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Landscape Architectural Discourses on Restoration

A Review from Strategic Beautification to Nature-Based Solutions

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ABSTRACT: The literature of landscape architecture points to an intensifying interest in "landscape restoration" practices. This literature represents restoration projects as demonstrations of multifaceted societal ambitions achieved through landscape transformation. Through exemplary case studies, we trace the lineages and evolution of restoration and related concepts, situating them against discourses of beautification and civility; integration and functionality; and adaptation and complexity that characterized landscape architectural practice through the Picturesque, Ecohumanist, and Landscape Urbanist periods. Each case study presents a distinct practice employed to transform the landscape in ways that reflect scientific breakthroughs and societal ambitions, as understood through discourses between 1730 and the present. We highlight an apparent conflation in contemporary terminology describing these practices and a lack of critical evaluation of the complex implications of such initiatives.

KEYWORDS: Brownfields, landscape architecture, nature-based solutions, regeneration, rehabilitation, renewal, restoration

The scope of landscape architectural practice is gradually changing due to a sustained and growing interest in initiatives described as "landscape restoration" (Spirn 2005; Steiner 2019). Contemporary debates proposing the transformation of landscapes within the frameworks of nature-based solutions (IUCN 2012) or the Sustainable Development Goals (UN 2015) indicate that restoration projects are increasingly expected to operate as multi-functional systems that can achieve various goals, such as removing contaminants, enabling new uses for existing infrastructure, supporting biodiversity and generating economic and cultural benefits.

Connected to a lineage of projects that has been shaped by pioneer landscape architects, current restoration practices have been gaining traction due to growing concern about the threats posed by the crises of climate change and ecological collapse. The contemporary notion that restoration projects should operate as multi-functional endeavors means that the definition and ambition of these initiatives is still evolving. In *International Principles and Standards for the Practice of Ecological Restoration*, the Society for Ecological Restoration (SER) suggests that: "Ecological restoration, when implemented effectively and sustainably, contributes to protecting biodiversity; improving human health and wellbeing; increasing food and water security; delivering goods, services, and economic prosperity; and supporting climate change mitigation, resilience, and adaptation" (Gann et al. 2019: 11).

More recently, the United Nations has declared 2021–2030 the Decade of Ecological Restoration, with the first of 10 guiding principles being "global contribution": "Successful ecosystem

restoration aims to contribute to the [. . .] 17 Sustainable Development Goals (SDGs), which seek to end poverty, conserve biodiversity, combat climate change and improve livelihoods for everyone, everywhere" (Cole 2019: 5). These principles extend on discourses of ecological restoration, nature-based solutions, ecosystem-based approaches, rewilding, biodiversity conservation, sustainable land management, agroecology and others. The attempt to aggregate these diverse fields of thought and action under the banner of ecological restoration, illustrates a broadening conception of restoration. It casts restoration as an overarching term used to describe a range of distinct practices, with an integrated transformative ambition, spanning social, economic, and political dimensions.

Throughout historical discourses of landscape architecture, planning and engineering, a range of terms continue to be used to describe processes of landscape transformation and improvement akin to restoration, including rehabilitation, remediation, reclamation, regeneration, revitalization, renewal, and nature-based solutions. While these terms now tend to be conflated under the umbrella term restoration, they in fact describe various ambitions predicated on assumptions about what constitutes desirable transformation and how best to achieve it.

Conceptual Frameworks for Landscape Restoration

Early conceptions of "land restoration" emerged from the ecological sciences in the early 1980s as a "solution" to the "problem" of intensifying urban development and extractive industries, and their ecological impacts (Bradshaw 1982). In *The Reconstruction of Ecosystems* (1982: 14), Anthony Bradshaw suggests that "with proper use of imagination it is clear that there is great scope for creative ecology" and acknowledged that derelict and degraded sites were unique in that they offered a clean slate from which to recreate desired ecosystems with species and structure either "old or new." More recently, Eli Clare (2014) offers a conceptual articulation of restoration as an attempt to "return [a body or ecosystem] to an earlier, and often better, condition." Clare demonstrates, however, that constructed binaries of "natural" and "unnatural" and "normal" and "abnormal" underpin societal imaginaries of what restoration ought to achieve, even in cases where the prior condition of a specific body or ecosystem is not consistent with these aspirations; so, restoration may not be a "return" even if it's characterized as such. Additional formulations of landscape transformation through time provide nuance and variation to the contemporary idea of restoration. The Modernist "urban renewal projects" of the nineteenth and twentieth century attempted to "create social utopia by changing the arrangement of . . . objects in space while leaving social relationships intact" (Buck-Morss 1989: 89) often expressing such ambitions through the creation of parks and boulevards on sites deemed degraded or derelict. Contemporarily, Chrisna du Plessis (2022) describes the orientation of "ecologically responsible practices" which aim toward landscape transformations of a scale and intensity appropriate to meet the challenges of the Anthropocene. Importantly, du Plessis identifies that an evolution in terminology—from "sustainability" to "resilience" to "regenerative design"—obscures a relative consistency in the stated ambitions of such practices (du Plessis 2022).

While distinctions can be made between terms such as restoration, renewal, and regeneration and the kinds of landscape ambition they aim to articulate, together they often describe an effort to transform a specific landscape deemed to be in poor social and/or ecological condition. We posit that the roots of this debate can be traced back to centuries-old definitions of restoration and related concepts developed under specific scientific, political, and social contexts. These concepts emerged to respond to threats to human and/or non-human commu-

nities posed by landscapes deemed unsafe, undesirable, damaged or depleted (Corner 2015; Olmsted 2015).

This review seeks to contribute to the discourse by examining a series of landscape architectural projects through time, each framed as transformative initiatives akin to restoration in their specific historic contexts. These projects reveal a lineage of narratives within the discipline which engage with the themes of recovery, reuse and rehabilitation of landscapes (Corner 1999; Meyer 2007; Duempelmann and Waldheim 2016). Contributing to the growing body of knowledge on landscape restoration, we trace the cultural and disciplinary narratives underpinning projects through canonical periods: the "Picturesque," the "Ecohumanist," the "Landscape Urbanist," and more recently a period of "pluralist" and "solutionist" approaches, which includes the formulation of nature-based solutions. Each of the three canonical periods can be understood through the following definitions:

> Picturesque (circa 1730–1910): "a long phase in the aesthetic relation of man to nature. At moments the relation of all the arts to one another, through the pictorial appreciation of nature, was so close that poetry, painting, gardening, architecture, and the art of travel may be said to have been fused into the single 'art of landscape.'" (Hussey 2019)
>
> Ecohumanism (circa 1950—1990): "a rejection of looking at the world only as a series of separate parts and embracing holism, emphasizing the interaction between many parts of the whole, thus focusing on systems and the interrelationships of their parts." (Cohen 2019)
>
> Landscape Urbanism (circa 1990–2020): "Over the past decade landscape has emerged as a model for contemporary urbanism, one uniquely capable of describing the conditions for radically decentralized urbanization, especially in the context of complex natural environments." (Waldheim 2006)

Even though current understandings of restoration appear novel and expansive, we argue that the expectation that so-called restoration projects are able to make landscapes functional, clean, and socio-economically impactful are not new (see Figure 1). These can be traced back to schools of thought that dominated the narratives on landscape transformation in the last century, such as those of the Picturesque, Ecohumanism, and Landscape Urbanism. We suggest that in each reviewed project, the choice of site and design process undertaken express active efforts to generate narratives and deploy tools in the pursuit of context-specific ideals of improvement. As such, these practices are more than attempts to restore landscapes to an objective measure of quality; they are expressions of power by planners, landscape architects, and their collaborators, in charge of landscape transformation, who themselves reflect dominant narratives of social and ecological relations.

We argue that understanding these lineages is critical to imagining future trajectories of landscape restoration initiatives and the role that landscape architects have in realizing them. Amidst growing understandings of the profound interdependencies between human and non-human communities, how might restoration practices engage with quickly changing social and ecological contexts? Restoration practices should be able to respond to social and political dimensions over extended periods of time to shape new landscape outcomes. Against a backdrop of rolling economic crises and growing wealth disparity, challenges to democratic institutions, and climate change and biodiversity loss, we ask: What is the role of landscape architectural restoration practices in the context of the intersecting crises of the twenty-first century?

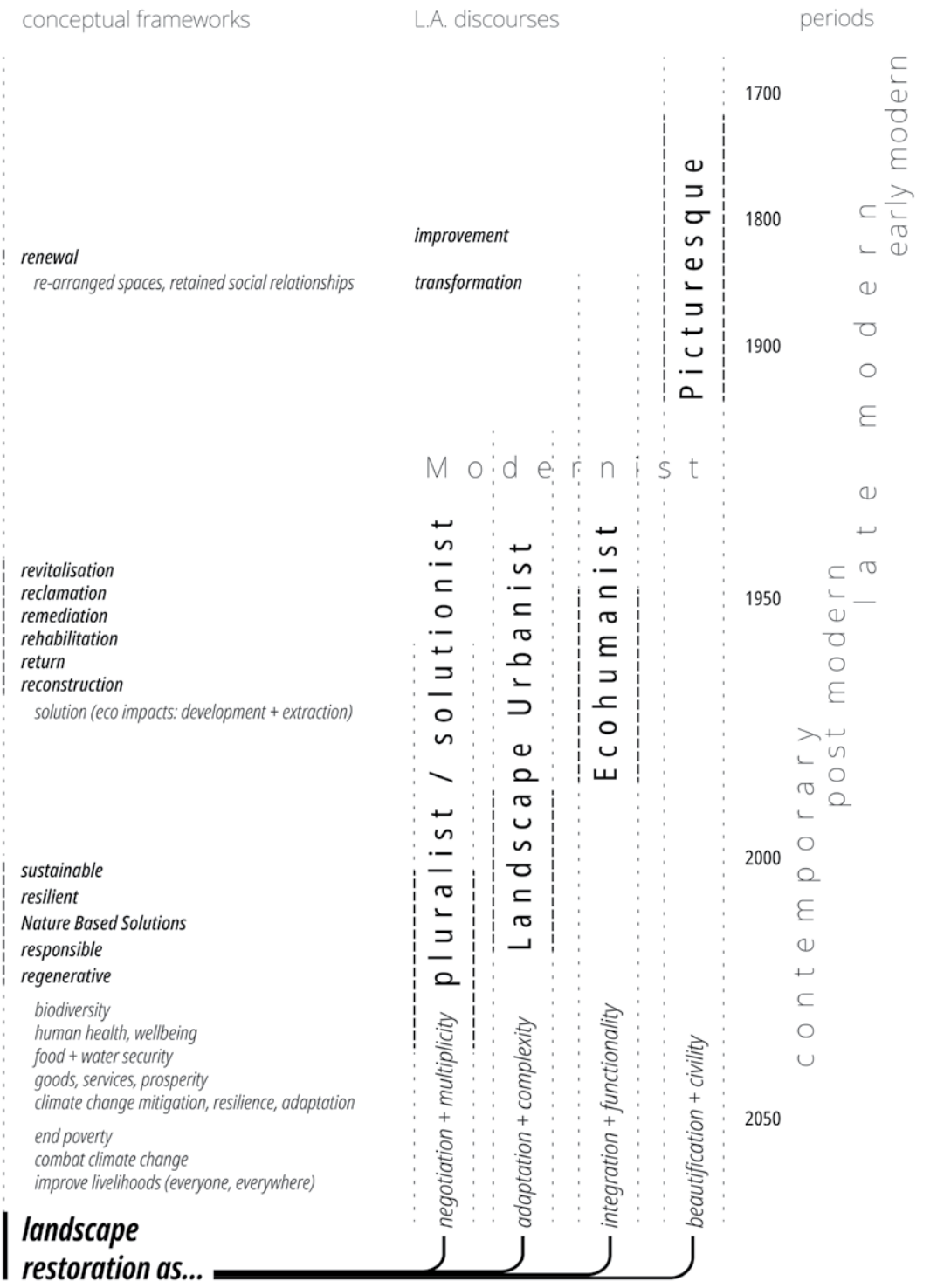


Figure 1. Lineages of restoration practices: relationships between landscape architectural discourses, contextual periods and conceptual frameworks (diagram by the author)

Review: Lineages of restoration practices in landscape architecture

While early discussions about ecological restoration focused squarely on scientific approaches to understanding "nature" and ecosystem functions in order to reconstruct and manage them (Bradshaw 1982), contemporary frameworks explore and expand the ambitions of restoration. Reflected in policy documents of international relevance, this expanded understanding of restoration is evident in the United Nations recent support for nature-based solutions as a framework to achieve health, biodiversity, climate adaptation, and several other SDGs (United Nations Environment Assembly 2022). Many of the ideas contained in these documents, however, are derived from notions of landscape improvement that are intertwined with the very origin of the discipline of landscape architecture.

Landscape architecture has long been concerned with the transformation and improvement of landscapes. Since its nineteenth-century definition in Western cultures as a design discipline distinct from architecture or landscape gardening, landscape architecture has pursued agendas of "rural improvement through those advocating for landscape as an architectural and urban art" (Waldheim 2014). Through various periods of landscape architectural practice, the underlying agenda of landscape transformation has been a consistent theme, though what constitutes desirable improvement has shifted with changing societal expectations and aspirations. The Picturesque, the Ecohumanist, and the Landscape Urbanist traditions each pursue landscape transformation in ways that reflect the cultural, political, and scientific context of the time. In each period, the parameters for transformation are contingent on shared understandings of scientific knowledge and opportunities associated with ecological, social, and economic change. These, in turn, reshape notions of landscape transformation demonstrated through restoration projects and the landscape architectural practices that deliver them.

Restoration as Beautification and Civility: A Picturesque Approach (ca. 1730–1910)

In the late nineteenth century, the role of landscape architects in restoration projects was to imagine and deliver transformed landscapes to serve a civilizing public. Through the English Picturesque sensibilities of the period, designers such as Frederick Law Olmsted and Jean-Charles Adolphe Alphand demonstrated that transformation through landscape restoration could provide various forms of value required to respond to the ambitions of an industrializing society. Indeed, "Olmsted's core priorities [of] social harmony, aesthetic refinement, and guided progress" underpinned his efforts to build the "capacity for liberty" through rearranging the environment (Nelson 2015: 55). Josef Konvitz (1987: 110) described this approach to restoration further by arguing that "often engineers and architects viewed cities as they did rural landscapes, as areas to be reshaped into a new, more productive pattern of territorial organization." This framing of landscape architectural practice is evident in the design of *Parc des Buttes Chaumont* in Paris, 1867, and in several European projects developed in the context of the nineteenth- and twentieth-century industrial revolutions.

Picturesque Restoration: Parc des Buttes Chaumont (1867) by Jean-Charles Adolphe Alphand

Parc des Buttes Chaumont was developed in the context of the 1867 *Exposition Universelle*, being inaugurated on the official opening day of the Exposition, April first. Arguably one of the earliest examples of a restoration project executed by a landscape architect, the design of *Parc des*

Buttes Chaumont was deemed a success for converting an abandoned and degraded quarry site into a major attraction for international visitors to the Exposition.

The area now occupied by the park was previously known as a derelict site with a negative reputation among locals and visitors alike. It was described as a "receptacle for night soils and their transformation into *poudrette*, site of the gibbets and charnal house of *Montfaucon*, and neighbor to slaughterhouses for horses and their associated rendering plants" (A. and W. Galignani and Co 2013: 451–452). This transformation was only possible due to the support of the French government, who funded the *Academie of Science* to generate knowledge that was directly applicable to military efforts and to restoration projects conducted within the fields of urban and landscape design (Komara 2009).

Situated within the political context of Napoleon's Second Empire in France, the park was the result of a confluence of political, economic, and social ideals. Through the work of Baron Haussman, Paris was transformed through a process of "strategic beautification" between 1853–1870, the covert goal of which was to guard against a mounting threat of civil war (Buck-Morss 1989: 88). Amidst the scientific breakthroughs enabled by the industrial revolution, cities throughout the world were undergoing similarly radical transformations in an effort to manifest paradise on Earth. Emboldened by the promise of Enlightenment thinking and the technological capabilities of the industrial revolution, the narratives of beautification and civilization gained currency and shaped the design of the park (Buck-Morss 1989: 88).

Parc des Buttes Chaumont, therefore, must be understood within this larger context of restoration as a practice of urban improvement through renewal. Its shape and design, illustrated in Figure 2, were supported by "Napoleon's desire to maintain order and a visible government presence, the incentive to clean up the slums and bring 'green lungs' producing healthy air for the city, and the aesthetics and image of the city" (Komara 2004: 5).



Figure 2. *Parc des Buttes Chaumont* demonstrated exactitude and control of the restored area through the design of a Picturesque but precise landscape. (photo by the author)

Examining the plans developed by Alphand for the design of *Parc des Buttes Chaumont*, Ann E. Komara (2009) argues that the designer's decisions deliberately separated the park from its surrounding context in an expression of order and design clarity. This is representative of a view that restoration practices should be made visible through overt structural and visual cues and was achieved through the use of carefully detailed boulevards designed with restorative purposes. "These precisely planted edges defined the framework of an experience and delineated a bounded condition, a juxtaposition Théophile Thoré and Jules Simon would have seen as a fantasy of a complete but temporary immersion [in nature that] would restore the mental and spiritual equilibrium ruptured by the city's frenzy" (Green 1990: 68–70).

The ideals of restoration were also made visible through the use of a concrete curb along the lake's edge at *Buttes Chaumont*, shown in Figure 3. This curb, clearly recognizable as a human intervention in the site, is a statement of technological capability and the societal aspirations of the time, in the sense that "the lake is not supposed to be understood as a naturally occurring body of water so integral to the formula of the picturesque, but rather as a constructed, pleasurable amendment of the site" (Komara 2004: 6). This aspect of the project is a clear demonstration of how Alphand wanted the landscape to be perceived: as a controlled environment deliberately restored, or in other words, as an improvement to a previously neglected and undesirable site.

Komara (2009) points out that the introduction of these visual cues to mark the precision within landscape design was a means to erase the "undesired past" of the landscape and achieve the goal of desirable transformation. Ulf Strohmayer reiterates this argument by suggesting that "it was precisely the desire to counterbalance these histories, and to eliminate their influence on the spread of goods and capital, that made the choice of the *Buttes* for the construction of a park such a compelling and rational one" (2006: 563).



Figure 3. The concrete curb defining the water's edge is consistent through streams flowing into the larger lake at *Parc des Buttes Chaumont* (photo by the author)

The canonical Central Park by Frederick Law Olmsted (Figure 4) shared the aspiration of creating an orderly landscape with the goal of improving its surrounding areas. In the case of New York, Central Park was born of a desire to ensure the growing city would maintain access to green public spaces, indispensable for public health. Frederick Law Olmsted was inspired particularly by "the expanded scope of Parisian practice in which landscape gardening was set in relation to infrastructural improvements, urbanization, and the management of large public projects" (Waldheim 2014: 189). Like in the construction of *Parc des Buttes Chaumont*, the design of Central Park was also premised upon the notion that restoration was a public project necessary to improve the city. The ideas of Picturesque restoration practices continued gaining currency globally and were prevalent in landscape architectural discourses in Europe until around the decade of 1910–1920, when the European continent was engulfed by the first and then the second World Wars. During this period profound and fundamental critiques of established traditions of art, design and culture were fueled by the significant shifts in geopolitical, industrial, and cultural alignments that characterized twentieth-century Modernism. The expression of these shifts was perhaps most vivid in the approaches to urban and rural landscapes in North America, where there was "explosive, hypermodern urbanization, and unprecedented topographic, hydrographic and ecological transformation" in places like California, and the emergence of novel suburban and utopian typologies (Cosgrove 2006: 57).



Figure 4. Central Park in New York, designed by Frederick Law Olmsted, was conceived to provide an improved public green space to the residents of Manhattan due to concerns with public health. (photo by the author)

Restoration as Integration and Functionality: An Ecohumanist Approach (ca. 1950–1990)

Departing from the notion that restoration was the act of beautifying and civilizing landscapes, landscape architectural practices developed new frameworks for conceptualizing landscape transformations that were aligned with rational Modernist thought. In the mid-twentieth century, following the reconstruction efforts of the post-war period, Lewis Mumford and Ian McHarg pioneered Ecohumanism as a "a rejection of looking at the world only as a series of separate parts and embracing holism, emphasizing the interaction between many parts of the whole" (Cohen 2019). Here, the scientific innovations that were disseminated to society after the second World War played a key role in how city planners envisioned the future.

Through Ecohumanism, the rational ideas famously explored in Modernist utopian experiments by Le Corbusier (Villa Radieuse), Ludwig Hilberseimmer (Decentralised City), Lucio Costa (Brasilia) and others, were expanded upon with an ecological sensibility. Landscape architects grew increasingly skeptical of the classical ideals of orderly beauty and healthy landscapes that characterized the Picturesque and the assumed separation between humans and nature they were predicated on.

At this time, large urban parks were designed based on Ecohumanist principles that integrated ecological and social agendas beyond the immediate goals of providing green spaces and sanitizing derelict areas. Describing the design of the *Parque del Este* in Caracas, built in 1961, Anita Berrizbeitia (2005) argues that the use of native plants by Roberto Burle Marx instead of ornamental exotic species was oriented by both ecological and social purposes: "Social because through design he made available significant knowledge about the environment that would otherwise remain inaccessible to most urban dwellers, and ecological because he saw parks, and their nurseries, as the places where ultimately, endangered plant species would be preserved and protected from extinction" (Berrizbeitia 2005: 91). An integrated and functional role for parks as contributors to biodiversity conservation, education, and national identity was explored further through restoration projects such as the Pardisan Environmental Park in Iran, designed by Wallace, McHarg, Roberts, and Todd (WMRT) in 1975.

Ecohumanist Restoration: Pardisan Environmental Park (1975) by WMRT

Pardisan Environmental Park was a flagship restoration project commissioned by the Iranian Department of Environment that aspired to produce a "technologically predicated, politically motivated, and ecologically inspired image of the Earth transformed into a bucolic zoological park where people and animals coexisted" (John-Alder 2016: 139). While never completed due to the upheaval of the Iranian revolution and subsequent changes in leadership, the design process led by WMRT with local architecture practice Mandala Collaborative brought together leading international designers, including Buckminster Fuller and Charles Eames, to create an Ecohumanist environmental park on the outskirts of Tehran. The site was described by the design team as "barren and stony because of centuries of overgrazing and misuse"; however, they reassured the reader that "this land will be transformed so that . . . the realized Pardisan will appear as an immense green oasis, a broad belt of woodlands silhouetted against the arid south face of the Elburz Range" (The Mandala Collaborative and Wallace, McHarg, Roberts and Todd 1975: 13).

The Pardisan Park illustrates how restoration was reframed through scientific breakthroughs in ecology, new models of urban planning and nationalist narratives about modernization in postcolonial contexts. Kathleen John-Alder describes the moment that this project represents in

landscape architectural practice and discourse as "when regionally based, ecologically inspired conservation strategies became global in scope and entwined with postcolonial modernization" (2016: 121). The project presented an opportunity for Iran to showcase a world-leading approach to restoration and park design, while for Ian McHarg it became a vehicle for "advancing the practice of ecological and human ecological planning and design" (Cohen 2019: 342). Eskander Firouz (Director, Iranian Dept. Environment) was inspired by the globalist ambition of the 1972 UN Conference on the Human Environment, which "promoted international cooperation as a means to protect, improve, and remediate the human environment" (John-Alder 2016: 121).

Through a comprehensive, integrated, and phased plan, the designers proposed the manipulation of the existing landscape conditions to construct a series of biomes. Each of these would reflect a typical Iranian ecological niche, and another series would reflect typological ecologies from around the world for educational purposes. Visitors would develop a "familiarity with all elements of life" by moving through a zoo, botanic garden, natural history museum, planetarium, and aquarium, which integrated the sciences in a "scientific ecosystem" (John-Alder 2016: 125). As a living demonstration of ecological function from the microscopic to the cosmological scale, the park was to perform primarily as an education and research facility while also accommodating other cultural and ecological agendas.

The educational and ecological agendas advanced by the design are exemplified by the fact that even the construction processes were seen as an opportunity to educate society on restoration practices. The authors stated that "it will be possible for visitors, throughout the entire construction process, to witness the techniques of land rehabilitation, the establishment of botanical specimens, and the replication of animal habitats" (The Mandala Collaborative and Wallace, McHarg, Roberts and Todd 1975: 159). The cultural agenda of the project is represented by the second objective: to celebrate and conserve ancient Persian culture. Notably this was pursued through the integration of cultural exhibits within the constructed biomes, and through the selection of iconic Iranian plant and animal species (such as the lion) for inclusion in the park (John-Alder 2016, 2022). These agendas illustrate the influence of ecological thinking in urban planning and the overarching social and ecological aspirations of Ecohumanism as a key lineage that shaped the meaning of restoration and transformation within landscape architecture.

Restoration as Adaptation and Complexity: A Landscape Urbanist Approach (ca. 1990–2020)

At the turn of the twentieth century, notions of functionality and integration gradually made way for a broader understanding of restoration as a tool to promote and engage with ecological complexity. This framing is perhaps best illustrated by the practice of James Corner, a prominent landscape architect responsible for some of the most recognizable recent landscape architecture projects in the United States, such as The Highline Park in New York.

The Highline Park is a key project that pioneered the cultivation of ecological complexity as a tool for restoration efforts within landscape architectural projects. The understanding that restored landscapes should evolve as ecosystems was adopted in this project as a response to the original inspiration for the design: the wild plants and animals that colonized abandoned elevated train tracks in Manhattan (Corner 2015). While this project is primarily framed as the reuse of The Highline, it also follows some of the ideas of restoration as a civilizing and beautifying process adopted within Central Park. In both projects, the designers proposed that the restored landscapes should operate as a public facility capable of providing much needed green



Figure 5. A garden bed within The Highline Park, designed by James Corner Field Operations. The use of native plants and weeds that thrive in urban environments is championed in the project as a way of promoting ecological complexity. (photo by the author)

public spaces to the residents of the city (Corner 2015; Olmsted 2015). Contrasting with Olmsted's framing of restoration as a project premised on public health, the design of The Highline incorporates some of the notions of ecological function and the multi-dimensional ambitions of the Ecohumanist lineage.

Extending upon notions of restoration seen within the Picturesque and Ecohumanist traditions, The Highline pursues restoration through dynamic process cultivated through and for ecological complexity, as illustrated in Figure 5. Operating partially as a Picturesque, maintained garden and partially as a spontaneous adaptive project, the Highline draws from more recent ecological understandings of landscape that reject the notion of static equilibrium and embrace dynamic change.

Acknowledging ecological processes as adaptive restorative agents is a key tenet of what came to be known as Landscape Urbanism. In this line of thought, restoration projects were framed as a catalyst for ecological restoration, urban development and investment, therefore playing an ecological, economic, and political role (Lindner and Rosa 2017). This dynamic nature of restorative practices spearheaded by Landscape Urbanism is also demonstrated within the design of the Freshkills Park. In landmark projects of the Landscape Urbanist tradition such as The High-

line and Freshkills Park, landscapes are shaped by their ecosystems and become not assemblages of controlled parts (as per the Modernist and Ecohumanist traditions) but as indeterminate systems shaped by gradual processes of choreographed transformation.

Landscape Urbanist Restoration: Freshkills Park (2001) by James Corner Field Operations

As one of the most debated restoration projects in the field of landscape architecture within the last two decades, Freshkills Park is a landmark endeavor that reshaped contemporary narratives of restoration and risk management. The project currently implemented in Freshkills Park is derived from the winning proposal of the 2012 Land Art Generator Initiative Competition, developed by James Corner Field Operations (Steiner et al. 2019). Constructed on top of the former landfill that serviced New York in the marshlands of Staten Island, Freshkills Park was the largest landfill in the world at the time of its closure (Steiner et al. 2019). From a technical and ecological perspective, the project implemented in Freshkills Park was fundamentally inspired by the growing scientific interest in promoting the adaptive management of ecosystems, which gained prominence at the time of the competition (Levin 1998).

Notably, the winning entry for Freshkills Park demonstrates that landscape restoration can happen gradually through biological remediation as shown in Figure 6. The argument for adaptive restoration projects was arguably first introduced to the field of landscape architecture through the design competition for Downsview Park in Toronto (project unbuilt). This adap-



Figure 6. The Freshkills Park in Staten Island, New York, is characterized by an adaptive rehabilitated ecosystem that was intended to restore the ecological functions of the wetlands that existed before the area was used as a landfill. (photo by the author)

tive approach suggests that restoration can be achieved over a larger temporal scale through dynamic management of the existing and introduced ecosystems (Czerniak 2002). Within this view of restoration, the adaptive management of contaminated landscapes is conducted by allowing ecological processes to gradually consume pollutants while also adapting to contingencies through natural selection and ecological succession (Reed 2005). The site today contains capped mounds of waste of up to 69 meters high converted into public space (Steiner et al. 2019), including material removed from the ruins of the World Trade Center in 2001. Serving as the final destination of materials produced in this traumatic event, Freshkills Park also exemplifies Ecohumanist principles as it plays a culturally and environmentally restorative role in terms of its historic and ecological significance.

The role of the landscape architect as an agent capable of shaping the economic and political restoration of landscapes draws on key Landscape Urbanist ideas. The notion that landscape should serve as a driver of complex forms of urbanism is a critique, by James Corner and others, of previous understandings of land-use planning which promoted rationalization and control as per Picturesque and Ecohumanist thinking (Corner 1999). In response to a perceived failure of governmental capacity to propose and enforce urban planning practices, the idea of landscape as urbanism positions landscape architecture alongside private developers, consumer markets, and cultural forces as agents operating in the production of landscapes through creative and economic processes (North and Waldheim 2013).

Similar to debates about how adaptive landscapes can support the restoration of abandoned industrial sites and contaminated brownfields, the writings of James Corner suggest that The Highline and Freshkills Park are the result of a vision of restoration based on complex ecology and adaptive management (Corner 1999). North and Waldheim posit that landscape as urbanism recognizes "ecology's potential to inform design culture, supplanting traditional models of urban design with more responsive, resilient and potentially heterogeneous structures of urban planning and design"(2013, 393). The ideas explored in this project still reverberate in contemporary notions of restoration that are aligned with the goals of improving resilience and adaptive capacity.

The design of Freshkills, and its engagement with ecological complexity, illustrates how landscape restoration projects transitioned to more overtly performing environmental and social roles (demonstrated within earlier Picturesque or Ecohumanist discourses) while embracing ecological and social dynamism. These ideas paved the way for a more pluralistic framing of restoration that underpins emergent twenty-first-century restoration discourses.

Restoration as Negotiation and Pluralism: Contemporary Discourses (ca. 2000–present)

Recent restoration discourses within landscape architecture draw on many of the ideas of Landscape Urbanism, in the sense that they advocate for a dynamic and adaptive perspective of restoration practices as a means to achieve specific social, ecological, and economic goals. Increasingly shaped by multi-layered expectations of landscape performance, restoration practices seek solutions in a way reminiscent of the functionalist ideals of Ecohumanism, while simultaneously (and somewhat paradoxically) embracing the unpredictable and interdependent nature of many landscape transformation processes. For example, landscape transformations discussed in relation to nature-based solutions are guided by dynamic ecological processes (as per Landscape Urbanist principles), but specific goals ensure that control over the communities, spaces, and forces that produce restoration are still present. Within contemporary framings of restoration, the overarching goal of achieving wide-ranging and multiple social, ecological and

economic impacts is now more noticeable than ever, described through new transdisciplinary frameworks which bring more complex models of relational collaboration and coordination.

While humans have always lived with and shaped their surroundings as socio-ecological systems, restoration discourses have only recently engaged more directly with the complexity of negotiating trade-offs between human needs and ecological functions. Within this sphere, the emerging concept of nature-based solutions has been used to define initiatives that simultaneously benefit ecosystems and address societal challenges by providing services such as food production, disaster risk reduction, and wastewater treatment (Cohen-Shacham et al. 2016; United Nations Environment Assembly 2022). Used to frame several restoration projects globally, the argument that ecological processes can support a pluralistic view of ecological restoration has been gradually adopted since the 1990s by projects that would now be considered nature-based solutions.

The Internationale Bauausstellung (IBA)—International Building Exhibition—is a model of urban and regional development originating in Germany in 1901, which exemplifies the ambitions of contemporary pluralistic views of restoration. The multifaceted framing of restoration dominant in contemporary discourses is demonstrated by the goals of IBA, which "in addition to aesthetic and technological aspects, increasingly incorporate complex social, economic and ecological issues" ("Internationale Bauausstellung," n.d.). In recent decades two significant restoration projects, IBA Emscher Park and IBA Fürst-Pückler-Land, have resulted from this model and illustrate world-leading approaches to engaging with the complexity of regional transitions through coordinated urban renewal and landscape restoration. The IBA Emscher Park was framed as a "problem-solving" program integrating 20 German municipalities and more than four hundred initiatives in areas previously designated as industrial parks (Steiner et al. 2019) to "form continuity between the still vast, albeit disconnected, areas of green space in the region and create an ecological system of European significance" (Shaw 2002: 85).

Pluralism and solutionism in restoration: IBA Emscher Park (1989–1999) and IBA Fürst-Pückler-Land (2000–2010)

Prompted by the collapse of the German Democratic Republic (GDR) in the late 1980s, the IBA Emscher Park aspired to act as a "protagonist-prototype for integrated, structural, long-term change in post-industrial communities" (Ratten 1994: 9). Uniquely, in order to deploy its ambitious program, it required a sophisticated governance structure to coordinate the delivery of multiple projects. This program illustrates the multi-dimensional goals of contemporary restoration as it sought to repurpose industrial facilities by providing recreational, cultural, touristic, and ecological benefits while also celebrating their sculptural and aesthetic properties within new projects. Incorporating the notion that restoration should be ecological and social in nature, the IBA program also draws on ideals of beautification that can be traced back to the Picturesque tradition.

While the IBA projects advance a pluralistic view of restoration, they also build upon and reshape notions of civilization and beauty that guided earlier restoration frameworks. The now globally recognized Duisburg Nord Landscape Park, by Peter Latz and Partners and developed within the IBA framework, is one example of how Picturesque ideals are transformed and incorporated into contemporary restoration discourses. In this project, the designers converted a former steel works site into an industrial culture park, preserving and celebrating the existing industrial infrastructure and making way for a post-industrial ideal of the Picturesque to emerge among it (Figure 7). In doing so, processes of change, new forms of dynamic transformation, and a diverse aesthetic and programmatic character were legitimized in novel ways.



Figure 7. New forms of "industrial nature" are allowed to take hold among existing industrial infrastructure at Duisburg Nord Landscape Park, a flagship project from the IBA Emscher Park. (photo by the author)

Exemplifying the pluralist nature of contemporary restoration, the IBA Fürst-Pückler-Land emerged from the need to recover a series of coal mines in the lower Lusatia region that had been decommissioned or were nearing the end of their life. The coal extracted was a key source of energy for the GDR but after the reunification most mines were closed without notice. As a result, the ecological impact of the abandoned pits was compounded by the social and economic impacts of the disruption to local livelihoods as many jobs were lost, and up to 25 percent of the local population moved away from the Lusatia region (Mead 2005). Consequently, the restoration of these landscapes aimed to respond to challenges in the economic and cultural dimensions, in addition to ecological ones, and went on to be labeled "the biggest landscape project in Europe" (Mead 2005: 26).

Between 1977 and 1989 these landscapes were characterized by several environmental issues caused by contamination, including: "changes in the natural landscape; destruction of soil structure and its biological values; violation of the geological stability of soils; disturbance of the natural groundwater table; increase in the level of acidity of ground and surface waters; [and] air pollution" (Opania 2020: 5–6). While striving for the recovery of the areas and sustainable development of the region, the regional restoration strategy sought to achieve economic and cultural goals by supporting "tourism and recreation, with many pits becoming lakes," it aimed "to cultivate new forms of energy (biomass)" but all while ensuring that the "region's special topography and history still count[ed]" (Mead 2005: 26).

The notion of restoration championed within the project built upon key principles of previous ways of framing restoration, such as the ideas of adaptive management pioneered by Landscape Urbanism. Andrew Mead (2005) argues, for instance, that the project sought to maintain the local topographic features and use them to support new ecosystems that are able to adapt

over time. In this sense, the IBA Fürst-Pückler-Land draws on the understanding that restoration should be conducted within an adaptive framework that aims to "transform a ravaged landscape" even if that means that "the process of transformation may be more striking than the result" (Mead 2005: 31). Here we see a deepening appreciation of the social and ecological value of landscape processes of which we, as humans, are a part, and a further turn away from pursuing an idealized, complete, and static landscape condition. The recognition of the adaptive nature of the project is noticeable in the programs conducted on site and in the complex landscape that emerges as the project is established over the years, as shown in Figure 8.

The project team, however, describe their consideration of three distinct strategic approaches, which signals a slight shift in restoration discourses. One option was to collaborate with the government funded remedial work already underway "with the biggest coal pits turned into lakes, waste heaps revegetated and remaining industrial structures demolished" (Mead 2005: 26). A second option was to abstain from intervening at all, allowing new ecologies to emerge from the degraded landscapes organically, though this "wasn't feasible, because of the danger of subsidence as water in the pits gradually rose, and . . . this water would come from the River Spree to the detriment of areas further north" (Mead 2005: 26). The third option, which was adopted, was to treat the restoration process as a "workshop for new landscapes" (illustrated in Figure 8), which worked actively with ongoing remediation processes but left space for experimental approaches to appropriating degraded sites.

Unique examples of the pluralistic goals of restoration practices emerging from this strategic approach include: Grünhaus Natural Paradise in Southern Brandenburg; Paradise 2; and Welzow-Süd Landscape Project. Grünhaus Natural Paradise is a portion of a former coal mine bought in 2003 by the NABU Foundation "which resembled a hostile moonscape after years



Figure 8. IBA Terraces, Großräschen-Süd; The ability for the public to access landscapes that are still undergoing construction and restoration works is a unique characteristic of the IBA Fürst-Pückler Land project. (photo by the author)

of mining [but] today provides habitats for many different species" (NABU Foundation 2023). The Foundation describes its solutionist and pluralist approach by stating that the project aims at providing "both an undisturbed development of the area and the ecological restoration of the former mine" (NABU Foundation 2023). These goals indicate that while the project has clear aspiration, the approach is based on employing ecological processes that privilege unique landscape conditions and emergent ecological assemblies through minimal intervention. Paradise 2 was an art project led by Jürg Montalta between 2007 and 2010, which further illustrates the pluralistic ambitions of the IBA. Montalta's approach "aimed to enable and admit collective intelligence, creativity, intuition, silence and strength" among communities participating in a range of events in-situ (Internationale Bauausstellung Fürst-Pückler-Land 2012: 185). The project allowed local individuals and communities to connect with the landscapes undergoing transition and to meaningfully participate in decision-making about their future as a form of cultural restoration. The Welzow-Süd Landscape Project, by Becker Giseke Mohren Richard (BGMR) and Archiscape, proposed a new landscape in a working coal mine that capitalized on the earth-moving capacities of operating mining machinery. They imagined new topographies, accessible to the public from day one, and choreographed overburden distribution patterns to create a desert of hills—sometimes conical and varied in color—and valleys—the first to attract vegetation (public tours of this site shown in Figure 9). Each of these examples demonstrate an overarching commitment to non-deterministic processes of landscape transformation and decision-making, where even the concept of a "final form" is challenged.

Reflecting on the outcomes of the IBA Fürst-Pückler-Land, Michel Deshaies argues this new landscape "appears as a palimpsest (or layered composition) structured by the exploitation of lignite, the traces of which are omnipresent without being immediately visible" (2020: 18). The



Figure 9. Welzow-Süd Mine; offering public tours of various sites is a key strategy to enhancing community connection to them in the IBA Fürst-Pückler Land, including the operating mine of Welzow-Süd. (photo by the author)



Figure 10. Grünhaus Natural Paradise is a 900Ha area of post-mining landscape, owned by NABU Foundation and managed as a nature reserve through minimal human intervention. (photo by the author)

range of restoration projects and new landscape uses were collaboratively developed by private interests and local municipalities and have created "a common good, to the extent that they have favoured citizen re-appropriation of these spaces from which they were denied access for decades" (Deshaies 2020: 19). This characterization highlights the role of negotiation between multiple stakeholders to achieve concurrent, multi-scalar landscape restoration outcomes, which address ecological, social, and economic imperatives in real time and over long periods of continuous transformation.

The examples reviewed in this article each address ecologically degraded sites and have been represented not only as technical projects but also as cultural and social operations. As such, these projects are connected to discourses about what constitutes desirable transformation, framed through time as beautification and civility, integration and functionality, adaptation and complexity, and negotiation and pluralism. Recent frameworks that are increasingly embedded in contemporary restoration projects, such as ecosystem services, nature-based solutions and the SDGs implicitly draw on these lineages. For this reason, understanding the narratives that underpin these projects is key to examining how they frame current debates about landscape restoration and the future of restoration practices.

Discussion: The Legacy of Restoration Discourses

A marker of the impact of these lineages on current restoration narratives is that many ideas driving landscape transformation, once championed by Picturesque, Ecohumanist and Landscape Urbanist traditions, are still present in contemporary discourses and policy. Much of the

literature on contemporary approaches to restoration is predicated on the idea that these projects should achieve both social and ecological goals.

The attempt to aggregate diverse fields of thought and action under the banner of ecological restoration was hinted at in Ecohumanist restoration projects in the 1960s. While the gradual expansion and integration of social and economic ambitions within restoration projects illustrates a less siloed approach to ecologically responsible practices, this tendency also shows that restoration has gradually become an all-encompassing concept. Even though sustainable development discourses cast restoration projects as significant agents of change on multiple fronts, ranging from social equity to economic development and biodiversity protection, some of the metrics used to assess and classify these projects are still rooted in earlier notions of restoration as a return to a "natural" or "normal" condition. For instance, the Commonwealth Government of Australia defines restoration ambition through a differentiation between rehabilitation and restoration based on these criteria: "Rehabilitation aims to reinstate ecosystem functionality and land productivity, although it will probably assume a different land-use and species composition from the original ecosystem. Restoration has the more ambitious aim of re-establishing ecosystem structure and function to an image of its state before disturbance, or of replicating a desired reference ecosystem" (2016: 4). These definitions demonstrate that the effectiveness and ambition of restoration projects are still measured by their capacity to return ecological functions (as per Ecohumanist ideals) and enhance land value and productivity (as per the ideals of the Picturesque and Landscape Urbanist traditions). Some of the ideas that were once pioneering and ambitious concepts for transformation in the era of Alphand's Buttes Chaumont or McHarg's Pardisan Environmental Park decades (sometimes centuries) ago, are still prevalent in standards and guidelines orienting restoration practices globally. This hints at the significant degree of lag between pioneering landscape architectural discourses, and commonplace guidelines and policy frameworks guiding restoration projects at any given time.

The recognition of the multiple roles performed by restoration projects, heralded by Ecohumanist approaches, has been central within the study of ecosystem services gaining traction in the last 20 years (Millennium Ecosystem Assessment Program 2005). The concept of ecosystem services recognizes that ecosystems provide several services to humans and their environments, ranging from the regulation of water levels to the remediation of contaminants, and from the production of food and nutrients to the provision of cultural and spiritual connection. Similarly, the emerging field of nature-based solutions is grounded on the synthesis of capacities inherent to landscape and ecological (natural) systems, to meet the demands of the intersecting ecological, economic, and social crises of the twenty-first century.

While contemporary policy documents are now overtly describing ambitions of achieving positive social, cultural, and ecological impacts, many prevailing narratives still do not acknowledge the political entanglements of restoration practices. International restoration initiatives attempting to respond to climate change, such as those funded by the Rockefeller Foundation, illustrate how success is measured in terms of ecosystem services and disaster risk reduction (ACCCRN 2013). These projects show that the current understanding of restoration as a multi-functional project still draws directly from notions about functionality and control over nature which emerged through Ecohumanist practices. Contemporary discourses continue to focus on achieving social and ecological gains, presenting ecological restoration as a process with potential to deliver "social and environmental equity" and "long-lasting economic benefits" (Gann et al. 2019).

While landscape architectural practices have long demonstrated an interest in harnessing the diverse benefits of healthy ecosystems and productive landscapes through Picturesque,

Ecohumanist and Landscape Urbanist restoration practices, some political and practical challenges to achieving the goals of restoration are still not directly stated. As the pluralistic and solutionist goals of restoration are now being articulated and quantified with new terminology, systems of measure, and methods of visualization, it is important to recognize where barriers to fulfilling the promises of restoration remain. Despite the comprehensive scope of restoration articulated through international discourses and frameworks, many challenges still exist in the political realms of restoration, including concerns about social equity, regulation of restoration approaches and the practice of restoration more broadly.

Limitations in Contemporary Practices

Landscape architectural authors affiliated with the broader literature of environmental justice assert the importance of critically reflecting on practices that seek to restore the environment (Spirn 2005). These concerns are often based on critiques of how restoration practices have historically been constrained by frameworks such as risk management and ecological impact assessment (Cousins 2021; Wolch, Byrne, and Newell 2014; Bulkeley, Edwards, and Fuller 2014). Risk management and ecological impact assessment practices are primarily based on systematic methods that seek to quantify uncertainties, estimate potential gains of restorative practices, and measure existing losses caused by hazardous, contaminated landscapes. Critics of these frameworks highlight how these metrics might not be able to properly represent the challenges of growing social inequalities and weakened political institutions (Wolff 2020).

Some authors have denounced how restoration projects can at times be unfair or problematic in different ways. For instance, several examples show that practices conducted within "urban upgrading" or "climate adaptation" projects can be highly problematic if they are not able to support existing livelihoods and are used to advance unfair political agendas by leveraging narratives about restoration (Yarina 2018). In the Global South, particularly, projects framed as restoration initiatives developed in the context of historically disadvantaged informal settlements have been criticized for their unequal distribution of risks and benefits (Wolff et al 2023).

The politics of developing restoration projects in historically disadvantaged contexts is particularly noticeable in the literature of nature-based solutions (ACCCRN 2013; ICLEI Africa 2020). The promise that nature-based solutions can significantly contribute to improving living conditions in disadvantaged areas is at times put on hold due to concerns about gentrification, lack of transparency in decision-making processes and unequal distribution of benefits (Wolff et al. 2022). Acknowledging the political and social implications of contemporary restoration narratives and nature-based solutions, therefore, is critical to ensure that restoration projects are fair and appropriate to each specific context.

Tendencies toward inequitable outcomes from restoration projects, despite their ongoing critique and refinement, hint at an underlying structural challenge for those that practice in this field. It is important to recognize that narratives used to interpret and describe the landscape and tools for measuring and acting upon it work together to transform landscapes and cultures through these processes. These narratives have limited impact when they are not backed by institutional mechanisms and political action. The challenge of gathering support for impactful restoration projects is exemplified by the limited power of standards intended to guide restoration practices. To date, these standards are non-binding and are intended only to "support development of ecological restoration plans, contracts, consent conditions, and monitoring and auditing criteria" at the local level (Gann et al. 2019: 12).

When restoration ambitions are translated to local regulatory frameworks or practical commitments by corporate or government actors, the scope is notably different. Taking the Austra-

lian mining industry as an example, regulatory environments and industry best practice guides for mine site restoration tend toward more modest measures of success. In each case, considerations of social and economic impacts and potentials are not explicitly stated, simplifying the expectations placed upon industrial actors. In this regulatory context, The Minerals Council of Australia—the peak body representing the nation's extractive industries—describes the minimum standard of mine rehabilitation as ensuring it is "safe, stable and non-polluting" (Environment and Communications References Committee, Senate of the Parliament of Australia 2019: 15). Even these more modest ambitions are rarely met in Australia due to absent or ineffective policy and regulatory frameworks, with approximately 50,000 abandoned "legacy mines" that continue to negatively impact on the environment and associated communities (Roche and Judd 2016). The scale of this ecological and landscape outcome is reflected globally with 550,000 abandoned mines identified in the United States, more than 10,000 in Canada, and a lack of adequate data in most other countries (Hufty 2019).

Conclusions: What is the Future of "Restoration" in Landscape Architecture?

Current restoration practices are evolving amidst a range of crosscurrents in restoration discourses. The advent of frameworks such as nature-based solutions, ecosystem services and others described in the UN Decade on Ecosystem Restoration Strategy (United Nations 2021) are adding to the historic understandings of restoration practices as an engine of transformation through beautification and civility, integration and functionality, adaptation and complexity, and negotiation and pluralism.

The all-encompassing nature of current thought on restoration practices is demonstrated in the International Principles and Standards for the Practice of Ecological Restoration (Gann et al. 2019). The notion that ecological restoration should achieve multiple benefits to both human and non-human communities is still evolving within landscape architecture (Spirn 2005), and, with it, the discipline is making sense of the ongoing political and social implications of restoration projects. Reviewing projects across multiple geographical, political and temporal contexts, we have identified patterns in how power is articulated through restoration projects and their practices of landscape production within Picturesque, Ecohumanist and Landscape Urbanist lineages.

The projects discussed reveal that the landscape architectural profession is a beneficiary of power imbalances in the restoration of landscapes, as much of our work is predicated on a desire to improve such places for public or private use. As such, the discipline has a unique opportunity to contribute to reshaping the structures and mechanisms which have perpetuated this condition. Despite the more multi-functional and diverse goals that are used to frame restoration in current debates, in some cases the language of landscape architectural ambition has not departed from the Western origins of the nineteenth century. The *New Landscape Declaration* provides a clue for understanding some of the problematic assumptions that have brought the discipline to this point: "The urgent challenge before us is to redesign our communities in the context of their bioregional landscapes enabling them to adapt to climate change and mitigate its root causes. As designers versed in both environmental and cultural systems, landscape architects are uniquely positioned to bring related professions together into new alliances to address complex social and ecological problems. Landscape architects bring different and often competing interests together so as to give artistic physical form and integrated function to the ideals of equity, sustainability, resiliency and democracy" (Landscape Architecture Foundation

2017). In this passage, the framing of landscape architectural purpose is clear as the declaration: (i) identifies and states a threat (climate change and its root causes); (ii) articulates a narrative for response to this (landscape architects have unique expertise tailored to overcome the threat we face); and (iii) sets out the actions that must be taken to achieve the desired outcome (give artistic form and integrated function to just ideals).

While the threats, responses, and desired outcomes all resonate with a contemporary desire for improvements in landscapes and cultures within the frameworks of restoration, the underlying positioning of landscape architecture as the savior and "problem-solver" is familiar. If we understand this disciplinary posture as problematic, then we must interrogate the ways in which it is continuously recreated and adapted in shifting cultural and ecological contexts. Billy Fleming, a scholar at the Weitzman School of Design, University of Pennsylvania, offers a prompt: "We may yearn to impart systems-level change, but we are working on discrete sites, with incrementalist tools, within structures that produce injustice. Before we ask the world to view design as an urgent necessity, we must look at those sites, tools, and structures and remake our discipline to be more useful, in the moment, for the movements and ideals we aspire to serve" (Fleming 2019). In order to articulate the role of landscape architecture within current debates about restoration, we aimed to understand how the goals of significant and canonical landscape architectural projects were articulated through narratives of transformation, restoration and related concepts. In doing so, we articulated a lineage of frameworks used to make sense of restoration, to better enable critical engagement with contemporary projects that are underway or yet to begin. The examples discussed in this article reveal that restoration practices are not only the result of technical decisions but ultimately of social and political processes that operate through restoration and its associated narratives.

It is critical to recognize that the ambitions of these discourses have defined restoration projects historically but still reverberate in the contemporary narratives around ecological restoration, nature-based solutions, ecosystem-based approaches, rewilding, biodiversity conservation, sustainable land management, agroecology, and others (Cohen-Shacham et al. 2016; United Nations Environment Assembly 2022). Transforming a landscape, in this sense, must be recognized as an endeavor intertwined and inseparable from its scientific, social, and political milieu (Croeser et al. 2021; Diep et al. 2022; McPhearson et al. 2022). This is true whether the project is framed as an endeavor to civilize a landscape, to ensure that an ecosystem is functional or to harness ecological processes to solve societal challenges (McHarg and Steiner 1998; Olmsted 2015). The efforts undertaken to control landscapes throughout time, therefore, hint at an overarching framing of restoration practices as a problem-solving endeavor, though more recent projects begin to offer more open-ended, inclusive, and exploratory approaches.

Current and future restoration projects should, therefore, be explicit about their social and political dimensions, and anticipate the long-term participation and contribution of varied and changing human and non-human communities in shaping new landscape outcomes. The variable and layered notion of transformation offers a starting point for reflection on and critique of the narratives that underpin restoration practices today and into the future. This review of lineages shows that the authorship, circulation, and defense of restoration narratives underpins the identification of their sites, their translation into physical forms and processes, the governance of their landscape production processes, and the communication of their merits. While landscape architects continue to be deeply engaged in restoration practices and their discourses, they work alongside myriad actors to conceive, initiate, produce, and care for restoration projects throughout their lifecycle. This truth implicates the discipline and its practitioners in the wide-ranging outcomes of such work, suggesting renewed potential for landscape architectural restoration practices, which actively engage with the full range and complexity of forces generat-

ing transformations through narratives and sites. Acknowledging the influence and limitations of historical restoration lineages, the profession can advance nuanced and critical perspectives on restoration practices to maintain relevance and agency as the field expands and accelerates in the coming years.

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