

Contextualization Matters: Beyond Abstract, Normative and Universal Approaches

Roderick J. Lawrence PhD

University of Geneva, Switzerland.

Email: Roderick.Lawrence@unige.ch

Abstract

The negative ecological, health and social impacts of intensive agricultural production and deforestation, coupled with rapid urban and suburban development motivated some architects, land-use planners, landscape and urban designers last century to consider how the morphology and size of human settlements impact on natural and human ecosystems at local, regional and global levels. Some initiatives 50 years ago, including the seminal contributions of Constantinos A. Doxiadis, John Habraken, Victor Papanek (among others), preceded current concerns about complex people-society-environment-biosphere interrelations in a rapidly urbanizing world. Notably, the United Nations 2030 Agenda for Sustainable Development and the New Urban Agenda recognize these dilemmas, but these initiatives have not borne anticipated outcomes since 2015. This article explains that the proposed responses to these societal challenges by these international initiatives have devalued fundamental elements of ekistics that combined and synthesized five forces - economic, social, political, technical and cultural factors in a holistic and systemic model. In addition, abstract, dogmatic, normative, and universal approaches commonly used in architecture and urban planning during the last century have remained dominant. The author requests a fundamental rethinking of key drivers of rapid urbanization that need to be understood and corrected according to the diversity and plurality of contextual conditions in which human settlements are constructed. These can be identified and accommodated in Living Labs which are creative real-world settings that explicitly reconnect knowledge and praxis about human habitats, thus overcoming the current deficit in implementing the SDGs, and in particular SDG 11.

Keywords: context; contextualization; cultural, economic and political factors; Living Labs.

Introduction

All buildings, infrastructure and services in human settlements must be conceptualized and constructed using creativity and ingenuity, knowledge and know-how, individual and shared resources, and social conventions and rules that are transmitted across generations (Oliver, 1997; King 1980; Lawrence, 1987). Therefore, the construction of buildings and cities is more than a technical accomplishment. It is a significant societal achievement that relies on collective decisions and commitment, numerous artificial and natural resources, and shared visions about the way people live.

Throughout human history cultural predispositions including shared beliefs, prescriptions and religious practices were meant to ensure a harmonious relation between 'cosmos' - the universe - and 'anthropos' - the human habitat - (see Lawrence, 2023). In essence, cultural predispositions are expressions of social - and place - identities that ensure ontological security. Given that threats of drought, famine, floods, and landslides have never been fully controlled by scientific or technological innovation, as Brian Wynne (2012) noted, sustaining human settlements has been a shared preoccupation of groups and societies for millennia. Unfortunately, policy makers and decision makers in the fields of housing and urban planning rarely address the fundamental metaphysical nature of built environments as human-made places to protect and sustain life. Instead, they have

anchored their contribution in a normative, rationalized system of public administration that Jon Gower Davies (1972) described. This approach, often framed by short-term instrumental rationalism, has changed the nature of planning and constructing human settlements from ideals and strategic visions for radical change to technocratic procedures for piecemeal development. Regrettably, there have been dire consequences: For example, ambient air pollution measures in many planned cities including Beijing, New Delhi and Paris exceed public health safety standards endorsed by the World Health Organization; repeated flooding in cities including Bangkok, Jakarta and New York City recur while citizens in Cape Town, Montevideo and other cities are confronted by a shortage of safe drinking water (UN-Habitat-2010). In sum, although the health of urban populations has improved according to statistics about life expectancy at birth, other data and information record increasing levels of substandard housing and homelessness, high unemployment, and greater socio-economic inequalities in cities in all regions (UN-Habitat, 2016).

Although cities are locations of compound and complex ecological, social and health problems, this article posits that local authorities should accept that housing construction, land-use planning, and urban development can and should have a fundamental contribution in formulating and implementing adaptive responses to these persistent societal challenges. to predictable and unpredictable ecological, geological, health and other



social challenges This article further posits that the appropriate construction and uses of built environments and infrastructure can become a substantial contribution to implementing the 17 sustainable development goals and their 169 targets. Collaborative approaches should include the viewpoints of decision makers including property owners and investors, politicians and public administrators, and professional practitioners in the construction sector (Lawrence, 2022). Moreover, these inclusive approaches should allow for individuals and groups in society to share their knowledge and know-how about their habitat. Lawrence (2021) explained with examples that convergence and collaboration between individuals and institutions in and beyond these sectors can generate a shared understanding of societal challenges in precise localities, before formulating collective responses to them which are socially accepted. He argued that Living-Labs provide a communal setting for testing prototypes before transferring them from specific sites to other neighborhoods.

This inclusive and collaborative approach is radically different from the authoritative, exclusive, and dogmatic procedures commonly used in housing and urban development programs during the last two centuries. Nonetheless, common urban development was challenged from the 1960s: For example, the provision of mass housing was criticized by John Habraken (1972) and alternatives were proposed (see Boosma et al., 2000). Also, the need for a more socially responsible kind of housing and urban development was described by Victor Papanek (1971) and he also presented alternatives (Papanek, 1995). During the last five decades, there has been a growing interest in the contribution of architecture, urban and land use planning to growing concerns about sustainable development especially in relation to rapid urbanization and the challenge of meeting the housing needs of urban populations. This concern for the public good was initially promoted at the first United Nations Conference on Human Settlements (Habitat I) held in Vancouver in 1976; it was then endorsed by Agenda 21 at the United Nations Summit on Environment and Development in Rio de Janeiro in 1992; and followed by the Second Habitat Conference held in Istanbul in 1996. It is noteworthy that there have been many pioneering contributions since the 1960s. Notably, Constantinos A. Doxiadis (1913-1975) should be recognized not only as the founder of ekistics – the science of human settlements – but also as a precursor for sustainable development; and especially those contributions since the 1990s regarding carrying capacity and ecological footprints of human activities (Wackernagel & Rees, 1996).

Acceptance of an international agenda and an intersectoral framework for sustainable development at the United Nations Conference on Sustainable Development (Rio+20) in June 2012 led to the formulation of 17 goals and 169 targets that are not being achieved (Biermann et al., 2022). This is particularly the case with respect to human settlements included in SDG 11 ‘Sustainable Cities and Communities’. This goal aims to “make cities and human settlements inclusive, safe, resilient and sustainable”. Our published research about the different types of barriers to implementing sustainable development identified a strong focus on the core principles of sustainable development that are

founded on universal generalizations and norms that have been used repeatedly to define development agendas during the last century (Lawrence, 2020). Consequently, this international framework, detached from the diversity and plurality of real-world conditions in cities, does not provide an effective governance framework for better implementation because it is voluntary and therefore nonbinding rather than being ethically responsible and just (Lopez Carlos et al., 2020). Beyond major institutional and regulatory reforms that would challenge national sovereignty and neoliberalism, much more attention should be attributed to human beliefs, intentions, motivations, preferences, and fundamental values of those individuals and institutions involved in housing and urban projects (Martin et al., 2015). These constituents of human culture define and are mutually defined by individual–society–environment–biosphere interrelations in precise situations and periods as explained by Lawrence (2001).

Consequently, this article explains why professional practitioners, researchers and policymakers should rethink conventional gaps between knowledge, public policies, and urban development. It explains that interdisciplinary research and intersectoral collaboration are necessary but not sufficient to bridge these gaps because they are strongly influenced by other drivers (Goldstein, 2009). The article explains why ekistics can and should provide epistemological and methodological frameworks that creatively facilitate human agency during collective decision-making about housing and urban development projects. Notably, human agency incorporates articulations of intentions, meanings, norms, and values of individuals and institutions in precise situations; these are influential drivers included in the anthropocosmos model formulated by Doxiadis (1968; 1970). These driving forces include economic/financial; social/group; political; technical and cultural factors. The article explains that these drivers and core elements of ekistics can be used as a reference model provided that they are considered according to their societal context. A shared contextual understanding of the main drivers of housing, building, and urban development can be coproduced in Living Labs or other communal arenas. Then collective responses to problematic situations and shared visions about the future can be implemented. Specific cases can serve as exemplars and catalysts for a reorientation of housing and urban development at other sites in the same city.

The next section of this article defines context and explains its importance in terms of the social, economic, and environmental characteristics of built environments that are integral to daily life. This site-centered, humanistic framework underlines the importance of understanding the multiple functions of housing and human settlements which should accommodate and nurture the behavioral and cultural dimensions of built environments. Moreover, it also enables critical thinking about the main drivers of human settlements grounded in human development agendas tied to liberal economic growth and financial gain (Martin et al., 2015). These subjects will be discussed before concluding with the proposition that community-based planning is needed because cities and local authorities are the main venues for innovation and change that can support sustainable



urban development (Lawrence, 2022). Advances can be coproduced in Living Labs, or other communal arenas; by explicitly reconnecting diverse types of knowledge and praxis before the 'applicability gap' (Lawrence, 2021) is overcome. This approach should be facilitated in the future with national and local authority support.

Context and Contextualism

Since the 1960s, the field of People-Environment Studies (PES) includes research on human habitats by researchers in several disciplines including anthropology, architecture, environmental psychology, geography, human ecology, politics, and urban sociology (Bell & Tyrwhitt, 1972; King, 1980; Lawrence & Low, 1990). Many contributors acknowledge the need to understand the societal context in which a human situation, a problem, and a research project are embedded. In essence, the meaning of a subject or statement is dependent on the context in which it occurs. This is precisely the case for public buildings, parks and other spaces which define and are mutually defined by the multiple contextual conditions of their site location.

The word 'context' was originally used in linguistics to refer to the composition and structure of language-speech and texts (Oxford Language Dictionary). The precise meaning of spoken and written words should be deciphered by analyzing the phrases and sentences that precede and follow them. In the discipline of philosophy, 'contextualism' refers to the meaning of terms, and it emphasizes the position of a phenomena or a problem in relation to its milieu. We recall that Edward Hall (1984, p.60) explained that "no communication is totally independent of context and all meaning has an important contextual component. This may seem obvious, but defining the context is always important and frequently difficult."

Hall (1976, p.95) explained that the human act of contextualizing involves at least two interrelated processes. The first is an individual cognitive process which is internal and innate to the human brain. The second is external and influenced by the 'behavior setting' (Barker, 1968) of human activities in private and public domains. Barker's concept explicitly accounts for social and environmental variables in specific situations that should be analyzed in situ by observation and measurement. This is precisely why the architectural and physical features of human settlements should be studied using concepts from the human, social and natural sciences. We recommend that this can be achieved in Living Labs or other venues for community projects (see later).

In this article, context is interpreted as a human-centered meaningful situation that is not only determined by its material/physical characteristics but how human agency perceives and attributes meanings and values to it (Lawrence, 2001; Lawrence 2021). The meaning of home differs within and between cultures (Lawrence, 1987). Understanding context and contextualization enables professional practitioners, public policy makers and researchers in architecture and urban planning to identify the specific and perhaps unique characteristics of the

meanings attributed to precise situations at a specific point in time as well as changes over periods (Dilley, 1999). Consequently, inappropriate or irrelevant meanings can be discarded, ambiguities can be identified and studied, and more coherent understandings of each situation can evolve. Therefore, context is interpreted as a complex, dynamic, multi-dimensional and, above all, a human-centered and locality-specific concept.

Elsewhere we explained that context matters in both research and practice about housing and built environments (Lawrence, 2021). It should contribute to the formulation of theoretical frameworks, influence the selection of populations, sites and situations that are studied, assist in the selection of multiple methods for the collection and interpretation of information and data, and help explain variations in research findings (Dilley, 1999). This means that context and contextualization are the foundations of antithetical approaches to those commonly provided by normative design methods and research procedures in architecture and planning. In stark contrast, context has often been defined and applied in architecture and urban design to refer only to the aesthetic and compositional features of buildings and especially their facades, without any qualifications about the culture attributes of architecture and urban design (Lawrence, 2021). Moreover, professionals were provided with guidelines that were meant to enable 'contextual design' and 'contextual fit' especially between old and new buildings. Such contributions to the built environment continue a long history of 'styling' in architecture and urban design that Daglioglu (2015) explained. In fact, many practitioners who adhere to neo-classicism, deconstructivism, postmodernism, or other fashions, decontextualize their contributions because they ignore the cultural, economic, historical, political and social milieu in which they work. This is the antithesis of the broad interdisciplinary interpretation of 'context' presented herein.

In architecture and urban planning, contextualization should be implemented in professional practice to understand precise situations and subjects. Rittel and Webber (1973) explained that public policies for urban planning should not be isolated from their societal context, especially their political and temporal context. Contextualization can be nurtured and applied in Living Labs and other venues that accommodate public projects for change. In these behavior settings, the framing of design and research questions should emerge during deliberative processes that acknowledge multiple sets of contextual variables rather than inferring that these should be identified and controlled by predetermined protocols (see Lawrence, 2021, chapter 7).

Unfortunately, our research also confirmed that context has often been ignored or discarded in the international framework for sustainable development (Lawrence, 2020). Consequently, although cultural, environmental, political, socio-economic, and political diversity are omnipresent in large human settlements, they have been neutralized and pushed backstage rather than being integral to the United Nations 2030 Agenda for Sustainable Development (see United Nations, 2002; 2015; 2017). Likewise, the New Urban Agenda endorsed at the United Nations Conference on Housing and



Sustainable Urban Development (Habitat 3) held in Quito in 2016 (UN-Habitat, 2016). Notably, the Global Sustainable Development Report 2019 published by the United Nations acknowledged the need for intentional change but continues to endorse current institutional, fiscal, and legal arrangements and mechanisms for implementation (United Nations, 2019). That report, written by an independent group of scientists, has followed the thinking of academic authors of many other documents which have presented the major pressures that threaten natural and human-made ecosystems, health, and well-being without analyzing the root causes of these pressures. For example, claims about better access to more empirical data and information, and the role of social media serving as catalysts for change, completely ignore the well-known fact that in our digital world these media are also crucial barriers to societal change; for instance, they are used by lobbies, private enterprises and political pressure groups. Likewise, the claim that new scientific research and technological innovation can undercut 'business as usual' is naïve given the documented lack of progress towards sustainable development. This claim assumes a linear connection between knowledge, technical innovation and public policy; this is an illusion, as shown by the continued uses of asbestos and lead based paints in the building construction sector despite their well-known threats to population health.

In contrast, Lopez-Claros et al. (2020) describe in much detail why the current institutional, legal, and political system has not been effective in facilitating and enacting societal change for sustainable development by countries since the 1970s. Despite these persistent shortcomings, the Global Sustainable Development Report 2019, published by the United Nations, proposes that current institutional, fiscal, and legal frameworks and mechanisms for implementation can be reformed, whereas we agree with Lopez-Claros et al. (2020) that they should be replaced. The next section of this article discusses how this can be achieved if critical thinking about urban development and economic growth - one of five main forces of ekistics - is the foundation for the requalification of human settlements as more equitable and fair human habitats for current and future generations.

Reconstructing Urban Development: Beyond Financial Gain

Financial, political and other drivers of urban development were included in the ekistics interpretation of human settlements (Dix, 1977; Doxiadis, 1968; 1970). The word *economy*, from the ancient Greek words 'oikos' and 'nomos', denotes the management of household or habitat. *Economy* has strong linguistic roots with *ecology*, but this association has generally been ignored, as Ernst Schumacher (1973) noted. Today *economy* generally refers to the production, consumption, distribution and regulation of all human-made goods and services, including building construction, communal infrastructure, and public services. Conventional economic theory has often interpreted built environments as a market and an autonomous self-regulated system independent of cultural values, site specific characteristics and the availability of natural resources. These resources,

especially air and water, have been free goods at no cost to the consumer (Daly, 2007), at least until the supply of water was privatized by some national and multinational companies in several countries with neoliberal political agendas. Both micro- and macro- economic policies and programs have commonly been evaluated in terms of their direct effects on consumption and production processes as well as the accumulation of capital especially in the real estate sector (Martin et al., 2015). Moreover, ekistics acknowledges that human settlements produce secondary effects, including environmental pollution and toxic wastes, the depletion of renewable and non-renewable resources, and health hazards (UN-Habitat, 2010). These negative impacts are significant anomalies in both free market and socialist economies that have been recognized and challenged by Daly (2007) and others working in the field of ecological economics.

In principle, ecological economics accepts multiple sets of non-monetary values, while recognizing that the economy is a permeable ecological and social system (Costanza et al., 2014). The radical shift from conventional to ecological economics admits the explicit role of both natural and human-made ecosystems and institutional frameworks (such as different types of property rights), as well as the mutual interactions between them. It also recognizes that both built and natural environments are the subject of competing and conflicting interests and values, between individuals and groups, and perhaps between representatives of private enterprises and public authorities (Daly, 2007). Therefore, ecological economics accepts that comparability of monetary and nonmonetary values is rarely feasible owing to their incommensurability. Consequently, the constituents of both built and natural environments have often been interpreted as commodities that have 'market' and 'exchange' values, whereas intrinsic 'ecological' and 'use' values are rarely accounted (Dasgupta, 2004). The high priority attributed to monetary values removes the environmental components of human ecosystems from their ecological and societal context - they become placeless - in order to make precise (so called 'objective') calculations of their monetary value and facilitate 'rational choice' (Augé, 1995). Symbolic and personal values are devalued by the commodification of human habitats by housing markets.

Criticisms of globalization and urbanization, and especially their promotion of real estate markets and the commodification of built environments have been challenged by numerous authors in different disciplines including cultural anthropology, political science and urban sociology. For example, Low and Lawrence-Zuniga (2003) compiled an interdisciplinary set of chapters by authors who share a concern about what they term 'global spaces', 'transnational spaces' and 'translocal spaces', which they consider are outcomes of the globalization of built environments. The authors explain how 'global spaces' denotes the dehumanization of places for living and working in modern cities. Notably, the localized meanings and uses of fresh food markets for local and regional produce have been replaced by processed food delivered by global trade networks and multinational food systems. Global retail outlets found in cities around the world serve the trading of commodities and capital, and tourism too, whereas many low-income households are



excluded from these global networks. While these global trends are significant, they often co-exist in many cities with local people-centred approaches especially in relation to the production, processing and consumption of food (Lawrence 2021, chapter 3), or the alternative provision of affordable housing beyond the public or private sectors in a third community-based sector (Lawrence 2021, chapter 4).

These criticisms of contemporary built environments raise a fundamental question about how we want to live (Augé, 1995; Papanek, 1995). Answers to this question should express a social and political agenda that is driven by 'the common good' framed by ethical principles and moral values included in the first principle of the Rio Declaration on Sustainable Development endorsed in 1992. As Shelley Mc Namara, the co- curator of the '2018 Architecture Biennale in Venice' stated in an interview on 25 May 2018:

We have to be aware of the political issues in order to make buildings which protect in so far as we can the status of the human being in the world " " that's a very general statement but architecture does have a political agenda which may be not specific to the political parties or whatever but it's a social agenda, it's a deep social agenda which has a deep political implication.

Ekistics acknowledges the crucial role of the political drivers of urban development and this section has noted that economic drivers are explicitly associated with them. Both have decontextualized urban development and the construction of human settlements while rarely implementing a human-centered habitat. However, this is a core objective of the Rio Declaration (United Nations, 1992). If our human habitat is to accommodate the human condition more effectively, then a radically different institutional framework is needed, and it should be supported at the national level and implemented at the city and community levels. A tangible way to achieve this objective requires more institutional and financial support for community projects in Living Labs, or other public venues, that facilitate and enact social change.

Looking Ahead: Reconnecting Knowledge and Praxis

This article acknowledges that cities are localities for complex problems and societal challenges while also being appropriate settings for social change. This section briefly how responses to problematic situations and persistent problems identified about societal challenges are being discussed and innovative projects are changing them in many cities around the world (Lawrence, 2021). Community venues including Living Labs (sometimes called Real-world Labs) have been established to address issues concerning societal change. These venues are embedded in extant conditions that enable the coproduction of collective responses to site specific challenges in real time. They are behavior settings that answer the call for contextualization requested earlier; they also enable the application of case study methods that translate knowledge about situations into praxis that responds to them (Steen & van Bueren, 2017). However, based on accumulated experience in Germany and other European countries, it is crucial to acknowledge that Living Labs are difficult to implement and sustain as

Richard Beecroft (2023) explained. They have three core components: their physical infrastructure; their tasks or purposes as a community venue and service; and their specific real-world projects, undertaken in semi-controlled conditions that concern change processes including social innovation. They should be facilitated by institutional support and sustained by political commitment and financial aid. The task faced by those who want to establish a Living Lab, or other types of community associations, is to combine their multiple functions and purposes, including the creation and testing of new products and processes, with experimentation; then to monitor and evaluate the performance, the potential development, and reproduction of exemplars to more general use in the public domain (von Wirth et al., 2019).

Case study methodology involves conducting an in-depth examination of a specific case within a particular real-world context, allowing for a thorough understanding of its complexity and specificity (George & Bennett, 2005; Yin, 2017). This means that there is no pre-established definition of criteria used to delineate what a design project or planning proposal should include in precise situations and who should participate. The content of projects should be influenced by multiple sets of contextual factors rather than inferring that these factors are established by predetermined protocols. Site surveys can begin with studies of the smallest ekistics units – the household and housing units - and then extend to the units of neighborhoods and the city using several quantitative and qualitative research methods (Lawrence, 2021, chapter 7). Contextual factors should influence the selection of populations, sites and situations that are studied, assist in the selection of multiple methods for the collection and interpretation of information and data, and help explain variations in project outcomes (Ragin & Becker, 1992). Beyond extant material and geographical configurations of built environments, a holistic and systemic understanding of site conditions requires in-depth knowledge of omnipresent cultural, economic, social and political conditions that coexist and change over time.

In cases of sustainable urban development projects, this approach may include technological innovations meant to reduce the energy or water consumption of households or enterprises (Black et al., 2023). It could also refer to behavioural changes that are meant to influence individual, household, or group consumption patterns (Femenias & Hagbert, 2013). In this second case, barriers to modifying consumption patterns may not be related to technological innovation, but social acceptability, as shown by the rebound effect (e.g., potential gains by technological efficiency are not achieved owing to excessive consumption behaviors).

Living Labs provide settings for co-design and coproduction that can be observed, described, analyzed and evaluated by consortia including researchers, public administrators, practitioners and laypeople. All participants can have the opportunity to shape the collaborative process rather than just responding to one predefined by experts (Steen & van Bueren, 2017). In addition, these settings may include ways and means of modifying, testing and evaluating feasible prototypes or



exemplars before they are implemented more widely (Black et al., 2023). They can combine participatory action research, intervention studies and analysis of people-environment relations using practices and different kinds of research methods; then the shared empirical knowledge can be translated into the designs and uses of housing, community gardens, and other constituents of human habitats. This inclusive approach facilitates the exchange of diverse types of data and information, leading to mutual learning and social adhesion to decisions made collectively. This is one tangible way of associating different types of knowledge and praxis that should be used more frequently to implement and sustain human habitats that are more ecologically responsible, more economically fair and socially equitable.

Conclusion

This article has posited that housing construction, land-use planning, and urban development should contribute more effective responses to societal challenges this century. This mission was recognized by C.A. Doxiadis over 50 years ago and it has been endorsed by the United Nations 2030 Agenda for Sustainable Development. However, shortcomings in implementing change have accumulated and been documented since the endorsement of the SDGs. Our content analysis of official reports indicates that the SDGs are considered by many experts to be a panacea for the non-achievement of policies and programs that implement change towards sustainable development. However, this article has explained that the SDGs are no more than a generic framework that can serve as a referent for both research and professional practice in human settlements. Numerous official data and other sources of information confirm that the SDGs have not become a catalyst for additional political commitment at the national level during the last decade in many countries. This persistent implementation gap stems partly from the fact that these international initiatives related to the United Nations 2030 Agenda for Sustainable Development are not addressing the root causes of inaction, or challenging public policies and subsidies that jeopardize more ecologically responsible, economically just and socially equitable habitats. The main drivers of urban development in many countries are financial and political, and they reinforce power relations, financial profits and unbalanced power relations that have produced increasing levels of homelessness in recent decades. This is contradictory to core principles of sustainable development endorsed in 1992.

Our research findings also confirm that, despite inertia at national levels, increasing numbers of cities and local authorities are becoming venues that use the built environment sector as a catalyst for societal change - including healthy food produced locally, affordable housing for different types of households, and infrastructure that produces renewable energy. This change enables community-based projects to be implemented with support from the public and private sectors. This reorientation away from abstract, normative and universal discourse to contextual site-specific projects is sensitive to cultural predispositions and local societal conditions. Although this human-centered

approach is not mainstream, project implementation in many cities confirms it can bridge the persistent gap between knowledge and praxis whether or not ekistics is used as a reference model to generate social change in community-based projects. In venues called Living Labs, or other community arenas, different types of knowledge are being collected, discussed, interpreted, and used creatively to requalify extant human habitats and construct new built environments that respect core principles of sustainable development. These contributions of hope for a better future are embedded in specific situations that are considered exemplars and studied using known case study methods. This radical shift from the virtual simulated designs of buildings and public spaces to embeddedness in real-world conditions is achievable using Living Labs and other venues as communal behavior settings for societal change that promotes the common good.

References

- Augé, M. (1995). *Non-Places: Introduction to an anthropology of supermodernity*. Verso Books.
- Barker, R.G. (1968). *Ecological psychology: Concepts and methods for studying the environment of human behavior*. Stanford University Press.
- Beecroft, R. (2023). Real-world Labs as Transdisciplinary Learning Environments. In R.J. Lawrence, R. J. (Ed.) (2023). *Handbook of transdisciplinarity: Global perspectives*, pp.214-229. Edward Elgar.
- Bell, G., & Tyrwhitt, J. (Eds.). (1972). *Human identity in the urban environment*. Penguin Books.
- Biermann, F., Hickmann, T., Sénit, CA. et al. (2022). Scientific evidence on the political impact of the Sustainable Development Goals. *Nature Sustainability*, 5, 795-800. <https://doi.org/10.1038/s41893-022-00909-5>
- Black, D., Charlesworth, S., Dal Poz, ME., Francisco, EC., Paytan, A., Roderick, I., von Wirth T., & Winter, K. (2023). Comparing societal impact planning and evaluation approaches across four urban Living Labs (in Food-Energy-Water Systems), *Sustainability*, 15(6), 5387. <https://doi.org/10.3390/su15065387>
- Boosma, K., van Hoogstraten, D., & Vos, M. (Eds.) (2000). *Housing for the millions: John Habraken and the SAR (1960-2000)*. NAi Publishers.
- Costanza R., de Groot, R., Sutton, P., van der Ploeg, S., Anderson, S., Kubiszewski, I., Farber, S., & Turner, R.K. (2014). Changes in the global value of ecosystem services. *Global Environmental Change*, 26.,152-158, <https://doi.org/10.1016/j.gloenvcha.2014.04.002>
- Daglioglu, E.K. (2015). The context debate: An archaeology. *Architectural Theory Review*, 20(2), 266-279, DOI: 10.1080/13264826.2016.1170058
- Daly H. (2007). *Ecological economics and sustainable development*. Edward Elgar.
- Dasgupta, P. (2004). *Human well-being and the natural environment*. Oxford University Press.



- Dilley, R. (Ed.) (1999). *The problem of context: Perspectives from social anthropology and elsewhere*. Berghahn Books.
- Dix, G. (Ed.) (1977). *Ecology and ekistics* by C.A. Doxiadis. Elk Books.
- Doxiadis, C. A. (1968). *Ekistics. An introduction to the science of human Settlements*. Oxford University Press.
- Doxiadis, C.A. (1970). Ekistics, the science of human settlements, *Science*, 170(3956), 393-404. DOI:10.1126/science.170.3956.393
- Femenias, P. & Hagbert, P. (2013). Habitation lab: Using a design approach to foster innovation for sustainable living. *Technology Innovation Management Review*, November, 15–21.
- George, A., & Bennett, A. (2005). *Case studies and theory development in the social sciences*. Massachusetts Institute Technology Pres.
- Goldstein, H. (2009). Commentary: Translating research into public policy, *Journal of Public Health Policy*, 30(Suppl.1), S16–S20. <https://www.jstor.org/stable/40207248>
- Gower Davies, J (1972). *The evangelistic bureaucrat: A study of a planning exercise in Newcastle upon Tyne*. Tavistock Publications.
- Habraken, N.J. (1999). *Supports: An alternative to mass housing* (1st Edition). Routledge. doi:10.4324/9781003014713
- Hall, E.T. (1976). *Beyond culture*. Anchor Press/Doubleday.
- Hall, E.T. (1984). *The dance of life: The other dimension of time*. Anchor Press/Doubleday.
- King, A.D. (Ed.) (1980). *Buildings and society: Essays on the social development of the built environment*. Routledge and Kegan Paul.
- Lawrence, D.L., & Low, S.M. (1990). The built environment and spatial form. *Annual Review of Anthropology*, 19, 453–505. <http://www.jstor.org/stable/2155973>
- Lawrence, R.J. (1987). *Housing, dwellings and homes: Design theory, research and practice*. John Wiley.
- Lawrence, R.J. (2001). Human ecology. In M. Tolba (Ed.), *Our fragile world: Challenges and opportunities for sustainable development*, (Vol. 1., pp. 675–693). EOLSS Publishers.
- Lawrence, R.J. (2020). Overcoming barriers to Implementing sustainable development goals: Human ecology matters, *Human Ecology Review*, 26(1), 95-115.
- Lawrence, R.J. (2021). *Creating built environments: Bridging knowledge and practice divides*. Routledge.
- Lawrence, R.J. (2022). Co-benefits of transdisciplinary planning for healthy cities. *Urban Planning*, 7(4), 61-74. <https://doi.org/10.17645/up.v7i4.5674>
- Lawrence, R.J. (2023). Oecumene: Repositioning ourselves in our habitat, *World*, 4(1), 95–109. <https://www.mdpi.com/2673-4060/4/1/7>
- Low, S. & Lawrence-Zuniga, D. (Eds.) (2003). *The anthropology of space and place : locating culture*. Blackwell.
- Lopez-Claros, A., Dahl, A., & Groff, M. (2020). *Global governance and the emergence of global institutions for the 21st century*. Cambridge University Press.
- Martin, R., Moore, J., & Schindler, S. (Eds.), (2015). *The art of inequality: Architecture, housing and real estate*. The Temple Hoyne Blue Center for the Study of American Architecture, Planning and Preservation, Columbia University.
- Oliver, P. (Ed.) (1997). *Encyclopedia of vernacular architecture of the world*. 3 volumes. Cambridge University Press.
- Papanek, V. (1985). *Design for the real world: Human ecology and social change* (2nd edition), Thames and Hudson.
- Papanek, V. (1995). *The green imperative: Ecology and ethics in design and architecture*. Thames and Hudson.
- Ragin, C. & Becker, H. (Eds.) (1992). *What is a case? Exploring the foundations of social inquiry*. Cambridge University Press.
- Rittel, H. W. J., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences*, 4(2), 155–169. <https://doi.org/10.1007/bf01405730>
- Schumacher, E. (1973). *Small is beautiful: A study of economics as if people mattered*. Blond & Briggs.
- Steen, K., & van Bueren, E. (2017). The defining characteristics of urban Living Labs, *Technology Innovation Management Review*, 7(7), 21–33. <http://timreview.ca/article/1088>
- UN-Habitat. (2010). *Hidden cities: Unmasking and overcoming inequalities in health in urban areas*. World Health Organization.
- UN-Habitat (2016). *New Urban Agenda*. UN-Habitat.
- United Nations. (1992). *Agenda 21: Programme of action for sustainable development*. United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3–14 June. United Nations. sustainabledevelopment.un.org/content/documents/Agenda21.pdf
- United Nations. (2002). *Report of the world summit on sustainable development*. United Nations. <https://digitalibrary.un.org/record/478154?ln=en>
- United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations. <https://sustainabledevelopment.un.org/post2015/transformingourworld>
- United Nations. (2017). *Progress towards the Sustainable Development Goals: Report of the Secretary-General*. United Nations. digitalibrary.un.org/record/1288024?ln=en
- United Nations. (2019). *Global sustainable development report 2019: The future is now—Science for achieving sustainable development*. United Nations. doi.org/10.18356/5d04ad97-en



von Wirth, T., Fuenfschilling, L., Frantzeskaki, N., & Coenen, L. (2019). Impacts of urban living labs on sustainability transitions: mechanisms and strategies for systemic change through experimentation, *European Planning Studies*, 27(2), 229-257. doi: 10.1080/09654313.2018.1504895

Wackernagel, M. & Rees; W. (1996) Our ecological footprint: Reducing human impact on the earth. New Society Publishers.

Wynne, B. (2012). Interview in 'How to think about science series, Episode 10', Canadian Broadcasting Corporation interview, Available at: <https://beta.prx.org/stories/41015>

Yin, R. K. (2017). Case study research and applications: Design and methods. Sage Publications.

Note on the Contributor

Roderick J. Lawrence graduated from the Faculty of Architecture and Town Planning at the University of Adelaide (Australia) with First Class Honours. He has a master's degree from the University of Cambridge (England) and a Doctorate of Science from the Ecole Polytechnique Fédérale, Lausanne, (Switzerland). In 1999 he was nominated Professor in the Faculty of Economic and Social Sciences at the University of Geneva. He was promoted to Honorary Professor in October 2015. He was Honorary Adjunct Professor at the University of Adelaide (2017-2020), and Adjunct Professor at the Institute for Environment and Development (LESTARI) at the National University of Malaysia (UKM) from 2011 to 2019. He was Visiting Professor at the Institute for Global Health at the United Nations University (UNU-IIGH) from 2014 to 2016. He was founding Director of the Certificate for Advanced Studies in Sustainable Development at the University of Geneva from 2003 until 2016, and Director of the Global Environmental Policy Program (GEPP) from 2010 until 2016. He was a Member of Scientific Advisory Board of Network for Inter- and Trans-disciplinary research, Swiss Academies of Arts and Sciences, Bern (2009-2020). For more detail, visit: <https://www.unige.ch/gedt/membres/roderick-lawrence/>