Routledge Companion to Creativity and the Built Environment

Edited by Julie T. Miao and Tan Yigitcanlar

Routledge Companion to Creativity and the Built Environment

This book critically examines the reciprocal relationship between creativity and the built environment and features leading voices from across the world in a debate on originating, learning, modifying, and plagiarizing creativities within the built environment.

The *Companion* includes contributions from across the disciplines of architecture, design, planning, construction, real estate, economics, urban studies, geography, sociology, and public policies. Contributors review the current field and propose new conceptual frameworks, research methodologies, and directions for research, policy, and practice. Chapters are organized into five sections, each drawing on cross-disciplinary insights and debates:

- Section I connects creativity, productivity, and economic growth and examines how our built environment stimulates or intimidates human imaginations.
- Section II addresses how hard environments are fabricated with social, cultural, and institutional meanings, and how these evolve in different times and settings.
- Section III discusses activities that directly and indirectly shape the material development of a built environment, its environmental sustainability, space utility, and place identity.
- Section IV illustrates how technologies and innovations are used in building and strengthening an intelligent, real-time, responsive urban agenda.
- Section V examines governance opportunities and challenges at the interface between creativity and built environment.

An important resource for scholars and students in the fields of urban planning and development, urban studies, environmental sustainability, human geography, sociology, and public policy.

Julie T. Miao is an Associate Professor in the Faculty of Architecture, Building and Planning, University of Melbourne; a visiting scholar at Harvard University; and an Australian Research Council Discovery Early Career Research Fellow. Her main research interests lie in innovation-space, urban entrepreneurism, and intrapreneurial state.

Tan Yigitcanlar is an eminent Australian researcher and author with international recognition and impact in the field of smart and sustainable city development. He is a Professor of Urban Studies and Planning at the School of Architecture and Built Environment, Queensland University of Technology, Brisbane, Australia.

"This rich and diverse collection connects the idea of the creative city with a much broader research base, and offers a really valuable base for rethinking the role of creativity in the urban environment. The editors have assembled a book that stimulates thoughts on new connections and combinations and challenges the way we look at the city. It should be a required reading for all students of the urban environment."

David Charles, *Northumbria University, UK*

"Creativity is not just the product of gifted individuals and it does not exist 'in the air.' It is a social process which is embedded in our urban landscapes and built environment. This volume brings together a wide range of contributors to help us better understand this critical nexus."

Richard Florida, *author of* The Rise of the Creative Class

"Miao and Yigitcanlar offer a truly interdisciplinary resource on the multifaceted intersections between human creativity and the urban context. The authors dig into an impressive range of issues and open critical lines of inquiry that deepen our knowledge of this important research area. Ambitious in scope and scale, *The Routledge Companion of Creativity and the Built Environment* will be a go-to reference on urban creativity for years to come."

Carl Grodach, *Foundation Professor of Urban Planning and Design, Monash University, Australia*

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LONDON AND NEW YORK

This book is dedicated to the following beloved, beautiful, and brilliant people that have shaped our lives:

Yulia, Nick, Aili, Haijun and Wang

Cahide, Susan, Ela, and Selin

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Foreword: Creativity and the built environment

Charles Laundry

Then, now, and tomorrow: A trajectory

More people, more organizations, more cities, regions, countries, and global organizations for more reasons have found that the culture, creativity, and innovation triad can aid their city development as they embark on and navigate their transformational trajectories. They understand that culture is who we are and that creativity can help create what we can become. They asked what are the physical conditions that enable these intangible assets to flourish.

They recognized a significant phenomenon in the transition to the evolving knowledge intensive economy from the 1980s onwards. These were dramatic affecting the organization of work and prospects of cities as the deindustrialization process in the West had winners and losers. It reduced the power of blue collar workers and their unions with a rise of professional workers and the 'creative' professions associated with design or new media.

Remember too, and this is now hard to believe, that we then thought that cities had little hope as cities hollowed out with suburbanization and as industries declined and moved production to Asia and elsewhere. New York, as one example, nearly went bankrupt in the 1970s.

The city then began again to exert a gravitational pull with the recognition of its resources in learning, its capacity to help exchange and transactions, its gathering places, its cultural institutions and richer artistic life and vibrancy, its stock of buildings and infrastructure and its transport links. **The city was seen as an accelerator of opportunity,** chance encounter, and resources.

The city, as a dense communications system, is **not easy to replicate** in other settings. Once the urban focus re-emerged, a vast urban regeneration process began with the tearing down of the past to make the city ready for professional services related industries, offices, and residential developments. These frequently pushed out older tenants mostly living in more human scale street patterns as a result of the gentrification process. Often, the results were negative. Simultaneously, an extensive retrofitting exercise began. Worldwide several hundred old warehouses, breweries; train, bus, or fire stations; cement, coal, textile, tobacco, or steel factories; old markets or military barracks were transformed into culture or experience centres, start-up incubators, and company breeding grounds or headquarters and as hubs for wider urban regeneration. The latter often used the industrial heritage to provide identity as the creative professionals, in particular, were drawn to these places. Strangely, those same places that had horrible working conditions began to be celebrated as places for the new and the hip. Those structures resonated as they exude memory with their layered patina of time in an age where novelty increasingly erases memory, and physically, their spaces are large and allow for flexibility and interesting structures.

The homogenizing effects of a globalizing world highlighted the desire to **protect the distinctive** and the special including tangible and intangible heritage. Within this the cultural

creative industries were seen as playing a significant role by impacting on anchoring local identity and belonging or the perception of place to attract talent, investment, tourism and image as well as helping improve the quality of life and overall liveability.

At the same time, the real estate community saw **vast opportunities to build afresh** with icon-mania taking hold worldwide in a frenzy to outpace urban competitors. It continues unabated as cities try to find the physical version of the killer app that takes the world by storm and puts a city on a fast route to fame. A roving band of nomadic starchitects began to step over themselves to produce the most spectacular forms, proliferating gleaming glass towers, bold shapes breaking out of traditional square box patterns; skyscrapers exploding onto the landscape, some with good public spaces. Vast retailing, entertainment, or cultural centres try to bewitch, enchant and seduce.

The attempt to mimic the **ambiance and creative milieux** that older more finely grained and textured somewhat shabby rather diverse environments that artists in particular began to regenerate was difficult with newly built structures. Think here of the shabby café with second hand furniture and atmosphere versus the more squeaky clean alternative. Or a re-sited university department housed in transformed industrial building versus a green field innovation campus located at the city's edge. This raised the question of what physical contexts enable creativity.

That creative milieu can be defined as: a place – either a cluster of buildings, a part of a city, a city as a whole, or a region – that contains the necessary pre-conditions in terms of 'hard' and 'soft' infrastructure to generate a flow of ideas and inventions. Such a milieu is a physical setting where a critical mass of entrepreneurs, intellectuals, social activists, artists, administrators, power brokers, or students can operate in an open-minded, cosmopolitan context and where face to face interaction creates new ideas, artefacts, products, and services and institutions and as a consequence contributes to economic success. The creative milieu requires the **right mix of hard and soft infrastructures** and the tangible and intangible, such as institutions, research centres, cultural facilities, buildings, and support services – mobility, amenities, healthcare – as well as a density of social networks. The 'hard infrastructure' is the 'container' and provides the physical environment, setting a platform upon which the activity base – the 'contents' – can unfold. 'Soft infrastructure', by contrast, consists of the associative or intermediary structures and social networks, connections, and human interactions that underpins and encourages the flow of ideas between individuals and institutions including relaxed meeting places, events, symposia, or conferences. These intangible attributes are manifested in informal groups, cross-sectoral partnerships, collaboration, and common interest networks and crucially in forms of trust, kinship, and personal relationships.

The **qualities of urbanity** are key, which the German saying 'Stadtluft macht frei' (urban air makes you free) encapsulates as it highlights the idea that urban citizens are more open-minded, cosmopolitan, able to deal with diversity and difference, and welcome chance encounter. In this sense, urbanity can be defined by a set of distinctive social characteristics. Other characteristics of urbanity are physical concentration, proximity and density, flows of people, or the speed of information and mobility.

It involves too the notion of the **public realm** which Richard Sennett describes as any context that facilitates free communication among strangers where shared spaces accommodate unplanned and unmanaged encounters as they are beneficial for personal and social development. That public realm requires publicly owned places and spaces that belong to and are accessible by everyone regardless of gender, race, ethnicity, age, or socio-economic level. These can include city streets, lanes, squares, plazas, sidewalks, trails, parks, open spaces, waterfronts, public transit systems, and civic buildings and institutions. With the digitizing world virtual spaces can be considered a new type of public space that fosters interaction and social mixing.

The Covid experience has highlighted how in spite of the opportunities cyberspace provided, meeting physically remains a deep human need and so the power of public space.

The **public sphere** (German: Öffentlichkeit) was first defined by philosopher Jürgen Habermas. It carries with it a related and broader idea of relevance. The public sphere is a place accessible to all, where public debate and a discussion culture are encouraged, and where issues of public concern, often expressing diverging views, can be debated. That debate takes shape via mass and social media or meetings, academic contexts, or government policy documents.

All of this combines to the process of **creative placemaking,** a term coined by Artscape in Toronto in 2006. This harnesses the potential of the arts, culture, and creativity to serve a community's interest whilst simultaneously pushing a city's wider agenda for change, growth, transformation, and physical development in ways that build distinctiveness, character, and quality of place. Its success is reliant upon a collaborative approach between various civic stakeholders such as governments, private investment, not-for-profit organizations, artists, and citizen groups. Shared leadership and partnering are crucial to build momentum to improve the quality of life and to revitalize buildings, neighbourhoods, or cities.

What next?

Creativity was invariably a key attribute of city making. Think here as an instance of the astonishing heritage left by cities across the world, especially places of ritual like churches, mosques, or temples that sought to impress and generate awe that required new methods of building or the first aqueducts. The **difference between the past and today** is that cities are self-consciously encouraging and planning to create the enabling pre-conditions for creativity. Its central characteristic is to foster a more open mindset, management style, and organizational structure for inventive ideas and projects to flourish. Here, the notion of the 'creative bureaucracy' is important. This allows a city to respond to changing circumstances and to become adaptable.

Creativity is context driven. What was 'creative' in the 19th or 20th century will be different from what is creative now and tomorrow. Think of the complexity of developing London's 720 km long sewage system in the 1860s. Or over the last 40 years, the focus on the contribution of the arts to city making and now how we can help foster the green transition.

The city has always been a source of problems as well as a laboratory for finding inventive solutions to any problems it creates technologically, conceptually, and socially. Now the special focus should be on **'what really matters'** such as creating the fourth clean, green, lean industrial revolution, intercultural understanding, helping to reduce the rich-poor divide and to create ambition and meaning beyond consumerism. This requires a 360-degree holistic perspective to ensure the complexity of the city is fully understood. It acknowledges the specific sub-sector perspectives and knowledge but stresses that silo thinking has limitations.

These overall urban trends highlight spatial planning issues and three are significant. First, the alarming and **escalating levels of inequality** and subsequent segregations. The extreme concentration of money, power, and influence of a few at the very top has pernicious effects on the rest of us.

Second, **development is a double edged sword**. The intent of improving areas is positive, such as creating public spaces, parks, new housing, or bike lanes or investing in increasing safety. Yet, when driven solely by market mechanisms, this process raises property prices and rents often pushing out precisely those at whom development is targeted. This gentrification process over time changes the authenticity or sense of community as local shops close to be replaced often by upscale shops or chain stores and workspaces disappear. Property owners or speculative investors are the beneficiaries getting a windfall of unearned income of neighbourhood

improvement. Often, artists in search of cheap space and good intent spur development if they turn a dilapidated warehouse into a gallery that then attracts a restaurant, cafe, or an artisan bakery. So indirectly they trigger the forces they wish to prevent. This raises the questions of 'whose voices', 'whose culture', and 'what culture' are being heard.

Third, **private interests are shaping the look and feel of cities** in ways rarely lead to balanced economies, well mixed communities and instead reinforce spatial segregation. It is the relative increase in capital value from property over the last decades that has far outstripped other forms of investment, thereby sharpening the affordability crisis dramatically.

This raises the question: **what is the aim of creativity** and its relation to the built environment? Urban creativity needs a purpose, a goal, and an ethical frame. It should include giving back to its community and even to the world. It is better to be the most creative city for the world rather than in the world. This ethical framework and moral compass should guide a city's imaginative energies and actions. Any evolving place development initiative needs to address the dynamic of our current economic system, which is 'materially expansive, socially divisive and environmentally hostile'. Today, a deep concern to be sustainable in every sense is one such priority. Thus, our collective imagination needs to focus on innovations that go beyond being sustainable, which tends to imply 'do less harm' and to reduce the ecological footprint so that we can operate within the natural limits of the biosphere whilst coexisting with nature. Being 'restorative and regenerative' goes further. To restore is to bring back to a healthy state and to be regenerative is to allow the system to evolve.

This is a place and economy that goes **beyond a 'take-make-waste' growth driven model**. It highlights how growth models can be overcome such as with circular, doughnut, or sharing economy principles. This would shape how planners, investors, architects, and the construction industry operates. The resulting buildings may look the same, but their internal construction processes will differ to ensure they are intelligent buildings. Yet as buildings communicate through their mere presence, their physical aesthetic is increasingly changing, such as with green roofs or living green walls.

Our future creativity would encourage physical environments where its communities within their daily lives are encouraged to behave differently. Here, the 15-Minute City promoted by Paris or the Barcelona Superblock are pushing in the right direction. These seek to localize and establish facilities from health care to education to pocket parks in close proximity. The walkability enabled shifts infrastructure patterns, it highlights public transport solutions and micro-mobility options and even urban rewilding. It requires planning regimes to create physical settings and structures that foster all of these processes. Here, you not only 'repair, reuse, recycle' but also restore natural capital and so rebuild and enhance the conditions for cities to become resilient.

The return to the local is being seen as a boon potentially increasing a sense of community and so these processes can **improve peoples' quality of life**. Here, the pandemic was a game changer and increased our understanding of how this potential might dramatically help our work/life balance. It normalized **hybrid working** which changed our relationship to space, place, and time. If you only have to go to an office occasionally and can interact increasingly through Zoom or Teams, this impacts on our sense of the space we operate in. The idea of operating within a 100 km radius became normal.

The digitizing world highlights **how we think about community** given the human bias to be social. The ability to be 'here and there' simultaneously force feeds a more nomadic world. Whilst the desire for and necessity of community has not changed how it is expressed has – less bound in the fixed physical spaces of traditional community limited to family and a few outsiders. It is defined more by and embedded in our networks than classic bonds. **Place matters in**

our shifting landscape. It provides anchorage, belonging, opportunity, connection, and, ideally, inspiration. Here, online and offline, cyberspace and local space combine to make identity, shape interests, and generate a meaningful life. The public realm, from sidewalks to benches, pocket parks, and well-designed covered areas, rise dramatically in importance as do third places, like informal cafes. These third places are essential for community building – communal yet homely.

The idea of **civic creativity** I developed in 1998 can be a useful framing device. This is defined as imaginative problem-solving applied to public good and public interest objectives. It seeks to combine an entrepreneurial attitude whilst maintaining the focus on issues of equity and transparency. 'Civic creativity' is the capacity for public officials, businesses, large and small, or civil society organizations together to generate a flow of opportunities to improve urban life physically and in terms of emotional experience.

This highlights how public policy priorities in city making need to change towards **a shift towards the 'social turn'** so that investment is geared to good social results including addressing inequality and affordability as well as providing opportunities for participation and empowerment. It will be a battle to shape market driven economic processes towards these broader public interest aims.

By insisting on some **strategic, non-negotiable, principles** yet being tactically flexible it is possible to ensure that the higher goals of a creative city agenda are not side tracked. Those principles ensure that one has strong guidelines for action whilst maintaining the fluidity necessary to adapt to changing circumstances.

<div align="right">Charles Landry</div>

1   A reflection on the interface between creativity and the built environment

Julie T. Miao and Tan Yigitcanlar

State of the art review

This book brings together two important but together not so much investigated areas of research – i.e., creativity and built environment. On the one hand, built environment refers to the human-made surroundings where people gather to live, work, socialise, and play. It encompasses both the physical structures where people undertake these activities and the supporting infrastructures, such as transport, water, and energy networks. There are several key industries and associated disciplines that provide direct material and intellectual inputs in producing and altering our built environment, including architecture, design, planning, construction, real estate, and so on. On the other hand, creativity can be described as the ability to produce new and original ideas and things. In other words, it is any act, idea, or product that changes an existing domain or transforms an existing domain into a new one (Yigitcanlar, Velibeyoglu and Baum, 2008).

While the creative industries boom, during the early 2000s, brought the creativity discourse at the forefront of academic debates, creativity within the built environment sectors in shaping our hard environment for better functionality, aesthetics, and economic values has long been recorded and celebrated (Tiwari and Miao, 2022). There are other disciplines, notably economics, urban studies, geography, sociology, and public policies, that although not directly engaged in the engineering side of hard environment, provide crucial insights on the economic, social, and institutional fabrics that are constructed or disrupted by our built environment. How creativity, as a human attribute and social capital, could be influenced by people's lived experience and surroundings is a revival topic among these disciplines, especially since the popularity of the 'creative cities' (Landry, 2000, 2019) and 'creative class' (Florida, 2002) theses.

Jane Jacobs' book *The Death and Life of Great American Cities* (1961) is a forerunning in the debate on how built environment, in her case, sidewalks, public parks, and functional diversity among adjacent uses, could all help to induce users, schedules, and random encounters, which encourage a sense of safety but also encourage creativity and innovation ('the economy of diversity'). Her critiques of the orthodox urbanism, which may be regarded as radical and creative in its own regard in promoting an ordered, self-contained, and low-density suburban living, speak to the fact that some contents and practices of creativity could hold responsible for the decline of city neighbourhoods, diversity, and the source of innovation. Inspired by Jacobs' writing on the importance of dense mixed-use development, walkable streets, and bustling pedestrian environment, Florida (2002) highlighted the attractiveness of a certain type of urban environments and social fabrics to creative workers: the so-called 3Ts (i.e., technology, talent, tolerance) and the authenticity. In his reversed logic of 'jobs following talent', the hard and soft qualities of built environment become protruding.

On the other side of the coin, Peter Hall's account of *Cities in Civilization* (1998) is a tribute to the cities as the birthplace of Western civilisation. Drawing on 2,500 years' history and spanning across 21 cities, Hall identifies four distinct expressions of civic creativity: artistic growth, technological progress, the marriage of culture and technology, and solutions to evolving problems. All these expressions found their artefacts in the built environment, being it through the architectures, the street patterns, the factories and stream working lines, and the bars and music venues.

The last expression of creativity, in particular, that cities have to solve problems created by their very size, is strongly resonated in built formats. With Imperial Rome, for example, came the apartment blocks and aqueducts; 19th-century London introduced prisons and sewers; 20th-century New York developed the skyscrapers; and Los Angeles became the first centre-less city ruled by cars. Although implicit, the role of urban built environment in attracting artists, engineers, and enterprisers, as well as in stimulating and realising their creativities and innovations, is underlined. Zooming in on the roles of artists, Sharon Zukin's *Loft Living* (1982) explains the artists' role in attracting investors and developers to the derelict loft districts where they made their home, and uncovers the broader economic shifts and cultural transformations that brought widespread attention to artists as lifestyle models and agents of urban change.

In a similar but more practice-facing manner, Charles Landry's best-selling book, *The Creative Cities* (2000), provides a clarion call for imaginative action in the development and running of urban life, as well as a clear and detailed toolkit of how to revive and revitalise cities, drawing upon case studies of urban innovation and regeneration from around the world. This seminal work has led many built environment professionals and local decision-makers to view creativity as an essential intangible in the construction of urban environments. The creativity and built environment symbiosis not only helps in a consolidated livability and sense of place but also cultivates citizen creativity and civic engagement (Baum et al., 2007). This experience, in turn, can contribute to shape a happier, healthier, more sustainable, and just urban futures.

Plausibly, these scholarships draw our attention to the influence of built environment on socio-economic and physical well-being, *or* on how urban challenges resulting from congestion, climate changes, and segregations, etc., could be solved creatively. Furthermore, the literature also underlines the positive correlation between prosperity and creative activity (Baum, O'Connor and Yigitcanlar, 2009; Durmaz, Platt and Yigitcanlar, 2010). There are, however, very few dedicated volumes that focus on the reciprocal relationships between creativity and the built environment simultaneously, especially from an international and/or multi-disciplinary approach. Existing works are of several types.

The largest number of existing books are conventional edited collections and authored books focused upon a particular disciplinary or sub-disciplinary field. These include, for example, Anjeline de Dios and Lily Kong's *Handbook on the Geographies of Creativity* (2020, Geography), Sarah Williams Goldhagen's *Welcome to Your World* (2017; Architecture), Natalya Sergeeva's *Making Sense of Innovation in the Built Environment* (2018; Construction), Silvia Cerisola's *Cultural Heritage, Creativity and Economic Development* (2019, Preservation), Julie Miao, Paul Benneworth and Nick Phelps' *Making the 21st Century Knowledge Complex* (2016, Planning), Alexander Tzonis and Liane Lefaivre's *Times of Creative Destruction* (2016; Architectural History), Tüzin Baycan's *Sustainable City and Creativity* (2016, Public Policies), and Tan Yigitcanlar, Koray Velibeyoglu and Scott Baum's *Creative Urban Regions* (2008, Urban Studies). As could be expected, these volumes tended to be based around narrower and more specific themes and often failed to explicitly address multi-disciplinary reflections.

The second category of existing publications tends to focus on either creativity or built environment. These include, for example, Robert Sternberg's *The Cambridge Handbook of Creativity* (2019), which collected a few chapters that touch upon the physical environment of creativity. Karl Kropf's *The Handbook of Urban Morphology* (2017) focuses on the form, structure, and evolution of the built environment but with creativity implied rather than explicitly addressed and analysed. Gerhard Krauss and Rolf Sternberg's *Handbook of Research on Entrepreneurship and Creativity* (2014) included a section discussing the influence of public policies on creativity. Janet Chan and Kerry Thomas' *Handbook of Research on Creativity* (2013) discussed the influence of school environment on creativity.

Third category includes those studies discussing creativity from industry and/or city management perspective. Nancy Marshall's *The Routledge Handbook of People and Place in the 21st Century City* (2019) discussed contemporary issues that have influenced the relationship between people and place in urban environments. Although it has major implications for the processes and products of urban planning, design, and management, it tends to treat the connections between creativity and built environment as exogeneity. Candace Jones's *The Oxford Handbook of Creative Industries* (2015) focused on individual creativity and scaled up to teams, social networks, cities, and labour markets. Built environment is only a subtle matter covered in this Handbook. Andersson, Andersson and Mellander's *Handbook of Creative Cities* (2011) detailed the construction of creative cities but primarily from the perspectives of urban studies and planning.

This brief review suggests that there are currently intellectual gaps in: first of all, exploring the endogenous and reciprocal relationships between creativity and the built environment in great depth and scope; second, offering a state-of-the-art, critical review of the theoretical, methodological, and practical issues connecting creativity and built environment; third, encouraging interdisciplinary dialogues from leading voices internationally that not only survey the field but also develop and introduce new agendas and frameworks for future research; and last, a wider and more comprehensive collection and reference point mapping out the terrain of creativity and built environment in an international and multi-disciplinary context.

What this book offers

The concise review reported above indicates that despite the growth of the literature on creativity and the built environment, it is still an under-studied area. Particularly, there is, to our knowledge, a lack of key reference sources, especially in the form of handbook or companion, that are 'go to resources' for practitioners, policymakers, researchers, and undergraduate and postgraduate students. The *raison d'etre* of this book is to fill such a gap.

Building upon the extensive expertise in the field and also respective success of the two editors' books – *Making 21st Century Knowledge Complexes* (Miao, Benneworth and Phelps, 2015) and *Building Prosperous Knowledge Cities* (Yigitcanlar, Metaxiotis and Carrillo, 2012), Miao and Yigitcanlar team together in this Companion to reflect, celebrate and prognosis the reciprocal relationship between creativity and the built environment within an international and multi-disciplinary context. Despite the growing authored and edited volumes that touch upon some of the similar issues discussed above, few were able to bring together leading international voices from multi-disciplinary backgrounds to convene on this topic in a scale and scope achieved by this Companion. There is also practical value in composing a comprehensive Companion like this one, when public and private interest on creative-led economic growth and

urban regeneration is surging and local stakeholders are looking for inspiration, lessons, and best practices worldwide in designing their next grand projects.

Specifically, our aims for the companion are as follows:

- To provide critical reviews and appraisals of the current, and future, development of conceptual and theoretical approaches as well as empirical knowledge and understanding of the reciprocal relations between creativity and the built environment.
- To encourage dialogue across disciplinaries of Architecture, Planning, Design, Real Estate, Construction, Urban Studies, Economics and Geography, and so on, and to synthesise best practices against different regional and local contexts through the international reach of our contributors.
- To engage with, and reflect upon, the practice of a creative-led urban development strategy by connecting theoretical discussions with empirical reflections, where such strategies could contribute to constructing happier, healthier, more sustainable, and just urban futures.
- To offer a repository of relevant information, material, and knowledge to support research, policymaking, practice, and transferability of experiences to address the connection between creativity and the built environment.

With these aims in mind, we put together a Companion that brings together invaluable perspectives of key experts across the globe on the topic. The Companion helps in forming a consolidated understanding on the multi-faceted intersections between creativity and the built environment at times when the disciplinary boundaries are becoming more porous. Moreover, it also generates much needed inspirations, lessons, and best practices from across the globe for public and private actors in designing and delivering projects that support creative-led economic growth and urban regeneration.

Contributions

After the introduction, this Companion is organised into five sections, each drawing on cross-disciplinary insights and debates.

Section 1: Economy and productivity

This section connects creativity, productivity, and economic growth and situates such connections within the broader hard and soft environments. Eight scholars reflect critically on how our built environment not only contains but also profoundly stimulates or intimidates human imaginations. Case studies are drawn from the UK, US, China, Indonesia, and Australia, among others.

Silvia Cerisola, in Chapter 2, explores the mediating effect of multi-dimensional creativity. Specifically, it examines local economic development based on the relationship between built cultural heritage and creativity. The hypothesis is that impressive elements of built cultural heritage, through their aesthetic and historical value, may inspire local creativity, which in turn favours economic development by generating new and innovative ideas. An application recently conducted in England is presented here and originally compared with previous results obtained for Italy. The mechanism is confirmed, although in England, built cultural heritage seems to enhance economic development both directly and indirectly through its role in inspiring economic creativity by triggering related entrepreneurial and business ideas, which, in turn, do interact effectively with artistic and scientific creative talents.

Taking this quantitative exploration further, Wu and colleagues' contribution in Chapter 3 speaks directly to the influence of built environment, measured by environmental health, daily environment, mixed land use, commuting convenience, and technology atmosphere, on regional innovation productivity. Using China's Pearl River Delta (PRD) as case study, the authors show that the spatial distribution of innovation productivity in the PRD is extremely uneven, and that the built environment has a significant impact on the spatial differentiation of regional innovation performance. Meanwhile, it seems that the built environment factor impacts the spatial heterogeneity of regional innovation productivity to varying degrees, with technology atmosphere impacting the most. Their analysis thus provides direct evidence on the importance of innovation-oriented design and updating of built environments.

In a similar vein but on a more defined scope, Zhiyuan Li, in Chapter 4, explores an interesting but largely undermined intersection between housing conditions, productivity, and creativity. Drawing upon a unique questionnaire survey conducted in Beijing, Li shows that long commutes negatively affect knowledge workers' efficiency and innovation. Moreover, exploratory analysis and non-parametric tests show that the networking opportunities of knowledge workers living in seriously unaffordable housing conditions are more likely to be affected than knowledge workers on other housing affordability levels. His findings, therefore, echo that of Silvia Cerisola in unveiling the multi-dimensional creativity parameters but also highlight the multi-faced housing conditions beyond the sheer numbers and affordability that could influence knowledge workers' performance.

Taking the discussions on the multi-dimensional creativity and its spatial articulations further, Nicholas Phelps and Holi Wijaya's work in Chapter 5 discusses business innovation at informal settings. Drawing insights from first-hand interviews and survey data at two kampungs (traditional villages) in Semarang City, Indonesia, the authors note that innovation is a notable feature both of informal businesses and the informal urban context. In particular, they highlight the home as a locus of innovation, whereas the neighbourhood or kampung appears less relevant as a supportive setting for business innovation. To a certain extent, therefore, Phelps and Wijaya's writing on community and business innovation reaffirm the argument of Zhiyuan Li that housing, as an important component of the built environment, could also play a role in the innovation and creativity equation.

Also focusing on the business environment and the variegated stakeholders involved, Chapter 6, contributed by Julie Miao, discusses innovation infrastructures as carefully crafted hard, soft, and cultural facilitators of innovation in defined urban areas. She argues that instead of attributing the genesis of an innovation cluster to 'happy coincidences', a better understanding of the design, utilisation, and improvement of innovation infrastructures, as well as the interweaved relations between different stakeholders, could shed light on the much-debated genesis and evolution of innovation clusters. She refers to Seaport Innovation District at Boston and illustrates how artists, designers, developers, planners, and local bureaucrats have all played a role in turning this underused yet primely located land into one of the most sought-after and least affordable economic hotspots in Boston.

Eileen Sim's contribution in Chapter 7 builds upon Miao's work on innovation infrastructure but focuses more on the design and evolution of office spaces, especially in a post-COVID environment. She traces the evolution of four generations of workspaces from corridor offices to open-plan offices, and then non-territorial, sharing-based model, and now a hybrid working mode. Sim argues that the adoption of hybrid working will have major implications in how offices should be redesigned. The process of redesigning will vary dependent on the type of workplace that an organisation currently occupies as well as employees' activity preferences.

Chapters 8 and 9, both contributed by Kruti Upadhyay and Raghu Tirumala, lead our attention to the green and blue economies and how creative financial mechanisms have been

developed so far to support their development. In Chapter 8, the authors emphasise that green infrastructure is receiving substantial international attention considering the benefits it provides and can lead to an improved chance of achieving SDGs and combating climate change-related issues. Investments required to meet SDGs and climate action are, however, very substantial, hence there is a necessity to configure creative financing mechanisms. Some of the mechanisms that emerged are carbon credits, concessional finance, different thematic bonds (green, social, and sustainability), and the broader blended finance arena.

Chapter 9 also bases its rationale on the Sustainable Development Goals (14 – Life under Water). Tirumala and Upadhyay believe that the traditional methods of financing have not been successful in addressing the concerns of this sector. Innovative changes in the blue finance ecosystem are nonetheless emerging quickly. These include (i) stronger articulation of the blue themes in the mandate of the financial institutions, (ii) development of various taxonomies, (iii) the instruments that have been developed and launched, and (iv) the institutional mechanisms to augment the capacity of the stakeholders and to channel a wide range of investors to the blue economy projects.

All in all, contributions in the first section provide the statistical evidence on the connections between creativity and the built environment. More importantly, they draw our attention to the vintaged definitions, articulations, and components of both creativity and the built environment. It is very interesting, for example, to note that housing is an important shaper of creativity and that developers and financiers can also be imaginative in planting the seed of an innovation cluster or sector. Many authors also allude to culture and social fabric that are embedded in the built environment (Section 2) as important influencers of a place's creative capacity.

Section 2: Society and culture

Taking on the clue left by the last session, Section 2 explicitly addresses how hard environments are fabricated with social, cultural, and institutional meanings. Their unique feel and layout are constantly absorbed by those lived-in and passing-bys and form part of their cognitive development and creativity. Under the overarching theme of Society and Culture, chapters in this section discuss the social and cultural norms and standards that shape, and are shaped by, the urban forms, as well as how they evolve and differ at different times and in different settings, with case studies drawn from Baltimore in Maryland, Gwangju in South Korea, to Leh in India and Helsinki in Finland.

The opening Chapter 10, contributed by Dan Eugen Ratiu, suggests a philosophical question of seeing the 'city' as a normative world in order to explore the often-neglected aspects of the creative urban life. Echoing the work of Sharon Zukin, the author discusses how new forms of creative work and urban lifestyles, as epitomised by the 'project-oriented city' and the 'creative city', have emerged under the influence of artistic lifestyle and values. The analysis reveals that extending the hyper-mobile and flexible creative lifestyle as everyday urban life triggers both benefits and risks. It also raises serious challenges to the creativity-led policies for urban development and their sustainability.

Rishika Mukhopadhyay, in Chapter 11, details two street-based public art festivals in India. Specifically, the author is interested in how these events are inspired by the existing socio-spatiality and cultural production of the space on the one hand, and how these public art events chose to interact with the built environment on the other. The first case, *Rong Matir Panchali,* a two-day art festival organised by Kumartuli Art Forum, has transformed an impoverished neighbourhood into a momentary space of spectacle. Comparatively, Chitpurer Chalchitra, a three-day public art trail organised by Chitpur Craft Collective, has interweaved its creative process

with the existing built environment and thus foregrounded spatial performativity and the city's existing visual aesthetics. Different interactions with the built environment raise questions about art's political commitments.

Building upon Mukhopadhyay's articulation on the artist organisations, Chapter 12, contributed by Michael Buser, further addresses a gap in scholarship on the role of local arts groups in India and the impact they can have on place-making. The author narrates the Ladakh Arts and Media Organisation's heritage-led regeneration efforts in Leh Old Town, India. The analysis revealed positive impacts the organisation has made both on the built environment and wider community. But it is noted that due to the organisation's voluntary nature and small size, life in the Old Town remains largely as it is for the past several decades, characterised by deteriorating buildings and poor water, sanitation, and transport infrastructures, hence denoting the need for a broader support.

Focusing on informality and the active promotion of the right to the [formal] city by slum dwellers, Martín Arias-Loyola and Francisco Vergara-Perucich in Chapter 13 present three cases of building the first cooperative bakery in a Chilean slum, a service-learning, and a Public Participation Geographic Information System, where multiple actors (grassroot informal communities, local and international NGOs, academia and the state) co-produced several actions aimed to make Los Arenales' urban utopia a concrete reality. Their work demonstrates the complex, dynamic, and multi-faceted relationship between creativity and the [informal] built environment, and calls for a prefigurative politics stance, where the inexistent place (utopia) is gradually constructed in the here and now through direct action and planification.

In Chapter 14, HaeRan Shin's account of the remaking of Gwangju in South Korea through a creative city brand touches upon the roles of both events and key actors in restoring the image of the city. Shin criticises a monolithic view on creativity by demonstrating that different creativities can encounter, conflict, and negotiate. Her longitudinal study of Gwangju, the place where university students staged a peaceful anti-dictatorship protest on May 18, 1980, and in response, the national government sent in troops that brutally beat protestors, shows three stages of transformation in which its creative city strategies competed and renegotiated the nature of the built environment to reform the city's identity. Importantly, Shin suggests the addition of history and memory to the intersections between creativity and the built environment. As the case of Gwangjun demonstrates, different creativities relating to the specific memory of a built environment can eventually align and combine to become an asset to urban resilience.

On the transformation of physical environment, Meghan Ashlin Rich, in Chapter 15, examines artists' relationship to city revitalisation and the built environment, and the role of arts-themed development and branding in city revitalisation plans. Here, the artists' role of transforming and upscaling previously industrial spaces before they eventually being displaced – a process also noted by Sharon Zukin – is alluded to. Yet the author rightly points out that much of the research on gentrification has centred on global cities, whereas how arts and culture affect the built environment of peripheral, smaller cities, is less discussed. This chapter focuses on an arts and cultural district in Baltimore, Maryland, as an example of arts themed development through public-private partnerships. This case shows the possibilities of 'striking a balance' between revitalisation and gentrification in arts districts when development includes careful consideration of various neighbourhood stakeholders' interests.

Partly confirming Rich's argument but through a less successful example, Anna Laura Palazzo and Romina D'Ascanio in Chapter 16 document a culture-led regeneration of the Ostiense working-class district in the city of Rome from a 'factory city' to a 'knowledge city'. Despite its reputation as a multi-cultural melting pot, Ostiense is facing a far more ambitious challenge. Besides conflicts over space and uses, Palazzo and D'Ascanio record variegated governance

expectations and failures in mediating between various interests, resulting in highly segmented dynamics along the multiple paths of ethnic, cultural, and socio-economic differences.

Chapter 17, contributed by Tommi Inkinen, leads our attention to a more defined scale. Specifically, it looks at a temporal renewal of a cable factory into a dance house building in Helsinki. Most interestingly, its methodology combines creativity and built environment together with photographs, site-visit experiences, and qualitative classification framework considering three spatial elements: Material (architectural); Social (interactive); and Experienced (emotional) spaces, and embedded them on three spatial scales: the building, its immediate surrounding, and the city. Take-away lessons are: first, combination and utilisation of old structures in the creation of new spaces for arts and culture is still a highly viable solution. Second, active programming should be considered together with physical regeneration. Third, accessibility and customer feedback cannot be underestimated.

Taking together, Section 2 offers new insights on the conceptualisation of cities and creativity and underlines the different implications in normative values where different definitions and norms are promoted. It offers hope in balancing urban regeneration and inclusion and in leveraging the power of grassroot organisations, citizens, and their memories. It also warns the complicities involved and the different interests need to be coordinated.

Section 3: Environment and space

This section discusses those activities that directly and indirectly shape the material development of our built environment and the thinking that exhibit human originality. At the same time, authors are encouraged to reflect upon how practice in these industries not only engineer our built environment but also exert influence on environmental sustainability, space utility, and place identity.

Chapter 18, contributed by Francisco Javier Carrillo, is a theoretical reflection on how contemporary urban life has taken the Holocene climate for granted. Yet anthropogenic environmental impacts are on course to disrupt our way of life in deeper ways and at a wider scale than anything previously experienced by mankind at a global level. Despite increasing warnings, most cities seem to be in denial of the impending catastrophes and remain ill-prepared to cope with major disruptions. A review of the most relevant existing transdisciplinary literature leads to a call to overcome existing paradigms of urban development and let the Holocene city go. The case is made for rethinking the urban Anthropocene in the light of the challenges likely to be faced by cities around the world over the coming years.

Also centred on the issue of sustainability, Cristina Ciliberto, Raffaella Taddeo, Wenjie Liao, Tan Yigitcanlar, and Giuseppe Ioppoloin in Chapter 19 provide a thorough review on current writing of Industry 4.0 and lean production, in order to seek for potential synergies between technological and organisational innovations in manufacturing and solutions for a more eco-efficient production. Result shows that these three dimensions complement each other, and the emerging technologies are potential vectors able to support lean and digitalised sustainable business models.

In Chapter 20, Esther Anatolitis and Hélène Frichot discuss environment and space from a planning and design perspective. They introduce the concept of creative ecologies to investigate the ways in which a creative precinct emerges as a result of a range of complex relationships among diverse actors. Using a case study of Collingwood Yards in Naarm, Melbourne's newest creative precinct, Anatolitis and Frichot demonstrate how deliberating and careful planning could resist contributing to yet more gentrification in the area, although years before it would become a creative precinct, developers deployed an unauthorised Gentri-fiction to leverage site

value and future apartment sales by riding on the promise of rubbing shoulders with creative types – a process not so dissimilar from that in the Seaport Innovation District (Chapter 5).

Focusing on the role of architectural and urban design in the Conceptual Age, Chapter 21, contributed by Rob McGauran, emphasises the importance of urban designers in not solving a problem, but identifying what is the right question to be asked. His case studies reveal the crucial role of quality affordable housing as essential infrastructure for the creative city, a finding echoes those made in Chapter 3. The more detailed study of the Monash National Employment and Innovation Cluster adds to the importance of a strong relationship between Town and Gown. To achieve this, the author suggests six crucial steps in setting up and delivering a master plan for the innovation precinct to succeed, a useful toolkit that could be adopted in other places.

Chapter 22, contributed by Amparo Tarazona Vento, also departs from an architectural and design perspective but draws our attention to flagship architectures in city branding. Sharing the view of Chapter 14 on the power of history, Vento takes a historical approach to explore the connections between architecture, city branding, culture-led urban regeneration and the political economy of city making more widely, and the evolution of these connections over time. In reflection, Vento sounds at the danger of disconnecting these flagship architectures from everyday lives and the risk of focusing on the iconic city at the expense of the everyday others.

Also paying attention to flagship architectures, Daniel Huppatz, in Chapter 23, critically examines recent iterations of the corporate campus, as represented by Apple Park, Facebook's MPK 21, and Google's Mountain View, from their external, symbolic value of branding and internal space designs that encourage staff creativity and collaboration. Although sustainable practices, programs, and initiatives are emphasised by all three cases, Huppatz points out their separatist nature as these corporate campuses isolate staff from the rest of the world and their use of 'green camouflage' to distract from the campus's automobile dependency and huge energy expenditure elsewhere.

Taking the design perspective further, Stephen Wood, Kim Dovey, and Lucinda Pike, in Chapter 24, ask how, and to what degree, morphology factors such as building types, public/private interfaces, density, mix, and walkability make a difference to creative clusters. Drawing upon a series of in-depth interviews with cultural producers working in creative clusters in Melbourne, Sydney, and Brisbane, Australia, the authors argue that the creative cluster is a socio-spatial assemblage of a set of synergies that they summarise as MANA: Mix, Adaptation, Networks, and Ambivalence. The authors further argue that some of the fuzzier properties, such as 'buzz', 'atmosphere', and 'character' of creative clusters, are emergent effects of these synergies.

The final Chapter 25 in this section, contributed by Marcus Foth, Skye Doherty, and Nick Kelly, is a useful reflection on the role of design and designers. Under the title 'The dark side of creativity', these authors point out that creativity and criminality are close cousins: while creativity is often heralded as a prime skillset planners and designers of the built environment must aspire towards, it can result in consequences that are ambiguous at best and malevolent or harmful at worst. Using design historiography as the method in examining three cases at Howard Smith Wharves, Brisbane airport, and fire resilience design in Australia, these authors sensitise the readers to the unintended implications when design creativity is co-opted by institutional processes and economic frameworks for objectives beyond the designer's own circle of influence.

All in all, chapters in Section 3 have covered a broad range of topics from environmental concerns to creative ecologies, from partnership to morphology. Those writings on design, in particular, have helped to set up a clear reciprocal relation between creativity and the built environment. Whereas a mixture of spatial qualities does attract the clustering of creative businesses,

the design and planning of these qualities need to be deliberate at avoiding certain unfavourable consequences.

Section 4: Technology and innovation

This section illustrates how technologies and innovations, as displays of human creativity, have been used in building and strengthening an intelligent, real-time, responsive urban agenda. Authors are encouraged to critically evaluate their effect and effectiveness, including those negative ones.

Chapter 26, contributed by Mark Stevenson and Avita Streatfield, reviews innovations in big data collection and analysis. Specific applications covered include in-vehicle telematics, Mobility-as-a-Service, on-demand transport, and electric micro-mobility. The authors believe that big data will enable cities to not only adapt to an unstable climate but also to digitalise their transport systems. It, therefore, will be crucial for planners and decision-makers to utilise big data to monitor the development of urban areas and determine priorities for resource allocation.

Focusing on Mobility as a Service (MaaS), in Chapter 27, Xiaoyang Yu, Prithvi Bhat Beeramoole, Chaitrali Shirke, Paul Scott, and Alexander Paz discuss how it could be used as a single platform to provide travellers with access to (i) a broad range of transport options; (ii) trip information; and (iii) payment services, recommendations, and incentives. A case study using a stated preference for MaaS in Queensland is presented. Detailed statistical analysis reveals that price, access to public transport, rideshare, and carshare facilities are important attributes affecting MaaS preferences. Age and income levels are also important influencers. Most importantly, an overall reluctance was observed for MaaS uptake, suggesting MaaS is still a new idea with a tiny market presence in Australia.

Another case of big data implementation is critically discussed in Chapter 28 by Mark Wilson, Travis Decaminada, Cornelius Darcy, and Eva Kassens-Noor. Specifically, these authors ask how the narrative of smart cities is created and disseminated. Analysing 4.7 million tweets containing #smartcity or #smartcities, they show that the major influencers for smart cities on Twitter are centrally placed or allied to the technology vendors and advisers that endorse smart cities and that a few influencers and bots account for a significant share of the tweets on the subject. These lead to the question about how an increasingly technology-based society learns and understands the forces that shape our daily life.

Taking on this question, Daniel de O. Vasconcelos, in Chapter 29, discusses the new socio-spatial dimensions of creativity by theorising the creative hybrid-places in the digital age. The author points out that there is a profound yet under-explored nexus between creativity, digital technologies, and the urban environment. To fill this gap, Vasconcelos argues that the recent digitisation of social practices has led to the rise of unbundled creativity, a form of creativity that is flexible, discontinuous, and a source of new subjectivities and embodiments. Its spatial reproduction is defined as creative hybrid-places, an assemblage of spaces integrated by digital technologies that support different tasks and requirements of creative production.

Paying special attention to the virtual spaces, Chapters 30 and 31 illustrate the rise of augmented (AR) and virtual reality (VR) from different perspectives. Chapter 30, contributed by Jennifer Whyte and Dragana Nikolić, approaches AR and VR as useful technologies that could democratise design by making built environments more accessible. They detail progress on AR/VR applications in the built environment and the impact of AR and VR on creativity and design across a range of design domains. This leads them to highlight that many existing frameworks and approaches are inadequate to support a playful and creative design inquiry. The authors hence call for relinquishing control in ways that make design more participatory.

In Chapter 31, Peter Raisbeck and Michaela Prunotto conceptualise the application of AR and VR as part of a libidinal economy. Central to VR production is the desire to remake the real. But this (re)framing process, according to the authors, also seduces the passive adoption of false innovation for the sake of being spuriously 'cutting edge' rather than offering new political futures. Examining the adoptions of VR in architecture, construction, and planning, the authors note that VR and its creative imaginaries exist within an entangled libidinal ecology of desiring production. In this way and contrary to the view of Chapter 30, VR actually fosters control over the subjectivity of others through the design and manipulation of perception rather than producing a resistant politics.

Shifting our attention to the construction discipline, Yanqing Fang and Shang Gao, in Chapter 32, offer a thorough literature review of lean construction in China. The authors focus on four topic areas in their content analysis: Lean construction theory and application, areas of Lean construction research, factors related to the influence of Lean construction, and an evaluation of the effect of Lean construction in China. Overall, Fang and Gao argue that the existing research on lean construction theory is somewhat lacking, the drivers of lean construction need to be strengthened, and the evaluation of lean construction effects needs to be deepened.

In Chapter 33, Sarah Bell, Charlotte Johnson, Tse-Hui I, Kat Austen, and Gemma Moore provide an interesting case of bottom-up infrastructure design that supports healthy, sustainable, and resilient cities. A six-step design method and a set of associated tools are offered, including: setting aims, characterising communities, capturing requirements, analysing options, crafting solutions, and evaluation. The method was applied to the design of a rooftop garden on a social-housing estate in London. The implementation process shows the potential for digital tools to further enable the intersection of community and technical knowledge in creative co-design of infrastructure and opportunities to incorporate more community creativity in formal design processes.

Also focusing on the roles of agents in adopting and transforming technologies and spaces, Chapter 34, contributed by Ana Cristina Fachinelli, Suélen Bebber, Bianca Libardi, and Thais Zimmermann Suzin, discusses different strategies used to foster areas of innovation (AOIs) in three Brazilian cases of Porto Digital Technological Park in Recife, Sapiens Centre Creative District in Florianópolis, and the Fourth District in Porto Alegre. The authors find evidence of the different performances of the agents of the Triple Helix and that all agents are necessary to fulfil the phases for the transformation of the environments into a creative and innovative space.

Julie Miao, Adiwan Fahlan Aritenang, and Nadia Gissma, in Chapter 35, also touch upon the different stakeholders involved in technology advancement and spatial transformation. They enter this discussion through the smart city discourse and the coworking spaces in particular. Using spatial network analysis, this chapter contributes to existing literature with a case study on Bandung, a creative and smart city in Indonesia. It demonstrates the spatial agglomeration tendency of coworking spaces as well as their diverse physical and social environments as a result of their size, financial strength, and history. The future development of coworking spaces in Indonesia, however, is facing the challenge of regulative ambiguity, hence calls for urgent policy action.

Chapter 36, contributed by Giorgio Marfella, explores the relationship between design, technology, and creativity through the phenomenon of tall buildings. He argues that tall buildings are generated by the encounter of innovative building technologies and architectural ideas with the entrepreneurial forces that foresee the benefits of their economic exploitation. A historical account of skyscrapers in Melbourne's Central Business District reveals a clear shift from owner-occupied properties to speculative projects, and highlights the importance of design in contributing to change while balancing public and private interests in high-rise developments.

It is clear that contributors in this section have paid attention not only to specific technologies and their applications but more so to the social and institutional environments and key agents that either enable or constrain their adoption and efficacy. Technologies and innovative productions, therefore, are the artefacts of creativity, whose spatial and social embeddedness requires contextualised interpretation and analysis.

Section 5: Governance and planning

Chapters in this section examine governance opportunities and challenges at the interface between creativity and built environment. Leading voices from different regions are brought on board to provide a global review of practice in connecting creativity and built environment, and how communities and grassroot initiatives are responding to, and responded by, both planned and bottom-up approaches. Creativity and/or opportunism of the public sector in forging strategic partnerships are also distilled and analysed.

Chapter 37, contributed by Paul Walker, starts this section with an interesting historical review of the birth and demise of the Multifunction Polis in Australia, which was proposed for Australia by the Japanese Minister for International Trade and Industry in 1987. After government investment reputed to be $100 million, the scheme was abandoned in 1997. Documental analysis reveals suspicion about the Japanese intentions and the different expectations on both sides. Interestingly, Walker noted the South Australian proposal won on the base of the priority it gave to urban design over propositions about industry and by its focus on environmental issues – both were advanced in its time and demonstrated bureaucratic creativity.

Building upon Walker's account but fast forward to Australia's more recent creative city pursue, Emma Felton, in Chapter 38, discussed the unfolding of this planning logic and the broader social-economic consequences. Specific to Australia, Felton points out that current creative city thesis has overwhelmingly focused on inner-city precincts while overlooked activities occurring in the suburbs and outer suburbs. Moreover, the suburbs rather than the city, are typically the location of buildings which accommodate small-scale creative and craft type activities found in what have become known as makerspaces. Yet current arts and culture framework in Australia has left a gap in planning for these quasi-creative precincts.

Elaborating this suburb creativity, Alan Pert and Nicholas Phelps, in Chapter 39, argue that the suburbs have always been locations for greater experimentation with regard to the built environment than is commonly recognised. Moreover, governments have at times themselves been important developers or, as regulators, instigators of experimentation in suburban housing. They present instances of suburbs by design in greater Melbourne, including Merchant Builders' cluster housing anomalies, Boyd's antidote to ugliness at Fountain Gate, Bent Architecture's 'Living Places' cluster social housing and Habitat 21, and Delfin's master planned community at Caroline Springs. All cases illustrate some of the patches of innovation and residential design beauty in what might otherwise be characterised as greater Melbourne's suburban landscape.

Shifting our attention to innovation districts, in Chapter 40, Joshua Drucker provides a useful review of this approach. He outlines what makes innovation districts different is their intentional grouping of multiple elements, which combine networking opportunities, entrepreneurial assistance, and other innovation support services. These districts package them together within a circumscribed and thickly clustered space, the physical features of which catalyse knowledge spillovers and networking opportunities while motivating and gratifying workers and entrepreneurs. Physical characteristics, in particular, are recognised as having a pivotal influence in an innovation district, and in an economic development strategy more broadly.

Chapter 41, contributed by Carla Maria Kayanan, builds on above discussion by tracing the scholarship on tech spaces. While current literature emphasises the importance of a dense, walkable, amenity rich urban fabric as catalyst for the spontaneous synergistic interactions integral to innovation, the case of Dublin Docklands discussed in this chapter reveals that urban restructuring accommodating the desires of the tech sector creates new material, cultural, and social tensions. Critically, the author warns that without a deliberate change, the planning apparatus ends up either meeting the demands of the tech sector or finds that they do not have the means to achieve the type of comprehensive neighbourhood envisioned at the beginning.

The phenomenon of large corporates flooding back to heritage buildings in the old district of Dublin also finds its replication in Paris. Jacob Thomas Simpson, in Chapter 42, presents empirical evidence on the prevalence of historic buildings among foreign firms in Paris Ile-de-France. In particular, Simpson examines the role of property market actors in shaping the quality of the built environment. Interestingly, interviews with actors involved in site selection revealed that historic buildings are regarded as 'second best' and less attractive compared to new built, even within the city centre, although creative industries and creative classes tend to appreciate the value of built heritage. His findings suggest that the types of investment taking place in historic Paris are framed by planning and preservation policies.

In Chapter 43, Sha Liu and Kristian Ruming, echoing the writing of Rob McGauran in Chapter 21, further add to the debate on urban innovation and innovation districts from the perspective of universities and university incubators. Perceiving these incubators as physical, social, and educational spaces of creativity and innovation, Liu and Ruming examine how the Macquarie University incubator (Mqi) encapsulates the ideals of creativity and innovation, and how ideals of creativity and innovation have informed the planning, design, and construction of the Mqi. The physical design of Mqi, its social programs, and its educational missions have all worked together to support start-ups and build connections between the university and industries.

Summarising discussions on cultural amenities and planning, Robert Kloosterman and Jochem de Vries in Chapter 44 present a holistic framework that distinguishes four types of cultural amenities. These include: small scale and caters to niche markets; small scale and caters to local mainstream audience; large scale with a niche orientation; and large scale that targets a mainstream audience. Both direct and indirect government interventions could be used to steer their development, as shown by the case of Amsterdam, but a governance perspective brings indirect interventions and partnerships to the fore.

The final Chapter 45 in this section, contributed by Caitlin Morrissey and Michele Acuto, is a very useful remark on the making of 'global city'. In particular, the authors, by reviewing how current research on, and policymaking for, global city-making has engaged with creativity, call for a broader 'global urban' interpretation of this domain. The chapter advocates for engaging with scholarship that has recast engagement with creativity from beyond the global north in a more cosmopolitan fashion. Creativity, from this point of view, is argued as not only a powerful asset and pervasive 'ideas industry' in circuits of global city-making but also a core component of the way we imagine the 'global' in cities. It is in itself an essential piece of the act of 'worlding' of urban processes, cities, and urbanisation, which allows us to expand the vocabulary and practice of global(ly engaged) city-making from a more inclusive point of view.

Discussion and way forward

Together, contributors in this Companion have initialised an intellectual journey of comprehending the reciprocal relations between creativity and our built environment, drawing insights from some of the most relevant disciplines, which, however, rarely talk to each other. Authors in

this Companion assemble and assess an array of plausible methodologies against their specific contexts in examining the multi-faceted interactions between the dynamic creativity and the inert built environment. By comparing and contrasting the thinking and practice behind some of the popular development strategies, this collection invites critical reflections of the validity of these strategies in different regional settings and the originality of the strategy being used. Explicitly, contributions in this Companion promote an appreciation of politics and power relations in multi-level, multi-agent, and devolving systems of government and governance and the normative dimensions of value judgements about the kinds of creativity we should be pursuing and the built environment we should be developing.

Some common themes and open questions also emerge across the 45 chapters that call for further explorations.

First of all, there is a need to further unpack the multi-dimensional and multi-scalar nature of creativity and the built environment. Several authors have pointed out the fuzzy definition and fluid boundary of creativity, and problematised its attachment to particular cities, places, and social classes. HaeRan Shin's (Chapter 14) suggestion on adding history and memory to the play of creativity is a case in point. Who are creative, who can execute it, and who benefits from it are also some of the critical questions explicitly asked by Mark Wilson and colleagues (Chapter 28). One strong message emerged from our collection is that creativity is a distributed quality found across the public, the private, the third sector, as well as the populace. It can benefit but also impede economic and social well-being, as shown in Marcus Foth and co-authors' writing on the dark side of creativity (Chapter 25). The meaning and content of the built environment are also scrutinised by several authors. City and its built environment, for example, is perceived as a normative world by Dan Eugen Ratiu (Chapter 10), and Daniel de O. Vasconcelos (Chapter 29) writes on the creative hybrid-places as the norm in a digital age. Analytically, Tommi Inkinen (Chapter 17) suggests the built environment's material (architectural); social (interactive); and experienced (emotional) elements for a more comprehensive investigation.

Second and related, the relationship between creativity and the built environment is variegated and mutable. On the one hand, it is arguably to say that creative clusters are more likely to be found in certain built environments, as summarised in Wood and colleageus' MANA quality (Chapter 24), in Pert and Phelps' examination of suburbs (Chapter 39), in Drucker's surveying of innovation districts (Chapter 40), and in Kloosterman and de Vries' distinguish between four types of cultural amenities (Chapter 44). Moreover, the quality of a built environment is evidenced to have an impact on regional and local innovation and creativity, as shown by Cerisola (Chapter 2) and Wu et al. (Chapter 3). Importantly, several authors have highlighted certain built elements that are important to innovation and creativity but have not attracted sufficient attention so far. These include, for example, affordable housing (see Chapters 4 and 21), innovation infrastructures (Chapter 6), makerspaces (Chapter 38), and university incubators (Chapter 43). On the other hand, the reciprocal relationship between creativity and the built environment is strongly shaped by the contexts and agents. It seems that informal businesses (Chapter 5) and third sectors (Chapters 11–13) are playing crucial roles in the global south, sometimes even filling the gaps left by formal institutions. Whereas in global north, planning regulations, developers, architects, financiers, and large corporates (see, e.g., Chapters 6, 8, 9, 22, 36, 41, and 42), often hold account for the creativity-built environment interface. Moreover, the cause effect between creativity and built environment could be positive or negative, depending on the rationales and relative powers of different stakeholders as well as how their different interests are negotiated and compromised (see Chapter 20).

Third, there is a rich pool of methodological approaches emerging from this volume, both qualitatively and quantitively. Some of the most-used methods include literature review and

content analysis (see, e.g., Chapters 19 and 32), secondary data and case studies (e.g., Chapters 7, 16, and 23), as well as primary data collected through interviews and surveys (e.g., Chapters 4 and 27). Other useful and innovative methodological tools are historical account (e.g., Chapter 37), spatial modelling (Chapter 3), geographic information system mapping (Chapter 24), social network analysis (Chapter 35), participatory planning (Chapter 33) and grounded theory (Chapter 17). There are also writings from the authors' personal experience in observing, implementing, and/or managing an innovation ecosystem (see, e.g., Chapters 20, 21, and 33), which usefully bridge theoretical exploration with practical actions. There is, therefore, a further need of methodological conversation and evidence exchange among scholars interested in the broad theme of this Champion.

Last but not least, almost all contributions have usefully reflected on the roles and implications of public interventions in the built environment to stimulate creative industries and revitalise local economy. It is noted that high-quality built environment is either an asset itself, or a marketing tool to attract investments, tourists, and consumptions. The role of the public sector is not only regulator but also negotiator, mediator, and even direct investor in this process. But two important chains on this feedback loop are arguably undermined so far. The first chain is the creativity within the public sector in imagining a different future for its localities and the creative toolkit they deploy to approach this. Miao's writing (Chapter 6) on innovation infrastructure is a direct response to this gap, whereas Simpson's (Chapter 42) finding of the unintentional clustering forced by heritage legislation provides indirect evidence on the role of planning. The other chain is the impact of a creative cluster or agents on local built forms. Evidence for this chain effect is more difficult to find given the inert nature of the built environment and the more scatted evidence of proactive transformation. Stories told by Mukhopadhyay (Chapter 11) on India's street-based public art festivals and by Phelps and Wijaya (Chapter 5) on home as a locus of innovation have managed to shed some light on this regard. Further research, nonetheless, is needed to comprehend and nourish the creativity and built environment synergy.

We believe in absence of rich literary resources on the interplay between creativity and the built environment, this Companion will serve as a key repository of relevant information, material, and knowledge to support research, policymaking, practice, and transferability of experiences to bridge the disconnect. Happy reading!

Acknowledgment

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Section I

Economy and Productivity

2 Built cultural heritage and local development

The mediating effect of multi-dimensional creativity

Silvia Cerisola

Introduction

This chapter aims at exploring local development through the relationship between built environment and creativity. The reasoning is conducted according to a particular approach, which focuses on specific perspectives on both elements. In fact, the peculiar built environment we have in mind is a 'cultural' one, i.e., built cultural heritage in terms of historical/architectonical beauties. On the other hand, the creativity we refer to is multi-dimensional, thus involving a combination of different talents, i.e., artistic, scientific, and economic.

Both built environment (here in the form of built cultural heritage) and creativity may be fully considered as territorially rooted, which further justifies the territorial attitude characterising the present contribution. While in the case of the built environment the territorial foundations are quite explicit, it is worth mentioning here the reasons why we see creativity as a territorial feature. Although creativity has been in fact initially considered as an *individual* psychological characteristic (one among different 'personality traits'), within this work we refer to the concept of *creative environment*, according to the idea that what is called 'creative' is never the result of individual action per se (Csikszentmihalyi 1988). Rather, social, cultural, historical, and physical contexts are important for individuals, as they provide the basis from which to create meanings (Nonaka et al. 2000; Landry 2011). In this sense, the creative environment that characterises a given area may be considered as determined by the endowment of different creative talents and by their particular combination.

Overall, many different disciplines have investigated built cultural heritage (e.g., history, architecture, preservation, conservation, valorisation, and restoration) and creativity (e.g., psychology, sociology, neuroscience) before these elements were considered within the economic domain. All these approaches have informed the present work and have contributed to the wide and multidisciplinary conceptual and operational framework presented here.[1] In more detail, the reasoning developed in the present contribution explores how the presence of built cultural heritage may inspire multi-dimensional creativity, which in turn favours local development through the generation of new and original ideas.

To unfold the interpretation proposed, the chapter is structured as follows. After a literature review on the relationship between built cultural heritage, creativity, and local development, our operational definition of multi-dimensional creativity is conceptually and empirically explained. Subsequently, the results of a recent applied study on England are presented and interestingly qualitatively compared with those obtained by the author in earlier studies about Italy. Some final reflections conclude the work.

Built cultural heritage, creativity, and local development in the existing literature

Built cultural heritage and local development

When we mention 'built cultural heritage', the immediate reference that comes to mind is immovable tangible cultural heritage, in terms of monuments, groups of buildings, and sites, which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view (UNESCO 1972). Immovable tangible cultural heritage also implicitly encompasses non-material meanings such as identity and experience (Carr 1994; ICOMOS 1964; Burra Charter 1999; Charter of Krakow 2000; Faro Convention 2005) since works of art and culture are influenced by the historical period during which they are created, functioning as physical supports of collective memory, sense of belonging and civic pride. Therefore, they can be considered a tangible expression of the history and culture of a given territory and community (Carta 1999; Spagnolo 2019), as well as identity and cohesion (Council of the European Union 2014; European Commission 2016).

The role of the built cultural heritage in local and regional socioeconomic development has been emphasised in the last 20 years by many scholars and institutions.[2] However, in most cases, an effective relationship between built cultural heritage and local economic development has been simply assumed, according to the idea that the presence of tangible cultural heritage has an automatically positive effect on economic development. In other cases, the only investigated transmission channel through which the presence of built cultural heritage is supposed to affect economic development is cultural tourism.[3]

Although undeniably significant, this mechanism risks to hide more complex and sophisticated processes that, instead, could well be at place. As Ashworth (2013) puts it, in fact, tangible cultural heritage in the form of a historic built environment is a place-bound major contributor to people's identification with specific places and it becomes inextricably involved in local place images, identities, and economic geographies. In this sense, tangible heritage is frequently believed to perform many instrumental roles as a driver of (local) economic development (e.g., as a location factor for people and other sectors, as a contributor to environmental amenities and local identity, as a critical component of place image promotion and branding, and as a catalytic element in neighbourhood regeneration) (p. 367).[4] According to this wider and more sophisticated perspective, some characteristics of societies such as creativity, sense of place, cultural landscape, social cohesion, and identity may play a relevant and important (although indirect) role within the relationship between built cultural heritage and the local socioeconomic development.

Related to this, and conceptually drawing on some previous works (Cerisola 2019a, 2019b), the attempt here is to consider the inspirational role played by built cultural heritage[5] on creativity, as will be thoroughly explained later.

Creativity and local development

Initially studied within the psychology domain, creativity has relatively recently become a relevant research topic in economic and spatial fields due to its potential positive impact on local economic development. Its promising role has been indeed recognised by both scholars and institutions (see, for instance, UNCTAD 2008, 2010; European Commission 2010). In particular, creativity is seen as a central driver of growth and change, mainly through its role in innovation. Therefore, deepening our understanding of the mechanisms through which creativity may have a positive impact on economic performance becomes important also from a policy perspective.

However, defining and measuring creativity is not straightforward, essentially because the concept is fuzzy, intangible, and multi-dimensional.

While there are many different existing definitions of creativity – substantially based either on its content, or on its outcome (product), or on its characteristics as a process (for a review, see Cerisola 2019a, Chapter 3) – the challenging measurement of this intangible and sophisticated concept is performed mainly through two approaches: the industry-based one and the occupational one.

The industry-based approach focuses on the identification of 'creative industries' whose employment and value added are considered as proxies for the creativity of a given area.[6] The existing literature on the relation between creativity and economic development based on creative industries highlights that these industries tend to cluster and to concentrate in big cities, characterised by high population density, agglomeration economies, positive externalities, and easy face-to-face interaction.[7] Nevertheless, not much is available on the direct impact of creative industries on economic development. Among the existing studies, De Miguel-Molina et al. (2012) show an important correlation between creative industries and regional wealth, while Boix et al. (2013) provide evidence on the impact of creative services on regional wealth. More recently, Boix-Domenech and Soler-Marco (2017) found out that creative service industries increase regional labour productivity.

The second existing approach to the measurement of creativity is the occupational one and in fact more empirical evidence on the link between creativity and development is available based on this perspective. The occupational approach is related to Florida's (2002) work, where the author looked at 'creative occupations', identifying a so-called 'creative class'. The idea that the presence of individuals working in creative jobs like sciences, education, culture, and arts favours local development has been remarked especially among policymakers. In this sense, a quite abundant literature is available, showing the positive contribution of the creative class on productivity (e.g., Florida et al. 2008; Marrocu and Paci 2012, 2013) and employment growth (e.g., Marlet and van Woerkens 2007; McGranahan and Wojan 2007; Boschma and Fritsch 2009), although in this last case Faggian et al. (2017) actually find out that creativity (measured *à la* Florida) does not appear as a dominant factor with respect to education and entrepreneurship.

However, issues related to the causality direction of the investigated relationships are far from being solved and to be sure they still deserve particular attention, needing to be carefully considered also in the future related research. In addition, both approaches explained above present some limits and drawbacks.[8] As for creative industries, in most cases, the whole production chain is considered (e.g., Howkins 2007; see Boix et al. 2013, on creating vs making and UNCTAD 2010, on value-chain analysis), without distinction between more or less design intensive activities. This also implies that even people who do not perform creative tasks within a creative industry are eventually considered, while people performing creative tasks outside the creative industries are not. Following this logic, the occupational approach overcomes the main problems of the industry-based one since it considers the specific tasks performed. Nevertheless, Florida's creative class comes out to be very (too) wide, besides being strongly correlated with the group of more educated people, as highlighted by many scholars, who pointed out the difficulty in discriminating between the creative and the educational components (Glaeser 2005). Moreover, both methods are based on an *ex-ante* selection of creative sectors/occupations which is in fact quite discretionary.

Theoretically drawing on some earlier studies by the author, the present chapter considers the multi-dimensional nature of creativity and proposes a conceptual and operational perspective to disentangle the complex relationship between built cultural heritage, creativity, and local growth, as will be illustrated in the rest of this work.

Creativity as a mediator between built cultural heritage and local development

The existing literature has also mildly suggested that there is a relation between built cultural heritage and creativity. Back in 2005, the Faro Convention already stressed how these elements are linked, the promotion of cultural heritage protection being a crucial factor in the mutually supporting objectives of sustainable development and creativity. Later, the European Commission (2012, 2014) considered the contribution of cultural heritage through its direct and indirect economic potential, including the capacity to strengthen cultural and creative industries and to inspire creators and thinkers.

Clarifying the channels through which the cultural (built heritage) and creative features of a local area can positively affect its economic development is therefore extremely important to design appropriate policies, able to trigger and push economic performance effectively, taking advantage of (and incentivising) the peculiar local cultural and creative environment. In more details, the present work puts together and reconciles the two strands of literature described in the previous sections, with the aim of highlighting the *mediating* function of creativity in linking built cultural heritage to local development. Our belief, in fact, is that built cultural heritage – through its aesthetical, beautifying, and identity value – can play an *inspirational role* for the generation of local creativity, which in turn works as a trigger of development.

This mechanism was empirically – and successfully – evaluated at the local level in Italy and, more recently, in England NUTS3 regions (Cerisola 2022). The present chapter focuses on this last case, also providing some comparisons between the two situations, which show in fact some interesting and instructive differences. In order to properly get into the topic, the next section is devoted to explaining the perspective taken here to conceptually and operationally define (multi-dimensional) creativity at the local level.

Multi-dimensional creativity: an operational definition

Defining and measuring creativity is extremely difficult, essentially because the concept is blurred, abstract, and complex and because there are in fact distinct types of creativity. Thus, to address the topic, the present work identifies artistic, scientific, and economic creativities as the main modes in which local creativity can be expressed. Based on specific talents, each of them is shortly defined as follows.

Artistic creativity involves imagination and capacity to generate original ideas and novel ways of interpreting the world, mainly expressed through text, sound, image, and performing arts (UNCTAD 2010, ch.1).
Scientific creativity implies curiosity and willingness to experiment and make new connections in problem-solving (UNCTAD 2010, ch.1). This type of creativity finds its expression in engineering, or R&D and academic research in any field.
Economic creativity is related to entrepreneurial skills, and it manifests itself through business ideas/practices/organisation, marketing, etc. (see also UNCTAD 2010, ch.1; Stolarick et al. 2011).

In more detail, the present contribution is based on the conceptual idea that local creativity can be interpreted as 'ideation based on talent of different types, i.e., stemming from different domains'. These different talents can fruitfully and synergistically interact, being simultaneously present, with different intensities and in different combinations, within a given territory, therefore characterising it. In this sense, our belief is that single creative types do not contribute

particularly to local development. Instead, the most breakthrough ideas are the result of the interaction of different creative talents stemming from different mental settings. In fact, their association is the way to approach the complexity of the world, thanks to the combination of artistic, scientific, and economic talents. The mental cross-fertilisation of talents (Andersson 1985), rather than creativity on its own, is, therefore, the driver of local development (Cerisola 2018).

This definition, however, needs to be operationalised. Since the *occupational* approach to the measurement of creativity in fact overcomes some of the limits of the *industrial* approach (see previous section), the former is here considered as the starting point for quantifying *artistic* and *scientific creativity*, also trying to include some sectoral considerations. Therefore, *artistic creativity* is measured as the share of people performing creative tasks in artistic sectors and *scientific creativity* as the share of people performing creative tasks in scientific sectors over total employment.[9] Finally, *economic creativity* is measured as trademark applications per capita, being trademarks an expression of new and original business ideas.

Based on the conceptual and empirical definition of multi-dimensional local creativity presented above, the link between built cultural heritage and local development as mediated by multi-dimensional creativity was recently explored in England NUTS3 regions. The outcome is described in detail in what follows, as well as qualitatively compared with the case of Italy.

The mediating role of territorial multi-dimensional creativity between built cultural heritage and local development in England: a comparison with Italy

As mentioned in the previous section, the research work presented here made use of data geographically disaggregated at the NUTS3 level.[10] Such level of spatial disaggregation can be considered particularly appropriate since it is quite detailed, but still allows to consider our territorial perspective because it involves a whole region characterised by specific tangible and intangible features (see the concept of *territorial capital* in OECD 2001; European Commission 2005; Camagni 2008, 2019).

In particular, in a recent work on England, data on built cultural heritage were kindly provided by Historic England[11] in terms of NUTS3 level information on the number of *listed buildings*.[12] The absolute values were weighted by area to obtain an indicator representing the residents' degree of exposure to built cultural heritage, and consequently – as mentioned before – also indirectly expressing some intangible aspects such as identity, collective memory, culture, and sense of belonging.

The endowment of built cultural heritage in England is displayed in Figure 2.1, with the distinct categories being defined according to the quartiles of the distribution. As can be smoothly inferred from the map, the northern part of England – more remote and rural – is less endowed with built cultural heritage, which is, instead, clearly concentrated in the cities. Birmingham, Southampton, York, Manchester, Portsmouth, Bristol, Nottingham, Liverpool, and – above all – London evidently emerge from the map. A zoomed image of London is also provided to supply a more apparent contribution to the understanding of the great peculiarity of this city within the overall English context.

This piece of information functioned as the starting point for the empirical analyses conducted by the author to explore the idea that the exposure to the physical presence of impressive, beautiful, and historical elements of built cultural heritage inspires territorial multi-dimensional creativity. Through this mechanism, it favours local development since creativity in turn pushes innovation by promoting the generation of new and original ideas. In order to empirically investigate the reasoning, measuring creativity as explained in the previous section, structural equation models were performed to test econometrically the overall relation.[13]
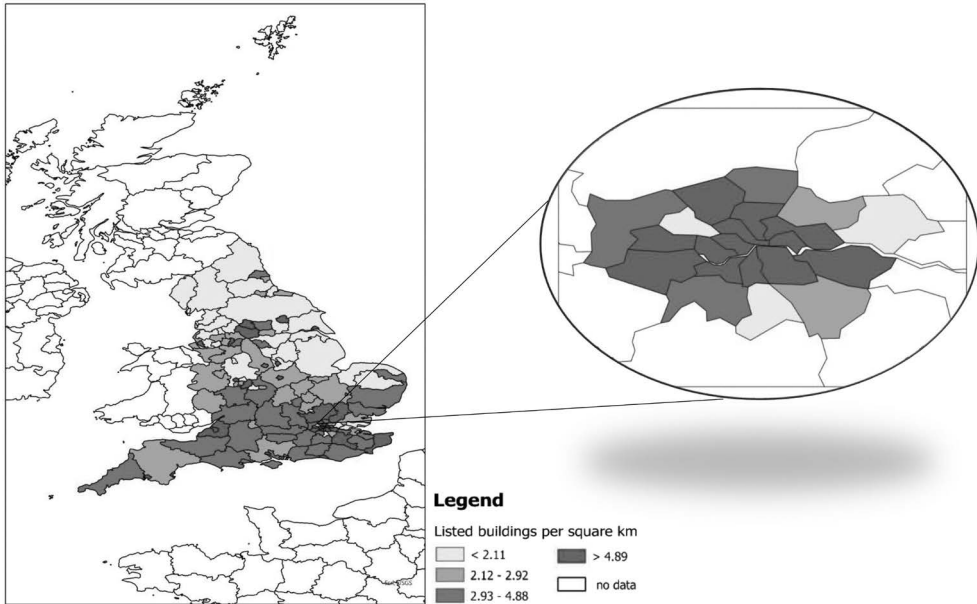
Figure 2.1 Listed buildings per square km in England and in London.

Source: Author's elaboration on data kindly provided by Historic England (listed buildings). Regions' areas were retrieved from Eurostat.

As for the results, the presence of built cultural heritage seems to be effectively used in England, and in fact, it appears to have a positive direct impact on economic development (such outcome being possibly related to tourism). This is not the case in Italy, instead. On the other hand, the three creative talents do not appear to affect economic development when considered individually, and this is interestingly the case in both countries, which confirms the expectation that single types of creativity are not effective *per se*.

For the sake of clarity and synthesis, the other – more sophisticated and more interesting – results are graphically displayed in Figure 2.2, where panel (a) represents England and panel (b) represents Italy. Bold links symbolise statistically significant relationships. As can be seen, the existence of abundant built cultural heritage is significantly related to economic creativity in the English case, while it is the reverse in Italy, where it comes out to be a determinant of artistic and scientific creativity.

The hypothesis of a fruitful interaction between different creative talents is empirically investigated through the inclusion of interaction terms in the main econometric specification. In this case, the outcome demonstrates that while in England artistic and scientific creative talents do not appear to play any significant joint role in affecting economic development, when they are interacted with economic creativity it clearly emerges how the regions that are abundantly endowed with both economic creative talent – on the one hand – and with either scientific or artistic creativity – on the other – perform better in terms of economic development. The result is consistent with the case of Italy, where nevertheless also artistic and scientific creativity play a significantly positive synergistic role in favouring development.

Thus, overall, in England, built cultural heritage seems to enhance economic development both directly and through its role in inspiring economic creativity, where the mechanism could
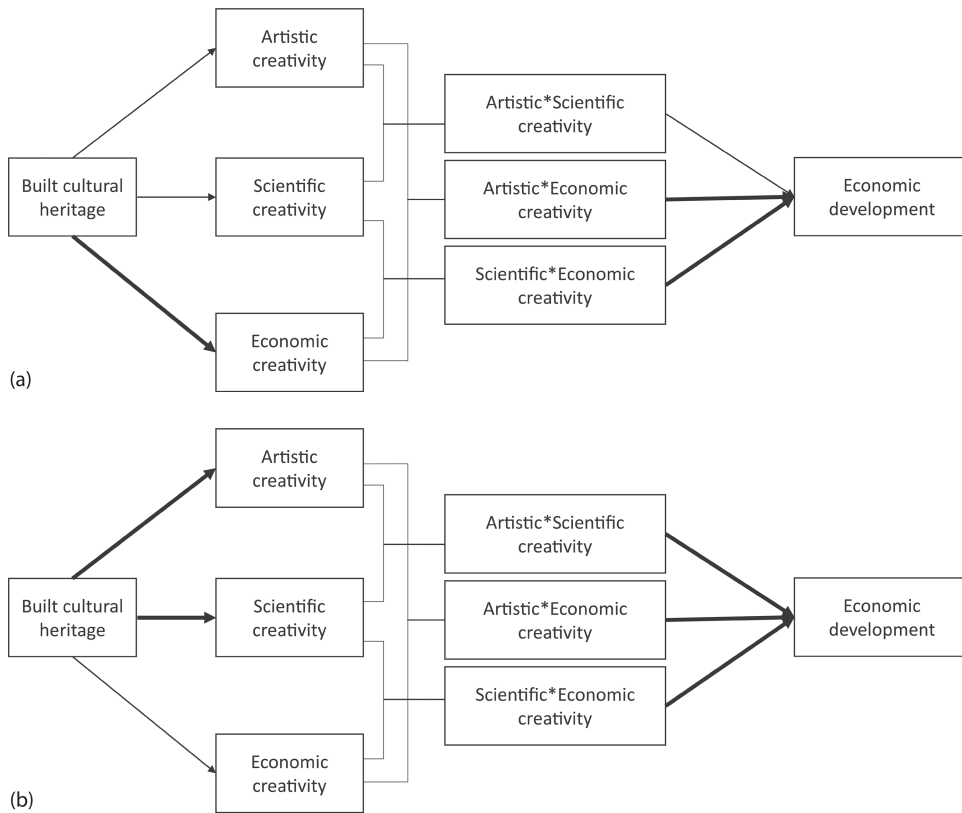
Figure 2.2 From built cultural heritage to development through multi-dimensional creativity. (a) England; (b) Italy.

Source: Author's elaboration based on Cerisola (2019a, 2019b, 2022).

be associated with the presence of built cultural heritage triggering related entrepreneurial and business ideas, which, in turn, do interact effectively with artistic and scientific creative talents. The process is conceptually similar in Italy but, in this case, it is linked to the positive effects of built cultural heritage on artistic and scientific types of creativity, which synergistically interact between themselves and also positively and smoothly interplay with economic creativity in favouring local development. Therefore, while in England, built cultural heritage seems to be more conducive to organisational and business skills, in Italy, the creative talents that come out to be stimulated by the presence of impressive tangible elements of culture are those stemming from more traditional sources (i.e., art and science).

Overall, there are indeed significant differences between the two countries, and this is extremely interesting since it conveys the message that the mechanism (built cultural heritage → multi-dimensional creativity → development) is, in fact, at play, but it works differently in different cultural and institutional contexts. The peculiar features of the built cultural heritage present in an area may also affect the particular ways in which it inspires different creative talents. This outcome highlights once more the importance of local – mainly intangible – specific characteristics (territorial capital) in determining the development path of a given area.

Moreover, the case of England led our attention towards the role played by a particularly big, vibrant, and developed metropolitan area, such as the one of London, where scientific and – even more so – artistic creative talents are concentrated, as well as built cultural heritage. The city of London can for sure be counted among the urban areas characterised by the 'knowledge city paradigm', implying a leading role in economic, social, and cultural development, beside the importance of intangible assets in their evolution. In this sense, cities may be considered as economic engines and cradles of creativity and innovation, which can also be promoted by the stimulating role of diversity (Yigitcanlar et al. 2012). In addition, knowledge cities are characterised by open attitudes towards the external world (cosmopolitan local identity), as well as by a vibrant cultural participation, all elements generating, boosting, and attracting talents, social vitality, and cultural heterogeneity (Landry and Bianchini 1995; Zukin 1995; Hall 1998; Scott 2000; UNESCO and World Bank 2021; Cerisola and Panzera 2022).

Conclusions

Stimulated by different disciplinary approaches on built cultural heritage, on creativity, and on their relationship, this chapter aimed at illustrating an unconventional transmission channel which implies the positive effect of built cultural heritage on local development through its inspirational role on territorial multi-dimensional creativity. The recently analysed case of England was explained, and it was also compared with some previous studies on Italy.

Overall, built cultural heritage turned out to be a determinant of local development not only through the well-known touristic mechanism but also through a more sophisticated and intangible channel. This result corroborates the importance of proper conservation and valorisation of cultural heritage not only as an unproductive moral duty but also as an effective way of benefiting the well-being of an area. Therefore, it is fundamental to raise awareness on the importance of built environment characterised by the presence of cultural heritage as an effective tool for favouring economic performance through different channels, among which, significantly, local creativity.

As usually happens, some challenges still need to be addressed and some interesting additional issues have emerged, deserving to be further dug into in future research. In particular, the (cultural) built environment-creativity nexus has been here highlighted through an inspirational mechanism. Nevertheless, such relationship has been considered as completely passive, without involving any direct interaction between built cultural heritage and residents. One might think, however, that the link could be even more effective if 'activated' through the cultural participation (engaged fruition) of local stakeholders. This type of transmission channel still requires more academic effort to be properly understood.

In addition, a deeper investigation of the role of cities within this reasoning could be particularly interesting since they are suitable and important *loci* for a fruitful relationship between built cultural heritage and multi-dimensional creativity. However, some potential critical issues also need to be considered in this sense. Concentrating policies and efforts on innovative, creative, cultured, and educated big cities could lead to serious disparities, favouring growth in already strong areas to the detriment of weaker ones. Related to this, the productive relationship between a built environment characterised by cultural heritage and creativity could instead be used to strengthen more fragile areas and possibly to catch-up after the economic crisis generated by the COVID-19 pandemic.

Finally, the application of our reasoning to other and different contexts could provide further insight into this interesting topic.

Notes

1 On the relevance of the interplay between different domains (conservation and economics in particular), the reader may refer to Boniotti and Cerisola (2022).
2 See, among others, Bowitz and Ibenholdt (2009); Ashworth (2013); European Commission, Directorate General for Research and Innovation (2015).
3 E.g., Herrero et al. (2006); Greffe (2009); Yang et al. (2010); Bonet (2011); Patuelli et al. (2013); Snowball (2013); Noonan and Rizzo (2017), Panzera et al. (2020).
4 Related reasonings can also be found in European Council (1999, 2014).
5 On the psychological relationship between patina, spontaneous fantasies, and place attachment the reader may also refer to Wells and Baldwin (2012) and Wells (2017).
6 Among the most renowned classifications of creative industries, UK-DCMS (1998, 2001); WIPO (2003); UNCTAD (2004, 2010); KEA (2006).
7 E.g., Hitters and Richards (2002); Scott (2005); Capone (2007); Freeman (2010); Power (2011); Lazzeretti et al. (2012); Boix et al. (2015).
8 For a more thorough discussion of this issue, the reader may refer to Cerisola (2019a, Chapter 3). In particular, the UK Department of Culture Media and Sport (DCMS 2015) through the concept of 'creative intensity' and the European Commission (2016) also proposed some more sophisticated measurement methods that aim to integrate the creative industries with the occupational perspectives to the quantification of creativity.
9 In more detail, and drawing also on UNCTAD (2010), *artistic creativity* is measured as the share of professional occupations in 'artistically creative' sectors (motion picture, video and television program production, sound recording, and music publishing activities; programming and broadcasting activities; creative, arts and entertainment activities; libraries, archives, museums, and other cultural activities) while *scientific creativity* is measured as the share of professional occupations in 'scientifically creative' sectors (computer programming, consultancy and related activities; architectural and engineering activities; technical testing and analysis; scientific research and development; advertising and market research; other professional, scientific, and technical activities).
10 The NUTS classification (nomenclature of territorial units for statistics) is a hierarchical system for dividing up the economic territory of the EU and the UK for the purpose of collecting, developing, and harmonising European regional statistics, providing socio-economic analyses of the regions, and framing EU regional policies. The NUTS3 level represents small regions for specific diagnoses (https://ec.europa.eu/eurostat/web/nuts/background, accessed 12 May 2020).
11 https://historicengland.org.uk/.
12 *Listed buildings* are buildings of special architectural or historic interest (DCMS 2018, accessed 12 May 2022 at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/757054/Revised_Principles_of_Selection_2018.pdf). They may include great cathedrals, houses, but also more modest but still fascinating structures.
13 Structural equation modelling (SEM) allows to provide a comprehensive econometric model that shows the role of creativity as a mediator between built cultural heritage and economic development. The model is meant to provide the impact of the built cultural heritage on the different creative talents (artistic, scientific, and economic) and the subsequent effect of such (individual and interacted) creative talents on regional economic development (see also Cerisola 2019a, Ch. 7). Moreover, among other regressors, the specification controls for human capital (education) to avoid the problems highlighted before. For additional details on the model and specifications, the reader may refer to Cerisola (2019a), Cerisola (2019b), and Cerisola (2022).

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