CLIC

Circular models Leveraging Investments in Cultural heritage adaptive reuse

D4.4

Case Studies of Cultural Heritage Adaptive Reuse in the view of Circular Economy

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Deliverable 4.4

Case Studies of Cultural Heritage Adaptive Reuse in the View of Circular Economy

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Abstract

The Deliverable investigates 34 case studies of cultural heritage adaptive reuse, 29 of which extracted from the CLIC Database (D1.4). The analysis mainly focuses on the pattern of “original use”/“new use”, linking the cases to the four pillars of sustainable conservation (economic, social, environmental, cultural), also highlighting the different types of actors involved (public, private, social) and their role in supporting the adaptive reuse project.

As the typologies of building were considered relevant in the decision and success of the reuse projects (D1.3), the analysis focuses on coastal buildings (lighthouses), religious heritage (monasteries and churches), forts and castles, industrial heritage, and neglected (i.e. minor) heritage. Furthermore, some rural and urban cases highlight connections between reuse initiatives, new functions of the buildings and local (contextual) needs.

Although this research design by multiple case studies prevents findings generalizability to different industries, contexts, or countries, it is still appropriate to study the early state of art of circular business models in CHAR both in the theory testing and in the theory building view.

This qualitative approach aims to complement the quantitative approach applied within WP1, in survey data statistical elaboration (D1.3) and the in-depth case studies analysed in the updating of the Database of case studies (D1.4 – updated). This Deliverable is complementary to D1.4 which analyses in-depth cases of successful business models in cultural heritage adaptive reuse, highlighting circularity aspects. In this Deliverable, an overview of case studies based on typologies of cultural heritage is presented, developing concluding reflections on relevant aspects of circular business models in cultural heritage adaptive reuse.

For example, some cases of reuse result aiming at eco-innovation and fit the concept of circular economy as ‘efficient use of natural resources’, however economic sustainability is now receiving much more attention than in the past. Nevertheless, the majority of adaptive reuse projects lay on a wider concept of circularity, based on the sustainable development paradigm and targeting social and cultural goals, in the view of reusing cultural heritage for the benefit of local communities and next generations.

Conclusions suggest two manifold streams of policy intervention:

- To support local communities in the phase of reuse decision, making them aware that the ‘value proposition’ is at the core of the decision, constraining the alignment of all the elements of the business model, on the different levels of sustainability;
- To consider Cultural Heritage and its reuse as an engine for cultural development and to reinforce young people education with a richer endowment of concepts and abilities, thus enabling them to face what is “new”.

Partners involved in the document

Participant No	Participant organisation name	Short Name	Check if involved
1 Coordinator	CONSIGLIO NAZIONALE DELLE RICERCHE	IRISS CNR	X
2	UPPSALA UNIVERSITET	UU	
3	HAUTE ÉCOLE ICHEC - ECAM - ISFSC	ICHEC	
5	TECHNISCHE UNIVERSITEIT EINDHOVEN	TU/e	
6	UNIVERSITY OF PORTSMOUTH HIGHER EDUCATION CORPORATION	UOP	
7	UNIVERZA V NOVI GORICI	ETCAEH	
8	WIRTSCHAFTSUNIVERSITAT WIEN	WU	X
9	UNIWERSYTET WARSZAWSKI	UNIWARSAW	
10	ICLEI EUROPEAN SECRETARIAT GMBH	ICLEI	
11	FACILITYLIVE OPCO SRL	FacilityLive	
12	VASTRA GOTALANDS LANS LANDSTING	VGR	
13	GRAD RIJEKA-GRADSKO VIJECE	RIJ	
14	COMUNE DI SALERNO	SA	
15	STICHTING PAKHUIS DE ZWIJGER	PAK	
16	INIZIATIVA CUBE	INI	
17	TECHNOLOGICAL UNIVERSITY DUBLIN	TU Dublin	

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1 Description of the Project

The overarching goal of CLIC trans-disciplinary research project is to identify evaluation tools to test, implement, validate and share innovative "circular" financing, business and governance models for systemic adaptive reuse of cultural heritage and landscape, demonstrating the economic, social, environmental convenience, in terms of long lasting economic, cultural and environmental wealth.

The characteristics of cultural heritage and landscape pose significant challenges for its governance. Cultural heritage is a “common good”, which enjoyment cannot be denied to citizens, although many buildings and landscape structures are privately owned. Furthermore, the large economic resources needed for recovery and maintenance of heritage goods are rarely available to the private owner, often charged of the additional cost of non-use due to limited degree of transformation allowed. The existing governance arrangements currently involve limited stakeholders concerning for the historic, aesthetic or religious sociocultural values, severely restricting the use of the heritage properties, and charge the central government of conservation costs. The approach of regulatory and planning tools throughout European countries has been to preserve cultural heritage by preventing transformation of buildings or areas having historic-cultural significance.

“The current monument-based, full protection, and government-financed approach that restricts the use of protected properties and relies almost entirely on public funds is incapable of tackling the vast urban heritage of most communities and of sustaining conservation efforts in the long term” (Rojas, 2016). To turn cultural heritage and landscape into a resource, instead of a cost for the community, the structures of authority, institutions and financial arrangements should be adjusted to ensure larger stakeholders’ involvement in decision-making, attract private investments and facilitate cooperation between community actors, public institutions, property owners, informal users and producers (Rojas, 2016). The risk is that without financing channels the decay of European heritage and landscape will increase, until its irreversible loss.

Flexible, transparent and inclusive tools to manage change are required to leverage the potential of cultural heritage for Europe, fostering adaptive reuse of cultural heritage / landscape. Tools for management of change should consider costs and benefits at the local level and for all stakeholders, including future generations, and should take into account the cultural, social, environmental and economic costs of disrepair through neglect, compared to the benefits obtained through diverse scenarios of transformation / integrated conservation.

Costs and values of cultural heritage adaptive reuse have to be compared in a multidimensional space: the relationship between costs and “complex values” influences the willingness to invest in the functional recovery of cultural heritage and landscape. Therefore, it is necessary to clarify what is intended for the value of cultural heritage. The higher the perceived value for potential actors, the higher the willingness to take the risk of investment. This “complex value” of cultural heritage depends on the intrinsic characteristics, but also from extrinsic (context) characters.

Investment costs are related to the materials, technologies and techniques to be used to preserve the cultural value of the heritage / landscape, and to maintenance / management / operating costs. The willingness to invest, the same value done, increases with the reduction of costs. Then, the social cost of abandonment – and eventual irreversible loss of heritage – must be included in the investment choice.

The investment gap in cultural heritage and landscape regeneration can be addressed through careful evaluation of costs, complex values and impacts of adaptive reuse, providing critical evidence

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of the wealth of jobs, social, cultural, environmental and economic returns on the investment in cultural heritage.

CLIC Specific objectives

The scopes of CLIC project will be achieved through a set of specific, measurable, achievable, realistic and time-constrained (SMART) specific objectives:

Objective 1 - To synthesize existing knowledge on best practices of cultural heritage adaptive reuse making it accessible to researchers, policy makers, entrepreneurs and civil society organizations, also with direct dialogue with their promoters;

Objective 2 - To provide a holistic ex-post evaluation of the economic, social, cultural and environmental impacts of cultural heritage adaptive reuse, stressing on the importance of appropriate conservation and maintenance approaches able to highlight the integrity and authenticity of heritage;

Objective 3 - To provide EU-wide participated policy guidelines to overcome existing cultural, social, economic, institutional, legal, regulatory and administrative barriers and bottlenecks for cultural heritage systemic adaptive reuse;

Objective 4 - To develop and test innovative governance models and a set of evidence-based, participative, usable, scalable and replicable decision support evaluation tools to improve policy and management options/choices on cultural heritage systemic adaptive reuse, in the perspective of the circular economy;

Objective 5 - To analyse hybrid financing and business models that promote circularity through shared value creation, and assess their feasibility, bankability and robustness for cultural heritage adaptive reuse;

Objective 6 - To validate the CLIC circular financing, business and governance practical tools in 4 European cities / territories representative of different geographic, historic, cultural and political contexts;

Objective 7 - To contribute to operationalise the management change of the cultural landscape also in implementing the UNESCO Recommendation on Historic Urban Landscape;

Objective 8 - To re-connect fragmented landscapes, through functions, infrastructures, visual relations at macro and micro scale;

Objective 9 - To design and implement a stakeholders-oriented Knowledge and Information Hub to make tools and information accessible, useful and usable and test them with policy-makers, entrepreneurs, investment funds and civil society organizations;

Objective 10 - To contribute to the creation of new jobs and skills in the circular economy through cultural heritage adaptive reuse, boosting startups and sustainable hybrid businesses and empowering local communities and stakeholders through public-private-social cooperation models.

Objective 11 - To contribute to the monitoring and implementation of SDGs (especially Target 11.4) and the New Urban Agenda, creating operational synergies with global initiatives of UN-Habitat, UNESCO/ICOMOS and the World Urban Campaign.

All partners have wide experience in developing and testing CLIC proposed tools, ensuring the effective and time-constrained achievement of all the above-mentioned specific goals. The integration of sectorial knowledge, tools and methods will be achieved through a trans-disciplinary

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approach promoting partners and stakeholders' cooperation, co-creation of knowledge and co-delivery of outcomes.

The expected impacts of the project are the following:

- Validation of integrated approaches and strategies for cultural heritage adaptive re-use, comprising innovative finance with high leverage capacity, business models and institutional and governance arrangements that foster multi-stakeholder involvement, citizens' and communities' engagement and empowerment;

- New investments and market opportunities in adaptive re-use of cultural heritage, also stimulating the creation of start-ups;

- An enabling context for the development and wide deployment of new technologies, techniques and expertise enhancing industrial competitiveness and contributing to economic growth, new skills and jobs;

- Innovative adaptive re-use models that are culturally, socially and economically inclusive;

- Contribution to implementing the Sustainable Development Goals (SDGs) (Goals 1, 15, 11 particularly) and the United Nations New Urban Agenda.

2 Introduction

Cultural heritage recovery and maintenance has traditionally been in charge to of the public sector, which used public resources to maintain heritage “public goods” in optimal state of conservation and accessibility. Moreover, the public sector (institutions) has the role of setting the “rules” for heritage conservation, maintenance and reuse, especially to avoid destructive interventions, especially on heritage goods owned or managed by private actors.

Public investments have mainly focused on the evaluation of cultural heritage adaptive reuse projects highlighting social and environmental costs and benefits. However, traditional public funding sources and in general public financial resources are decreasing. In this context of fragile public finance, business model and economic sustainability of reuse projects are increasing their importance in order to leverage private investment and to avoid waste of public resources.

The link between business model and funding sources is strengthening, as new financing models can make economically sustainable some business models with low operative margin; as well as economic opportunity to gain profits may convey private funds to cultural heritage building restoration and reuse as a business resource. An increasing overlapping of perspectives has recently attained to Cultural Heritage, merging business service approach and governance issues, as cultural heritage management has to comply legal, economic and organizational specificities. Furthermore, the value generated by reuse initiatives has ambiguous definitions and a plurality of stakeholders and the presence of network economies make the decision-making processes very complex.

The concept of “heritage as common good” is mainly understood as “co-owned by heritage communities”, implying the right to accessibility and enjoyment, as well as the responsibility of heritage communities for its conservation. It implies the concept of communities’ “co-ownership” of cultural heritage, being the heritage legal property private or public.

This new notion challenges the concepts of responsibility and current practice in the investment models for the conservation of cultural heritage, opening up the scenario to new funding models such as “crowdfunding” and new cooperative models to manage the conservation and regeneration of the “common good” in cities.

A key barrier to private investments in heritage regeneration/reuse is represented by the poor profitability of cultural assets that are included in the category of so-called “cold investments”, unable to generate adequate cash flow without a public intervention.

New business and financial models should be developed to shift “cold investments” in heritage into more effective “warm investments”. Particularly, new creative activities / functions in heritage buildings/sites and business models able to generate adequate cash flow, while generating social, environmental and cultural value as well as positive economic impacts in the area/region, need to be developed and tested.

IRISS work on WP4 starts from the notion of “complex value” conveyed by cultural heritage regeneration/reuse (Fusco Girard, 1987; Fusco Girard and Nijkamp, 1997).

The notion of “complex value” created and delivered represents the basic concept from which it is possible to identify innovative business models. Thus, the main research questions here are:

- How organizations can create and deliver “complex value” (economic, social, environmental, cultural) through the adaptive reuse of cultural heritage?

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- Which business models can we observe or develop to boost complex value creation and delivery in cultural heritage adaptive reuse, according to circularity principles?
- Which are the typologies of buildings and the contexts (i.e. rural/urban settings, services demand and economic specialization of the territory) that enable or hinder the development of circular business models for cultural heritage adaptive reuse?

Literature review

A wide literature in business and management sciences applied the business model conceptual framework to different industries companies. Recent research tried to apply the concepts developed in business model studies to circular economy, mainly focusing manufacturing industries and new waste management strategies but Business Model perspective and circular economic approaches are completely absent in Cultural Heritage adaptive reuse, while on this issue the perspective of the public economy appears very relevant.

In business disciplines, business model (BM) is a unit of analysis to explain how value is created and delivered. BM is seen as an antecedent of heterogeneity in firm performance; specifically, BMs are argued to be an important factor contributing to firm performance. As some types of BMs are found to outperform others, successful BMs are seen as examples to be imitated or replicated.

The most well-known and widely used framework is the Business Model Canvas (Osterwalder & Pigneur, 2010), based on nine elements: key partners, key activities, key resources, value proposition, customer relationships, channels, customer segments, cost structure, and revenue streams.

Fielt (2014) also notes that it is hard to comprehend a definition of business model without a better understanding of the value concept. He explicitly includes the customer value (or use value) where other definitions are less clear by referring to value in general or include business value (or exchange value). The focus is on the value creation from the customer perspective and linking value creation to value capture.

Moreover, while the focus is on the organization, the business network needs to be included as well, when it plays a critical role in creating and capturing customer value. However, a more strategic perspective is required to fully understand value capture and business value.

In the emerging field of sustainable business model (SBM), an increasing number of scholars and practitioners go beyond value creation in economic or financial terms and explore the potential of business models to solve ecological and social problems. (Bocken et al. 2014; Lüdeke-Freund and Dembek 2017; Schaltegger et al. 2016).

Several authors describe iconic cases of companies that aim at reducing the pressure on ecological and social systems through their business models (e.g., Boons and Lüdeke-Freund 2013; Stubbs and Cocklin 2008). Some of these cases and business model types bear the potential to provide inspiration or even useful solutions for established companies and start-ups facing similar challenges.

Taking a “strongly sustainable” perspective, Upward and Jones (2016) formulate four propositions:

1. A strongly sustainable business model creates ecological, social and economic value and takes its embedding value network into account, which implies an extended understanding of the value that is proposed, delivered and finally created.

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2. The concept of value itself broadens to forms of value that meet the needs of actors in aesthetic, psychological, physiological, utilitarian and/or monetary terms.
3. This extended perspective on a business model's value network and extended understanding of value requires a systemic conception of business models as being embedded within wider ecological, societal and economic contexts.
4. A new kind of metric, “tri-profit”, is required to integrate all forms of value creation into one single measure, instead of measuring these in parallel, as with traditional triple-bottom-line approaches.

Joyce and Paquin (2016) suggest the Triple Layered Business Model Canvas as a tool for exploring sustainability-oriented business model innovation. A holistic impact approach is proposed, linking economic impacts to social and environmental ones. It also creates two new dynamics for analysis: horizontal coherence and vertical coherence. This tool fits a decision-making approach, both in a business and in a policy maker perspective.

The emphasis given to organizational, market and societal transformations distinguishes the discourse on business models for sustainability from their conventional antecedents, which focus on organizational value appropriation, that is, one-dimensional profit maximization, without considering the consequences for the wider social and ecological contexts. Therefore, the business model perspective is particularly interesting in the context of sustainability because it highlights that new value creation logic of an organization potentially allows (and calls) for new internal governance forms such as cooperatives, public private partnerships, or social businesses, thus helping transcend narrow for-profit and profit-maximizing models (Schaltegger, Hansen, Lüdeke-Freund, 2016).

Circular Economy oriented BM also add uncertainties and complexity to conventional BM. New variables have to be considered, for instance, reverse on top of forward logistics; quality, quantity and timing of returns of resources; customers perceptions and preferences for ‘as new’ (Bocken et al., 2018). This requires a systemic and transdisciplinary view, which has been reflected in recent publications exploring the interfaces of CE-oriented BMI with other innovation perspectives, such as product design, value chain and digital technologies (Bocken et al., 2016; Geissdoerfer et al., 2018).

Pieroni et al. (2019) provide a review of approaches for business model innovation for circular economy and/or sustainability, finding opportunities to seize synergies from the intersection of both streams. They acknowledge resource efficiency, resources longevity and economic growth at the intersection of Circular Economy and Sustainable Development approaches.

The incorporation of circular principles into BMs also occurs at different levels, depending on decision makers' ambitions and adopted strategies.

Firm activities play an important role in the various conceptualizations of business models that have been proposed.

Urbinati et al. (2017)‘s taxonomy suggests three available modes of integrating CE principles in BMs: downstream circular (altering value capture and delivery, through new revenue schemes and customer interface e e.g. pay-per-use models), upstream circular (changing value creation systems, e.g. reverse logistics), or fully circular (combining upstream and downstream principles).

Circular business models may be also studied taking into account:

- Business ecosystem level (Antikainen and Valkokari 2016): (i.e. Trends and Drivers, Regulation; Financing or technology opportunities; consumers consciousness as well as stakeholders involvement and policy commitment);

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- The Adoption factors (Lewandowsky, 2016), as transition towards circular business model must be supported by various organizational capabilities and external factors.

According to this view, circular business models in Cultural Heritage adaptive reuse require a wider perspective, overcoming the focus on the micro-business perspective and enlarging the view to an extended stakeholder's network, as the value proposition is the result of a negotiation process among different stakeholders both in decision making and in financing, building and operating.

The impact of the circular economy models and sustainability should measure value creation for all stakeholders. The challenge of re-designing business ecosystems is to find the "win-win-win" setting that balances the self-interests of involved actors and sustainability impacts.

The study of Mısırlısoy, and Günçe (2016) offers holistic approach and unified factors for the successful implementation of Cultural Heritage adaptive reuse projects, paying attention to the decision making process and on the role and involvement of different stakeholders. The study also recommends deep analysis of the existing fabric, which includes original function, physical characteristics, adaptive reuse potentials and needs of the district. The decision of the new function according to the needs of the region is important in terms of the life of the adaptive reuse project.

Conservation actions should be decided and adaptive reuse potentials of the architectural for the new use should be evaluated. The main aim should be preserving the values and originality of the building and its context; however, the economic sustainability of the building is important for the future of the built heritage.

A relevant stream of research focus on the role of Private Companies in the whole Project Cycle, as private partners may contribute at different stages (i.e. Project design, Finance, Build, Operate) and with different roles (Promoter, Sponsor, In-kind contributor, Evaluator). Furthermore, their role may vary from delivering non-core/outsourced services to a full project cycle involvement.

Neverthless, institutional PPP differ from public procurement as well as from privatizations (Mac Donald, 2011), and imply risks and responsibility sharing, often strictly regulated by national (country specific) laws.

The majority of research efforts have focused on case studies. Although this research design prevents findings generalizability to different industries, contexts, or countries, it is still appropriate to study the early state of art of circular business models in CHAR.

Building theory from case studies is a research strategy that involves using one or more cases to create theoretical constructs, propositions and/or midrange theory from case-based, empirical evidence (Eisenhardt, 1989). The central notion is to use cases as the basis from which to develop theory inductively. The theory is emergent in the sense that it is situated in and developed by recognizing patterns of relationships among constructs within and across cases and their underlying logical arguments. Central to building theory from case studies is replication logic (Eisenhardt, 1989b). That is, each case serves as a distinct experiment that stands on its own as an analytic unit. Like a series of related laboratory experiments, multiple cases are discrete experiments that serve as replications, contrasts, and extensions to the emerging theory (Yin, 1994).

This qualitative approach aims to complement the quantitative approach applied within WP1, in survey data statistical elaboration.

3 Document structure

The document is structured as follows:

Introduction highlights the main objectives of the analysis and their goals within the CLIC Project. It also includes a short literature review describing the concept of business models as unit of analysis in business and management disciplines, also highlighting recent evolution of the concept in the view of sustainable development and circular economy.

Chapters from 4 to 10 describe and discuss case studies of cultural heritage adaptive reuse all over Europe.

Any chapter introduces a typology of building and main challenges to its adaptive reuse; then, it describes the case studies and closes with comments on circularity, success factors and replicability.

Chapter 4 focuses on coastal buildings (lighthouses), Chapter 5 focuses religious heritage (monasteries and churches), Chapter 6 focuses on forts and castles, Chapter 7 focuses on industrial heritage, and Chapter 8 focuses on neglected (i.e. minor) heritage.

Furthermore, some rural (Chapter 9) and urban cases (Chapter 10) highlight connections between adaptive reuse initiatives, new functions of the buildings and local (contextual) needs.

Conclusions highlight that some cases of adaptive reuse aim at eco-innovation and fit the concept of circular economy as efficient use of natural resources.

Economic sustainability is now receiving much more attention than in the past; nevertheless, the majority of reuse projects lay on a wider concept of circularity, based on the sustainable development paradigm and targeting social and cultural goals, in the view of use cultural heritage for people and next generations.

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4 COASTAL BUILDINGS - LIGHTHOUSES

The traditional economic analysis considered the lighthouse as a classic example of public good: those who don't pay cannot be excluded from consuming it, and one's consumption does not reduce the consumption of others. So, general taxation funds public production (Stuart Mill, 1848). This old vision was questioned by Ronald H. Coase (1991 "Nobel prize") in "The lighthouse in economics" (1974), he outlined that in the lighthouses system, in England and Wales, 16th-19th century, private individuals embarked on financing, building, and maintaining numerous lighthouses.

Nowadays lighthouses are often decommissioned. They become obsolete due to changes activated by new technologies like GPS and sonar. Therefore, lighthouses are at risk of deterioration while rehabilitating them is a difficult challenge also because represent an ancient heritage.

There are several experiments of adaptive re-use of buildings and maintenance projects. The lighthouses positioned close to urban agglomerations sometimes turn in clock towers (Old Colombo Lighthouse in Colombo, Sri Lanka).

Some turn in art studio - as an "artist in residence" program operating in Port Bickerton lighthouse in Nova Scotia - or art space as Lighthouse in Maryport in the northwest of England, which in 2009 was used as a gallery space by an arts collective. In other cases, natural scientists develop lighthouses into animal observatories or wildlife refuges (Low Light Lighthouse on the Isle of May in Scotland; Seahorse Key lighthouse in Florida).

The Northern Lighthouse Board (NLB) responsible for Scotland and the Isle of Man and the General Lighthouse Authorities (GLAs) of the United Kingdom and Ireland developed a new initiative for the Scotland's Outstanding Lighthouses. The initiative aims to promote and drive tourism to Scotland's coastal communities and increase awareness of the role and history of NLB's unique heritage.

Exploitation of lighthouses through tourist activity contributes to their protection and revitalization. Their involvement in tourist offer would not obstruct their primary role in assuring the safety of sailing. Croatian lighthouses contribute to Croatian tourist offer as a unique tourist category. Palagruža is the most attractive site in this group.

In the following paragraphs three case studies show how lighthouses can be turned into cultural attractions, saving historic heritage buildings for next generations.

The cases describe:

1. Palagruža lighthouse, located on the Croatian Island of Palagruža in the middle of the Adriatic sea;
2. Capo d'Orso lighthouse, located in the protected area of the Amalfi coast;
3. Genoa lighthouse (also called Lanterna), the tallest lighthouse in the Mediterranean, built in 1543 on a previous structure of the XII century.

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Palagruža island lighthouse

Palagruža

The most distant Croatian island Palagruža is located in the middle of the Adriatic Sea, between Croatian and Italian coast. It is 52 km away from the Italian coast. Palagruža is rich in historical heritage, flora and fauna species. It is situated 68 NM to the south of Split and 26 NM of the island of Lastovo.

The island is 1400 m long, 300 m wide, and 90 m high. The lighthouse was built in 1875 on the top of the island. It consists of one-store building with a lighthouse tower in the middle of the building reaching 109.70 m above sea level. There are two paths leading up to the lighthouse. It houses meteorological station because of its specific climatic conditions.

The Project of transforming lighthouses into a tourism offer was run by the company Plovput Ltd.(Split).

It is a commercial company owned by the Republic of Croatia taking care of waterways of inner sea and territorial sea within the Republic of Croatia, building and maintaining facilities needed for navigation safety, among which there are lighthouses as well.

Plovput Ltd. works on principles of social responsibility of corporate sector: responsibility of corporate sector towards their employees, stakeholders and owners, management boards, consumers and suppliers, natural environment, communities in which they carry out their activity or sale their services.

The Company started a project called „Stone Lights", based on positive experiences in lighthouse maintenance, integrating history, ecology and tourism. The project goal was to commercialize lighthouses and assure means for their maintenance and restoration. In contemporary time of noise and stress, holiday in a lighthouse provides a unique experience of sun, sea, solitude and peace, which is impossible to have in an everyday life.

It was necessary to determine potentials of commercial exploitation based on market arguments, and taking into consideration the size, building conditions, accommodation capacities, position and attractiveness of the building, necessary investments, and investment cost benefit, etc.

After having completed the analysis, the company started to include lighthouses in a targeted tourist offer.

Although lighthouses involved in the tourist offer differ in their attractiveness, size, number of apartments, vicinity of tourist destinations and traffic infrastructure, in a marketing sense it is necessary to differentiate the offer based on the services quality and accessory facilities. To strengthen promotion of lighthouses for tourism purposes, lighthouses offered to specific tourist targets.

The Company has created a special tourist offer of Lighthouses at the open sea that are located on far-away islands and cliffs, providing solitude and peace. Tourists enjoy sea, fishing, diving, exploring the sea world, but these lighthouses are usually rented by guests that are aware of wildness charms.

Source: by Vellecco I., Martone A., IRISS CNR

The Capo D'Orso Lighthouse

In recent years, the Italian Agenzia del Demanio (State Property Agency) together with Ministero della Difesa, through Agenzia Difesa Servizi Spa, has activated the "Valore Paese Fari" initiative,

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currently being implemented, with the aim of increasing the economic and social value of the assets and territories in which the lighthouses are sited, thus contributing the competitiveness of the entire Country.

The aim is to recover public assets, owned by the State and local authorities, so that it is no longer just a cost for the community, but also a lever for territorial and social development, based on public-private partnership in management and/or financing reuse initiatives.

The Capo D'Orso Lighthouse

The Capo D'orso lighthouse is located in the small promontory of Capo d'Orso. The place is named for its characteristic shape (looking up it seems to see the head of a bear) and being located on the southern slope of the Lattari Mountains within the Amalfi Coast, it boasts an environmental heritage of great scenic interest, geological and biodiversity. Overlooking the sea and perched on the side of the mountain, it reaches by land, through a long and articulated journey made up of galleries and steps (about 350), with variable height between 17 and 20 cm and variable tread between 25 and 40 cm.

The lighthouse is partially hidden by citrus groves and Mediterranean vegetation and is not visible from the road; access to the entry route is not well defined and it is often mistaken for a private gate.

In the Campania Region it is the only lighthouse that has further access from the sea.In 2015 the State Property Agency has activated a "Country Value - FARI" initiative which aims at the sustainable recovery of buildings located in Italian coastal towns. As a result of a call for tender launched in 2016 and involving 11 structures, the Capo d'Orso Lighthouse in Maiori was assigned to the WWF Oasi in the province of Salerno in 2018, for the following 25 years.

The concession awarded in 2016 established the sum of the actualized rents offered at € 369,592 with planned investments equal to € 210,000.

The proposal of the WWF Oasis winning the tender aims to recover and enhance a State asset, located in a context of the highest naturalistic value, through the mission of conservation and protection of the territory. The Capo d'Orso site is included in the perimeter of the Monti Lattari Regional Park and is a site of European importance for biodiversity. Strengthened by the experience of managing WWF Italy's Oases, the project intends to help maintain natural ecosystems and, where necessary, recover and restore the original environment, enhancing, through the lighthouse, the territory with a responsible and sustainable use. The proposal therefore develops over a wider area than the building of the lighthouse itself, which becomes a garrison but also a place of attraction, carrying out multiple roles, from information to training.

The proposal is part of a responsible tourism perspective, an activity that allows acquiring the necessary awareness to protect the natural environment and local cultures but also represents an important tool for the development of a virtuous tourism economy in the destination places.

The building will house a WWF house for whale watching and birdwatching, a marine-coastal observatory attentive to the fauna linked to marine environments and to migration some birds, a visitor center. The lighthouse will also be the venue for meetings, seminars, conferences and educational activities related to the themes of nature conservation, scientific research and sustainable development, while the

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Visitor Center can act as a flywheel to get to know the coast, promoting local events related to the enhancement of the territory and its culinary vocation, through collaboration with local restaurateurs.

The project includes initiatives of development at sea, taking up the blue Oasis project, a space dedicated to marine use.

Source: CLIC Database

The GENOA Lighthouse

The GENOA Lighthouse

The Lantern of Genoa (or "Lanterna", in Genoese a Lanterna de Zena) is the port lighthouse and symbol of the city. Seventy-seven meters high, it is the tallest lighthouse in the Mediterranean and the second in Europe. Also considered the rock on which it rests, it reaches 117 meters. The current structure, built in 1543 on a previous structure of the XII century, consists of a tower on two orders of square section with a terrace at the top of each order.

The Lantern has 365 steps in total, of which only 172 are open to the public, and it is possible to reach only the first frame, while upper part of the lighthouse is the exclusive property of the Navy (i.e.visitors are not admitted).

The building is located on the eastern edge of the Sampierdarena district, on a rock formerly called a promontory and surrounded on three sides by the sea, over time the area has taken the name of Capo di Faro or San Benigno, from the name of the homonymous convent that stood on it. Over time the hill has been eliminated to create new urban spaces, only the small rocky spur remains on which the lighthouse stands, while the Port of Genoa was expanded, creating new piers, with sea fillings.

In 2019 the lighthouse returned to its original splendor, thanks to a restoration and rearrangement of the museum on the occasion of its 890th anniversary.

The Lantern is accessed through the controlled port gates, and from the city with a pedestrian walk of about 800 meters, for the most part cantilevered outside the old city walls with a path that overlooks the port docks. Close to the tower there is the Museum of the Lantern, a multimedia museum dedicated to the city and the province. The Monumental Complex of the Lantern from March 2018 became part of the Mu.MA - Institution of Sea and Migration Museums, together with the Galata Maritime Museum, Pegli Maritime Museum and the Commenda di Prè.

The visit to the museum of the Lantern begins with the path that leads to the ancient lighthouse, overlooking the Port of Genoa and continue on to the *open air museum of the park*, which runs adjacent to the seventeenth-century fortifications and the Porta Nuova of Lantern, the ancient western gateway to Genoa.

At the base of the lighthouse, inside the ancient fortifications is located the Museum of the Lantern, where there is the story of the Lantern. Leaving the museum, the visitor can continue towards the

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lighthouse, where is possible to climb to the first panoramic terrace to admire a unique 360° view of the city and its port.

The lighthouse, as a support tool for maritime navigation is controlled and managed by the Lighthouse Zone Command of the Navy in La Spezia which deals with the lighthouses of the Upper Tyrrhenian Sea.

The part of the Lantern, which is a monument and symbol of the city was managed by the province of Genoa with the Muvita Foundation, owned by the Province from July 2004 to July 2014, when it was replaced by the Young Urban Planners - Labò Foundation.

The association is responsible for the opening to the public of the lighthouse and the annexed museum, in addition to the ordinary maintenance of the complex, including the urban park around it and the access promenade. In 2014 the Province of Genoa terminated its mandate, transferring the management to the Municipality of Genoa.

In 2014, the Municipality of Genoa, Municipality II Center West and the Province of Genoa accepted a proposal for adoption by the Mario and Giorgio Labò Foundation, which become the new manager of the monumental complex of the Lantern of Genoa. The concession to the Foundation and a Group of young urban planners (Youth Group of the Labò Foundation) avoided an imminent closure due to the huge economic cuts that have hit the Province of Genoa.

A few weeks earlier, the Young Urban Planners were carrying out voluntary redevelopment works in the area such as cutting trees and weeds, repainting the museum furniture, cleaning, etc.

The Labò Foundation also took care of the interventions necessary for the maintenance of the green decoration, as well as the expenses necessary to make it operational and to the maintenance of the multimedia museum, thus becoming the first supporters of this monument and lighthouse.

The Labò Foundation, with the Youth group, continued to manage the enhancement of the Monumental Complex until January 5, 2020. From 6 January 2020, the Youth Group of the Labò Foundation and part of the Amici della Lanterna structured as a creative cultural enterprise born from the management experience of the last five years: *PHAROS light for h*eritage, which together with the Amici della Lanterna association encourages and supports initiatives to enhance the symbolic monument of Genoa.

The social promotion association (APS) Amici della Lanterna organizes and supports activities and projects to enhance the monumental complex of the Genoa Lantern together with the context in which it has been located (such as the port, Sampierdarena the system of Genoese walls and forts and the network of lighthouses to which it belongs, at regional, national and international level).

The Lantern complex, that includes the promenade, the park, the museum and the lighthouse itself, hosted a rich program of side activities, events and workshops for children with guided tours and other activities by reservation.

As for the number of visitors, 2016 closed with 18,617 visitors to the Lantern (from 8,000 in previous years), 2017 with 18,353 visitors, while 2018 saw about 16,000 visitors, with a decrease due to the decrease in tourist flows that hit the city following the tragedy of the collapse of the Morandi Bridge and bad weather throughout the Liguria region in October 2018. The 2019 year confirmed the trend of almost 20 thousand visitors / year.

There are over 100 annual memberships to the "Friends of the Lantern" Association. The didactic activities offered to schools have received more and more adhesions. In 2018, about 2,800 students visited the Lantern from all parts of Italy. In the first semester of 2019 the students and participants in the educational activities were 1569.

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Specifically, more than 1000 people visited the Lantern as part of the “Ti PORTO alla LANTERNA” initiative: a monthly appointment that, from the Old Port, leads visitors to the Lighthouse, thus fully entering the city's tourist itineraries.

In addition, in recent years, thanks to important partners such as the Compagnia di San Paolo, the Lantern has seen the energy efficiency of all the public, monumental and artistic lighting of the monument. The most significant intervention was on the tower, on the 690th anniversary of the first oil lamp, which was equipped with artistic lighting that strengthened the role of dialogue with the city of Genoa of the lighthouse, which has always been a signal tower.

Since 2015, an official website and an APP support the use of the building.

The Lantern is equipped with a Free WIFI thanks to a crowdfunding, promoted by the Open Genova Association, that in the space of four months, reached the amount to buy the equipment (half from private and half from sponsors).

A solution was also designed to improve accessibility for the disabled, adopted wayfinding strategies.

There are numerous events and exhibitions aimed at animating, promoting and enhancing the lighthouse and among the most popular there is the review of the itinerant theater of LUCI SUL FORTE, the Getzmataz Festival, the National Singing Competition of New Voices for Children and Teens from 5 to 15 years, the Festival Zones Portuaires Genova.

Other usual cultural events are contemporary art and photography exhibitions, private events, etc.

The “Together for the Lantern” project aims at contributing to the enhancement of the symbolic monument of Genoa. There are numerous companies that have joined the project in recent years, making it possible to carry out important interventions and actions for the enhancement of the monument. Pharos light for Heritage today, as well as previously the Mario and Giorgio Labò Foundation, together with APS Amici della Lanterna, are looking for other supporters to give assistance at this unique and highly symbolic place, which represents Genoa and its citizens throughout Italy and in the world.

The Lantern confirms its vocation as best practices and case studies due to the particular characteristics of the site and the solutions applied, to the technology of its systems, recently renovated with advanced solutions. Since the Lantern, due to its shape and exposure, has always been the target of lightning, in recent years, with the introduction of electronics for the management of the plants (lighting and elevator control systems, digital interactive means, etc.) the vulnerability against atmospheric phenomena has increased and even recently (August 2017 and November 2019) lightning has caused significant damage. To avoid these risks, the recent technological renovation has introduced various solutions funded by the Ministry of Culture (formerly MIBACT) and the Ministry of Sustainable Infrastructure and Mobility (formerly MIT).

Source: By Vellecco I., Martone A., IRISS-CNR

Comments on circularity, success factors, replicability

Lighthouses enhancement attempts to prevent their falling into a state of decay, regenerating the places and helping the activation of local economies in favor of citizenship, enriching the public heritage of refurbished structures for the community.

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The Genova lighthouse is the only one in the world to be a symbol of a city and repository of a large part of its history. The construction of the base seems to date back to 1128, an age in which Genova was a maritime independent republic and one of the powerful cities in the Mediterranean. The historic value of the lighthouse and its symbolic value made it a cornerstone of the old waterfront reuse project. The result is a leisure and meeting area for citizens and tourist, where the ancient maritime identity of the city finds new ways to increase the social capital. The case suggests a light stress on direct economic returns on the single building reuse, adequately considering also indirect economic effects, due to the social and economic regeneration of the surrounding area.

As point of interest in environment education and research, lighthouses similar to Capo d'Orso may catalyze cultural change and sharing. More generally, lighthouses are well suited to a request for tourism that is attentive to the environment and culture, connected to unspoiled places and places of landscape-environmental interest.

Due to equipment expenses, regular maintenance, transport and staff, tourism rent fee is usually high and increases due to the transfers to and from the site. Maintenance expenses are very high, as lighthouse inventory decays rapidly because of exposure to weather conditions and salt and this affects profit gain. Distance from the mainland and nearby inhabited villages affects operating costs. Connection to the mainland and to local water supply network allows having water supply costs significantly reduced. Water supply expenses for Palagruža island lighthouse take up to 50% of the income, while these expenses for lighthouses on the mainland take up only 15 – 20 % of the income. Then, lighthouses may be a fruitful field for development of circular economy as eco-innovation, applying water saving application and green energy technologies.

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5 RELIGIOUS HERITAGE

The religious real estate patrimony presents countless properties with high historical and artistic value which, also due to the current period of vocation crisis, have not received the attention necessary for optimal conservation, and which, in many cases, have been closed and abandoned.

The religious structures are embedded in the collective memories of the members of a society and are a source of identity; therefore, the public becomes concerned with maintenance the integrity of these edifices and conserving their cultural heritage symbols. Therefore over time the protection of the religious architectural heritage has been increasingly recognized as a cultural obligation.

The proper reuse of buildings is one of the best ways to ensure their survival and a change of the original function has to keep the intangible meaning in reuse. Then, it is difficult to manage the limits and opportunities in the adaptive reuse of this type of heritage, while preserving its social and cultural significance.

In recent years, the decline of religious practices and the economic crisis have led to the abandonment of countless structures, often sold and privatized.

The following paragraphs describe five case of religious heritage adaptive reuse, that are:

1. The charterhouse of Avigliana, reusing a Franciscan monastery in the Susa Valley near Turin;
2. Pousada Santa Maria do Bouro, built on the ruins of a former convent in Portugal;
3. Dominikanenkerk. a famous case of a church adaptive reuse, in Maastricht;
4. Jacobuskerk, reusing an old catholic church in Utrecht;
5. San Giorgio dei Genovesi, a XVI century church in the historic center of Naples.

Charterhouse of Avigliana - Certosa 1515

Certosa 1515 B&B

The charterhouse of Avigliana rises on the mountain that leads to the Sacra di San Michele, in the Susa Valley. It was founded as a Franciscan monastery in 1515. Over time, the Certosa di Avigliana had several destinations. In the 90s of the last century, the community of Carthusian nuns who lived there decided to leave it. The Abele Group took action for the purchase and restoration, which ended in September 2011. The Certosa di Avigliana is currently owned by the Social & Human Purpose Fund of REAM sgr of Turin and **managed by the social cooperative Binaria 1515 scs**. The surface of the property covers about 2300 square meters. Today it is a place **of hospitality, education and location for events**.

The reuse process has transformed an underutilized complex into an asset that is financially self-sustainable and capable of generating revenues without external sources of financing in the management phase. This process has led to an increase in jobs and attracted cultural visitors in the framework of **sustainable tourism**. The new destination has produced a positive social impact thanks to the inclusion of marginalized groups that are involved in the management of the asset. New events and cultural activities have been proposed that have encouraged citizen participation. The process of reuse has determined the conservation and enhancement of a good that the local community had forgotten, determining a

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strengthening of the place attachment and local identity. The new function determines a symbiotic link between the new functions of the building and its external context. The reuse process is characterized by the minimization of consumption of natural resource.

Source: CLIC Database

Pousada Santa Maria do Bouro

Pousada Santa Maria do Bouro

The project of renovation of the Ruins of Santa Maria do Bouro Convent is a not a reconstruction of a **former Convent, but rather an interpretation of the ruins in a new building**. Respecting the identity of the space while introducing new materials, forms and functions in a subtle way.

Pousadas Regionales was a Portuguese State-run program from the 1940s onwards, whose aim was to develop the touristic infrastructure in Portugal. In the 1950s the program was expanded to Historic Pousadas, with a goal to revitalise and renovate the Historical monuments, such as castles, monasteries and convents and repurpose them for **luxurious touristic accommodation**. This brought the economic and social development of often times remote and rural towns. Since 2003 it has been privatized under the concession for 40 years.

Source: CLIC Database

Dominicanenkerk, Maastricht

Dominicanenkerk, Maastricht

The Dominicanenkerk (Dominican church) is a **Gothic monastery church** situated in the city centre of Maastricht. The church is built in the 13th century of marl stone on a foundation of millstone-grit, consecrated in 1294. In 1796 the church's ecclesiastical function ended, its later uses being a.o. stables, a bike shed, exhibition space and a party hall. In 2006 the old Dominican church in Maastricht got a new destiny. A **bookshop** was established inside the church. Until 2013 the bookshop was part of the bookshop chains Selexyz and Polare. After the bankcruptcy in 2014 the bookshop restarted as Bookshop Dominicanen and is now an independant bookshop. The bookshop receives approximately 700.000 visitors a year. Besides selling books, music and non-books, over 150 events a year (exhibitions, debates, interviews, readings, music, workshops etc.) are being organized. Maastricht coffeeburner Blanche Dael runs the coffeebar Coffeelovers.

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The bookshop has rightly been named one of the most beautiful bookshops in the world, in a completely intact old church full of wall and ceiling paintings. According to many, the "true power of reading" comes into its own in the old church.

The sacral elements such as the stained-glass windows, fresco's, vaults and the incidence of light have been saved. To keep the view of the height of the church, a steel a-centric 'book tower' with two floors was erected (400m2). On the northern wall you can see the oldest known wall painting (secco, not a fresco) depicting the life of St. Thomas Aquinas (Dominican and philosopher) from 1337.

The major renovation went smoothly, thanks to a successful public-private partnership between the municipality, monument care, project developer and the new user Selexyz. The architect Merkx + Girod from Amsterdam won the Lensvelt Architectuur Prijs in Holland in 2007.

Source: CLIC Database

Jacobuskerk, Utrecht

Jacobuskerk Utrecht

The Old Catholic St. Jakobus **Church** has been transformed into a spacious home. There have been no services in the church since 1991, and in the period up to 2007 the church was used as a showroom for antique furniture, a meeting room and small concerts. In the long term it is conceivable that the church can be converted for public purposes such as a library, bookstore, museum or even another church. As little as possible of the existing church has been "touched" or adjusted.

The existing wooden floor, the stained glass windows and old doors have been preserved and restored locally. For these functions, a large mezzanine floor was made in the 90s, which broke the spatiality of the church. The intermediate floor from the 90s has been transformed in the design into a functional and spatial sculpture in the monument. The modern living volume has been 'kept separate' from the old building in detail and can be considered as a temporary 'resident' of the historic church.

The Netherlands has hundreds of vacant churches. Since the 1970s, more than 1,000 churches have been divested by church communities. More than a third of them were demolished and of the Catholic churches even half. In the coming years, another 1000 churches will lose their original function. Fortunately demolition is becoming less common, partly because the churches are often on the list of monuments. Re-use is often the only way to prevent long-term vacancy or demolition. With the redevelopment of the St. Jakobus church the starting point was to revive a worthy monument with minimal intervention. The special quality of this project is that the church has been **transformed into one home**. The church is not divided into small residential units, so the spatiality of the church would have been lost. In addition, small residential units or split ownership situations make new re-use impossible in the future.

Source: CLIC Database

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The Church of San Giorgio dei Genovesi

The Church of San Giorgio dei Genovesi

San Giorgio dei Genovesi (also named San Giorgio alla Commedia Vecchia) is a church built in the XVI century within the historic center of Naples.

Church was used for a long time by the thriving community of Genoese merchants residing in the city, who initially settled in a small church under the infirmary of Santa Maria La Nova, which later proved to be too small. The other name is older, due to the building of the church on the site where once there was the ancient Teatro della Commedia Vecchia (Theater of the Old Comedy). The Church rises above a flight of steps, built at the beginning of the seventeenth century by Bartolomeo Picchiatti, occupying the space obtained from the destruction of the old church, the theater and a dilapidated hospital.

Latin cross interior with a single nave (the total internal surface is 644 square meters), with a transept and a polygonal choir, has hosted numerous works of art, the most famous of which is a painting by Battistello Caracciolo, “Sant'Antonio raises a dead man ”, in which the influence that Caravaggio had on Neapolitan painting is touched upon. The church also houses the frescoes by Giacomo Cestaro in the third chapel on the right (dating back to 1770) and the painting "San Giorgio killing the dragon" by Andrea da Salerno Many other works were transferred to other structures. On the portal there is a large window above which the coat of arms of the city of Genoa is supported by two griffins, that is a work from the 1600s.

The Church was closed for a long time to the office of Catholic worship, and in 1997 it was granted on loan by the Curia to the Parthenope University, which celebrated the inauguration of the academic year 1998. Due to a great increase in the number of students, the University was searching new spaces, near to the used teaching rooms and to its main offices, standing within an ancient complex (Royal Foundry Fabric) dating back to the XVI century, outside of wall of the Castel Nuovo. Sin then, the church hosted teaching courses, graduation sessions and conferences involving academic and entrepreneurship, consolidating a strong university-industry alliance, mainly with the most important local industries (cruise shipping and maritime transport, jewellery, fashion and tourism). The site remained a consecrated church, acting as University Chapel.

In recent years, the Church was disused due to reasons of safety and has fast felled into a degraded status, but the years it was opened to students and the Neapolitan community made it well known, also gaining a sort of attachment of ex-students and local entrepreneurs. It may be this the reason why an unexpected proposal emerged from a part of the Neapolitan community: to reuse the church as a Naples football club museum celebrating Diego Armando Maradona, a beloved football player who recently passed away.

Thematic sites and storytelling about famous people are increasing their number worldwide, easily capturing tourist attention and gaining good ticket incomes. Nevertheless, this precious opportunity cannot be seized by the use of the Church of San Giorgio dei Genovesi, which needs important works for new public safe use. Although this reuse project may be not carried out in this church or in any other church at all, the Neapolitan fans of Maradona can be sure that they will find another place to celebrate one of the greatest football myths.

Source: By Vellecco I., Martone A., IRISS-CNR

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Comments on circularity, success factors, replicability

Cases show different uses of religious building, not only because they may be different in their structures (monasteries, churches) or in their state of conservation, but also because different communities may need different services and may feel different sensitivity to the aesthetic and/or authentic features.

Monasteries structures usually fit to hospitality function and the reuse as hotel has to question to what kind of clients target address the services, choosing appropriate marketing channels, adequate and sustainable price for value, also profiting from other contextual attractive. Nature-based hospitality may be more adequate for rural areas, while high class hospitality may occur in urban historic areas, but alternatives are also offered if the religious owner also manages the site as a social business, hosting students or supporting social tourism.

Churches offer a larger number of reuse opportunities; some of these are very original as the cases above described, others are foregone, as the use as concert hall, museum or as art/handicraft showroom.

Partnerships with important cultural players (as a University) can keep the mission of the building fitting to the original goals, enhancing human cultural and spiritual wellbeing.

A very important question is limitation to new use that religious owner can impose both in the property transfer contract and in the rent or free use agreement. Uses in open contrast with the original and sacred function of the building are usually not admitted. Although limitations bear only the users or the first buyer, they reduce the typologies of entrepreneurial ventures which can settle in the site, and social enterprises seem the most adequate initiatives to be hosted, mainly in temporary use agreement.

Nevertheless social enterprises, even able to ensure the economic self-sustainability of their service delivery system, rarely can arrange a large amount of economic resource for the large investment required to restore or renovate a church. So, when the latter is in a very bad state, further partners might be necessary in order to provide financial support, preferably as grants (crowdsourcing community, social responsible corporation, private foundation), in order to prevent the burden of a loan repayment on social enterprises venture, usually having a fragile economic balance.

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6 FORTS AND CASTLES

Forts were usually military buildings, aiming at defending the territory against enemies. They are robust and very large structures which have been surviving many centuries. They usually have high historical value as their storytelling is the narrative of wars changing people history and culture. This is the reason why they are usually state owned, although charging public finance with high restoring and maintenance costs.

Reuse projects are a great challenge as they need to keep historical and cultural meaning furthermore producing direct and/or indirect economic impacts.

In the following paragraphs five case studies show how forts can be turned into cultural tourism attractions, saving historic heritage buildings for next generations.

The cases describe:

1. Castle Ryn a renovated XIV century castle in Ryan, Poland
2. Alden Biesen, a castle established as the headquarters of the Teutonic Order, in Bilzen, Belgique
3. The Hotwalls Studios an enviable location with access to the waterfront and harbour views located in Old Portsmouth, UK;
4. Fort Vechten, alongside the 85 km long "New Dutch Waterline defense system", Bunnik, Netherlands
5. Fort Resort Beemster, that was part of the Amsterdam defense waterline
6. Fort Monostor, as part of the system of historic forts situated on opposite banks of the Danube River.
7. Suomenlinna, a former naval military fortress system (18th century) near to Helsinki, Finland.

Castle Ryn

Castle Ryn
The building is a renovated XIV century castle in Ryan (Poland), which was rebuilt during the XIX century. There was a prison for women there for a period of time. After II World War it served as a town hall, but it was very expensive in use and there was no money for much needed renovation, so the town sold it to a private owner in 2001. The private owner renovated the building and turned it into a hotel and a conference center that has been operating since 2006. The renovation was organized in a very short time, less than a year, which is remarkable for such an enormous project. Although it took some time to build the trust between the city and the owner of the building, the place is a good practice of Public and private cooperation, trying to work together with the aim of organizing many local events. A lot of new jobs have been created in an area that didn't have that many (despite being a tourist localization). Some traditional skills and crafts have been used and promoted (local food, historic clothes created by tailors on the site). The city of slow movement and the castle ownership are very active

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participant in that program, which also allowed for the city to rebuild and renovate the harbor and some buildings in the area. It can be considered a successful business model that is constantly evolving and investing in new environmentally friendly technologies as a way of saving money for the business.

Source: CLIC Database

Alden Biesen

Alden Biesen

The Landcommandery Alden Biesen was built by the German Order (Teutonic knights). The Grand Commandery is founded in 1220 by the German Order of the Teutonic Knights. The territory of this order consists of 12 bailiwicks or provinces. Alden Biesen is established as the headquarters of the bailiwick of Biesen, which consists of 12 subordinate commanderies.

Owned by the Grand Commander, Alden Biesen is the showpiece of the bailiwick. The castle estate flourished from the 16th till the 18th century, when the Grand Commandery developed into the luxurious residence we know today.

The French Revolution of 1789 abruptly ended this period. The Teutonic Order was disbanded and the castle complex is sold at auction. When Guillaume Claes purchased the estate, this is the start of two centuries of private ownership and decay.

Following the fire of 1971, Alden Biesen became the property of the Belgian government and today, the Grand Commandery is an international cultural center owned by the Flemish Community.

It is a meeting place where conferences and seminars take place. It has an educational program run by its staff and carried out also in cooperation with other institutions and associations about the history of the Teutonic order in general and Alden Biesen in particular.

From the social perspective, it works together with associations and institutions to organize a myriad of events and activities for tourists. From the environmental perspective it has cultural natural routes.

It also offers accommodation rooms and restaurants.

Source: CLIC Database

Hotwalls Studios

Hotwalls Studios

The building is part of the complex date back to the 15th century and it is recognized nationally as a listed building. The surrounding area of Old Portsmouth (UK) is where the city first began way back in the 12th century.

There are many theories as to why the area is known as the Hotwalls but its association with artists dates back to the 1960s/70s when artists began selling paintings at Point Battery. This has provided inspiration for the project. In 2014, Portsmouth City Council were successful in securing government funding, via the Coastal Communities Fund, to refurbish the buildings at Point Battery and to re-use them

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as working artist/maker studios (Hotwalls Studios project). The restoration of these unique and important heritage buildings was finished in 2016.

The Hotwalls Studio project has transformed the area into a creative quarter with artists' studios along with a commercial eatery. It has created permanent jobs, attracting visitors to the area and is supporting the surrounding business and local economy to provide a dedicated artistic and cultural center and secure a sustainable future for this Scheduled Ancient Monument.

Nowadays, the Hotwalls Studios creative quarter is a landmark development in the city of Portsmouth. The complex aims to provide an environment in which artists/makers can start and grow their business.

The Hotwalls Studios bring artists and designer-makers together in an exceptional heritage location. Located between the Square and Round Towers in Old Portsmouth, the Hotwalls Studios is in an enviable location with access to the waterfront and harbour views.

The Portsmouth's creative quarter, Hotwalls Studios and Canteen, is an area where the city's historic fortifications have been transformed into thirteen working studios and a waterfront dining space.

The Canteen is a warm and vibrant haven providing a daily offering of great homemade food sourced from local ingredients.

The development of the site addresses the lack of affordable studio space and acts as an incubator for local start up artists, supporting the development of creative businesses in the city. In 2018 many of the makers and artists at the Hotwalls Studio have had national and international exhibitions of their work building on the growing reputation of Portsmouth as a creative vibrant city. The number of events and engagement have grown annually also thanks to social media.

Source: CLIC Database

Fort Vechten

FORT VECHTEN

Fort Vechten is part of the 85 km long "New Dutch Waterline defense system" from the 19th century, which has been revitalized for various cultural, educational and leisure purposes.

The New Dutch Waterline is a defence line that spans 85 kilometres. The line starts at Muiden and ends at the Biesbosch and is 3 to 5 kilometres wide. It consists of 45 forts, 6 fortified towns, 2 castles, 85 machine gun casemates, over 700 concrete troop shelters and casemates as well as more than 100 military sluices and water engineering works. The New Dutch Waterline is the largest National Monument in the Netherlands.

Between 1815 and 1940, the New Dutch Waterline made it impossible for the enemy to reach the West of the Netherlands. Water was our ally. In times of war, the military could flood broad parts of the surrounding landscape. The knee-deep water prevented soldiers, vehicles and horses to reach their goal. At the same time, it was much too shallow for boats to sail across.

The New Dutch Waterline has been given a new, peaceful function. Nowadays it is a beautiful green and open area with exciting buildings and a variety of possibilities for recreation. There are many special activities for visitors in the forts, as well as in the fortified towns and castles.

Fort at Vechten is the most popular place to visit. Fort Vechten is another example of restoration of a fortification along the New Dutch Waterline, with the exception of having become a reference point in the area of Utrecht for the interpretation of this kind of architecture, as well as an important location.

In one of the buildings, partly underground, visitors can find the Waterline Museum. The Waterline Museum tells the story of water in its capacity as an ally in defending the Netherlands between 1588 and

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1940. The museum will bring the Waterline to life through personal stories, original elements, and replicas, working models and digital media. Outside there is the 50-metre-long model of the entire New Dutch Waterline that is a real eye-catcher; visitors can operator it themselves and observe how inundation and dry pumping works.

Visitors discover how the Dutch used water as a weapon to defend their country. It is a fantastic and very educational experience for young and old. You can even make a virtual skydive and parachute landing, using 3D virtual reality goggles. For children, this fort is a great playground offering exciting things to discover. The result is a museum whose focal point is not the didactical infrastructure but the place itself.

The site is owned by the state forestry department, which wanted to maintain the natural habitat refuge for the fauna and flora, but the local, provincial government wanted to leverage its educational potential and designate it for public space. In order to balance these two requirements, the landscape approach was chosen. The intervention cut the site transversely, therefore maintained the forest that's grown over the site on one side and peel it back, to recover the original fort infrastructure as it was in 1880 on the other side.

The building is significant as a practice of reuse because:

1. The adaptive reuse of the building was extensive, in different steps, but in respect to the authenticity and integrity of the complex, taking design solutions to give value to the place.
2. The steps for the regeneration of the place were sustainable because always shared with local population, observing the use made along the years.
3. It is now a social place with a multifunctional use.
4. Also retrofitting and sustainable energy solutions were applied in the renovation, keeping in mind that adaptation should refer both to user and object.

Source: CLIC Database

Fort Resort Beemster

Fort Resort Beemster

The Fort aan de Nekkerweg, (Fort Resort Beemster) is part of the Amsterdam defense waterline.

In 1886 the Fort was terminated as a secure fortification. The shellproof building was finished in 1912 for the purpose of defending the accesses. For a brief time, the building served as a prison, and in 1918 it was used as a military building. Of the fortress remain only the existing machine gun positions on top of the front wall and the fort watchman's house.

The Fort is part of a specific serial property: Stelling van Amsterdam - Amsterdam defense line. This UNESCO serial property has been inscribed on the World Heritage List since 1996. The line of defense of Amsterdam is a defensive system designed between 1881 and 1914 consisting of forty-five forts that form a 135 km long ring around the capital of the Netherlands. In addition to the fortifications, a flood system was planned to stop the hypothetical enemy.

In 2012 it was converted into a luxury wellness center with hotel and restaurants. It represents a successful modern lifestyle adaptive re-use, incorporating military, cultural heritage.

The new intervention is an underground extension, which does not interfere with the fort's visual appearance in the landscape. The extension houses spa and wellness, which includes an indoor and outdoor pool, whirlpools, saunas, and steam baths. The complex also has two restaurants, a conference room, and a hotel. It employs 120 people. The sustainable energetic systems have been incorporated in

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the design, about 28 km of floor heating have been installed, fed with the heat recovered from wastewater of saunas and showers. The entire resort has a zero-carbon footprint.

Source: CLIC Database

Fort Monostor

Fort Monostor

The system of historic forts is situated in and around the "twin" towns of Komárom, Hungary, and Komárno, Slovakia on opposite banks of the Danube River. Even taken individually the forts on both sides are genuine historic and cultural treasures, representing the highest level of military architecture of their time and having survived unaltered since the beginning of the 20th century. These forts, and their predecessors have been built and rebuilt over the centuries, but their current forms show the most skilled building techniques and styles from the second half of the 19th century (1852-1890).

Fort Monostor is a national monument, willing to be included, with the other fortifications in the system, including the Danube Opposite fortifications in Slovakia, in the WHlist.

Today the fort Monostor is going to be restored step by step as a multifunctional cultural site.

The fort is huge and its conservation really difficult for the high costs.

Nevertheless, Fort Monostor Ltd has been slowly undertaken conservation works imagining a multifunctional reuse of the site, ranging from Museum to venue place, to visitor attraction with bars, restaurants, etc.

It is of interest for both the conservation works and the use of design as cultural activator, and for the push to the restoration of other forts in the system, giving back to the cities of Komarom - Komarno a new cultural life, not purely based on the seasonal thermal tourism.

Source: CLIC Database

Suomenlinna

SUMENLINNA

Suomenlinna is a former naval military fortress system, built on a group of islands off Helsinki.

Construction began in the mid-18th century when Finland was still part of Sweden, but in the course of its history, the fortress has served in the defence of three realms: Sweden, Russia and Finland.

It was in service until 1972 and later turned to a civilian administration. The defense and naval units were subsequently converted for residential use. Since 1991 it is also UNESCO world heritage site

The site is also an important local retreat and recreational area for citizens of Helsinki as well as a tourist attraction since 1918. A wild seascape is coupled with a breathtaking green environment, turning into a blank one during winter season.

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It has 800 residents and 400-500 workplaces (winter/summer), depending on the season. Yearly Suomenlinna attracts above 1 000 000 visitors.

The fortress is state-owned and belongs to the city of Helsinki. The Governing Body of Suomenlinna consists of representatives of four ministries, the City of Helsinki, the National Board of Antiquities, Senate Properties, the residents of Suomenlinna. The management body cooperates with a wide range of actors and stakeholders, national and local, for its successful and sustainable development.

The monument is a successful model for long-term preservation and maintenance as well as an appropriate use for similar military facilities.

Residents and civil services provided for them represent the continuity, alongside, activities, which primarily serve the local community through tradition or culture linked to Suomenlinna and its long-term maintenance and conservation, are an essential year-round activity for adaptive reuse.

Likewise, various activities by private initiative boost the dynamic reuse, with increased demand for workspaces, temporary, recreative and touristic use.

The state uses about 11 000 000 EUR for maintenance and restoration, which enables the adaptive reuse, and gets back in rents about 7 000 000 EUR. Space is rented for various activities. With the revenue from rents, the Governing Body of Suomenlinna employs approximately 80 people.

Source: CLIC Database

Comments on circularity, success factors, replicability

Forts and Castels reuse have to manage a system of goals, saving cultural value and producing direct and indirect economic impacts. Most of them are turned on to tourism attraction, and the package of services can include accommodation, entertainment, and wellness services, as well as museum areas, live performance. Large spaces can be also rent for conferences, meeting and other social and cultural events. Most of them are listed buildings, others are going to be.

Castle Ryan is a good example of public and private cooperation, as private owner and the community have been trying to work together with the aim of organizing many local events, in a win-win strategy.

Alden Biesen is now a Flemish community center promoting the European dimension in culture and education.

Hotwalls studios are combining social goals with tourism attraction, reusing the site as a creative art district.

Fort Vechten and Fort Resort Beemster are included in the same cultural route and base their attractive on same natural resource: water. Fort Vechten seems to target families and children as visitors, offering didactic and virtual experiences; this business model - high revenue oriented- may produce better economic results but may also conduct toward a Disneytization of the cultural heritage resources. Fort Resort Beemster uses water as a cultural and natural resource, adding wellness services to cultural ones.

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Fort Monostor is a shared heritage resource across state borders, and its reuse, still ongoing, is experiencing a Special (Project) Company, which may (or may not) manage the running phase when the building will be full readapted.

Sumenlinna touristic success has been reached due to a Governance body very attentive to save the beautiful landscape and the precious natural environment from overexploitation.

All these cases show a certain awareness of circular economy fundaments, and social and economic impacts seem more to guide reuse projects, also taking into account cultural values, landscape quality protection and natural resources saving.

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7 INDUSTRIAL HERITAGE

Buildings for industrial production were usually located near provisional areas of raw material, near ports or near densely populated settlements where it was easy to hire cheap workers.

Then factories and their surrounding areas (with workers houses, schools, hospital, churches, municipal building, open spaces and other facilities) gained a visual identity according to building materials and technologies of the time.

The economic development of western economies, the decline of industrial production and the contemporary transition toward a service economic systems often left industrial quarters or cities largely disused, as a consequence of a decreasing population and of people migration to more vibrant and modern cities, searching new working opportunities.

Large disused building or whole city quarters have become a great resource and opportunity to reuse and regenerate, strengthening new social and economic place identities.

Industrial buildings (and mainly ex manufactures), although considered historical heritage, are usually not listed and provide wide room to be adapted, at affordable cost and without constraints to restore as it was.

Thus, architects can choose to mix original structures, materials and style with contemporary ones, also adding new modern spaces to old structures and profiting of advanced technologies in the project and operation phase, as well as new materials and solutions, that increasingly boost resource saving and green technologies.

The success of the reuse initiatives also depends on appropriate decisions regarding the core and ancillary services the building has to provide, according to urban planning, based on visionary forecasting of the emerging demand.

The following paragraphs briefly describe the reuse of two mining areas and four factories that are:

1. Le Grand Hornu, a neoclassical former mining complex in Boussu, Belgique, recently reused as a cultural centre for innovation and design
2. C Mine, a mining complex in Genk, Belgique, reused as a recreational and educative site, also boosting artistic entrepreneurship:
3. Simonsland, former textile industry in Boras (Sverige) reused as a multifunctional fashion center;
4. Inredia, and old shirt fabric whose new mission is linking furniture industry with interior design;
5. The Lichttoren (Light tower) a factory for Philips, a light bulb manufacturing company in Eindhoven which has been adapted as a living, working and leisure complex;
6. Brew House, a former brew fabric in Goteborg, recently reused as a “culture fabric”, as a venue for musical events and as business support for creative start-ups.

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Le Grand-Hornu

Grand Hornu

Grand-Hornu is one of the most beautiful sites of the Industrial Revolution, listed by UNESCO in 2012 on the World Heritage List. This neoclassical former mining complex was owned and envisioned by Henri De Gorge. It includes the workshops and offices of the colliery, the working city of some 450 exceptionally comfortable houses for the time, each with a private garden, and the residence of the administrators, called Castle De Gorge.

The workers' city is also equipped with a school, a hospital, public places, a library, a dance hall. Henri De Gorge calls on the Swiss architect Bruno Renard for its construction, to the principles of the communitarian ideal defended by certain theoreticians and utopians of the time. Becoming a symbol of the coal industry throughout the Belgian and French Hainaut, Grand-Hornu was also a fabulous technological laboratory. Henri De Gorge uses new extraction techniques and new steam engines.

As early as 1984, the provincial non-profit Grand-Hornu Images had set up its offices there and has continued its triple mission: heritage, tourism, and culture. It placed Grand-Hornu in a good position in the major international heritage associations and developed a cultural program on the site. The exhibitions presented by the association explored the field of relations between art and industry; design, industrial creation and applied arts hold a privileged place, very close to the spirit of the place and in resonance with the history of the Region. In 2002, the Museum of Contemporary Arts MAC's opens its doors and in 2014, Grand-Hornu Images became the CID - center of innovation and design at Grand-Hornu. It aims to promote contemporary design through a program of exhibitions and marketing activities highlighting innovation, experimental research, the emergence of new themes and horizons of research in the areas of design, architecture and applied arts.

Source: CLIC Database

C-Mine

C-Mine

In 1900, Genk was a quiet village with around 2,000 residents. At that time, Genk was known for its beautiful nature, popular among artists and painters who used Genk as a setting for their pieces.

In 1901, coal was discovered in Genk and three mining sites were developed: Zwartberg, Waterschei and Winterslag (C-mine today). As a result, the population grew exponentially: today Genk has about 65,000 inhabitants with 107 different ethnic backgrounds. The mines had some good years, but in 1966 the Zwartberg mine closed, followed by Winterslag (C-mine today) in 1986 and Waterschei in 1987.

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The city went looking for new opportunities for the enormous mine sites on its territory, including the Winterslag site. In 2000, the idea began to grow to accommodate a creative hub in the buildings of the old coal mine of Winterslag. In 2001, the city of Genk bought the site from LRM (Limburgse Reconversie Maatschappij) and the name "C-mine" was born in 2005.

As regards to content, the creative hub works on four cornerstones: education, creative economy, creative recreation and artistic creation and presentation.

With a university college specialized in various artistic graduation subjects, an incubator for young entrepreneurs, a cultural center, a design center, a cinema, and surprising experiences at a depth of six meters providing narratives of past (C-mine expedition)[1] the C-mine mission has succeeded.

It has created 330 jobs in 42 companies and organizations, including around 200 jobs in the creative sector in 33 creative companies.

Source: CLIC Database

Simonsland

Simonsland - Borås

Simonsland is a municipal historical building that was built in 1918. It was located in an urban city that used to be a manufacturing area and now developed into a modern city with its earmark from textile heritage.

The symbolic value of the building is the textile industry, and this has also influenced the symbolic of the city. Earlier its only function was being an industry which now in current use have turned into a fashion center with restaurants, conference, university, café, and museum.

Simonsland is private owned both before and after reuse. The building is funded by a private organization for-profit and as well as after the reuse. The center manages to find new uses and a new role in the society linked to the original functions, from a textile industry to a modern fashion center with multifunctional uses. The adaptive reuse was financial by PPP, Private Public Partnership.

Restauration of buildings is always (almost) a cooperation between private and public actors but it is unusual that a private owner takes such an important role in manage the transformation process.

Source: CLIC Database

[1] C-mine expedition starts in the Energy Building on the C-mine site. First, you descend to a depth of six metres, where you get to see a good deal of surprising installations. In the story tubes, life-like stories are combined with animations, holograms, stage elements and special effects.

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Inredia

Inredia - Tibro

Inredia is housed in an old shirt factory from 1944. It is a 1,500 square meter building on three levels. Inredia was inaugurated in autumn 2012. It is a house with many functions. Inredia is a visitor and meeting center for both visitors and inhabitants in Tibro. In the house there are visitor and meeting services, meeting rooms, offices, a restaurant with full rights and dynamic exhibitions, where Tibro's solid furniture and interior design history is presented and linked with todays and future decorating skills. Entire Inredia is characterized by Tibro's living cultural heritage. It is a project that deals with collaboration at local, regional, national, and international level, about linking designers and manufacturers together, strengthening existing producers, creating new interior experiences and an international platform for Swedish interior design.

After adaptive reuse, it's a meeting place where you can get acquainted with the local cultural heritage of the furniture craft. As a meeting place for design students, designers, furniture manufacturers, architects and others who work professionally with interior design, industry people can meet to acquire new knowledge, work with design and product development - and do business.

Source: CLIC Database

Lichttoren

Lichttoren

The Lichttoren (Light tower) is a former factory building in Eindhoven. It has a heptagonal, white tower, designed in the functionalist style. From 1911 the Light Tower was used as a factory for Philips, a light bulb manufacturing company in Eindhoven. Later, the headquarters of the Philips light division were established in the building. The building is a national monument.

In 2009 it has been converted into a living, working and leisure complex. Now it houses residential penthouses / lofts, offices, hotel, commercial spaces and a restaurant. Homes were called "lofts" - a new concept for the Netherlands at that time. This meant that users did not buy or rent a home, but rather one or more "spatial modules". The concrete skeleton of the Light Tower was the basis, this "divided" the building into modules of 7.20 long by 7.20 wide by 4.40 meters high.

The Lichttoren, once an incandescent light bulb factory enclosed company site, has been 'returned' to the people of Eindhoven. The Lichttoren is an exceptional building, certainly in an

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architecturally historical sense. Its functionality, efficiency, use of concrete, glass and metal make it a true example for the city. The long duration with changing clients indicates that financing was difficult. What made Trudo successful was their goal, not to maximum profits but to save this project in a way that would last for a long time. A good program was crucial; that is why they opted for very diverse homes (owner-occupied and rental homes, even social housing), in addition to offices, sports facilities, hotels and restaurants. The joint ambition and intensive cooperation of the client, developers and executive parties made the redevelopment of De Lichttoren a major achievement.

Source: CLIC Database

Brew house

Brew house

Brew house is a “culture factory” located in central Gothenburg and is an open and innovative business with a broader and attractive business climate, greater genre width in the field of culture and cross-border meetings. There ambition is that Western Sweden will become a creative, artistic and entrepreneurial hub in Sweden, and this will be one of the initiatives. It’s a meeting place for casual visitors, people in bypass, musicians, artists, creators and entrepreneurs, young and old. Here connections and relationships are created, boosting innovation partnerships and new entrepreneurial ventures.

Service management offers space for innovative event and concert venues (800 standing places or 300 sitting places), studio and office rental in raw factory environment, a 60-number company in creative industries, incubator activities, business support for startups in creative industries and award-winning talent development projects.

Brewhouse was started on the initiative of Business Region Göteborg and is run as a non-profit association. Its mission is to contribute to increased profitability and employment in cultural and creative industries. Financing comes from Business Region Gothenburg, the Västra Götaland region. Brewhouse is a non-profit organization and all surplus from commercial activities goes back to the talent and incubator activities in full. In this way, all guests are involved and contribute to the development of the cultural and creative industries.

Source: CLIC Database

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Comments on circularity, success factors, replicability

Reuse projects of ex industrial buildings often aim at creating innovation centers, fostering social networks, innovation partnerships and new entrepreneurial ventures.

This business model is supportive of the local development, offering services addressed to main local industries.

Simonsland and Inredia address the needs for design and innovation of local manufacture (furniture and textile). Brew House is a culture oriented hub; it couples the mission of talent incubator for cultural and creative industries with commercial high rewarding activities in hosting and organizing event and concerts; this is the typical hybrid model of non-profit organization as it is. The site owes the success to the ability in managing a wide network of service providers and customers.

The Lichttoren has more conventional goals of residential, working and leisure complex, although the concept of ”loft” as spatial module to rent or buy was very innovative at the time of its reuse project.

Le Grand Hornu and C Mine are larger complex in ex coal districts, small towns in need for economic regeneration and a new image. Both the cases are best practices of cultural and economic regeneration in heritage tourism (at C Mine largely based on the tourism experience paradigms), creative economy and art development, with indirect economic impacts in terms of new business ventures and jobs. It should be noted that both the regeneration projects were managed by a Special (Project) Company, able to fully integrate the regeneration phases and the network of partners in the project.

Further reflections can also be proposed on all the cases: alliances and strong partnership are fundamental drivers of the success both in the project concept and operation phase and in the delivery of the new services the building was re-functionalized to.

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8 NEGLETED (i.e. MINOR) HERITAGE

The lack of financial resources together with the constraints on interventions on the built cultural heritage are threatening the survival of the buildings with the risk of losing the benefits that they can potentially offer.

When the built heritage is no longer able to fulfil its initial functions because they are no longer useful or because it is too expensive to provide them, the risk of the structures being abandoned becomes high.

It is a matter of fact that always man converted buildings constructed to give them a new function.

Even in the past, buildings that were structurally in good condition were modified to make them suitable for different functions. Nevertheless, demand for new spaces and for new services may result into unexpected solutions, both in the choice of spaces to reuse and in the services they offer.

The next sections briefly illustrate the reuse of four sites that are:

1. Dynamo, an historic abandoned space underneath near the central train station in Bologna;
2. Cavallerizza reale, former used as stables at the Royal Palace in Turin;
3. Bourbon Pheasant (Fagianeria Borbonica) standing inside the Royal Park of Capodimonte in Naples;
4. Kilowatt, a cooperative master player of a reuse project of historic gardens and greenhouse in Bologna.

Dynamo - la Velostazione di Bologna

Dynamo - la Velostazione di Bologna

The group Salvaiciclisti-Bologna needed a place for secure bike parking, as well as a community hub to promote sustainable urban mobility.

In 2015 they won a public call promoted by the Municipality of Bologna to develop their project and they received an historic abandoned space underneath the Pincio staircase leading up to Bologna's Montagnola park and near the city's central train station.

The group cleaned and rehabilitated the space creating a bike park and a community space. Today, la Velostazione functions as a self-sustaining cooperative, with 12 members and several employees. It also serves as a hub for a vegetable co-op and courier service, and is hosts an event space, a bar and one outpost of LEILA, an objects library.

The Velostazione in Bologna is located near the central train station, and commuters from the suburbs park their bikes there for a fee and take the train home. Dynamo also rents bikes to students and tourists and provides bicycle tours of the city. More than 56,000 bikes have been parked in the space since it was founded, and Dynamo has rented another 9,000 bikes and repaired 15,000.

In 2018 alone, the space generated €350,000. With little financial investment from the city, the previously unused space is now a successful small business and a center for biking and community in the heart of Bologna.

Source: CLIC Database

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Cavallerizza Reale

Cavallerizza Reale

Cavallerizza Reale is an 18th century building located in central Torino, part of the emblematic group of buildings that comprise the UNESCO-listed Residences of the Royal House of Savoy.

Originally used as stables, the building was temporarily used as a theatre location until 2013. During that period, the ownership was transferred from the Central Government of Italy to the Municipality of Torino, who decided to put the building up for auction in 2010, receiving no adequate offer.

In May 2014, a group of local citizens decided to occupy the building with the purpose of re-opening the space to the public and stop the privatization process.

The activist group, Assemblea Cavallerizza 14.45, has been managing the building ever since by organizing a variety of cultural, artistic, and civic activities.

Currently, the citizen group has made a proposal to institutionalize the management role that they have informally been doing based on the Common Goods regulation of the city of Torino.

In case the proposal of the citizen group of signing an agreement with the Municipality (owner) regarding management of the site goes forward, it could also be a very relevant example of public-private partnership in the management of a UNESCO site that will serve the community needs.

Source: CLIC Database

Fagianeria Capodimonte

Fagianeria Capodimonte, Naples

The Bourbon Pheasant (Fagianeria Borbonica) stands inside the Royal Park of Capodimonte, which in turn extends around the to the Royal Palace of Charles III of Bourbon, now hosting one of the main Museum in Naples.

The Park extension is about 134 hectares: there are more than 400 different plant species - planted over two centuries - crossed by 36 km of paved avenues and 10 hectares of restored prairies that count over 150,000 tall trees. The architectural heritage consists of 16 historic buildings, dating back to the 18th - 19th centuries, once functional to the hunting and productive activities that took place there.

The Park requires monitoring 134 hectares whose visitors are around 3 million a year.

The Pheasant was also known as the House of Foreign Pheasants because it was intended for the hatching and shelter of Chinese, American and peacock pheasants. The hunt for this bird was one of Charles of Bourbon's favorite, and was widely practiced in the royal reserves.

The structure of the Pheasant was built practically from scratch - albeit on the original maps - also removing some trees that were placed elsewhere. The current building is the result of a restoration of the original construction of which only one of the two buildings for the keepers that flanked the long room for the pheasant cages survived.

In 2019, 5.6 million were awarded for the redevelopment and enhancement of the monumental complex of Capodimonte, Real Bosco and Museum. Two tender procedures have been launched as part of a broader project of sustainable development of the site, which aims at the recovery and innovation of

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production activities in addition to the restoration and refurbishment of buildings. One of the procedures had the aim at providing for the granting of the "Pheasant" for 20 years. The concessionaire will be able to enhance this building by carrying out sports-recreational activities (for physical and mental well-being, for the social inclusion of people with disabilities and the elderly, for rehabilitation, meditation) or activities related to catering and the sale of fresh and cooked food.

Given the COVID emergency, the ancient Royal Pheasant has been temporarily transformed into a Vaccination Center in collaboration with the ASL Napoli 1 center, with the slogan: “Vaccine among works of art to be infected only by beauty”.

The Fagianeria with its 1000 square meters has spaces to host a vaccination campaign mass and at the same time ensure the right distancing between citizens before and after vaccination.

Once the vaccine is inoculated, the vaccinated citizens will be able to carry out the observation period (fifteen minutes) in a room set up with reproductions of the main masterpieces in the Museum.

This stage aiming to dissolve the tension was also a way to bring the public of the park closer to that of the museum, an invitation to visit the Palace.

An agreement with the ASL Napoli 1 Centro provides a reduced admission ticket to the museum for those vaccinated at the Fagianeria; at the reopening of the museums, they will be able to visit the exhibition 'Naples, Naples: lava, porcelain and music” set up in the rooms of the royal apartment of the Museum and Real Bosco di Capodimonte.

Source: By Vellecco I., Martone A., IRISS-CNR

Kilowatt

Kilowatt, Bologna

Kilowatt is one of the partners of the project of Le Serre dei Giardini Margherita, a financing program of the Region Emilia Romagna to promote bottom-up regeneration processes and to foster the diversification of local production systems. The project started in 2015, with a total investment of more than 900.000,00 €.

Kilowatt has developed a multitude of services and initiatives, according to the vision of the overall project of *Le Serre dei Giardini Margherita*.

Kilowatt is a coworking space and an accelerator of ideas of high social, cultural, and environmental value, which brings together a network of enterprises, freelance professionals, start uppers, cultural operators and associations, with the aim of innovating the way of conceiving work and services by promoting the collaboration and sharing of tools and skills for the professional growth of all and for the improvement of the quality of life of everyone. Furthermore, it is a free business incubator and accelerator. It has realized an experimental educational service for infants and children (age 0-6), focused on outdoor education. Moreover, it hosts cultural festivals about arts, cinema, and music.

Inside Le Serre dei Giardini Margherita there is a kitchen garden open to citizens where Kilowatt cultivates vegetables and organizes workshops with local schools. Among the most important projects related to the garden there is "Semino – Alimentare Positivo", that wants to make research and discover typical products of the migrant communities that are in Italy. Since 2018 several local farms have subscribed to the project and cultivate these products.

Source: CLIC Database

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Comments on circularity, success factors, replicability

The case of Cavallerizza Reale stands out as a valuable example of civic commitment towards cultural heritage, as a community, in view of a privatization decision limiting the use of heritage, has taken bottom-up action to revitalize the building through innovative financing (crowdfunding).

Other cases above described can be taken as models to imitate, for different reasons.

Dynamo (The Velostazione) is a valuable example of circular economy in reusing a neglected space to promote sustainable mobility by bike sharing.

The Bourbon Pheasant emergency use is a lesson about the use value of minor heritage buildings, as their lower artistic importance enables more flexible and quick reuse solutions.

Kilowatt shows how gardens reuse can accelerate social innovation and creative community's start-ups, also recommending the choice of competent social enterprises to manage the running phase of the reuse project.

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9 RURAL HERITAGE

Rural buildings are often set in wider rural areas, and both may be object of reuse projects, with the aim of increase the value produced by this resources. Reusing local buildings and areas for recreation and leisure can activate economic dynamics owed to the attraction of tourism, generating new jobs and profits, as tourists demand for goods and services generates new jobs and profits.

Building reuse can also benefit social ties, as cultural initiatives can catalyze local inhabitants, providing space for young and old people, increasing young people place attachment and encouraging an active aging of the old ones.

Place attachment and social ties are a key resource in rural environment, moving people to cooperate, and acting bottom-up, bypassing bureaucracy and procedure to obtain financial resource. Some reuse initiatives described below have been carried out by local communities only relying on its own work. This cultural mindset can also avoid external speculative incoming actors which in the medium or long term can totally change local identity and landscape.

In the following paragraphs, five initiatives are described, highlighting some options and drivers of rural heritage reuse that are:

1. Lanckorona Ecomuseum, spread on four rural municipalities near Cracow;
2. ReDock, a medieval village in the region of Alti Plano, part of a big eco-restoration project;
3. Škratelj a ruined stable at Homestead;
4. the project “Adopt a terrace” in the Brenta River Valley, reusing a former system of intensive tobacco cultivation;
5. H-Farm, reusing an ex rural building surrounded by the agrarian land near Venice and Treviso.

Ecomuseum in Lanckorona

Ecomuseum in Lanckorona

Lanckorona Ecomuseum is a networked and open museum that covers the entire space of four rural municipalities near Cracow – Lanckorona, Kalwaria Zebrzydowska, Stryszów, Mucharz.

The main goal of the Ecomuseum is to create local spaces for tourism, recreation, leisure and, as a consequence of profits, cultural and social activation of municipalities’ residents.

It is a network of organizations and private actors, so there is no one owner (however the main umbrella organization is Gościniec 4 Żywiołów).

It is financed by the individual social and private actors which are participating in Lanckorona Ecomusuem.

It is a clear example of bottom-up, networked initiative. It includes different actors such as NGOs, local businesses (38 private and social actors).

Source: CLIC Database

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ReDock

ReDock La Junquera

The transformation of a medieval village into a green and sustainable community as part of a big eco-restoration project in the region of Alti Plano.

The ReDock village is self-sustaining and is a best practice with reference to energy, food, and waste. The aim is to disconnect the village from the grid completely and implement alternative energy sources for the entire set up. The options include solar panels, heat pumps, a hydrogen tank and a bio boiler as back-up.

All waste, rainwater, grey and black water will be part of a re-usage or recycle program that aims for a complete circularity of these energy systems.

Living a healthy and happy life is one of ReDock's core values. A swimming pool, sport facilities like yoga or fitness training and a silence room are part of the standard provisions of the village.

A 'farm to table' food program and communal work on the fields stimulates a healthy and happy way of living.

Source: CLIC Database

Škratelj Homestead

Škratelj Homestead, Slovenia

A ruin of a typical Karst village homestead enclosed with Borjač (stonewall enclosure of the property), called Škratelj Homestead, was carefully restored to house the Museum of Slovenian Film Actors in Divača. The complex consists of three buildings embracing the paved courtyard and grass open-air cinema. The main house and the most dominant building is restored to show the ethnological heritage and is reserved for the permanent exposition of the Slovene actress Ita Rita.

The ruined Stable has a new suspended structure, gently touching the original walls and creating an intermission between old and new. The newly restored stable holds a permanent exposition devoted to the development of Slovene cinematography. In the old barn is a small screening multipurpose hall.

The restoration and reconstruction is an example of adaptive re-use of dilapidated rural architecture with high cultural landscape value, intertwined with the story of a local but internationally known actress, and the needs of Slovenian Cinematheque, placed outside of the cultural centre of Ljubljana, acting as a micro catalyst for social and cultural activation of periphery.

Source: CLIC Database

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Adopt a terrace in the Brenta River Valley

Adopt a terrace in the Brenta River Valley

The Brenta River Valley is a narrow valley in the northwestern part of Veneto, in the Province of Vicenza. The territorial development of the valley is characterized by the diffusion of the tobacco cultivation, starting from the XVIII century under the Republic of Venice.

Tobacco-growing spread in the valley assuming the role of monoculture and brought the inhabitants to build extensive systems of agricultural terraces on the slopes (estimated total area 350 Ha, length 230 Km). Tobacco cultivation remained the main occupation of the inhabitants for two centuries, while the terraces grew steadily.

After the Second World War the production of tobacco collapsed, the number of farms dropped (by 90% in the Municipality of Valstagna), leading to a rapid abandonment of the terraced areas, leaving extensive stone structures on the slopes. In the last decades research projects were developed starting a new use of this heritage, linked to tourism and family farming.

The project “Adopt a terrace in the Brenta River Valley” established in 2010 an association (NGO) which recovers and preserves the abandoned terraced fields through a contract of “free loan” (“comodato d’uso gratuito”) signed with the landowners, either private proprietors or public bodies. The abandoned terraces are then entrusted to new users, who make request and become members of the association. Each member of the association ensures the conservation of the terraced fields through such works as lawn mowing and vegetation cutting. About 110 terraces were entrusted to the association, for a total area of 5 Ha, and the work of about 100 participants. The main use of the terraced fields is part-time farming, while other uses are recreational (for other NGOs) and training (for schools).

No major economic gain is produced by the project, but a mutual advantage for the landowners and the new users. The terraced areas are increasingly re-cultivated, with high positive environmental impact.

Source: CLIC Database

H-Farm

H-Farm

H-Farm was established in 2005 as an incubator of innovative SME in the field of ICT, developing into a more diversified complex, including education at all levels.

H-Farm is at present a HUB where Innovation, Entrepreneurship and Education are combined together, in a rural environment. It is one of the largest rural undivided properties in Italy.

H-Farm Campus is in Ca’Tron, near Venice and inside the Sile Natural Park. The built surface (18.000 mq.) is only 10% of the total, while the remaining is a park (15 hectaries). Its foreseen extension is 51 hectares.

The main premises of H-Farm were built in the agrarian land surrounding Venice and Treviso, around a typical rural building in need of conservation. The implemented restoration, envisaging an adaptive reuse, was in line with the conservation theory by accurate design, with attention to the aspects of cultural and environmental sustainability. The present extension of the complex, including newly designed and built offices, is fully integrated with the natural assets and has a zero carbon footprint.

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H-Farm is among the first in the world to adopt a model that brings together investments, business consultancy and digitally augmented educational programs all into one place and now is one of the most important innovation centers in Europe.

H-Farm was selected as a successful story responding to the main topics of CLIC, namely adaptive reuse, circular economy, landscape: 1 – Referring to Adaptive re-use, the project started by restoring a traditional rural building, previously used as a familiar farm, paying attention to the conservation theory through innovative design. 2 – Referring to circular economy, the entire project was imagined to have a totally different concept than in the past, regenerating a building and an agricultural area, with a strict relationship with the land, i.e. providing local food, sustainable mobility, building retrofitting, multifunctional use and 24h use of the spaces, etc. 3 – Referring to landscape, as in the priorities of the founder, the Farm was imagined to have a regenerating impact in the agricultural landscape, as well as being as less impacting as possible. The enlarging of the campus is made not to impact the landscape and to make the users part of the landscape itself.

Source: CLIC Database

Comments on circularity, success factors, replicability

Lanckorona Ecomuseum, Škratelj Homestead and the Brenta River Valley are exemplar initiatives based on local community cooperation and work. They clearly aim at improve people wellbeing while further economic goals can be reached without being stressing priorities. Small, personal and in-kind investments are sufficient resources to reach the projects goals.

ReDock is a more ambitious project, fruitfully applying the best eco-innovation technologies, in the view of creating a sustainable eco-friendly community. The village aims to be a blueprint for a sustainable future in the countryside. As circular economy strongly promotes natural resource saving and reuse, this project could be more in depth analyzed to learn more about problems and solutions in applying leading edge technological eco-innovation in a medieval village. Furthermore, an interesting field of research is the evaluation of middle-long term social impacts of the project on the local community, with a special attention to migrations and demographic trends.

H-Farm is a case of fast-growing, fast-changing area. It is a Hub for digital technologies where innovation, education and entrepreneurship are designing a new era. Although the project of reuse was imagined to have the less possible impact on the landscape, the extension of the complex and the large and knowledge intensive community which has settled in the area stimulate to ask new research question on the concept and tools to study circular economy.

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10 URBAN SITES

Heritage building reuse needs to consider the surrounding framework and, especially in urban context, heritage building reuse projects need to connect past and future identities that cities have experienced.

Sustainability, as a function of increasing quality of life of urban residents is a driving force of social and ecological innovation inspiring cities planning and urban development at national and international level.

So, the reuse project for a single building must set multiple contextual goals but standing alone rarely induces a leap forward for the entire City, toward ecological and social values.

On the other hand, although multiple reuse and conservation initiatives can result as sustainable at a micro-level, a change in the view is ongoing at urban level, linking sustainability goals of the area and their monitoring to massive use of ICTs.

Neverthless, an adaptive reuse project needs to take into account previous historical artifacts when they are of exceptional value, and repurpose ideas can be changed if communities acknowledge the importance to keep memory of the past.

The next sections briefly illustrate four metropolitan initiatives that are:

1. House of Vans, former underground tunnels, near London Waterloo station;
2. Pianofabriek, an old laboratory of piano makers, now complementing with the existing cultural offer of the city of Bruxelles;
3. Vienna Kultur-Token, an innovative application of digital token technology applied to two critical aspects of urban sustainable development, cultural life, and low-carbon mobility.
4. El Mercat del Born, an historical market in Barcelona, now hosting a cultural center, after a long "stop and go" rehabilitation process.

House of Vans

House of Vans

The former underground tunnels, near London Waterloo station, were readapted into a cultural and creative hub, housing skateboarding, art, film, and music. Using the layout of the tunnels, the site was outlined into four main functions each in its own tunnel; an art gallery with artist's labs to create and display art exhibitions; a film tunnel, with a cinema and screening room; a music venue with a capacity of 850 visitors; and a skate park.

Adapting the old underground tunnels incorporated The Vans shows visual identity as well as all the markings of the previous user, which are proudly displayed. Space is designed to evolve for itself by letting the visitors co-create street art.

Source: CLIC Database

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Pianofabriek

Pianofabriek

The current building was erected in 1898 on behalf of the German Gunther family, a family of piano builders who settled in Brussels in 1845.

The pianos Gunther had a big name throughout Europe but also beyond. This by applying several technical innovations. They were among the first to produce high-quality pianos with a metal frame, and later through the cross-fitting "cordes croisées" of the strings they obtained a specific sound that made them win various prizes.

After the second world war, the name Gunther and the factory were bought by the Vanderelst family, a family of piano tuners. Fortstraat was the factory, the stock site, and the point of sale of mainly used pianos. The company was among the largest piano builders and repairers in Europe.

In the peak years, more than 100 people worked, and more than 100 pianos were sold per month. During the eight years that pianos were made, more than 200 pianos were built each year. The case was abandoned in 1997.

Pianofabriek is complementary with the existing cultural offer and at the initiative of the city makers.

It is neighborhood oriented with a metropolitan and international perspective. It supports projects with innovative and creative character and gives opportunities to individuals and groups.

It is a community center, a city lab for super diversity, education and training employment center and arts workshop at the same time. Its strength is related to entrepreneurship, inclusive bottom-up initiatives, and eco-friendly way of work.

Source: CLIC Database

Vienna “Kultur-Token”(KT)

Vienna “Kultur-Token”

KT is an innovative application of digital token technology applied to two critical aspects of urban sustainable development, cultural life, and low-carbon mobility. It encourages people to use low-carbon mobility in exchange for tokens free access to local cultural events. It started in 2019 and its pilot of 1,000 users was launched on February 26th, 2020 and halted in mid-March 2020 due to the Corona virus crisis.

The KT app is governmentally owned and developed without a profit purpose. The KT’s primary goal is to reward citizens of the City of Vienna, Austria, for sustainable mobility behaviors so reducing greenhouse gas emissions associated with cars. The city’s goals include reducing vehicle-related air pollution to improve human health while expanding the cultural engagement and social cohesion

The aim of KT is to create “learning-by-doing”, which is a strategy to cultivate a new low-carbon, less car-focused mobility behavior. Actually, KT belongs to an emerging class of apps that incentivize human behaviors to accelerate transition to an economy that consumes less materials and energy (Sustainability Behavioral Change Apps *SBCAs*). They are designed to focus on an individual person’s behavior (micro level) and the micro-level data provided to the user informs real-time choices as well as future choices. The SBCAs goals are aligned with the macro-level goal of sustainability and apply behavioral modification

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methods to elicit results from their users, primarily through information provision; tokens and rewards; and gamification. These methods are practical applications of theories of behavioral economics, psychology, and marketing. For example, reward programs are a common feature of retail customer loyalty programs. Theories of behavioral economics applied to individual behavioral change for sustainability topics, have shown that people can be 'nudged' to comply with societal sustainability goals by providing data on activities such as water or energy use in comparison to neighbors.

The KT app users create a personal account on their phones to track their own mobility behaviors and be rewarded for low-carbon choices. Four different transport modes are measured: car; bicycle/scooter; walking; and public transport (buses, trams, and trains). When a user travels by bicycle or scooter, walking or public transport, (s)he is rewarded with "Kultur-Token" (KT). One full Kultur-Token, equivalent to 20kg CO2, can be exchanged in the app's marketplace for one voucher for a ticket to various cultural events and venues in Vienna. Users choose from tickets available in the marketplace on a one-token-equals-one-ticket basis.

The individual mobility behavior data are provided with sensors in the users' smartphones that gather information on GPS locations, speed of travel, acceleration, etc. The data collected allows the app to calculate: the route traveled; the time it took to travel a certain distance; and the distinctive start-stop patterns that define the most likely transport mode. KT is able to achieve an average accuracy of 90% for the detection of travel mode and distance. As users travel by any mode other than by car, the algorithms calculate the CO2 emission equivalent of an average car trip in comparison to the low-carbon mode and award this amount as avoided CO2.

KT recognizes citizens transitioning to sustainable transport modes and at the same time provides additional access to cultural experiences for citizens. An increase in sustainable mobility is encouraged by providing individuals with an incentive to avoid travel by car and by visualization of their personal travel-related CO2 profile. Further, the app provides citizens with a new way of exploring and gaining access to culture. As these offers are a bonus for the KT, they do not require entrance fees, thereby lowering financial barriers to access cultural institutions for the Viennese.

Given that the KT is a government strategy to implement its policies more efficiently, the multi-dimensional goals of the KT align with local policy initiatives: 1) the "STEP 2025 Urban Mobility Plan"; 2) "#Mission 2030 Austrian Climate and Energy Strategy"; and 3) under the banner "Culture for All with All". Vienna promotes cultural institutions and cultural experience as integral to the Viennese lifestyle and emphasizes social inclusion, access to culture, and developing citizens' cultural competence. The three policy initiatives, mobility, climate, and culture are all included in the overarching "Smart City Wien Strategy", outlined by Vienna's Magistrate for the period 2019-2050, based on the Sustainable Development Goals SDGs of the UN Agenda 2030.

The KT represents a step towards multiple and often interdependent goals of the Smart City Strategy. For example, the KT is in line with the objectives of the Smart City Strategy of fostering integration and social cohesion through affordable cultural offers. An investigation on Viennese cultural involvement, commissioned by the Office of the Executive City Councilor for Cultural Affairs and Science **(OCAS)** in 2015, found a high participation and satisfaction with the cultural offers among citizens. However, 40% of Viennese were identified as "culturally inactive", visiting only cinemas or concerts once or twice a year.

The KT responds directly to these needs by facilitating access to and enjoyment of artistic and cultural institutions.

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The KT aims to be a platform for cultural institutions. Within the project, cultural objectives and plans are co-developed by OCAS. Currently four cultural institutions offer tickets for KTs. These are traditional cultural venues located in the city center. The list of participating institutions is likely to expand over time.

The project is also an example of “digital humanism” that, consequently, contributes towards another social goal that is diffusing new technologies and digitalization.

Source: Foster, G. J., Lamura, M. J., Hackel, J., (2020), “Kultur-Token” Sustainable Business Model: Visualizing, Tokenizing, and Rewarding Mobility Behavior in Vienna, Austria. Working Paper Series, WU Vienna

El Mercat del Born

El Mercat del Born

El Born Center de Cultura i Memoria, also known as Born CCM, once was a fruit and vegetable market, built in 1876 as a first iron building in Barcelona. Now it is one of the best cultural centers in Barcelona where you can see the archaeological ruins of the medieval city.

It was designed by Josep Fontserè i Mestre and built between 1874 and 1876, as a market with a rectangular plan, with 2 large naves with domes at the intersections and 4 smaller naves. The structure is supported by cast iron columns and covered with smooth vitrified tiles.

In the basement of the market, in 2002 the remains of the medieval and modern city were discovered, an exceptional archaeological site for its state of conservation and size. You can see the remains of 42 streets and 60 houses that were part of the La Ribera district, demolished by King Philip V to build the military fortress of Ciutadella after the war of 1714.

The market operated until 1971. Afterwards, the city of Barcelona was searching for new ideas to reuse the historic building. In 1977 the restoration works began under the supervision of the architect Pere Espinosa and the surveyor Carlos Magrazo. With the cleaning and replacement of dilapidated structural and decorative elements and removal of all the twentieth century superfetations, repainting of the facade and arrangement of ocher and red tiles on the roof.

The market was therefore restored in 1977-1981. The archaeological excavations started in the 1990s, and in 2002 the idea of the new library arose. In the meanwhile, archaeological excavations found precious medieval archaeological remains of the city and its preservation in situ required to change the plans for the new library and instead of converting it to a cultural centre with medieval ruins as its centrepiece.

Regarding the adaptive reuse of the building, after the closure of the market, the neighborhood associations and institutions began to take action to preserve the structure, also through the organization of recreational and cultural events in the building.

At the end of the restoration, the building remained unused and lacking of a specific function, it hosted various exhibitions and cultural activities carried out inside it, until around the 90s, the French company Fnac and the Universitat Pompeu Fabra respectively proposed to convert the market into a bookshop or a branch of the Institute.

No solution was implemented and in 1998 a public competition was held to transform the former market into a library. When the works began, the remains of the ancient houses of the La Ribera district emerged from the subsoil, destroyed by the attack on the city by Philip V of Spain in 1714.

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Then the neighborhood associations and institutions took action to preserve the finds and integrate them in the library project. In October 2002 the project was abandoned, given the incompatibility between the library function and the archaeological remains.

The enormous historical and documentary value convinced the municipality to preserve it and make the Born a cultural center of the city, and at the end of the works, which began in 2006, in September 2013 it was inaugurated.

Then on 11 September 2013 the former local market reopened with a different function as a Barcelona exhibition center, focusing on the promotion of the eighteenth-century archaeological finds that have re-emerged, on the dissemination of events related to the siege of the city of Barcelona in 1714 and on the spread of historical development of the market building that houses it. The whole covers an area of 8,000 m² and is redistributed on two levels. In the first, underground, it is possible to visit the entire deposit, while in the second, the permanent exhibition "Barcelona 1700. De les pedres a les persones" is kept, then there are spaces occupied by temporary exhibitions, the bar and the library.

This refurbishment and museumization project, signed by the architects Enric Sòria and Rafael de Càceres, won the 2013 "Ciudad de Barcelona Prize", in the "Arquitectura i Urbanisme" category.

The cultural centre is created for the city to encourage and promote the remembrance of local and national historical events; hosting events to foster information of urban and local history, providing continuous training; and offering a range of cultural and artistic events that promote national programmes and international projects relating to memory and intangible heritage.

Source: CLIC Database

Comments on circularity, success factors, replicability

The House of Vans has fruitful reused a neglected space which can be precious in high dense urban context where any square meter of soil can reach skyrocketing prices. Keeping the old visual identity, the project has reinforced the uniqueness of the new space and functions.

Pianofabrik is the reuse project of an ex industrial building aiming at creating a culture oriented hub; it plays the role of multifunctional hub for the intercultural and international community of Bruxelles, fostering social networks, innovation partnerships and new entrepreneurial ventures. A leading edge cultural offer couples with support to arts, entrepreneurship and bottom-up initiatives. The site owes the success to the ability in managing a wide network of service providers and customers, also promoting diversity and inclusiveness as social values.

The Kultur-Token (KT) is not an adaptive reuse of cultural heritage building renovation or property management initiative. It is one of the City of Vienna's initiatives to enhance city life whilst addressing the global challenge of climate change with local greenhouse gas / air pollution reductions. By targeting culture and cultural heritage as rewards, the Kultur-Token business model recognizes and celebrates culture and cultural heritage's role as a multi-faceted and valued "commodity" in the future sustainable city.

El Mercat del Born is a case of a very long "stop and go" rehabilitation process, offering important elements to comment. Different ages of the city history have found connection in the site due to the last reuse project, which is able to show different historical layers from XII century to the siege of the city of Barcelona in 1714, to contemporary age. Furthermore, the meaning of the site strictly connects

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city history and past events to current civic proud, and this connection is supported to last by the current reuse functions of the site as a cultural and memorial centre. The case also offers a fruitful field for social research to study the link of community action in cultural heritage reuse to community awareness and knowledge of its history.

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11 CONCLUSIONS

Heritage buildings and sites can be reused as hotels, as tourism attractions, as residential or commercial structures, and as multifunctional hubs for people networking and entertainment.

Case studies analysis shows the importance of the building typology in enabling new reuse functions, supporting the study of Mısırlısoy, and Günçe (2016) and highlighting some typical (and replicable) patterns.

Monasteries can be easily reused as hospitality structures; churches structures offer a larger set of choices in the activities they can host, albeit limits can be imposed to initiatives in open contrast with the original sense of the place.

Forts and castles are often reused as tourism attractions, although they offer a larger mix of services; virtual experience and historic narratives can couple with different leisure and entertainment services, fostering more frequent access both by residents and nearby inhabitants. The goal of economic self-sustainability can be easily reached when a flexible renting of spaces for single events increases revenues.

Industrial heritage is often reused as multifunctional hubs. This general trend is usually conceived according to the history and the evolving needs of the local community, delivering business services complementing historic industrial specialization of the local “milieu”, otherwise fostering new business start-up in cultural and creative industries, or technological ones. An efficient planning of use and renting of the space is the mean to reach (and overcome) economic self-sustainability, hosting high revenue initiatives alternated with low profit or social ones.

Projects involving clusters of buildings need an area based strategy: residential use needs to be supported by services and infrastructures, while office uses need to take into account different facilities and the evolving occupational trends.

Uses supporting tourism development need to consider modern success factors of tourism destinations (branding, themes, experience, on line booking) as well as a life-cycle approach to the destination itself. These uses also require an adequate supply of hospitality services and infrastructure and a high quality context (architectural and relating to landscape).

Therefore, although the building typology plays a very important role enabling, or sometimes hindering, adaptive reuse and new functions, local context matters too as also suggested by Mısırlısoy, and Günçe (2016).

Rural heritage can give local communities space to create and manage new ventures, also fostering social cohesion through entertainment, hobbies, cultural initiatives as cinema and museums. Heritage building reuse in rural areas near large towns or metropoles enhances rural areas attraction, also equipping them with residential or leisure services, aiming at people living, enjoying and wellbeing in a natural and green environment. Some initiatives can also bring about a rapid turnaround in development, as new players can provide ideas and financial resources to change local milieu, provided they find some consensus and support at the local community level.

Some reuse cases within urban contexts are generating economic and social value by neglected buildings or spaces, in high dense populated and built context; a strong demand for space and soil makes more spaces and building attractive to renovate and reuse, also allowing limited economic and financial risks, as foreseen demand for new uses is high.

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Renovation and reuse projects also support urban identity and urban strategy, targeting one or more goals as tourism development, social networks and innovation partnership, social inclusion, leisure and entertainment, quality of life, sometimes addressing the global challenge of climate change with local greenhouse gas / air pollution reductions.

Although structural rehabilitation and new services are the backbone of the reuse projects, they do not fully describe the business models. The core of projects is the value proposition, a multiple-level player field ranking and balancing economic, social, cultural, environmental goals. Local communities and different stakeholders co-create a valuable project, not only taking into account present needs but also sharing a long-term vision of local development. This phase is the very critical black box of the reuse project, as legitimacy, leadership, competencies, and financial resources may fall into a never-ending negotiation, missing the main goal of governing the commons. This result is achieved only if local stakeholders are able to find an effective self-organization.

High skilled facilitators of local decision could speed the process, avoiding unworkable or unfeasible initiatives, and raising awareness of constraints and opportunities.

Therefore, while enabling local communities to build strongly sustainable business models, constraints and incentives should also be re-defined as new priorities emerge for a common future of people and the planet.

The cases herein described do not allow to validate circular business models as detailed by theory and research (Bocken et al., 2018 Upward and Jones, 2016; Joice and Paquin, 2016). Nevertheless, most of the cases fit circular economy as a general perspective (see Pieroni et al., 2019; Urbinati et al. 2017) of resource efficiency, shared use and economic growth.

The model of Urbinati et al. seems the best responsive to frame the results of case studies, highlighting upstream, downstream and fully circular models. Upstream circular models mainly involve innovation in building technologies (i.e. energy saving or green energy). Indeed, some cases of reuse aim at eco-innovation, and fit the concept of circular economy as efficient use of natural resources. Downstream circular models mainly refer to social or multifunctional uses, while fully circular models involve both of the perspectives including, of course, efficient economic management.

It is unquestionable that circular economy principles, mainly in the sense of eco-innovation and natural resources saving, must scale up both at urban planning and at citizens' level. This leapfrog requires updated knowledge and the use of leading edge technologies, including ICT-based solutions for smart mobility and smart environment supported by municipally based partnerships.

Economic sustainability is now receiving much more attention than in the past, challenging other sustainability goals and paying more attention to management abilities both in project design and operation phases. Therefore, multifunctional reuse is common to many projects, as core services or attractions and ancillary services or facilities enable longer staying of users as well as customer satisfaction and repeated visits.

Nevertheless, cultural heritage is not a mere space to use and profit. Frequently projects lay on a wider concept of circularity, based on the sustainable development paradigm and targeting social, economic, cultural goals, in the view of use cultural heritage for people and next generations, not too burdening public finance for renovation and maintenance.

Cultural heritage produces many intangible and long-term benefits: the education of young people, the strengthening of the identity processes, the inclusion of disadvantaged social groups or minorities and immigrants, the development of tolerance and human dignity based on the knowledge

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and protection of cultural diversity. It also enables network and learning economies. Therefore, cultural heritage is the main input and enabling infrastructure of culture.

Culture nourishes the human personality and it is the basis of educational processes. It enriches the endowment - concepts, images, information, emotions - available to individual and community, thus facilitating reasoning, logic and semantic associations, analogies and contamination.

Therefore, culture provides people with more opportunities and a general ability to find solutions to problems as well as a flexible attitude in dealing with the “new”. That is the reason why culture is assuming an increasingly strategic role as a synergistic agent that provides other sectors of the production system with contents, tools, creative practices, increasing value added.

These patterns induce many local systems to invest more heavily in allowing a deeper integration between culture and the various aspects of social everyday life. By this way, cultural heritage adaptive reuse turns a stock of historical resources into an engine able to mobilize the best energies of the community, and to leverage human and social capital.

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Acronyms

[BM]	[Business Model]
[CBM]	[Circular Business Model]
[SDGs]	[Sustainable Development Goals]

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