

INTRODUCTION TO SECTION 7

Urban design and place making

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The rapid urban development witnessed in Pacific Rim cities over the past 30 years has been remarkable in all dimensions. Characterized by expanding population growth and impressive economic advancement, particularly in China and Southeast Asia, cities in this region have moved quickly to extend their residential sectors, develop industrial and commercial centers to attract global businesses, update roads and transport infrastructure; bolstered energy generation and transmission; and progressed technological capabilities to ensure their global connections.

With this progress have come new urban forms and new pressures on existing urban infrastructure and associated natural systems. Typically, these cities have quickly grown taller, denser, and more spread out to provide accommodation for new residents and new commercial activities. Internationally renowned architects and designers have experimented with innovative forms, cutting-edge materials and technologies, and generous budgets creating daring designs emblematic of the cities' positions in the new global economic order.

Today, architects, urban designers, and planning professionals are examining this past development to understand the outcomes of this rapid growth and transformation of the built environment, especially in light of the global COVID-19 pandemic which brought to our attention the shocks and long-term stresses that are impacting cities and regions. Urban design and planning policies, as well as governance, play an important role in ensuring a sustainable, efficient, and inclusive development, thus avoiding long-term adverse outcomes. Reshaping our existing cities involves a rethinking about their future and their supply systems, especially when aiming at long-term sustainability and considering a pathway toward decarbonization (Lehmann, 2021). This comment from a World Bank report (2015) conveys a reminder of the critical importance of giving consideration to the needs of future populations and environmental conditions:

[o]nce cities are built, their urban form and land use patterns are locked in for generations, making it critical for cities to get their urban form right today, or spend decades and large sums of money trying to undo their mistakes.

(The World Bank, 2015, p. xix)

Sustainable and resilient futures for global cities

In 1987, the Brundtland Commission Report introduced the concept of “sustainability” and the need to think deeply about how development decisions made in the present day would impact the quality of life and resources available to future generations (World Commission on Environment and Development (WCED), 1987). The interpretation of these considerations was soon applied to ecologically sustainable development and/or environmentally sustainable design (ESD), influencing the spectrum of design activity from product design through to urban planning. Such concepts are still relevant today, although the discourse on sustainable futures has been enriched with new concepts and broader goals. For instance, the *2020 Global Cities Report* (Nasr, et al., 2020) attempts to outline the new challenges and priorities faced by global cities as they start planning for a “stronger and more resilient” post-COVID future. The study uses 29 metrics to measure cities’ current performance across business activity, human capital, information exchange, cultural experience, and political engagement. A further 13 indicators measure future potential across dimensions of personal well-being, economics, innovation, and governance. Not surprisingly, in 2020, five of the top ten global cities were in the Pacific Rim (Tokyo, fourth; Beijing, fifth; Hong Kong, sixth; Los Angeles, seventh; and Singapore, ninth).

The report identifies three key areas that need to be addressed by future global cities to continue to thrive (Nasr, et al., 2020, p. 2):

- Urban value creation – global cities need to deepen their focus on value centered around common good for the society as a whole.
- Global city connectedness – global cities need to revitalize and expand their connections at global scale.
- Transformation of urban space – global cities need to address the challenges revealed by the pandemic to become more sustainable, resilient, and inclusive.

It is easy to make a case for the relevance of all three of these points to the theme of sustainable urban design and place making. The third point, however – transformation of urban space – speaks directly to the challenges facing cities in the coming years as they “re-open” and seek to define a “new normal” in the patterns of daily urban life. As the global pandemic has highlighted new trends or exacerbated existing ones (e.g., people spending more time online, remote working looking set to stay, at least in some forms), there is a fear that some of the long-fought “battles”, such as urban sprawl, and deep-rooted inequalities will now be even more difficult to address. However, the post-pandemic recovery offers a unique opportunity to re-imagine the future of our cities, their multiple connections and inter-dependencies with natural environments, as well as more successful governance models.

The *Global Cities 2020* report outlines a further five action points directly related to urban design and place making considered necessary to catalyze the transformation to “more sustainable, more resilient, and more equal” urban environments (Nasr, et al., 2020, p. 17). These include:¹

- rebalancing density – with more mixed-use development and rethinking demand on shared public spaces;
- localizing lifestyles – better redistributing urban population;
- rebuilding trust in public transit – increasing reliability, optimizing comfort and safety;

- expanding greenspace – to accommodate an increased desire to be in greenspaces and ensuring it is equitably distributed; and
- designing for resilience – anticipating continued disruption to “normal” daily life caused by major natural events or by gradual accrual of climate change impacts.

Advancing sustainable urban design in the Pacific Rim

In 2001, urban design researcher Matthew Carmona noted that “[...] recent writing on concepts of sustainable development has firmly shifted the urban design agenda towards broader environmental concerns. [...] (T)he sustainability agenda is giving the discipline a new and broadly accepted legitimacy” (2001, p. 165). Today, scholars and professionals in the urban design field are using multiple sustainable dimensions, interweaving them within “well-established visual, morphological, social, perceptual and functional concerns” (Carmona, 2001, p. 165), to emphasize the concept of “green urban design” and, more broadly, any planning process that aims at securing long-term sustainability across the different spheres of influence, from the individual dwelling to the city and region.

As remarked by Larco (2016), the identification of strategies and categories for the achievement of sustainable urban designs is not enough to ensure their effectiveness and deliver expected results. Although this can be considered a first step, it is very important to “holistically relat[e] the different aspects of urban design” (Larco, 2016, p. 2) and to develop metrics that enable the assessment and comparison of design outcomes, understanding the range of complexities at any given scale. In the need to develop evidence-based, research-informed, and future-proofed urban design approaches, this section explores sustainable practices across the Pacific Rim and the extent to which urban development is being informed by and can respond to international agreements such as the UN Sustainable Development Goals (SDGs) (United Nations, 2015), with a focus on SDG 11 – *Make cities and human settlements inclusive, safe, resilient, and sustainable* – along with other related SDGs. The collected chapters in this section aim to better understand the specific traits and contextual complexities within which cities function and continue to evolve. As well, they identify more general, universally applicable approaches and ways of thinking about urban sustainability and resilience, and their linkages to the natural environment. The authors explore challenges and opportunities for achieving the multiple goals underpinned by sustainable development in our cities and regions across the Pacific Rim, considering the different national realities and policies, with the ultimate objective of strengthening our co-operation and, therefore, our positive impact as a Pacific community.

The six chapters in this section explore sustainable urban design in relation to the themes outlined above and as it is attended to in:

- planning and design of compact residential development;
- regional metropolitan planning and mapping of green infrastructure systems;
- regional scale and site-specific design to accommodate alternative energy resource generation; and
- remaking urban landscapes to mitigate the impacts of more frequent and intense urban heat.

Accordingly, the examples presented in this section address a variety of scales, moving from the regional to the city scale and then to the neighborhood, streetscape, and specific places. Each chapter identifies how urban design approaches – formal and informal – impact upon

our built environment and make it more sustainable and resilient, as well as promoting the mitigation of and adaptation to the effects of climate change.

The authors contributing to this section have been involved in the establishment and/or development of the *Sustainable Urban Design Working Group* (SUD-WG) within the Association of Pacific Rim Universities' Sustainable Cities and Landscapes Hub, launched at the hub's first annual conference in Portland, Oregon, in September 2017. That first meeting attracted some 20 participants representing a spectrum of built environment disciplines (including architecture, urban design, planning, and landscape architecture) and a culturally diverse group of mostly academics from China, Ukraine, Chile, New Zealand, Australia, Singapore, and the United States. Looking back on our workshop notes from that first session, it is clear there were many shared issues and concerns expressed that provided a point of departure for outlining the group's ambitions. By way of introduction, we quickly identified shared perspectives on urban design that resonated across the Pacific Rim but were applicable almost universally. For example, it was accepted that there were both philosophical orientations and instrumental approaches to considering urban design as an overarching strategy for urban development, but ultimately the aims of sustainable urban design should address climate-change considerations, quality of life and livability, along with notions of place identity and cultural connections. The identified key audiences of our SUD-WG's projected work were and still are mainly practitioners, mayors and politicians, decision makers, investors/developers, and the communities in which and for which we were and are working, highlighting the value of constructing both universal comparisons and place-specific case studies that could inform and influence our work.

Authors in the SUD-WG continue to give voice to a broad spectrum of key challenges (particularly, city-landscape connections, climate change, and social sustainability) and themes connected with the UN's Sustainable Development Agenda by bringing case studies and examples from across our Pacific Rim Region (spanning from as far West as Hong Kong, to as far East as California; and as far North as Japan, to as far South as New Zealand). We identified the following issues to consider, in their global context and as they are presented in specific case studies:

- overlapping systems – natural and constructed, and their multiple inter-dependencies and connections;
- scale – regional, city, neighborhood, parkland, and individual site scales;
- place making for identity and community building – public realm and its features;
- people issues – quality of life, access, and equity;
- governance/leadership – roles and responsibilities of the multiple actors involved; and
- stakeholders – from developers to individual residents.

We also identified the reality that delivering sustainable urban design necessarily involves a wide range of actors including built environment design professionals (architects, landscape architects, engineers, ecologists, etc.), planning authorities, developers, investors, public services (e.g., infrastructure, fire, environmental health, housing authorities), as well as the key contribution of the communities in which we are working, along with the shared traditional knowledge of Indigenous people.

Although this section is not comprehensive of all the topics that have been part of the Working Group's discussions during the annual conferences in Portland and thereafter (Hong Kong 2018, Sydney 2019 and Auckland 2020), it does address some of the most

relevant and urgent challenges and potential barriers, from both design and policy perspectives, to achieving sustainable development in cities and regions across the Pacific.

Chapter themes and discussions

Chapter 43, authored by Linda Corkery, explores a landscape-led approach to planning based on the integration of the constructed and natural systems of cities. This understanding has led to the concept of “green infrastructure”; a recent formulation that regards natural systems, areas, and elements as essential contributors in delivering services across urban environments and in supporting everyday activities; as well as the necessary “ecological framework for environmental, social, and economic health” (Benedict & McMahon, 2006, p. 1). Corkery discusses green infrastructure in the context of the *Greater Sydney Region Plan* and the *Sydney Green Grid*, linking and contrasting these high-level regional planning perspectives with the implementation of local-scale projects. That discussion highlights the challenges of balancing large-scale planning and the need for high-level direction with strong leadership at all levels of governance.

The green infrastructure approach and extension of green cover across Sydney’s metropolitan region is elaborated by Louise McKenzie in Chapter 44, as she examines how urban greening initiatives can mitigate increasing temperatures and improve the environmental, health, and well-being of a specific place and community in Western Sydney, Australia. The case study reveals the increasing challenges experienced by local governments and communities in their efforts to adapt to rising temperatures and increased numbers of urban heat events. Her study, largely based on qualitative analysis, highlights the need to prioritize heat-vulnerable hotspots of cities and to implement mitigation strategies to maintain healthy microclimatic conditions that enhance thermal comfort, provide a variety of amenities, and offer sensory stimulation for residents and citizens. McKenzie also identifies opportunities to incorporate traditional Aboriginal ecological knowledge and understanding of place in the greening strategy, and their positive effect in supporting healthy behaviors and awareness.

Understanding the gap between expected or intended outcomes and actual results is key to improving the quality, performance, and livability of our cities, and helps inform future strategies and policies. Post-Occupancy Evaluation (POE) methodologies help identify this performance gap and, although predominantly used to evaluate building performance, POEs can also be adopted to assess outcomes at the neighborhood level. Chapter 45, written by Paola Boarin and Errol Haarhoff, discusses how POEs, based on both quantitative and qualitative assessments, can be important tools to support urban developments’ directions for the achievement of environmental sustainability goals. The authors test a new POE framework on the largest master-planned greenfield residential development in New Zealand that merges approaches described in the literature with a number of sustainability tools and rating systems. Their results demonstrate the complexities of a neighborhood scale assessment, as well as the importance of evidence-based design and need for more transparent and coherent metrics to achieve sustainable outcomes.

Although Boarin and Haarhoff take a holistic view of urban environmental sustainability strategies, the demand to find pathways toward more efficient production and use of energy remains paramount to achieving a low-carbon economy and fighting the impacts of climate change. In Chapter 46, Alessandro Premier investigates the synergies between technologies for producing local energy from solar sources and their architectural integration at the urban scale, with particular emphasis on centralized solar plants and rooftop installations. Through several case studies distributed across the Pacific Rim, he compares qualitative aspects related

to the morphology of interventions and their spatial organization, as well as other criteria that are relevant from an urban integration perspective. Comparisons among different countries and regional contexts highlight the importance of careful siting and integration with building and infrastructure design to achieving successful installations.

Premier's ideas direct the discussion toward the topic of urban form and its impacts on the implementation of solar energy strategies as well as the integration of solar technologies in cities. Urban morphology is a determining factor not only for the achievement of sustainable energy futures, but also to have more inclusive, safer, and resilient human settlements, as well as to address the challenge of urban growth through quality built environments that preserve our natural ecosystems. To achieve such ambitious, yet strategic goals, many Pacific Rim cities have adopted urban intensification as a key direction for future urban developments, moving forward from previous urban growth models which led to low-density living and sprawl.

The key question asked by Haarhoff and Boarin in Chapter 47 is whether building at higher density has led to housing satisfaction and well-being, especially in residential areas and where lower density, detached suburban housing is a typical and widely accepted urban model. Their chapter focuses on social sustainability, assessing it through the residents' perspectives. In particular, they examine the role of neighborhood amenities and public spaces in shaping the sense of community and achieving urban well-being in a new medium-density, master-planned development in Hobsonville Point, Auckland. The research addresses several scales, from the dwelling to the neighborhood and to the community, across the whole development. Findings reveal generally a high level of satisfaction with increased urban density and the crucial role that public places and spaces play in developing cohesion, identity, and shared commitment among residents.

In the final chapter of the section, Mathew Pryor reports on the experiences of residents in one of the world's most densely developed cities – Hong Kong. In particular, he explores how new typologies of informal, community-generated spaces have developed in some neighborhoods of this high-density city to meet the public needs and contribute to social sustainability and community resilience, and to improve the well-being of residents. These “new landscapes” include vertical surfaces of roadside infrastructure (e.g., railings, access steps, and boundary walls) ingeniously modified as small-scale gathering spaces and micro-gardens. Under-utilized rooftop spaces are converted into flexible productive farms. Infrequently used industrial sites (e.g., cargo piers and loading bays) are appropriated by the community as temporary social and recreational spaces. The locations and experiences analyzed in this chapter are evidence of the informal, community-generated aspects of place-making that demonstrate the stewardship of local urban landscapes through common social actions of making and using small-scale personal interventions. Pryor suggests, at the same time, they may be a signal that something is missing in the governance and formal placemaking process in high-density cities, leading to a severe under-provision of open spaces, as well as to a disconnection between the city and the surrounding landscape.

Sustainable urban design and the SDGs

Throughout this section, there is an explicit attempt to determine the extent to which urban development is informed by and responds to international agreements and, in particular, the UN SDGs (United Nations, 2015). For this section, Goal 11 – *Make cities and human settlements inclusive, safe, resilient and sustainable* – is foremost in the discussion, with many of the sub-topics addressed in the chapters of this section. The need to “enhance inclusive and

sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management” (SDG 11.3) is very aligned with the formal and informal approaches to placemaking discussed in the case study of medium-density housing in Auckland (Haarhoff & Boarin) as well as in the public spaces of Hong Kong’s high-density urban environment (Pryor), with some reflections regarding the engagement with Aboriginal knowledge and worldviews as part of participatory processes (McKenzie).

The need to “reduce the adverse per capita environmental impact of cities” (SDG 11.6) is widely discussed by Boarin and Haarhoff, who take a more holistic approach, moving beyond the air quality and waste management issues mentioned in the sub-goal. “[P]rovid[ing] universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities” (SDG 11.7) is extensively addressed by McKenzie, who also makes strong connections between this sub-goal and the previous sub-goal 11.6, highlighting ways to adapt generic greening initiatives to the urban heat attributes and heat-related vulnerabilities of a specific place and community. These sub-goals are also discussed by Corkery with a focus on the much larger scale of green infrastructures which draws the attention on the need to “[s]upport positive...environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning” (SDG 11.a).

Despite the strong alignment with the challenges included in SDG 11, the section’s authors also address several other relevant SDGs. For instance, Corkery, Boarin and Haarhoff, McKenzie, and Pryor all stress the relationship between sustainable cities and the health and well-being of communities. This draws attention to Goal 3 – *Ensure healthy lives and promote well-being for all at all ages* – while addressing the challenge at multiple regional, urban, and neighborhood scales. Premier highlights the multiple linkages with Goal 7 – *Ensure access to affordable, reliable, sustainable, and modern energy for all* – with a focus on “increas[ing] substantially the share of renewable energy in the global energy mix” (SDG 7.2) through the integration of solar energy in urban environments. Both Premier’s and McKenzie’s contributions highlight the need to “[t]ake urgent action to combat climate change and its impacts” (Goal 13), a vision shared by Corkery, Boarin, and Haarhoff whose ideas point to sub-goal 13.2, in particular (“Integrate climate change measures into national policies, strategies and planning”). Finally, Corkery and McKenzie underline the importance of creating climate resilient places that protect and renew local habitat, biodiversity, and ecological systems, defining an important connection with Goal 15 – *Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*.

The SDGs provide critical measures against which planners and designers must develop urban design and place making in our efforts to achieve the conditions for all humanity to flourish. However, at a time when the global community is urgently focused on fighting a pandemic the imperatives of SDG 3 to “address the health and well-being for all” is taking precedent. After experiencing prolonged periods of lockdowns, sheltering in place, physical distancing, our interrelatedness with other humans, other species, our environments of home, work, school, and shared public spaces have never been so starkly and intensively experienced.

This *Urban Design and Place Making* section is, therefore, attempting to provide an evidence-based understanding of approaches, practices, and directions our Pacific Rim regions and cities are taking to address the urgency of sustainable development, from both an environmental and social perspective. As we address how sustainable urban design impacts the livability of our cities and the complex dynamics between the natural and built

environments, we are increasingly mindful that this work can positively impact health and well-being. Further, it is essential to consider the unique characteristics, cultures, communities, and peoples of our Pacific region, and encourage collaboration and participation among all stakeholders involved, as well as interdisciplinarity, excellence, and custodianship through design practice and policy-making.

Urban design, being “both a process and an outcome of creating localities in which people live, engage with each other, and the physical place around them”, is a long-term, ever-evolving, multi-layered endeavor that “gives places their unique characteristics and identities” (Australian Sustainable Built Environment Council (ASBEC), 2011, p. 5). To this regard, the SDGs, and SDG 11 in particular, offer an opportunity to incentivize and realize urban design practices to increase the sustainability, resilience, safety, and inclusiveness of our cities and communities.

However, two main questions arise from the research offered in this section for future enquiry: with 2030 around the corner, will our Pacific cities and regions be able to achieve the SDGs through effective and feasible strategies and actions? What strategies and actions are necessary post-COVID to ensure that the SDGs maintain their relevance, and perhaps an enhanced role, to ensure greater resilience of cities and landscapes into the future?

Note

- 1 A sixth action point in the Kearney report is “enabling universal digital connectivity”. While this strategy is not aligned with the focus of this section, it is addressed in Section 8 of this volume.

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