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Urban Heritage Dynamics in 'Heritage-led Regeneration': Towards a Sustainable Lifestyles Approach

This paper aims to introduce a novel approach to sustainable heritage-led urban regeneration. More specifically, the paper proposes a new heritage-led urban regeneration paradigm that has communities and sustainable lifestyles at its core. The paper concludes with this approach after analysing current paradigms of heritage-led urban regeneration through system dynamics. We have chosen to analyse though system dynamics a longitudinal study of the Townscape Heritage Initiative (THI), a heritage-led regeneration scheme funded by the Heritage Lottery Fund. Our system dynamic analysis unveils the absence of environmental sustainability concerns in current heritage-led regeneration examples as well as the critical role of the existence of concerted, strategic and participatory vision of a heritage-led urban regeneration programme. The critical, systemic and dynamic analysis of the THI longitudinal study provides the basis for developing a new approach towards sustainable heritage-led regeneration which has communities and sustainable lifestyles at its core. Although we acknowledge that extensive applied and theoretical research is needed to validate or enhance the proposed approach, we do cite sporadic examples that provide some first indications of the effectiveness of the approach.

Keywords: sustainable heritage-led urban regeneration; sustainable lifestyles; Townscape Heritage Initiative, system dynamics, systems thinking

Introduction

The Historic Urban Landscape (HUL) Recommendation (UNESCO 2011) generates considerations with regards to the role of urban heritage in sustainable development. The Recommendation does so by stating that 'the principle of sustainable development provides for the preservation of existing resources, the active protection of urban heritage and its sustainable management is a condition sine qua non of development' (UNESCO 2011). The Recommendation further argues that urban heritage 'fosters economic development and social cohesion in a changing global environment'

(UNESCO 2011). In view of this, ‘conservation has become a strategy to achieve a balance between urban growth and quality of life on a sustainable basis’ (UNESCO 2011). The Recommendation calls for ‘better integration of urban heritage conservation strategies within the larger goals of overall sustainable development, in order to support public and private actions aimed at preserving and enhancing the quality of the human environment’ (UNESCO 2011). Urban heritage, according to the Recommendation, can mobilize new functions, ‘such as services and tourism, as important economic initiatives that can contribute to the well-being of the communities and to the conservation of historic urban areas and their cultural heritage while ensuring economic and social diversity and the residential function’ (UNESCO 2011).

In light of the above statements, it becomes apparent that the Recommendation advocates for urban heritage conservation as it is fundamentally a sustainable practice in itself. Concurrently, the Recommendation accentuates the role of heritage in socio-economic development, especially via tourism. However, despite these advancements and the broadening of heritage to encompass tangible and intangible, cultural and natural heritage dimensions, the essence of the Recommendation is conservation-driven. Indeed, a critically discursive analysis of the Recommendation reveals that the majority of references to sustainable development are linked with the built heritage conservation or the use of urban heritage for tourism and economic growth (Fouseki, 2018).

Interestingly, the interconnection of built heritage conservation with economic growth has been underpinning the majority of the so-called ‘heritage-led’ urban regeneration paradigms. The term ‘heritage-led regeneration’ connotes initiatives where the driver for the social, economic and cultural revival of a declined urban or rural area is the heritage that makes a local place distinct (e.g. Reeve and Shipley 2014a and 2014b). The significant majority of ‘heritage-led’ urban regeneration examples are

primarily directed by the conservation and adaptive reuse of listed and abandoned buildings with the ultimate goal to boost the local economy of declined urban areas. However, as this paper will argue, a conservation driven approach to heritage-led urban regeneration fails to contribute to sustainable and resilient development over time unless such an approach is imbued by participatory planning and environmental concerns related to sustainable living of communities. The paper unfolds this argument by critically analysing through systems thinking the findings of a longitudinal study of the Townscape Heritage Initiative (THI) scheme carried out by the Oxford Brookes University (Reeve & Shipley, 2012). The THI is an initiative funded by the Heritage Lottery Fund aimed at reviving socially and economically declined areas through the conservation of built heritage. Through systems thinking, we identify the factors that enabled or prohibited resilience of places revived via the scheme towards the economic crisis hitting the UK in 2008. We selected this longitudinal study because, despite its methodological limitations, it still constitutes the only existing comprehensive longitudinal study of heritage-led regeneration paradigms.

Our analytical approach is based on the premise that an urban heritage environments are complex and dynamic systems. They are complex systems comprised of multiple dimensions (such as social, cultural, political, economic, and environmental) that are in dynamic interactions with each other. Hence, systemic and complex methods are required in order to better comprehend the long-term impact of sustainable development interventions in urban environments. On the basis of this proposition, we have developed a conceptual framework for ‘urban heritage dynamics’ which we use as the initial ground for applying a systems thinking reading of the findings of the THI longitudinal study. The system thinking approach will unveil the dynamic and complex interactions of factors that are mobilized during a heritage-led urban regeneration

programme, and which eventually contribute to the sustainable development of a place. To our knowledge, this is the first academic attempt to propose an urban heritage dynamics framework and apply system dynamics in the context of heritage-led urban regeneration. Consequently, our paper is a first attempt for exploring a complex matter that merits further research in the future. The key finding of the systemic analysis of the THI findings is that community participation and concerted, strategic coordination are two of the most critical factors for achieving social and economic resilience. We also pin point the absolute lack of environmental concerns in heritage-led urban regeneration programmes. Based on these critical observations, we suggest a new paradigm of heritage-led regeneration which has strategic partnerships, community participation and sustainable lifestyles at its heart (Figure 8). Sustainable ways of living, as we will argue, could and should be inspired by local heritage and embedded into the everyday life. Ultimately, we hope that the paper will inform revisions of the HUL Recommendation which, as we argue, could be strengthened if it put emphasis on sustainable lifestyles and the everyday practices inspired by heritage.

Current paradigms of heritage-led urban transformations

During the last decade, a shift has been noticed in the UK regarding the focus of heritage-led regeneration. Initially, the renovation and restoration of historic buildings was purely approached from a conservation point of view when conservation-led regeneration began to gain popularity from the 1980s with the first UK scheme launched in 1994 (Maeer and Campbell 2009, 187). Over the years this type of work has been linked with local economic and social development (Reeve & Shipley, 2014b: 123; see also, Strange & Whitney, 2003; Pendlebury & Strange, 2011). Derelict and obsolete buildings are increasingly conserved and adaptively reused with the ultimate goal to

boost the local economy, local pride and social cohesion (e.g. Strange & Whitney, 2003; Pendlebury & Strange, 2011; Reeve & Shipley, 2014a; 2014b). Thus, the objectives of 'heritage-led regeneration' efforts are gradually aligning with the objectives of urban regeneration where the latter constitutes a 'comprehensive and integrated vision and action which seeks to resolve urban problems and bring about a lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to change or offers opportunities for improvement' (Roberts 2000, 18). The alignment of heritage conservation with social and economic development echoes similar efforts in the United States (e.g. Lloyd *et al.,* 2003), Canada (Shipley & Snyder, 2013) and Australia (Reeve & Shipley, 2014b, 124).

It is also not uncommon to observe urban development programmes, which intentionally incorporate heritage buildings into a wider development scheme. The results are often positive from a conservation point of view because funding sources are generated to conserve and preserve heritage. However, there are often negative, unintended social consequences. Examples include the risk of gentrification that often leads to 'pushing out' from the area local communities (e.g. Skoll & Korstanje 2014) as well as the what we could call 'elitisation' of heritage, a process by which heritage is being used to raise property values and create a distinct, wealthy community while erasing 'poorer' communities. There are very few cases where the community itself has orchestrated the 'regeneration' or 'transformation' of an urban environment and has identified the type of heritage values of the area over time, often in partnership with local stakeholders (e.g. Guttormsen & Fageraas, 2011). Community-led efforts to transform an area via heritage often emerge from local resistance towards development schemes (such as in the case of Woolwich Town Centre, UK). In rare cases, heritage agencies attempt to identify the social needs and then, accordingly, follow an adaptive

reuse model that corresponds to those needs (e.g. Churches Conservation Trust). Interestingly, in development-led, conservation-led and community-led paradigms of heritage-driven regeneration, environmental concerns do not hold a prominent position in the process as the focus is largely being placed on social and economic impacts emerging from heritage.

Despite the intensity of heritage-led regeneration programmes (e.g. Townscape Heritage Initiative, Heritage Action Zone to name just a few), there is extremely limited empirical evidence on the degree to which heritage in this type of schemes contributes to the social and economic development of a city (Reeve and Shipley 2014).There is though some evidence showing that 'heritage-led regeneration' initiatives driven by the conservation of deteriorated and neglected buildings in a constrained geographical area, usually lead to 'pockets of unequal geographies, with wealth concentrated in the city centre' (Labadi, 2016: 143). It is, thus, of no surprise why this type of approach creates non-resilient cities that are susceptible to dramatic and global economic and social challenges (Reeve & Shipley 2014b). Jones and Mean (2010:11-12) have, for instance, commented that the 'shock of the credit crunch brutally exposed the vulnerability of the gains of the urban renaissance to the complex and densely interconnected global financial networks in which the fates of our towns are embedded'. Similarly, Reeve and Shipley (2014b, 133) in their THI longitudinal study highlight that post 2008 (the year of the economic recession in the UK), the research clearly shows that in the majority of cases the recession has had a major impact with the exception of areas, such as Creswell, where housing is the main component of the conservation-based regeneration effects. The above findings are unquestionably of significant interest. However, it is worth pointing out that the aforementioned or studies evaluating the impact of heritage on sustainable development adopt one-dimensional methodological approaches by using

at social and economic indicators separately rather than in interconnection. However, since an urban system (and in our case an urban heritage system) is complex and dynamic, a complex method is needed to capture the evolution of heritage-led regeneration programmes over time. It is the aim of this paper to endeavour a systemic, multi-dimensional analysis by employing a systems thinking approach. The paper will do so by first briefly presenting the conceptual foundation of a heritage city as an urban heritage dynamic system that is subject to constant change.

Urban heritage dynamics: heritage cities as dynamic systems

This section presents the underpinning conceptual framework of the paper. As aforementioned, we have developed an urban heritage dynamics theory which we intend to use as the foundation for unpacking the dynamic interrelationships between 'heritage-led' regeneration processes and sustainable development. The point of departure for developing our urban heritage dynamics theory derives from Forrester's classical theory on urban dynamics (1969). Although we use his theory as a starting point, we further revise it and advance it by integrating a heritage approach to 'growth', which advocates for the adaptive and creative reuse of urban heritage rather than the demolition of old buildings as often implied in the traditional urban dynamics approach.

Forrester (1969) defines urban areas as systems of changing interactions between industries, job availability, housing and population. He contends that growth in urban areas is initially marked by new housing construction resulting in new industries, job availability and population growth. Gradually, urban areas become subject to stagnation and decline as a result of ageing housing, declining industries and depopulation or as a result of overpopulation in an ageing-built environment which

reduces jobs and housing availability. Demolition to create empty land is often implied as a solution. Limited, thus, land availability is an explicit resource constraint in urban dynamics. For Forrester and his followers, ‘too much open land holds risks for entrepreneurs’ (Alfeld, 1995: 201). The pace of growth accelerates while the land is being occupied by new constructions with increasing prices. Progressively, the rate of construction begins to slow due to lack of land and high land prices.

Another assumption in the classical urban dynamics theory is that ‘as the housing stock ages, it is successively occupied by residents of lower socio-economic status’ (ibid). Older housing tends to become more crowded, with more people occupying each structure. Parallel to this, industrial and commercial buildings also age. As they age, they command lower rents and thus they are occupied by less profitable enterprises. In view of the above, urban aging creates two opposing forces (Alfeld, 1995). On the one hand, residences are occupied with more people of lower income while, on the other hand, jobs in commercial buildings are reduced. Urban dynamists suggest that one solution to this imbalance is to ‘demolish the excess housing to make way for new enterprise construction’ (ibid). It is fair to mention that demolition is not the only option implied by this group of urban dynamists. Alfeld (1995) points out the case of Boston where the aging house could simply be upgraded and rehabilitated.

In sum, traditional urban dynamics theories focus on the materiality of the built fabric as enabler or obstacle for growth and less on the intangible, cultural values with which the built fabric is imbued. In addition, traditional urban dynamics implicitly adopt a top-down approach to development that is driven by city planners while community voices are not integrated into urban plans. Furthermore, environmental concerns are not taken into account in the equation of development and growth. It is fair to mention though that recent studies on urban dynamics stress the need for bottom-up

perspectives in urban planning adjusting urban dynamics modelling accordingly where the role of 'agents' (and not just the system) is critical (e.g. Batty 2005; 2007). This type of modelling is highly computational and to, some extent, difficult to comprehend. Other studies on urban dynamics use landscape spatial pattern analysis to understand land uses (e.g. Ramachandra *et al.*, 2012). A cross- disciplinary approach that draws together spatial and social dynamics seems to be the way forward.

Since this paper is the first attempt to explore the impact of heritage over time on sustainable development, we opted to use Forrester's model as the basis of the analysis but through a critical lens. Rather interestingly, the majority of heritage-led regeneration programmes follow Forrester's urban dynamics model with the exception that demolition of listed buildings is not an option. Heritage buildings are being conserved with the purpose to be reused and offer new job opportunities and/or housing. 'Newcomers' from upper income classes are being attracted and areas are often 'gentrified' excluding local residents while social housing structures are often undergoing demolition.

Our urban heritage dynamics theory builds upon the interactions between industries, jobs, population growth and housing as suggested by Forrester. However, we take a different view towards the 'aging built infrastructure' as we regard this as a driver for sustainable development rather than an obstacle (Figure 1). As Figure 1 shows, the urban heritage system is the result of dynamic interactions of three main sub-systems including the sub-systems of urban heritage environment, socio-political environment and economic environment. Each sub-system is affected by wider social, economic and environmental changes posing sustainable development of declined areas at risk. Each sub-system comprises of multiple components and dimensions that are in dynamic interactions. It is the aim of this paper to begin unfolding the individual components of

each sub-system, the ways they interact with each other and the factors that mostly contribute to sustainable and resilient development. To achieve this goal, we will critically analyse the findings of the Townscape Heritage Initiative through systems thinking.

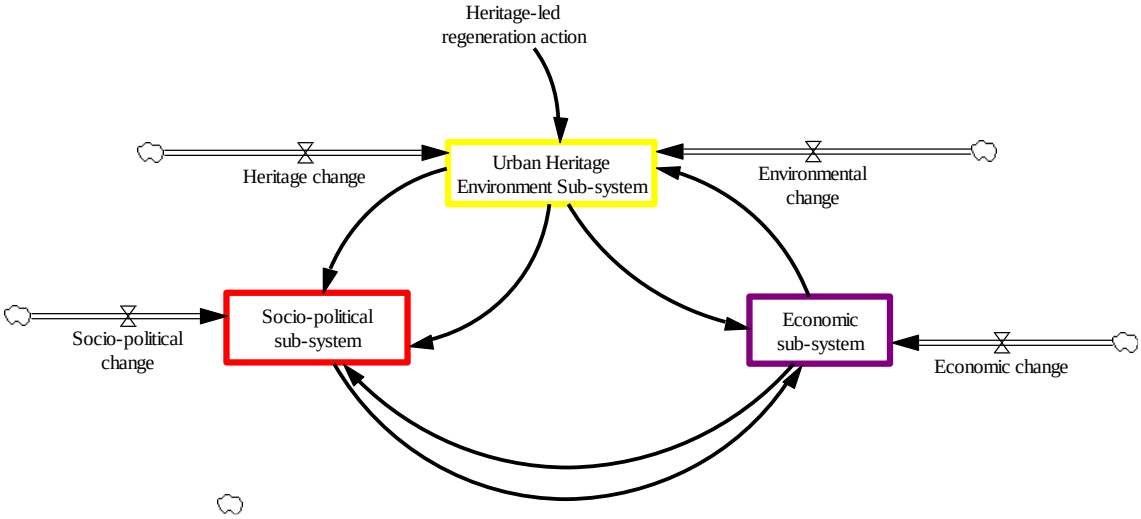

Figure 1: Conceptual Framework of Urban Heritage Systems

Methodology

The term 'system' refers to a set of variables 'interconnected in such a way that they produce their own pattern of behaviour over time' (Meadows 2008, 2). The underpinning idea in systems thinking is that events and patterns or things that we observe are driven by systemic structures and hidden mental models (Checkland 1993, 3). In other words, systems thinking is about understanding the interconnection and systemic structure of elements that form a whole (Monat & Gannon 2015, 11). One of the most commonly used methods in systems thinking is system dynamics. System dynamics are a useful tool for mapping, modelling and simulating the change of a system's parameters over time (Sterman, 2000). The main elements in system dynamics are: *complex* and *non-linear systems*, *feedback loops*, and *stocks and flows*. A *complex* and *non-linear system* comprises of multiple loops (*feedback* loops) that interconnect

various factors creating nonlinear, cause and effect relationships (meaning that one relationship that dominates the present may disappear in the future) (Forrester 1987, 107; Randers 1980, 120). The *stocks* refer to anything (tangible or intangible) accumulated over time. What drives the accumulation of stock over time is defined as the *flow* (Sterman, 2000). *Stocks* and *flows* are used to model the behaviour of a system. This paper will focus on qualitative mapping of the cause and effect of dynamic relationships via a causal-loop diagram rather than the modelling as the latter will require new data. A causal loop diagram visualizes the feedback loops that 'are assumed to have caused the reference mode' i.e. the behaviour of key variables over time (Randers 1980, 119). The causal links among variables are depicted with arrows from a cause to an effect (Sterman 2000, 102). Each cause-effect relationship is indicated with + or – depending on whether the relationship is positive and reinforcing (e.g. the more…the more) or balancing (e.g. the more…the less) (Sterman 2000, 155).

The starting step in system dynamic analysis is to define and articulate the problem that is caused by a complex and dynamic system (e.g. Randers 1980, Sterman 2000; Luna-Reyes et al. 2003, 275). In our case, the problem that triggered the research question is the lack of resilience of heritage-led regeneration programmes towards major socio-economic challenges, the observed gentrification and social exclusion of local communities and the narrow approach to heritage-led regeneration as adaptive reuse of buildings. Accordingly, our problem is as follows: 'In what ways can heritage-led regeneration contribute to social, economic and environmental sustainability in declined urban areas?' To answer this question, we identified and mapped the causal relationships of socio-economic factors contributing to the sustainable development of a declined area on the Vensim software. One of the limitations of this approach is that we need to rely on the findings of the Oxford Brookes University. However, as this is the

only existing longitudinal study of its kind, we can confidently start applying the systems thinking approach in this context by using this specific piece of research.

What critical factors contribute to sustainable heritage-led urban transformations? A system dynamics analysis of the Townscape Heritage Initiative

The Townscape Heritage Initiative (THI) used to be one of the core 'urban regeneration' programmes of the Heritage Lottery Fund (1994). It is 'a conservation-led, area-based programme which aims to contribute to the regeneration of urban areas with heritage and socio-economic need' (Maeer & Campbell 2009, 185). Its rationale is that 'investment in historic fabric will benefit the appearance of an area, improve confidence, quality of life and economic performance, so initiating a cycle of new investment' (ibid). The scheme was set up by the Heritage Lottery Fund (HLF) in 1998 with the ultimate goal to address problems of 'disrepair, erosion of quality and under use of structures in areas where historic buildings predominate' (Shipley and Reeve, 2010, 221) in areas of 'both heritage merit and social deprivation' (Reeve and Shipley 2014, 292). The use of the term 'townscape' connotes emphasis on the visual aesthetics associated with the improvement of the quality of the built environment and the wider landscape (Reeve et al. 2007, pp: 25-26).

A longitudinal study of the programme between 1999 and 2008 was commissioned to the Oxfords Brookes University [1] following closely the progress of 16 case studies that were approved between 1998 and 2000 (Maeer & Campbell 2009, 187). Despite the limitations of the methodology, most of which are acknowledged by the researchers of the study (see Reeve & Shipley 2014; see also: Maeer & Campbell

[1] http://www.hlf.org.uk/HLF/Docs/ ResearchAndConsultation/THI%20five%20year%20final%20report%201%20Aug.pdf

2009, 188), this evaluation still constitutes the first longitudinal, systematic study of heritage-led urban regeneration schemes in the UK.

A mix of schemes were evaluated by the Oxford Brookes university research team including schemes in large urban areas (Rope Walks, Liverpool; Merchant City, Glasgow); rural towns and villages (West Wemyss, Wigtown); old industrial communities (Creswell, Burslem, Cleator Moor); a former holiday resort (Colwyn Bay); and a variety of other types, spread across the whole of the UK. All of the THI areas were within or nearby conservation areas (ibid). In this paper, we have chosen to focus on urban areas including the schemes in Liverpool and Glasgow and the old industrial communities in Creswell, Burslem and Cleator Moor.

A detailed account of the design of the THI evaluation is given by Shipley et al. (2004) and Reeve & Shipley (2012); but in essence, the research attempted to establish a baseline prior to the THI intervention, and then to take the same measurements at key points at a minimum of two subsequent points to see what impact the intervention was having (Weiss, 1997). In terms of the THI, these points were generally five years after each scheme received its funding (the assumption being that any public realm and building works would have been completed at this point); and then at ten years, when schemes had 'bedded in' and when it could be reasonably determined whether initial impacts had been sustained (in Shipley & Reeve 2014, 293; see also Shipley & Reeve 2012, 4).

The research design had to address the vision and goals of the THI programme, which related to improvements of the townscape, the quality of life, local economic vitality, and commercial and user confidence in the place. The researchers established a series of indicators and sub-indicators in order to capture the change over time and

collected primary as well as secondary data for each indicator (see, for a detailed account of the research design Shipley et al. 2004).

By reading the findings of the THI longitudinal study through systems thinking, we created a causal-loop diagram, as explained in the methodology chapter, that depicts the factors of each of the sub-systems of our proposed urban heritage system. In sum, our system dynamic analysis of the Townscape Heritage Initiative longitudinal study demonstrates a range of socio-political, heritage, cultural and economic factors of the urban heritage system which are at dynamic interplay during a heritage-led regeneration process.

The initial THI longitudinal study identified a series of factors which we classified into the three main sub-systems of the urban heritage system as a means to understand their dynamic interconnections and impact on sustainable developments. The socio-political sub-system of the urban heritage system consists of the following variables: confidence among local residents, newcomers, demand for adaptive reuse of buildings, complexity of ownership, concerted strategic planning, clear vision and goals, local self-esteem, active local participation, alignment of resources with community needs, quality of life and employment. The economic sub-system comprises of: economy of surrounding regions, business and enterprises, the gap between THI costs and the costs of restoration, property values, willingness to invest, scale of distribution of investment and resilience to economic downturn. The urban heritage environment system includes ‘townscape improvements’, quality of original building and maintenance of original buildings.

However, as the dynamic interconnections of the aforementioned factors was not one of the objectives of the original study, we take a step further in the dynamic exploration and interpretation of the identified factors. By looking at the interplay of the

multiple variables and how they change and affect the overarching urban heritage system, we are now in the position to start unpicking which of the factors were crucial over time.

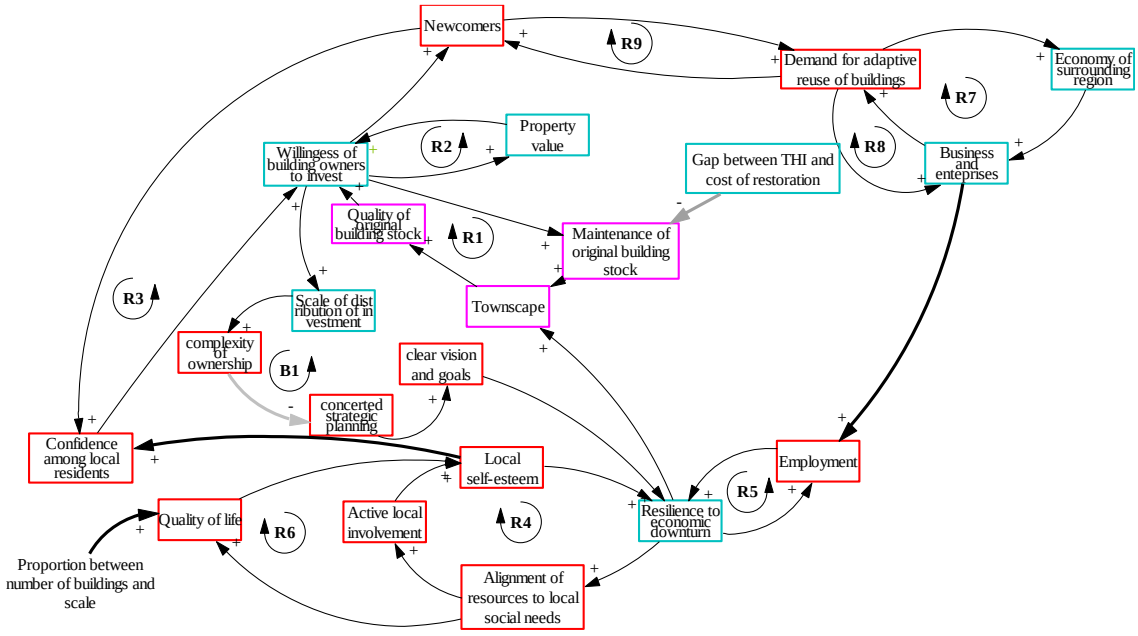

Figure 2: *Urban Heritage Dynamics in Townscape Heritage Initiatives: Factors in red boxes relate to the socio-political system; factors in blue boxes relate to the economic sub-system and factors enclosed by the pink boxes refer to the urban heritage environment system. The R symbol refers to reinforcing loops and the B symbol to balancing loops.*

In order to facilitate the communication of Figure 2, we will present the causal-loop diagram in smaller sections. The point of departure for the Townscape Heritage Initiative was the quality of the original building stock which motivated investors and building owners to invest on adaptive reuse programmes. This investment enabled the maintenance and preservation of the buildings improving the townscape. It is a reinforcing loop the continuity of which requires constant investment (R1) (Figure 3).

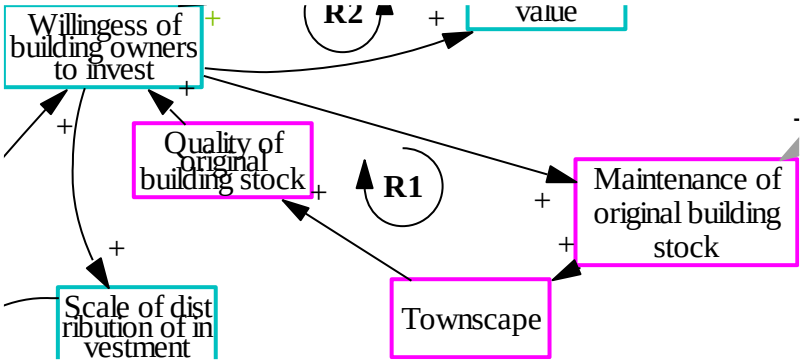

Figure 3: Reinforcing Loop (1) of factors linked to the urban heritage environment (pink boxes).

The 'willingness to invest' may have short term positive consequences, such as the increase of property values for existing home owners (but negative consequences for tenants who need to pay higher rents) and the attraction of newcomers (R3). The newcomers tend to place higher confidence on the place which encourages willingness to invest (R3) (Figure 4). However, at some point, as the balancing loop (B1) shows, the wider the scale of distribution of investment becomes, the more complex the ownership status and the less concerted the planning are. Indeed, it turns out from our dynamic analysis that more than local involvement and investment, it is the concerted and shared vision and clear goals that contribute significantly to resilience and sustainability.

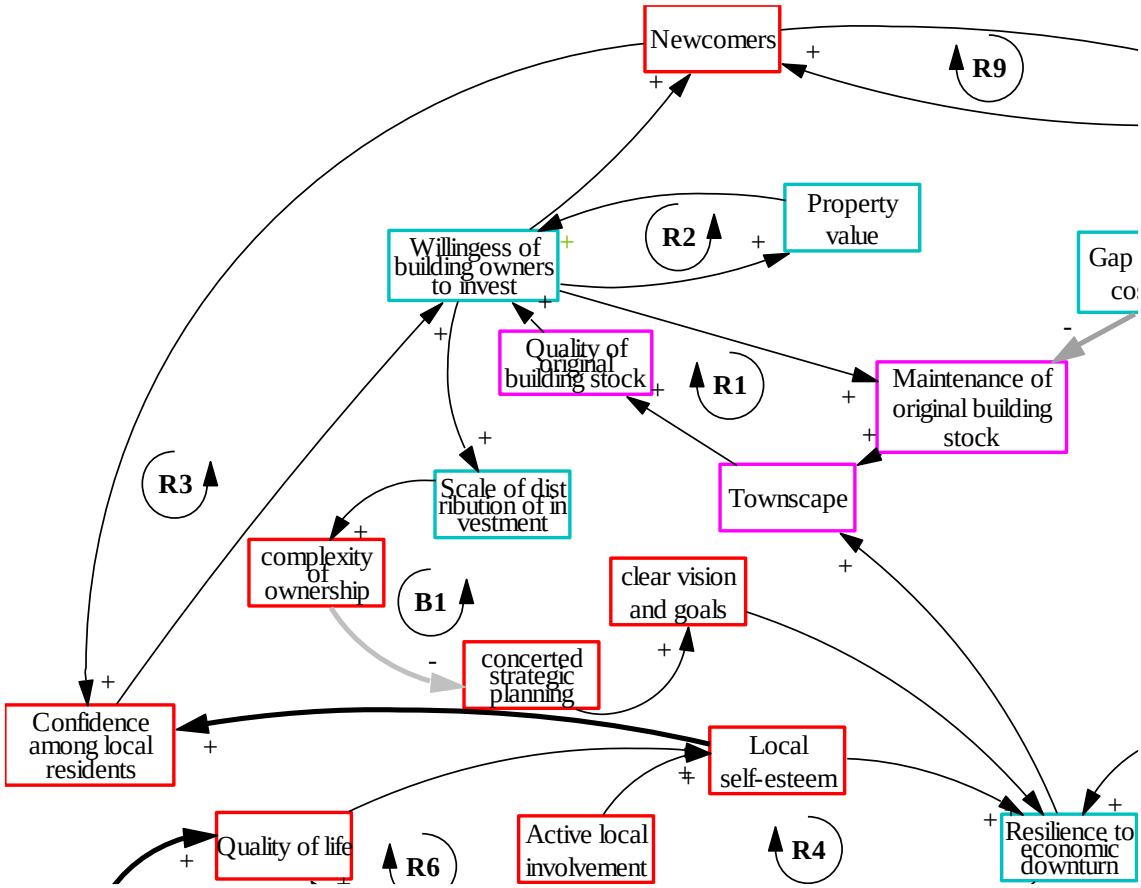

Figure 4. Interrelationships between socio-political, heritage and economic dimensions.

The high demand for the adaptive reuse of old buildings as commercial structures creates new jobs and high employability (R5, R7, R8) which, if combined with active local involvement in the decision-making process and planning (R4), can lead to economic resilience. This also pre-requires, as aforementioned, concerted strategic planning and a shared clear vision (Figure 5).

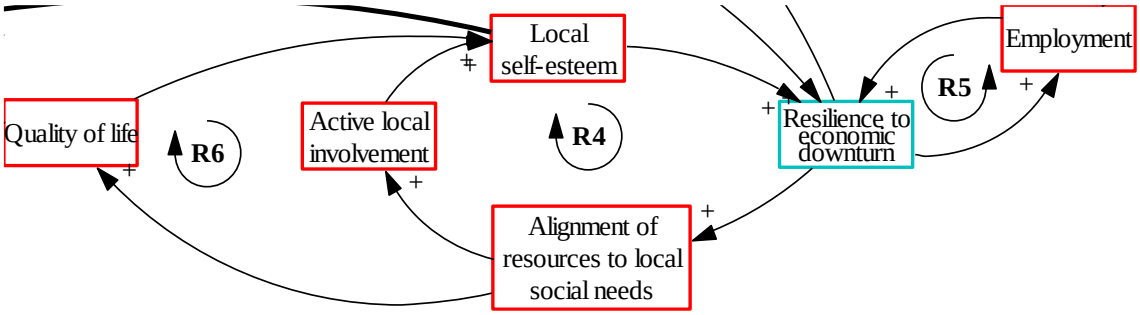

Figure 5: Socio-political and economic interactions in urban heritage systems

Another critical factor contributing to the economic resilience of a heritage-led regeneration scheme is the wider economic situation of the surrounding region (Figure 6). The better the economy of the surrounding region, the higher the chances for business and enterprises to thrive.

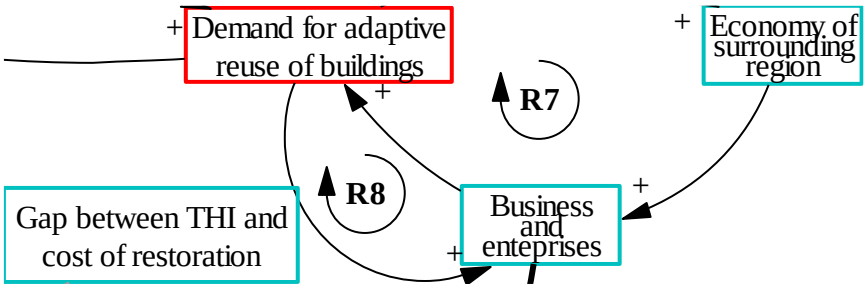

Figure 6: Interrelationships between external and local economic environments

In sum, two of the variables of the socio-political sub-system factors (i.e. ‘newcomers’ and ‘demand for adaptive reuse of buildings’) directly linked with each other shaping a reinforcing loop. The remaining factors of the socio-political sub-system linked with economic variables. Direct loops were shaped by the interaction between the willingness of building owners to invest and the rise property values while the rest of the dimensions of the economic sub-system interlinked directly with social variables (such as demand for adaptive reuse and employment) or urban heritage variables (such as the maintenance of original building stock).

Our system dynamic analysis clearly illustrated that a bottom-up approach endorsed by the community and corresponding to the community needs as well as the existence of a strategic, clear concerted vision are the most critical factors for resilient, sustainable development in heritage-led regeneration schemes. However, while these factors can facilitate socio-economic resilience, what is missing from the THI schemes is the environmental dimension of the system. The following section proposes a novel approach for sustainable heritage-led regeneration that considers the socio-political, economic and environmental dimension. It complies with the key findings of the analysis above by putting communities at the heart of the regeneration process and it further introduces sustainable lifestyles inspired by local heritage as a core element of the urban heritage dynamics theory in order to strengthen the environmental sustainability of the heritage-led regeneration process. Although we acknowledge that this novel approach requires further research and validation, we argue that this analysis constitutes a significant and critical step forward for thinking about sustainable heritage-led urban regeneration.

Sustainable Heritage-led urban regeneration: a sustainable lifestyles approach

Our proposed approach is that for heritage-led regeneration efforts to be sustainable and resilient we need a new approach which is systemic, large-scale, synergetic and socio-spatial with communities at the heart. We argue that communities can develop resilience to external factors if heritage-led regeneration is driven by sustainable lifestyles. We define sustainable lifestyles as the diverse patterns of action and consumption that enable better quality of life and resilient economy within the limits of the planet. We contend that heritage can inspire and drive, as well as be driven, by innovative solutions for sustainable living generating resilient and vibrant communities. Our conceptual

model argues that development driven by heritage-led regeneration will be sustainable and resilient to global challenges if sustainable lifestyles are fully integrated into heritage-led regeneration programmes. Heritage can inspire and drive sustainable lifestyles in such a holistic manner that no other approach can do. This is because cultural heritage testifies to the lifestyles of people across different settings throughout history, and its practices and assets are often green 'by design', in that they embody more sustainable patterns of consumption and production that have been developed over years of human-environment adaptation[2]. As heritage lies at the foundation of current societies, people can more easily connect with sustainable living practices that come through heritage, instead of being confronted with external and top-down demands for sustainable development. This makes heritage an ideal driver for sustainable lifestyles. As a framework, sustainable lifestyles provide a multidimensional line to guide regeneration processes (e.g. social, environmental and economic) avoiding one-dimensional perspectives. They also offer a systemic approach to address sustainability challenges by looking into individuals/communities' needs and aspirations, thus fostering inclusiveness. As social practices, sustainable lifestyles today relate with social innovations, technology solutions, community arrangements, products and services that enable low impact activities. If such practices link with heritage, a new array of entry points for revitalizing heritage and embedding it into people's everyday lives open. This means that heritage would not be applied as a simple repetition of the past, but rather be integrated to today's innovations in order to deliver even greater sustainability benefits and find room in the lifestyles of third millennium. To this end, our proposed model understands the three key components of its overarching approach as follows (Figure 7): a) **Cultural heritage** as moving beyond object-oriented and one-

[2] Boccardi et al. 2013. Background note: Cultural heritage and Sustainable Development: A Rationale for Engagement in UNESCO, *Introducing heritage into the sustainable development agenda.* Hangzhou International Congress.

dimensional approaches to heritage, to integrate a socio-spatial approach that conceives heritage as a socio-cultural practice; b) **Sustainable lifestyles** as diverse patterns of actions and consumption that enable better quality of life. These can relate to *eating* (i.e food production, cooking, eating habits); *consuming* (i.e. patterns and levels of what and how people obtain, use and dispose of goods); *living* (i.e. built environment and neighbourhood interaction); *moving* (i.e. transportation means); and *enjoying* (i.e. leisure and tourism) and c) **Heritage-led regeneration** as a dynamic and participatory process that leads to social, economic and environmental benefits for citizens; regeneration is understood as revitalization of identities. The three components are interlinked into an overarching approach that blends the *traditional*, the *new* and the *diverse* (Figure 7). **The traditional** refers to the sustainable tangible and intangible cultural assets and practices that have shaped lifestyles along the years and are inherited by our societies. **The new** refers to the latest innovations for sustainable lifestyles against which heritage assets are regenerated (social innovations, technologies, innovative business models and creative financial mechanisms). **The diverse** refers to further enrichment of the blending process through exchange of learnings and best practices among various cultures and via immigration and integration of external cultural elements.

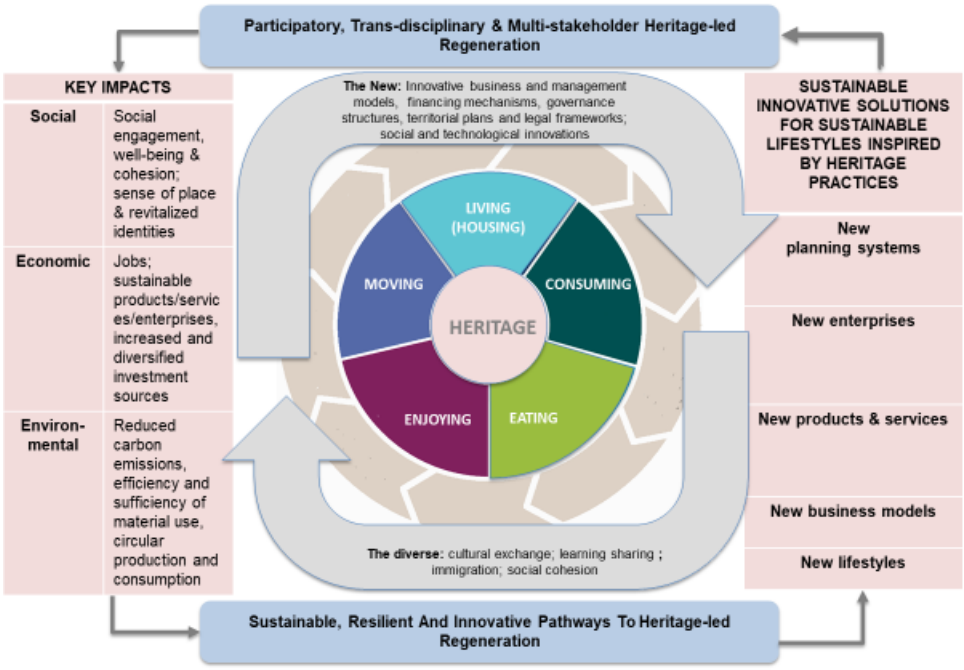

Figure 7: Sustainable Heritage-led Regeneration: A Sustainable Lifestyles approach

Although, this novel model merits further research, enhancement, testing and validation we have gathered sporadic evidence through personal communications with 20 local authorities and heritage agencies on studies that illustrate the potential of this approach for sustainable and resilient development. This evidence was collected during collaboration with 45 partners for the development of a major European grant proposal on this subject. This section refers to a few examples where a sustainable lifestyles approach inspires heritage and innovation and ensures sustainability over time. The section concludes with the integration of the sustainable lifestyle approach into the causal-loop diagram developed above (Figure 2).

One of the first illustrative examples is Lake District which provides evidence of sustainable eating and consumption by training farmers on traditional farmland practices to keep the cultural landscape alive. Another example derives from Spain (the natural heritage of Gavarres massif at North-East Catalonia) which responded to the low diversification of use of local resources (75% of the local economy relies on forest use)

by developing in 1998 a novel governance model, the Gavarres consortium. It comprises 19 local councils, 2 county councils, a provincial council and the Catalan ministry of environment. The consortium created new forms of circular economy based on ecotourism (http://www.corkforest.org) and cultural tourism, and leveraged investments[3] through private companies which supported the candidature of the area as a World Heritage Site. Another case in Catalonia (La Vall d' en Bas) can illustrate how a mountainous region facing rapid depopulation can be revived via eco-tourism through the re-establishment of walking paths used by villagers back in the 20th century as part of the European project on 'The Specialization and Regional Competitiveness of the Cultural and Creative Industries of Girona and its Regions' (2017 and 2020) (www.cantrona.cat).In Greece, the Small and Medium Enterprise (SME) of Perleas on the traditional village of Kampos on the island of Chios (Greece) is pioneering innovative products and services linked to the cultivation of citrus which represents the character of the cultural landscape. This SME has proved resilient to the economic and refugee crises which contributed to the decline of tourism industry. However, despite the novel (though sporadic) entrepreneurship initiatives, the area of Kampos was listed by Europa Nostra in March 2016 as one of the *7 most endangered* heritage areas in Europe. This is not only due to the deterioration of the historic buildings and their adjunct citrus gardens but also due to the decline and replacement of citrus cultivation by other farming activities (i.e. potato farming) leading to the dramatic change of the historic cultural landscape. Within this challenging environment, sporadic conservation projects have taken place (one of which was recently awarded a Europa Nostra prize)[4]. Going beyond Europe, in Arica y Parinacota Region in Northern Chile the abandonment

[3] Such as the winery Eccociwine, the cork stopper factories J. Vigas and F. Oller, a private foundation like Nando and Elsa Peretti Foundation and other institutions such as The Cork Museum, the cork territories network "Retecork" and the Catalan Cork Institute.
[4] http://www.chios-riziko.gr/default_gr.asp

of 100 small Andean villages was reverse through work of the Fundación Altiplano with local communities and the local authority for the heritage-led regeneration of the area[5]. The once declining Arica now shows signs of growth through the creation of new businesses linked with eco-tourism. This regional model inspired the regional strategy for Heritage Preservation and Sustainable Development which involved public authorities and private enterprises. The Barking and Dagenham borough of London is one of the most deprived boroughs which actively seeks to boost its economy and social-well being by various mechanisms including heritage-led regeneration. The area has diverse array of heritage sites including industrial heritage (as Ford used to operate in the area). Small projects where the residents are encouraged to use their gardens of the historic Becontree Estate for producing sustainable forms of eating and consumption are taking place.

Although this sporadic and anecdotal evidence derived from the above examples does not suffice to prove the hypothesis, it is still enough to formulate a solid hypothesis that merits future research, testing and validation. *Figure 8* illustrates the integration of sustainable lifestyles into the causal-loop diagram created in *Figure 2*. Sustainable lifestyles are surrounded by a green box and are located into the diagram to indicate that the stronger the sustainable lifestyles approach the more the business and enterprises and the more the chances for employment leading to resilience to economic downturn which further encourages the use of sustainable lifestyles (Reinforcing loop: R11). Furthermore, sustainable lifestyles are directly linked with Townscape improvements because the users of the built environment are using sustainable forms for living which can consequently contribute to the maintenance and conservation of the aging built environment (R10).

[5] www.fundacionaltiplano.cl; https://www.youtube.com/watch?v=lrlOxp1kqLw

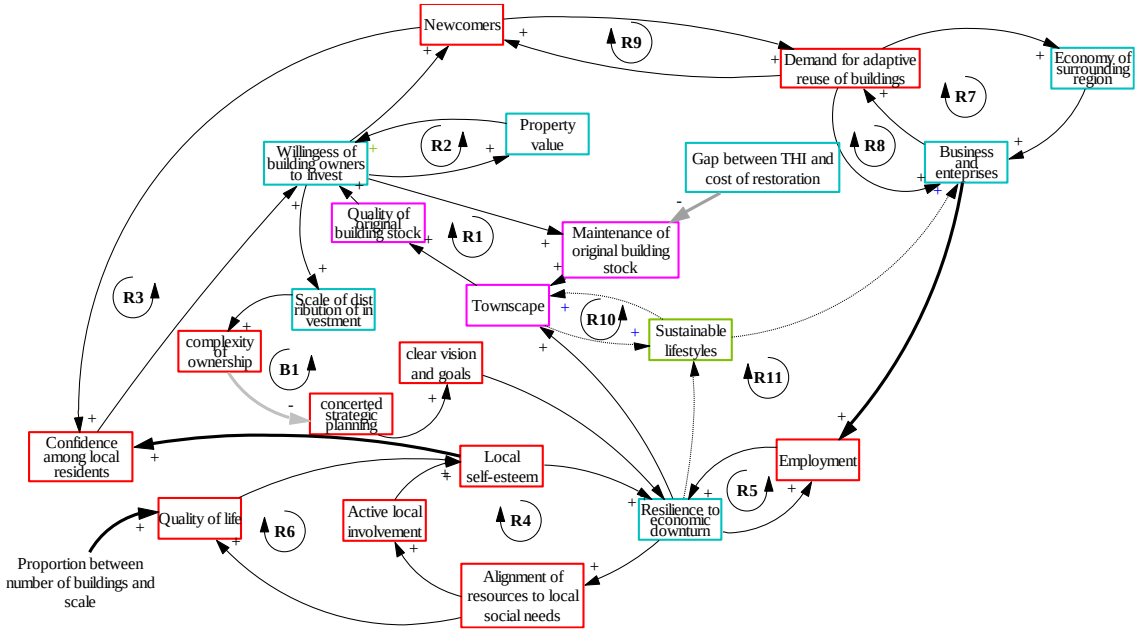

Figure 8: Sustainable Heritage-led Regeneration: A Sustainable Lifestyles approach

Conclusion

We initiated this paper by critiquing the reference of the UNESCO Historic Urban Landscape (HUL) Recommendation to sustainable development. More specifically, we interrogated the focus of HUL on urban heritage conservation as the sole concern of sustainable development as well as the narrow linkage between heritage conservation and economic growth through tourism. Indeed, we argued that this linkage is unsustainable over time. We proved this contention by first developing an urban heritage dynamics theory which we used as the foundation tool for unpacking the dynamic, interconnected interrelationships of the multiple dimensions of urban heritage systems. We specifically classified the factors at interplay, as identified by a longitudinal study of the Town Heritage Initiative (a scheme funded via Heritage Lottery Fund), into three urban sub-systems including the socio-political, economic and urban heritage environment system. We proposed that an urban heritage system

comprises of the three aforementioned sub-systems. We examined through systems thinking how the dimensions and variables of each sub-system link with each other and change over time as well as what the impact of this dynamic interconnection is on the sustainability of a place. We used for the first time qualitative system dynamics in the context of heritage-led urban regeneration in order to explore the critical factors that determine the sustainable development of a heritage city. Our systems dynamic analysis unveiled the following relationships. We identified political commitment and community involvement as two of the most critical factors for socio-economic resilience. We also noted the absence of the environmental sub-system in current heritage-led urban regeneration paradigms. On this basis, we proposed a new model for sustainable heritage-led regeneration which has communities and sustainable lifestyles as inspiration for heritage and innovation at its heart. Given that existing paradigms of heritage-led urban regeneration tend to neglect environmental issues as well as fail to fully integrate communities at the core of the process, our proposed approach can provide the way forward for sustainable heritage cities. In addition, the approach blends tradition, diversity and innovation inspired by heritage. The synergy between tradition and cultural diversity is pivotal for socio-economic and environmental sustainability and resilience. Although we did refer to sporadic evidence proving the potential of this approach for long-term sustainable and resilience, we acknowledge that this new approach requires further research, testing and validation. However, we contend that this new conceptualization of sustainable heritage-led urban regeneration can also re-orientate the focus of HUL from the current linkage of urban heritage conservation with economic growth to a future, holistic, synergetic and dynamic approach that connects urban heritage, tradition and cultural diversity with communities, innovation and sustainable lifestyles. As a result, the spatial approach of HUL is transformed into a

socio-spatial approach with communities and sustainable lifestyles at its heart.

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Figure captions

Figure 1: Conceptual Framework of Urban Heritage Systems

Figure 2: *Urban Heritage Dynamics in Townscape Heritage Initiatives: Factors in red boxes relate to the socio-political system; factors in blue boxes relate to the economic sub-system and factors enclosed by the pink boxes refer to the urban heritage environment system. The R symbol refers to reinforcing loops and the B symbol to balancing loops.*

Figure 3: Reinforcing Loop (1) of factors linked to the urban heritage environment (pink boxes).

Figure 4. Interrelationships between socio-political, heritage and economic dimensions.

Figure 5: Socio-political and economic interactions in urban heritage systems

Figure 6: Interrelationships between external and local economic environments

Figure 7: Sustainable Heritage-led Regeneration: A Sustainable Lifestyles approach

Figure 8: Sustainable Heritage-led Regeneration: A Sustainable Lifestyles approach