D2.2 Working Paper: European Historic Urban Areas

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State of Play

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HUB-IN

Working paper: European Historic Urban Areas - State of Play

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COVER PHOTO

Art installation Vortex at Darwin, Bordeaux, France
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STATEMENT OF ORIGINALITY

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About HUB-IN

Mission

The project 'Hubs of Innovation and Entrepreneurship for the Transformation of Historic Urban Areas' (HUB-IN) aims to foster innovation and entrepreneurship in Historic Urban Areas (HUA), while preserving their unique social and cultural identity and the environment.

The project adopts innovation and entrepreneurship as the main drivers of urban regeneration in HUAs and is fully aligned with European and international policy (see Smith (2021) for an overview).

In the first stage of HUB-IN, a network of Hubs of innovation and entrepreneurship will be developed in the HUAs of eight city partners (Lisbon, Slovenska Bistrica, Brasov, Nicosia, Genova, Grand Angoulême, Belfast, Utrecht) and in the second stage, the resulting methods and tools will be scaled up to a global network of HUAs in follower cities and the HUB-IN Alliance. The Hubs of Innovation and Entrepreneurship will test, demonstrate and pilot activities of co-creation and co-design in three main clusters with the potential to deliver sustainable transformation of HUAs: 1) Culture and Creative industries, 2) New Lifestyles and 3) Resilient and Human Connected Places.

Vision

HUB-IN expects to contribute to reverse trends of abandonment and neglect of historic heritage in cities in a systemic way through the creation of networks of Hubs where innovation will be the main driver.

The project will also have a direct impact on the creation of new sustainable opportunities for local traditional businesses and for the development of new creative skills and jobs.

About this working paper

The purpose of this working paper is to provide an overview of the current context within which the HUB-IN Mission and Vision will be developed and delivered. It explores the current state of play of heritage-led regeneration across Historic Urban Areas throughout Europe, and highlights the role that innovation and entrepreneurship play in the realisation of their sustainable transformation.

The consortium behind HUB-IN

Executive Summary

The purpose of this working paper is to provide an overview of the current context within which the HUB-IN Mission and Vision will be developed and delivered. It presents an analysis of the current state of play of heritage-led regeneration that is already taking place in Historic Urban Areas throughout Europe, and highlights the role that innovation and entrepreneurship play in the realisation of their transformation.

The findings presented in this paper are based on an analysis of 40 cases across 17 European countries. The analysis has followed the framework developed in HUB-IN (Dargan, Fox and Hartung, 2021), which utilises an entrepreneurial ecosystem approach. This working paper presents descriptive characteristics of the cases analysed, illustrates the state of play across ecosystem elements, and highlights some of the current conditions, barriers, and opportunities faced by those striving for heritage-led regeneration in a historic urban context. The paper furthermore provides insight into fifteen examples of good practice.

Our data confirm that innovative and/or entrepreneurial initiatives have the potential to contribute to heritage-led regeneration in a historic urban setting. The good practice examples presented in this paper provide inspiration on the different routes that can be taken to utilise material and/or immaterial heritage to fulfil a wide range of needs from different actors and transform Historic Urban Areas. We conclude that establishing connections between actors and conditions of the entrepreneurial ecosystem is an important way forward in creating inclusive and sustainable regeneration of Historic Urban Areas. This aligns with the focus of HUB-IN on creating hubs of innovation and/or entrepreneurship as focal points that connect individual projects, stakeholders, resources and ideas, and it reaffirms that this is a useful approach in the pursuit of heritage-led regeneration of Historic Urban Areas.

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Contents

1. Introduction

Historic Urban Areas (HUAs) can foster and sustain innovative and entrepreneurial activities by building on their unique history and heritage. These activities can result in regeneration that is culturally, economically, socially and environmentally sustainable.

As part of HUB-IN, we are mapping approximately 100 examples of innovative and/or entrepreneurial initiatives aimed at regenerating Historic Urban Areas throughout Europe. These examples will be set out in the HUB-IN Atlas, an online database that will become publicly available in February 2022. From these examples, we aim to extract lessons for the HUB-IN cities and explore the ingredients that are likely to foster sustainable regeneration in this specific urban context. This working paper provides a first step in extracting these learnings. It contains a descriptive analysis of 40 innovative and/or entrepreneurial initiatives in the light of heritage-led regeneration of Historic Urban Areas. It outlines some of the key characteristics of the cases analysed, provides insights into the elements of innovative and entrepreneurial ecosystems, how these elements interact in practice, and highlights some of the current conditions, barriers, and opportunities faced by those striving for heritage-led regeneration in this context. The paper furthermore draws attention to 15 examples of good practice among the cases. This deliverable thus provides insight into the current 'state of play' of heritage-led regeneration in Historic Urban Areas throughout the European territory. It acts as an analytical background to the online HUB-IN Atlas (D2.5) and a starting point for modelling a HUB-IN specific ecosystem approach (D2.7). Thereby, this working paper offers potential ingredients that aid the emergence and development of innovative and entrepreneurial behaviour for heritage-led regeneration in a historic urban context.

The remainder of this working paper is outlined as follows: the next section (section 2) provides a descriptive overview of the main characteristics of the 40 cases analysed for this paper. Section 3 explains the ecosystem approach that has formed the basis for our analysis. Section 4 describes recurring themes from the cross-case analysis regarding the individual ecosystem elements and pays attention to typical interactions between different ecosystem elements across the HUB-IN clusters. Section 5 provides a description of the barriers and challenges to heritage-led regeneration emerging from the data. Section 6 highlights opportunities for innovative and/or entrepreneurial initiatives in a historic urban context. In section 7, an overview is provided of 15 examples of good practice. Section 8 concludes this working paper and summarizes the lessons learned from the data.

2. Profile of the case studies

The findings presented in this working paper result from an analysis of 40 innovative and/or entrepreneurial initiatives in relation to heritage-led regeneration of Historic Urban Areas throughout Europe. An overview of all 40 cases included in the analysis can be found in Appendix 2. Cases have been selected based on their promise to add to our understanding of the current state and conditions of innovative and entrepreneurial ecosystems in Historic Urban Areas. In Appendix 3, the methodology for cases selection, data collection and data analysis is explained. This section provides a basic overview of the cases included in the analysis (e.g. geographic spread, type of Historic Urban Areas and type of heritage used). It provides the background against which to interpret the findings presented in the remainder of this working paper.

Geographic spread

The 40 cases included in the analysis represent different geographic areas of Europe. In figure 1, an overview of the geographic spread of the cases can be found. The cases included in this report originate from 17 countries across the European territory[1]. An overview of the cases and the city and country in which they are based can be found in appendix 2.
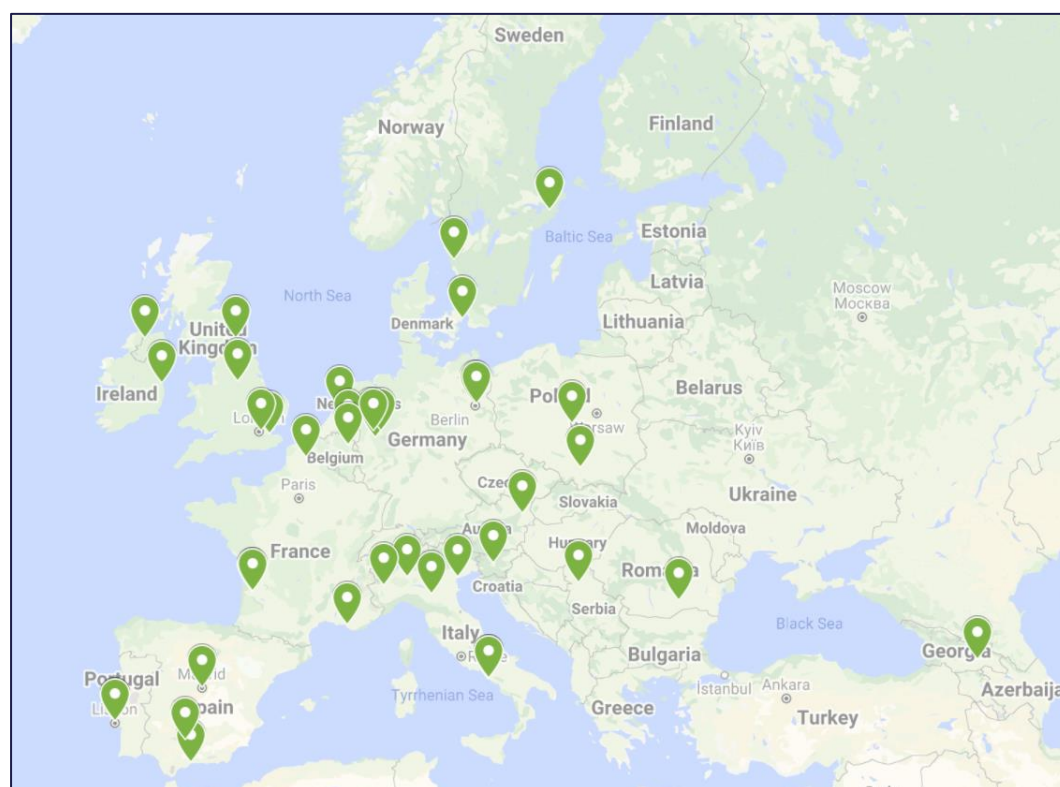

Figure 1: Geographic overview of included cases. Created with Google My Maps.

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[1] In the final HUB-IN Atlas (D2.5), we strive for a representation of at least 33 countries across the European continent. To maximize geographic spread, the remaining efforts of case selection will focus specifically on (South-)Eastern Europe.

City size

Across the 40 cases, a spread of small, medium and larger sized cities is included (see figure 2). The distribution across city size is not representative of the actual city-size distribution across Europe (in particular, the cities in the two smallest city size categories are under sampled). Such representativeness was not aimed for; instead, we aimed to report on examples of HUB-IN places in a variety of city sizes.

Figure 2: Number of cities according to city size (inhabitants)[2].

Type of Historic Urban Area

The cases analysed are rooted in a specific Historic Urban Area. The understanding of Historic Urban Areas as utilised in HUB-IN draws explicitly from the UNESCO (2011) concept of 'Historic Urban Landscapes'. This understanding is sensitive to what makes a place special in its social, economic, and cultural characteristics and the heritage and natural values connected to it. Hence, both geographic and value-driven characteristics play a role in defining a historic urban area. In the context of HUB-IN, three main categories of Historic Urban Areas have been defined[3]:

(1) Historic areas which are, *in whole or in part, town or city centres*;

(2) Historic areas which are *outside of the town or city centre*;

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[2] The total number of cities included in this table adds up to 36 instead of to 40 because for four cities, two cases per city have been included in the sample.

[3] See Bosma et al. (2021) for a more in-depth discussion on the understanding of Historic Urban Areas in the HUB-IN context.

(3) Historic areas that *focus on the wider urban values* that define the identity and character of the place.

When evaluating the type of historic urban area in which the 40 cases analysed for this working paper are based, it shows that the majority is located in the town/city centre (category 1; see figure 3). Historic Urban Areas outside the city centre (category 2) are also well represented. The current data show only a minor number of cases in the category of Historic Urban Areas that are defined less by their tangible heritage but more by the wider heritage values they represent (category 3). With only two cases being defined to operate within such a Historic Urban Area, it shows how tangible heritage, often represented by physical buildings and/or monumental structures, acts as an important starting point for innovative and entrepreneurial initiatives.
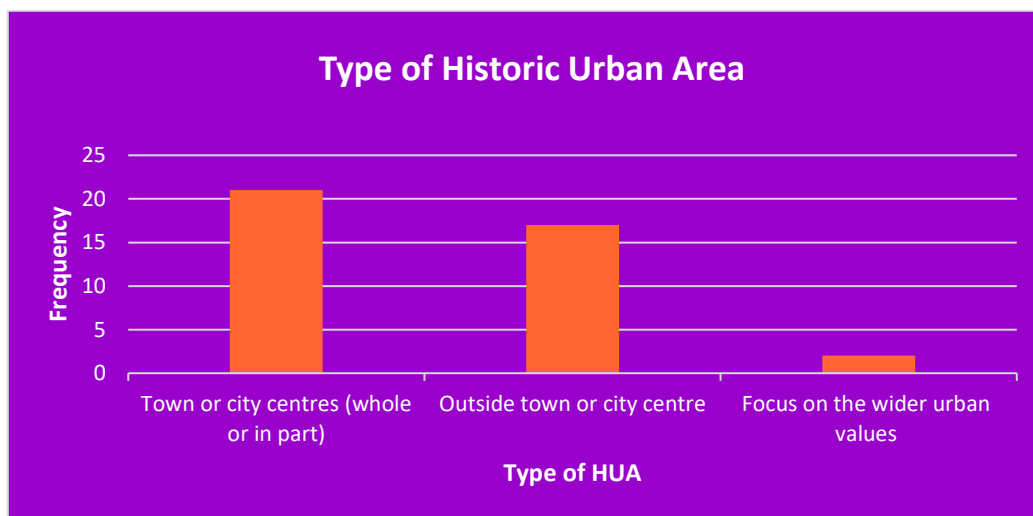

Figure 3: Overview of type of historic urban area

Type of activities conducted (HUB-IN clusters)

In the context of HUB-IN, three different clusters of activities are defined. The first cluster is called Culture and Creative Industries (CCI) and encompasses activities that utilise cultural heritage to nurture socio-economic development, including the reuse of traditional skills and industries, the development of novel business models and the attraction of cultural and creative tourism. The second cluster is called New Lifestyles (NLS), and is focused on activities that stimulate new sustainable living patterns that foster inclusivity and diversity, and that improve health and well-being in the urban context. The third and final cluster is called Resilient and Human Connected Places (RHCP), and includes activities focused on the sustainable use of (natural) resources and digital and human connectivity as a means to foster ecological and social resilience at a local scale. More information on the three clusters and the activities they encompass can be found in Gregorio and Vieira (2021).

When analysing the 40 cases, it shows that most cases (26) combine activities from two or three clusters (see figure 4). This confirms the idea that Historic Urban Areas encompass

heritage, economic, social and environmental values that are best revitalized and developed through a holistic approach. For those cases that conduct activities mainly within one of the clusters defined by HUB-IN, these activities primarily focus on stimulating the presence and development of creative and cultural industries in Historic Urban Areas (cluster 1; 12 cases). This data implies a strong connection between Historic Urban Areas and the creative and artistic sectors. A small number of initiatives only focus on activities within the cluster of New Lifestyles (1 case) or Human and Connected Places (1 case), indicating that the activities conducted in these clusters are highly interrelated with the activities in other clusters, and only in very specific circumstances are the sole point of action.
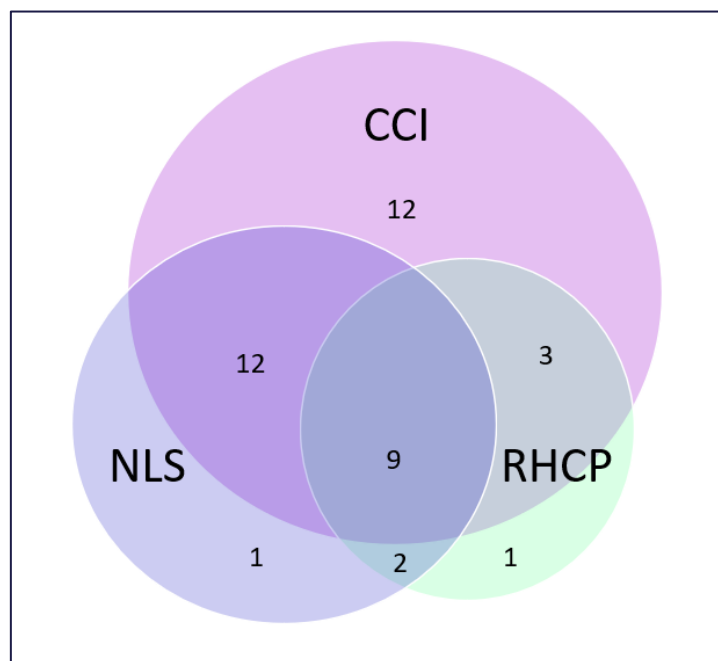

Figure 4: Activities in HUB-IN Clusters

Spatial scale

For each of the 40 cases we identified on which spatial scale they conduct the majority of their activities. Over half of all cases (23) focus on a neighbourhood or district level (see figure 5). This includes cases that focus on the regeneration of a specific neighbourhood (for example, Sugar House Island in East-London, UK), or an area comparable in size, like a former industrial district (like the Meatpacking District in Copenhagen, Denmark). Few cases conduct activities on a wider scale, throughout the whole city (1 case), or even a region (2 cases). For several cases, the focal point of activities happens at the level of a single building (7 cases) or block[4] (also 7 cases). This is not to say that the impacts of these activities are limited to this level. The activities conducted within a building or block can attract people from the wider

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[4] With block, we mean a conglomerate of several buildings/venues in close proximity to each other (for example the same street). This category denotes an area that is larger than a single building, but smaller than a neighbourhood.

neighbourhood, fulfilling an important function on a broader scale. This overview merely indicates at which spatial scale the majority of activities of specific initiatives is focused.

Geographic Scale of Activities
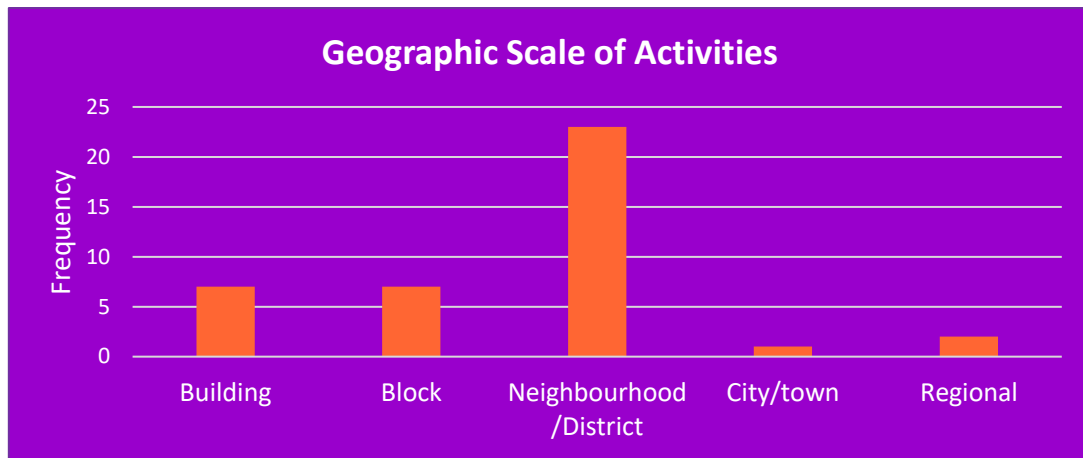
Figure 5: Geographic scale of activities

Type of heritage used

When analysing the types of heritage used by the cases, practically all (39 cases out of 40) actively take advantage of heritage buildings and/or other monumental structures. In many cases, this is combined with intangible types of heritage, like local values, traditional craftsmanship, or traditional music (see figure 6).

Buildings
and/or
monumental
structures

18

Values and/or
symbols

4

1

6

Landscapes
and/or
natural
resources

1

1

1

Music/dance/rituals

2

1

1

1

1

2

Traditional
craftsmanship

Figure 6: Type of heritage used

3. Approach

HUB-IN Places provide fertile ground for innovative and entrepreneurial behaviour. They are able to foster and sustain innovative and entrepreneuria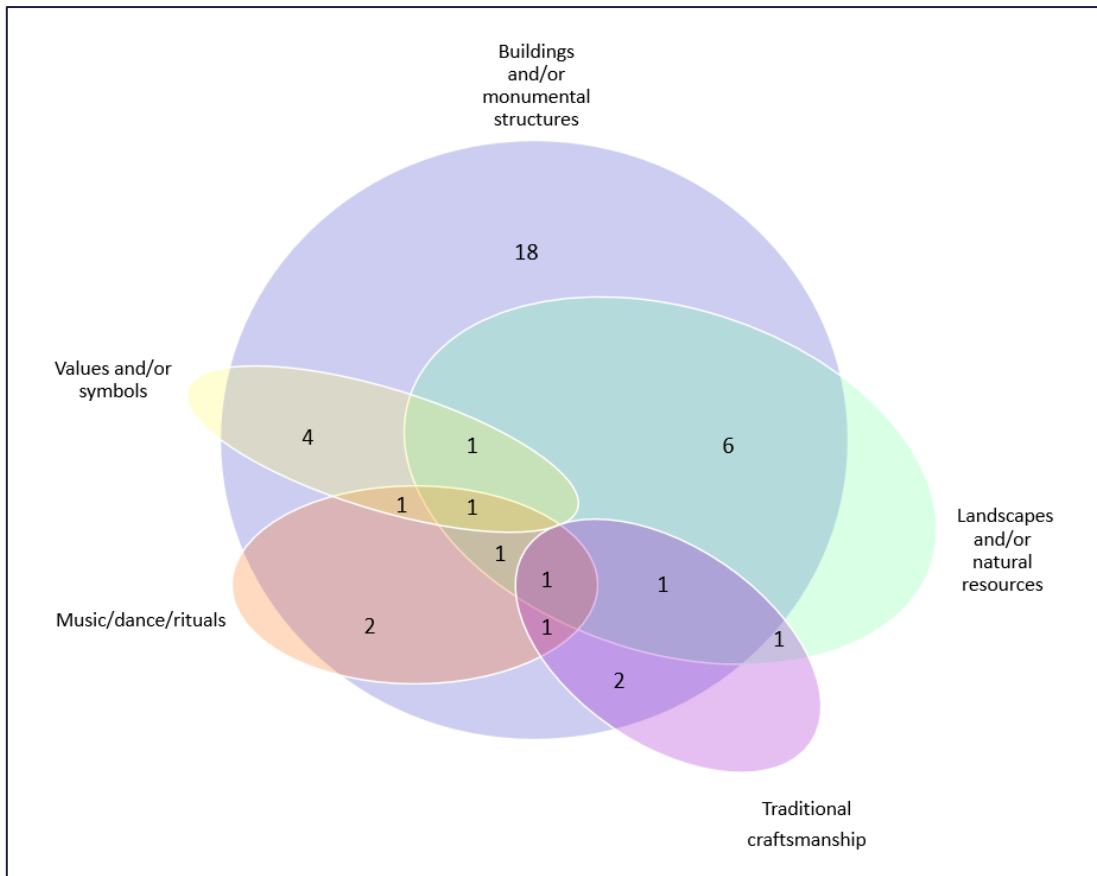l processes in Historic Urban Areas that contribute to regeneration while building on their unique history and heritage (van Twuijver et al., 2021). Stimulating innovative and entrepreneurial behaviour is thus an important step in creating diverse and inclusive Historic Urban Areas that are resilient and sustainable from a cultural, social, economic and environmental perspective.

Ecosystem Approach

In HUB-IN, we aim to uncover the 'ingredients' that are likely to allow innovative and entrepreneurial behaviour to emerge and flourish in Historic Urban Areas. We do this by drawing on insights from the academic fields of urban innovation (Concilio et al., 2019) and entrepreneurial ecosystems (Stam and van de Ven, 2021). Based on this literature, a historic urban area can be viewed as a melting pot of (potential) resources, including elements such as people, organisations and infrastructures. We have utilised the literature to identify eight ingredients and four institutional/cultural arrangements that, combined, can support innovative and entrepreneurial behaviour in Historic Urban Areas (see figure 7). This framework has provided the theoretical background against which the state of play of innovative and/or entrepreneurial initiatives throughout European Historic Urban Areas is analysed. In the remainder of this section, the components of this ecosystem model will be shortly discussed. In the next section of this paper, we analyse 40 innovative and/or entrepreneurial initiatives to describe the state of play.
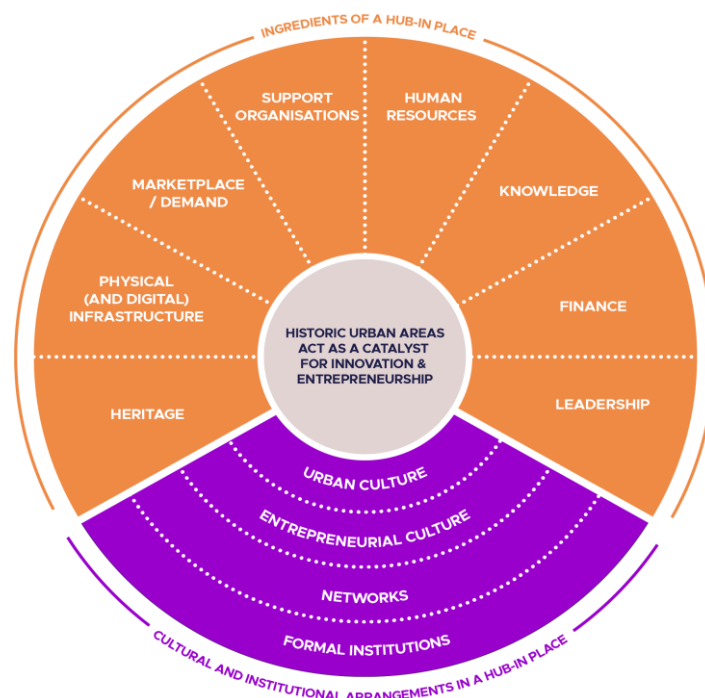

Figure 7: Ingredients and arrangements of an innovative and entrepreneurial ecosystem. Source: van Twuijver et al. (2021)

In short, the eight ingredients are the following:

- **Heritage** represents those tangible and intangible elements inherited from the past that reflect and express constantly evolving values, beliefs, and traditions.

- **Physical and digital infrastructures** refer to the availability of structures and facilities (e.g. buildings, energy systems, modes of transportation) that facilitate proximity and interaction between different stakeholders.

- **Marketplace / demand** shows the importance of innovative and entrepreneurial activities addressing a clear need or a receptive marketplace.

- A well-developed range of **support organisations**, like research institutes or incubators, can provide input for innovative and entrepreneurial processes.

- **Human resources** incorporate the experience, skills, and talents of the local population and those attracted to the area from outside the city.

- **Knowledge** as an openly accessible resource that both local and extra-local partners can build upon (for example, through open-data sources or publicly accessible educational spaces).

- Availability of adequate **financial resources**, which can take the shape of innovative financial models.

- **Leadership**, understood as the presence of individuals or groups that guide and direct collective action.

In each HUB-IN Place, the availability and level of development of the above ingredients result in a unique mix of resources. How these ingredients can be mobilized, combined and employed is influenced by four institutional and cultural arrangements:

- The **urban culture**, encompassing the sense of place and symbolic meanings that those living in, working in, and visiting Historic Urban Areas attach to these places, as well as a specific ambience in (parts of) the city.

- The **entrepreneurial culture**, including, for example, the opportunities innovative actors have to learn from each other, the general attitude towards risk and risk-sharing, and the chances of spontaneous interactions that spark creative processes.

- (Formal and informal) **networks**, referring to the presence and density of social infrastructures.

- The presence and priorities of **formal institutions** that set out rules and regulations.

Together, the four institutional and cultural arrangements, and the eight ingredients, combine into a complex ecosystem in which the different elements interact with and influence each other. HUB-IN Places strive to configure the elements of the ecosystem in such a way that innovative and entrepreneurial behaviour is encouraged. The outputs and outcomes created through this behaviour result in place-specific solutions that contribute to heritage-led regeneration.

4. State of play

The shape and form in which innovation and entrepreneurship can be observed in Historic Urban Areas differ greatly, yet the intended outcome is usually a mix of economic, social, cultural and ecological goals. Within the analysed cases, we find examples of new thinking on urban development policies, novel government arrangements, innovative combinations of resources, inventive business models, new forms of (shared) ownership and original approaches to (co-)living, to name a few. Not surprisingly, the type of activities undertaken by innovative and entrepreneurial initiatives in Historic Urban Areas shows great diversity. The observed activities include, but are not limited to, improving the physical infrastructure of a neighbourhood, renovating buildings, initiating a business, setting up a network, offering training, property management, and experimenting in open laboratories or living labs. In the cases where a whole historic urban area was the target of activities, these areas are provided with a new (or renewed) function, for example, by creating a creative quarter (e.g. the SOHO Arts District in Málaga, Spain) or a mixed-use neighbourhood (e.g. Sugar House Island, London, UK). On a smaller scale, individual buildings or groups of buildings are re-used as office spaces, co-working facilities, makerspaces, (co-)living accommodation, event spaces, restaurants, hotels and a range of other public and private functions, often in combination with one another. The types of outcomes and impacts targeted by the individual initiatives also differ. Where in some cases, the initiative is mainly focused on regenerating the local economy, in others, social, cultural or ecological goals prevail. In many instances, a combination of outcomes is envisioned.

The above shows that heritage-led regeneration in Historic Urban Areas has multiple faces. Nevertheless, we observe some common themes across the initiatives. These will be explored below in an attempt to describe the state of play for heritage-led regeneration of Historic Urban Areas. First, we will provide an overview of the dynamics observed within the individual elements of the entrepreneurial ecosystem. After that, we provide insight into some typical interactions that take place between these individual elements within the context of the HUB-IN clusters. In the following chapters, the focus will shift to an overview of barriers/challenges and opportunities that arise from the data.

4.1 State of play of elements of innovative and entrepreneurial ecosystems

Below, we provide an impression on trends and themes that appear throughout the 40 analysed cases for each of the individual ingredients and arrangements of an innovative and entrepreneurial ecosystem (see figure 7, page 15). Only the element of human resources will not be discussed, given that data collection has provided sparse information on this topic. Further data collection on this theme is needed before findings can be presented. Next to the ingredients and arrangements described above, a section on governance has been added. Governance structures emerge in the data as a recurring theme that combines several elements of the entrepreneurial ecosystems (e.g. networks, leadership and formal institutions), but that deserves a discussion in its own right.

Heritage

In the form of heritage buildings and/or monumental structures, tangible heritage plays a prominent role in many of the cases analysed. It acts as a focal point from which activities can be undertaken. Intangible heritage, like values or symbolic interpretations of a place, are often used in tandem with tangible heritage structures. What stands out in the data is the prevalence of certain types of material heritage. Former industrial complexes or military areas, and religious buildings like convents, seem to provide pockets of open space within the urban fabric that lend itself well to adaptive re-use by innovative and/or entrepreneurial initiatives. Their often striking physical characteristics, and the values and stories attached to them, seem to provide an atmosphere attractive for, among others, the cultural and creative industries.

Another theme that appears from the data is the different perspectives on the value of heritage and historic (infra-)structures that different stakeholders might hold. Open debate and careful navigation are needed in order to agree on a way forward in relation to renovation and/or re-use of historic infrastructures.

Infrastructure

The physical infrastructure of Historic Urban Areas provides unique streetscapes and a distinctive ambience. It is not surprising that initiatives often aim to maintain characteristic elements of the physical infrastructure, like is the case with the old courtyards in Sugar House Island (London, UK). At the same time, historic infrastructures might not always be up to date for modern day use, especially if Historic Urban Areas have suffered from high vacancy rates and degradation. This leads to a need for improvements to the public realm, as observed in initiatives like (Re)Centres Bordeaux (Bordeaux, France), Union Quarter (Dortmund, Germany) and Grainger Town (Newcastle upon Tyne, UK). Such improvements can take the shape of renovation of derelict buildings, improvements to public lighting, improved access for pedestrians and cyclists and new transport connections to other parts of the city. In some instances, like Strijp-S (Eindhoven, The Netherlands), improvements are made to the energy grid and waste treatment infrastructures. Overall, improvements are mainly aimed at protecting the cultural character of the Historic Urban Areas, improving the living conditions of the local community, and improving access and use by entrepreneurs and visitors.

Another dominant theme related to physical infrastructure that appears from the data is creating places where people can meet. This can be aimed at socialization of local residents, like done by Largo Residências (Lisbon, Portugal) and Laguna Libre (Venice, Italy), through their café/restaurant. At the same time, emphasis is put on creating open spaces for innovation, like fab labs, makerspaces, co-working facilities and living labs. For example, initiatives like Base Milano (Milan, Spain); Chiostri di San Pietro (Regio Emilia, Italy); Marineterrein (Amsterdam, The Netherlands) and Hub Criativo do Beato (Lisbon, Portugal) build local infrastructures that enable innovation and entrepreneurship to emerge and develop.

Next to the physical infrastructure, digital infrastructures also gain importance. Though improvement to digital infrastructure is a less prominent theme in the data, there are

instances that indicate that innovative and/or entrepreneurial initiatives can benefit from solid digital infrastructure in Historic Urban Areas. For instance, in Strijp-S (Eindhoven, The Netherlands), the availability of a high quality ICT structure in the city has enabled experiments with smart city solutions and a living lab.

Marketplace / demand

Innovative and/or entrepreneurial initiatives have the best chance of survival if they address a receptive marketplace or solve a distinct need. Within the 40 cases, different markets are being served. Several of the initiatives, like the Cultural and Creative Quarter in Dublin (Ireland), the Meatpacking District (Copenhagen, Denmark) and the SOHO Arts District (Málaga, Spain) focus on attracting visitors and tourists to regenerate the local economy. At the same time, we observe cases that solve a demand for retail space, office space and/or workshops of local entrepreneurs. Several initiatives, like Stamba Hotel (Tbilisi, Georgia), Färgfabriken (Stockholm, Sweden) and Matadero (Madrid, Spain) also help build local markets, mainly in the creative and artistic industries. Some cases focus on social and economic needs of the local community, like Largo Residências (Lisbon, Portugal). An important challenge that several Historic Urban Areas struggle with is the provision of affordable housing to the local community. Examples like Sargfabrik (Vienna, Austria) and PAX (Córdoba, Spain) show that innovative solutions can be found that re-utilise heritage to provide affordable accommodation for the local community.

The data also point out that heritage-led regeneration provides space for implementing sustainable practices and thereby plays a part in creating and building new, sustainable markets. For instance, Stamba Hotel (Tbilisi, Georgia) is home to the first vertical farm in the country. The ecological transition is a leading theme in the regeneration of an abandoned military terrain now known as Darwin (Bordeaux, France), where all restaurants and shops are ecological. In Laguna Libre (Venice, Italy), green building principles have been utilised to renovate a 17th century Baroque palace. All food served in the restaurant is sourced from the island of Venice itself. The revival of traditional meadow orchards in Wuppertal (Germany) contributes to a short food supply chain and food self-sufficiency in its vicinity. Initiatives can also generate new knowledge to help build sustainable markets, like in Loos-en-Gohelle (France), where a former mining complex has been turned into a research and development centre for sustainable energy.

Given the long time span of many regeneration processes, it seems important that flexibility is maintained so changes in demand can be accommodated. For example, in the development of Strijp-S (Eindhoven, The Netherlands), it was decided to replace planned office space, for which demand dropped after the financial crisis, with living accommodation, for which there was a bigger need in the area.

Support organisations

The data indicate that instead of drawing on existing support structures, the great majority of the initiatives analysed are focused on developing new support structures to stimulate creative, innovative and/or entrepreneurial behaviour in Historic Urban Areas. Business incubators, business development services and mentoring programmes are frequently found

to be part of the activities developed by the analysed initiatives, including, for instance, Zollverein (Essen, Germany), C-Mine (Genk, Belgium) and NOD Makerspace (Bucharest, Romania). Yet, support structures are not necessarily confined to business-oriented support. In the generation of the historic Porta Palazzo neighbourhood in Turin (Italy), a collaboration with the Artisan Restorers School was formed, which provided a great impulse to the local arts and craft industry. This shows that educational and/or cultural organisations, including educational institutes, creative organisations and museums, can also support the development of innovative and/or entrepreneurial initiatives by providing specific knowledge and expertise.

Another form of support frequently encountered in the analysed cases is the provision of (co-)working facilities, makerspaces and fab labs, like in Chiostri di San Pietro (Regio Emilia, Italy), Cultural Station Svilara (Novi Sad, Serbia) and Strijp-S (Eindhoven, The Netherlands). These facilities provide space, and in some cases materials, to creative and entrepreneurial minds. Sometimes these facilities are offered against low or no rents, like in Scugnizzo Liberato (Naples, Italy), thus facilitating low-barrier support.

In multiple cases, specific support to the creative and artistic industries is offered. This can for example take the form of providing a platform to display creative work, like exhibition spaces as provided by, among others, Färgfabriken (Stockholm, Sweden) and kitev (Oberhausen, Germany). Artist-in-residence programmes, like those provided by Stamba Hotel (Tbilisi, Georgia), Matedero (Madrid, Spain) and La Friche (Marseille, France), also are incorporated in multiple initiatives.

Knowledge

New applications of existing knowledge, as well as the development of new knowledge, foster creativity, innovation and entrepreneurship. Generating and sharing knowledge is at the forefront of many initiatives. In some cases, improving an understanding of immaterial heritage, like, for instance, Jewish heritage in Kazimierz (Krakow, Poland), is the primary focus. Another recurring theme in the data is the generation of knowledge on sustainable solutions to contemporary urban challenges. At the Marineterrein (Amsterdam, The Netherlands), a living lab is focused on creating a sustainable urban living environment. PAX contributes to urban biodiversity and climate resilience by regenerating green space in patio-houses in the historic centre of Córdoba (Spain).

In offering space for experimentation and co-creation, like fab labs, makerspaces or living labs, many initiatives also contribute to the generation and diffusion of knowledge in different sectors, often with a focus on creative industries. Like NOD Makerspace (Bucharest, Romania), which has built the first and only materials library in South-East Europe. This library contains over 2500 samples of material and aims to educate designers and other interested parties about types of materials and their uses.

In general, we observe a great willingness to share knowledge. For example, by participating in research projects and (local, national and international) networks. Some initiatives have also found novel ways to share the knowledge generated in their initiatives. Like the makerspace RogLab (Ljubljana, Slovenia), which has utilised a 'Fab Box', a mobile fab lab that travels across the country to spread lessons learned in RogLab.

Resources

Public financing provides much needed resources for many of the initiatives. The utilization of public funding from EU-level, national, regional and local level is observed in many cases, often in combination with one another, and with private resources. In some cases, public authorities have designed specific instruments to stimulate investment from the private sector. For example, in the case of C-Mine (Genk, Belgium), where a programme of tax incentives and subsidies was designed to convince creative companies and academic institutions to settle in the area of the former coal mine. Or in Base Milano (Milan, Italy), where private investors were stimulated to fund cultural projects by offering the possibility of tax deduction.

It should be noted that public funding can be important at different stages of development of initiatives. Furthermore, the degree and dependency of initiatives on public funding differs. For instance, at Darwin (Bordeaux, France), only 4% of the total investments in the past decades came from the public budget. Yet, in the starting phase of the initiative, EU funding provided an important resource to conduct a feasibility study of the project. This shows the importance of specific funding programmes that fulfil a need at different stages of the lifecycle of an initiative.

At the same time, we observe great willingness from entrepreneurs and civil society to contribute (financial) resources to innovative and/or entrepreneurial initiatives, for example through private investments and crowdfunding projects. This results in initiatives like NOD Makerspace (Bucharest, Romania) and Stamba Hotel (Tbilisi, Georgia), which are entirely driven by private and/or community investments.

There is also a role for alternative lenders and financiers. Financing provided by the Social Development Bank for Europe played an important role in realising the New Centre of Łódź (Łódź, Poland), and in ExRotaprint (Berlin, Germany), tenants were able to purchase a former industrial complex with the financing of two foundations, both aimed at preventing speculation with the land.

Leadership

Leadership plays an important part in creating commitment from different stakeholders and securing much-needed resources. The cases show that a leadership role can be taken on by a wide range of actors, including but not limited to the local government, entrepreneurs, artists and/or citizens.

Leadership can be recognized in the presence of influential individuals or groups, for example, a visionary local politician, like in Loos-en-Gohelle (France), where the local mayor has been instrumental in driving the transition from the coal mining industry, to becoming a pilot town for sustainable urban management. Leadership can also manifest itself through partnerships that facilitate the cooperation between stakeholders with a shared vision, for example, the local authority and a group of entrepreneurs or citizens. The creation of the SOHO Arts District (Málaga, Spain) was ignited by a group of residents and entrepreneurs who formulated a vision of what their revived neighbourhood should look like. They came up with the idea of the arts district and organised themselves to convey that idea to public parties, thereby creating collective action for the realisation of the idea.

The cases point to the importance of articulating a clear vision that can unite stakeholders and guide collective action. Developing a vision is not a once of event, but a continuing process that evolves with the development of an initiative. In Sargfabrik (Vienna, Austria), for instance, a group of citizens, brought together in an association, has formulated a vision on communal living, that is evolving from a focus on the activities in the building, to creating a positive impact on the wider neighbourhood.

Urban culture

Each city has unique cultural elements that are represented in the sense of place and symbolic meanings found in a place, and in the atmosphere that is characteristic of individual neighbourhoods. Elements of urban culture can inspire regeneration, and are actively drawn on in the cases in our sample. In doing so, the innovative and/or entrepreneurial initiatives also reinforce and renew elements of urban culture. For instance, street art and graffiti have become a prominent and distinctive element of the SOHO Arts District (Málaga, Spain), reinvigorating the local street art scene. In Darwin (Bordeaux, France) and Strijp-S (Eindhoven, The Netherlands), urban sports are given space to develop, attracting different target groups into their neighbourhood.

The data demonstrate that unique elements of a historic urban area can prove an important resource to create a pronounced and distinct atmosphere. Like in the Meatpacking District (Copenhagen, Denmark), where efforts have been made to create a fusion of traditional food-producing industries and contemporary creative industries, which results in a distinctive urban setting, that attracts both local and international visitors to the area.

Entrepreneurial culture

An entrepreneurial culture is one in which innovative actors have opportunities to learn from each other, in which spontaneous interactions can spark creative processes, in which there are places where experimentation is stimulated. Data show innovative and/or entrepreneurial initiatives draw from, or tie in to, an already existing entrepreneurial spirit in Historic Urban Areas. In the regeneration of Gamlestadens Fabriker (Gothenburg, Sweden), former industrial spaces have been adapted into a modern entrepreneurial district, where large companies and small start-ups work side by side. There is also an entrepreneurial incubator on site, which is part of a city-wide initiative, "The entrepreneurial Gothenburg", aimed to create structures in the city that facilitate entrepreneurship and innovation.

This theme of facilitating entrepreneurship and innovation is recurring in many of the cases, which shows in practice through promoting (co-)working space for entrepreneurs, and the incorporation of business incubators and mentoring programmes on-site (e.g. Hub Criativo do Beato, Lisbon, Portugal; NOD Makerspace, Bucharest, Romania), as well as facilitating networking between entrepreneurs (Porto Palazzo, Turin, Italy; Marineterrein, Amsterdam, The Netherlands)

Networks

The data indicate that networking is an important element in building innovative and/or entrepreneurial initiatives in Historic Urban Areas. We find that on a local level, building, strengthening and maintaining networks with policy makers, entrepreneurs and/or local community members is a recurring theme. Networking is an important way to enhance impact and reach and combine efforts of likeminded-people. For example, Färgfabriken (Stockholm, Sweden) built a variety of collaborations with various local design and art initiatives, among others resulting in a collective label under which products from local artists are sold. Not only at the local level but also at the national and international level, networks are maintained to support Historic Urban Areas. For La Friche (Marseille, France), for instance, joining an international network of alternative spaces dedicated to culture was an important step in increasing their visibility. Overall, networks are utilised as a way to gain knowledge and inspiration, attract potential contributors, access new resources and strengthen impact and reach.

Formal institutions

Formal institutions prescribe rules and regulations that influence what entrepreneurs and innovative actors can and cannot do. They play an important role in the redevelopment of Historic Urban Areas through the planning regulations and procedures that guide what types of activities can take place within certain districts. Within the cases, we observe different degrees of involvement of formal institutions. Sometimes local or regional municipalities are the main drivers of regeneration processes in Historic Urban Areas, but they take a supporting and facilitating role in other cases. Formal institutions provide the infrastructure for innovative and/or entrepreneurial behaviour to emerge, for example, by supporting the creation of separate organisational entities that support HUAs. This is observed at Hub Criativo do Beato (Lisbon, Portugal), where the municipality has supported the foundation of a non-profit entity, StartUp Lisboa, that is coordinating the development of the entrepreneurial hub.

Overall, the data imply that policy commitment at the local level is of importance. This does not necessarily mean that a public authority itself needs to drive the initiative or provide funding. Support can also be provided by facilitating the use of a heritage building or by providing advice or mediation when needed. Another way support can be provided is by allowing for regulatory space to experiment with innovative activities or governance structures. For example, at the former navy yard of the Marineterrein (Amsterdam, The Netherlands), the public authorities have allowed for redevelopment to take place through an innovative urban development approach that deviates from standard urban planning policy. In this case, there are no predefined end-goals for the development of the area. Instead, a phased process of development is followed, guided by a broadly-defined area concept. In the municipality of Naples (Italy), legislation has been created to formally recognize informal community structures, providing them with an opportunity to establish themselves. The municipality also has regulations that allow for the formal use of squatted public places if they serve community needs. This latter regulation has enabled the development of a range of social, economic and cultural activities of Scugnizzo Liberato in a former convent.

We also observe instances in which innovative and/or entrepreneurial initiatives are in disagreement with local authorities. This can, for example, be related to the ownership and usage of land, like is the case in Darwin (Bordeaux, France), where there is a dispute of the ending of a temporary lease of land.

Within the publicly driven cases in our sample, we observe different degrees in which community engagement is created. In some instances, the community is merely informed of planned developments. There are also cases, like Grainger Town (Newcastle upon Tyne, UK), in which regular fora are organised for community members and entrepreneurs during which plans are discussed, and ideas exchanged.

Governance

A wide range of governance and organisational forms are observed. Public-private partnerships are quite common, through which mainly local authorities and private organisations cooperate. For example, in Strijp-S (Eindhoven, The Netherlands) or Grainger Town (Newcastle upon Tyne, UK) these partnerships are formalized in a separate organizational structure. Alternatively, the public-private partnership can take the shape of loosely structured or activities based cooperation, like is the case in Chiostri di San Pietro (Reggio Emilia, Italy), where the municipality is in charge of the overall development of the former monastery. Still, individual facilities are managed in cooperation with different businesses and associations.

In other cases, initiatives are led directly by community members (civil society or an entrepreneurial community). Examples include NOD Makerspace (Bucharest, Romania), which is governed by a partnership of entrepreneurs, Sargfabrik (Vienna, Austria), which is run by an association made up of the building's residents, and Largo Residências (Lisbon, Portugal), where a cooperative of community members is in charge. These initiatives often originate from the needs and wishes of local community members and entrepreneurs. In some of these cases, public partners fulfil a supporting and facilitating role, while in others, the initiatives are run without any form of public support.

Formalized partnerships between public partners and the community are less prevalent in the data. Yet, at Quartieri Spagnoli Park (Naples, Italy), an association is currently being designed that brings together representatives from the municipality and the local community to create a public-community partnership. Other examples of initiatives that actively experiment with new governance models include the Roglab (Ljubljana, Slovenia), where a non-hierarchical style of management is tested that is perceived as uncommon in the area, and Scugnizzo Liberato (Naples, Italy), where all interested citizens can participate through open democratic principles and weekly assemblies.

4.2 Clustering activities

In order to create a sustainable and regenerative entrepreneurial ecosystem, the individual elements of the ecosystem need to interact and reinforce each other. According to the vision of HUB-IN, this interaction of elements can take place within three common clusters of innovation. These clusters provide a common goal and concentrate geographic activity. The three clusters defined within HUB-IN are Culture and Creative Industries (CCI), New Lifestyles (NLS) and Resilient and Human Connected Places (RHCP). Each cluster responds to specific global trends and challenges and addresses particular themes in a Historic Urban Area. In Gregorio and Vieira (2021) the three clusters and the specific trends, challenges and themes they address are explained in more detail. Below, we provide some typical examples of observed activities among the cases analysed that can be attributed to the clusters. In doing so, we pay specific attention to how elements of the entrepreneurial ecosystem interact. It should be noted that the types discussed below are not exhaustive. The types and cases discussed, on which more details are provided in section 7 (Good Practice) and appendix 1, show the relevance of the interactive use of different ecosystem elements and some overall commonalities observed in the data.

Culture and Creative Industries (CCI)

In the cluster of Culture and Creative Industries (CCI), cultural heritage is at the centre of innovation and creativity to nurture socio-economic development.

Urban culture, citizen initiative & local governance
We observe initiatives in which the urban culture is an important base and utilised in combination with, for example, leadership, and finance, translating into novel governance structures.

ExRotaprint (Berlin, Germany) provides an example of a novel ownership and governance structure that safeguards a supportive environment in which creative and community projects can develop. Through a non-profit limited liability company founded by tenants and with the financial aid of two foundations aligned against land speculation, the former tenants of this monumental industrial complex now have full ownership. The initiative aims to establish a heterogeneous and open site for diverse social groups, representative of the local community. The space is divided equally among initiatives aimed at work, arts and community. ExRotaprint represents a unique form of ownership and self-organisation that allows adaptive re-use of a non-touristic heritage building favouring local cultural and social initiatives that help regenerate the local neighbourhood.

Entrepreneurial culture, innovation & creativity in heritage spaces
Other cases tend to exploit a local entrepreneurial culture and networks and utilise these to gain access to, for instance, (financial) resources and local knowledge.

NOD Makerspace (Bucharest, Romania) provides an example of how an abandoned heritage space is turned into an opportunity by a collective of entrepreneurial minds. In setting up a range of co-working facilities for small entrepreneurs in the creative industries, the entrepreneurs behind this makerspace have been able to access financial and non-financial resources through, among others, partnerships with large businesses and crowdfunding efforts. It shows how drawing on and extending local entrepreneurial collaborations and

networks can generate resources and commitment for a new initiative. At the same time, NOD Makerspace acts as a support organisation that strengthens local networks, supports the generation and diffusion of (openly accessible) knowledge, and thus reinforces the local entrepreneurial culture.

New Lifestyles (NLS)

The cluster of New Lifestyles (NLS) is focused on improving urban wellbeing by stimulating sustainable living patterns, inclusivity, and diversity.

Community-based networks linked to local heritage
Some of the examples covered in the cases analysed link networks to local communities and sustainable living patterns, emphasizing local human resources and providing solutions to local needs by utilizing vision and leadership.

Sargfabrik (Vienna, Austria) provides an example of an inventive co-living arrangement, combining private, communal and public functions in an abandoned 19th century factory. It is an example of how a heritage building can contribute to solving a range of local needs. In providing affordable housing to its residents, as well as social, educational and leisure services for the neighbourhood, shows the potential of combining different functions to bring life back into a run-down neighbourhood. The strong vision of the initiators, a group of community members, on combining public and private functions to positively contribute to the lives of residents and the wider neighbourhood has been an example for similar initiatives within and outside Vienna.

Largo Residências (Lisbon, Portugal) utilises an innovative approach that combines arts, intangible heritage and tangible heritage, to empower the local community. A strong vision about the importance of operating from the needs and desires of the local community is translated into social and cultural activities that build on, and expand, the talents and skills of those living in the neighbourhood. In combining this with (partially more commercial) activities like a hostel, hotel and artist-in-residence programme, the initiative is able to generate an income to sustain its social and cultural operations, while at the same time offering local employment.

Resilient & Human Connected places (RHCP)

The cluster of Resilient & Human Connected places (RHCP) is focused on improving ecological and social resilience of historic places through the sustainable and regenerative use of resources, enhanced community cohesion, and increased digital and human connectivity.

Creative hotspots through community-based regeneration
Creative hotspots belong to the CCI cluster but are sometimes also based on regenerative use of resources and community cohesion, hence combining activities in both the CCI and RCHP cluster. In this type of Historic Urban Areas, we observe strong interactions between networks, infrastructure, entrepreneurial culture and formal institutions - in some cases also human resources and leadership. For example, the *SOHO Arts District* in Málaga, Spain, is a catalyst for regeneration of a historic neighbourhood via arts and creative industries. The area suffered from problems of deterioration, marginalization and criminality. Neighbourhood

residents joined forces and started the creation of an artistic district. By forming an association, local cultural projects were initiated, which triggered engagement of the local municipality. The arts district has been realized through a cooperation of different public and private stakeholders, including community members, local artists, entrepreneurs and public bodies. The combination of re-utilizing abandoned historic buildings, improvements to the public space, and support to the creative industries, have led to a buzzing creative area full of cafes, galleries and art spaces. It demonstrates how cultural and artistic assets can be utilised for the regeneration of urban areas, through united efforts of public and private partners. The combination of interventions in the physical infrastructure, support for economic activities and social projects has turned an abandoned neighbourhood into a creative district and tourist hotspot with a distinct identity.

Scugnizzo Liberato (meaning 'freed street-boy') in Napels, Italy, is characterised by urban regeneration based on urban commons, taking shape in a former convent. This initiative developed through community action that capitalised on local regulations allowing for innovative governance arrangements. The Municipality of Naples got ownership over the building and allowed Sacco Matto, a citizen association striving to provide empty spaces with a social purpose, to use it. Currently, hosted activities include language courses, after-school, sports, dance, theatre, spaces for coworking, and art and craft labs. A special focus is on providing meaningful engagement for local youth vulnerable to gang membership and criminal activities. Scugnizzo Liberato is managed based on radical open democratic principles, with weekly assemblies that are open to all. This way, inclusivity is safeguarded and the former convent is now a place where youth and migrants socialize, work, and play together with among other artists.

Energy and ecology based approach to regeneration
Other initiatives are directing their regeneration activities towards ecology, and tend to be characterized by interaction of leadership, knowledge, marketplace / demand, human resources and formal institutions. In *Loos-en-Gohelle*, France, the town's mining heritage has been transformed into an innovative, and ecological focused, approach to regeneration of the town. In response to rising unemployment and loss of identity after closure of the mines, a political project was started combining ecological, economic and social measures. Emphasis was put on democratic decision making, public debates, and community engagement, juxtaposing the paternalistic management tradition in the mines. Now, a wide range of activities such as renewable energy generation, green technology, green renovation and tourism are taking place. Green belts have been stimulated throughout the town, energy efficiency and the use of renewable energy is promoted, as well as eco-construction. The former mining heaps now are home to cultural organisations and a research and development centre focused on sustainable energy. Thus, Loos-en-Gohelle is an example of innovative re-use of material and immaterial heritage, combined with strong (political) leadership and an emphasis on ecological activities while also preserving economic and social values.

Another example is the case of *Darwin*, in Bordeaux, France. This is an initiative from local citizens developed on the terrain surrounding former military barracks, and initially informally utilised by locals as a place for street art and urban sports. It was turned into a vibrant and future-oriented cluster of economic and social activities, using a cleverly designed governance structure that considers the voice of users of the terrain, enabling a combination of economic activities and citizen initiatives to strengthen each other. This is all based around a strong vision of ecological sustainability. All restaurants and food shops based in the area solely work

with ecological produce, energy efficient renovation of the buildings is a key priority and pilots are run with new (urban) farming techniques like aquaponics and micro-gardens. The developments at Darwin show how heritage can provide an ingredient to help people design their future.

Interaction between ecosystem elements

The above examples show that creating positive interaction between individual ecosystem elements is key for the creation of innovative and/or entrepreneurial initiatives in Historic Urban Areas. Hence, the data indicate that it is not the quality of individual ecosystem elements that determines the strength of the ecosystem, but the connections and interactions between the particular ingredients and arrangements.

So far, the analysis has not revealed ecosystem elements that relate only to the development of activities within a specific cluster. Rather, the ecosystem elements tend to operate across, and independent of, the clusters. Yet, aligning several elements of the ecosystem towards the goals of a specific cluster can enable innovative and/or entrepreneurial elements to arise within that area of focus. Here, it is important to note that the activities within the analysed cases tend not to be restricted to one cluster but typically touch on multiple clusters due to intertwining activities in the supporting ecosystem. This finding is in line with the descriptive data presented in section 2 of this paper, highlighting that many of the analysed initiatives operate across multiple clusters. Further analysis is needed to investigate if there are patterns in how specific ecosystem elements are utilised and combined within, and across, each of the three clusters.

5. Barriers and challenges

Regeneration does not happen without encountering barriers and challenges. Transparency about them can foster learning and help to overcome and prevent them. Below, the most prominent barriers and challenges resulting from the analysis of data are discussed. It should be noted that our case selection is based on 'good' practices. On the one hand, this means that barriers and challenges observed in our data can be expected to occur in the wider range of related initiatives throughout Europe as well. On the other hand, the barriers and challenges described here, more than likely, do not provide an exhaustive overview of those experienced in practice, as our sample is skewed towards positive examples. Nevertheless, the themes discussed below provide valuable food for thought that can be taken into account by HUB-IN cities and the HUB-IN Alliance.

Our data highlight that heritage-led regeneration is characterised by a long time span of developments and often a high resource intensity. Maintaining momentum, commitment of stakeholders and inflow of resources over extended periods of time, which can easily span decades, is a challenging task. An added challenge is the long-term maintenance costs of material heritage, which can be significant and require recurring investment. A specific barrier, mainly related to industrial heritage, is the pollution of heritage sites resulting from former activities. High costs attached to cleaning and preparing sites for use can form a significant barrier in re-utilizing these sites, by increasing the need for substantial once-off investments.

Another challenge that emerges from the data relates to the ownership of material heritage (e.g. heritage buildings). When material heritage is not owned by those utilizing it, and there are no clear governance structures in place that guarantee the continuity, there is a chance that successful initiatives might find themselves without a home when (either public or private) property owners decide on a different use of the building or area. This can lead to loss of resources and investments of the initiatives and be a barrier to long-term sustainability of innovative and/or entrepreneurial initiatives. The data also show examples of cases that try to prevent these dynamics. For example, in the case of ExRotaprint (Berlin, Germany), where, with financial help from two foundations, a former industrial building was taken off the speculative market and is now collectively managed by the tenants through a non-profit, limited liability company and a heritage building right.

Historical planning arrangements can also cause barriers to the development of innovative and/or entrepreneurial initiatives. Rigid planning rules on a building level or zoning rules that only allow for specific activities to take place within a certain area can delay or hamper the emergence of initiatives. At the same time, these regulations are an important instrument to safeguard the characteristic fabric of Historic Urban Areas, and serve an important purpose in maintaining their unique character. Hence, a balanced approach, which combines legal space for experimentation and innovation with respect for preservation of unique heritage elements, seems of importance to break this barrier. Taking into account the point of view of different stakeholders and users of an area can help in creating a balanced approach.

Gentrification and the negative consequences of mass tourism are challenges that certain initiatives have to deal with. Unequal distribution of the positive effects of regeneration can

lead to unwanted consequences. For example, value increases of property and land can positively impact those owning material assets. Still, they can negatively impact those that depend on renting this space for living and/or working. An example of an initiative empowering the local community to take back ownership of heritage structures is PAX (Córdoba, Spain). This initiative supports the establishment of cooperative structures for community members through which they can renovate and re-inhabit derelict patio houses, thereby addressing a need for affordable housing and counteracting gentrification of the historic centre of Córdoba.

The main barriers and challenges extracted from the data mainly refer to the ecosystem elements of financial resources, institutions and governance arrangements. In this, the data seem to point out that in order to realize inclusive and sustainable regeneration of Historic Urban Areas, (shifts in) the distribution of power, influence and assets among different user groups of the area need to be taken into account. Also, Historic Urban Areas need to ensure resilience to changes that may occur over time. Again, a well-functioning interaction between the different actors and conditions that constitute the ecosystem will ensure that relevant developments and changes are signalled and discussed in time and can be enacted upon.

6. Opportunities

Based on the data, we can conclude that there are big opportunities to use heritage-led approaches to enhance the unique identity of Historic Urban Areas, whilst helping communities meet the economic, social and environmental challenges that they face. The 40 cases analysed indicate that with innovative and creative thinking, opportunities can be created and realized that utilise heritage as an important element in building an inclusive and sustainable future for Historic Urban Areas. The strength of each of the analysed initiatives lies in their one-of-a-kind blend of unique heritage, infrastructures, resources and networks, in combination with their specific institutional and socio-economic history and characteristics. Innovations depend largely on the context in which they take place, and therefore, providing an overview of opportunities that will suit every context is a challenging task. Yet, from the data analysed we can distil some avenues that have potential for further exploration in Historic Urban Areas.

Based on the data gathered, we see that financial and governance models utilised at the moment are relatively traditional. Yet, we observe a number of initiatives that are exploring novel financial arrangements and new modes of governance and ownership to empower local (entrepreneurial) communities. These initiatives can provide inspiration for others to set up experiments in the same direction. For example, exploring new ways to combine resources, as adopted at NOD Makerspace (Bucharest, Romania). Another opportunity is presented by rethinking ownership structures, as is the case with ExRotaprint (Berlin, Germany). Taking land "off the market", through various means, is a promising avenue that could alter the business case of heritage-led regeneration efforts. Moreover, structures that enable community ownership, for instance, observed at the Sargfabrik (Vienna, Austria) and PAX (Córdoba, Spain), could also be explored more fully. The data show that there is also room to experiment with forms of citizen engagement. Public instruments like participatory budgets or community councils could be a potential starting point for this.

The data analysed for this working paper also point to the importance of providing open spaces for innovation. This can take the form of, for example, makerspaces, fab labs and living labs. These spaces can act as an important support structure for strengthening the entrepreneurial culture, and stimulating the emergence of new networks and new knowledge and ideas. RogLab (Ljubljana, Slovenia) and Chiostri di San Pietro (Regio Emilia, Italy) provide examples of this. In order to ensure the progress from invention to innovation, it is imperative that other actors such as financiers and support organisations are well-connected to these open spaces for innovation. Moreover, connecting separate projects and initiatives, like is aimed for at Porto Palazzo (Turin, Italy) or in Loos-en-Gohelle (France) can strengthen the impact and reach of individual actions, and attract more stakeholders, resources and ideas to an area. In the terminology of HUB-IN, this means a focus on the creation of hubs of innovation and entrepreneurship that bring together initiatives, stakeholders, resources and ideas, either physically or virtually.

In creating open spaces for innovation, not only the provision of physical spaces seems of importance, but institutional space to allow for experimentation is crucial too. This can for

example be a regulatory space to allow for bottom-up initiatives to evolve. Inspiration can be taken from the municipality of Naples, which has implemented regulations that formally recognize informal community structures to provide them with an opportunity to establish themselves, as well as regulations around urban commons. This has enabled the initiative of Scugnizzo Liberato to develop into the citizen-driven, self-governance structure it has today.

Taking all the above into account, an important conclusion we draw is that instead of developing individual elements of the ecosystem, the greatest opportunities seem to lie in bringing the individual elements of the ecosystem in tune with one another. Enabling interaction between the separate ingredients and arrangements of the ecosystem seems to be the key to not only kickstart innovative and entrepreneurial behaviour but also to sustain it and to scale its impact. In cases where the different elements of the ecosystem strengthen each other, a positive spiral is created that attracts new stakeholders, additional resources and new ideas that benefit innovation and entrepreneurship, contributing to heritage-led regeneration.

At the same time, enabling the interaction between different elements of the ecosystem seems important to overcome challenges and barriers that currently inhibit the realisation of the full potential of innovative and/or entrepreneurial initiatives. For example, challenges related to the unequal distribution of benefits of regeneration, like gentrification, can only be solved through a combination of elements in the ecosystem. Solving such challenges requires, among others, a balanced approach to the market that is guided by strong leadership that takes into account different public and private needs, and that cooperates with diverse networks that are inclusive to different stakeholders and users of the area.

Finally, efforts to explore and articulate outcomes and impacts of innovative and/or entrepreneurial initiatives from different perspectives, including for example economic, social, cultural and environmental points of view, seems important to get a deeper understanding of how inclusive and sustainable heritage-led regeneration can be achieved while minimizing negative side-effects. With the impacts of heritage-led regeneration often being diffuse and spread across several dimensions, structurally mapping outcomes and impacts from different perspectives is challenging. Yet, more detailed insights into this might aid in opening avenues towards new resources that can support inclusive and sustainable heritage-led regeneration of Historic Urban Areas.

7. Good practice

This section draws attention to 15 cases that may serve as a good practice and provide a source of inspiration for initiatives that are in design or in gestation. The cases can be grouped along the three key clusters identified in the HUB-IN Framework (Dargan, Fox and Hartung, 2021; Gregorio and Vieira, 2021). This results in three groups of five cases each, even though it should be acknowledged that, as stated before, many of the cases have developed activities that cut across multiple clusters. Here, they are presented in the cluster of which we believe their work is most exemplar. The description of these cases can be found in Appendix 1; by clicking on the name of a specific initiative, you will be directed directly towards the description of the initiative.

Culture and Creative Industries (CCI)

- NOD Makerspace (Bucharest, Romania)
- Cultural Station Svilara (Novi Sad, Serbia)
- Meatpacking District (Copenhagen, Denmark)
- ExRotaprint (Berlin, Germany)
- Hub Criativo do Beato (Lisbon, Portugal)
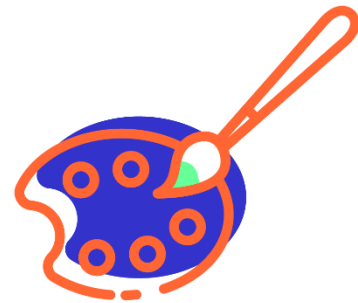
New Lifestyles (NLS)

- Sargfabrik (Vienna, Austria)
- Largo Residências (Lisbon, Portugal)
- Darwin (Bordeaux, France)
- Stamba Hotel (Tbilisi, Georgia)
- PAX (Patios de la Axerquía) (Córdoba, Spain)

Resilient & Human Connected Places (RHCP)

- Strijp-s (Eindhoven, The Netherlands)
- Scugnizzo Liberato (Naples, Italy)
- Loos-in-Transition (Loos-en-Gohelle, France)
- SOHO Arts District (Málaga, Spain)
- RogLab / RogCentre (Ljubljana, Slovenia)

8. Conclusion

The purpose of this working paper was to provide an overview of the current context within which the HUB-IN Mission and Vision will be developed and delivered. Based on an analysis of 40 cases across 17 European countries, we have explored the current state of play of heritage-led regeneration in Historic Urban Areas throughout Europe. The analysis has followed the framework developed in HUB-IN (Dargan, Fox and Hartung, 2021), which describes an ecosystem consisting of eight ingredients (heritage, physical and digital infrastructure, marketplace / demand, support organisations, human resources, knowledge, finance and leadership) and four institutional and cultural arrangements (urban culture, entrepreneurial culture, networks and formal institutions). The working paper has outlined descriptive characteristics of the cases analysed, illustrates the state of play across ecosystem elements, and has highlighted some of the current conditions, barriers, and opportunities faced by those striving for heritage-led regeneration in this context. The paper furthermore provides insight into fifteen examples of good practice found among the cases. As such, this working paper provides useful information to those who are actively involved in developing heritage-led regeneration in a historic urban context that is to be characterised by innovative and entrepreneurial behaviour. In the remainder of this conclusion, we highlight some lessons of significance for the future activities within HUB-IN, and of relevance to the HUB-IN cities, and others interested in stimulating innovation and entrepreneurship in a heritage-sensitive setting.

Our data confirm that innovative and/or entrepreneurial initiatives have the potential to contribute to heritage-led regeneration in a historic urban setting. The good practice examples provide inspiration on the different routes that can be taken to utilise material and/or immaterial heritage to fulfil a wide range of needs from different actors, and the transformation of Historic Urban Areas. All of the analysed cases are unique since, first and foremost, they draw on unique material and/or immaterial heritage. We observe that activities take place across a wide range of sectors, include different constellations of stakeholders and access and utilise resources in different ways.

Many of the analysed cases show 'erratic' progress over time, meaning that early-phase initiatives sometimes fail, and a new trajectory is set in. Hence, a long-term point of view seems needed to really value impacts of development. At the same time, this also means that long-term sustainability of an established initiative is not to be taken for granted, as conditions, both internal and external to a Historic Urban Area, change. Creating structures through which consultation, deliberation, and discussion between different actors seems important to steer the ever-changing dynamics of heritage-led regeneration in the direction of inclusion and long-term sustainability.

An important finding is that all cases exhibit signs of interaction of ecosystem elements. We thus conclude that a strong ecosystem is not so much characterized by well-developed individual elements but by well-developed relations and interactions between the different actors and conditions that constitute the ecosystem. Enabling the interaction between different ecosystem elements seems important to seize opportunities and overcome

challenges and barriers that might inhibit the realisation of the full potential of innovative and/or entrepreneurial initiatives. The data show that strong interactions involve, almost without exception, a combination of at least one ingredient and one institutional or cultural arrangement from the framework. This implies that initiatives should be embedded within the institutional and cultural setting of a place.

In relation to the ecosystem model underlying our analysis, we observe that the elements identified in this model allow us to capture relevant dynamics of already existing innovative and/or entrepreneurial initiatives in Historic Urban Areas. This supports the use of this framework in the remainder of the HUB-IN project and provides a solid basis for further developing a HUA specific entrepreneurial ecosystem model (which is HUB-IN deliverable D2.7). At this moment, our analysis has not revealed ecosystem elements that relate only to the development of activities within a specific cluster. Instead, the ecosystem elements operate across, and are independent of the clusters. This is in line with the idea that an entrepreneurial ecosystem is industry-agnostic and can thus operate across sectors. In our data, this is confirmed by observing that most analysed cases operate across two or more HUB-IN clusters.

We conclude that establishing connections between actors and conditions of the ecosystem is an important way forward in creating inclusive and sustainable regeneration of Historic Urban Areas. This reaffirms that the focus of HUB-IN on the creation of hubs of innovation and/or entrepreneurship, as focal points that connect individual projects, stakeholders, resources and ideas, is a useful approach in the pursuit of heritage-led regeneration of Historic Urban Areas. Thereby, the findings presented in this working paper reinforce our belief that HUB-IN presents a timely and strategic opportunity. In guiding the development of inclusive and sustainable practices that support the emergence and permanence of hubs of innovation and/or entrepreneurship, a contribution can be made to create Historic Urban Areas that embody a spirited culture, a vibrant and inclusive social life, and a flourishing local economy while being environmentally sustainable.

References

Bosma, N. , van Buiten, D., Stam, E., Smith, B., & Toxopeus, H. (2021) Data Collection Protocol, HUB-IN project – Hubs of Innovation and Entrepreneurship for the transformation of Historic Urban Areas H2020-SC5-2019, GA 869429.

Concilio, G., Li, C., Rausell, P., & Tosoni, I. (2019). Cities as enablers of innovation. In: Concilio G., Tosoni I. (eds) Innovation Capacity and the City. SpringerBriefs in Applied Sciences and Technology (pp. 43-60). Springer, Cham.

Dargan, L., Fox, M. & Hartung, G., (2021). HUB-IN Framework: An overview of our shared context, vision and values towards 'HUB-IN Places', HUB-IN project – Hubs of Innovation and Entrepreneurship for the transformation of Historic Urban Areas H2020-SC5-2019, GA 869429. Available at: https://hubin-project.eu/library/hub-in-framework-overview/

Gregorio V. and Vieira V., 2021. HUB-IN Clusters of Innovation (The Long Read), part of the HUB-IN Framework: An overview of our shared context, vision and values towards 'HUB-IN Places', HUB-IN project – Hubs of Innovation and Entrepreneurship for the transformation of Historic Urban Areas H2020-SC5-2019, GA 869429. Available at : https://hubin-project.eu/library/hub-in-clusters-of-innovation-hub-in-framework/

Smith, B. (2021). HUB-IN Framework: Alignment with European and International Policy (The Long Read), HUB-IN project – Hubs of Innovation and Entrepreneurship for the transformation of Historic Urban Areas H2020-SC5-2019, GA 869429. Available at: https://hubin-project.eu/library/hub-in-alignment-with-european-and-international-policy/

Stam, E., & van de Ven, A. (2021). Entrepreneurial ecosystem elements. Small Business Economics, 56(2), 809-832.

UN Statistical Commission (2020). Statistical Commission: Report on the 51st session (3-6 March 2020). ISSN 0251-9976. United Nations. New York, 2020

UNESCO (2011), Historic Urban Landscape - Historic Urban Landscape V1. Resolutions. United Nations Educational, Scientific and Cultural Organization, Paris. Available at: http://portal.unesco.org/en/ev.php-URL_ID=48857&URL_DO=DO_TOPIC&URL_SECTION=201.html

van Twuijver, M.W., Bosma, N.S., Stam E. & Toxopeus H. (2021). HUB-IN Framework: Ingredients of a 'HUB-IN Place' (The Long Read), HUB-IN project – Hubs of Innovation and Entrepreneurship for the transformation of Historic Urban Areas H2020-SC5-2019, GA 869429. Available at: https://hubin-project.eu/library/the-ingredients-of-a-hub-in-place-hub-in-framework/

Appendix 1: Good practice examples

This appendix contains a one-page description of fifteen examples of good practice found among the cases analysed. For each of the examples, basic information is provided, as well as a short explanation of why this example serves as a good practice. Furthermore, for each example we have indicated which of the ecosystem elements are specifically prominent and utilised in combination with one another. This is done based on the ecosystem visual presented earlier in the paper (section 3, figure 7).

NOD Makerspace

NOD Makerspace shows the strength of combining many entrepreneurial minds. The initiative is located in an old cotton factory in the city of Bucharest, Romania. It aims to create a diverse ecosystem where designers, artists, engineers, inventors, freelancers and entrepreneurs meet, discuss and create together. It has turned 1400m2 of abandoned factory into 21 private workshops, a fab-lab and a co-working facility, offering workshops with tools and machinery for a wide range of crafts. It supports small entrepreneurs in the creative industries to prototype and market their ideas. It is also home to the first and only materials library in South-East Europe, which contains over 2500 samples of material and aims to educate about types of materials and their uses. Furthermore, the building operates as a public centre for meetings, debates and civic engagement and is home to a restaurant and a rooftop bar.

Factsheet

City: Bucharest (1.830.000 inhabitants)
Country: Romania
Location: Outside of city centre
Cluster(s): Creative and Cultural Industries
Themes: Creative industries; Education; Sharing economy
Governance: Led by private sector
Additional info:
www.nodmakerspace.ro/

NOD Makerspace has been initiated by a collaboration of 25 small entrepreneurs in partnership with large companies and providers. Currently, NOD Makerspace has 350 members and is home to over 40 start-ups in a wide range of creative industries.

The strong entrepreneurial spirit of the initiative shows among others in the way in which resources are accessed. By building partnerships with large companies, free materials and services, like building material or IT and telecom services, have been accessed. These contributions are estimated to equal about 40% of the initial investment costs of the initiative (which is estimated at €120.000). The remaining 60% has been provided through monetary contributions from the initiating entrepreneurs. With the extension of projects at NOD Makerspace, the initiative is able to attract monetary and non-monetary contributions from a wide range of partners. For example, the materials library was set up through a crowdfunding campaign (reportedly the biggest in Romania so far). Income is generated through subscription fees for the usage of the (co-)working facilities, and through events and the restaurant.

Good practice

NOD Makerspace shows how an abandoned heritage space can provide an opportunity for a collective of entrepreneurial minds. It gives an example of the strength of entrepreneurial collaboration and networking in generating resources. Financial and non-financial contributions are accessed through, among others, partnerships with large businesses and crowdfunding efforts. NOD Makerspace in itself acts as a support organization that strengthens local networks, supports the generation and diffusion of (openly accessible) knowledge, and thus reinforces the local entrepreneurial culture.
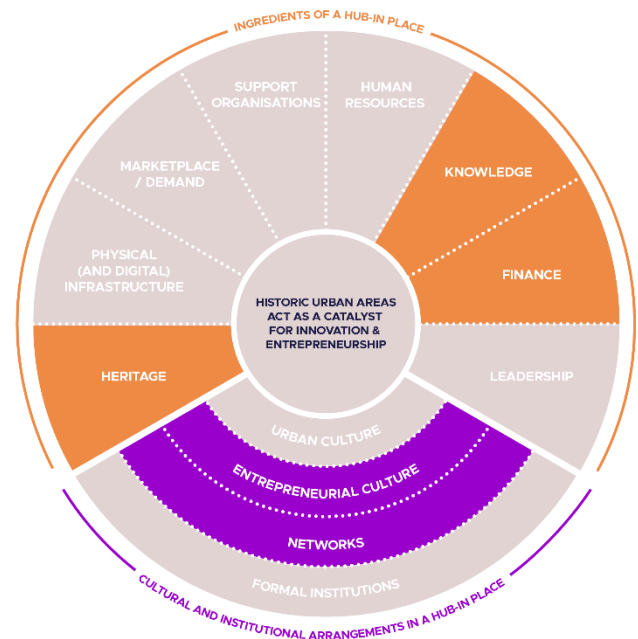
Cultural Station Svilara

The Cultural Station Svilara is part of a pioneering network of cultural stations throughout the city of Novi Sad. Once the biggest silk dyeing factory in the country, Svilara now has a concert hall, a recording studio and (co-) working spaces for entrepreneurs, individuals and organizations, a social centre, and a space for local NGOs and educational activities. A wide range of activities are conducted in the station, ranging from artistic workshops, concerts and debates to exhibitions, book promotions and festivals. An artist-in-residence programme and community programmes are also run from the station.

The Cultural Station Svilara is situated in the Almaš neighbourhood, which is a protected cultural-historical area. The centre was opened in 2018, within the context of the 'Novi Sad 2021 – European Capital of Culture' project. This project supported the opening of new cultural centres around the city. It answered a long time wish of residents of the Almaš neighbourhood to revive the neighbourhood and its heritage, thereby providing a space for grassroots initiatives already ongoing within the neighbourhood.

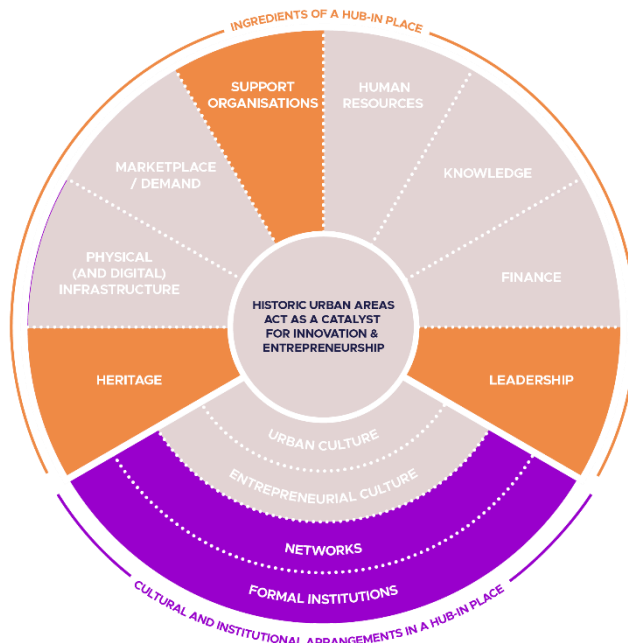**Factsheet**

City: Novi Sad (299.300 inhabitants)
Country: Serbia
Location: Outside city centre
Cluster(s): Cultural and Creative Industries
Themes: Creative industries; Entertainment; Public space
Governance: Hybrid governance
Additional info: www.svilara.kulturne stanice.rs/en/

The Novi Sad 2021 Foundation, set up in light of the European Capital of Culture 2021 of Novi Sad, is responsible for managing all cultural stations in the project, including Svilara. Together with private partners, a plan is designed for the self-sustainability of the centre. Next to the activities within the centre, the Cultural Station of Svilara has sparked wider development of the neighbourhood, for instance, shown in the plans to make a new square where residents can meet and socialize.

Good practice

The Cultural Station of Svilara is part of a network of eight cultural stations in Novi Sad. This network is created throughout the city in order to connect citizens, artists, organisations and cultural institutions in creative activities, create new audiences and help build a new image of the city as a cultural hotspot. Each of the eight cultural stations has its own focus, with that of Svilara being the production and valorisation of creative and artistic content, in the spirit of the former industrial character of the area. The network of cultural stations should further develop the city's creative potential, in which the creative industries are currently one of the fastest growing economic sectors. In combining localised impact on a neighbourhood level with a city-wide network, Novi Sad has designed an inventive tactic to revive both material and cultural heritage throughout the city.

Meatpacking district

The Meatpacking district provides an example of innovative re-use of a former industrial area. The Meatpacking district is located in Kødbyen, which is part of the Vesterbro neighbourhood in Copenhagen. Around 1850, Kødbyen became a municipal establishment focussed on the supply of meat and pork. Until the 1900s, the industry expanded, and three separate areas developed: The White Meat City, The Grey Meat City and The Brown Meat City, which were named after the dominant colour of their buildings. The White and Brown Meatpacking Districts are considered national industrial monuments.

Yet, after the closure of much of the industrial activity in the area, Kødbyen became a forgotten and rundown part of the city. In the early 2000s, the municipality of Copenhagen launched a regeneration programme under the banner "Meat and creativity", which marked the White Meat City as a place for creativity. The programme aimed to revitalize the area by establishing connections between existing food-producing industries and creative businesses. Creating this interaction with existing businesses in the area was of great importance to the municipality to maintain and build on the area's unique atmosphere. To achieve this, the municipality of Copenhagen has cooperated with a locally based architecture office. Through long term leases, creative and gastronomy businesses were encouraged to set up business in the vacant buildings. Nowadays, it has developed into a creative cluster where galleries, shops, nightlife and restaurants operate next to, and in cooperation with, the traditional food producing industries. The area attracts both local visitors and international tourists.

The municipality of Copenhagen is planning further development of the wider neighbourhood, under the banner of 'FoodCity'. The plan is to create a multi-purpose district where living, working and leisure are combined with local food production to create a sustainable and self-sustaining neighbourhood.

Good practice
The Meatpacking district shows how protected heritage can be creatively re-purposed to create a unique neighbourhood, in which the creative industries are used as a catalyst for regeneration of the area. In connecting remaining traditional industries with new creative initiatives, a unique urban space has emerged, which has become a popular destination for both local visitors and international tourists.

Factsheet

City: Copenhagen (638.800 inhabitants)
Country: Denmark
Location: In city centre
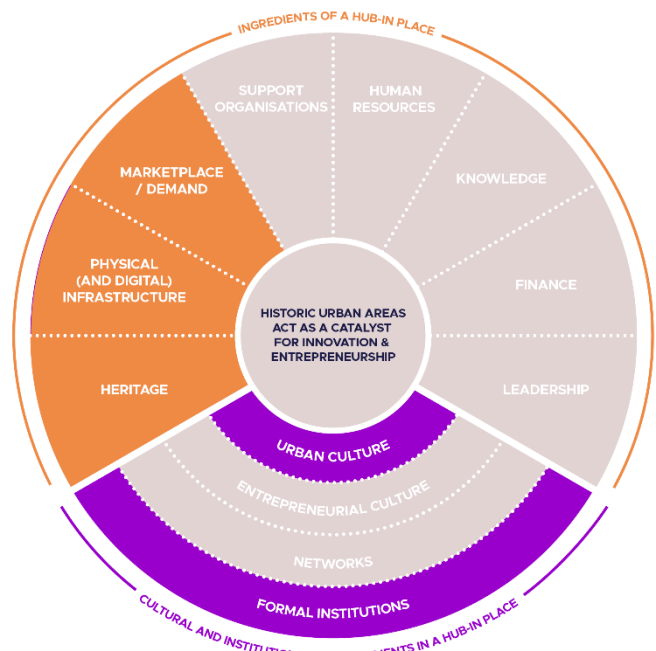*Cluster(s)*: Creative and Cultural Industries; New lifestyles
Themes: Creative industries; Public space; Tourism
Governance: Government led
Additional info:
www.kodbyen.kk.dk/en

ExRotaprint

ExRotaprint is a model for urban development that utilises a unique form of self-organization to rule out financial profit linked to ownership. The initiative aims to establish a heterogeneous and open site for a diverse set of social groups. It promotes a mix of uses in their building, related to work, arts and community.

ExRotaprint is based in a 10,000 m² building complex previously owned by the printing machine manufacturer Rotaprint. After the bankruptcy of Rotaprint in 1989, the local authority manages the site and allows temporary tenants into the building. In 1991, the complex, built in the post-war modernist style of the late 1950s, is listed as a monument. In 2002, the site is transferred from the local authority to Liegenschaftsfonds Berlin (Berlin Real Estate Fund), which is commissioned to sell the property. The temporary tenants are afraid future speculation of the building will increase rent prices and drive them out, and a process of bottom-up organisation follows to prevent this.

ExRotaprint gGmbH, a non-profit limited liability company, is founded by the tenants of the building. In the need for financing to acquire the site, ExRotaprint gGmbH teams up with two foundations, both aimed at preventing speculation with land. After lengthy negotiations with the local authority and the Liegenschaftsfonds Berlin, the ownership of the site gets transferred in 2007, for the sum of € 640.000.

The land is now owned by the two foundations that oppose land speculation, prohibiting the future resale of the site. A 99-year heritable building right provides ExRotaprint gGmbH with the responsibility for the buildings. They now manage all aspects of project development, leasing, financing and renovation. They operate with non-profit goals and utilise all income generated to renovate and maintain the heritage site and promote and develop artistic and community activities. Furthermore, part of the income is used to pay back the purchase sum of the site to the two foundations.

Factsheet

City: Berlin (3.664.000 inhabitants)
*Country*: Germany
Location: Outside of city centre
Cluster(s): Creative and Cultural Industries; New lifestyles; Resilient and Human Connected places
Themes: Community action; Creative industries; Sharing economy
Governance: Led by community
Additional info:
www.exrotaprint.de

Good practice

ExRotaprint represents a unique form of ownership and self-organization that allows adaptive re-use of a non-touristic heritage building. Their governance structure facilitates inclusive decision making and accessible rents. It enables the long-term use and maintenance of a historical architectural monument while promoting artistic work and cultural activities.
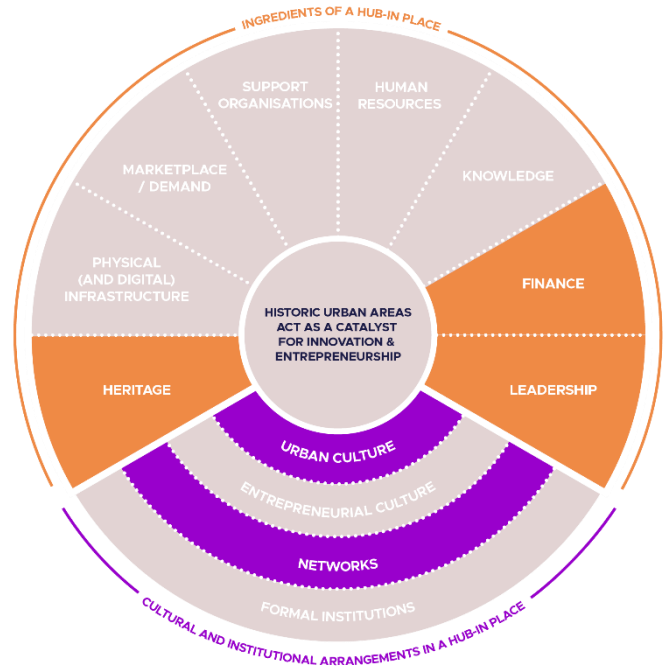
Hub Criativo do Beato (HCB)

HCB is a space for open innovation directed towards creative and technological companies. HCB had two primary goals. Firstly, contribute to the development of the neighbourhood and the city's economy by re-use a derelict industrial complex (the former Manutenção Militar factories). Secondly, to transform this complex into a focal point for the promotion of entrepreneurship and creativity.

The creation was envisioned and led by the City Council of Lisbon to accelerate local development and enhance urban, economic and cultural regeneration in a socially and economically disadvantaged area of the city. The City Council has invested around 20 million euros in acquiring the 18 building complex from the Central Government and on infrastructural, renovation and maintenance works. The creation of HCB is linked to the economic and innovation strategy of the City Council.

The City Council has invited a non-profit incubator named Startup Lisboa to design the project concept and manage the site. The concept defined by Startup Lisboa was: "to enhance the city as an international entrepreneurship hub without draining the existing dynamics, functioning as a pole to attract and retain new talent, new projects and new players, adding value to the community and the country". Startup Lisboa searched for partners and residents who develop innovative projects on the site and invest in (re-)building infrastructure. In return, these organisations do not have to pay rent until their initial investment is recovered.

Some partners and residents are well-known brands that reinforce trust in the HCB initiative. The partners include global companies such as Factory, one of the largest European incubators (with Berlin origins); the Super Bock Group, with a space to promote the creative industries and a craft brewery - Browers Beato; Praça, an innovative food retail focused on Portuguese products and producers; Casa do Capitão, an open and inclusive space for cultural, artistic and entertainment programs. Startup Lisboa also hosts and assists entrepreneurs, start-ups and technology-based scaleups, supporting them in developing their ideas and business while creating a dynamic, innovative and creative community.

Factsheet

City: Lisbon (544.900 inhabitants)
Country: Portugal
Location: Outside of city centre
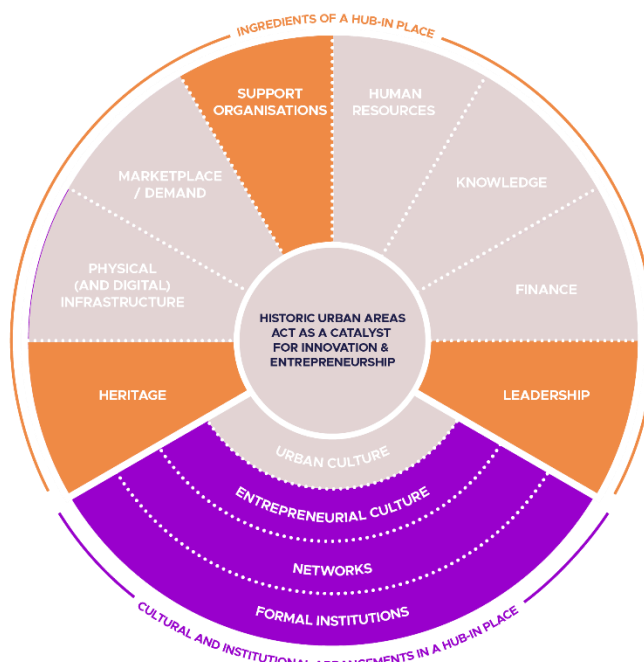*Cluster(s)*: Creative and Cultural Industries, New Lifestyles
Themes: Creative industries
Governance: Led by non-profit sector
Additional info:
www.hubcriativobeato.com

Good practice

Hub Criativo do Beato (HCB) is a one of a kind innovation and entrepreneurship hub that connects local and international stakeholders. The hub is estimated to create three thousand new jobs. In regenerating the decommissions factory site, industrial heritage is preserved; each of the 18 buildings has a specific concept fitting with the overall vision of HCB, where the history and cultural tradition of the building are preserved and reconverted for modern-day use.

Sargfabrik

The Sargfabrik provides an example of an inventive co-living arrangement, combining private, communal and public functions. The original Sargfabrik was constructed in the late 19th century and operated as a coffin factory until the 1970s. Then it was abandoned and deteriorated. The empty building represented an opportunity for a group of citizens who were exploring the possibility of starting a communal housing project. Together with two architects, the group established a registered association, and in 1989, they purchased the abandoned Sargfabrik with a joint mortgage for which the collateral was provided by the members of the association.

Through renovation and reconstruction, the building was repurposed into an innovative collective living arrangement combining private accommodation, communal areas and public functions. Sargfabrik has 73 residential units with several communal spaces and facilities. There is a strong focus on social goals, with social equality and integration being important themes. Because Sargfabrik is registered as a communal living accommodation, individuals are not entitled to individual social support services. Therefore, an internal social fund was established to assist those with less financial means with the payment of rent. Furthermore, part of the residential units are reserved for temporary living, and offered to refugees or those in need of social housing. The association is keen to broaden its social focus to the wider neighbourhood, and offers a range of publicly available services from the building. There is a cultural house with regular performances, a restaurant, a childcare facility, an event hall, a conference room and a bathhouse. These services not only fulfil local needs, but also provide an income for the association, which is reinvested in the maintenance of the building and further development of (additional) services. In 2000, incited by high demand, the association took over a neighbouring building and opened 39 additional residential units.

Factsheet
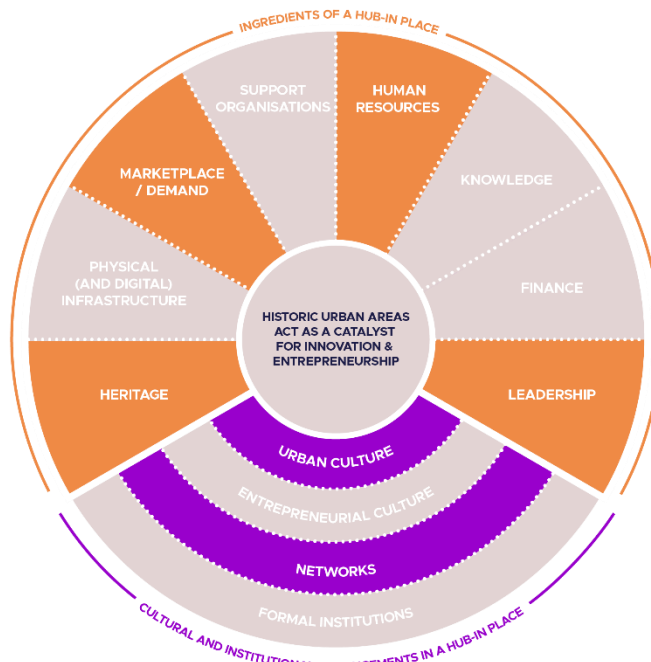
City: Vienna (1.897.500 inhabitants)
Country: Austria
Location: Outside of city centre
Cluster(s): New Lifestyles; Creative and cultural industries; Resilient and Human Connected places
Themes: Community action; Education; Entertainment; Housing; Sharing Economy; Social inclusion; Public Space
Governance: Led by civil society
Additional info: www.sargfabrik.at

Good practice

Sargfabrik is an example of how a heritage building can contribute to solving a range of local needs. In providing affordable housing to its residents, as well as social, educational and leisure services for the neighbourhood, shows the potential of combining different functions to bring life back into a run-down neighbourhood. The strong vision behind the Sargfabrik inspires others as well. Sargfabrik has become a model for similar initiatives around the city, and receives hundreds of visitors from all over the world each year who want to learn from the project.

Largo Residências

Largo Residências has applied a creative approach that uses both tangible and intangible heritage connected to the neighbourhood to empower the local community. Largo Residências operates in the Intendente neighbourhood in Lisbon, Portugal, which used to be known for its quality ceramics. However, factory closures, neglect and decay made that from the second half of the 20th century onwards, the neighbourhood got a bad reputation. The cultural association SOU was motivated to provide cultural interventions in this now deprived neighbourhood, to connect and empower the local community.

An innovative approach was utilised to understand the needs of the local community and create community engagement. Together with interested community members, a cooperative was formed (founded by 3 partners, later extended with 10 others) to shape and implement activities. Efforts were made to get to know local community members. One of the first activities undertaken was creative street work, a process that was developed gradually, in a close relationship with the community, and considering their opinions and desires. Nowadays, Largo Residências operates a hostel, hotel, artist-in-residence, café and shop in a former ceramic factory. The building functions as a community hub. The cooperative has adopted an entrepreneurial approach to facilitate its continued operations. It utilises commercially generated revenues, from among others the hotel and hostel, to support the cultural and artistic projects and provide employment for approximately 15 employees, of which 80% is from the Intendente neighbourhood.

In order to implement activities, the cooperative collaborates not only with local community members, but also with an extensive network of partners, ranging from the local municipality to NGOs and non-profit organisations.

Factsheet

City: Lisbon (544.900 inhabitants)
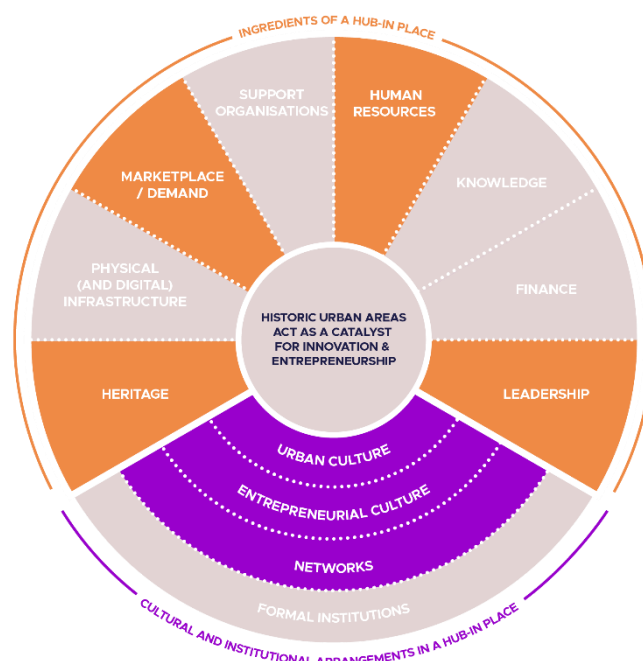*Country:* Portugal
Location: In city centre
Cluster(s): Creative and Cultural Industries; New Lifestyles; Resilient and Human Connected places
Themes: Community action; Creative industries; Social inclusion
Governance: Led by community
Additional info: www.largoresidencias.com

Good practice

Largo Residências utilises an innovative approach, that combines arts, intangible heritage and tangible heritage, to empower the local community. A strong vision about the importance of operating from the needs and desires of the local community is translated into social and cultural activities that build on and expand, the talents and skills of those living in the neighbourhood. In combining this with (partially more commercial) activities like the hostel, hotel and artist-in-residence programme, the initiative is able to generate an income to sustain its social and cultural operations, while at the same time offering local employment.

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Darwin

Darwin provides an example of the citizen-driven revival of an abandoned heritage site that combines entrepreneurial and social activities. Since the departure of the military in 2005, the empty land around the Niel barracks was used for street art and skateboarding by locals. When plans for a big development project on the terrain became public, the local community provided resistance. 'Evolution Group', a holding with the mission to help innovative projects that respect the environment, was established by a local community member. This entity negotiated with the local authorities to regenerate the area, and in 2009 bought part of the site. The Evolution Group has preserved the authentic buildings and initiated a variety of activities to create a social, creative and green economy. This is done together with the association Darwin'Co, in which the more than 180 organisations located on the terrain are represented.

Currently, Darwin covers an area of 22.000 m², incorporating among others a business incubator, co-working spaces, ecological stores and restaurants, a skate park, childcare facilities, an experimental secondary school, and space for events. Furthermore, the area acts as a living lab for new (urban) farming techniques like aquaponics and micro-gardens. The ecological transition is an important theme in the redevelopment of the area. All buildings owned by Evolution Group are rented out with a Green Lease, a legal provision that explicitly makes the environmental and energy performance of a building, and ways to improve on this, subject of the contract between owner and tenant. There is a specific 'Darwin Green Team', which coordinates and implements actions with respect to this part of the contract. Each of the organisations on the terrain also contributes to the Darwin Foundation. Through this foundation, awareness is raised about the ecological transition, experimental projects are supported, and initiatives to empower citizens are funded. Overall, Darwin has been successful in mobilizing the local community and entrepreneurs to contribute to the area. Only about 6% of the total investments done in the project over the years has come from public subsidies.

Factsheet

City: Bordeaux (261.900 inhabitants)
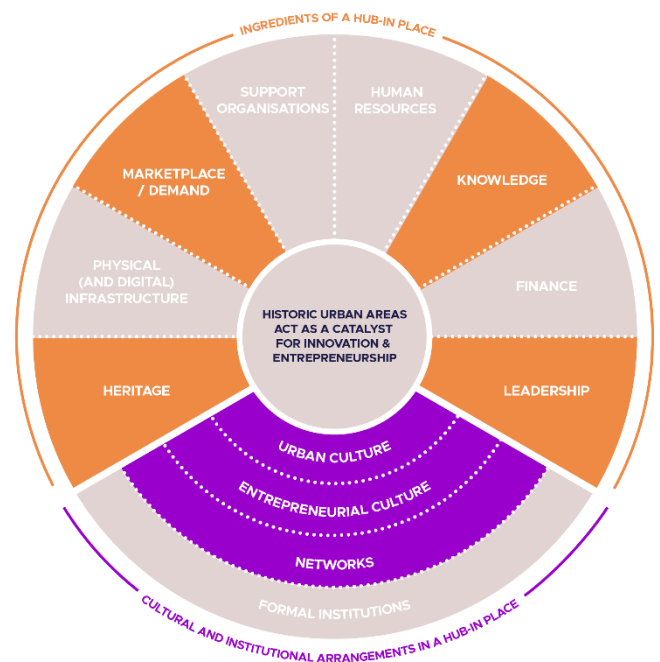*Country*: France
Location: In city centre
Cluster(s): Creative and Cultural Industries; Resilient and Human Connected places
Themes: Circular economy; Community action; Creative industries; Education; Energy transition; Entertainment; Green space; Sharing economy; Public space; Tourism
Governance: Hybrid governance
Additional info:
https://darwin.camp/

Good practice

Darwin is an example of a cleverly designed governance structure, which considers the voice of users of the terrain, and enables a combination of economic activities and citizen initiatives to strengthen each other to revitalize an abandoned heritage site. This is all based around a strong vision of ecological sustainability, showing how heritage can provide an ingredient to help people design their future.

Stamba Hotel

Stamba Hotel demonstrates how entrepreneurship can aid sustainable community development through the adaptive reuse of heritage. The hotel is housed in what once was a Soviet publishing house, which published the first communist newspaper in Georgia. Many original features, like the concrete structure of the lobby and the metal conveyor belt that used to transport the newspapers through the factory, are a reminder of the industrial past of the building. The hotel is internationally recognized in the design community because of the creative manner in which heritage is respected and integrated with modern elements.

Stamba Hotel is run by The Adjara Group, a hospitality provider that combines their work with community development and agricultural projects with an aim to create sustainable tourism in both rural and urban settings throughout Georgia. This also shows at Stamba Hotel, where activities don't stop at providing tourist accommodation. There is an amphitheatre where events, shows and concerts for the general public are hosted. Moreover, the Tbilisi Photography and Multimedia Museum is housed in the hotel, which arranges exhibitions of visual artworks and archival collections from the annual Tbilisi Photography Festival. Furthermore, the creative industries are supported directly, for example, through a residency program for individuals and teams in arts, fashion and design. The hotel plays an important part in supporting and developing the local and national art scene by providing grants and free work space. Stamba Hotel is also the headquarters of the Propaganda Network, a network aimed at promoting and developing the contemporary art sector.

Next to promoting the creative sector, the hotel also supports innovative and sustainable agricultural projects. Space Farms, the first urban vertical farm in the Caucasus region, founded and owned by the urban agricultural expert Tusya Gharibashvili, is based in the hotel. The indoor urban farm provides fresh vegetables to the hotel's restaurant and supermarkets, and eateries in the surrounding area. The hotel offers an internship and part-time employment program for students and agriculturists interested in the area.

Factsheet

City: Tbilisi (1.202.700 inhabitants)
Country: Georgia
Location: Inside city centre
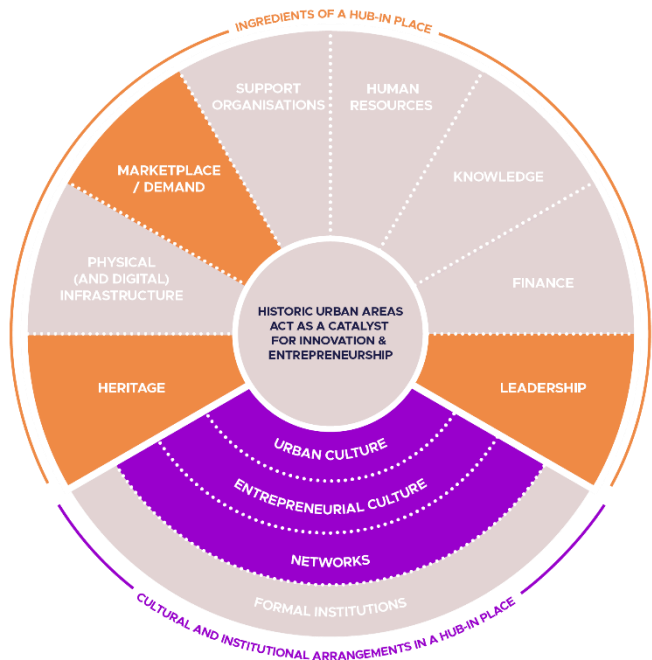*Cluster(s):* Creative and Cultural Industries; New lifestyles
Themes: Creative industries; Entertainment; Tourism
Governance: Led by private sector
Additional info:
www.stambahotel.com

Good practice

Stamba Hotel is a remarkable example of how entrepreneurial activities can aid community development. A novel combination of hospitality, development and agriculture is created that respects, and reinvigorates, local culture and heritage. The hotel is not just a place for visitors, but also an epicentre for the local arts scene and innovative entrepreneurs interested in contributing to sustainable development practices.

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PAX - Patios de la Axerquía

PAX—Patios de la Axerquía utilised an innovative system of governance to renovate and re-inhabit unoccupied patio-houses in the city centre of Córdoba, Spain.

The patio-houses are located within the historic centre of Córdoba, which is one of the largest UNESCO World Heritage Sites in the world. The patio-houses themselves not only are a tangible heritage structure, but also have immaterial value, as they represent a traditional system of communal living. Moreover, they are recognized for their ecological value, as they play an important part in supporting biodiversity and climate regulation in the Mediterranean urban environment.

The historic Axerquía district, due to 'touristification' and gentrification, has suffered from depopulation and a gradual and severe degradation of its built heritage. PAX Astronautas, a non-profit association, was established to help citizens bring life back into the city centre. Working through the concept of 'heritage communities' PAX aims to strengthen the linkages between cultural heritage and its societal values. It does so by promoting co-ownership as well as co-management of communal living spaces, thus creating new modes of living within high heritage-value Mediterranean cities. The association has enabled the creation of citizen-led cooperatives through which patio-houses are acquired, renovated, and finally, inhabited. Hence, each patio-house is managed by the statutes decided upon by the individuals involved in the cooperative of that specific house.

The initiative is characterised by being highly diverse in its aims and achievements. It has an environmental dimension, as it contributes to urban greening while also reducing energy consumption for cooling in the summer; it also has a sociocultural dimension based on its focus on maintaining the intangible heritage that allows for social resilience through an innovative but historical model of community living; and it has a strong economic dimension, as it enables collective action through which a local microeconomy can flourish.

Good practice
PAX has developed a novel governance model that empowers citizens to reclaim and reinvigorate local heritage. It combines a positive social and ecological impact with the conservation and re-use of heritage. It also creates a thriving environment for a microeconomy to flourish, and as such, acts as a powerful model against gentrification and touristification. It is potentially replicable in other Mediterranean high heritage-value cities.

Factsheet

City: Córdoba (325.700 inhabitants)
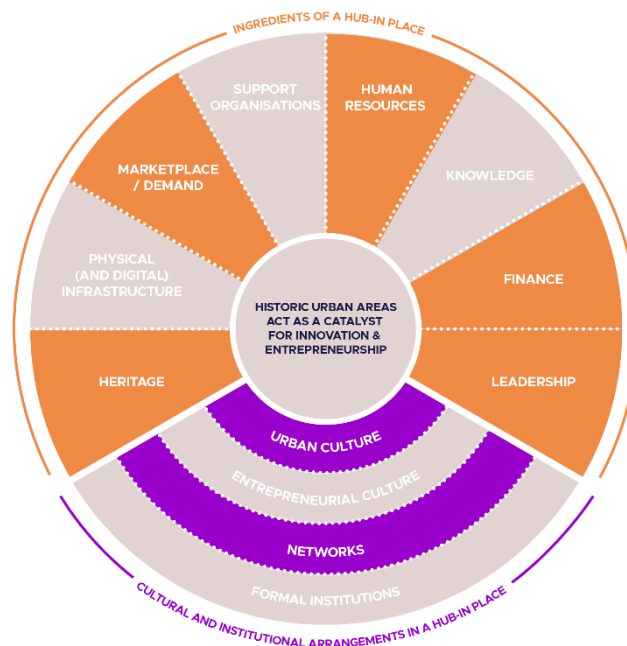*Country:* Spain
Location: Inside city centre
Cluster(s): New lifestyles; Resilient and Human Connected places
Themes: Community action; Green Spaces; Housing; Sharing economy; Social inclusion
Governance: Led by community
Additional info:
www.patiosaxerqua.org

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Strijp-S

In Strijp-S, a strong public-private partnership has been able to utilise heritage, existing infrastructure and strong local networks to create a mixed-use neighbourhood that acts as a large-scale living lab.

The municipality of Eindhoven and the private construction company Volkerwessels B.V., together with a range of public and private partners, have transformed a former industrial area that once belonged to tech-giant Philips, into a vibrant, multi-functional neighbourhood. The area now combines among other living accommodation, work and office space, and a range of public services. It also functions as a living lab that provides space for the development, demonstration and scaling of novel products and services that improve the quality of life for residents, users and visitors of the area.

The development has been guided by a strong vision in which sustainability, creativity, innovation and a living lab approach are central elements. This vision has materialized in physical developments, as well as in the types of activities stimulated in the area. Heritage buildings, remainders of the industrial past and modern new builds are actively utilised to create a streetscape which sets the area apart from the rest of the city and in which there is activity around the clock; thereby attracting a diverse set of people and organisations to the area. A crucial element for Strijp-S is the strength of the local digital infrastructure, in the form of a high quality ICT structure that is available in the city. This allows the initiative to experiment with digital solutions and a smart city approach, thus facilitating the living lab activities taking place.

Furthermore, Strijp-S is able to benefit from an already existing network of innovative organisations in the region, ranging from knowledge institutes to high-tech businesses, to the creative industries, together with a creative and highly-skilled (international) population. Through the formalized public-private partnership, the initiative has utilised and combined knowledge and resources from both public and private sources.

Factsheet

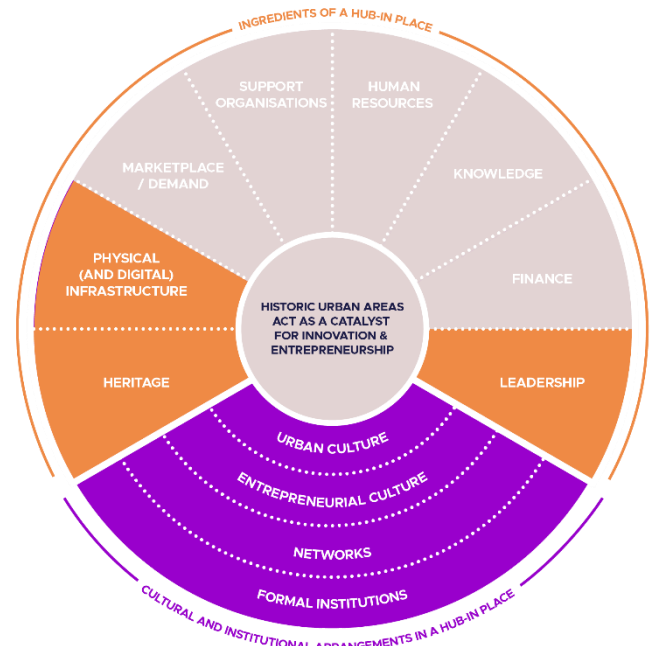*City:* Eindhoven (235.700 inhabitants)
Country: The Netherlands
Location: Outside of city centre
Cluster(s): Creative and Cultural Industries; New lifestyles; Resilient and Human Connected places
Themes: Creative industries; Energy transition; Entertainment; Housing; Smart city; Public space
Governance: Hybrid governance
Additional info:
www.strijp-s.nl

Good practice

The development of Strijp-S shows how a progressive vision can guide the mobilization and utilization of a range of resources, knowledge and networks present locally. The strong public-private cooperation has enabled the area to draw on commitment and resources provided by a wide range of both public and private organisations. In combining living, working and leisure activities, and specifically providing places for people from different backgrounds to meet, support structures for entrepreneurs, and physical and regulatory space to experiment, the area itself has become a place that nurtures innovation and entrepreneurship.

Scugnizzo Liberato

Scugnizzo Liberato (meaning 'freed street-boy') is an experimental place for urban regeneration, based on urban commons, taking shape in a former convent. The initiative was able to emerge through a combination of community action and local regulations allowing for innovative governance arrangements.

The Convento delle Cappuccinelle was originally founded in 1585. In the early 1800s, the convent became a detention centre for youth, until, in 1980, an earthquake destroyed parts of the building. A famous Neapolitan actor financed its renovation and turned it into a cultural centre for local youth. The project failed, and in 2014, after being acquired by a university but remained without use, the Municipality of Naples got ownership over the building. In 2015, the building was occupied by Sacco Matto, a citizen association striving to provide empty spaces with a social purpose. They aimed to fulfil the project of turning the convent into a cultural centre, specifically focused on providing meaningful engagement for local youth.

The Municipality of Naples recognized the social value of the activities emerging in the complex, and, through an existing public resolution, giving the occupants to opportunity to utilise the complex. Currently, hosted activities include language courses, after-school, sports, dance, theatre, spaces for coworking, and art and craft labs. Part of the funding for running the complex is provided by the municipality, part is generated through organisational activities, like cultural and artistic activities organized for adults, and crowdfunding campaigns.

Scugnizzo Liberato is managed based on radical open democratic principles. Weekly assemblies are organized, in which everybody (also those from outside the neighbourhood), is welcome to join. Utilization of spaces and workshops can be requested by all interested. There is no rent, but those utilizing individual spaces are requested to participate in the overall renovation and management of the complex. Scugnizzo Liberato is a place where a wide range of people, among other local artists, youth, and migrants, can socialize, play, experiment, and work.

Good practice

Scugnizzo Liberato demonstrates the potential of providing regulatory space for emerging initiatives that serve the common good. The municipality of Naples has put regulations in place that allow the recognition of squatted public places if they serve community needs. These regulations have enabled the development of Scugnizzo Liberato. Within the municipality of Naples, this innovative regulation is part of a broader strategy aimed at supporting the collective use of public and private spaces through self-governance structures.

| Factsheet |
|---|
| **City:** Naples (3.085.000 inhabitants) |
| **Country**: Italy |
| **Location**: Inside city centre |
| **Cluster(s)**: Creative and Cultural Industries; New lifestyles; Resilient and Human Connected places |
| **Themes:** Community action; Creative industries; Education; Sharing economy; Social inclusion |
| **Governance:** Led by community |
| **Additional info:** https://scugnizzoliberato.org |

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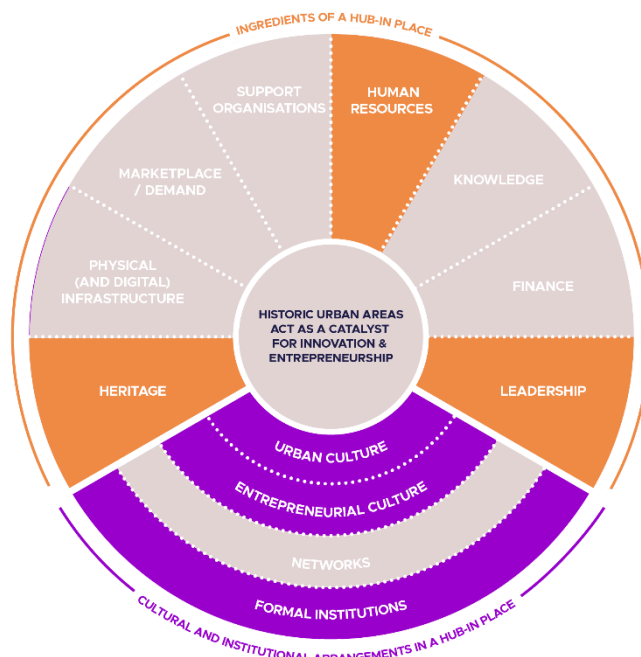
Loos-in-transition

In Loos-en-Gohelle, the town's mining heritage has been transformed into an innovative, and ecologically focused, approach to regeneration of the town. Between the 1850s and 1980s, the coal mining industries were very active in the town and surrounding areas. The mining business left both environmental as well as social damage, the latter one characterized by a sharp rise in unemployment when the mines closed. Currently, two mining heaps, and part of the mining infrastructure, remain on-site are a testimony of Loos-en-Gohelle's mining past, and proof of an important part of the history of industrial Europe. Since 2012, the mining heaps are registered as a UNESCO World Heritage site.

After the closure of the mines in the 1980's, Loos-en-Gohelle had to reinvent itself. In response to rising unemployment and loss of identity, a political project was started, combining ecological, economic and social measures. An emphasis was put on democratic decision making, public debates, and community engagement, in an attempt to counteract the paternalistic management tradition in the mines.

Factsheet

City: Loos-en-Gohelle (6.900 inhabitants)
Country: France
Location: Throughout city
Cluster(s): New lifestyles; Resilient and Human Connected places
Themes: Education; Energy transition; Public space
Governance: Government led
Additional info: www.loos-en-gohelle.fr/loos-ville-pilote/

Over time, individual measures and projects have grown into a strong overall framework of development for the town, incorporating economic, social and ecological measures and giving rise to a wide range of activities, including, but not limited to, renewable energy generation, green technology, green renovation and tourism. Green belts have been stimulated throughout the town, energy efficiency and the use of renewable energy is promoted, as well as eco-construction. Furthermore, the former mining heaps now are home to cultural organisations and an R&D centre focused on sustainable energy. Part of this is a development centre for eco-companies, which houses over 600 ecological oriented companies, 150 of which operate in the field of renewable energies.

Good practice

Loos-en-Gohelle is an example of innovative re-use of material and immaterial heritage. Strong political leadership of the local authorities has enabled an overall framework of ecological, economic and social measures to emerge that stimulates generation and implementation of new knowledge on renewable energies, energy efficiency and eco-construction. The strong vision has enabled public and private investments, and provides the town with a new identity. Loos-en-Gohelle sees itself as a pilot city for sustainable development and aims to rely 100% on renewable energies by 2050.

SOHO Arts District

The SOHO Arts District in Málaga shows how arts and the creative industries can be a catalyst for regeneration of a historic neighbourhood. The SOHO Arts District is a cultural and commercial area situated within the Ensanche Heredia neighbourhood. This neighbourhood is located between the historic centre and the port of Málaga. Once a thriving commercial area, Ensanche Heredia suffered from problems of deterioration, marginalization and criminality.

To turn the tide and reactivate the area, neighbourhood residents joined forces. They came with the idea of creating a cultural district and formed the Soho Málaga Citizen Association (AESM; Asociación de Empresarios del Soho Málaga). Through the association, cultural projects were initiated in the neighbourhood. Furthermore, the association started to engage with various public authorities. In 2004, the College of Architects and the local municipality got on board with the ideas.

The arts district has been realized through a cooperation of different public and private stakeholders, with community members, local artists, entrepreneurs and public bodies being involved in designing interventions through the SOHO Art District Master Plan. A combination of EU funding and local public funding provided for infrastructural adjustments, like a renewed public lighting system and improved pedestrian access to the area. Efforts were made to map empty buildings in an Online Real Estate Listing, providing an overview of available commercial spaces. A Bank for New Business Ideas was created to stimulate entrepreneurial activity. Furthermore, a branding strategy was designed for marketing the area both nationally and internationally. The combination of re-utilizing abandoned historic buildings, improvements to the public space, and support to the creative industries have led to a buzzing creative area full of cafes, galleries and art spaces. Furthermore, a wide range of cultural events and festivals is hosted here. The area is especially famous for its graffiti and street art, which is featured on many social media channels.

Factsheet

City: Málaga (578.500 inhabitants)
Country: Spain
Location: Inside city centre
Cluster(s): Creative and Cultural Industries; New lifestyles; Resilient and Human Connected places
Themes: Community action; Creative industries; Public space; Tourism
Governance: Hybrid governance
Additional info:
https://soho.malaga.eu/

Good practice

The SOHO Arts District in Málaga demonstrates how cultural and artistic assets can be utilised for the regeneration of urban areas through united efforts of public and private partners. The combination of interventions in the physical infrastructure, support for economic activities and social projects has turned an abandoned neighbourhood into a creative district and tourist hotspot with a distinct identity.
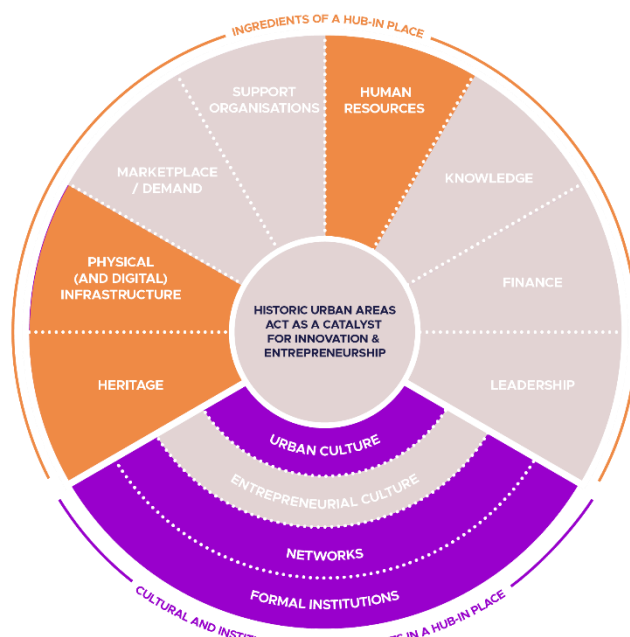
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RogLab / Rog Centre

In Ljubljana (Slovenia), the landmark factory of ROG bicycles is being re-purposed as a fab-lab oriented towards innovative forms of 3D manufacturing. This Rog Centre aims to provide creators, organisations, businesses and the general public with a supportive environment to develop innovative, socially beneficial projects that address current social challenges. It has a specific focus on 3D design and other innovative techniques of manufacturing in the digital and circular economy. In order to test and develop programmes, partnerships and business models for Rog Centre, an innovative pilot approach has been utilised, which materialized in RogLab.

RogLab is a 30m^2 industrial container set up close to the original site of Rog Centre. It provides equipment (3D printers, laser cutters and other machines), which can be rented by everybody interested in working with them. Furthermore, education and training workshops are hosted for both youth and adults, and RogLab is the base from which school projects and other educational material is developed.

Factsheet

City: Ljubljana (279.600 inhabitants)
Country: Slovenia
Location: In city centre
Cluster(s): Creative and Cultural Industries; New Lifestyles
Themes: Circular economy; Education; Sharing economy
Governance: Hybrid governance
Additional info:
https://roglab.si/

At the same time, RogLab is experimenting with a novel governance structure. In the lab, a non-hierarchical style of management is trialled, which is perceived as unusual in Slovenia. The hub's everyday operations are managed by an interdisciplinary team of three people, with freelancers with relevant skills brought in to work as mentors on specific projects. Furthermore, there is a strong focus on building local and international networks, with typically 16 local partners and 9 international partners involved at one time, ranging from NGOs to high-tech companies to cultural institutions.

RogLab was so positively received that it has taken on a life of its own. Since 2012 it has been successfully promoting innovative manufacturing and a circular/sharing economy. The pilot got extended with a 'Fab Box', a mobile fab lab that travels across the country to spread lessons learned in RogLab. It is expected that the Rog Centre will begin its activities shortly as the plan for its development was approved in 2019, based on the lessons learned in RogLab.

Good practice

Roglab is a good example of how a large scale initiative can be tested on a smaller scale. RogLab provides valuable lessons about potential programmes, business models and governance structures for the Rog Centre. It is a controlled and low-risk way to trial new ideas and test new markets, providing the municipality of Ljubljana with value input for design and investment decisions related to Rog Centre. RogLab furthermore helps build and strengthen the commitment and networks needed to make the Rog Centre a success.
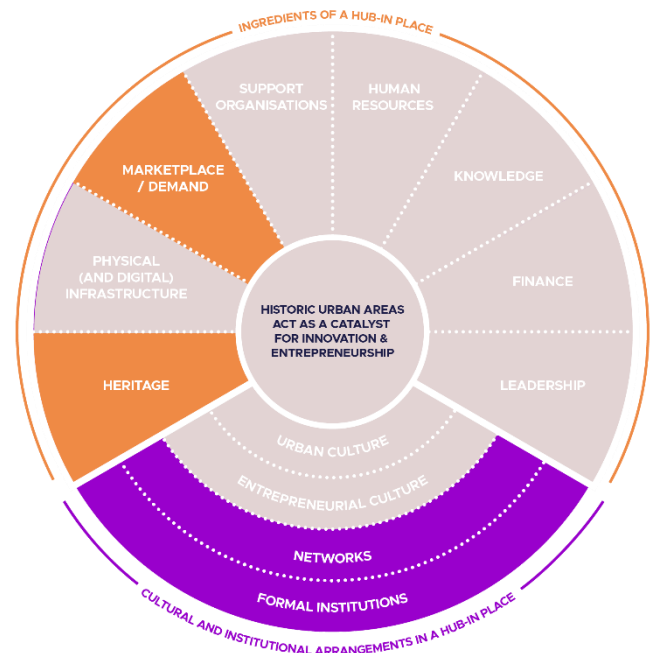
Appendix 2: Overview of included cases

Initiative	City	Country	Type of HUA	HUB-IN cluster	City size (inhabitants)
Sargfabrik	Vienna	Austria	2	1,2,3	1.897.500
C-Mine	Genk	Belgium	2	1,3	66.110
Meatpacking District	Copenhagen	Denmark	1	1,2	638.800
Darwin	Bordeaux	France	1	1,3	261.900
(Re)Centres Bordeaux	Bordeaux	France	1	2	261.900
La Friche	Marseille	France	1	1	861.600
Loos-in-transition	Loos-en-Gohelle	France	1	2,3	6.900
Stamba Hotel	Tbilisi	Georgia	1	1,2	1.202.700
ExRotaprint	Berlin	Germany	1	1,2	3.664.000
Kulturbrauerei	Berlin	Germany	2	1	3.644.000
Zollverein	Essen	Germany	2	1,3	583.100
Union Quarter Dortmund	Dortmund	Germany	1	1	587.700

Kultur im Turm e.V. (kitev)	Oberhausen	Germany	2	1	212.200
New traditional meadow orchards	Wuppertal	Germany	3	1,3	354.400
Dublin's Cultural and Creative Quarter	Dublin	Ireland	1	1	545.000
Base Milano	Milan	Italy	2	1,2	1.352.000
Chiostri di San Pietro	Regio Emilia	Italy	1	1,2	172.400
Laguna Libre	Venice	Italy	1	1,2	258.600
Porta Palazzo	Turin	Italy	2	1,2,3	847.000
Scugnizzo Liberato	Naples	Italy	1	1,2,3	3.085.000
Quartieri Spagnoli Park	Naples	Italy	1	1,2	3.085.000
Marineterrein	Amsterdam	Netherlands	2	1,2,3	1.157.500
Strijp-S	Eindhoven	Netherlands	2	1,2	235.700
Kazimierz	Krakow	Poland	3	1,2	765.000
New Centre Lodz	Lodz	Poland	1	1	696.700
Hub Criativo do Beato	Lisbon	Portugal	2	1,2	544.900
Largo Residências	Lisbon	Portugal	1	1,2,3	544.900
Nod makerspace	Bucharest	Romania	2	1	1.830.000
Cultural Station Svilara	Novi Sad	Serbia	2	1	299.300

RogLab / Rog Centre	Ljubljana	Slovenia	1	1,2,3	279.600
PAX—Patios de la Axerquía	Córdoba	Spain	1	1,2,3	325.700
Matadero	Madrid	Spain	2	1,2	3.223.300
SOHO Arts District	Málaga	Spain	1	1,2,3	578.500
Färgfabriken	Stockholm	Sweden	2	1	1.657.000
Gamlestadens Fabriker	Gothenburg	Sweden	1	1	579.300
The Derry City Centre Public Realm	Derry	United Kingdom	1	1,2,3	110.700
The Great Lines Heritage Park	Medway	United Kingdom	2	3	240.000
Sugar House Island	London	United Kingdom	2	1	9.426.000
Grainger Town	Newcastle upon Tyne	United Kingdom	1	1,2	280.900
Creative Industries Quarter	Sheffield	United Kingdom	2	1	552.700

Appendix 3: Methodology

In this appendix, the methodology utilised to select cases and the collection and analysis of data will be explained. Attention will also be paid to the limitations resulting from data collection and analysis.

Case selection

Cases have been selected based on their ability to add to our understanding of the shape and conditions of innovative and entrepreneurial ecosystems in Historic Urban Areas. The three main selection criteria were as follows:

(1) Cases show evidence of HUA regeneration (realised or ongoing)

(2) Cases have adopted innovation or entrepreneurship as mechanisms to realize regeneration

(3) Cases draw on (tangible and/or intangible) cultural heritage.

We have allowed for the inclusion of places with 5.000 or more inhabitants in our sample. This is in line with the definition of urban centres and urban clusters as proposed for international comparison by the UN Statistical Commission (2020).[5]

Cases originate from existing databases, other European projects and the HUB-IN city and partner networks. A detailed description of the sampling strategy is outlined in Bosma et al. (2021).

Data collection

After case selection, data collection has been conducted following a standardized Excel-sheet. This sheet contains a combination of text answers and drop-down selections in order to collect information on a range of variables. The initial variables are taken from the academic fields of urban innovation (Concilio et al., 2019) and entrepreneurial ecosystems (Stam and van de Ven, 2021). In a workshop with the HUB-IN consortium in December 2020, a start has been made to operationalize these variables into a data collection sheet. This list has been refined in follow-up meetings with a selected group of project partners between February and May 2021. After an initial pilot in June 2021, in which the data collection process has been tested on 5 cases, the data collection sheet has been finalized.

Data for the cases analysed in this paper has been gathered through desk research. A range of official and semi-official sources have been utilised for each case, including output from policy, business and community organizations, research projects, newspapers, and organizational websites. Researchers have collected data from different HUB-IN partner organizations. A guide, including definitions of terminology used and an example case, was written to accompany the data collection sheet. One-on-one training was provided to all researchers by the coordinating researcher. Furthermore, regular group meetings have been

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[5] The UN Statistical Commission, next to absolute population size, also includes density thresholds in their definition. Given that checking these thresholds is not possible within our brief, we have utilised only the absolute population size in our definition of urban areas.

held to discuss terminology and collected data in order to create a common frame of reference among the researchers.

Moreover, a quality check on all individual cases has been done by the coordinating researcher. A process for verification of the collected information with representatives from the initiatives is planned. At the time of writing this verification has not been completed for all cases yet.

Data analysis

Analysis of the data has been conducted on an in-case and between-case basis. A deductive approach has taken place in which, for each case, the most important elements of the ecosystem have been mapped. This has been complemented with a cross-case inductive analysis to determine recurring themes and topics across the cases analysed.

Overall, the aim is to collect approximately 100 cases for the HUB-IN Atlas. However, with data collection still in progress, 40 cases for which data was already available have been selected for the analysis described in this paper.

Limitations and further considerations

Given that we take our data from secondary, publicly available sources, limitations have occurred in data availability. The breadth and depth of available data differ per case. Yet, for each of the cases included in the analysis for this working paper, a solid set of data has been collected that provides insights into a majority of elements of the ecosystem. Limitations in the accessibility of data due to language barriers have been mitigated as much as possible by selecting researchers for data collection with language skills complementary to the cases analysed. In cases where this was not possible, native speakers have been approached to help with the translation of key documents.

Due to time limitations and language barriers, the coordinating researcher has not been able to verify all individual referenced sources on a per case basis. To ensure correct information, a process has been designed to verify case descriptions with representatives from the included initiatives. At the moment of writing, the verification of the data with representatives of the initiatives is still in progress. To mitigate the likelihood of invalid information, we have ensured that the information recorded is based on a multitude of sources.