

Bringing Systematic Thinking of Landscape Justice Into Global Design Practice

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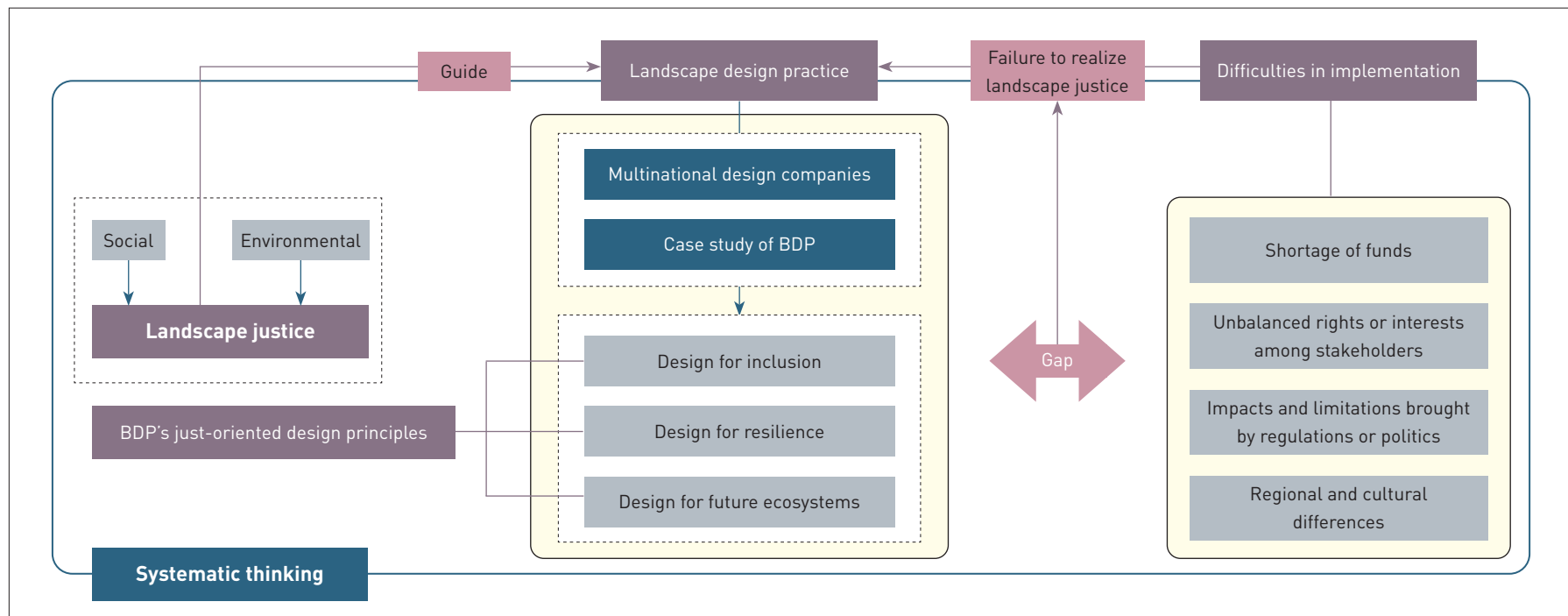
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GRAPHICAL ABSTRACT



ABSTRACT

Design increasingly plays a pivotal role in achieving justice for all. However, there are often gaps between visions and implementation due to the variety of factors and stakeholders involved in design practice. Through literature review and a keyword co-occurrence analysis, this paper investigates current landscape justice research and identifies the distinguishing concerns in design, and highlights the importance of systematic thinking in achieving landscape justice. By examining the practices of the British company Building Design Partnership (BDP), a multinational design company, this paper identifies BDP's three key design principles as experiences can be followed for landscape justice: design for inclusion, design for resilience, and

design for future ecosystems. The paper also addresses potential challenges and conflicts in implementing landscape justice across different contexts and highlights multinational design companies' efforts to mediate between various stakeholders. Finally, this paper demonstrates that design companies can contribute to 1) bridging social and environmental justice through landscape design, 2) achieving the visions promoted by scholars, 3) identifying and deploying diverse approaches to achieving landscape justice with their sensitivity to practical problems, and 4) fostering integrated feedback loops via both top-down and bottom-up approaches to ensure effective implementation of landscape justice.

KEYWORDS

Landscape Justice; Systematic Thinking; Justice-oriented Design Principles; Inclusion; Resilient Landscapes; Ecosystems

HIGHLIGHTS

- Investigates current landscape justice research and identifies the gap between theories and design practice through a keyword co-occurrence analysis
- Identifies BDP's essential design principles for achieving landscape justice as experiences can be followed
- Highlights the pivotal role of multinational design companies in effectively communicating with stakeholders and integrating justice in design across diverse contexts

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1 Introduction

The growing global awareness and movements of environmental and spatial justice have brought a new standpoint in the field of architectural, urban, and landscape design. Three critical aspects of justice related to landscape—distributive effects, community involvement, and holistic ecosystem regarding the importance of people's living spaces^[1]—have become intriguing issues for designers. The conceptual and legal development has prompted the rethinking of strategies and principles for landscape design in a broader sense, illuminating the landscape not merely as a spatial

scenery but as an integrated artefact that shapes and reflects societal values, power structures, and collective memory^[2]. In the 21st century, the adoption of the Sustainable Development Goals (SDGs) and the New Urban Agenda for 2030 by the United Nations (UN) has heightened the focus on equality for all human beings, garnering attention from both individual and institutional perspectives^{[3][4]}. Nevertheless, the impact of regional, national or local regulations that emphasize justice on implementation remains uncertain. In design practice, although experts and researchers can provide professional knowledge and advisory support, their opportunities to engage in diverse practices that ensure embracing their ideas and achieving landscape justice are limited. Thus, the role of designers, who are leading the transformation of conceptual achievements and agreements into practice, as well as their productive approaches, needs examination.

Design serves as a way of advocating justice within constructed orders and systems shaped by the matrix of domination^[5]. Design approaches aim to challenge unreasonable facts and to implement the most idealized scenarios, rather than perpetuating the existing structural and systemic inequalities. It is necessary to focus on dismantling long-standing systemic injustices in an emerging systemic manner, in the interest of marginalized and vulnerable groups. Thus, this paper raises the following questions. 1) What systematic principles can design companies and designers propose to favor the practice and realization of landscape justice? 2) What are the necessary prerequisites for achieving landscape justice?

The existing just discourse has not adequately discussed the landscape justice concept. Working on the interface between environmental and social justice, this paper sees the emerging landscape justice as a bridging idea that contributes to design justice through human intervention. Due to a lack of comprehensive understanding of pressing market and practical issues, the implementation of landscape justice in design practices still has many difficulties that have not been fully discussed in academia. Furthermore, influenced by mainstream academic justice discourse, current research focuses on the deconstruction of racism, equitable resource distribution, climate justice, vulnerability, and urban greens pace^{[6]~[8]}. In this context, the diversity encompassed by landscape justice necessitates design justice, which responds to intersecting injustices and other constraints that may arise during its implementation.

Noting the gaps between justice visions and implementation, this paper argues for the necessity of studying the role and responsibilities of design companies, particularly the multinational ones, and their possible contributions to landscape justice through

global practice. The emphasis on multinational companies (e.g., OMA, MVRDV, Gensler) is based on their research teams and the capabilities, which ensure their competitiveness in the marketplace, as well as recognizing the ability to formulate systematic justice-orientated design principles. From the perspective of designers at the British company Building Design Partnership (BDP), the authors comprehensively analyze and classify BDP’s justice-oriented landscape design practice globally—across North and South America, the Middle East and North Africa, the Asian Pacific, and Europe—to summarize its most distinctive design principles. The selected cases are mainly located in America, Asia, and Europe, ranging from building to city scales and showcasing advanced insights and diversity. This paper aims to demonstrate how design can play a positive bonding role in different socio-political, economic, and cultural conditions by empowering marginalized communities and all the species, fostering extensive landscape justice through design.

2 Keyword Co-Occurrence Analysis and Literature Review

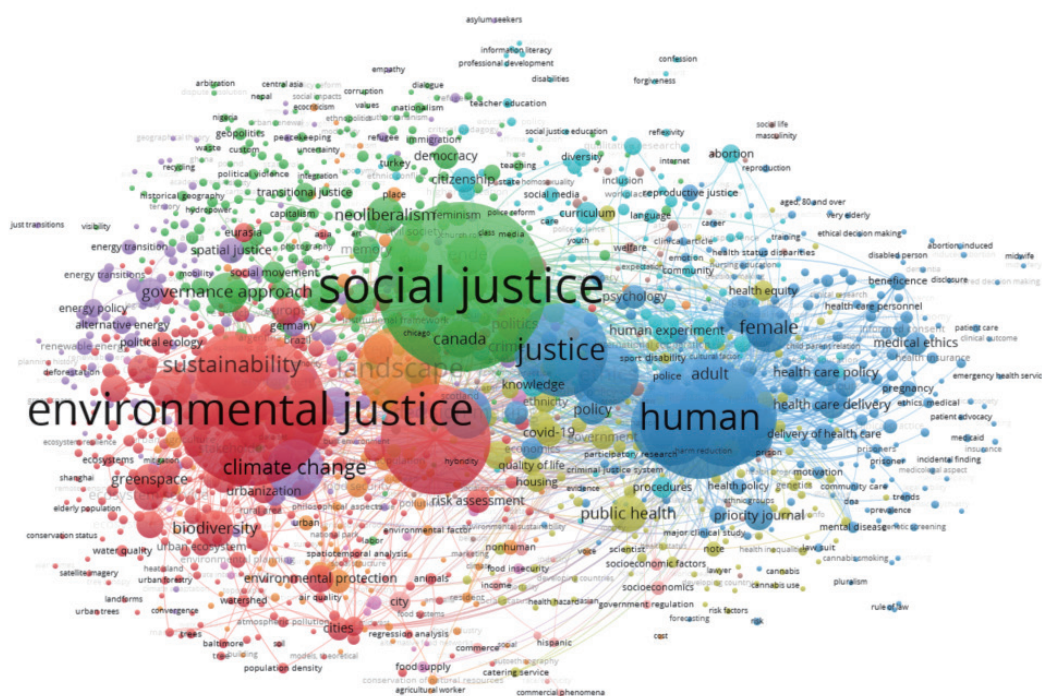
The interplay between landscape justice and design has become an important research area in contemporary landscape architecture^[9], but still remains a fragmented theme^[10]. The role of design is still overlooked in the expanded justice discourse. To investigate the existing research on landscape justice, understand

its position in scholarly dialogue, and identify the distinguishing concerns in design, a keyword co-occurrence analysis was conducted on January 8, 2024, using the Scopus database. The analysis followed three steps.

Firstly, a basic literature search with “landscape” found 453,378 papers. These papers were imported into VOSviewer for scientometric analysis, however, the terms of “justice,” “equality,” “equity,” and “fairness” were not prominently demonstrated in the keyword co-occurrence map. It revealed that the justice-related research is still underrepresented in landscape discourse.

Secondly, a more targeted literature search and co-occurrence map creation using “landscape AND justice” within article title, abstract, and keywords returned 2,802 papers, covering fields of Social Sciences, Arts and Humanities, Environmental Science, Medicine, Earth and Planetary Sciences, Agricultural, Biological Science, etc. The scientometric analysis using VOSviewer received 10,026 keywords in total. To refine the analysis, the minimum keyword co-occurrences threshold was set at 15, eliminating the less recounted topics. Within the resulting 10 keyword clusters, except for those prevalent keywords such as “social justice,” “environmental justice,” “landscape,” “justice,” and “human,” the secondary keywords “climate change,” “public health,” “female,” “human experiment,” and “welfare” also caught attention in academic discussions (Fig. 1).

Thirdly, by including “design” into discussion, 261 papers were found with the search of “landscape AND justice AND



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1. Diagram of the keyword co-occurrence network of “landscape AND justice.”

comprehensive theoretical and policy framework is established that can address value conflicts between human and non-human species and simultaneously accommodate environmental adaptability, resilience, and vulnerability in regional landscapes^{[17][18]}. In this respect, it is worth studying the extent of the designers' subjective initiative in practice, as well as how they can mobilize different stakeholders and stimulate their potential through design.

However, traditionally, little is revealed about how vulnerable groups have been marginalized and neglected during landscape justice examinations in history^[19]. If considering the full process and ultimate effectiveness, the achievement of landscape justice encompasses multiple dimensions, including distributive, process, and interactive justice^[20]. Hyejung Chang also proposed a three-fold concept of justice—distributive, procedural, and restorative justice—as a comprehensive strategy to achieve social, economic, and ecological sustainability values^[10]. Even though justice-oriented design can include various dimensions, it cannot ultimately determine the implementation of landscape justice. Multinational companies or star designers may influence the direction of distributive and interactive justice by bridging key factors in different dimensions. Given the fragmented themes embedded in design for landscape justice, it is necessary to formulate systematic justice-oriented design principles from multiple perspectives and at multiple scales. Therefore, the needs and preferences of all stakeholders could be considered, particularly those historically marginalized or excluded from decision-making processes and dominating matrix. It also promotes recognizing and valuing natural and cultural diversity, ensuring the adoption of inclusiveness in sustainability-oriented planning and design^{[21][22]}.

Despite research demonstrating that design can address the problems posed by a history of injustice and achieve collective justice, intersecting inequalities persist at all levels of practice^[23]. For instance, the contemporary landscape architecture discourse on procedure management often perpetuates socio-ecological separation and reinforces inequalities owing to insufficient consideration of historical and geographical contexts^[24]. To overcome this dualistic separation, practitioners in the UK proposed integrating advanced technologies throughout the design and construction process and in business models, as well as creating nature-based conceptual frameworks for both human well-being and ecological systems in the transformation for a sustainable future^{[25][26]}.

According to the search results on Scopus, the increasing body of literature on landscape justice underscores the importance of considering historical injustices and disparities in social projects,

emphasizing capitalist dynamics generated by urban political economy, property relations, race, and ethnicity as a transformative methodology for equitable distribution in landscape^[27]. Noting that, among the 1,928 results only a few are related to the practical design approach, where “urban design” appeared 14 times, “landscape design” and “design” each appeared 7 times, and “architectural design” and “park design” each appeared 4 times. Despite this, the discussions in these articles extend beyond design to include the role of procedural justice, transparency, and landscape evaluation in public acceptance, and advocate the examination of historical, socio-ecological, and political-economic factors. This suggests that design is not prominent in landscape justice research, leading to the inability of designers to comprehensively and effectively apply cutting-edge theories and strategies to specific case or explain the role of design in achieving landscape justice. It necessitates designers' bridging role throughout the entire process, yet lacking analysis in current literature. Besides, academic literature does not offer direct methods for practical design application, highlighting the urgent need to position designers prominently in landscape design management and to emphasize their potential impact on implementation.

Achieving all the desired justice-related goals in real projects is challenging and should be aligned with democratic idealism and ecological humanism within the pragmatic context of landscape architecture. It is crucial to acknowledge that design practitioners in different regions and institutes have yet to fully realize the significance of adopting landscape justice thinking in design. From the perspective of designers, it is necessary to demonstrate the positive role and significance of design companies and designers in realizing landscape justice through successful examples. This study highlights the role that design institutes, especially multinational companies, can play in the whole-process project management, while aims to inspire other practitioners to stimulate and enable their possibilities to work more with marginalized communities for realizing landscape justice at multiple scales. Furthermore, it attempts to reveal the possible difficulties in practice and provide feedback to academia for theoretical solutions.

3 Emerging Global Practices Towards Landscape Justice

Globally, designers, encompassing architects, urban designers, and landscape architects, have gradually emphasized on the concept of landscape justice in their strategies, transcending geographical boundaries. The keyword co-occurrence maps above

illustrate the leading role of the USA and Canada in the efforts of promoting landscape justice. Over time, North American designers have shifted from prioritizing aesthetics and functionality to a more holistic approach that includes social equity and environmental sustainability.

The discourse of landscape justice has similarly reverberated across the Atlantic to the European Union. European designers are incorporating justice ideas into their projects, creating inclusive environments that address social inequalities and environmental challenges simultaneously^[28]. The Council of Europe adopted the European Landscape Convention in 2000 that contributes to promoting inclusivity in decision-making, advocating for sustainability, and emphasizing the importance of landscapes for the well-being of present and future generations^{[29][30]}. The conceptual framework of the convention aligns with the broader goals of landscape justice in fostering equitable and sustainable relationships between communities and their environments, promoting public participation in decision-making processes. In the 21st century, the evolving activities and promulgation of regulations have reflected a growing awareness of landscape justice^[30], with a focus on rectifying historical injustices, fostering environmental sustainability, and promoting social equity through innovative and inclusive design practices.

4 Case Study of BDP's Design Practice in Promoting Landscape Justice

4.1 Connotations of Landscape Justice

Landscape justice is not a higher-dimensional or more advanced concept beyond the existing popular theories such as social justice, environmental justice, climate justice, and design justice. This paper argues that it is a concept emerging at the intersection of social inclusion, environmental ethics, urban planning, humanism, transparency, etc., especially as contemporary environmental issues have begun to threaten human life. It is a revisiting and upgrading of previous people-centered research and user-oriented design methods. In this respect, the contemporary concept of landscape justice should not be confined to justice for people of different races, ages, genders, gender orientations, educational backgrounds, and incomes. Instead, it should also extend to different species and encompass a methodology and philosophy aimed at realizing integrative justice for the planet, addressing both natural and cultural aspects, as well as material and immaterial elements. This provides landscape architects a critical framework for equitable and sustainable design that facilitates justice in various dimensions.

4.2 BDP's Role in Promoting Landscape Justice Worldwide

Amidst a global trend towards justice-oriented design, UK designers increasingly integrate the principles of the European Landscape Convention into their practices, aligning with the 17 SDGs and the 2030 Agenda. This shift emphasizes sustainable regeneration, mixed use, and equitable distribution of green spaces. Participatory design that encourages organized public participation throughout design projects, like advocated by the Bristol City Council^[31], addresses historical injustices and ensures community involvement. The British influential architects, including David Chipperfield, Thomas Heatherwick, and Norman Foster, also work towards the goal of landscape justice in their respective areas of expertise^{[32]~[34]}.

BDP, a prominent UK-based design firm founded by Sir George Grenfell Baines in 1961, excels in people-centered and eco-friendly design. With nearly 1,600 professionals across studios in the UK, Ireland, the Netherlands, Canada, the USA, the UAE, China, India, and Singapore, BDP emphasizes inclusive design, adaptive reuse, climate change strategies, and sustainable development. Focusing on landscape justice, BDP addresses both social and environmental issues through systemic thinking. BDP has established three key research branches—Human Space^①, BDPbelonging^②, and BDPLab^③—providing designers with theoretical, strategic, and political guidance, ensuring a systematic approach to justice-oriented design, and supporting the firm's commitment to creating equitable and resilient urban environments. These actions not only serve global clients but also benefit all social groups that BDP might have come into contact with. Beyond specific design projects, these embranchments also put efforts in collective activities, events, workshops, and podcasts^④, enhancing their contribution

① Human Space consulting team is located within BDP's North American headquarter BDP Quadrangle in Toronto, Canada, and has completed more than 200 projects across various sectors including healthcare, residential, workplace, hospitality, recreation, education, transportation, and public realm over the past 30 years.

② BDPbelonging is a network within BDP aimed at creating an inclusive organization where everyone inside and outside the company feels respected, valued, and has a sense of belonging. Led by representatives and allies, it promotes positive changes through continuous dialogue on equality, diversity, and inclusion, and collaborates with external advocates to advance social equity.

③ BDPLab is an interdisciplinary research hub that integrates design and engineering to enhance quality of life. With 60 years of experience, it fosters innovation through partnerships with academia, industry, and professionals to refine design processes and add value.

④ To achieve their common goal, Human Space and BDPbelonging launched many professional lectures on topics of social mobility, solidarity and zero discrimination, and race equality.

and enlarging the global visibility of their work on social justice by offering environmental, social, and economic solutions.

A single project cannot fairly deliver a comprehensive sustainable development. Therefore, a systematic process of environmental management monitoring and subsequent operation is crucial in implementation, considering aspects including the relationship between the project and public transport, water resource usage, waste management, and energy consumption. These complex tasks require the involvement or even the leadership of multinational companies. BDP, with its capabilities, is well-positioned to take on and creatively—in a hands-on or experimental way—fulfil these tasks.

4.3 BDP's Design Principles for Landscape Justice

Through a comprehensive overview of BDP's projects, this paper summarizes three fundamental design principles for achieving landscape justice, namely design for inclusion, design for resilience, and design for future ecosystems. Among them, design for resilience pays particular attention to extreme conditions, such as climate change and severe natural disasters (e.g., earthquakes, wildfires), and the risks they may pose. The three principles together completely cover BDP's design vision towards landscape justice. By analyzing the responses to current popular topics in justice theories across social and environmental sciences, arts and humanities, as well as planetary, agricultural or biological science, this paper aims to reveal emerging and creative approaches to promoting landscape justice, which were proposed in diverse practical scenarios and suitably adopted in other domestic and global projects. BDP's design principles elaborated in this paper examines strategic designs contribute to and challenge conventional landscape justice discourse.

4.3.1 Design for Inclusion

Regarding landscape justice in the social dimension, BDP is dedicated to fostering equity, inclusion, and diversity agenda in practice, ensuring comprehensive consideration of human diversity in design processes, and collaborating with external advocates, charities, and organizations committed to social mobility, equity, and inclusion. BDP prioritizes considering the entire spectrum of human diversity in design projects.

Over nearly a decade of exploring equality for all, BDP developed a set of systematic ideas and operating mechanism to integrate legislative regulations, design, and user feedback by testing with authorities and workshops with various stakeholders. BDP published External Guidance for Inclusive Visualisations^[35]

in 2023, providing designers with how to create more thoughtful visual materials for users with diverse needs. With the evolving acknowledgement of inclusive accessibility, the guidance mentions nine characteristics requiring extra protection, including those BDP designers have not encountered in previous practices: age, disability, religion and belief, race, pregnancy and maternity, marriage and civil partnership, gender reassignment, sex, and sexual orientation. Protecting these characteristics in design guarantees the users' rights and sense of belonging, establishing meaningful connections with their surroundings. At this point, a complete set of feedback loops for landscape justice regarding equal accessibility is achieved: from the top-down initiative of proposing legislative rules, landing the required standards into built environments, to getting bottom-up users' feedback, to formulating universal guidance for inclusive design.

Employing landscape design strategies and principles informed by scholarly discourse, BDP focuses on creating cities, districts, and neighborhoods that cultivate holistic well-being, socio-cultural diversity, seamless mobility, robust community bonds, accessibility, flexibility, and economic prosperity. For example, in line with the Public Services (Social Value) Act 2012 issued by the UK government, BDP raises particular attention to ageing-friendly community design. With the UN projecting that approximately 60% of the world's older population will reside in Asia by 2023^[36], and noting the lack of a planning definition (or use class) for age-friendly housing, BDP takes Asia as a base for research-oriented conceptual and practical design for all-aged users (Fig. 3).

Using accessible design as an example, BDP has participated not only in landscape architectural projects but also in formulating rules and policies for equitable accessibility and community engagement. In 2009, BDP's master design Liverpool ONE in UK brought back a fully rejuvenated city center with a proper connection to the marina (Fig. 4).^[37] In 2014, the Town of Oakville in Ontario, Canada produced an updated version of universal standards that are applicable throughout the region. By communicating with different stakeholders and specialists, BDP improved the accessibility legislation for Oakville and published the new standards in 2018 (Fig. 5), to strengthen the equal accessibility and inclusion within the town. Following this project, Canadian Urban Institute (CUI) of Government of Ontario collaborated with Human Space to deliver the project AllAccess for both research and education, aiming at increasing the accessibility of Ontario's public space through urban landscape design (Fig. 6), particularly offering convenience for disabled and elderly people with reduced mobility.



3. In the design of Geylang Serai Cultural Belt in Singapore, landscape architects resolve grade changes to enhance accessible paths of travel, design of comfortable and dynamic outdoor furniture systems, the incorporation of innovative smart wayfinding systems to create a safe and attractive place for all-aged visitors.

4. To connect the newly regenerated retail space to the existing world-famous Mersey waterfront in Liverpool while maintaining the cohesion of the local community, BDP raised the then-existing public green space near the waterfront and added four levels of car parking lots underneath. The elevation difference was utilized to create a gentle “Z” line of slopes to enhance accessibility to all aspects of the park.

4.3.2 Design for Resilience

The growing impacts of climate change and natural disasters highlight the urgency for landscape justice, prompting designers to address environmental inequalities. The distinction between “environmental justice” and “social justice” blurs, as climate change highlights the need to address vulnerability and build resilience in marginalized communities towards a social justice-oriented approach. BDP’s approach aligns with scholarly perspectives on resilient urbanism that emphasizes the integration of ecological and social systems to enhance adaptability and mitigate environmental risks^{[38][39]}. Resilient design is closely related to the safe and continuous use of resources, such as energy, soil, water, and green

spaces^[40]. Solutions like low-impact development and sustainable urban drainage systems address water management and ecological balance. Techniques such as permeable surfaces, green roofs, and sustainable water systems ensure equitable resilience.^[41]

By screening BDP’s global experimental practices, this paper suggests that “resilience,” being an attribute of regional sustainable development for justice, can be divided into two modes: active and passive. Design strategies to mitigate the climate change impacts are increasingly underpinned by justice and equity principles as active approaches. Sustainable landscape design is crucial in this regard, with a focus on integrating green infrastructure (e.g., public parks, green corridors) to address



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5. The handbook *Oakville Universal Design Standards* for town facilities in the Town Oakville in Ontario, Canada.
6. AllAccess is a collaborative initiative for raising awareness among the population and promoting the implementation of public space design standards that are consistent with the Accessibility for Ontarians with Disabilities Act (AODA). More than 70 people from the local community attended BDP’s workshop on the accessible design of public spaces.



7. The photograph of the improved Beckenham Place Park in London. In the center of the historical green space, the design team restored the large lake not only for urban resilience but also creating much needed high-quality green-blue spaces for local communities.

environmental challenges and enhance community resilience actively. By integrating green spaces and sustainable design features, designers create environments that provide tangible benefits, such as improved air quality and reduced urban heat island effects, particularly in historically marginalized areas.^[41] BDP emphasizes increasing green infrastructure and halving global emissions by adopting Science Based Targets (SBTs) through the Science Based Targets Initiative (SBTi) tools.^{⑤[42][43]} For example, to improve the facilities of Lewisham's largest green space in London, BDP's designers reinvigorated a decaying Local Nature Reserve by restoring the large lake and associated wetlands in the center of the green space, enhancing the connectivity of the historical Beckenham Place Park with the surrounding communities, carrying out a comprehensive review of the trees, and providing a new bulwark against climate change for the city (Fig. 7).

In contrast, passive approaches to achieving landscape justice are also important when dealing with deteriorated environments. Renovation of negative urban spaces and former brownfield sites and resilience-oriented design after severe disasters (e.g., earthquakes, forest fires, floods, tsunamis, and volcanic eruptions), can all be defined as the "passive mode" (Fig. 8). Although they can turn into active modes after a decade or more of ongoing maintenance. Landscape justice, in this context, necessitates a conscientious approach to design, ensuring that repurposed spaces are open to more diverse populations.

4.3.3 Design for Future Ecosystems

With a concern for the planet, justice for other species becomes a focus. At larger scales, designing for ecosystem-related landscape justice may involve blue-green network design and biodiversity design; at smaller scales, it includes green building design such



- ⑤ The Science Based Targets Initiative (SBTi) is a global corporate climate action organization that enables companies and financial institutions to combat the climate crisis. Founded in 2014, SBTi is now an independent standard-setter, recognized as a charity, with a subsidiary handling target validation services. It provides standards, tools, and guidance for setting greenhouse gas (GHG) emissions reduction targets aligned with climate science to limit global warming and achieve net-zero emissions by 2050.

8. The regeneration of the Avon River Precinct in central Christchurch, New Zealand, is a post-earthquake reconstruction project. The designers aimed to build a greener, more accessible city by restoring the health of the river and creating integrated habitats that attract birds and aquatic organisms, to place a greater emphasis on the harmony between people and nature.



9. The UK Pavilion at Expo Milano 2015. This project represented BDP's concern and commitment to justice for ecological diversity. In this design, one needs to pass through a landscape strip before entering the main structure, where the raised grassed landscapes at eye level and zigzagging paths that allow visitors to explore the route in a way that mimics the spatial sensation of bees harvesting nectar from the flowers.

as design for energy efficiency, emission reduction, and energy storage, all of which contribute to achieving overall landscape justice for future ecosystem. BDP's successful design of the UK Pavilion at Expo Milano 2015 could be a notable example of global practice (Fig. 9). Through this experimental project in collaboration with Nottingham-based artist Wolfgang Buttress, designers aimed to highlight the decline in the world's bee population and the crisis in food production. The design concept and strategy followed up on their concern and commitment to landscape justice in biodiversity and further bridged the theoretical discussion of the limits on green spaces and accessibility of public spaces, providing a practical paradigm for action that can be investigated, replicated, and promoted.^⑥[44]

As technology becomes increasingly involved in all aspects of human life and work, BDP's new vision of the future aims to integrate all dimensions that contribute to the SDGs for a dynamic and interactive ecosystem. Interdisciplinary collaboration emerges as a key theme in the academic discourse on future built environment. BDP's design ethos harmonizes the built environment with circular processes, fostering a resilient, symbiotic relationship between communities and ecological systems, and promoting shared responsibility for planetary stewardship.

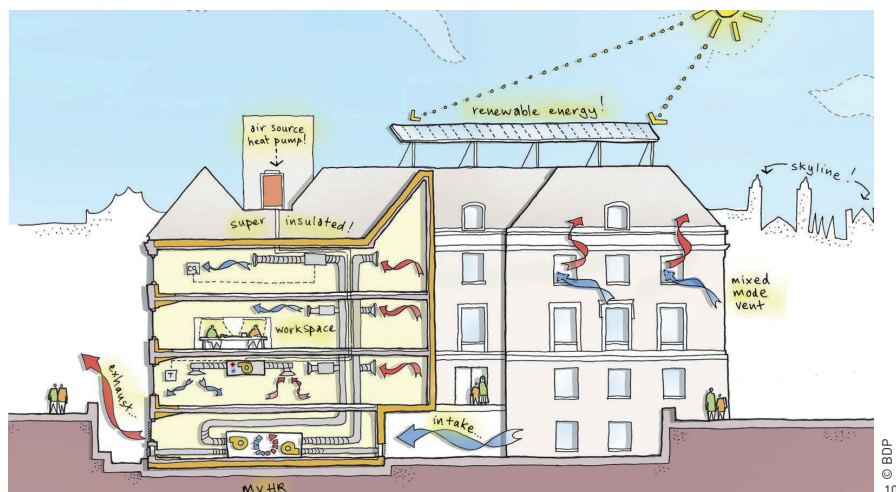
Envisioning the built environment within the future ecosystem requires an understanding of the intricate interplay between innovation, technology, and landscape justice at all scales. In the context of urban and landscape design, BDP believes that landscape justice can be fostered through innovative design solutions that embrace emerging technologies and scientific advancements. Two key aspects are prominent among all the proposed ideas: 1) a horizontal campus-like layout that connects the newly designed urban places with the existing ecosystem and historical landscapes within the city, and 2) adaptable basic laboratory spaces as an integrated infrastructure to meet the requirements of diverse

innovative start-ups with resource integration and intensification. Although BDP named such a design model as a "speculative" cost-effective strategy, it is still a challenge to the existing policy of establishing technology industrial parks through massive land hoarding encouraged by governments in certain regions, as well as to the technological monopoly of oligopolies. Landscape justice in this respect is achieved through the elimination of monopolies of resources and land, as well as more accessible urban and green spaces for communities.

In architectural scale design, aligned with SBTs, BDP's emission reductions target three scopes: 1) company-owned sources; 2) purchased energy; and 3) all indirect value chain emissions.^[45] BDP aims to achieve zero carbon net emissions in its projects, including improving architectural energy efficiency, reducing the carbon content of architecture throughout its life cycle, maximizing the use of biomaterials and nature, and applying circular design principles.

In its beacon project Entopia Building of Cambridge Institute of Sustainability Leadership (CISL) in UK, the refurbished structure significantly reduces carbon emissions, achieving an 84% reduction per square meter and 21,000 kg of carbon equivalents during construction. The project has enhanced insulation and airtightness with triple-glazed windows, maximized daylight, and employed recycled decor, aligning with circular economy

⑥ When BDP moved to its new headquarters in Manchester, its designers created a "living roof" at the new building. Being teamed up with the Royal Society for the Protection of Birds' Homes for Wildlife initiative, this design concern has brought back the elusive black redstart (*Phoenicurus ochruros*). BDP also installed a live webcam on the "living roof" to monitor any visits from redstarts and other possible wildlife. This inclusive and eco-friendly approach was adopted in more projects, facilitating Manchester City Council's goal to become Britain's greenest city [source: Ref. [44]].



10. The renovated Entopia Building is an ultra-low carbon sustainability hub, being a beacon project in the UK and has been recognized by numerous awards related to green building design. The refurbishment improved the performance of the building fabric by adding super insulation and reducing air leakage, and incorporated bio-based materials with a high level of recycled content.

principles (Fig. 10). This innovative approach promotes climate justice with measurable carbon impacts and societal benefits.

BDP sees the benefits of extensive and direct access to green spaces, as well as emerging technologies applied in green building design for the overall balance of an integrated ecosystem. Landscape justice is intricately linked to design, where the care about inclusiveness, reuse of old buildings, climate change considerations, and the envisioning of future built environments within the future SciTech ecosystem⁷ together serve as critical focal points. This paper highlights the importance of historical reconciliation, social equity, and sustainable design principles in shaping landscapes that are just, resilient, and science-oriented for the future. However, it also notes that designers demonstrate their greater sensitivity to existing challenges and threats that may require correction and improvement, as they navigate the complexities of practical projects and unjust landscapes shaped by history or a lack of awareness.

5 Discussion: The Gaps Between Visions and Implementations of Landscape Justice

The prevailing challenges of climate change, rapid urbanization, digital disruption, demographic shifts, global health pandemics, and economic fluctuations collectively confront the international community. Designers have recognized their ethical obligation

to conceive innovative solutions that effectively address these multifaceted challenges, benefiting both its clients and society at large. This paper argues that design companies are more sensitive and able to keenly discover the pain points in contemporary community life based on actual conditions, even though these problems have not yet been fully exposed. In addition, multinational design companies like BDP have the inherent conditions to combine the policies of various countries and the demands of clients from diverse backgrounds to create practical designs and strategies that keep up with market trends and public demands, benefiting more underdeveloped areas. The comparable timeliness and effectiveness of first-hand information obtained through communication with different parties are not often seen in academic research. BDP is not the only design company that takes the initiative to design and update its principles to landscape justice, but also provides other design companies and practitioners a model for systematic thinking of landscape justice, rather than fragmented or random one-time methods.

However, in global practice, distributive, process, and interactive justice is not always fully realized by design, for a variety of practical reasons. Overall, this paper notes that the challenges to the practices of landscape justice in BDP's projects can be roughly summarized into four reasons: 1) shortage of funds, 2) unbalanced rights or interests among stakeholders, 3) impacts and limitations brought by regulations or politics, and 4) regional and cultural differences.

First, inadequate funding often results in the inability of implementation stakeholders to realize the design proposals for landscape justice. For example, BDP's experimental project for Shanghai's New Pujiang Center envisions it as a world-class sponge city, prioritizing environmental resilience amidst rapid urbanization in China (Fig. 11) by managing rainwater, recycling water, and preventing flooding through extensive green infrastructure. Incorporating nature justice and biodiversity, the site is designed to evolve into a self-sustaining urban ecosystem. However, according to the words of the project manager⁸, initially the government attempted to replace the constructed lake with a lawn, as the cost of excavating the lake was considered too high. Through several

⁷ BDP proposes the idea of "future SciTech ecosystems" to emphasize the expansion of the traditional innovation cluster model, integrating societal and environmental benefits, supporting knowledge sharing, collaboration, and adaptability in science, research, and technology, and fostering innovation across government, academia, and industry.

⁸ This statement was obtained from an in-person talk in 2024.



11 © BDP

11. The rendering of the New Pujiang Center in Shanghai. In this project, the constructed lake in the new city center is the key to achieving the world-class sponge city vision with enhanced resilience.
12. The headquarter of BDP's Manchester office is built right up against the canal, a clear interruption to the accessibility of the continuous waterfront walkway comparing with the walkway on the other side of the waterway.

rounds of formal seminars, BDP insisted that the constructed lake was essential to achieving a resilient landscape, and the design was finally adopted. The advantages of multinational design companies can be glimpsed in this project. Obviously, for a project of this magnitude, where the interests and well-being of the region are at stake, it would be difficult for smaller design institutes to negotiate the right with the local authorities and win therein.

Second, unbalanced rights may cause uneven distribution of benefits, resulting in the failure to achieve justice-oriented goals. In BDP's Fudan University (Handan Road Campus) Renovation of 55 Zhengsu Road project in Shanghai, the results of stakeholder negotiations led to the demolition of an old grocery market, directly harming the rights and interests of local residents who relied on it for their daily life. The stakeholders ignored the common interests of the community that were more concerned with individual interests. In the original proposal, designers planned to retain the original function of the market by adopting a "use while constructing" approach. However, resulting from the complex property rights of the building, the large number of small owners involved, and the illegal modifications made to the building over the years by various stallholders and shopkeepers, the scheme that aimed to benefit the community could not be implemented. The stakeholders are incapable of contributing to the welfare of the community at the expense of the individual interests.

Third, the presence of comprehensive legislative orders and regulations can significantly influence whether design companies advocate for landscape justice in their proposals. Designs for disadvantaged groups without mandatory statutory regulations can be erased in the process of implementation—intentionally or unintentionally. For example, in the construction of its own Manchester Headquarter, BDP faced challenges caused by the size and shape of the land (long and narrow) and local construction regulations, which made the architecture to be erected close to the canal (Fig. 12). This design decision sacrificed the continuous



12 © BDP

accessibility of the waterfront for pedestrians. Nevertheless, the strict regulations set by the UK's national heritage department require full waterfront accessibility to the general public along the Manchester canal section. Therefore, BDP constructed a steel bridge as the compensation for the coherence that was broken by the construction of the headquarter. BDP also used the same design language for its waterfront balconies for accessibility. In many countries and regions, the design of accessibility has been highly valued in regulations. However, comparatively, the design of protecting other vulnerable groups such as women and mothers has not received the same level of attention. For instance, designs that include additional rooms for mothers and infants or women's toilets are often scrapped during the implementation process due to the lack of mandatory provisions in the statutes.

Fourth, on the basis of different cultural contexts and traditions, BDP's global studios perform differently with the same goal. For example, according to BDP's Environmental Management and Social Impact Report 2022–2023, in the dimension of social impact, within its contribution to No Poverty (SDG 1), Quality Education (SDG 4), Gender Equality (SDG 5), Decent Work and Economic Growth (SDG 8), and Sustainable Cities and Communities (SDG 11), the UK and Canada studios had outstanding performance by raising money for LGBTQ + Youth Homeless Charity, women, girls, and non-binary people, as well as advocating a focus on access, inclusion, barrier-free design, empowering language use, and unconscious bias.^[46] Regarding the company's environment management, under the same SBTs, the UAE studio has the highest emissions per capita due to air conditioning needs and the high-carbon national electricity grid, and especially, it currently does not use renewable energy. In contrast, the Netherlands studio achieves zero market-based emissions by using renewable electricity. Therefore, although the goals to support landscape justice in different dimensions are consistent under the rules of a single multinational design company, the effectiveness of implementation varies due to regional and cultural differences.

6 Conclusions

In the justice-oriented design movement, from North America and Europe to other continents of the world, many multinational design companies have practically developed their responsibilities for achieving landscape justice through project-based research and experimental efforts. The formulation of BDP's three design principles is striving in different ways to

realize or intervene in the possibilities of achieving distributive, process, and interactive justice in practice from both social and environmental perspectives. The intersection of these principles in different projects breaks down the discursive barriers existing in theoretical and academic discourse that often focuses on one particular dimension. It further circumvents scenarios of injustice in landscape design due to human-nature interactions. This paper regards this approach as a strategic way to achieve systematic thinking that can be effectively applied to different scenarios worldwide. The interplay of design principles and design themes can drive projects towards a sustainable, fair, just, and environmentally sound future.

By analyzing BDP's projects, this paper argues that multinational design companies could help achieve the direction that researchers try to promote. Summarily, landscape design ensures equal accessibility to public spaces, especially green spaces, meaning that they are equally open and conveniently reachable by different groups. In addition, designers may contribute to equitable resilience to the impact of climate change by creating spongy cities, adding green infrastructure and soft embankments along waterways, reusing old and abandoned buildings, curbing the heat island effect, striking ecological equilibrium, and creating a circular economy under the discourse of environmental and climate justice. Designers can also reconcile historical injustices tied to rapid urban development, colonialization or industrialization to minimize the environmental impact on marginalized and vulnerable communities.

Furthermore, situating such a design company's practice within existing scholarship, designers, with their sensitivity to practical problems, have raised and even realized many topics that have not been much discussed in the academia for a while. BDP equally prioritizes younger and older generations through design principles and programs for their well-being. Beyond negotiating with local authorities to maximize landscape justice, BDP recognizes the risks of resource and land monopolies in cluster of professional and high-tech industries. To address this, BDP proposes a decentralized approach to future ecosystems, ensuring equitable resource distribution and enhancing the design agenda.

Beyond design approaches, multinational design companies can more easily collaborate with local governments, professionals and specialists, community charities, and other non-profit organizations, facilitating achieve the practical goals of landscape justice. In the aforementioned Ontario case, the set of processes

integrating both proposing top-down legislative rules and obtaining user feedback bottom-up is worth noting. This paper argues that this loop, designed with systemic thinking, can maximize the benefits to a wider range of communities and achieve true landscape justice. Such a holistic and systematic approach deserves to be learnt and applied by other world's leading design firms capable of designing landscape justice-orientated templates for a wider range of issues beyond design for inclusion.

To conclude, compared with the largely developed concepts of environmental justice and social justice, landscape justice, being a theoretical branch within the entire justice discourse and narrative, needs more interdisciplinary investigation. As designers navigate the complexities of urban environment, it becomes imperative that they incorporate strategies and principles of landscape justice into their practice to create inclusive, sustainable, and equitable spaces for all. Achieving landscape justice requires concerted efforts for environmental justice, climate justice, and social justice.

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景观正义导向的全球设计实践： 系统性思维的引入与应用

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摘要

当前, 设计在实现全民正义中发挥着日益显著的作用。然而, 由于设计实践中涉及的因素和利益相关者众多, 常常导致方案与实施之间出现脱节。通过文献综述和关键词共现分析, 本研究对现有景观正义研究进行分析, 并指出设计实践中的突出问题。本文强调系统性思维在实现景观正义过程中的重要性。通过研究来自英国的跨国设计公司BDP百殿建筑设计咨询有限公司的实践, 文章总结了BDP实现景观正义的三大关键设计原则: 包容性设计、韧性设计和未来生态系统设计, 并将其作为可供其他设计机构借鉴的经验。此外, 本文还探讨了在不同背景下实施景观正义可能遇到的冲突与挑战, 并强调了跨国设计公司在协调各方利益中发挥的重要作用。最后, 本文探讨了设计公司如何在以下方面做出贡献: 1) 通过景观设计衔接社会正义与环境正义; 2) 实现学者所倡导的理想愿景; 3) 凭借对实际问题的敏锐洞察, 识别并应用多样化的景观正义实现途径; 4) 通过自上而下和自下而上的方法建立综合反馈机制, 以确保景观正义的有效实施。

关键词

景观正义; 系统性思维; 正义导向的设计原则; 包容; 韧性景观; 生态系统

文章亮点

- 通过关键词共现分析现有景观正义研究, 并指出正义相关理论与实践的脱节
- 总结BDP实现景观正义的设计原则, 并将其作为可供借鉴的经验
- 强调跨国设计公司在与利益相关者的有效沟通及在不同背景下将正义融入设计的关键作用

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