issues, and a possible driver to engage people in place-based innovative solutions. On the other, the regeneration of the built environment and promotion of local traditions, memories and legacies. Thus, the reuse and optimisation of cultural heritage for regeneration relies upon the possibility to pursue more sustainable goals for future cities. Sustainability is an overarching concept that has been advocated by activists, policymakers, and researchers in the last few decades. The coming together of a high number of voices around this concept can make it difficult to find a common definition. However, in general, sustainability refers to a shared concern over the present use of natural resources and ecosystem services in view of our future. Economic, environmental, and social aspects of sustainability have been more and more understood in tandem to the development. As the Brundtland Report put it in 1987, the development shifts from merely political and economic embedded progress, to understand “what we all do in attempting to improve our lot within that abode”.

Sustainable development helps, thus, clarify that we need to meet basic needs of people today without compromising future generations. To this end, we need to respond to and ameliorate, whenever needed, essential needs. Limitations are key to figure out how and to what extent the economic growth can facilitate their fulfilment. Along with the role of economic agencies, citizens have been more and more encouraged to take an active stance in this field. In 1992, the Rio Conference advanced citizen participation as an essential component to achieving sustainable goals. To this end, local “Agendas 21” were promoted in cities all over the world, while the United Nations have more recently strengthened their call to citizen participation in the 17 Sustainable Development Goals (SDGs) for 2030. Such goals are defined as the blueprint to achieve a better and more sustainable future with a focus on key global challenges, such as poverty, inequality, climate change, environmental degradation, peace and justice.

Cities have been long considered as a main hurdle for sustainable development. Yet, the high concentration of opportunities for knowledge sharing and change steering have shed light on the importance of local drivers. As the urban dimension has grown in the public debate, a specific urban SDG addresses challenges of overpopulation, housing, slum upgrading, as well as targets related to climate resiliency, waste management, public space, mobility systems and participatory planning in cities. If cities are encouraged to take the lead on sustainable

development, the trade-offs of urban sustainability are often sidelined, along with the impacts of upcoming extreme events and risks.

The World Economic Forum points out the increasing geopolitical interconnection among activities and agents for sustainable development. Extreme events and risks equally affect the economic, political, and societal spheres, while the human-non human relations become a cross cutting theme to be taken into more serious consideration for the future. Right before the breakdown of the covid19 pandemic, some global trends were put on the table, such as the decrease of life duration in wealthy countries, the spread of new diseases, as well as the acceleration of new technologies and the raise of the artificial intelligence as key drivers of the economic growth. Nevertheless, a synchronized slowdown registered already in 2019 was especially visible in the Euro zone due to political instability in member states, and the worsening of social inequalities.

Environmental hazards represent one of the major risks for the coming years, and countries are still far from finding an agreement on the reduction of greenhouse gas emission by 2050 (COP Paris 2015). Deforestation and the loss of biodiversity is visible on earth, sea and air. Pollution and human action are coupled by the drastic reduction of bees, the destruction of coral reefs, and the retraction of the Amazon forest, which lost 17% of its land in the last 50 years. However, sustainable development should not be conceived out of ongoing interconnections among different elements. For example, population growth leads to great trade-offs, as the provision of electricity, which is estimated to increase of around 25% by 2040, can prevent from goals of environmental sustainability. Likewise, food production, which already altered around 75% of the earth soil – causing a massive decrease of its quality – and 66% of the oceans, is responsible for 70% of water use.

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The call for a New European Green Deal seems to acknowledge these challenges, as it features the role of knowledge systems and infrastructures, citizen engagement and international cooperation as key components of a carbon-free model of economic production, and its intersection with the technological, and societal spheres. An example of this commitment is ICOMOS and Europa Nostra announcement of a new collaboration to develop a “European Heritage Green Paper” on the issue of cultural heritage and climate change. The Paper focuses on the role of cultural heritage in achieving the ambitions of the European Green Deal (EGD). The deal identifies main interlocked areas of action: (i) clean energy to reduce greenhouse gas emissions; (ii) sustainable industry against the loss of biodiversity; (iii) building and renovations against the abuse of energy; (iv) farm to fork against the waste and low quality of food; (v) eliminating pollution to lower health issues; (vi) sustainable mobility to reduce greenhouse gas emissions; and (vii) biodiversity to protect wild species. The envisioned transition towards a sustainable future should,

therefore, be socially inclusive and participatory, as well as ensure social innovation through experimental research on multiple changes.

Social, environmental and cultural sustainability in the ROCK project

The ROCK project in Lisbon took advantage of the international debate on sustainability and cultural heritage within the wider framework of sustainable development goals. In particular, the Lisbon Living Lab has focussed on three main aspects of inquiry and intervention: social, environmental, and cultural sustainability.

Social sustainability essentially refers to the quality of community life, which depends on the eradication of poverty and the promotion of greater social inclusion and participation in the decisions that affect people. Formal and informal processes, and the adoption of different structures, infrastructures, and systems can help fulfil equal rights by ensuring that the impacts of current choices preserve the rights of future generations. Environmental sustainability casts light on the need of mitigation and adaptation to environmental hazards. Like social sustainability, the choices we make in the present should not compromise the future of our planet, as especially regards the access to natural resources. Last, cultural sustainability is often included in the realm of social sustainability, and concerns the preservation and promotion of cultural beliefs, practices as a fundamental piece of the future. Cultural sustainability, therefore, strictly depends on the sharing of knowledge as a global asset to fight unequal access to cultural life. Connected to the cultural sustainability, the launch of the European Year of Cultural Heritage in 2018 has played a key role in the international debate about the potential of tangible and intangible heritage for sustainable cities. The search for a stronger sense of belonging to a common European space was based on the opportunity to strengthen the ties between past and future through the active engagement of people, especially young people.

Final remarks: social, environmental and cultural sustainability in the Lisbon Living Lab

The three major actions promoted by the Lisbon Living Lab addressed different, however interlocked, aspects of sustainability which made sense of the cultural heritage-led regeneration approach promoted by the ROCK project.

First, following the Pop-Up, the recovery of empty stores and their occupation by local stakeholders is based on the need to revitalise the area by ensuring effective services to local populations, and bringing new cultural activities and events for wider public. Second, the future implementation of a new edible garden reliant upon the active participation of local stakeholders and communities took advantage of local traditions, memories and know-how of rural traditions, which were acknowledged as part of the intangible heritage of this place. Third, the inauguration of the interpretive centre of Marvila and Beato, was based on the identification, collection and analysis of memories and legacies of the place through the active engagement of residents.

Community-based action/research allowed retrieving some relevant insights about whether and to what extent social, environmental, and cultural sustainability have been addressed in Lisbon.

First, regarding social sustainability, ICSUL research team found that attempts for greater social inclusion and participation should rely upon a more in-depth knowledge of the socio-spatial dynamic of the city. Focus on the demonstration area gave the opportunity to analyse emerging features through an extensive survey with a representative sample of the population about multiple aspects of the social life. This endeavour leads to a broader issue that refers to the definition of local community, whether it is defined by the sharing of socioeconomic characteristics and/or territorial boundaries. This was a major challenge in the demonstration area as it shows a great diversity and, thus, emerging social inequalities and disparities.

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With regard to the environmental sustainability, ICSUL research team understood that limiting environmental hazards should be based on the raise of awareness about natural resources and their preservation for future generations. Extreme events and global risks show the need for clear predictors and a qualitative appraisal of how local communities can access data to effectively mitigate and adapt to climate change. Socio-spatial diversity in the demonstration area necessarily raises questions about the pursuit of environmental justice, thus, the extent to which different social groups have currently access to natural resources, and the identification of what can be improved in the coming years.

Last, concerning cultural sustainability, ICSUL research team acknowledge the need for greater access to cultural sites and practices, which implicates firstly and foremost a stronger role of culture in our cities. Cultural heritage in the demonstration area helps cast light on the role of cultural sites and collective memory as a driver for future change. A great potential in the regeneration of both tangible and intangible cultural heritage can, therefore, be the first step to raise awareness about the need to ensure equal conditions to culture as a common good.

Green Office

Alessandra Bonoli

Many studies on shared governance in higher education have highlighted numerous advantages when university's students are involved in the management of decision-making processes and in the implementation of land growth projects (Calvano, 2017). Students are considered as key agents of the transition to sustainable development of universities and territories.

Through the Living Lab of Engineering students, first, and then the Green Office, the University of Bologna has been promoting students' participation processes for the transition towards sustainable development for several years.

The UNIBO Green Office was born thanks to the European Horizon 2020 Project ROCK as milestone for a work package.

The Green Office (GO) is a student-led and staff supported sustainability hub that informs, connects and supports people to take action on sustainability. It represents a central hub where sustainable ideas come together and realizes university community's ideas to advance sustainability in education, research, and operations.

- 88 The first GO has been established at Maastricht University in 2010 where a student initiative came up with the idea to establish a dedicated office that would support students in advancing sustainability at the university. Since then, this model has been replicated by many universities across Europe, in particular North Europe.

Inside ROCK project, there was the new idea of a specific UNIBO Green Office, such as a sustainability hub run by students supported by Universities, Citizenship and Bologna Municipality, promoting low carbon activities and sustainable initiatives, organization and management of appropriate environmental-friendly events, for University and the city.

In fact, the GO of the University of Bologna has been created with the aim to play a role of connector with student community and the at the core university district, Via Zamboni, where the historical schools are located, and where students, professors, researchers have a fundamental role to feel as active citizens of the space in which they live.

The innovative nature of Bologna Green Office, compared to other European Green Office, is the desire to get out of the University context, interacting with citizenship and institutions as well. For this reason and for the development of collaborations and networks between students, professors and administrative staff, the model can have an impact not only at the university and local community level but also at the international

level. The University is a community to all intents and purposes. The great mobility and dispersal of the members of university community, whether they are students or staff, could be a way to create a knowhow that people involved will replicate in non-university communities. In short, it is a capillary diffusion of sustainability purposes, which is an innovative University-city integrated model.

The aim of the Green Office is also to improve the research activities related to the urban environmental sustainability. The project is supposed to produce development in the fields of waste management, air quality improvement, greenhouse gas reduction, sustainable mobility promotion, and organization of events co-creation to raise awareness of students and citizens about sustainable topics.

The potential impact of Green Office is to disseminate culture of sustainability, to create synergies between research, citizens, urban and societal stakeholders, to reinforce the student consciousness about the topic of environmental sustainability and transition.

Through the analysis of the initiatives implemented within the ROCK Project and a series of interviews with those who manage university and city governance, it was possible to detect that the Students' Green Office represents a useful tool for connecting the University and the city, also in the perspective of a third mission (Calvano, 2019). The increasing of students participation in city life, strengthening their role as citizens, favors the definition of innovative sustainability solutions for the city.

Students can definitively play a crucial role for the sustainability of university and city and the Green Office model can effectively promote an increase in urban sustainability.

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Collaborations and Cultural Heritage

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Collaborations: a key aspect in meeting Sustainable Development Goals

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There is a specific Sustainable Development Goal addressing the issue of collaborations. The number 17, titled "Partnership for the Goal", aims at strengthening "the means of implementation and revitalize the global partnership for sustainable development". It is possible to affirm that this goal is one of the most important, maybe the most important, as meeting ambitious objectives cannot be done if collaboration is absent. The current search of a more sustainable transition requires that multiple public and private actors find collaboration paths, aligning their own agendas and being aware that collaborating often means starting a complex process needing discussions, maybe task forces and probably compromises.

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The experience of ROCK taught cities, institutions and citizens a lot about how to create collaborations and about the potential benefits coming from them. The project, in fact, worked a lot on this regard, as a way to manage urban complexity and to achieve objectives. Indeed, dealing with existing urban areas, framed by the presence of tangible and intangible cultural heritage means having the necessity to align multiple drivers, such as for example the following:

- preserving physical cultural heritage (specific buildings and often the entire urban landscape);
- preserving intangible cultural heritage, in terms of cultures, traditional histories, diversity, et cetera;

- making cultural heritage not only a good to be preserved but an engine of life;
- answering to the evolving needs of the society and to the growing challenges;
- considering urban areas as a space that should be made usable from everybody, also in different ways than the traditional ones (not only considering mobility);
- answering to the different necessities of the different categories of people living and working in the areas (residents, workers, traders);

All these aspects, then, need to enter in institutional agendas made of urgencies, emergencies, political goals, pushes from new laws, national and European directives. The ROCK projects identified four core paths for developing collaborations and it worked for making recognisable and sustainable in the long-term perspective.

1. Institution to Institution. This is one of the first collaborations that ROCK promoted, as one of the key aspects for making actions' implementation effective and faster. In particular, each of the three Replicator Cities (Bologna, Lisbon and Skopje) resulted in creating institutionalized forms of collaborations between the local university and the municipality, through agreements or the creation of hinge institutions.
2. Institution to Private sector. This type of collaboration was performed through the definition of specific agreements among municipalities and local actors from the private sector, in relation to specific themes (such as sustainability). These forms were useful for better understanding the necessities and interest of the private sector and to create bridges of a joint effort in meeting common goals. Some of these collaborations involved also creative people, for example through the creation of creative contests for developing new products and services for the city.
3. Institution to Citizens. This collaboration was mainly achieved in ROCK through the setting up of Living labs in the areas and the organization of co-creation and co-design workshops. This process was particularly effective as it allowed citizens to express not only their own opinion but to really contribute as active member of the transformation process through a learning-by-doing approach.
4. Citizens to Citizens. This typology of collaboration is maybe the hardest one to achieve, as it requires the creation of trust among citizens. However, ROCK strengthened some of these partnerships for example fostering the adoption of portion of cities to be managed by people (e.g. the common goods regulations) or through giving

people the space and the moments to collaborate together toward common goals (in this case also through the living labs).

To conclude, the ROCK experience was very interesting and effective in understanding which can be potential paths and instruments of collaborations in complex environments.

Collaborations and Public Private Partnerships

Raffaella Francesca Gueze, Alessandra Vaccari

The issues of responsibility, planning and innovation are central to the new economic model based on sustainability and for this reason public-private partnerships are an important instrument for environmental and social programmes and projects, carried out in synergy between the public, private and civil society.

The definition of what a public-private partnership is and how it works (an issue that can also be partly linked to public procurement legislation) can be found in socio-economic models dealing with the governance of public goods. As early as the late 1990s, the Copenhagen Centre, directed by Simon Zadek (2001; 2017), was the first to define the public-private partnership model: "people and organisations from the public, private and civil society sectors who voluntarily and reciprocally engage in innovative relationships to pursue common goals through the pooling of their resources and expertise".

In the same vein, Edward Freeman (2010), an American philosopher and mathematician, invites all organisations (not just companies) to expand the boundaries of their reporting to align knowledge, so that all the different actors are enabled to fully exercise their role as stakeholders, while Michael Porter (2011) analyses how "companies must create shared social and environmental value. The role of companies today is not just to maximise their profits, but to do so in a way that is also beneficial to society, benefiting communities".

Thus, the need for "New civil governance", i.e. participatory governance involving all the social actors that contribute to the creation of value (the public sector, the business world, organised civil society), stems from the growing complexity of the context in which all the actors find themselves acting, which no longer allows a single actor to develop effective and efficient solutions for the governance of complex situations, such as climate change.

On the one hand, from the awareness of this necessity, comes the importance for the Public Administration to involve businesses in the management and protection of common goods, first and foremost the local environment, through projects that can guarantee greater collaboration between the actors.

On the other hand, for businesses, such a transformation constitutes a new opportunity to base their competitiveness on sustainable innovation and the creation of more effective relationships with their internal and external stakeholders, especially in their local area.

Bringing together in an innovative way the levers, commitments and knowledge of different actors who can contribute, each in their own way, to the achievement of a common goal is at the heart of the public-private partnership. It is not a matter of sponsorship or the granting of donations exactly because the partnership identifies a common goal, promotes innovative solutions managed by both the public and private sectors, promotes training and the creation of a network, and is not limited to a single intervention but tends towards a common vision.

The public-private partnership model increases the active participation of citizens, guarantees a more coordinated and efficient approach within existing institutions, increases dialogue between institutions, businesses and volunteers, improves transparency and accountability of businesses and public bodies in terms of priorities, investments and results.

In recent years, public-private partnerships on the issue of environmental sustainability have become more widespread, also thanks to European programmes that consider them essential levers for the implementation of funded projects. However, it is with Goal 17 of the UN 2030 Agenda that the importance of partnerships as a fundamental tool for the achievement of the Sustainable Development Goals is sanctioned.

At this stage, partnership implementation practices are spreading and the definition of some "normative" frameworks or guidelines to increase the capacity of PA in the effective and legitimate implementation of projects is important. At present, there are several international ISO standards and UNI guidelines (currently being revised) that represent useful tools for defining requirements for the "grounding" of projects without increasing their "bureaucratic burden".

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Below is a list of the main regulatory references, with specific focus on Italian legislation.

UNI 11500/2013 Safety of the city and the citizen Public Private partnership

Guidelines for developing partnership agreements which provides a guide for agreements between public and / or private organizations that must coordinate and cooperate to face destabilizing events (natural, technological and human, intentional and involuntary). The document identifies the principles, planning and development of the cooperation agreement with the aim of, ensuring their interoperability, the governance of their actions and compliance with contractual clauses .

ISO 44001/2017 Collaborative business relationship management systems

The document specifies requirements for the effective identification, development and management of collaborative business relationships within or between organizations.

The aim of the document is to establish the requirements of a strategic lifecycle framework to improve collaborative business relationships in and between organizations of all sizes. Collaborative business relationships can be one-to-one relationships or networked relationships involving multiple parties.

ISO 44000/2019 Principles for successful collaborative business relationship management

The document introduces twelve collaborative relationship management principles.

A collaborative relationship can achieve synergies in areas such as reduced risk, improved performance and efficiency, extended product or service capability, product development.

The creation of effective collaborations is an iterative process where these principles will evolve through the life cycle of a relationship.

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Bologna case study

ROCK tested a new form of public-private-private partnership where the Public body is the sponsor for the agreement between two or more private companies and/or foundations.

The agreement aims to promote and develop joint activities between the Parties, aimed at increasing the capacity for collaboration in relation to the new goals of sustainability. The overall object of the Partnership is the

Improvement of the livability of the city: citizens' well-being, environmental quality, urban regeneration.

Membership can take place through the signing of a memorandum of understanding, which require parties to:

- share the mission on environmental sustainability
- contribute with ideas and proposals
- co-design of initiatives

The pilot project was the agreement within the Bologna municipality, Unipolis foundation and FIU-Urban Innovation Foundation. The object was the temporary greening of piazza Rossini.

The specific objects of the partnership were:

The Municipality of Bologna	FIU	UNIPOLIS
<ul style="list-style-type: none"> • promotes the creation of a sustainable network • general coordination of environmental activities; • implementation of green pilot projects; 	<ul style="list-style-type: none"> • Engagement of civil society; • Organization of social initiatives; • Promotion and dissemination of initiatives; 	<ul style="list-style-type: none"> • Contribute through economic support • Animate the green square with cultural events

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A Catalogue of ROCK Cities Actions

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In the following pages a selection of the most representative actions implemented in the ROCK cities is shown.

They are iconic actions related to cultural heritage, locally embedded and site-specific, supported by soft and technological tools.

ΔΗΜΟΤΙΚΗ ΑΓΟΡΑ ΚΥΨΕΛ



Municipal Market of Kypseli

Rehabilitation of municipal property

CITY, COUNTRY
Athens, Greece

POPULATION
664,046 inhabitants (2011)

CHALLENGE

As many cities in the world, one can find in Athens many empty cultural heritage buildings that belong to public or private entities. Primarily due to lack of funds for their renovation and then its operations, they are left abandoned, losing the value they can bring. How can we find creative ways of turning these buildings into hubs for social innovation, citizen cohesion, economic development in the neighbourhoods they are?

SOLUTION

Kypseli is one of the most densely populated and multicultural neighbourhoods in the municipality of Athens. 70% of its population come from different ethnicities. The Municipal Market of Kypseli under the Impact Hub Athens team turned into a platform that facilitates the activities of social entrepreneurs, creative networks, community groups and municipal services into a common space encouraging experimentation, exchange and dissemination of ideas through open processes and actions.

HOW

The Municipal Market of Kypseli was built in 1935. Abandoned in 2003, it was squatted for 6 years while outstanding local residents led a tough legal process to list the building as a cultural heritage one and thus protect it from demolition or inappropriate use.

In 2012, the Municipality of Athens ensured funding from the National Strategic Reference Framework for its renovation and through the synAthina platform, they organised a public consultation where residents and other stakeholders shared ideas for its future use. 470 proposals were harvested, mostly related to cultural activities, social entrepreneurship and social services.

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Based on these priorities, the municipality published an open call (June 2016) for a 5yrs management contract without paying rent. That was the first time that the municipality called upon civil society to co-manage a municipality owned building. From the 16 proposals, the one from Impact Hub Athens presented a self sustainable model that was answering the expectations set by the municipality.

Thus, in July 2017 the official agreement was signed in order for the Impact Hub Athens to manage the market on the municipality's behalf. The programming focused on creating a participatory cultural, economic and creative platform for the neighbourhood and the city. The Kypseli Market was officially inaugurated in October 2018, having fully operating social enterprise shops, a learning centre for adults & children, social services from NGOs towards vulnerable citizens and government services towards citizens, a canteen and many great festivals and pop up markets that fill in the daily life of the residents & the visitors of the city.

MANAGEMENT

Owned by the Municipality of Athens and managed by Impact Hub Athens, the operation of the Kypseli Market is an innovative model having as its main streams: culture, education, social innovation & entrepreneurship as well as the enhancement of the local economy. According to Impact Hub Athens' proposal, "*The Kypseli Municipal Market will not only act as an emblematic building telling the story of the people and the neighbourhood of Kypseli, but also as a platform that will give the opportunity to co-create with a plethora of stakeholders, an active community which will innovate and create while reviving the urban landscape.*"

The smooth operation of the Kypseli Market is monitored by a committee of experts appointed by the municipality. This new co-management model by Athens and civil society is being implemented in a public building for the very first time and has a non-profit character. Other partners involved include community groups from the whole city, private donors willing to finance the initiative, and public and private institutions, among others.

Impact Hub Athens is responsible for managing the building until May 2021. Should the model prove successful, the municipality is willing to replicate the model in other municipally owned buildings.

The main source of financing the Kypseli Market comes from the monthly rental of eight shops within the market and the events & productions that the Impact Hub is running. Other ways of financing include collaborating with private institutions, cultural organizations and other donors in order for the Impact Hub to design & implement programmes that follow their objectives while serving the needs of the local ecosystem, offering many visibility opportunities, outreach, qualitative services and a landmark building at their disposal. Other ways for financing come from grants; a great example of which is the collaboration between Impact Hub Athens and The People's Trust, where the latter offered an initiation grant of €5,000 to each new shop tenant in order to support them to initiate their social business and raise their social impact.

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TRANSFERABILITY

Identify city and neighbourhood needs. To do so, you have to allow & support activities by local communities, civil society organizations & local businesses.

Design an integrated strategy which offers economic viability and at the same time helps the project maintain, enrich and strengthen its social attributes (social sustainability). Adopt an innovative model for the management of the space that allows flexibility, speed for pivoting & experimentation and will ensure sustainable and independent governance. This is much easier by having an independent and well respected civil society organization or social enterprise to manage the property.

Have a good knowledge of the legal framework of use regarding municipally owned buildings to avoid bureaucratic hassles. You have to find the right allies within the municipality structure.

Create synergies with public and private institutions to ensure micro-financing and funding, usually run & led by the independent management organization.

IMPACTS

The Kypseli Market aspires to become a meeting and reference point for the Athenian public, focusing on culture and education, as well as on social entrepreneurship, while strengthening the local economy. The vision for the Market is to become a mechanism of social cohesion, co-operation, and co-creation in one of the most densely populated, multicultural and historical areas of Athens.

The market was inaugurated in October 2018. More than 100.000 people enjoy the Market's activities per year. Eight social enterprises have already rented the market's available shops (social economy stores). On top of that one learning space, one digital lab and a space dedicated to social and educational services are operated by Impact Hub Athens serving more than 300 students per month. Inside the market it is also hosted the 'Citizen Service Point' which is run by the Ministry of Interior.

All these structures aim at strengthening the social purpose of the initiative and ensuring its sustainability, creating bonds between local communities, bridging the gap between the municipality and civil society, creating new common spaces for the neighbourhood and the city, enriching the cultural capital of different communities, and nurturing the spirit of collaboration. More than 30 new job positions have been created, the level of safety in the area has increased, and the local economy has started to flourish.







Bologna Opera House and new urban dynamics

**Experimental actions of connection
between cultural heritage, public
spaces and citizenship.**

CITY, COUNTRY
Bologna, Italy

POPULATION
391,719 inhabitants

CHALLENGE

One of the main aims of the ROCK project is to rediscover the "Hidden Treasures" of the University Area - places in the city of great cultural and historical: the challenge, in particular, deals with the possibility to re-establish a mutual dialogue between the cultural formal and informal sites of the U-Area and the city of Bologna.

SOLUTION

A historical building in the heart of U-area, a traditional cultural building, becomes a scenario and a driver for testing unconventional uses, addressing a wider target of users and involving local communities and stakeholders. The Opera House is proposed as an open space towards the city, hosting co-design workshops, artistic installations, events and initiatives based on circular economy models with low environmental impact. These actions simultaneously aim to implement cultural heritage potential, to promote its knowledge and to make it more accessible by proposing innovative uses.



HOW

The actions involving the municipal Opera House of Bologna, were led by environmental sustainability and circular economy models, co-planning paths with the involvement of different actors and stakeholders (students, associations, institutions, entrepreneurs, professionals, artists, curators, gallery owners, etc.) and experimentation of unconventional uses: a temporary pocket garden on the terrace of the theater, a site-specific installation in the foyer, the use of some spaces of the theater for workshop activities on re-cycle, and the organization of life-cycle thinking based initiatives.

A preliminary sustainability audit with the Municipal Theater - to identify main environmental impacts and areas of interventions - kicked-off the process. "U-Garden. Bologna Opera House green terrace" is the pocket garden created on the theater terrace. The intervention, carried out through a Public Private-Private partnership, provided a system of seats, flower boxes and lighting elements interpreting space geometries and uses for outdoor performances. The project is the result of a co-design process developed as part of the ROCK project workshop "The 5 squares". The plants and shrubs installation favors the biodiversity of the area in terms of use and ecological diversity and promotes the injection of functional green in a place of culture. Several spaces of the Opera House were opened to the city, establishing new relationships. During the Bologna Design Week 2019 the Respighi foyer prepared itself as a scenario for talks, presentations, exhibitions and workshops. In particular, a circular economy process called "Upcycling - Evolved merchandising" was experimented for the transformation of waste materials of cultural operators into gadgets, merchandising and temporary installations, created by the students of The master's degree course in advanced product design at the University of Bologna. As part of the ROCK experimental actions, an environmental impact assessment was carried out and applied to the production of the Opera House's Barber of Seville.

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MANAGEMENT

The several actions implemented on the Opera House in the U-Area were managed jointly by the Municipality of Bologna, the Opera House Foundation, the Department of Architecture of the University of Bologna, the Foundation for Urban Innovation, Rusconi Foundation and Bologna Design Week.

TRANSFERABILITY

Encouraging accessibility and use of Cultural Heritage proved to be an effective strategy in increasing community engagement, enhancement and re-appropriation of the heritage itself. The actions developed in the Bologna Opera House - temporary interventions such as pocket gardens, artistic site-specific installations or the spaces use of historic buildings for workshops and events - are easily replicable in other consolidated city contexts, with low environmental impact and high value in terms of recovering the participatory dimension of culture.

IMPACTS

The Bologna Opera House, thanks to these implemented actions, assumed the role of experimentation and encounter place: the actions developed were a common chance of enhancing and rediscovering the city artistic and cultural heritage. The greening intervention on the terrace, in addition to add value to an underused space and to offer unconventional views of the city, acts as an ecological urban connector, in favor of biodiversity, in the historical context.



LEARN MORE

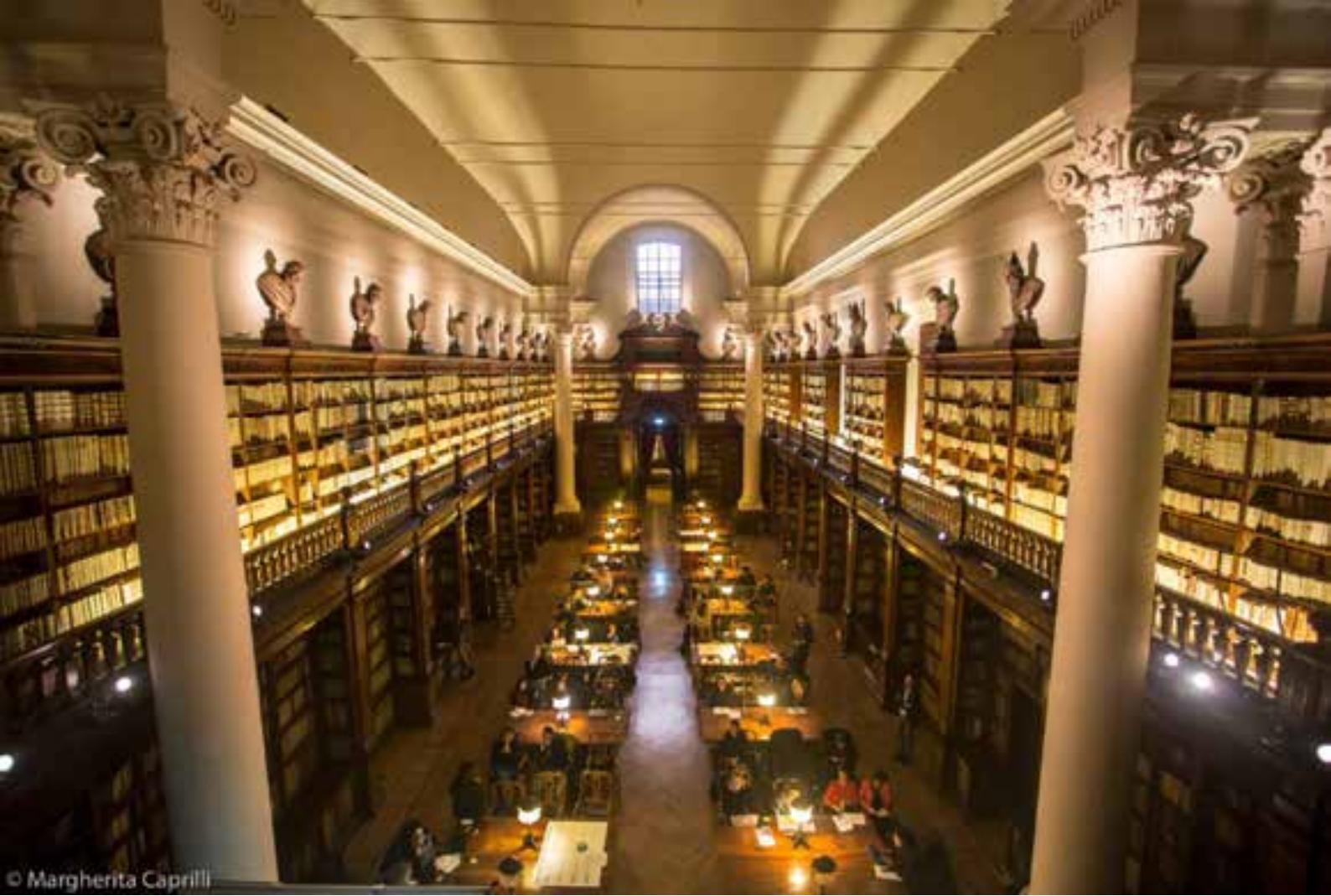
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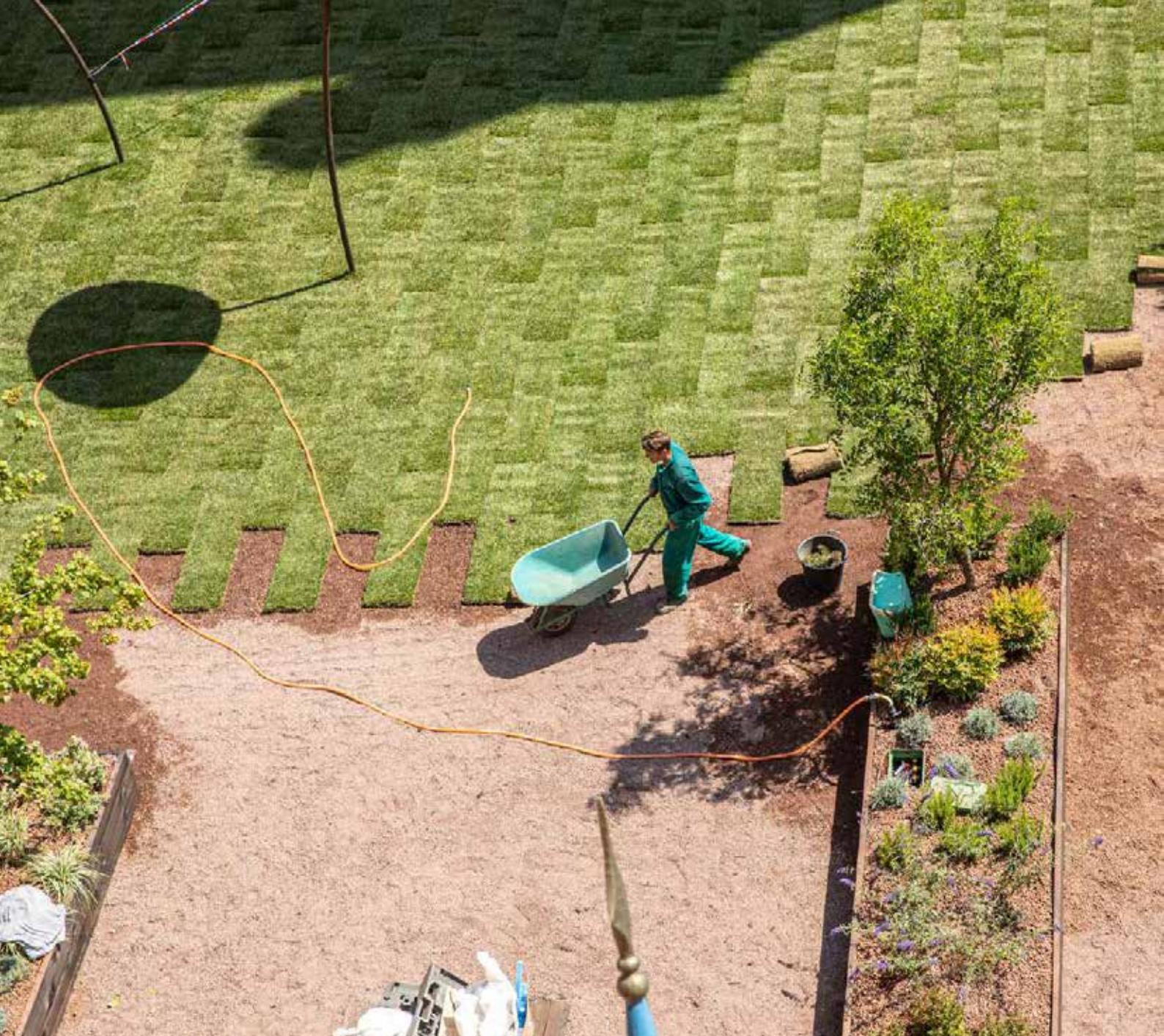
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Five Squares

A tactical urban regeneration of open spaces in the U-Area of Bologna

CITY, COUNTRY
Bologna, Italy

POPULATION
391,719 inhabitants

CHALLENGE

U-Area has a long history of changes generated by its actors and temporary users. Over time, its public spaces hosted different and constantly changing social worlds, which in some cases have interacted in a conflictual way. The area hosts public and semi-public spaces, gardens, surrounded by prestigious buildings or cultural excellent institutions. It is crossed by many local cultural associations taking care of the space, animating it with events and building relationships with the local community.

SOLUTION

ROCK actions in the public spaces of U-Area aimed to renew their role as mediators between differences, dialogic and transformative spaces. Several experiments were implemented in the area to tap into the creative potential of local users and in particular of students, to intervene enhancing the rich basin of heritage potential that needed to be recognized, enhanced and organized.

HOW

The activities were implemented through U-lab, the U-area Living Lab, in two phases: the first one of research, with thematic and contextual meetings; the second one of action, with co-design and installations via self-construction. The actions were first experimented in Piazza Scaravilli with the project Malerbe, a temporary transformation of a parking, into a dynamic garden. A second temporary experiment involved Piazza Rossini, a peculiar historical square, also used as a parking. The proposal was the result of a participatory process "Green Please: the meadow you don't expect", with an installation of a green meadow. The first two experiments were successful for the unexpected perception of the square provided with the temporary-reuse and the new uses and opportunities to rediscover the historical architecture. The success of the pilot actions, kickstarted a broader strategy to systematically involve all public spaces in the Area "The Five Squares". Within this, another temporary meadow was installed in Piazza Rossini in 2020, giving also the chance to open a wider and healthier public space for its citizens, to retrieve a social dimension in challenging times, providing access to inclusive environments for the largest categories of citizens.

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MANAGEMENT

The tactical transformation of the five squares of U-area, were managed jointly by the Municipality of Bologna, the University of Bologna, the Foundation for Urban Innovation and Rusconi Foundation, in charge of U-Lab, in synergy with the programming of Bologna Design Week and Researchers' Night.



FIND OUT MORE

Malerbe project

Green Please: the meadow you don't expect

The Five Squares

ROCK Zona-U

TRANSFERABILITY

The experimentations were successfully led by a structured interaction process, U-lab, proposing meetings, ateliers, and cultural events. This was the key knowledge basin from which emerged the need to restore a social dimension to the squares, enhancing the collaboration of all the local actors. The extensive historical, cultural and social knowledge of the context was also a main lesson learned by the project, fundamental to support the actions and better tailor the transformation, even if temporary.

IMPACT

Impacts that this practice had for the local community. (Max 80 words.)
The experiments were successfully embraced, with a weekly presence of over 200.000 visitors - monitored through 10 crowd analysis sensors - who spent some time in the square with an average of about 20 minutes. The installation has been abundantly commented on social media, receiving around 85 shares on Instagram and 38 articles. A large number of citizens, local stakeholders, and ad-hoc initiatives enthusiastically endorsed the initiative as a first step towards a future vision for the city. These events led rapidly to the decision from the Municipality to turn it into a permanent solution for the pedestrianisation of this space.

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Civic Imagination and Innovation Centre

Participatory governance instrument

CITY, COUNTRY
Cluj-Napoca, Romania

POPULATION
327,272 inhabitants

CHALLENGE

A fast-growing city faces rapid changes in its urban and public space, either related to newly developing areas or the regeneration of different urban spaces. This situation raises the need for local government representatives, citizens and specialists from various fields (economic, academic) to meet and discuss the challenges and necessary urban transformations of the city.

SOLUTION

The Centre was inaugurated in 2017, with the aim to respond to the high need for debating ideas and planned projects, as well as developing innovative solutions based on the creative potential of Cluj community representatives. It represents a communication, qualitative research and promotion tool, organised under the form of an open place hosted by the Casino building, an iconic heritage asset. The city of Cluj-Napoca used the Civic Imagination and Innovation Centre (CIIC) in the context of ROCK project as a soft instrument to co-design and co-create future transformations of the city heritage areas.

HOW

The city administration undertakes a coordination role, being responsible for organising meetings and debates focused on various topics and areas of interest, as well as discussing hot spots for regeneration and implementation of new city projects (i.e. park rehabilitation). After more than two years of experimentation, CIIC has become a permanent laboratory in which the city develops and tests various forms of collaboration and partnership between local actions, aimed at supporting participatory initiatives and encouraging discussions on urban innovation projects. Furthermore, during the lockdown period, CIIC started functioning as a virtual tool for organising public consultations on different thematic areas (urban regeneration, green Cluj, walkable city project, etc).

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MANAGEMENT

The Civic Imagination and Innovation Centre coordinates and guides complex networks of participatory governance, including academia, NGOs, trade unions, professional associations. CIIC is entirely managed by Cluj-Napoca Municipality, but it works as an independent structure with responsibility for promoting the participatory system of governance. CIIC is not a physical space, but the organised meetings and events are hosted within the Casino building, the publicly owned Urban Culture Centre in Cluj-Napoca. The Centre is entirely funded by the municipal budget.

TRANSFERABILITY

- Using this kind of tool is not enough without following-up on the public meetings, consultations and debates. You have to carefully analyse and process the collected information, selecting the most relevant inputs.
- Organise public calls and debates around the most pressing challenges and hear citizens' opinions on different aspects. Create dialogue by including different points of view coming from architects, urban planners, and developers as well as community organisers, local representatives and civil society.

IMPACTS

The most visible impact achieved quite soon after the inauguration of CIIC (around 1 year after) is related to the awareness raising among citizens and communities of the opportunities for enabling public participation and community empowerment concerning urban planning and development. Furthermore, CIIC has also impacted the way public administration addresses the process for preparing and developing large-scale urban intervention projects; including debates and international public contests for rehabilitation of different public spaces, redevelopment of strategic streets, as well as the relation between museums and the urban space. The process of co-designing and co-creating solutions with the local community has given birth to new ideas and innovative projects, valorising the creative potential of the Cluj community to develop urban innovation policies.





NRE-area

**Tailor-made district for
cooperative development**

CITY, COUNTRY
Eindhoven, the Netherlands

POPULATION
234,406 inhabitants (2020)

CHALLENGE

A place where the gas-supply factories of Eindhoven were located, the NRE-area is situated very near the downtown area of Eindhoven on one side, and next to a residential area on the other side. The buildings that remained were of historic and cultural value, but they were in a very poor state and the soil was heavily polluted. The municipality, owner of the NRE-area made a plan in 2004 with the intention of building 350 houses, working with a private developer on the project. But with the outbreak of the financial crisis, the project was put on hold. The municipality of Eindhoven has been searching for a possible solution to reuse the area and develop it in a different way.

SOLUTION

As the energy company Endinet moved away in 2004, the buildings became vacant and it was decided to sell them. The city council underwent market research for possible buyers of the existing buildings and lots, focusing on future residents and not real-estate developers. A sufficient number of future residents were found to start the development process. It is important to note that there was no predefined plan. The development process was initiated together with the selected parties and other stakeholders, leading to a roadmap in which the base and ambitions were defined. The ambition was to grow this area into a city community that feels committed to taking care of it. The way the NRE area was shaped and developed into a creative, mixed city district is unique in Eindhoven, and maybe even in The Netherlands.



HOW

As the buildings were vacant during the transition period, the municipality offered them to people to work there temporarily. Through a foundation, the buildings were rented out to artists and craftsmen. Thanks to these first temporary residents, the area has developed a friendly reputation, and popular awareness during major events such as the Dutch Design Week and Glow festival of lights.

MANAGEMENT

The cooperative philosophy at the base of this project was very innovative. The future residents and people that will work and live here decided together how to implement the options for living, what will be allowed and what won't be. Even the organisation and maintenance of the public space was a group-action, a responsibility of the residents. The ambition was to grow this area into a city community that will feel committed to taking care of their own environment.

The development of the area was managed in an organic way, with as little legislation as possible, in cooperation with the future residents. A roadmap was defined together with the end users to make clear from the start what was the ambition and reach a common understanding for implementation of the project. A small project group was set up at city level, with meetings every month with end users and individual buyers to discuss their plans. This direct and regular contact facilitated the process.



TRANSFERABILITY

- The end users are at the very start of the process, not real estate developers;
- The city has fully taken on its role as enabler and facilitator: the original intention was to arrange as little as possible in advance.
- The temporary use of the buildings before they were sold, opened up the area for a larger audience;
- Adapting the plan to people's projects and ideas takes more time but is rewarding in the end and more efficient in the long term.
- Impacts that this practice had for the local community.

IMPACTS

This method of trial and error is one of the main lessons from Eindhoven: the citizens have to make decisions that concern them. Citizens and users are given more responsibilities and therefore commit more strongly to the process of co-creation. The city had also taken a not-so-easy role, as the end objective of the process is for the municipality to let go. It required a lot of trust between the city and the end users.

The most remarkable result is the community building through the intense way of working together. No participant dropped out of the project during the period of 3.5 years that it lasted. In August 2017, the first building activities started. The construction activities on the site are in full swing and since the end of 2018 the first residents have actually been living in their homes. The most important building on the site, the former gasworks, is currently being thoroughly renovated and since May 2019, Jazz Club Fifth NRE brings new notes to the area.





Marvila and Beato Interpretive Centre

Citizens' participation for cultural
heritage in distant neighbourhoods

CITY, COUNTRY
Lisbon, Portugal

POPULATION
505,526 inhabitants

CHALLENGE

Historically, the rural and industrial neighbourhoods of Marvila and Beato have been isolated from the rest of Lisbon. The Lisbon city centre is now expanding and slowly reconnecting with its outskirts. If the geographical barrier is less present despite the limited public transport connections between the area and the rest of the city, social barriers remain, relying on the different historical phases of occupation and construction. The feeling of segregation and abandonment expressed by people that live on the upper side of the area is coupled with the desertification of the riverside, which has been the target of massive service and market-oriented investment in the last few years.

SOLUTION

The external and internal mobility issues in Marvila and Beato are linked with the issues of participation and cultural heritage. Whether and to what extent can Lisbon promote meaningful participation with the local communities of the area, and lessen this historical disconnection with the rest of the city? The Interpretive Centre of Marvila and Beato has been set up to answer these questions and find actionable solutions to engage the communities. Accordingly, the ROCK project has mainly focussed on the upper side of the area, working with the most disadvantaged communities. The presence of exclusive cultural heritage, including the old quintas and palaces of the upper class of Lisbon in contrast to the more ex-industrial character of the riverside, has given the opportunity to think of cultural heritage as a driver for a wider citizen participation. Several actions have been promoted and are taking place in order to engage local communities around tangible and intangible elements of the cultural heritage.

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HOW

The Interpretive Centre aims to identify and map both built environment and life stories in the area using a participatory method. The local community (residents, local institutions, entities with local intervention) is called to participate actively and help the municipality gather knowledge about the cultural, material and immaterial heritage of the neighbourhood, making it available to the public in an appealing, playful and innovative way, therefore providing better access to this local cultural heritage. Lisbon methodology is based on a bottom-up safeguard strategy, encouraging the direct participation of communities. A participatory/open inventory offers the communities an opportunity to highlight and present their own tangible and intangible cultural heritage.

A participatory/open inventory is being developed through a process in which the surrounding community assumes a central role in the recognition, dynamization and legitimation of the local identity axes. Thanks to the active involvement of the community, a set of oral testimonies about the territory in different historical periods and the diverse forms of appropriation of the local cultural heritage have been recollected and disseminated. The method combines different tools, such as participatory mapping, geo-referencing and cartography to represent the knowledge of local communities and to include information that is now excluded from mainstream or official maps. Innovative digital tools are used to promote knowledge about the tangible and intangible cultural heritage of the territory.

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Invitations were sent to residents that know very well the territory and to relevant stakeholders – to integrate the Interpretive Centre Organising Committee. The OC meets twice a month and includes residents, historians and sociologists from the city council, researchers from the ICS- University of Lisbon and representatives of the civil parishes of Marvila and Beato, of the local institutions SCML-PRODAC and GEBALIS and of a local association. Four groups have been set up to gather information on the cultural heritage of each area and to identify people who can give a privileged testimony of events, practices and experiences related to the history and cultural heritage of these territories.

1. Division of the territory into areas and teams, each concerned with one part of the neighbourhood – by the Organising Committee
2. Mapping of the Cultural Heritage elements – by each of the OC groups. Groups build an inventory of tangible and intangible cultural heritage by finding people who can give interesting stories of local events, practices and experiences.
3. Recollection of information about each of the Cultural Heritage elements - by each of the OC groups and with the support of the Interpretive Centre team to create a database. Each team is

responsible for validating and completing the tangible and intangible cultural heritage municipal inventory. For each cultural heritage item, each team must recollect text information, photos, movies, identification of witnesses who have experienced situations and who have "stories" to tell during interviews.

4. Conducting the final interviews - by the IC Team with the support and orientation of each OC group to prepare the structured interviews that will be conducted with the technical support of the municipal video library "Videoteca Municipal"



MANAGEMENT

- Lisbon Municipality, and more precisely the Cultural Department is leading the implementation process in cooperation with a set of selected stakeholders who were already present and active in the territory.
- Marvila Library is a crucial partner in the implementation of Marvila and Beato Interpretive Centre.
- ICSUL (Institute of Social Sciences in the University of Lisbon) is the academic institution engaged in action/research in the ROCK area and support within the Lisbon Living Lab for the design and implementation of the ROCK actions; ICSUL co-manages the Marvila and Beato Interpretive Centre with the Municipality of Lisbon; use the territory for research on urban challenges in Marvila and Lisbon.
- Grupo Comunitário 4Crescente. The ROCK Living Lab activities are presented at the monthly meetings held by the Community group. They are discussed there. Several members of the Community Group (GEBALIS, Santa Casa da Misericórdia in Lisbon, Marvila Library, the Parish Council) participate in the process of creation of the Interpretive Centre of Marvila / Beato.



TRANSFERABILITY

Within the framework of socio museology, this project was devised with a participative methodology in mind. The key tool within this approach is the centre's participative inventory, whereby people and communities participate directly in the identification and documentation of their cultural resources. This participative inventory can be replicated in other cities, within the scope of local preservation of cultural heritage and urban regeneration projects. For these to be successful, it is necessary to take into account that a participative inventory must possess the following characteristics:

- To be unfinished and consistently updated, since it reflects a flexible and ever changing community;
- To have a team of experts and communities with equal decision-making power regarding methodology, principles and objectives, at every stage of the inventory process;
- To acknowledge and recognize the existence of multiple, and valid, types of knowledge, not exclusively scientific (an ecology of knowledge);
- To recognize that all new findings gained from this process are the result of co-production and co-authorship.

Impacts that this practice had for the local community.

- Dissemination of knowledge of Marvila's cultural heritage;
- Improved open access to data / information about local cultural heritage;
- Valorisation, transfer and sharing of community knowledge on local cultural heritage;
- Improved collection of historical and recent data on local cultural heritage;
- Collective management and production of CH;
- Creation of enjoyable non-formal learning;
- Improved sharing of knowledge about local cultural heritage to wider audience;
- Engagement of residents in telling about their cultural heritage.





Citizens engagement and advancing technology

Synergy creation between
two different worlds

CITY, COUNTRY
Liverpool, UK

POPULATION
496,784 inhabitants

CHALLENGE

Liverpool faced the challenge of improving citizen involvement and knowledge relating to sustainability and Cultural Heritage (CH), and bringing together all the different interdisciplinary and cross-disciplinary expertise in this field. The focus was on user and visitor cultural experience, trying to produce new, innovative ways of engaging with the history of heritage buildings and to enhance the knowledge about the importance of their integration in the city's urban regeneration processes.

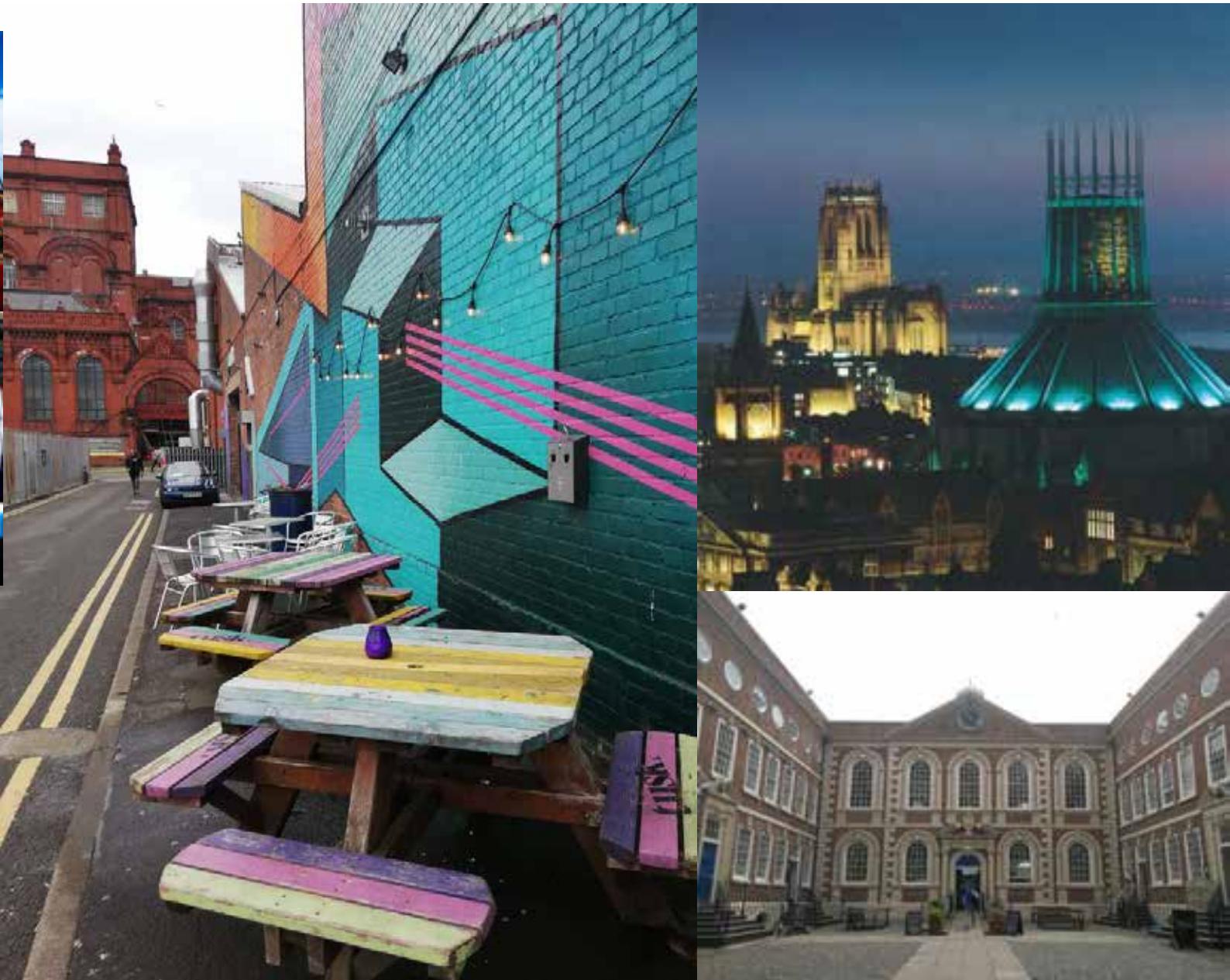
SOLUTION

Liverpool maximized the dialogue with diverse and non-traditional audiences using an approach focused on "meeting people where they are" that significantly increased engagement in the debate around CH. New thinking and solutions were applied especially in experimenting digital tools in one of the most iconic buildings from the 19th century the Grade 1 listed St. Georges Hall, a Council asset that is a quintessential to the UNESCO World Heritage Site.



HOW

The project foresaw the creation, together with the team of artists, heritage experts and local groups of volunteers, of a new kind of mixed reality experience that involved an array of emerging technologies, such as projection mapping Augmented Reality (AR) and Virtual Reality (VR), and live performances. The fusion of these two realities enabled the audience, equipped with Augmented Reality (AR) headsets, to immerse themselves in the history of the St. Georges Hall, through the stories told by the historical characters themselves, protagonists of the historical facts. The characters, full-sized very realistic holograms, were created through volumetric filming and with the help of performance artists, move and speak to the public as they walk through the building. The solution has been tested both inside as well as outside the Hall. Using these techniques, the team created a world's first innovation: a prototype of volumetrically filmed mixed reality heritage experience tested in a cultural building and on a UNESCO World Heritage Site, everything under the guidance of users' experience and the imagination of possible ways of exploring the building.



MANAGEMENT

The project was an interdisciplinary collaboration between various different actors. The actors include Liverpool City Council, world leading researchers; the Centre for Architecture and the Visual Arts (CAVA) of the University of Liverpool; the Royal Institute of British Architects (RIBA); award-winning local creative industry partners and young artists and performers from the Liverpool Institute for Performing Arts (LIPA), founded by Sir Paul McCartney. Participation and public engagement were particularly important throughout the various steps of implementation. Having a balanced team of gender, age and background and involving them in the activities, sharing with them information about the functioning mechanisms, allowed a continuous exchange of ideas, improving the quality of the final production.



TRANSFERABILITY

- It is particularly important to adopt an interdisciplinary practice, very impact focused, but also with a strong narrative approach, engaging the visitor through a journey and storytelling.
- The openness toward feedbacks and adaption is fundamental for the participatory process.
- The general and individual involvement in the implementation process should be open-minded and allow for open-ended results.

IMPACTS

The city collaboration with varied stakeholders using multiple communication and interaction approaches, enabled it to maximise its engagement tactics, leading to the creation of a local cultural network and interactive and ready mechanism for ongoing consultation that will assure the sustainability of the initiatives. This led, also, to the creation of the first Mayoral Commission for Heritage and a local level ROCK Engagement Programme and formation of Youth Initiatives with the City Council elected member for Heritage.





Enlightening cities

Cultural heritage and light
management in Lyon

CITY, COUNTRY
Lyon, France

POPULATION
513,275 inhabitants (2015)

CHALLENGE

Lyon has for a long time an outstanding relationship with light as an urban issue and tool. The city of Lyon realised in the early 1990s that it could amplify its cultural and heritage offer by working with the medium that brings that culture to people, and since then Lyon has been at the forefront of cities experimenting with light. Light has changed the image of the city, increased its attractiveness and transformed its nocturnal landscape over the years.

SOLUTION

The impact of the first lighting plan in 1989 has contributed to extending the very perception of public lighting that was not anymore a solely functional tool. In 2003, Lyon's second lighting plan overcame the traditional approach of lighting (like lighting buildings), considering the new challenges arising with technologies such as LED lighting, and giving a larger place to human beings and human activities. The plan also engaged a reflection on the place of light in the cultural heritage of a city. Light shows the reality of the city in its complexity and heterogeneity. Cultural heritage can be valorised thanks to a specific lighting scenography. Today, light has become an integral part of public action and landscape, urban and architectural development projects through the now familiar notion of "nocturnal landscape". Light is an integral part of Lyon's cityscape and has been integrated in all urban planning projects, with a lighting designer present in each project team.



HOW

Within ROCK, Lyon engaged a reflection on an overall governance and regulatory framework to tackle light scattering (also known as light cacophony) and preserve the cityscape in terms of cultural heritage. Light scattering can be defined as the inconsistency created by the abuse of light in commercial spaces (shops, windows, bars and restaurants) and by private light in general on the carefully created light scenography on facades and streets of the city.

The dialogue between public and private lighting that constitutes the nocturnal landscape and the use of commercial lighting was the focus of a series of discussions with inhabitants and visitors organised by the Lyon urban agency. The approach retained was to understand usages, needs and perceptions and did not intend to regulate at all costs. Different target groups were questioned, for the city to better understand inhabitants and visitors' perception of commercial light. Based on these exchanges, the city was working on a booklet of recommendations on how to properly enlighten a terrace or a building, and how public authorities should respond to it. To this end, the city also formed a group of actors involving different departments of the city administration, shopkeepers associations, different organisations and stakeholders. This work provided some leads and an identity for a revision of the 2003 lighting plan taking into account new challenges and recent developments among which the ecology transition.

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MANAGEMENT

The work on permanent lighting is led by the cultural affairs department together with the urban lighting department and a strong involvement from the urban planning department. The city has gathered a large and solid network of local partners in the different strands of activities: research partners like the university and the urban agency, cultural partners such as the city museums and archives, dissemination partners for the European link (LUCI network, based in Lyon).

Lyon is still for many pioneers on the subjects of permanent light, commercial light and light scattering. We witnessed the first signs of an opportunity for collaboration at European level on the subject. As part of ROCK activities and with the support of LUCI, Lyon organised two workshops to exchange with other cities on the subject and share views on permanent light, commercial light and light scattering. The future will hold more opportunities for collaboration at European level on the subject.

TRANSFERABILITY

- Working cross-sectoral: integrate all the elements of the chain on a concrete subject, with the possibility for each of the partners to contribute with its own means and to develop a series of different tools with multiple focuses.
- The mandate must be double: political and technical. In the case of light, March 2020 represents an opportunity for political representatives to take hold of the subject, well prepared by the technical services.
- The opportunity offered by European projects should not be overlooked: projects funded by the European Union allow local actors to take up strategic issues while having the luxury of budget, staff and working time entirely dedicated for this purpose.

IMPACTS

A strong local partnership now exists on the topic of light, with the university, various city departments (culture, urban lighting, urban planning), LUCI network, city museums, city archives and the urban planning agency working together to develop various actions. This transversal working method has become common practice. Commercial light has also become a local strategic issue: elected officials have become aware of the importance of permanent light as a tool for enhancing heritage (night landscape) and this converges nicely with the planned updating of the lighting plan. Thanks to the work carried out by LUCI (publication based on a study 'exploring urban landscapes' carried out with 12 European cities), light is also becoming a subject at European level.

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Engage Skopje

An online common space to improve
the quality of life in the city

CITY, COUNTRY
Skopje, North Macedonia

POPULATION
546,824 inhabitants (2016)

CHALLENGE

Like many cities in the Balkans, the city of Skopje has undergone radical changes through history that have left their marks on the image of the city. These transformations were not only social and political but affected also the built environment of the city. Skopje is made of multiple layers of history and characterised by discontinuity in urban planning history with many changes of paradigms over the years. This turbulent history is to take into account to fully understand the current challenges faced by the city, and its strong desire to start anew and rebuild trust between the local government and citizens.

SOLUTION

The online platform Engage Skopje is the common space which brings together, supports and facilitates citizens groups engaged in improving the quality of life in the city. Engage Skopje is an online, open public platform which intends to encourage citizens to generate bold new ideas that solve urban challenges and improve city life, as well as have the potential to spread. Engage Skopje is a common meeting place, recognising the activities and the projects with the greatest positive impacts on the city. It intends to mobilize individuals and groups of interest to share information of the actions they undertake in city life. It affirms best practices as a possible response to the real challenges of the city and enables provision of information, strengthening and networking of the actors in civic innovation, in order to emphasize the team spirit and the sense of active citizenship. Engage Skopje is meant to be a driver to active citizenship.



HOW

Engage Skopje is a resulting product from collaboration between Athens and Skopje (role models and replicator cities) as part of the ROCK mentoring process. Engage Skopje came up after a series of consultations with the synAthina team from Athens, with the city of Skopje and the local community. SynAthina is the city of Athens social innovation platform for engaging citizens in problem solving and reform. Founded in 2013, synAthina has made its website code open source in 2018, making the technical aspect of it available to other interested cities and organisations. The open source initiative by synAthina facilitates its adaptability to other web design interfaces and digital tools and opens up the field for municipalities to co-create shared technological solutions.

After a series of site visits in Skopje aiming to witness the area and co-develop the local consultation methodology, the city of Skopje took up the initiative to create its own community engagement platform based on synAthina: a new platform based on the city and citizens' needs to collect solutions by active citizens and community groups in the city of Skopje.



MANAGEMENT

Engage Skopje is an initiative of the City of Skopje within the ROCK Project framework, using the City of Athens experience of "shared key lessons learned from city models". It was created in March 2020 and is part of the Department of International Cooperation and Support of Civil Society and Innovation. Engage Skopje team works with partners in the City Hall in order to upgrade policies and embed a culture of openness with the citizens of the City.



LEARN MORE

Engage Skopje was launched in 2020 as a public platform for building trust and encouraging collaboration between the citizens and the city.

<https://engageskopje.mk/StaticPages/AboutProject>

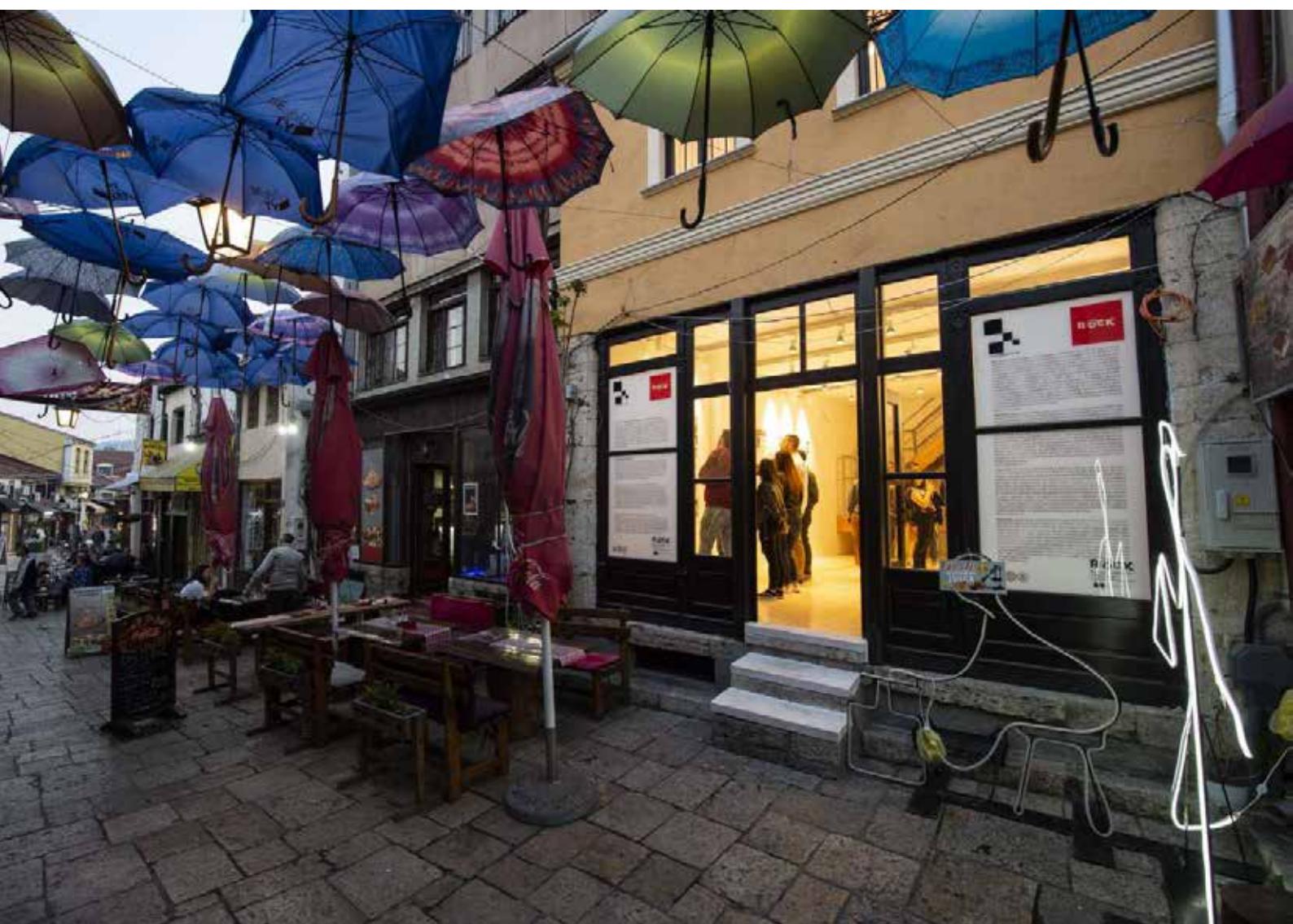


TRANSFERABILITY

Make the most of the mentoring opportunities offered by EU projects such as ROCK to connect to role model cities and learn about their best practices and potentially replicate them in your own local context.

As proved by Athens and Skopje, difficult economic, social or political conditions do not prevent efforts to engage citizens in problem solving, paving the way for engagement of both formal and informal groups.

Engage Skopje works in two ways: on the one hand, citizens and the city administration will have an overview of what is and will be going on among diverse stakeholders and on the other hand, the city administration can plan future activities based on the citizen's needs and expectations.



IMPACTS

Engage Skopje is a replication achievement for the synAthina platform in the ROCK project. Athens and Skopje exchanged their experience on local communities and shared lessons learnt from the synAthina platform. The combined strategy gave both cities (Athens and Skopje) the opportunity to reflect on the potential and challenges of such endeavors and take the platform a step forward to resonate the current technological and urban needs.

Engage Skopje is not just an online platform, it promotes public engagement as an important part of supporting civil society. Through this platform, Skopje has recognized the role of civil society and dynamically embraced citizens' initiatives in the decision-making process. In times of health, economic and financial crisis, Skopje wanted to create a systematic mechanism collecting the available capacity of public oriented citizens to co-create new solutions for better life in different areas in the City. Engage Skopje is the common meeting place, facilitating and utilizing citizens' groups carrying out actions to improve the quality of the city life. Through coordination of the human capital of the citizens' groups, Skopje listens to the needs of the society and modernizes, by strengthening the actions of the citizens, the relationship of the civil society with the local self-government and cultivates a two-way, dynamic relationship between them.





Large-crowd monitoring tool for understanding people flows in the city

**LBA sensors deployment at
permanent heritage sites and
temporary events/ locations**

CITY, COUNTRY
Torino, Italy

POPULATION
900,000 inhabitants

CHALLENGE

Torino was addressing a challenge related to linking permanent heritage of the city with temporary events, by understanding how visitors move among different events and locations in the city. The aim was to monitor the number of visitors attending specific places and events in the city for a better understanding if those attending temporary events were visiting the permanent heritage of the city as well.

SOLUTION

For gaining a better evidence on the city dynamics generated by different types of events, Torino applied LBA sensors (provided by DFRC) for crowd analytics in 3 main areas, allowing to monitor the crowd movements and identify mobility patterns. The targeted locations involved both permanent CH related sites (museums, gardens, historic buildings) and temporary events with high impact on the crowd movement and attendance (Contemporary Art weekend, International Book Fair). The reason behind this selection was to understand if the main events provide visitors to "off" events and whether temporary events provide visitors to permanent heritage sites.

HOW

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Through the use of LBA sensors, Torino collected data related to the number of visitors, duration of stay, % of returning visitors, mobility pattern and distribution maps. The data collected have been made available in real time and historical views, in daily, hourly and customisable resolution, via web-based dashboard and a mobile app. The data and analytics have been shared with the relevant municipal services in order to find out how, where and when can city services be improved during events (i.e. safety).

MANAGEMENT

The sensors deployment and data analysis have been coordinated by Torino City administration, with specific involvement of the Local Police (Scientific and Technological Unit). The Local Police was the department in charge of the technical implementation (sensors installation, maintenance) and for the monitoring and analysis of data. Since the sensors have been used in different heritage locations, as well as during different large-scale events, different stakeholders have been involved, such as museums directors and managers, temporary events' organizers, the shop/bar owners (in the area of San Salvario).

TRANSFERABILITY

- Crowd analytics can be extremely useful for security monitoring during large-scale events and city planning (e.g. transportation) during festivals and free outdoor events;
- Work together with other stakeholders such as events' organisers, heritage buildings managers and create synergies for better events planning, and possibly create "evidence-based" promotional strategies.

IMPACT

One impact generated by testing the crowd monitoring related to temporary events lies in the support offered to the local police in the management of safety and security. This was possibly done by identifying recurrent mobility patterns within the city, associated with different heritage attractions points, as well as temporary events and locations. Furthermore, the possibility of monitoring two editions of the same temporary event, Contemporary Art Fair 2018 and 2019, although with a different extent (only one sensor in 2019), allowed some specific analysis as well as a comparative one.





Happiness Index for urban regeneration

**Creating positive emotions
through planning**

CITY, COUNTRY
Vilnius, Lithuania

POPULATION
560.000 inhabitants

CHALLENGE

Involving citizens in creating open spaces and collecting their opinions regarding sustainable urban development and neighbourhoods' initiatives is not always easy and requires huge efforts. Traditional tools are not always helpful because they must deal with rapidly changing political contexts, as well as new raising challenges, such as Climate change and socio-cultural aspects. The challenge of Vilnius was finding an alternative way of understanding how people feel in public urban spaces.

SOLUTION

Vilnius Municipality, together with Vilnius Gediminas Technical University (VGTU), have tried to find an innovative solution that allows understanding citizens' wellbeing, without directly interacting with them. In this sense, they developed a Neuro-analytical system, measuring average emotions and physiological parameters of impersonalized people, to be applied in the Old town (UNESCO world heritage site) and in one industrial area of the city, leading to the creation of a "happiness index".



HOW

The process started with the creation of a team that learnt about the important role and relevancy of citizens' emotions measurement for urban development. The team installed ten neuro-analytics sensors in the Old Town, the recreational green areas, and the heavily polluted industrial sites of the city. Data from sensors were collected on a daily basis since autumn 2017, showing where people feel happier, sad, surprised, or angry, and how much feelings depend on weather, pollution, temperature, wind, daily rhythm etc. The results of the research have been discussed in public campaigns, in mass media, and local and international conferences, receiving a positive feedback from the public. The data collected were further united into a system which allowed their interpretation in the form of colours, then exhibited on the most prominent places of the city for the first Light festival (held in January 2019 and replicated in 2020). During Covid-19 quarantine, sensors reacted to the amount of stress and negative emotions accumulated by the population. The happiness index showed a decrease of citizens' wellbeing by 20%, while boredom increased by 80%.

MANAGEMENT

The Vilnius Municipality collaborated with many different actors, among which the VGTU university, supporting the know-how, offering their knowledge for the development of the innovative technological tools, their monitoring, the data analysis, and further research and dissemination of the results by depicting the process in the academic literature. Local Laser companies and IT companies have been involved in the implementation and consultation processes and City Lighting enterprises supported the initiative of interpreting the data into colours that were further exhibited during public events. The Municipality kept all these components together, by taking on the role of planning the activities, assuring the transparency of the operations, and disseminating the results locally but also internationally through public relation campaigns.



TRANSFERABILITY

- The use of emotional data as part of urban practices is a novelty for municipalities, is expensive and time consuming, this is why the political and financial support, and a qualified team engaging in the implementation is hardly needed.
- Personal data protection is a sensitive issue both for citizens and public administrations, it should be considered carefully and supported by a transparent procedure and a permanent public information.

IMPACTS

The fostering of the role of emotions in shaping urban environment and management, received a positive feedback from the city politicians and administrations. Data from the Happiness Index have been used for the Strategy Vilnius2in, to measure and improve the city management. The Vilnius Happiness Index became one of the most important indicators of the quality of the city and the integration of the "Colours of the data" in the Light Festival has increased the city's attractiveness at international level.



Fech
Marat
2º a 5º P
das Kfz im
6º Fein
das Kfz im



FUELLING THE FUTURE OF CITIES' INNOVATION

ROCK Innovation: a brief overview

Iwona Maciejewska, DFRC
Alexandru Roja, ARIES Transilvania

With ROCK the cities' Cultural Heritage is turned into a laboratory for innovation boosting urban regeneration and adaptive reuse of historic city centers. ROCK brings together stakeholders and tools in an open innovation environment generating Creative and Sustainable Districts, i.e. the ROCK ecosystem.

Within the ROCK project, the Cultural Heritage has been a central point in the process of urban regeneration. ROCK proposes an innovative portfolio of tools and services through which cities can be more aligned with the main socio-economic trends by capitalizing on Cultural Heritage. The project has developed and tested solutions, useful in the process of co-designing and co-creating new urban experiences in which citizens, together with the public administration, give new functionalities to urban spaces, capitalizing the potential of cities through Cultural Heritage and digital technologies. The diversity of solutions and scenarios co-developed and tested within the project made possible ROCK replication, offering different models for other cities in Europe whose strategic objective is to capitalize on local cultural potential through innovation, communities, entrepreneurship and digital technologies all brought together in the open innovation ecosystem.

Through ROCK, cities that adopt technological tools can develop unique capabilities to harness the distinctive potential of cities through an innovative mix of technology, citizens and community engagement, Cultural Heritage and new experiences.

At city level, ROCK has generated cohesion between citizens due to the definition of new contexts in which they interact. Social cohesion takes place in redefined urban spaces, in new scenarios through which citizens

or visitors can experience various places, spaces and activities. Within ROCK, technology has become a mediator and enabler of these new experiences by redefining the ways in which citizens experience spaces and life in cities, contributing so to strengthen the sense of belonging. The quality of life has increased in ROCK cities due to the high cohesion between citizens, and Cultural Heritage has been the meeting point and digital technologies the medium.

ROCK is highly relevant at the city level providing an innovative circular systemic approach to the extraordinarily complex city ecosystem, where a large number of diverse stakeholders are interacting, and different interests must merge into a consensus. Regenerating the city requires a citizen-centric approach, converting existing silos into an open innovation ecosystem, which is a complex process.

ROCK manages to bring them together through a clear methodology in a new innovative space. Through the ROCK project, the horizon of knowledge focused on Cultural Heritage has been expanded. Building communities and the ecosystem of stakeholders around ROCK had as a central element the cultural spaces, cultural heritage, and all these had revitalized the life of cities and generated new urban functions

The value of the innovations generated within ROCK

ROCK acknowledges a central role for the cities in the process of generating a new creative energy capable of transforming and regenerating urban life.

Such creative energy is based on the paradigm of open innovation, where knowledge, experiences and technologies are shared and good practices are critically identified, as the basis for replicating successes and avoiding threats.

A circular model was developed during the project, where six pillars have been used to build a program of innovative pilots run in the participating cities. The six pillars – creative, cultural, regeneration, knowledge, security and green – are interconnected circles where the cities are spaces of co-creation, living laboratories to put in place co-creation actions.

In the co-creation of the ROCK pilots, local actors, associations, students and entrepreneurs worked together to design and test innovative solutions and to produce guidelines and recommendations for future implementations.

The innovative solutions developed in the project have been used in real-life environments, involving citizens and visitors in the assessment of the

benefits that the proposed innovations could generate, not only for the users themselves, but also for a better management of the city, for a wider valuing of its cultural heritage, for an environmental respective growth and for new economic and job opportunities in the business sector.

Through the ROCK innovations, the creative cities are transformed into spaces of knowledge sharing: students can learn, citizens can engage, SMEs can find new customers, museums and galleries can offer new cultural experiences, and the public administrations can find guidance and tools to be more effective in the management of public spaces, in the use of public resources and in the provision of attractive destinations to visitors.

The ROCK innovations offer a wide range of instruments to co-develop new knowledge and to share it among the European cities and their local actors. They all together constitute an ecosystem, where responsibilities and awareness of the participating actors lead their interactions and generate the envisaged urban transformations, i.e. Cultural Heritage led regeneration, sustainable economic development and city promotion.

The values of the innovations generated in ROCK is demonstrated and discussed during the 'Open Knowledge Week' run in October 2020 as the final event of the ROCK project. In particular, the final 'Open Knowledge' session highlights exemplar cases of implementation of the six pillars of the ROCK circular model, where a wide range of values are provided as reference for future implementations. Cities and all the stakeholders involved in their regeneration can find in the resources of the ROCK Open Knowledge Week a wide range of stories based on the use and re-use of the ROCK innovations, a critical representation of the values connected with these innovations, and the more effective paths to achieve results, with particular regard to:

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- informing European policies, via valuing and exploiting European projects results
- valuing Cultural Heritage in the cities
- engaging with cultural and creative enterprises
- adopting innovative governance models and financial schemes
- linking Cultural Heritage to the regional development and in particular the smart specialisation strategies
- understanding the environmental impact of cultural events in the cities

Urban regeneration is a very complex process that requires experts from multiple disciplines and actors from multiple sectors to work together. The ROCK innovations represent a valuable repository of tools, guidelines and recommendations to help in facing this challenge.



ROCK Innovation Portfolio

Iwona Maciejewska, DFRC

The ROCK innovations presented in this publication aim to offer a concrete menu of solutions that each city can adapt to its specific reality. During the ROCK Open Knowledge Week, a special room for displaying ROCK innovation was available: it was possible to visit the virtual booths of ROCK partners presenting technological solutions and discover relevant EU projects focusing on cultural heritage.

The following Innovation Tables aim to present individually ROCK tools to a wider public, as well as to the stakeholders and potential end-users. The design and content of these tables were designed by ROCK Innovation team aiming to provide the essential knowledge about each one of them, being at the same time compatible with CH tools catalogue in www.innovationsinculturalheritage.eu, so they could be easily integrated within this European platform, co-designed by ROCK project. The tables inform about tool's provider, content a short description of innovation, ROCK use cases and added value they have to the potential end-users.

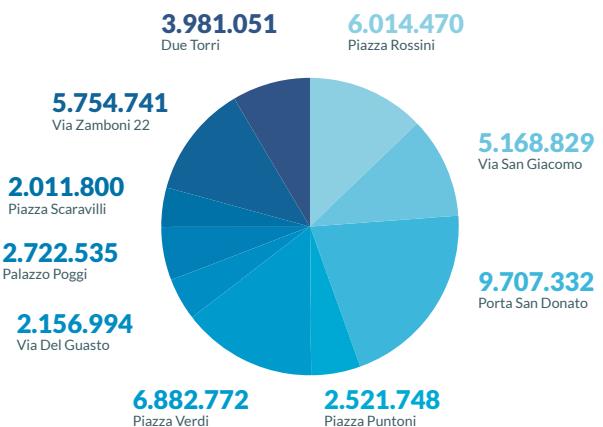
ROCK soft and hard ecosystem of tools contributed in creating a vast array of data descriptive and interpretative of CH experimentations in the Replicator Cities. The following infographic shows some of the main numbers related to Skopje, Lisbon and Bologna as well as general data on the project results.

ROCK in BOLOGNA

24 month data collection | Jan 1st 2018 - Dic 31st 2020



Visitors by area



People



More than
23mln
overall visitors



More than
52k
daily visitors



From more than
170
countries

Strategy



76 ACTIONS

- 26 Knowledge
- 13 Participation
- 37 Transformation



24 MONTHS
of actions and impact monitoring



10 AREAS
monitored and covered by sensors



10 PARAMS
for environmental monitoring



ROCK in LISBON

24 month data collection | Jan 1st 2018 - Dic 31st 2020



Cultural guide

Publication of the book

The East Side of Lisbon Cultural Guide

4 parishes

São Vicente,
Penha de França,
Beato and Marvila

for a new
centrality
expected
to emerge

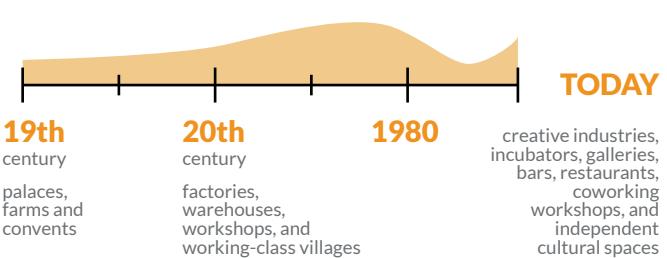
Creating the
**MARVILA AND BEATO
INTERPRETATIVE
CENTRE**



for mapping
tangible and intangible
Cultural Heritage elements
of the territory



and **creating a participative
inventory** for saving the
memory, even of those
disappeared over time



Output



140 CH ELEMENTS

documented with descriptions and photos



50 TESTIMONIALS

documenting the value of those elements



220 INTERVIEWS

recording on video those testimonial stories



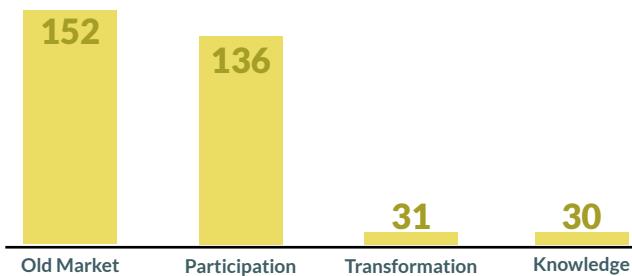
Stakeholders

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STAKEHOLDERS
involved by the projects' actions



**ROCK in
SKOPJE**

24 month data collection | Jan 1st 2018 - Dec 31st 2020



Monitoring



Crowd
monitoring



Microclimate
monitoring



Video-neuro
analytics



Strategy



3 OPEN DAYS
to draw the interest of citizens



**2 ARCHITECTURAL
WORKSHOPS**
to explore feasible transformations



2 OPEN CALLS
to foster the contribution of creative industries



7 EXHIBITION
to present results and achievements

Impact

3 REPLICATOR CITIES



BOLOGNA



LISBON



SKOPJE

7 ROLE MODEL CITIES

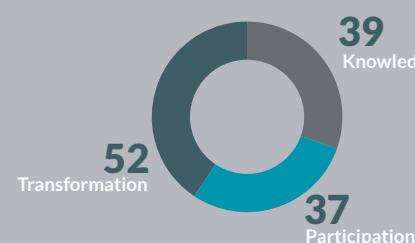
Athens, Cluj-Napoca, Eindhoven, Liverpool, Lyon, Turin and Vilnius



128
ACTIONS
on the Replicator Cities



10
TOOLS
for Heritage-led regeneration



For more info check out the
ROCK Atlas

Dissemination



TWITTER

1.123 followers
20k impressions / month



WEB

1k unique visitors / month



**MAILING
LIST**

648 subscriptions
34% open-rate



228 PUBLISHED
ARTICLES



738 DISSEMINATION
ACTIVITIES

ROCK
**Facts and
Figures**

ROCK Circular Urban System

UNIBO / Department of Architecture

**Giovanni Leoni, Valentina Gianfrate, Danila Longo,
Saveria Boulanger, Amir Djalali**

"ROCK Circle" connects and moves sub-systems of actors, processes and technologies in several ambits.

BRIEF DESCRIPTION

ROCK conceptualizes an innovative circular urban system model – the ROCK Circle – composed of both social and technical elements, using new technologies (or existing ones differently), including stakeholder knowledge, modifying materials flow, changing organisational practices adapting institutions aiming to facilitate:

- organizational,
- technological
- and social innovation
- and accelerate transition towards sustainable city growth, focusing on Smart Heritage inclusive growth and sustainable economic development

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The transfer of a circular economy model to the urban historic environment starts considering CH (Cultural Heritage) as a product to which the same principles of saving and reuse can be applied. Assuming historical centres CH transformation, adaptation and reuse into Creative and Sustainable Districts, as a key driver at its core.

EXAMPLES OF USE

The replication potential of the ROCK Circular Model has been tested in different contexts (validated during the demonstration activities, in three dimensional, socio-economic, and functional different locations).

BUSINESS/ SUSTAINABILITY MODEL

Consultation Agency, B2B

TARGET USERS

Cultural institutions, cities and associations.

TYPE OF INNOVATION

Technological, organisational, social

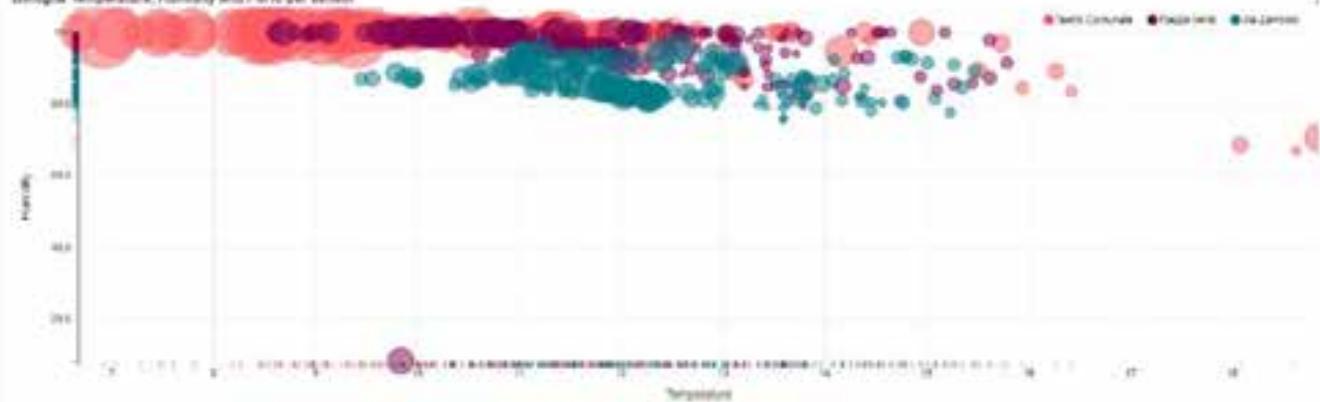
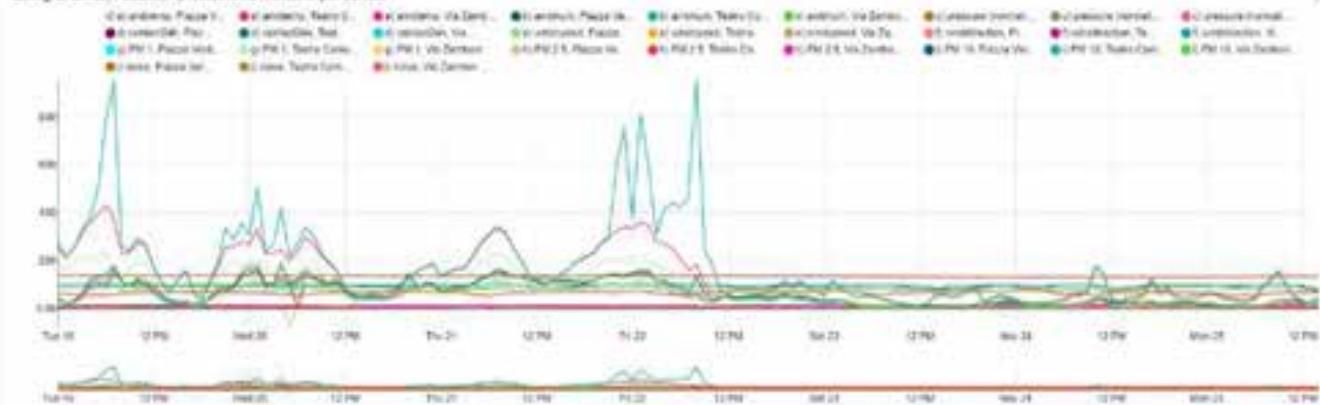
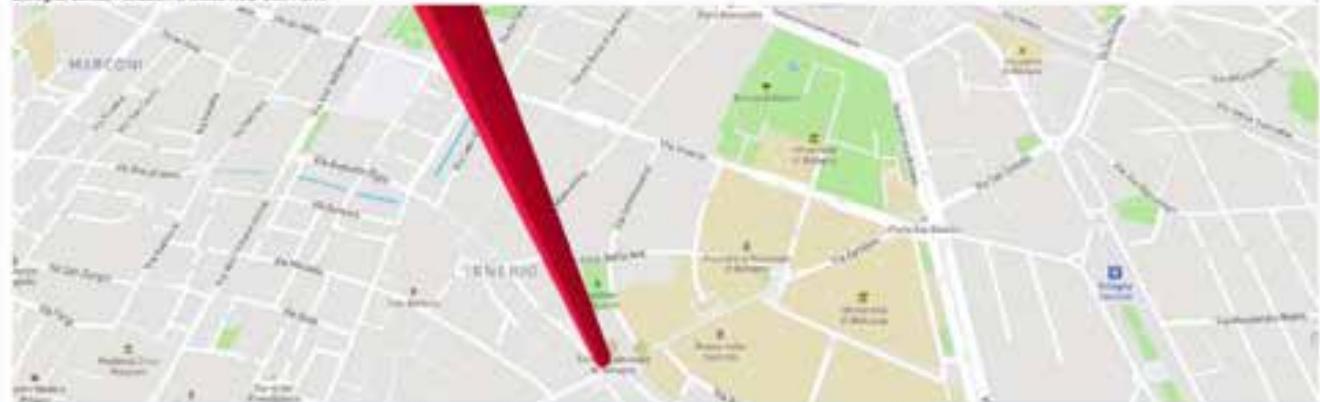
TYPE OF ADDED VALUE

Economic, social, cultural, environmental & urban

● Home ● Dashboard ● Project ● Components

Bologna, environmental monitoring ☆

Edit template

Bologna Clima, Pollution & Noise Avg Timeline**Bologna Temperature, Humidity and PM10 per sensor****Bologna Clima, Pollution & Noise Avg Timeline per sensor****Bologna Clima, Pollution & Noise Avg Geo PM10**

ROCK Interoperable Platform

CORVALLIS

Marinella My & Giovanni Corazzol

The ROCK Interoperable Platform collects and manages data sets related to Cultural Heritage to facilitate communication and relationships between different information sources

BRIEF DESCRIPTION

ROCK Interoperable Platform (IP) collects and manages data sets related to Cultural Heritage to facilitate communication and relationships between different information sources. Data sources are represented by:

- primary data collected during the project - deriving from sensors and ROCK tools, and gathered during ROCK public events and within the ecosystem of stakeholders
- secondary data that are already collected by the cities involved in the project using existing approaches.

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All data collected into the ROCK Interoperable Platform are available as Open Data for any further reuse.

The three Replicator Cities use the ROCK Platform to identify and describe their CH assets. The Replicators provide feedback to the data developed by the Platform on the basis of ROCK algorithms and its thematic layers, based on algorithms and common indicators defined by the replicator cities. A dashboard platform allows a comparison between Replicator cities during the course of the project.

Based on predetermined KPIs, the Interoperable Platform also compares the Replicator cities with the Role model cities with the aim to evaluate the best regeneration scenarios for historic cities. Algorithms aggregate the data uploaded into the platform providing the basic elements to calculate the KPIs that are used for the M&E plan in the online Rock Monitoring, evaluation and Reporting System (ROCKME). The data loaded on ROCKME are being periodically uploaded into the ROCK Web Platform to be released as Open Data to users who want to reuse them.

The IP also includes a Semantic Layer component to stream data in RDF format to be stored in the Triple Store.

- Within the Semantic component, data collected from ROCK tools and secondary data are being integrable with other open ones such as DBPEDIA and Open Geodata.
- The Query Layer provide endpoint SPARQL for querying the data stored in the central platform, allowing access in an interactive and programmatic way.

Data coming from the ROCK Atlas tool, reporting Urban context elements and Rock actions, are integrated into the IP. This information is converted as linked data with formal semantics.

Users will be granted access to them and other related Linked Open Data available on the web.



FIND OUT MORE

the platform presentation can be found at this link:

<https://www.youtube.com/watch?v=2zxiSzALS1A>

ROCK interoperable platform is navigable here:

<https://opendata.rockproject.eu/rock/>

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EXAMPLES OF USE

The three Replicator Cities use the Rock Platform to identify and describe their CH assets in interaction with Role Model Cities.

BUSINESS/ SUSTAINABILITY MODEL

Service Operator: OVH platform

Municipalities

TARGET USERS

Technological, organisational

TYPE OF INNOVATION

Economic, environmental & Urban

TYPE OF ADDED VALUE

CULTURAL HERITAGE AS A DRIVER FOR BRANDING THE CONTEMPORARY CITY

A TOOLKIT FOR STORYTELLING

Luis D. Rivero Moreno
Miguel Rivas
TASO

April 2019

Rock

Cultural Heritage
Leading Urban Futures

ROCK Place Branding Tool

TASO

Miguel Rivas

ROCK has tackled the communication dimension (as part of the integrated approach for heritage-led urban development and regeneration) by connecting cultural heritage to city branding.

BRIEF DESCRIPTION

As a first step, ROCK has organized an in-depth re-learning exercise on city branding, much closer to integrated urban development than just conventional marketing. Then, on this ground, ROCK was raising awareness of the potential of CH to branding & marketing the contemporary city, and thus targeting other audiences different to tourists and visitors. Besides built heritage, there are a number of angles associated to heritage-led urban regeneration, not always visible enough, which turn heritage into a driver to brand the contemporary city, ranging from emerging activities related to modern heritage management to build heritage as new urban workplaces.

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Both aims, providing a sound approach to city branding while emphasizing cultural heritage as a driver to branding the contemporary city, have led to a distinctive ROCK Approach to Place Branding. It is a valuable, structured tool for cities, no matter their size, dealing with heritage-led urban development in some way.

EXAMPLES OF USE

A number of advanced seminars were organized in 7 ROCK cities, mobilizing over 200 participants from around 100 stakeholder entities, mostly senior officers involved in destination management and investment promotion agencies as well as their main stakeholders, Mayor's cabinets staff, units in charge of culture and heritage management, dirComs from major cultural entities and events and professionals involved in design and visual arts.

The agenda has been conceived as an itinerary across the state of the art on innovative city branding, covering a number of main pillars such as city narratives and imageries, brand toolkits, audience segmentation and a mix of communications. A specific session is dedicated to how to make the most of heritage to branding and marketing the contemporary city.

Toolkit on storytelling: The off/online toolkit (online version supported on

WIX) has been produced to help city branding teams in promoting and telling stories connecting heritage to future-oriented issues, such as contemporary art and creative industries, entrepreneurship, new urban workplaces, emerging activities, social innovation, etc. In other words, how the adaptive reuse of heritage, particularly that of links to urban futures, can be translated into unique stories and compelling images to draw the interest not only of visitors but also investors, innovators and the local population.

Those urban futures have been categorized into 4 strands: i) heritage boosting new urban workplaces and emerging tech-driven activities; ii) heritage as a driver for cultural and creative industries; iii) cultural heritage as a driver for social innovation; iv) heritage as a driver for the experience economy.

It is worth noting it is a crowdsourced tool, since the collection of stories illustrating the arguments have been gathered from stakeholders of the ROCK partner cities.

BUSINESS/
SUSTAINABILITY MODEL

Consultancy & Training.

TARGET USERS

Municipalities

TYPE OF INNOVATION

Organisational & social

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TYPE OF ADDED VALUE

Social, environmental & Urban



FIND OUT MORE

<https://www.branding-toolkit.rockproject.eu>

ROCK ATLAS

The Rock Atlas is an interactive platform that accompanies the development of the Rock project in the three replicator cities, mapping the urban context, the actions carried out within the project and the connection with the model practices implemented in the network of cities participating in the project.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731280.



ROCK ATLAS

The Rock Atlas is an interactive platform that accompanies the development of the Rock project in the three replicator cities, mapping the urban context, the actions carried out within the project and the connection with the model practices implemented in the network of cities participating in the project.

Urban context

ROCK actions

Knowledge

Transformation

Co-design workshops

Self-built transformation of public spaces

Collaborative transformation...

Bologna Biennale Competition 2016 ACCOL

Zero lighting installations

La Grua plaza: Bologna's experience

U-Garden: Roma's Competitive



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731280.



ROCK Atlas

UNIBO / Department of Architecture & Department of History and Cultures

Giovanni Leoni, Martina Massari, Jacopo Gaspari,
Danila Longo, Amir Djalali, Federico Labanti,
Nieves López Izquierdo

The ROCK Atlas is developed by the Department of Architecture at the University of Bologna in collaboration with the Department of History and Cultures. It provides a cartographic tool to visualise the information produced by the ROCK project's actions within the replicator cities.

BRIEF DESCRIPTION

The ROCK Atlas is an analytical-descriptive tool that allows ROCK partners and cities to keep track of the activities of the project, connecting them to existing good practices and Role Model cities. It provides insights in an interactive and accessible way for a broader public, and a cartographic tool to present information to support the accessibility to cultural heritage buildings, sites and actions, also providing the possibility of supporting thematic and historical routes through a mobile interface. The ROCK Atlas is based on an intuitive map interface presenting the series of actions in their local context.

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It includes:

- basic contextual information from open datasets regarding cultural heritage sites, accessibility, sustainability, social life and cultural production;
- best practices around the world: case studies from the best practices around the world, in particular the Role Model cities and also Replicator Cities, collected within the Open Knowledge Portfolio
- actions carried on within the ROCK project in the demonstrator sites, and their connections to best practices and role-model cities;
- points of interest, and cultural heritage routes;
- visualisation on project results and impacts.

Atlas is a single page web application (SPA) built with the Angular framework (angular.io). The application uses Firebase (firebase.google.com) as the main database and hosting platform.

The ROCK Atlas is based on an intuitive map interface which allows to easily shift from the Europe-wide scale - highlighting the relation among role-model and replicator cities - and a local demonstrator site view, presenting the series of actions in their local context.

The administration backend mimics the user experience of collaborative and open tools such as Wikipedia and OpenStreetMap. The public Frontend looks like a full-screen interactive map built on the powerful Mapbox GL framework (mapbox.com).

EXAMPLES OF USE

The tool can support both public authorities and researchers' investigative work, but it can also engage the citizenship in a wider knowledge of the local CH.

**BUSINESS/
SUSTAINABILITY MODEL**

Information will be uploaded and maintained collaboratively by all ROCK partners

TARGET USERS

It answers to the need to visualize the actions of the ROCK project to researchers and citizens in a single, interconnected and accessible interface.

TYPE OF INNOVATION

Technological, organisational

TYPE OF ADDED VALUE

Cultural, economic

**FIND OUT MORE**

The ROCK Atlas demo can be viewed here:

<https://atlas.rockproject.eu/>



Integrated Management Plan

UNIBO / Department of Architecture

Giovanni Leoni, Valentina Gianfrate, Rossella Roversi, Martina Massari, Saveria Boulanger, Andrea Boeri, Danila Longo

The Integrated Management Plan (IMP) is a fundamental toolkit for developing, over time, Cultural Heritage-led regeneration strategies in historic city centres by balancing preservation and sustainable growth.

BRIEF DESCRIPTION

The IMP is a strategic/operational tool with several levels of in-depth analysis aimed at the cities' decision makers. Because of its nature, it is very practical, easy-to-understand, easy-to-use, unique and site-specific, cyclical and interacting, common and shared, realistic and sustainable, regularly reviewed and updated. It is based on an involvement process consisting of horizontal integration of actors and cross-sectorial coordination of policies. The IMP foresees 3 levels:

1. Principles: Mid-term Strategic visions about the 3 ROCK Pillars: Accessibility, Sustainability, New Collaborations
2. Priorities: directly connected to the Pillars and the principles. Design priorities at policy/strategic level
3. Tactics: describe the processes extracted by the single experimental actions, with the aim to encode the different steps and the enabling factors. The tactics are linked to the Key Actions of re-activation processes from the historic city with a high transferability degree.

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The innovation aspects related to the IMP are based on: (1) an iterative work methodology and (2) the co-design process articulated in (i) methods for detecting the instances that emerged from the various actors involved in relation to space, functions and uses and (ii) translation of the instances into guiding criteria and values that can be integrated into the design of solutions, tools and projects for the University Zone.

It aims to be a tool for integrating the existing city plans, strategies and missing policies, while at the same time providing suggestions for operative actions through the tactics.

The IMP is under publication in different international journals with the aim to share the methodology with the scientific public.

EXAMPLES OF USE

The Pilot Plan applied to the city of Bologna, provides for different forms of coordination, from the Municipality, the Neighbourhood, to local institutions. The experimentation has a focus on the historical University area of Via Zamboni, the U Area involved in the actions of the ROCK project.



FIND OUT MORE

a demo version of the pilot plan can be viewed here:

<https://bologna.rockproject.eu/bologna-rock-imp/>

BUSINESS/ SUSTAINABILITY MODEL

The idea of standardisation is essential for IMP's sustainability but also delicate for IMP: ROCK aims to standardise a structure and methodology for the plan, but not the plan itself that will be always site-specific and designed according to the evolving peculiarities of the urban district or city for which it is meant.

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TARGET USERS

It is aimed at the city's decision makers:

- Municipalities (decision-makers and policy-makers),
- Academic actors (Universities, professors, research fellows, students),
- service providers
- local ecosystem of stakeholders (cultural operators, SMEs, business companies, third parties, etc.).

TYPE OF INNOVATION

Technological, organisational, social

TYPE OF ADDED VALUE

Economic, social, cultural, environmental & Urban

ROCKME

ROCK Monitoring, Reporting and Evaluation Platform

UniYork

Corrado Topi & Howard Cambridge

ROCKME is a web-based application to collate and store information on ROCK interventions (case studies, actions, activities, projects) and to undertake monitoring, reporting and evaluation.

BRIEF DESCRIPTION

The ROCK Monitoring & Evaluation (ROCKME) system is a web-based application to collate and store information on ROCK interventions (case studies, actions, activities, projects) together with all the data on the case studies. It forms part of the centralised platform and integrates the Open Knowledge Portfolio, the Business Models database and the Financial Schemes database.

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ROCKME works at activity level: it allows cities and other consortium partners to monitor, evaluate and report on the overall impact of their interventions, who they have engaged, and whether they have achieved their intended outcomes and how.

As part of the monitoring component of ROCKME is the application of Key Performance Indicators (KPIs) on which to assess progress and measure success of the stated outcome. Stakeholders can easily set their own KPIs.

The generic set of KPIs were developed in consultation with the Task Force on ROCK KPIs. ROCKME enables organisations to report monitoring data on a regular basis and provides them with additional functionality to record information on key outputs from the intervention (events, meeting, publications, media).

At the completion of an intervention, the evaluation component of ROCKME requires the city /organisation to provide details on how successful it achieved its outcomes; whether any changes in boundary partners and other beneficiaries were experienced e.g. behaviour change; whether timeplans and budgets were adhered to; and reflections about overall project management and consortium interactions. A subset of the Information supplied to ROCKME is then utilised by the Interoperable

Platform (IP) for analysis and knowledge awareness building by non-ROCK organisations such as other city municipalities.

ROCKME integrates with the CKAN platform, and when an activity is completed and evaluated, the final report, together with all the data (including Financial Schemes and Business Model) can be published seamlessly onto CKAN.



FIND OUT MORE

ROCKME is available at
<https://rockme.rockproject.eu>

EXAMPLES OF USE

In total, over 150 different activities have been uploaded. The City of Turin has entered full details for 21 Projects including Business models and Funding Mechanisms. KPIs were also included for monitoring purposes.

BUSINESS/ SUSTAINABILITY MODEL

The tool provides KPIs to track progress towards reach business and sustainability outcomes.

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TARGET USERS

Municipalities, event organisers, planners, funders.

TYPE OF INNOVATION

Technological, Organisational, Social

TYPE OF ADDED VALUE

- Economic – examples of best practice, examples of different sources of funding and business models.
- Cultural – demonstrate how CH has improved through different interventions
- Social – identifies the stakeholders involved and the beneficiaries of CH interventions.
- Urban – it allows cities to learn from each other's activities, lessons learnt, and adapt and replicate these activities in their own territories.

AR cultural guiding path

Virtualware

Maria Madarieta

A mobile outdoor Augmented Reality (AR) application for providing AR Cultural information visualization on a city scale.

BRIEF DESCRIPTION

The application provides information about current and former buildings and historical sites to enhance the historical assets of the city. The geo-located content is provided in a number of formats including 2D map views, AR visualization of 2D models of buildings on-site, immersive panorama photographs, and list views. The outcome solution looks for making such information easily accessible to the public in a number of formats that could help people to have richer experience about cities. We provide guidelines that will be useful for people developing mobile AR applications for city-scale tourism or outdoor guiding and discuss how the underlying technology could be used for applications in other areas.

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EXAMPLES OF USE

The idea behind this application is collecting this information and reorganizing it into a geo-located structure, and making it easily accessible through modern personal information technology, so that it can help people to understand and remember those historic sites or historical events. In addition to providing historical information about buildings, the application is also designed to provide onsite AR visualization of the buildings, allowing users to see a virtual information associated with the building on the real site where it once was.

BUSINESS/ SUSTAINABILITY MODEL

The business model, B2C, is targeting Municipalities as initial clients who can provide value added services along the city and the main competitive advantage is generated by the user's experience.

TARGET USERS

Citizens & Tourists (mainly Tourists)

TYPE OF INNOVATION

Technological innovation: stands in the used of geopositioned data + incorporating the latest AR pattern recognition technologies

TYPE OF ADDED VALUE

The main design feature of the application is visualizing information of the buildings using AR technology, showing the city main before as they are right now or long time ago data.



Integrated Cultural Heritage Analytics

Vilnius Gediminas Technical University
Arturas Kaklauskas

Affective human-centred cultural heritage leading urban futures

BRIEF DESCRIPTION

Video Neuroanalytics (VN) senses and analyses nine data layers over time: emotional, biometric, and physiological signals of passers-by, together with other environmental data. These maps are compiled based on the developed database of neuro decision matrices. VN makes recommendations to different stakeholders on ways to improve sustainability, effective regeneration and adaptive reuse of a particular cultural heritage

Opinion Analytics (OA) automatically detects in RT citizens' opinions expressed in media and social media towards issues of urban CH. By applying OA, it is possible to understand and monitor opinions, thoughts, sentiments, attitudes, emotions and preferences of urban citizens and allow city officials to make superior decisions.

Integrated Cultural Heritage Analytics is the result of the combination of OA & VN and a range of Smart DSS (Multiple Criteria CH Analysis and Recommender System, Healthy Built Environment Multiple Criteria Analysis and Recommender System, Effective Regeneration and Adaptive Reuse Decision Support System, etc.).

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FIND OUT MORE

Vilnius happiness index can be viewed here:

<https://api.vilnius.lt/happiness-index>

EXAMPLES OF USE

BUSINESS/
SUSTAINABILITY MODEL

Vilnius, Bologna, Lisbon, Skopje, Brussels, Sri Lanka, Plunge

This tool foresees B2B & B2I models since the outputs it generates could be used both in decision-making and in providing more tailored experiences to the needs of citizens or individuals which use or visit certain urban or cultural spaces.

TARGET USERS
The main target users are: municipalities and communities, private business, developers, architects, contractors, landowners, environmentalists, consultants and any other agent concerned with effective management of the spaces, attracting residents, businesses, students, tourists, cultural operators and events, etc

TYPE OF INNOVATION
Technological, social

TYPE OF ADDED VALUE
One of the keys of this tool is the collaboration with stakeholders to improve sustainability, effective regeneration and adaptive reuse of cultural heritage assets and better sites management. In this respect, from the Open Innovation paradigm where stakeholders could co-create the future experiences, Integrated CH Analytics could deliver this dimension of value. Another link with the Open Innovation paradigm is the citizen's experiences as the focal point of the co-creation process and the beneficiary of this process.

Office: JB Head Office

0.0 kg CO₂e

General Energy use Water Waste Business Travel Fleet Travel Greenprint **Submit**

Energy use

Use defaults for electricity and gas?

Mains electricity use:	<input type="text"/> kWh
Mains gas use:	<input type="text"/> kWh
Bottled gas use:	<input type="text"/> litres
Create renewable energy:	<input type="text"/> kWh
Oil:	<input type="text"/> litres

Electricity supplier: Don't know

Green electricity tariff: Don't know

Energy use notes

Green electricity tariff details:

Notes:

Save and update results

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Water **Waste** Business Travel Fleet Travel Greenprint **Submit**

Waste

Waste to landfill:	<input type="text"/> Tonnes	Tonnes can be found on the bills from your waste contractor. Estimate the number of tonnes sent to landfill each week.
Waste to energy:	<input type="text"/> Tonnes	Weekly bin bags
Waste to recycling:	<input type="text"/> Number of monthly skip collections (2 Cubic yards)	
Waste to composting:	<input type="text"/> Number of monthly skip collections (4 Cubic yards)	
	<input type="text"/> Number of monthly skip collections (6 Cubic yards)	
	<input type="text"/> Number of monthly skip collections (8 Cubic yards)	
	<input type="text"/> Number of monthly skip collections (10 Cubic yards)	
	<input type="text"/> Number of monthly skip collections (12 Cubic yards)	
	<input type="text"/> Number of monthly skip collections (14 Cubic yards)	
	<input type="text"/> Number of monthly skip collections (16 Cubic yards)	
Waste note:	<input type="text"/> Number of monthly wheeled bin collections (120 Litres)	
Notes:	<input type="text"/> Number of monthly wheeled bin collections (240 Litres)	
	<input type="text"/> Number of monthly wheeled bin collections (360 Litres)	
	<input type="text"/> Number of monthly wheeled bin collections (500 Litres)	
	<input type="text"/> Number of monthly wheeled bin collections (660 Litres)	
	<input type="text"/> Number of monthly wheeled bin collections (820 Litres)	
	<input type="text"/> Number of monthly wheeled bin collections (1100 Litres)	

Creative Green Tools

Julie's Bicycle

Lucy Latham

Free Online carbon and environmental calculator to record and understand the impacts of venue, office, tour, production, event or festival. The results will inform environmental strategy and organisational priorities.

BRIEF DESCRIPTION

The Creative Green (CG) Tools are a suite of free carbon calculators developed for the cultural sector –they are specific to cultural activities and used to understand the environmental impacts of cultural buildings, offices, outdoor events, tours and productions, covering: energy, waste, water, travel and transportation and materials. Environmental impacts are visualized in a variety of carbon footprint graphs, allowing users to compare their environmental performance between activities (such as city festivals), buildings, and also year on year analysis. Users are also able to compare their environmental performance against Julie's Bicycle benchmarks which compare your environmental performance against industry averages.

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FIND OUT MORE

more informations can be found at:

<https://ig-tools.com/login>

and in the **brief**

EXAMPLES OF USE

The exemplar ROCK city using the Creative Green Tools is Liverpool: publicly-funded cultural organisations in the city have been recording and reporting environmental data since 2012. Julie's Bicycle is populating the CG Tools with data from the Replicator cities based on environmental audits of three key cultural organisation (1 per city). Additional data has been collected from Bologna's Palazzo d'Accursio to build up a more informed understanding of environmental impacts in the city's cultural infrastructure. This data and audits will inform a strategy document per city which will summarise the collected information and provide key recommendations for each municipality.

BUSINESS/
SUSTAINABILITY MODEL

The Creative Green Tools are open and free to anyone –but are aimed at other organisations, meaning they are essentially a Business to Business tool though, could also be adopted as Business to Consumer tool. There are additional exploitation opportunities –for example gamification and opportunities for commercialization.

TARGET USERS

Cultural arts venues, museums, cultural heritage buildings, organisations, events managers, city policy makers and cultural leaders looking to understand and improve their environmental impacts

TYPE OF INNOVATION

Technological

TYPE OF ADDED VALUE

Economic value achieved through better informed investment on efficiency

City Support Assets

Julie's Bicycle

Lucy Latham, Becky Hazlewood

City support assets can be used to inform sustainable practices across a broad range of areas, for example sustainable events or organisational management

BRIEF DESCRIPTION

Julie's Bicycle is creating resources for the ROCK cities, to support them in developing good environmental practice and supporting their cultural organisations and events. Assets produced include:

- Sustainable events guidelines (with Eurocities)
- Sustainable food fact sheet (Lisbon)
- Plastics fact sheet (Lisbon)
- Guidance for Sustainable Light Festival (Skopje)
- Green governance (all cities)
- Green office guides -policy and action plans (all cities)
- Waste (all cities)
- Procurement (all cities)
- Sustainable events template questionnaire (Bologna)
- Sustainable events case study/strategic report (Bologna)

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EXAMPLES OF USE

Julie's Bicycle has been delivering various training workshops in ROCK cities to encourage greater environmental literacy within the creative sector (organisations and public administrations), developing awareness of resource consumption and its associated impacts impact, which are both environmental and economic.

The City Support Assets can be used to inform a number of policy and action areas, for example:

- Creating policies for delivering sustainable events or environmental strategies in cultural heritage cities
- Trialling new approaches to sustainability management based on international best practice examples
- Enhance city reputation and climate resilience e.g. through sustainable cultural events
- Use sustainable events to launch new sustainable ways of working for local businesses, organisations and policy makers.

Understand the environmental impacts of your events, how to measure data pre, during and post event to evaluate and continually improve your environmental performance

BUSINESS/
SUSTAINABILITY MODEL

Julie's Bicycle also produces a range of publicly and freely available environmental resources and content for cultural organisations and administrations each year (case studies, factsheets, guides, surveys, training events etc.) This content is available on the Julie's Bicycle website and is made possible by key relationships, for example JB's contract with cultural funder Arts Council England.

TARGET USERS

Cultural organisations, artists, municipalities, cultural funders

TYPE OF INNOVATION

Organisational

TYPE OF ADDED VALUE

Environmental and economic



FIND OUT MORE

Further details can be found at:

<https://rockproject.eu/uploads/news/documents/JZ9vAa920brcn7nwHgiu11qxeoW6jSRAxT5xzESN.pdf>

LBASense

DFRC

Erel Rosenberg & Iwona Maciejewska

LBASense estimates the number of people present in an area, evaluates the duration of their stay and derives their country of origin.

BRIEF DESCRIPTION

LBASense is the tool by DFRC that provides insights about people's behaviour within the area under monitoring, where its passive mobile phone detectors are installed. The Crowd Analytics figures provided include real-time people counting, trends and revisit patterns, duration of stay, visitors traffic flows, nationality distribution.

LBASense is a passive system capable of detecting anonymous signals transmitted by mobile phones over Wi-Fi. The signal is related only to the digital, unique signature of the mobile device – no connection with the person's identity, no mobile number, phone call or text can ever be detected by LBASense.

The system per se comes with proprietary hardware and the deployment consists in sensors to be installed in key urban areas, LBASense is an actual software platform that deals with Big Data.

LBASense is a passive, non-intrusive yet accurate measurement tool to analyse urban

crowds, from counting people to measuring the time spent by time in selected locations and the movements between those. LBASense is independent from phone operators and provides data in 24/7 mode.

The main functionality developed within ROCK project is the interface with CKAN. An automatic tool generates multiple CSV data files in a format that was designed especially for the ROCK project. Implemented with a special API, the tool allows the dataset creation on the fly. Additionally, DFRC develop a service that automatically generates multiple reports using another dedicated API.

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EXAMPLES OF USE

Real time monitoring on people flow in publics area min selected ROCK cities, to provide real data, to measure real impact of ROCK implementations, to understand behaviour patterns; making prediction and providing alerts on abnormal behaviour.

BUSINESS/
SUSTAINABILITY MODEL

The business model for this tool could be Business to Business, and Business to Institutions. The business model has as its central point the value generated by the data gathered from and the experience of crowds in certain spaces, locations, cultural centres and events, analysed later on, on aggregated numbers' level.

TARGET USERS

Municipalities, events' organisers, urban planners & policy makers.

TYPE OF INNOVATION

Technological.

TYPE OF ADDED VALUE

Economic, social, cultural, environmental & Urban.

Outdoor multi-parameter tool

ACCIONA

José Luis Burón

A tool for cost-efficient monitoring of environmental and climate parameters in urban environments, to assess the impacts of regeneration initiatives in historical city centres and to enable open innovation based on the reuse of data generated.

BRIEF DESCRIPTION

The tool has been conceptualized as a modular platform for remote collection, storage and analysis of environmental (air quality, noise levels) and climate parameters measured by distributed sensor networks deployed in different locations within an urban area. The use of relatively low-cost sensors allows for denser sensor deployments in order to get more accurate insights into the microclimate and environmental situation in specific urban areas, and thus assess with higher precision the impacts of urban regeneration actions.

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The tool can be adapted to integrate different types of sensors to monitor additional parameters, or to use sensors from different manufacturers, in order to avoid any vendor lock-in. LoRaWAN is the preferred technology for collecting the data from the distributed sensor network.

The collected data are stored in a cloud server, being possible the use of different technologies for data storage (e.g. SQL Server and InfluxDB databases), data visualization, (e.g. Graphana), etc. One important aspect of the data processing in the cloud is the calibration of measured air quality and noise levels to compensate for possible effects of climate parameters on the precision of the measurements.

Lastly, the data collected are transmitted to the CKAN portal within the ROCK platform, in order to make them available as open data to any citizen, so that they can be reused as a basis for other urban innovations.

EXAMPLES OF USE

The integrated tool has been tested in 2 of the ROCK Replicator cities: Bologna and Skopje.

The deployment consists of 4 monitoring nodes measuring microclimate (temperature, relative humidity, atmospheric pressure, wind speed, wind direction and rainfall), air quality (Particulate Matter concentrations: PM1, PM2.5 and PM10), and noise levels. LoRaWAN is used in both cases for data transmission, and a single station is enough for collecting the data from the distributed monitoring nodes in each city.

**BUSINESS/
SUSTAINABILITY MODEL**

The business model envisages two possible paths for a sustainable exploitation of the tool: provisioning of consulting services to cities for the project design, deployment and operation of the tool, and integration of the tool as part of wider contracts between municipalities and private urban service providers (e.g. contracts for maintenance and management of urban green areas).

TARGET USERS

The main target users are municipalities that can use the tool for providing support to decision-making processes related to urban regeneration or to general environmental management of the city. Any citizen can be a potential user of the tool through the use of the open data uploaded to the ROCK platform. Lastly, the tool can be used by companies providing urban services such as management/maintenance of green areas, mobility, and logistics (e.g. last-mile delivery).

TYPE OF INNOVATION

Technological

TYPE OF ADDED VALUE

Environmental

Bologna Verdi square – Outdoor Microclimate Map Air temperature

Figure 1: UNBO_FVERD2 11:00:01 18.01.2019
www.unibo.it/verdi

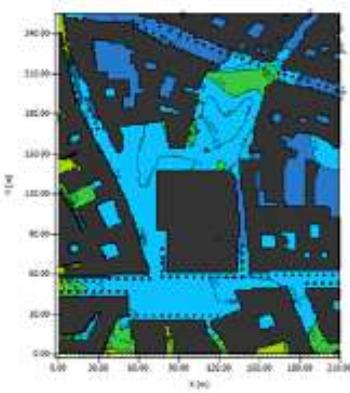


Figure 1: UNBO_FVERD2 12:30:01 18.01.2019
www.unibo.it/verdi

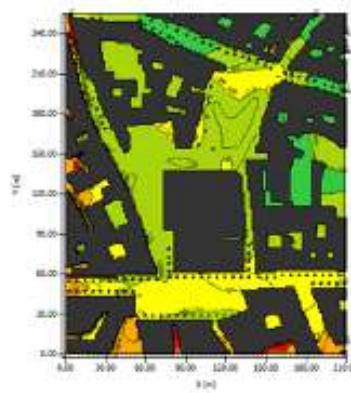


Figure 1: UNBO_FVERD2 14:00:01 18.01.2019
www.unibo.it/verdi

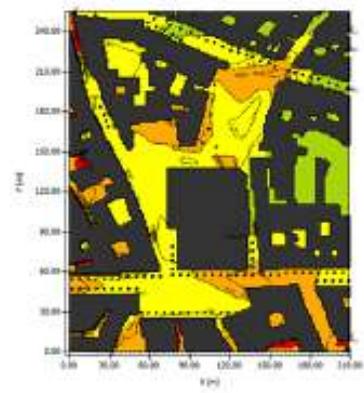
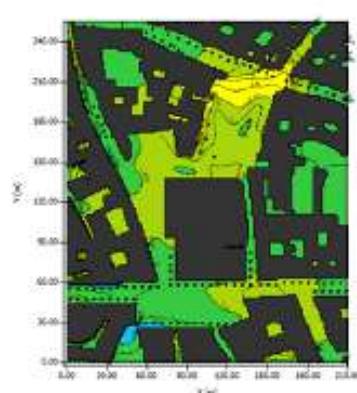


Figure 1: UNBO_FVERD2 16:00:01 18.01.2019
www.unibo.it/verdi



Air Temperature

below 5.50 °C
5.50 to 6.00 °C
6.00 to 6.50 °C
6.50 to 7.00 °C
7.00 to 7.50 °C
7.50 to 8.00 °C
8.00 to 8.50 °C
8.50 to 9.00 °C
9.00 to 9.50 °C
above 9.50 °C

Min: 6.30 °C
Max: 18.10 °C



Outdoor sensing

UNIBO / Department of Architecture

Kristian Fabbri, Saveria Boulanger, Danila Longo,

Andrea Boeri, Jacopo Gaspari

The aim of the toolkit is to assess the improvement of Outdoor Thermal Comfort as a result of temporary or permanent transformations of architectural and technological features in urban open spaces and to assess how people rate the comfort sensation.

BRIEF DESCRIPTION

This tool includes the ENVI-met software use and anonym questionnaires to assess how people rate comfort sensation in open spaces. It is based on the modelling of the area of interest in order to obtain Outdoor Thermal Comfort Maps for each physical variable and for the comfort evaluation indexes. The tool aims to estimate the opinions on the thermal comfort expressed by people by indirect assessment using the evaluation of the flows of people. It aims also to compare "homogeneous physical areas" and "homogeneous judgment areas" - before during and after the temporary transformation event - to assess the improvement recorded in the outdoor thermal comfort after the implementation of physical modification actions. Moreover, this experimentation allows to lay the first correlations between physical variables (including architectural and urban design) and people's thermal comfort.

The toolkit focuses on two aspects: (a) the characterization of thermo-physical properties of materials and technological solutions for the modelling; (b) the correspondence between the thermal comfort indexes (e.g. Physiological Equivalent Temperature PET).

ENVIMET software was used to simulate outdoor microclimate and thermal comfort for 4 Replicator Cities areas:

- Bologna, area 1: Piazza Verdi and area 2: Piazza Scaravilli, with and without Malebre Tree intervention;
- Lisboa, area Praca de Comercio;
- Skopje, area Mosque Mustafà Pascià – Museum of North Macedonia

The Tool activity included the support to install microclimate probes on site in Bologna.

This activity allowed to assess the correlation between people density (people flow, count and density) and outdoor thermal comfort in the detected area.

EXAMPLES OF USE

The tool allows to assess the role on microclimate and outdoor thermal comfort due to architectural patterns and urban design (materials, buildings geometry, squares geometry, urban canyons, pavement textures, absence/presence of tree or grass, material albedo or reflectance) and due to events with assemblage of persons.

BUSINESS/
SUSTAINABILITY MODEL

The business model for this tool is addressing both institutions and business. The tool is useful for organisations that want to understand the correlation between properties of materials, technological solutions and human comfort.

TARGET USERS

The Tool is aimed at the city's decision makers:

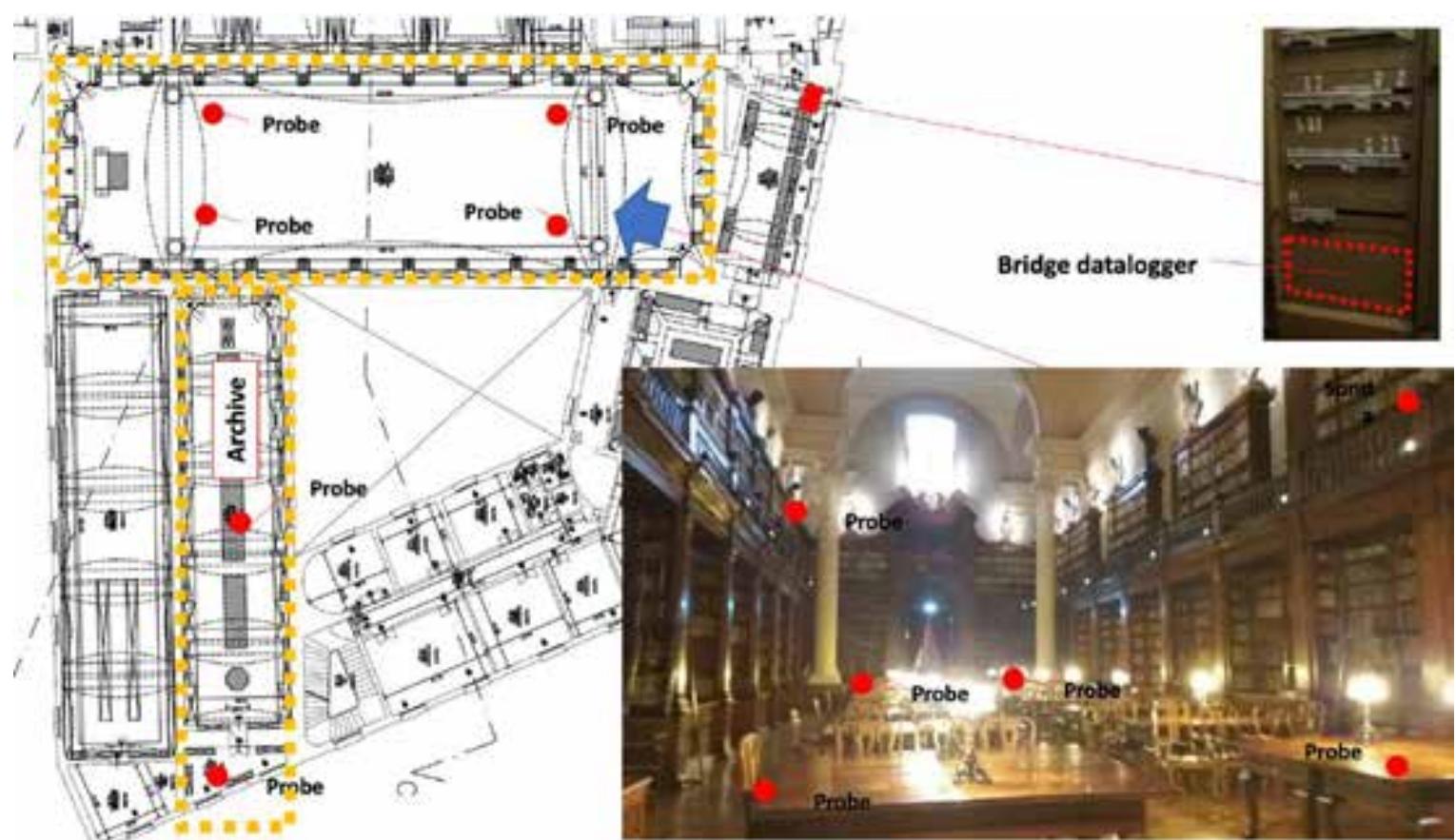
- Municipalities (decision-makers and policy-makers)
- Academic actors (Universities, professors, research fellows, students)
- Event planners/managers

TYPE OF INNOVATION

Technological, organisational, social

TYPE OF ADDED VALUE

Environmental, social, urban



INDOOR sensing

UNIBO / Department of Architecture

Kristian Fabbri, Saveria Boulanger, Andrea Boeri,

Danila Longo, Marco Pretelli

The aim of the tool is the knowledge of the indoor microclimate and its relation with user behaviour, favouring the setting of solutions to guarantee (or to improve) the indoor correct microclimatic parameters, with particular reference to cultural heritage buildings and manufacts.

BRIEF DESCRIPTION

The Indoor Microclimate Monitoring (environment & conservation) is a predictive tool including indoor microclimate monitoring (IMM). The development of the tool included a specific microclimatic monitoring system installation on site and the definition of a specific 'Alert-range'. The presence of the sensors allows the warning in case indoor environment physics variables are out of the appropriate conservation specific ranges, so to implement the needed corrective actions. In addition it develops develop a site specific 'indoor microclimate management Protocol (IMMP)' which contains recommendation for managing the microclimate where manuscript, book, library and rooms are presented in the site of the exhibition is taking place.

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There are two elements of novelty introduced by our approach. On the one hand, we adopt customized indoor microclimate technologies that allow us monitoring indoor air and its effect on historical books, manuscripts, tables, cartography, etc. in the BUB Library's reading room, with heating system, and historic BUB Archive, without heating system. Measured data have been evaluated following graphics' trends, psychrometric charts, frequency and cumulative, etc. for each variable, in order to know, in advance, the eventuality of microclimate risk (mould, moth, etc.). On the other hand, we worked on a tool to support Librarian Specialists and Directors to manage book restoration and/or loan protocol and/or exhibition in libraries or other places

The research activity included the design of the monitoring and sensor prototype device, developed by ASE srl. Together with ASE srl, electronic and physics variable were defined: variable ranges, sensor output, etc.

EXAMPLES OF USE

The tool was tested in the University Library of the University of Bologna providing the installation of a set of sensors. The monitoring campaign started 20th December 2018 and ended a year later, so the results show indoor microclimate trends during all the four seasons. The sensors measured the indoor microclimate parameters (air temperature, relative

BUSINESS/
SUSTAINABILITY MODEL

humidity, illuminance, Carbon dioxide CO₂) and an online platform was created to collect data. Research results of the monitoring campaign show that indoor microclimate monitoring (IMM), referred to manuscripts, books and artefacts in University Library of Bologna University, allow us to define specific indoor microclimate alert range and to develop management protocols.

The tool applies to other historical Libraries (e.g. just in Italy, Malatestiana Library in Cesena, Palatina Library in Parma, San Marco Library in Florence, etc.) and other heritage buildings, also with several rooms (e.g. villas, castle, realm, etc.).

TARGET USERS

Essentially B2I, including Public-Private Partnerships

The tool can support the management activities of Cultural Heritage institutions and public authorities, and the researchers' investigative work.

TYPE OF INNOVATION

Technological, organisational

TYPE OF ADDED VALUE

Environmental, cultural

ROCK

TU/e

Alma Mater Technica
Technische Universiteit Eindhoven
TECHNISCHE UNIVERSITÄT



TU/e

Technische
Universiteit
Eindhoven

GPS è restituito ai ricercatori in caso
di interruzione o interrompere la registrazione dei
dati.

Perché partecipare alla ricerca?

Partecipare alla ricerca è una scelta collettiva della città e
qualità delle strutture della città e,
potrà approfittare direttamente di più.

Il partecipante ha la scelta collettiva del partecipante datata aprile 2019
e può scegliere di partecipare o no.

Ho la possibilità di ritirarmi in
qualsiasi momento da un ricercatore
della TU/e.

Ho la possibilità di ritirarmi in
qualsiasi momento da un ricercatore
della TU/e.

Sottoscrivere

Scritto il 10/04/2019

Firma

148

Trip Recorder



Trace Annotator

Eindhoven University of Technology

Gamze Dane

GPS enabled Participatory Experience Mapping for People Flow and Opinion Analytics

BRIEF DESCRIPTION

The aim of this tool is to provide location-based analytics based on Global Positioning System (GPS) tracking. It exploits participatory mapping approach by using GPS tracks of participants (via small GPS tracking devices that does not link to any personal information). This tool uses a software solution called "Trace Annotator" (TA), developed by TU/e. TA takes GPS trace data as input and generates activity-travel diary data of users. TA simultaneously differentiates between a certain transportation mode and an activity episode. The GPS based diary data creates plenty of information on activity types, travel distance, time, duration and route. If users opt-in, by using the online questionnaire platform of TU/e and the location-based social network service data, we enrich the GPS data trajectories with background information of users and incorporate semantic meaning to GPS trackers such as feelings at certain locations. Combination of these data is used for understanding the differences between a variety of users such as different gender, income and age groups and also understanding the meaning and opinions attached to the pilot area by people. In particular, this tool can be used to understand: which exact routes people take in the city; which transport mode people take; how long their trips and activities take; which spots they spend more/less time; which activities they conduct at these spots; which locations trigger feelings and opinions of people.

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EXAMPLES OF USE

During large-scale cultural events to understand visitor flows; during a normal week to understand activity-travel patterns; for accessibility/mobility related experiments.

**BUSINESS/
SUSTAINABILITY MODEL**

Falls under the open innovation paradigm where creating value proposition is targeted. In that sense, shared values with the end users are considered. In addition, created understandings of the tool in living labs enable extensions and new developments via citizens.

TARGET USERS

Researchers, Municipalities, Event managers.

TYPE OF INNOVATION

Social (due to its participatory approach); Technical (providing individual activity-travel diary based on Bayesian network and machine learning algorithms; enabling the integration of semantics to GPS data).

TYPE OF ADDED VALUE

Environmental & Urban (results give an understanding of the mobility behaviour of individuals and therefore enable policy making for environmentally friendly solutions; results give an understanding how the urban locations are experienced and therefore enable policy making for better perceived urban places).

Innovators in Cultural Heritage

Search for...

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What's new:
The "Innovators in Cultural Heritage" competition



Gathering ideas:
From 46.2% (University of Picardie)



Lighting ideas:
From 46.2% (University of Picardie)



My art innovation:
With 45.8% (Picardie)

WHAT'S NEW

Bernardine Mampi has added a new document to collection: [INTERACTION INHERITAGE](#)
Engineering and Preserving the Ancient Roots of Culture

[View](#) [Edit](#) [Delete](#)

[S213 Report on IHP2 case studies](#)



Bernardine Mampi has added a new document to collection: [INTERACTION INHERITAGE](#)
Engineering and Preserving the Ancient Roots of Culture

[View](#) [Edit](#) [Delete](#)

[INTERACTION INHERITAGE](#)

PINCHTURES**Interactions**

The online magazine has established its active community of users, who contribute to the collective discussion their comments and contributions.

**MOST RECENT PUBLIC WORKING SPACES**

The online platform of the community of innovators in cultural heritage

www.innovatorsinculturalheritage.eu

ROCK

Antonella Fresa, Luigi Perissich

MARINA

Fernando Ferri

CNR / National Research Council

**IRPPS / Institute for Research on Population
and Social Policies**

200

www.innovatorsinculturalheritage.eu is the online platform created by a collaboration between the ROCK and the MARINA Horizon 2020 projects. The platform offers an integrated set of services to promote innovation, share best practices, support communities of innovators and offer collaborative spaces.

BRIEF DESCRIPTION

The platform, announced at the Fairs of Innovators, in the frame of the European Year of Cultural Heritage 2018, has several features and services available for the users, who can join the platform freely and following a very seamless registration procedure. The platform has a very 'social' character and offers the highest level of interaction to its users. When registered, the users can publish news about their activities, announce events, present their innovations – being them products, services, projects, and others -, create and share working spaces, and give access to their online archives.

The platform is composed by 3 sections that give access to various types of multimedia contents: 1.Events, 2.Workspaces and 3.Innovations. The 3 sections are linked and when a new content is published in one session, then it can be linked in turn to other sessions. The same happens for news and documents.

Users can also participate in the 4 communities that have been created as 'pre-defined' areas of interest. They are: 1. Circular, sustainable and creative cities, 2. Heritage at risk, 3. Shared management of cultural

heritage and 4. Advanced future technologies for heritage and arts

Additional communities can be created on the basis of the interests expressed by the users.

EXAMPLES OF USE

www.innovatorsinculturalheritage.eu has been used by the ROCK project to promote its Roadshows in Bologna, Lisbon and Skopje.

BUSINESS/ SUSTAINABILITY MODEL

The platform is open source and its use is free of charge. The software is maintained by CNR as part of its institutional role. CNR also provides the hosting of the application and of the database. The maintenance of the contents in the platform is based on the pro-active contribution of its users. More projects are invited to join the platform and to publish on it, for example of ILUCIDARE, REACH, HERCULES. The sustainability of the platform is strictly linked with the actual involvement of users. The users and their projects will advocate the support of the European Commission also in the future.

TARGET USERS

- Public administrations at local, national and EU levels
- Private associations and citizens' groups of interest
- Research
- Enterprises and SMEs
- Agencies linked with a public body
- Cultural institutions
- Individual experts

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TYPE OF INNOVATION

Technological and organisational

TYPE OF ADDED VALUE

Cultural, concerning both cultural heritage management and research on cultural heritage

Bologna Open Rock

Municipality of Bologna
Pina Civitella

The online open data website for ROCK Bologna, part of the municipal open data platform, featuring thematic maps and collecting local data produced within the ROCK actions.

BRIEF DESCRIPTION

The European ROCK project in Bologna becomes Open Data. The actions, the listening phases of the co-design laboratories of the university area (U-Lab) can also be consulted in open format, as well as the results of the actions that will be carried out in the Zona U.

The key themes of the research-action - accessibility, sustainability and collaborations for new productions - are now part of a dedicated online project (Bologna Open Rock) in which data collected from various sources (interviews, mapathon, innovative technologies) will flow in maps, dossier analysis and information in separate datasets under Creative Commons license CC BY 3.0 IT (Free Cultural Works).

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The aim of Bologna Open Rock is to allow anyone to monitor the implementation status and give the possibility to re-use the data for new and unprecedented combinations.

EXAMPLES OF USE

The tool can support both public authorities and researchers' investigative work, but it can also engage the citizenship in a wider knowledge of the local CH.

BUSINESS/ SUSTAINABILITY MODEL

Bologna Open Rock is open and free to anyone. The sustainability of the model is based on the reuse and production of civic quality open data by stakeholders and project partner. These last ones could become important players in the public policy implementation process. The project partner can federate with each other partners (Italian, European...) so that the data produced can speak the same language and knowledge metadata to develop inclusive and collaborative policies of the future.

TARGET USERS

It is aimed both at the city's decision makers: Municipalities (decision-makers and policy-makers), Academic actors (Universities, professors, research fellows, students), service providers and also at the local ecosystem of stakeholders (cultural arts venues, museums, cultural heritage buildings, organisations, events managers, city policy makers and cultural leaders, cultural organisations, artists, municipalities, cultural funders).

TYPE OF INNOVATION

Technological, organisational

TYPE OF ADDED VALUE

Cultural, economic, urban



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FIND OUT MORE

In collaboration with Digital Agenda of the municipality of Bologna.

<http://dati.comune.bologna.it/BolognaOpenRock>

WunderBo

**Municipality of Bologna;
Istituzione Bologna Musei (Institution
for Bologna Museums);
SMA Sistema Museale d'Ateneo
dell'Università di Bologna (University
Museums) / Giorgia Boldrini**

WunderBO App is a game to get to know and explore the Cultural Heritage of Bologna, in which the player is called to collect artefacts from the Civic Medieval Museum and the Museum of Palazzo Poggi in Bologna to reassemble a real Wunderkammer.

BRIEF DESCRIPTION

WunderBO was the winner of the public contest "Playable Bologna. Bologna si mette in gioco", calling for applicants to develop a videogame aimed at highlighting the historical, artistic and cultural heritage of Bologna taking off from some ideas for narration offered by the museums Museo Civico Medievale (Medieval Museum) and Museo di Palazzo Poggi (main University Museum).

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The contest was open to both professionals and companies having registered office and based in any EU member state. The idea was then materialised thanks to funding from the ROCK project and the collaboration between the Municipality of Bologna, Istituzione Bologna Musei and SMA Sistema Museale d'Ateneo of the University of Bologna.

Three famous Bolognese personalities are guides on a discovery journey: the naturalist Ulisse Aldrovandi, the wonder collector Ferdinando Cospi and the founder of the Istituto delle Scienze Luigi Ferdinando Marsili. During the experience, players meet the characters, reassemble the clues scattered throughout the story and collect the treasures.

To complete their collection of mirabilia the player will have to discover live some key pieces of the collections by visiting the two museums and unlock the missing contents with augmented reality.

Through social media the user will then be able to share the progress, participating personally in the dissemination of knowledge of the city and its treasures.

EXAMPLES OF USE

The tool can support the engagement of the citizenship in a wider knowledge of the local CH, starting from some pilot experiences through the museums and eventually moving towards an extensive exploration of the local Cultural Heritage.

BUSINESS/
SUSTAINABILITY MODEL

The overall amount of funding for the realisation of the App is euro 32.786,88. WunderBO is a free App, available in both IOS and Android version, in Italian and English. Moreover the first 100 players who successfully end the game, including the unlocking of the exhibits inside the museums, will win the Musei Metropolitani Bologna Card (Museum Card for the whole Bologna area).

TARGET USERS

It is aimed at the city's users, tourists, schools and residents

TYPE OF INNOVATION

Technological

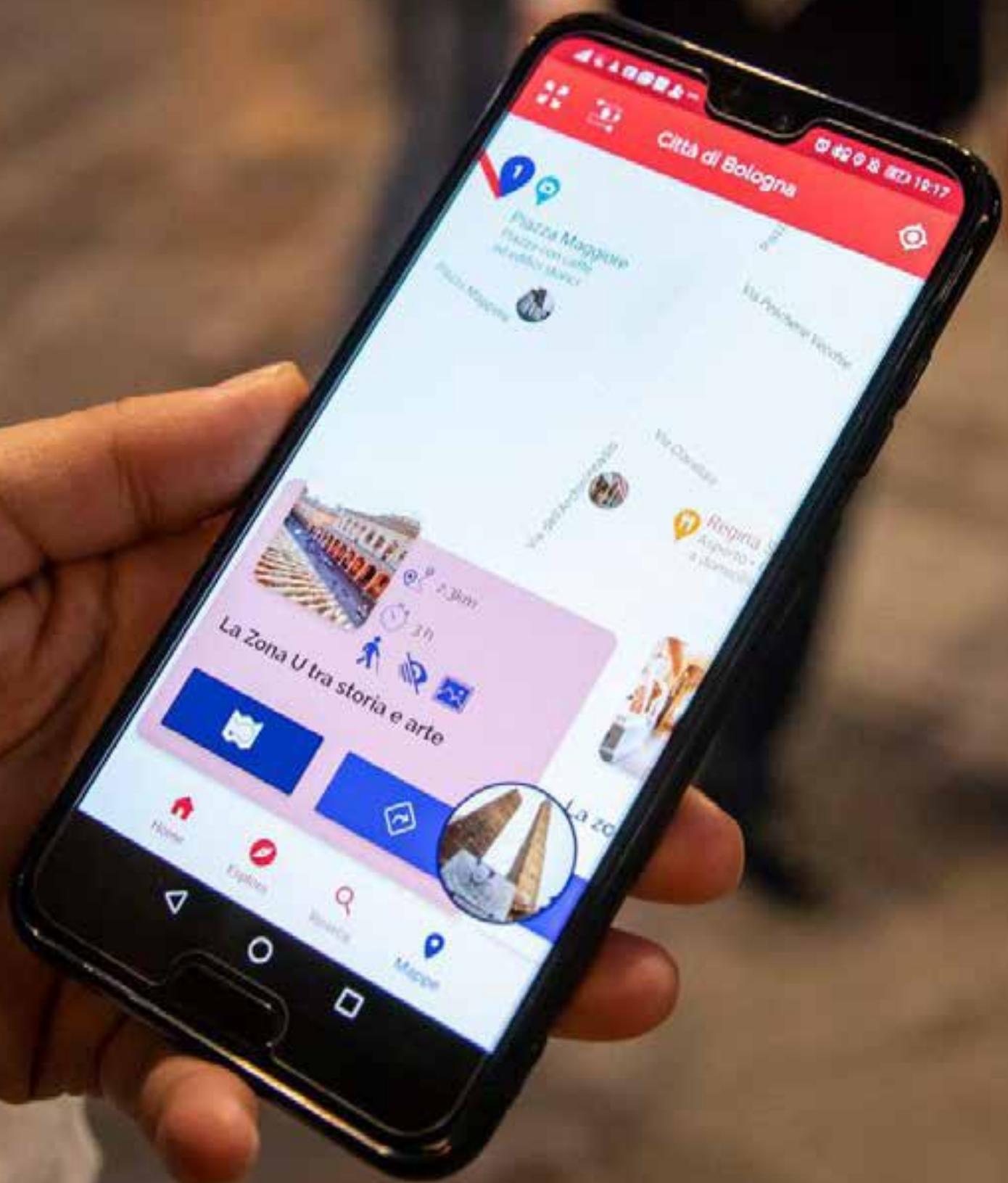
TYPE OF ADDED VALUE

Cultural, economic, inclusive

**FIND OUT MORE**

The winning proposal is an experimental project that promotes the city and its museums, available for free as an app in Italian and English in IOS and Android version at:

www.wunderbo.it.



U-area for all

**Municipality of Bologna (COBO);
Foundation for Urban Innovation (FIU);
University of Bologna / Giovanni Ginocchini**

U-area for all is a co-design path, aimed at conceiving, prototyping, experimenting and financing concrete solutions for enhancing inclusion and accessibility for persons with disabilities to cultural contents in the area of experimentation of the living lab of Bologna, U-lab.

BRIEF DESCRIPTION

"U-Area for all" is one of the experimental activities in the 2019-2020 U-Lab programme: it is a path to design and test a service of inclusive visits that allows to discover the University Area of Bologna and the opportunities that its museums, its cultural centers and the University itself can offer. The main idea is to make the cultural contents of the area more accessible for people with disabilities but the wider challenge is to allow the discovering of one of the richest parts of the city in history and Cultural Heritage by all citizens, with an inclusive approach.

The initiatives already activated are: 1. a call for proposals to select collaborators for the design of the service with the ROCK project WG, coordinated by the FIU; 2. a co-design path between April and October 2019, involving institutions and all the actors of the U-Area, along with people with disabilities.

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Firstly, COBO and FIU, selected an integrated team with specific expertise: motion enhancement, hearing, blind and visual-impaired expert, cognitive, simplified language, museum accessibility, dance and artistic language. The participants in "U-area for all" then gathered input from various participatory maps ("Carotaggi", "Pianeti solitari", "Nel museo sottopelle") and transformed them into guidelines and developed the project idea of an inclusive service: an accessible tourist guide service, composed of inclusive thematic itineraries, which can be followed with the help of expert guides who address different types of disabilities. The 2 routes to visit the experimental area characterized by:

1. a physical route without architectural barriers, suitable for people with reduced mobility or wheelchair users;
2. a series of points of interest that can be visited, with an indication of the accessibility and usability levels for the 3 main categories of disabilities considered: hearing, visual and motor disabilities;

In both cases they provided a description of the route and contents using the principles of simplified language.

EXAMPLES OF USE

The outcome of the co-design process is a set of guidelines that guided the ROCK project team in implementing the service that will be promoted by Bologna Welcome, the city's tourist promotion agency and in developing printed multi-accessible guides for city users and an inclusive APP for smartphone and tablets that suggests different tours along the city centre, accessible for people with different disabilities.

BUSINESS/ SUSTAINABILITY MODEL

The printed guides and the app are free for users and are distributed by the tourist offices of the city and by museums; the printed guides can be borrowed for free or bought by users financing the printing of new editions. The updating of contents is covered by specific funds and by local tourist tax incomes.

Moreover, accessible guided tours are offered by local tourist guides and are sold by the tourist offices.

TARGET USERS

It is aimed at the city users, tourists, schools and residents. It is also a supporting tool for cultural operators, cultural art venues, museums, organisations, event managers, cultural leaders, artists, cultural funders.

TYPE OF INNOVATION

Social, organisational

TYPE OF ADDED VALUE

Cultural, economic, social, urban

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FIND OUT MORE

The App BOforAll has been developed as a result of the U-Area for All process:

[The App](#)

[Login](#)

GINGER [COME FUNZIONA](#) [HAI UN'IDEA?](#) [PROGETTI](#) [PARTNER](#) [SERVIZI](#) [CONTATTI](#)

Dai, piantala!

by [Comune di Bologna](#) | Scade il 22/09/2019 | Tipo raccolta: [O tutto o niente!](#)

[PROGETTO](#) [NEWS 0](#) [SOSTENITORI](#) [CONDIVIDI PROGETTO](#)

Piazza Scaravilli

dai piantala

e tu?

ROCK

ZONA-U
CREATIVA
CULTURALE
SOSTENIBILE

Sociali | Ambienti

Social progetto:

Piazza Scaravilli

dai piantala

e tu?

Obiettivo raggiunto!

€ 3.000

raccolti su € 3.000

100 %

obiettivo raggiunto

121

sostenitori

0

giorni

Civil Crowdfunding

**Municipality of Bologna;
Ginger,
BAM;
Centro Antartide,
Fondazione Rusconi,
Fondazione Innovazione Urbana,
Interreg Central Europe CROWD-FUND-
PORT / Raffaella Gueze**

Civic crowdfunding campaign active between May and September 2019, promoted by the Municipality of Bologna, to support the installation of new green areas in Piazza Scaravilli. The campaign ended by reaching its goal and involving more than 120 donors. Rewards: Teatro comunale di Bologna (Opera House), University of Bologna.

BRIEF DESCRIPTION

"Dai, piantala!" is a pilot project and was an invitation for all citizens to participate to the regeneration of Piazza Scaravilli, promoting good urban greening practices and raising public awareness around environmental issues. "Dai, piantala!" went beyond mere online donation: everyone was invited to collaborate with the Municipality of Bologna, taking care of the University square.

Structure of the crowdfunding -> Objectives:

- Promoting participation in the redevelopment of a university zone
- Building a community of active and interested citizens
- Telling the story of Piazza Scaravilli
- Sensitizing citizens on environmental issues;

"Dai, piantala!" was hosted on ideaginger.it, a local crowdfunding platform from May 22nd to September 21st and was disseminated on OpenGaia's Facebook and Twitter channels.

EXAMPLES OF USE

Thanks to the support of donors, plants and trees have been added to the corners of Piazza Scaravilli, one of the key squares of the university area in Bologna city centre. The intervention has extended green areas in the very heart of Bologna, increasing the level of biodiversity through the use of different plant species and favoring the propagation of the plants themselves by attracting a good number of useful insects.

A total of 9 rewards have been included in the campaign.

The rewards were selected taking into account both the objectives and the themes of the campaign. To this end, two main types of rewards have been included:

- Cultural themed rewards - tickets to visit key places in the university area of Bologna (BUB - Historical University Library, Specola - Historical astronomy tower, Teatro Comunale);
- Green themed rewards - gadgets to promote environmental issues (water bottle) and kits to stimulate the spread of greenery even in private environments (Ecocube, plants, sprout pencil).

BUSINESS/
SUSTAINABILITY MODEL

"Dai, piantala!" campaign raised € 3,000 with 120 donors which contributed to the purchase and construction of the new green areas of Piazza Scaravilli.

TARGET USERS

Students, residents, shopkeepers

TYPE OF INNOVATION

Technological, organisational, social

TYPE OF ADDED VALUE

Environmental, economic, urban

“Marvila In Progress” Bibliogamers

Inês Garcia and Tiago Cruz

A videogame about Marvila - its past, its present and its future

BRIEF DESCRIPTION

Real Time Strategy, City Building/Management videogame about cultural heritage and history surrounding an area of Lisbon. Has been co-designed with the involvement of the local community/stakeholders.

EXAMPLES OF USE

It can be seen as a tool for spreading the knowledge about a town, city or village, its people and its traditions in a more personal way that cannot be achieved with a simply guide or tour.

BUSINESS/ SUSTAINABILITY MODEL

A business model which creates, delivers, and captures value from Marvila stakeholders, as a compliment to teaching in the historical fields, without depleting the cultural, economic, and social capital it relies on.

TARGET USERS

Schools, Bibliogamers

212

TYPE OF INNOVATION

Technological, organisational, social and cultural

TYPE OF ADDED VALUE

Social, cultural and environmental in an urban context



FIND OUT MORE

<https://pinheirodev.itch.io/marvila-in-progress>

<https://inesgarcia.artstation.com/projects/eag01Z>

Landscape and heritage 1755-2020

Câmara Municipal de Lisboa
Isabel Duarte Silva

VR film - a different and contemporary learning for the safeguarding

BRIEF DESCRIPTION

A different and contemporary learning for the safeguarding of the cultural and territorial heritage, with a cross-disciplinary spatial approach. The creation of a playful and pedagogical tool to understand issues related to public space and cultural heritage. An immersive experience, transversal to all ages, which allows the users to navigate through historical moments.

EXAMPLES OF USE

In a creative process, the contents will be presented during the school year, involving a variety of entities

BUSINESS/
SUSTAINABILITY MODEL

The use of new technologies connected to heritage, in particular through virtual reality experiences, in order to develop the knowledge, reflection, understanding, capacities, attitudes and values that contribute to the citizens' involvement in the exercise of citizenship in the field of culture. In addition to a pedagogical content, the relevance of the technological component allows a different and contemporary learning for the safeguarding of the cultural and territorial heritage, with a cross-disciplinary spatial approach.

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TARGET USERS

Marvila and Beato schools and residents

TYPE OF INNOVATION

Technological, educational and pedagogical

TYPE OF ADDED VALUE

Economic, social and cultural



Marvila and Beato Interpretive Centre

Câmara Municipal de Lisboa
Alexandra Aníbal

A digital mapping by historical layers. From the conception of the IC and the CH inventorying process, to the contents integration into an interactive digital equipment.

BRIEF DESCRIPTION

Multi-touch Interactive Table - Creation of a digital database of oral history linked to local CH elements. The content is based on images, videos and pdfs, handling in a multi-touch environment.
The software extremely intuitive and easy to use: can show multiple images, videos and pdfs (among others) simultaneously and write notes, underline, mark or highlight.

EXAMPLES OF USE

It can be seen as a database tool, also accessible to regional decision-makers as an instrument for their development planning.

BUSINESS/
SUSTAINABILITY MODEL

A business model which creates an interaction between people, letting groups involved around interactive historic and cultural contents on a large scale.

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TARGET USERS

Libraries, schools, communities of researchers and citizens interested in knowing more about Marvila/Beato

TYPE OF INNOVATION

Technological, organisational, social and historic.

TYPE OF ADDED VALUE

Economic, social, cultural and environmental



Fast-forward to the Future. ROCK Innovations in Perspective

Antonella Fresa, Confindustria

The Innovation Tables presented in the previous pages aim to provide a synthetic overview of the ROCK proposition, demonstrating the richness of impact that the adoption of these tools and best practices can generate in multiple areas of the life of people and organisations in the cities.

The impact of the innovations proposed by ROCK address a wide range of dimensions: from improvement of the quality of citizens' life to the generation of new opportunities for enterprises, from cultural participation to environment sustainability.

The ROCK innovations represent an articulated set of instruments, digital platforms, recommendations and guidelines, offered to European cities to support their culture-led regeneration:

- Administrations can find solutions to inspire their daily work of planning cultural and environmental actions, seeking for financial resources, coordinating and networking with other administrations in Europe.
- Enterprises can adapt and re-use technical tools to create new products and provide competitive services.
- Cultural heritage institutions can use applications to attract new visitors and meet their expectations.
- Universities can investigate how to improve the ROCK innovations with the results of their research.

And many other 'urban actors' can look at the ROCK innovations to discover new ways to unlock the potential of their cities, including stakeholders and city-makers that represent various types of aggregations and groups of interest in the city.

The approach established by ROCK to connect 'model cities' with 'replication cities' in a dynamic and agile process of reciprocal

information and sharing of knowledge permitted to ameliorate the ROCK innovations on the basis of the experience accumulated in a vast program of concrete pilots, carried out in real life environments. In these pilots, the cities participating in the project adopted tools, platforms and guidelines developed by the technical and academic partners of ROCK in different context, at different dimensions, covering a large geographical representation of European cities, from North to South, and from East to West, including 10 European cities: Athens, Bologna, Cluj-Napoca, Eindhoven, Lisbon, Liverpool, Lyon, Skopje, Turin and Vilnius.

Urban regeneration is a complex process that involves many different actors, at different levels, in a kind of ecosystem whose well functioning is at the basis of the satisfaction of social, economic and cultural priorities in the cities. These actors represent the various dimensions of the urban life:

- the civic dimension, including formal and informal groups of citizens with common interest;
- the working dimension, including enterprises and SMEs;
- the cultural dimension, involving museums, libraries, and many other types of cultural institutions;
- the educational dimension, including teachers, students, families and the schools in general;
- the research dimension, including academies, universities, private and public research centres, as well as SMEs involved in R&D;
- and last but not least the administrative dimension, involving both the local level (municipalities, districts) and its connection with regional, national and European strategies.

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All these actors have participated in the definition of requirements, actual development and assessment of the ROCK innovation as represented in the Innovation Tables. They all together represent the ROCK ecosystem of stakeholders, whose innovations participate in the Open Innovation paradigm that has been developed as part of the Marker Strategy of the ROCK results. The contributions brought by the stakeholders of the ROCK ecosystem represent the two sides of the innovation process: on one hand the demand of innovation, what is needed in the cities, what the individuals and organisations living in the cities need to ameliorate their living and working conditions; on the other hand the offer of innovation, what enterprises, associations, cultural institutions, etc. can provide - in terms of innovative products, services, and good practices - to satisfy those demands. The Open Innovation approach in ROCK highlights the importance to keep 'open' the dialogue between demand and offer of

innovation, sharing lessons learnt and success stories, and encouraging replications.

In its role of supporting the development of the ROCK innovations, the ecosystem was called to participate in the ROCK Roadshows. The Roadshows have been hosted, as events, by the three Replication cities, namely Bologna, Lisbon and Skopje. The events offered the opportunity to present the ROCK innovations to a wider public, and to review critically the impact that these innovations are generating in the targeted cities. The Roadshow in Bologna, organised by the Municipality of Bologna, the University of Bologna and Confindustria, in collaboration with Fondazione Innovazione Urbana and the European Joint Research Centre was the occasion to participate in a live test and demonstration of three different digital apps for valuing city cultural heritage sites. The Roadshow in Lisbon, organised by the Municipality of Lisbon, the University of Lisbon and Confindustria, in collaboration with Ar.Co and in coordination with the Replicator Workshop organised by Eurocities was an excellent roundup of the pilot activities conducted by the ROCK cities using and re-using the ROCK innovations, looking at success stories and lessons learnt. The Roadshow in Skopje, organised by the Municipality of Skopje, the University of Skopje and Confindustria, in coordination with the Incubational Workshop organised by ARTER looked inside the innovation project that won the ROCK Skopje Hackathon, a complex and articulated project on the regeneration of the old bazaar of the historical centre of the city.

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A useful platform for the promotion of cultural heritage led innovation was produced in the ROCK project: www.innovatorsinculturalheritage.eu. The platform was developed under the aegis of the European Commission, in collaboration with the MARINA project and publicly presented at the Fair of Innovators held in Brussels in November 2018 as part of the programme of events of the European Year of Cultural Heritage 2018. Innovatorsinculturalheritage.eu is in itself one of the 26 ROCK innovations It is an horizontal tool, aimed to target the whole ROCK ecosystem, including all the actors of the urban regeneration, namely: Public administrations, Associations and interest groups, Researchers, Enterprises and SMEs. The users of the platform can publish news about their activities, present their innovations products, services, projects, etc.), promote events, create and manage working spaces to support collaborative experiences, and give access to online archives. Fours areas of interest for the communities of innovators are considered. They are:

- Circular, sustainable and creative cities. Innovations are related to the functioning of the cities. They include tools and best practices targeting mostly actors that collaborate at territorial level, and particularly with the local administrations.

- Heritage at risk. Innovations are focused on preservation and conservation of monuments and sites, vulnerable physical artworks held by museums, rare books, and on the whole domain of long-term digital preservation of digital archives that include both digitised objects and born digital resources.
- Shared management of cultural heritage. The focus in this field is on cultural institutions and their interaction with people. Tools and practices related to this area target mostly actors that collaborate on cultural and creative initiatives, such as creative SMEs, museums and archives.
- Advanced future technologies for heritage and arts. Creative processes represent the focus of innovations. Tools and best practices in this field can support the delivery of interactive and spectacular experience in the virtual reality, digital exhibitions, 3D digital representations, artificial intelligence applied to the enrichment of digital archives, and much more to come in the future.

The replication of ROCK innovations is one of the major challenges for the sustainability of the ROCK results. The difficult undertaking for the future is not only to multiply the initiatives in cities that have participated in the Innovation Action supported by Europe in the frame of the Horizon 2020 programme. The cities of the ROCK project are already numerous, and the 10 cities beneficiary of the project co-funded by the EU are already complemented by more cities that are considering the adoption of ROCK innovations for the planning of their future investments. However, these are not enough, ROCK innovations need to be spread around the EU and beyond, with the help of partners, associate partners, interested stakeholders, cultural and creative SMEs, research, educational and cultural institutions, and the general public, the citizens that are the most important target of the urban re-generation.

Being citizens, living, studying, delivering services, producing and administering, their awareness on the fundamental role that culture has on their life and the progress of their cities is strategically important.

Finally, the cultural sector demonstrated to be a source of resources during the lock-down period due to the COVID-19 crisis, helping our society to become more resilient. Culture demonstrated to other sectors how important is the digital transformation to strengthen communities by becoming more accessible to all. Culture will continue to play a central role in the post-pandemic phase, when new paradigms of the living together in the cities should develop for a socioeconomic recovery. The innovations of ROCK, accompanied by the lessons learnt in the pilots of the ROCK cities, guidelines, schemes, platforms and best practices of the ROCK ecosystem of stakeholders represent a sound basis for the construction of successful future replications of ROCK in the European cities.



Technologies in the Research-Action-Research Perspective

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The proper implementation of the envisaged actions and the following monitoring process often represent a crucial phase of any kind of regeneration action, not simply with relation to the consistent achievement of the expected results and impacts, but also with reference to a long term learning process that goes beyond the project lifecycle. Within the general framework of its methodological approach ROCK has implemented a number of actions, varying for typology, expected impacts, duration, involved subjects, to consolidate an iterative methodology following a Research-Action-Research perspective. The proposed approach is typically based on: a) mapping and understanding the context; b) engaging the local key player into a participated experience; c) testing co-designed solutions within the pilots; d) analysing the outcomes and the related impacts and further re-loop the process when needed. In order these steps are effectively carried out according to their specific envisaged goals, a proper monitoring system during each phase is required to keep the implementation process and its direction under control. The role of monitoring is an essential part of the process not simply to ensure each single action is achieving the expected results but also to detect potential obstacles or barriers to its development requiring prompt corrections and improvements to successfully deliver the process. Monitoring is to be intended as a fundamental part of experimenting any innovative approach in research, being the way investigators understand if the assumptions on which the process is based are correct or not and if adjustments are required to refine it or make it more efficient. This requires appropriate (quantitative or qualitative) parameters are properly identified and adopted considering also the possibility new ones may be introduced after the process is started to embed the monitoring of phenomena which were not initially considered but definitely emerged during the implementation phase. A quite effective example is offered by some environmental parameters introduced to properly consider the interrelation between human activities, quality of life and environmental context. Each of the

topics can be monitored separately with appropriate parameters while interactions between them can be hardly detected and monitored using conventional solutions. This requires to identify appropriate variables and measures that become part of the research action feeding the process and expanding the initial core concept.

ROCK can be considered a pioneering experience in this direction, where monitoring has been extended to a combination of quite different fields not simply focusing on quantitative and measurable elements – as largely happens in the majority of projects – but also considering more complex components such as behaviours, placing people and citizens at the core of the process and making them to become part of the research action.

Consolidated monitoring experiences are often based on the use of real-time sensors which are largely adopted in Smart Cities realms to ensure effective data collection feeding a digital infrastructure governing different service typologies and key relevant sectors such as mobility or energy supply. ROCK monitoring is also based on real-time sensors for some specific issues which are combined within a set of technologies expanding the project monitoring capacity.

Each device typology operates as an individual collector but also within a more articulated set that allows to integrate data and information of different nature in order to analyse the multi-layered structure of urban environment and the way inhabitants interact with it (Gaspari et al., 2017)¹. The creation of this interrelated set of sensors allows researchers to create new knowledge based on the comparison of results. ROCK actions in the city of Bologna included the use of several devices: a multiparameter tool detecting environmental data (wind speed, noise, air pollution, air temperature and the average relative humidity); a large crowd monitoring tool, allowing to measure the presence and movements of people in the area; an indoor monitoring tool in the university library detecting environmental data; software-based simulation of outdoor comfort. The systematization of these results and, in particular, a comparative analysis regarding the presence of people in the investigated area, outdoor simulations of thermal comfort and detected environmental parameters after interventions, allowed researchers to understand how physical transformations have impacted and the ways in which they influenced people in using them. In other cities, as happened in Vilnius, a Neuroanalytic tool supported sentiment analysis to investigate people preferences in relation with different areas. In Turin, the large crowd monitoring tool has been applied to big events typically attracting a large number of visitors in the city.

¹ Gaspari, Jacopo; Boulanger, Saveria; Antonini, Ernesto, MULTI-LAYERED DESIGN STRATEGIES TO ADOPT SMART DISTRICTS AS URBAN REGENERATION ENABLERS, «INTERNATIONAL JOURNAL OF SUSTAINABLE DEVELOPMENT AND PLANNING», 2017, 12-n°8, pp. 1247 - 1259

As pointed out by a recent study from Green (2020)²², technologies and data should be used consciously as enablers and not simply as objectives of interventions. Accordingly, their implementation within ROCK cities has been anticipated by the creation of specific Regenerative Scenarios, co-designed with the local key players. The scientific value of this research-action-research methodology, including a large monitoring structure, relies on the creation of unconventional ways of analysing actions in cultural heritage cities where the specific features often make impossible the adoption of a single way to monitor results. Thus, the adoption of a multilevel monitoring approach is not only a suitable way to overcome limitations but also an opportunity to open unexpected paths of knowledge that can evolve during and after the implementation of actions.

22 Green, Ben, *The Smart enough city. Putting technology in its place to reclaim our urban future*, The MIT Press, Cambridge, London, 2020.

Shifting from a physical event to a virtual conference: The ROCK Open Knowledge Week

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Vision

The ROCK Open Knowledge Week “Cultural Heritage leading urban futures” is the title of the virtual conference that marked the closure of the ROCK project. The conference took place on 27-30 October 2020 online, engaging city officers, policy-makers, urban researchers, cultural actors and civic changemakers across Europe. The decision to move from physical to virtual format for the final ROCK event was not immediate. The uncertainties linked to the COVID-19 pandemic made the organisers, led by ICLEI, to delay the date of the conference from May to June 2020, hoping for a face-to-face meeting at a later date. The persisting and evolving shifts resulted in a slightly revised format from fully physical to blended and made the team incorporate different alternative scenarios, including a change of the conference venue. The continuing exceptional circumstances removed last hesitations of the team which in June 2020 took the difficult decision of transforming the final conference into a fully virtual event and started to review and refine scenarios, messages and strategies leading to a fundamental reframing of the ROCK Open Knowledge Week (henceforth, “ROCK OKW”). In line with the objectives of the ROCK circle focusing on Accessibility, Sustainability and Collaborations, the organisers provided a logical conference structure to validate the following assumptions:

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Accessibility: The ROCK project deals with physical and non-physical disabilities and considers different typologies of access to Cultural Heritage, harnessing the potential of digital and ICT technologies. The introduction of sign language interpretation throughout the entire Open Knowledge Week aimed at reducing disparities in accessibility, adopting inclusive communication and languages for all. This was in line with the

European Disability Strategy 2010-2020 which provides the framework for empowering people with disability to fully participate in leisure and cultural fruition.

Sustainability: The reuse, optimisation and regeneration of Cultural Heritage promoted by ROCK is closely related to sustainability and a shared concern over the present use of natural resources. Cultural Heritage management can be combined with actions for climate mitigation and adaptation. By delivering the conference online, attendees of the OKW did not need to travel to the conference venue to join it, avoiding CO2 emissions and minimising impact on work-family balances. The digital format also helped reduce waste to mount a conference-exhibition setting in a physical space.

Collaborations: The ROCK project acknowledges that Cultural Heritage is the arena where new, creative and bottom-up cultural productions can be boosted. Online events surely pose challenges when it comes to supporting new collaborations and reduced in-person interaction may generate a sense of something missing. To amend the effects of physical distancing, the organisers introduced multiple participation options, including online speed dating sessions called "ROCKnROLL Networking".

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The format

The format of the Open Knowledge Week was deliberately chosen to reflect the needs and challenges of online events. The central concern was to build a community around the conference while at the same time generate diversified audiences and start new relationships. Instead of simply "replacing" the physically planned event, the aim was to re-imagine and re-invent the entire experience.

The consortium decided to spread the originally planned 1.5-day conference into a 4-day event, comprising a total 15 hours of live broadcasting. To minimise virtual fatigue, the team defined a relatively short format of maximum 3.5 hours for each day. The final day hosted specific Thematic Seminars around the topics of Accessibility, Sustainability and Collaborations, as well as parallel Open Knowledge Sessions for in-depth and focussed interest (see section 6). The variety of the sessions allowed the attendees to experience their "personalised week" and choose their specific paths/journeys.

Furthermore, a ROCK exhibition described in more depth later, was facilitated to complement the live sessions. It involved virtual booths of internal and external partners presenting technological solutions and projects on Cultural Heritage. The Open Knowledge Week took place on 27-30 October 2020 to avoid overlapping with major

European events and align as much as possible with academic calendars of the Universities involved in the project as partners. All sessions were recorded and made publicly available on the ROCK YouTube channel for broader dissemination.

The infrastructure

The virtual conference was produced in partnership with one of the leading tech companies that offer virtual conference platforms. Extensive research among available market solutions was undertaken and demo sessions were arranged with five service providers, in order to clarify the requirements and select the most appropriate platform for the ROCK Open Knowledge Week. The primary requirement was the possibility to create a customised virtual environment accessible exclusively to conference attendees, simulating the physical experience of a welcome lobby/reception, a plenary space, different session rooms and an exhibition space. Special attention was given to ensure a branded environment in which the ROCK brand and the EU logo, the ROCK cities identity and the ROCK outputs would be promoted through graphic elements, video displays and digital libraries. Offering a virtual experience that enables easy navigation and engaging interactions across sessions was key to the platform selection process, also taking into consideration the technical requirements of providing Sign Language Interpretation in each session. Considering budget limitations, pricing comparison was undertaken to identify a high value-for-money solution, opting for services that combine a flat rate for the usage of the platform plus an additional fee for every user registering to the conference. GDPR compliance was one of the defining selection criteria for a EU-based company, in order to ensure safe handling of participants data, while having the possibility to export useful anonymised analytics (eg. number of participants per session, average duration of stay, geographical distribution of audience, number of meetings arranged etc). Last but not least, the major investment required in terms of staff training on behalf of ICLEI was considered, influencing the selection of a platform that builds on previous know-how and can be used for future virtual conferences of similar scope and scale.

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The ROCK Open Knowledge Week was thus produced in partnership with EventInsight, provider of the Let's Get Digital (LGD) Platform. The LGD platform covered all the criteria mentioned above, with some creative details and technical features that made a real difference to the conference experience. These included personalised digital badges for every participant; short videos of opening venue doors at the start of every session; a helpdesk providing technical support throughout the conference.



In parallel to the platform customisation an audiovisual Content Management infrastructure had to be set up using Google Drive shared folders, in order to collect and organise all presentations and videos to be featured in each session. PowerPoint templates and video specifications were provided to all partners and speakers prior to the event, aiming to ensure consistency and coherence in terms of content and audiovisual formats. All audiovisual material broadcasted during the conference was uploaded in advance on a dedicated, non-public playlist on the ROCK YouTube channel. Each video received a unique url which was embedded in the LGD platform and a numbered title corresponding to the relevant programme session, for easy reference.

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During the production of the ROCK Open Knowledge Week, an informal broadcasting studio was set up at the headquarters of the ICLEI European Secretariat in Freiburg, Germany. This ensured high-quality broadcasting of live interventions and timely coordination between organisers, presenters, content moderators and helpdesk providers. A reliable wired internet connection, a high definition camera, a branded background wall, studio lights and microphones, screens to display scripts and discreet headsets were deemed necessary to ensure a central coordination of this production. A second space with independent connection and basic broadcasting equipment was set up on a different floor as a fallback solution in case technical difficulties arose in the main studio. Lastly, as the event was being co-hosted by the Municipality of Bologna, a similar low-budget set up was devised in the project coordinator's office in Italy, ensuring visual coherence between the virtual presence of two main event hosts.

Fig. 1

ROCK Open Knowledge Week
lobby area



2 | 3 | 4

A micro-site within the ROCK website was used to disseminate the Conference Programme prior to the event, providing an overview of each session and short profiles of the speakers. During the event, the same content was displayed on the LGD platform, allowing for easy navigation between sessions and networking with speakers. After the closure of the LGD platform, session recordings were uploaded on the same YouTube playlist which was made public. The ROCK website was used as a long-term repository of the Open Knowledge Week proceedings, as session recordings were embedded in the conference programme, enabling open dissemination following the event.

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The team

The production of the virtual conference would not have been possible without the coordinated efforts of an interdisciplinary team with complementary skills on event management, digital production, communications, as well as deep understanding of the ROCK project results and activities.

For this purpose, a core organising team was established, comprising ICLEI Europe as the production team, the Municipality of Bologna as the project coordinator, and the University of Bologna as the content manager of the project, which held meetings on a weekly basis during the run-up to the event. This all-female team held meetings on a weekly basis during the run-up to the event and co-created the flow of the ROCK OKW programme. In addition, several session moderators were appointed among the rest of ROCK Consortium partners, who were responsible for defining the concrete outputs to be presented in the conference and also acted as liaisons with the selected speakers of each session. In order to ensure optimal visuals and videos for the platform, external graphic design and video editing services were provided to the core team throughout the conference preparation phase.

Fig. 2-4

Snapshots of the ICLEI broadcasting studio

Extensive training sessions were organised to introduce all platform functionalities, perform technical audio and video checks and ensure suitable background and lighting. This ensured that everyone present on stage was well-versed to the platform, and that there is a smooth and dynamic flow during the digital event. Session moderators and speakers agreed on an internal communication protocol that was established in case any challenges arose during the event. Additionally, one rehearsal per session was arranged the week before the conference informing them about the flow of the session and time to intervene.

Communication and engagement

The ROCK Open Knowledge week used all communication channels available to the ROCK project in order to disseminate the conference and ensure registrations across Europe. The project website and newsletter were the first to announce a "Save the date", launching registrations and showcasing an overview of the conference scope and structure. During the two months leading up to the event, social media posts gradually announced sessions and speakers, tagging key partners and using relevant hashtags to maximise outreach. In the final month, a comprehensive press release and detailed programme was disseminated through all ROCK partners websites and newsletters and through targeted invitations to relevant stakeholders from the public, private, academic and civil society sector. Registrations were managed using the JotForm online form builder, but participant data had to be exported to the LGD platform to ensure that all registered participants received credentials to access the virtual conference. Credentials were sent on the eve of the event launch by email, to allow time for participants to get familiar with the platform and complete their personal profiles, as well as on the morning of the event launch, to facilitate quick access. Registrations remained open throughout the duration of the event, requiring regular monitoring of new registrations and consequent access provision to last-minute attendees.

During the four days of the Conference, special attention was given to providing ongoing support to participants and facilitating engagement across virtual spaces. Technical support was provided through the platform Helpdesk which activated a private chat in the Lobby area, but also through a centralised email for those who had difficulties with accessing the platform. Although most inquiries were related to participants' internet connection or hardware problems and thus lied beyond the intervention capacity of the ROCK team, many questions were related to orientation inside the platform and required personal assistance to guide access to specific sessions. In that sense, just as a physical conference requires multiple assistants spread across rooms to guide attendees and trouble-

shoot production issues, so does a digital conference format require multiple people simultaneously present in different digital spaces (Helpdesk, Lobby, email, parallel sessions etc.). Speakers received an additional level of technical support before and during the conference. An email alert with credentials and step-by-step guidelines was scheduled and sent 60 minutes prior to the respective session, requesting them to join the Session 30 minutes in advance for a final technical check. All speakers mobile phones were saved in advance in order to enable direct contact in case of delays, sound or image failure.

Graphic facilitation was a helpful tool for capturing conference proceedings, sparking curiosity and stimulating engagement. Thanks to the rigorous visual recording of all sessions undertaken by ROCK Partners NOWHERE, a digital canvas was created for each Session, including portraits of speakers, key words and illustrations relevant to the different topics discussed. Session canvases were woven together in short animation videos, which were emailed to all participants at the end of each conference day, and displayed in the conference Lobby the next morning as a reminder of conference proceedings. An additional playful engagement feature was the Networking Carousel which was renamed as "ROCKnROLL Networking". This feature provided by the LGD platform appeared as a separate session in the programme but worked as a virtual speed-dating tool: as soon as a participant entered the session, they were randomly matched with another participant in a one-to-one encounter that lasted five minutes. This allowed for brief introductions and lively exchange of impressions on the conference, before switching the participants to a new one-to-one interaction. The ROCK Conference offered two ROCKnROLL Networking sessions of 30 minutes, leading to a total of 106 random speed dates. Many of these initial introductions led to additional chat interactions and the arrangement of bilateral video calls. Browsing through participants profiles and using the LGD platform calendar feature to book their meetings, many participants invested time to network and discuss possibilities of collaboration, in a total of 171 one-to-one calls held over the four days.

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The ROCK Open Knowledge Week Programme

The underlying assumptions, tools and processes regarding the ROCK Open Knowledge Week programme and conference production had to be redefined, in order to deliver the event in digital format. As a principle, the organisers acknowledged that producing a virtual event is more similar to directing a television show rather than organising a conference. Sharp timing was of essence to deliver an enjoyable virtual experience, considering the fact that live broadcasting time is faster and online silences are

more marked. In parallel, the effects of virtual fatigue had to be taken into consideration while planning the limited sessions of each day and regular breaks. Having a duet of conference Hosts broadcasting live from the headquarters of ICLEI Europe and the university of Bologna was essential for ensuring a virtual hospitality experience at the start and ending of each conference day, while providing high-level narration linking the different sessions. Furthermore, a dynamic 10-second animation video was used as a virtual “curtain” to mark the opening and closing of each session, avoiding the awkwardness that often prevails in online gatherings and conveying the branded, dynamic look and feel of a professional audiovisual production.

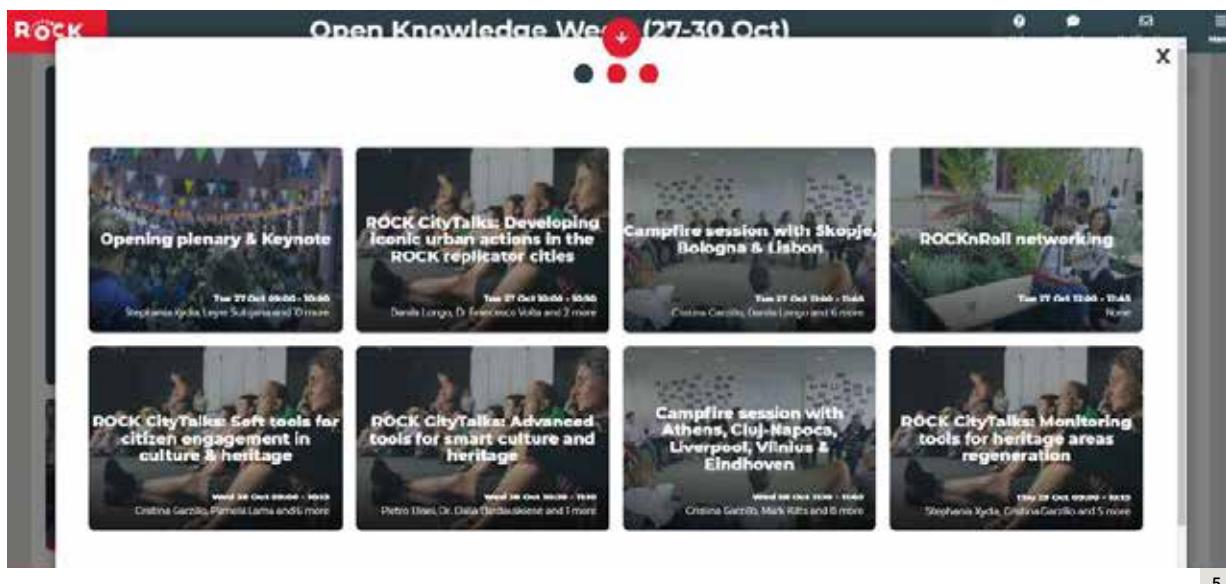
The ROCK Open Knowledge Week programme was developed using a combination of live and pre-recorded content on a 60/40 ratio. On one hand, this approach enabled a dynamic momentum between presentations, videos and discussions, which kept audiences engaged and broadened their attention. By showcasing pre-existing content as well as original content recorded for the conference, participants were able to virtually “travel” to different pilot cities, meet local actors and witness urban transformations. Dynamic music, diversity in languages and city landscapes displayed in City Videos set the stage for each subsequent presentation. Some presentations were also pre-recorded, using the PowerPoint feature that merges slideshows with speaker video. This approach of combining pre-recorded and live content required considerable human resource investment for curating, collecting, editing and uploading audio-visual material prior to the event, but significantly facilitated the flow of the programme during the actual conference. This considerably limited the risks related to live broadcasting, allowing many speakers to focus their energy in live discussions and releasing them from the stress of presenting slides. In fact, the LGD platform’s ability to embed and display YouTube Videos and PowerPoint presentations from the Content Library of each session enabled timely and efficient content management in a centralised manner.

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FIND OUT MORE

Graphic facilitation
ROCK Open Knowledge Week programme



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The ROCK OKW featured over 20 sessions in **multiple formats**, adapted to best transmit the knowledge generated within the project, but also encourage multilateral exchange among speakers and the audience.

- **City Talks** offered the space for ROCK city representatives to present their flagship urban interventions implemented at the local level. Each city was asked to submit a short promotional video from their existing touristic materials, which was played as an introduction to the urban landscape and local culture of each city. These were followed by 10' pre-recorded presentations by ROCK city representatives, which were mediated by live transitions on behalf of the session Moderator.
- **Campfire Sessions** gathered several city representatives in a digital circle to share inspirations, learnings and transformative stories that emerged during the project, reflecting on futures of newly created synergies. Based on the case studies presented in the CityTalks, city representatives were asked to reflect around a predefined set of questions from their own perspective.
- **Thematic Seminars** brought together academic experts, city representatives and local stakeholders to discuss theoretical and practical approaches to cultural heritage from the perspectives of Accessibility, Sustainability and Innovative Partnerships. Each 80' Seminar included an introductory presentation by an expert, reflections by an external provocateur, and a series of relevant case studies from the ROCK project. An open discussion was facilitated using questions and comments shared by the audience in the chat.

Fig. 5

Digital access to conference sessions



- **Open Knowledge sessions** served as quick sessions to present key ROCK outputs and stimulate Q&A between researchers and the audience. Organised as two rounds of three 30' parallel sessions, these enabled visibility of research partners and dissemination of deliverables.
- **Plenaries** served as highlights of the OKW programme Selected inspirational Keynote interventions were planned in an interview format, opting for dynamism over more traditional longer speeches. Opening and Closing plenaries served as the means to localise the conference despite its online character, bringing a touch of hospitality of the City of Bologna, through the welcoming words by political representatives and a final Music Performance by Teatro Comunale di Bologna.

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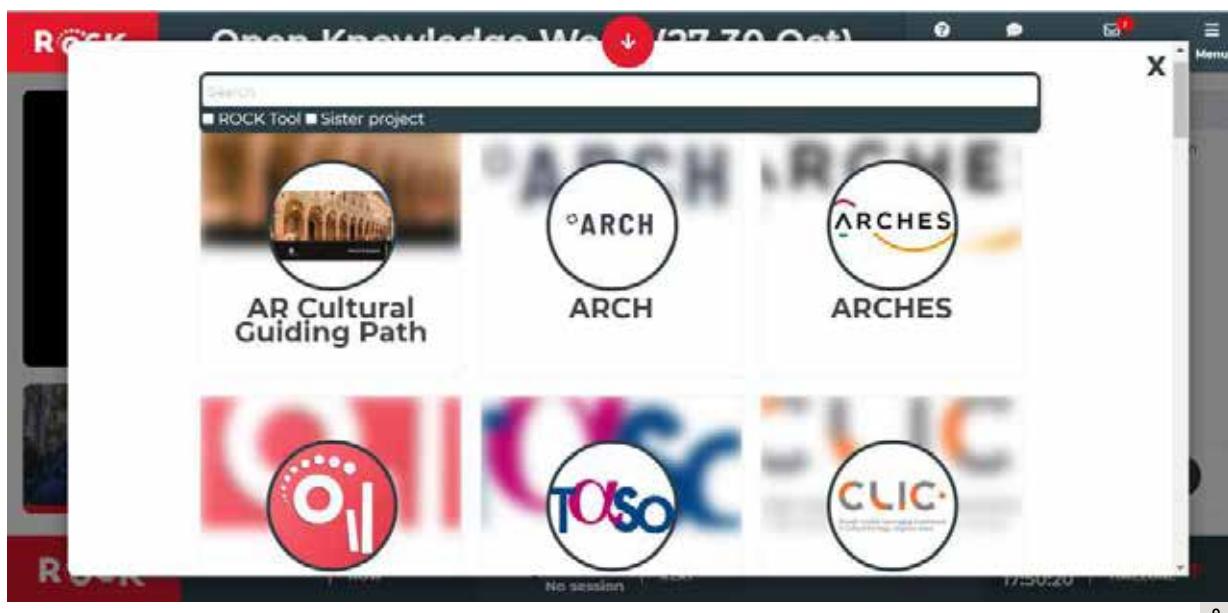
The ROCK Exhibition

A virtual exhibition showcased targeted solutions and innovative approaches for heritage-led regeneration, further enhancing the conference experience. The exhibition presented specific tools developed by ROCK city and technological partners (See Section 3.2 “Innovation Portfolio” of this publication for further information), as well as an intentionally closed group of EU-funded projects working on Cultural Heritage with whom ROCK had closely collaborated with, namely, ARCH, ARCHES, CLIC, DANUrB+, ILUCIDARE, Open Heritage, POCITYF, REACH and RURITAGE.

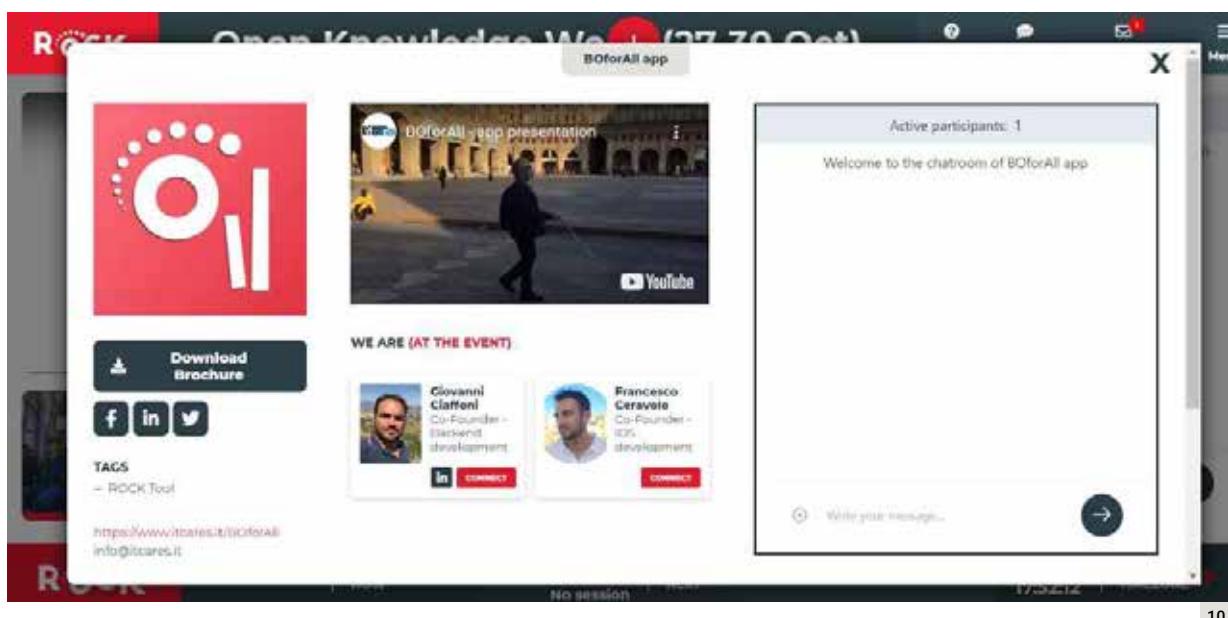
A total number of 34 virtual booths were deployed and a tag function was introduced for each ROCK Tool and Sister project, facilitating the user-experience when navigating the exhibition. For each tool or project, at least one exhibitor was appointed, with the responsibility for populating the booth with audiovisual material prior to the event and serving as the contact point for establishing dialogue with the audience during the conference. In this way, the virtual booths provided a space for public conversations, while offering a platform for participants to also schedule one-one meetings with exhibitors to further learn, discuss or find synergies with the dedicated solution or approach presented.

Fig. 6-8

Sample layouts of different session formats



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The virtual exhibition has received very positive feedback, offering interesting content to be explored by participants at their own time and pace during the four days. It allowed to showcase a larger suite of ROCK results without overcrowding the programme, while unlocking the potential for wider outreach, as Exhibitors became multipliers of the ROCK OKW to broader audiences.

Fig. 9

ROCK Exhibition Area

Fig. 10

Sample Digital booth at ROCK
Exhibition (BOforAll)

Conclusions

The metrics of the ROCK Open Knowledge Week clearly mark a successful event. The conference was "sold out" (794 registrations from 66 countries) and drew 458 active participants. Based on the platform analytics 11,342 pages were opened during the event and each participant spent an average of 1:00 - 2:49 hours per day on the platform. The networking opportunities were also satisfactory, with 106 random speed dates and 171 one-one meetings organised during the conference. Engaging the speakers from the beginning was critical to the event's success. Overall, the conference gathered 57 speakers and 34 exhibitors. This solid line-up of presenters and exhibitors attracted a large number of attendees and guaranteed a diverse and high-quality content for each session.

Clearly there are a number of drawbacks in terms of attendees' experience of online events: lack of real life experience, reduced direct interaction, limited truly critical exchange, different Internet connection speeds, audio and video quality not perfect at all times. In addition, while in a physical conference setting there is staff to assist attendees who are lost, this is more difficult to successfully achieve in a virtual setting. Despite members of the organising team being appointed to "pick up" lost participants, there was still a high risk that they would end their journey by simply clicking to leave the site.

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Despite these challenges, there is great potential of holding virtual conferences instead of in-person events: the wider reach of participants, the large number of platforms now available that were not accessible one decade ago, the lack of boundaries of physical spaces, the offer of knowledge displayed in a variety of ways and forms. According to the platform analytics calculating participants distance from Bologna (the initial conference venue), the ROCK event had the great advantage of reducing air travel, by saving 169.268,89 kg CO₂ which is equivalent to planting 208.97 trees). At the same time, the virtual edition of the event contributed to diminishing waste of mounting/dismantling a physical conference setting, respecting the work-life balance of participants, and democratising access to knowledge on a European scale. The ICLEI organising team believes that the innovations developed in the preparation for the ROCK Open Knowledge Week can be transferable not only to future events in the field of Cultural Heritage, but can also be scaled-up and implemented for sustainable, inclusive and delocalized events in other fields.

CONCLUSIONS

The Role of Cultural Heritage in Urban Sustainability

Catherine Cullen, UCLG - Culture Committee of United Cities and Local Governments

Cristina Sabbioni, Institute of Atmospheric Sciences and Climate - ISAC National Research Council - CNR

Europe has a rich and diverse cultural heritage which has multifaceted significance for Europe and its citizens as it was highlighted in 2018 by the European Year of Cultural Heritage. Cultural heritage is the memory of our civilization and is a non-renewable resource that needs to be placed at the center of the society in a period of transformation.

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The ROCK Project, as outlined in the final conference, developed topics considered essential to the role of cultural heritage in urban sustainable development such as Access, Sustainability and Innovative Partnerships. Participative access and innovative partnerships contribute to showing how cultural heritage can be a driving force to achieving urban sustainability and act as an enabler of urban transformation. Cultural vitality along with economic viability, social equity and environmental responsibility must be considered as cross-cutting issues for sustainable development to flourish, and in the course of the seminar, the interdependent relationships between cultural heritage and partnerships, whether with civic society, the creative industries, or public and private institutions, were convincingly highlighted and exemplified.

The inclusion of cultural heritage in the UN SDGs ultimately shapes what we mean by development and determines how people will act in a world under threat. This approach must ensure that culture and cultural heritage has its rightful place in all public policies and addresses important sustainable development objectives such as the respect of human rights, the basic needs of local communities and the non-depletion of natural resources. As was seen in the examples given on the final

morning, present-day cultural heritage issues are indeed closely linked to environmental sustainability, viable economic development, socially inclusive policies, and respect for human and cultural rights.

Timeless traditions meet new creativity every day in cities around the world, contributing on the one hand to the preservation of identity and diversity of its citizens and on the other to ongoing engagement in sustainable innovation, based on the intrinsic values of culture of which cultural heritage is an important part: shared knowledge, citizen participation, transversal decision making. This emergent model of sustainability, related to historical culture-specific approaches and worldviews, local level community trends and innovative approaches to urban futures, is at its most promising when combined with a holistic approach to cultural and cultural heritage policies inclusive of intercultural dialogue, one of humankind's greatest challenges. Creativity and responsible innovation can then be identified as inexhaustible resources nourishing society and the economy. Each and every aspect of cultural heritage enriches the world, and co-creations, partnerships, localization, accessibility, sustainable re-use as well as the significant symbolic impact of cultural heritage all contribute to the struggle against unsustainable practices leading to catastrophic events such as climate change and its multiple consequences.

The impact of climate change on cultural heritage and the required adaptation measures is in fact a paradigmatic example on how societal transformation requires a holistic approach for facing future threats and cultural heritage may play a leading role in urban futures.

Climate change is already impacting communities and heritage globally, and these trends are rapidly worsening. It is paramount to systematically cataloguing the impacts of climate change drivers, in order to aid in evaluating and managing both climate risks to cultural heritage and the positive role it can play as a source of resilience and sustainability.

In many places, frequency and intensity of climate related disasters like extreme floods, landslides, heavy storms, heavy precipitation events, thunderstorms and lightning will increase. Long and dry heat periods with increased fire risk also threaten to damage many historical and archaeological sites. Contrary to other agents of deterioration like a changing indoor climate over a long period that have a small but constant damaging impact, these disastrous events have the potential to destroy completely valuable artefacts and evidence from the past in hours or even minutes. Therefore, it is of utmost importance to adapt Cultural Heritage sites, city centers, structures and artefacts to climate change.

Given the nature and scale of climate impacts it will require fast updating how heritage needs to be conceived and managed. Multi-disciplinary research and approaches will be required in areas such as heritage

adaptation and documentation, disaster risk reduction, vulnerability assessment, conservation, education and training as well as in the ways heritage sites are presented to visitors.

There are significant cultural heritage dimensions to every aspect of climate action covered by the Paris Agreement, including heightening ambition to address climate change, mitigating greenhouse gases, enhancing adaptive capacity, and planning for loss and damage. For instance, historic and existing buildings represent an important source of embodied carbon and their reuse is a key strategy in many regions for avoiding future emissions associated with new building construction. Cultural heritage supports climate adaptation in a variety of ways, including learning from past social adaptability to environmental change and leveraging pride of place and social values to guide both contemporary resilience planning as well as sustainable growth.

In a period of deep transformation, the impact of research on policy linked to specific local practices are of primary importance for a balanced and sustainable development of our society, in particular where cultural heritage is involved. Now is the moment to be proactive and ensure that the results already provided by the research may form the basis of our society's policies and the ROCK Project provides a valuable contribution in this context.

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Silvia Bartoloni has been working for the International Relations and Projects Office of the Municipality of Bologna since 2015, being mainly involved in the management and coordination team of the H2020 ROCK project. Before 2015, she had been working for a long time for the Tourism Department of the Municipality of Bologna.

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Catherine Cullen was Deputy Mayor for Culture for the City of Lille, France, from 2001 to 2014. For over ten years she was a board member of the Culture Committee of United Cities and Local Governments (UCLG), its President for three years (2012-2015), and she is presently its special advisor on culture in sustainable cities. In 2016, she joined the UNESCO Panel of Experts for the International Fund for Cultural Diversity (IFCD) and in 2018 became its coordinator. She is currently a member of the Multi-Actor Advisory Board of the European H2020 ROCK programme. She is also an independent international consultant in culture and sustainable development, a subject she teaches at the Political Science Institute of Lille.

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