



# Transforming post-industrial landscapes into urban parks: Design strategies and theory in Seoul, 1998–present

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## 1. Introduction

### 1.1. Background

Over the last two decades in Seoul, many projects for transformation of post-industrial landscapes into urban parks have been carried out. At present, the Seoul Metropolitan Government (SMG) is managing urban regeneration projects for brownfield sites including factories, power plants, military bases, and transportation facilities. The projects plan to revitalize post-industrial areas that no longer serve their initial purposes and have fallen into urban decay, restoring them through creative reuse/recycling into green, open spaces. This design trend emerged in Europe and North American cities beginning in the mid-twentieth century; it gained influence in Seoul around the turn of the twenty-first century, and since then it has greatly influenced South Korean landscape architecture. Several of the projects referred to above have been highly acclaimed for their design quality by both Korean and international critics. For example, Seonyudo Park and West Seoul Lake Park were recognized at the ASLA (American Society of Landscape Architects) professional awards in 2004 and 2011. In reusing derelict sites and making them into urban parks, most Korean landscape architects have considered the sites as palimpsests, taking up the notion that the site retains various layers of local and Korean cultural history, and embracing the “memory” of the site alongside the recycling of its physical infrastructure. Since 1998, when post-industrial landscapes began to appear in Seoul, over the last two decades, attitudes towards post-industrial sites and the specific design strategies applied to them have been gradually but constantly changing, in response to the changing social needs and circumstances of Seoul.

Most scholars of landscape architecture have treated the design of post-industrial landscapes mainly in terms of the reusing/recycling of physical structures and environments in the sites. One group of studies has looked at the unique aesthetic attractions, sensibilities, and experiences of industrial ruins (Meyer, 1998, 2007, 2008; Haddad, 1996; Herrington, 2006; Lee & Pae, 2012; Pollak, 2007). They have often interpreted the aesthetic quality characteristic of these sites in terms of the notions of the sublime and melancholy, which are novel characteristics of parks, contrary to the pastoral parks epitomized by Frederick Law Olmsted's Central Park, constructed in the mid-to-late

nineteenth century. A second major approach to Brownfield sites is exploration of ways to conserve and use the sites' history and memory (Braae, 2015; Chan, 2009; Folkerts, 2015; Hemmings & Kagel, 2010; Kang, 2014; Kang, Lee, & Choi, 2003; Kirkwood, 2001; Son & Pae, 2017). They have studied design strategies and how designers have addressed site history, focusing on various approaches to renovation of the abandoned buildings. Recent research approaches analyze different perceptions of post-industrial landscapes between the public and professionals (Loures, 2015).

However, Korean projects during the last two decades have not been well explored in English-language research. Korean scholars, of course, have studied Korean post-industrial landscapes in terms of aesthetics and memory. However, even they have not focused on the Korean specificity of the sites and their restoration, including topographical, historical, and political conditions, which strongly influence the design of Korean post-industrial landscapes. More importantly, they have also not explored the relationships between practice and theory in Korean landscape architecture and those in Western landscape architecture, including the design of post-industrial landscapes. Indeed, Korean landscape architects have embraced the latest (Western-derived) design trends in practice and theory, as epitomized by their designs of post-industrial landscapes.

### 1.2. Research objective and methodology

This work, with a focus on the Korean context, examines design approaches and specific strategies for transforming post-industrial sites into urban parks, and explores changes in them over the last two decades. It first discusses Korea-specific contextual matters related to post-industrial landscapes in terms of urban conditions and the practice and theory of Korean landscape architecture. It then briefly examines the Korean landscape architects' three main attitudes towards post-industrial landscapes, which are aesthetic objects, repositories of memory, and sources of potential ecological, cultural, and educational value.

In the sections that follow, this work scrutinizes significant projects during the last two decades chronologically. Specifically, it focuses on metropolitan Seoul, the capital city of South Korea (Fig. 1). Seoul was the site of many early Korean projects for converting post-industrial

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**Fig. 1.** Distribution of case study sites in Seoul. (1: Yeongdengpo Park, 2: Haneul Park, 3: Seounyudo Park, 4: Seoul Forest Park, 5: West Seoul Lake Park, 6: Yongsan Park, 7: Gyeongui Line Forest, 8: Seoullo, 9: Culture Tank).  
(Source: author's drawing based on a digital map from the National Geographic Information Institute of Korea).

landscapes into urban parks, including projects well known all over the world, such as Seonyudo Park and West Seoul Lake Park. Furthermore, the city is currently holding many international landscape or architectural competitions for recycling brownfield sites into open spaces. This work examines noteworthy projects since 1998, when urban park conversion for post-industrial sites first appeared in Korea. Most of them were occasions for design competitions and were featured in *Landscape Architecture Korea (LAK)*,<sup>1</sup> the only magazine for Korean landscape architecture. Therefore, the selected projects were or are well known to the public as well as professional Korean landscape architects and scholars.

Methodologically, this study carries out a literature review, case studies, and site visits. That is, it first examines existing scholarly research, books, magazines, and proposals submitted to design competitions, in order to fully understand the wide range of issues related to post-industrial landscapes in design practice and theory. Next, it carries out site visits to learn how designers' proposals were embodied in real space and to collect visual materials. Through this analysis, it illustrates changes in design strategies for post-industrial sites over the last two decades as well as relationships between Korean and western landscape architectural practice and theory.

## 2. Contexts: Korean post-industrial landscapes and landscape architecture

To fully understand the design of post-industrial sites in Seoul, we need to consider Korean contexts, including Seoul's urban circumstances as well as professional landscape-architectural practice and theory in Korea. In terms of the urban circumstances and environment, because of Korea's small, mountainous land area, Korean post-industrial sites tend to be situated in or near cities. In particular, in Seoul, although many industrial facilities were initially constructed in the

outskirts, because of the city's continuous expansion, those same facilities are now located in the inner city (see Fig. 1). As such, as they have become degraded and non-operational, many have been made accessible to the public by conversion into urban parks. In designing them, designers need to fully consider their surroundings in order to actively use the sites' industrial facilities as urban green infrastructure.

Second, since Korean industrialization began relatively late, in the late nineteenth century, and since much of it was destroyed in the 1950s during the Korean War and rebuilt, the post-industrial landscapes and buildings in them are not particularly old. Furthermore, Seoul and other Korean cities rapidly industrialized in the second half of the twentieth century. Thus, most of Seoul's post-industrial sites for urban park design were constructed after the mid-twentieth century.

Third, there is no legislation for conservation of late-twentieth-century post-industrial landscapes as industrial heritage in Korea, and thus such sites have been frequently recycled and converted into urban parks at the discretion of landscape architects. Globally, TICCIH (The International Committee for the Conservation of the Industrial Heritage) was founded in 1973, and specific criteria for registration and conservation of post-industrial landscapes have been formulated by ICOMOS (International Council on Monuments and Sites) and UNESCO (United Nations Educational, Scientific and Cultural Organization) World Heritage. In Korea, a Registered Cultural Heritage system was first implemented in 2001 to designate architectural structures or monumental sites, including industrial facilities that have significant value in representing the modern period. (Cultural Heritage Administration of Korea, CHA, 2019)<sup>2</sup> However, even this system, the only legislation for conservation of industrial heritage in Korea, includes only facilities built before the Korean War (see Cho & Shin, 2014). In other words, the lack of legislation on facilities constructed since the Korean War has allowed designers to creatively recycle and transform post-industrial sites into urban open spaces.

Fourth, Korean public design projects tends to depend on the

<sup>1</sup> LAK is the new name (since January 2014) of *Environmental & Landscape Architecture of Korea* (January 2000–December 2013)/*Korea Landscape Architecture* (before January 2000).

<sup>2</sup> Korean scholars began to explore the notion of cultural heritage, its conservation and creative reuse, around 2003 (Kang et al., 2003).

political and social situation. Initial designs have often been changed according to the needs of many interested parties, including the SMG, associated ministries, and civic groups. For example, the initial design of Youngsan Park, a plan to transform a US military base into an urban park, continues to be modified to address different needs of government ministries and to remove environmental contamination associated with past military use (Ministry of Land, Infrastructure and Transport, 2017). As a result, the design and the following construction processes have been delayed.

Shifting to Korean landscape architecture, practitioners have tended to rapidly embrace Western design trends. Many international design competitions have been held in Korea, especially in Seoul, where international star landscape architects have participated and collaborated with Korean firms. Second, Korean landscape architecture has rapidly embraced Western landscape-architectural theory, for example Landscape Urbanism, large parks design, and resilience for urban parks (Waldheim, 2006; Czerniak & Hargreaves eds., 2007). To fully understand the Korean design of post-industrial sites, the recent history of Korean landscape-architectural practice and theory need to be examined in more detail, which the next section will do.

### 3. Attitudes towards post-industrial landscapes in Korea

#### 3.1. Aesthetic objects

Landscape architects have treated the architectural structures of post-industrial sites as aesthetic objects. They have creatively reused raw materials and exploited the appearance of the crumbling, rusting industrial ruins, emphasizing the materiality of the sublime, to provide a unique aesthetic landscape experience for people. Visitors are able to view the industrial ruins, symbols of progress and advanced economy, and creatively reconstruct the history of the industrialization period. Furthermore, according to studies on landscape aesthetics (Crawford, 1983; Herrington, 2006; Meyer, 1998), visitors can also contemplate the incursion of nature within the industrial ruins, and feel melancholy at the sites' decline and the transience of the present.

Korean landscape architects have adopted two design strategies for post-industrial landscapes. First, some designers preserve industrial structures and reveal its aesthetic characteristics and those of its ruin as much as possible. The attitude is further subdivided into two approaches to design: one is use of the rusting industrial structures as sculpture artifacts, for exhibition (Fig. 2); the other is actively reusing architectural structures to form the spatial structure of the park (Kang, 2014) (Fig. 3). Second, some designers prefer to tame the rough characteristics of industrial structures, embellishing and reorganizing the structure and its appearance (Fig. 4).

#### 3.2. Repository of memory

Landscape architects consider industrial structure as a repository of memory, and represent the sites' industrial history by reusing/recycling the industrial structure and designing new cultural programs using the sites' memory. As discussed earlier, most Korean post-industrial sites were built in the later twentieth century and are not designated Registered Cultural Heritage. Thus, they have been creatively alterable according to designers' own ideas.

Design strategies for exploiting the industrial history of the sites can be roughly divided into two. First, designers have recycled architectural structures as the medium of conveying memory. Since ruins are themselves fragments or parts of a structure, they embody the memory of the site (Crawford, 1983, pp. 52–53). Thus, industrial ruins evoke for visitors a sense of their industrial past and allow them to appreciate and associate with that past. Some designers preserve architectural structures in their original state, leave parts of them, or construct new artifacts using construction debris. Second, sites have been captured in creative ways in exhibition programs. The industrial history of the

places is displayable in the form of visual materials including photographs and videos as well as in items of everyday life (Fig. 5).

#### 3.3. Potential for ecological, cultural, and educational value

Post-industrial sites have been used to generate ecological processes and cultural and educational programs, which have helped regenerate derelict industrial structures, driven no longer by fossil fuels but by ecology and culture.

First, Korean landscape architects have frequently used rusting architectural structures to embody ecological processes (Fig. 3). As Elizabeth Meyer explains, an ecological park using industrial ruins mimics not the appearance of nature but instead evokes its processes, thereby embodying "sustaining beauty" (Meyer, 2008). Post-industrial landscapes in which rusting structures and nature are intertwined generate a unique, dynamic aesthetic experience by revealing the natural forces that destroy the structures and the structures' resistance (Crawford, 1983, p. 55). Second, the industrial structures have been recycled to convey various types of culture, including both traditional and new regional culture, pertaining to the sites and their surroundings (Fig. 5). Furthermore, both ecological and cultural programs fulfill educational functions (Fig. 3), in that the ecological system of the parks embodies the healing power of nature, which revives abandoned, degraded, and toxic sites (Lee & Pae, 2012). Thereby, the aesthetic experience of the post-industrial landscapes can promote the apprehension of the relationship between energy consumption, environmental pollution, and ecological health (Meyer, 2008, pp. 20–21).

### 4. Changes of design strategies and theory for post-industrial landscapes in Seoul

#### 4.1. Industrial ruins as exhibition objects (early days, before 2000)

In 1998, Seoul's first urban parks using post-industrial landscapes were opened to the public. They were products of an SMG project beginning in 1996 that aimed to transform post-industrial sites including factories and industrial facilities into urban parks to expand urban green space. These early parks tended to use rusting architectural structures as objects for display. The former use of Yeongdengpo Park (designed by Dong Myeong Engineering Consultant and Architecture), a typical example, had been a famous Korean brewery, the Oriental Brewery (OB) built in 1933. The only industrial structure that remained in its original state was a huge, pure copper pot for boiling hops and malts. The artifact is located in the middle of the park square, like a sculpture. As a Korean scholar pointed out, the artifact is not enough to fully reveal the site's whole memory and history, that is, its sense of place (Fig. 2). This is because, except for the rusting copper pot, there are no traces of the history of the site, whose design has produced a rather indistinctive appearance (Pae, 2007, pp. 33–34).

This attitude towards industrial ruins seems inherited in part from the Gas Works Park, designed by Richard Haag in 1971 and featured in LAK in July 1992 (Park, 1992), which was well-known to Korean landscape architects.<sup>3</sup> Similar to the huge manufacturing structures situated and displayed on the open lawn, Yeongdengpo Park uses the rusting copper pot as an aesthetic component. However, whereas the former's structures support cultural programs and are used by the visitors, the latter's industrial ruin functions only as an object of visual pleasure. In Korean landscape architectural theory of the late twentieth

<sup>3</sup> Landschaftspark Duisburg-Nord (designed by Latz + Partner in 1991) had already been constructed at that point, and, as it had been featured in LAK in 1995 (Meinicke, 1995; Schmid, 1995), was known to Korean landscape architects. However, an ecological park recycling industrial structures, as epitomized by the Landschaftspark, did not appear in Korea until 2002, when Seonyudo Park was opened.



Fig. 2. Pure copper pot for boiling hops and malts, used as an exhibition object. Yeongdengpo Park. (Source: author's photograph, 22 August 2018).

century, discourses on the sense of place and design methods employing it were important, dominant issues, by which design strategies using post-industrial landscapes were supported.<sup>4</sup> However, Korean works had a limitation: the tendency to use industrial ruins like exhibition objects, in which visitors could not actively participate.

#### 4.2. Transforming landfill into park (Sky Park, opened in 2002)

After 2000, several works acclaimed for their design qualities began to appear in Seoul. One such early park is Haneul Park (Sky Park), designed and constructed beginning in 2000 and opened in 2002 (designed by Yangkyo Chin). The site, named Nanjido, had been functioning as Seoul's landfill for about fifteen years since 1978. In constructing the main stadium for the 2002 FIFA World Cup, the place and its surroundings were transformed into an urban park. Stabilizing the landfill and then creatively using the condition of high landform, the designer established a wide field of reeds atop the landform and situated several observation points on it, which provided an unobstructed view of the city and the Han River, from the sloping sides of the site. This scenery conveys the healing power of nature, and the image of a living ecology reviving the degraded and polluted site (Fig. 6). Furthermore, the park uses methane gas out of the landfill as a power source and produces renewable energy with wind turbines.

The park design was highly influenced by that of Byxbee Park in Palo Alto, designed by Hargreaves Associates in 1992. The designer of Sky Park stated that like the designers of Byxbee Park, he tried to embody the former history of the site as a huge landfill by designing sculptures recycled out of waste materials from the landfill (Chin, 2000, p. 95). However, in the construction process, the original design using the sculptures did not materialize, and thus the methane gas pipes evoke for visitors the park's former history as a landfill. Although

former waste materials were not actively reused, the park was the first Korean design project for the regeneration of open space that tried to use recovery of nature as a main design concept.

#### 4.3. Recycling industrial ruins for ecological process (Seonyudo Park, opened in 2002)

Seonyudo (Seonyu Island) Park is the first Korean project to recycle post-industrial sites into an ecological park. The site is one of the few islands in the Han River, traversing Seoul's east to west, which made the island, Seonyubong (peak of the Seonyudo) a famous scenic location during the Joseon Dynasty (1392–1897). Then, during Japan's colonial occupation of Korea (1910–1945), the island peaks were cut and carried to other places for raw materials. From 1978 to 2000, the Seonyu Water Purification Plant ran here. In 1999, a design competition to transform the site into an urban park was held, and the team of SeoAhn Total Landscape, Johsungyong architect's office, and Dasan Consultant won, opening the park in 2002 (ASLA, 2004; SeoAhn, 2000; Sung, 2002).

The park was acclaimed as a design masterpiece by many Korean landscape design critics as well as designers and scholars of the fields of the built environment (Pae, 2007, pp. 56–73; Lee & Pae, 2012). Furthermore, the park was the first Korean winner of an ASLA Professional Award in 2004 (ASLA, 2004). It is still considered one of Korea's most famous urban parks by the public as well as the best urban design project in Korea selected by Korean landscape architects and architects.<sup>5</sup> Whereas former Korean works had tended to use industrial structures as objects for display, as discussed above, Seonyudo Park used the complex structures of the facilities to organically form an overall spatial framework, actively revealing the distinctive appearance of the rusting industrial ruins. The park embodies the sublime and

<sup>4</sup> In Korea, the notion of “sense of place” means the identity of the place, that is, the genius loci including the place's various historical, social, environmental, and cultural layers (Lee & Hwang, 1997).

<sup>5</sup> For example, the park came in third place in a survey for selection of Korean modern architectural masterpieces carried out by the Korean newspaper the *Donga Ilbo* and prominent Korean architectural magazine *SPACE* in 2013 (Park, 2013).



**Fig. 3.** Industrial structures of a settling basin for chemicals now functioning as a nest for aquatic ecological processes. Seounyudo Park. (Source: author's photograph, 22 August 2018).



**Fig. 4.** Bones of buildings of existing water purification plant functioning as frames of geometric gardens. West Seoul Lake Park. (Source: author's photograph, 12 November 2018).

melancholic sensibilities in the way it performs the spatial choreography of the complex facilities and the ecological processes covering them (Fig. 7). In addition, the strategy of revealing raw materials successfully conveys the site's industrial history, so that visitors can immediately understand that history as embodied knowledge. Third, most

importantly, the park was the first work in Korea to creatively use the ecological process, which filled the derelict and empty architectural structures. Specifically, the 'Water Purification Basin' is now an ecological garden situated in the remnants of the original structure, a settling basin for chemicals. The garden is full of various aquatic plants, which



Fig. 5. Museum exhibition displaying the industrial history of the oil tank. Culture Tank.  
(Source: author's photograph, 31 January 2019).

function to purify water in nature. In other words, the garden is a product of the creative interpretation of its original function, as purification of chemicals as an ecological process (Fig. 3). Fourth, the park provides an environmental educational effect for visitors in the way it embodies the healing power of nature, reviving the derelict and environmentally degraded sites (Lee & Pae, 2012).

In this sense, Korean scholars and critics have commented on the similarity between the design of Seonyudo Park and that of Landschaftspark Duisburg-Nord, designed by Latz + Partner (Peter Latz) in 1991 (Lee & Pae, 2012). Although other works converting post-industrial sites into urban parks, including the Parc de la Villette (designed by Bernard Tschumi and OMA/Rem Koolhaas in 1984) and Gas Works Park, were already well-known to Korean landscape architects, the Landschaftspark, presented in LAK in May and December 1995 (Meinicke, 1995; Schmid, 1995), enormously influenced the design of Seonyudo Park (Lee & Pae, 2012; Pae, 2007, p. 83). Whereas the Gas Works Park took advantage of the visual and cultural valences of the industrial structures, the Landschaftspark intended to recycle these rusting industrial structures to inject ecological processes in them, intertwining them with wild plants to represent a sensibility of wilderness. This strategy seems similar to that of Seonyudo Park, whose ecological transformation then sparked an important fashion in the design of post-industrial sites in Korea.

#### 4.4. Designing large parks (Seoul Forest Park, opened in 2005)

After the advent of ecological uses of Korean post-industrial sites, design strategies transforming large brownfield sites into urban parks began to appear. One of them is Seoul Forest Park, situated in Ttukseom, which had functioned for a variety of purposes, including the royal hunting grounds during the Joseon Dynasty; Seoul's first water purification plant, built in 1908; and a horse race track, recreation park, and golf course in the second half of the twentieth century. In 2003, SMG announced a plan to convert the site into an urban park and then held a design competition won by the team of Dongsimwon Landscape Design and Construction Co., Daewoo Engineering, and Kyungjin Zoh. The park was constructed and opened in 2005.

Similar to Seonyudo Park, the Gallery Garden of Seoul Forest Park left the remnant of the water purification facilities which the various plants cover (Fig. 8). Thereby, the garden provides sublime and melancholic sensibilities. The race course was used to form a circulatory spine through the park, conveying the former history of the site. Furthermore, the existing reservoir was used to create a wetland ecological park, where pillars of water purification facilities were left to function as sculptures. (Ahn, 2005). Whereas Seonyudo Park actively used the industrial structures to create the spatial structure throughout the site, Seoul Forest Park retained these remnants as they were but found new functions for some and integrated into the park.



**Fig. 6.** Methane gas out of the landfill recycling as a power source. Haneul Park.  
(Source: author's photograph, 31 January 2019).



**Fig. 7.** Incursion of nature within the industrial ruins, evoking melancholic sensibilities at their decline and the transience of the present. Seounyudo Park.  
(Source: author's photograph, 22 August 2018).

More importantly, the park received attention because it constituted the first Korean work designing large urban park sites. First, the winning proposal created a phasing plan, although it was not specific, for a flexible long-term construction process (Fig. 9) (Pae, 2007, p. 87). Second, the proposal explored computerized visualization techniques

for demonstration of the design strategy, including layering diagram overlaying various forms of organization on the site, such as walking paths, streams, and green spaces. Third, the park introduced Korea's first public-private partnership to manage an urban park and fostered citizens' participation at every stage, from planning and operation to



Fig. 8. Various plants covering remnants of the water purification facilities. Seoul Forest Park.  
(Source: author's photograph, 30 August 2018).



Fig. 9. Phasing plan (left) and design strategies (right), the former illustrating construction sequence of water purification plant, the latter demonstrating the evolution, network, and regeneration of the park. Winning proposal of Seoul Forest Park competition, 2003.  
(Source: Dongsimwon Landscape Design and Construction Co., Daewoo Engineering, and Kyungjin Zoh).

management. These design strategies, including supporting visuals, were influenced by proposals in design competitions for Downsview Park in Toronto in 2000 and Fresh Kills Landfill Park in New York in 2001 (Pae, 2007, p. 92)<sup>6</sup> Furthermore, in terms of theory of landscape architecture, Landscape Urbanism, which mainly addresses post-industrial sites, has become influential among Korean theorists since its introduction to Korean landscape architecture in 2001 (Pae, 2001b, 2004a, 2004b). Thus, Seoul Forest Park was the first Korean large post-industrial site revitalization project designed under a long-term process, including planning, construction, and management.

<sup>6</sup> The Downsview Park competition was featured by LAK in January 2001 and published in a Korean academic journal in 2002 (Pae, 2001a; 2002a). Fresh Kills Park was addressed by LAK in February and March in 2002, and in an academic journal in 2005 (Jeong & Corner, 2005; Pae, 2002b).

#### 4.5. Recycling for ecological process as a cliché (West Seoul Lake Park, opened in 2009)

West Seoul Lake Park, similar to Seonyudo Park, has a history as a water purification plant, built in 1959 and operated for over fifty years. In 2007, a design competition for its transformation into an urban park was won by Ctopos Design; the park was completed and opened in 2009 (Son, 2010).

Korean design critics commented that the design strategy of the park was similar to that of Seonyudo Park (Lee & Pae, 2012), since both parks actively used rusting industrial facilities to create a spatial framework for the whole park. Especially in the Mondrian Plaza, a featured space at the park, remnants of old reinforced steel concrete tanks from the former water purification plant were recycled to create a variety of scaled geometric gardens introducing the Mondrian composition. Furthermore, the regenerated structures embodied the former

history of the site as an industrial facility and function as the ecological process of the water cycle system in the garden (Choi, 2009, p. 29). The design was highly acclaimed by Korean and international design critics and scholars. In 2011, the park, following the first award for Seonyudo Park in 2004, won the ASLA Professional Awards (ASLA, 2011).

However, the two parks also differ in terms of ways of recycling industrial ruins and their aesthetic appearance. Seonyudo Park emphasized the materiality of the sublime in the appearance of the industrial structures, revealed in their rough state, permeated by ecological processes. In contrast, West Seoul Lake Park tamed and partly used the rough quality of industrial ruins, in which other artificial interventions were added, as shown in the Mondrian Plaza (Fig. 4).<sup>7</sup> Given that the two parks achieved great success among both the Korean public and design critics, the design strategy that injects ecological processes into post-industrial sites became a dominant trend in Korean landscape architecture (Kang, 2014, p. 151). Although the design approach had initially been considered a creative new design strategy, it gradually came to be viewed as a cliché, producing monotonous ecological parks using industrial facilities.

#### 4.6. Resilient park design (ongoing Yongsan Park project, General Basic Plan in 2009–2010/competition in 2012)

Yongsan Park had been planning to transform one of Seoul's US Army garrisons into an urban park. In 2003, Yongsan garrison was slated to be relocated to Pyeongtaek, and a special law for Yongsan's conversion into an urban park was enacted in 2007. Under this law, the General Basic Plan for the Creation and Zoning of Yongsan Park was carried out during 2009–2010 (Ministry of Land, Transport and Maritime Affairs, 2010), and, then, based on the plan, an international design competition was held in 2012 (Pae et al., 2013). The West 8 and Iroje team won the first prize (Rosenfield, 2012; West 8, 2012).

The site is large at 2.4 km<sup>2</sup>, similar to the size of Hyde Park in London. Occupied by the Japanese military in the early twentieth century and by US Army during the second half of the twentieth century, the site has a variety of urban infrastructure, including roads, buildings, and green spaces. Most importantly, due to its location in the center of Seoul, the site is accessible to many. The general plan and the following winning proposal determined the priorities of conservation, part-conservation, or demolition of existing buildings, including barracks and billets built during Japanese and US Army occupations, according to their perceived historical, artistic, academic, and social values. The specific priorities for the conservation and reuse of the site's history reflected an advanced approach to urban park design, which had not been the case before (Ministry of Land, Transport and Maritime Affairs, 2010; Pae et al., 2013). For instance, the winning proposal creatively explored a strategy for recycling existing buildings, under a new interpretation of Korean spatial tradition (Lee & Pae, 2018). Specifically, the team designed various types of *madang*, the Korean traditional multi-purpose yard, recycling various traces of the existing buildings, whether in their original state or mere fragments and even footprints of demolished structures, into new platforms for the various activities and culture of the park (Fig. 10).

The general plan and the winning proposal for the park were the first Korean works with phasing plans, which used the concept of resilience as a tool for Korean large parks' design and management (Fig. 11). Whereas Seoul Forest Park's phasing plan roughly determined the construction sequence, that of Yongsan Park tried to prepare a resilient long-term plan to adjust in the face of the various challenging conditions of the site. The strategy came from the Western discourse on large parks, which was translated by Korean scholars and introduced to

Korean theorists and designers in 2010. (Czerniak & Hargreaves eds., 2007).<sup>8</sup> The discourse addressed the concept of resilience not only as an ecological concept but also as a tool for design and management of urban parks. The resilience of an urban park, Julia Czerniak has stated, is its ability to accommodate diverse and changing social, cultural, technological, and political circumstances while maintaining its identity (Czerniak, 2007, p. 216). Embracing the discourse of resilience, the general plan for the park included a phasing plan with an open-ended process to enable the park to adapt to ecological, economic, political, and social changes (Ministry of Land, Transport and Maritime Affairs, 2010). However, despite the long-term vision of the plan and the winning proposal, it is still unpredictable when construction will begin, given the variety of issues onsite, including when the garrison will be relocated, how environmental contamination associated with military activities will be dealt with, and changing social and political conditions including surrounding urban development and the timing of relocation of US Army base. The initial plan has been modified due to the needs of different interested parties, including associated ministries, SMG, and civic groups (Ministry of Land, Infrastructure and Transport, 2017).<sup>9</sup>

#### 4.7. Constructing new cultural identity (Gyeongui Line Forest, Seoulo, Culture Tank)

More recently, transportation infrastructures including derelict railroad tracks and highway overpasses have been converted to linear open space with new cultural identities, to attract many visitors (Kullmann, 2011). Gyeongui Line Forest, one well-known example, was a series of trails repurposing abandoned railroad tracks at ground level into open spaces. One part of Gyeongui Line Forest, Yeonnam-dong district, opened in 2015, is a current Seoul hotspot. It is located in Hongdae, the district around Hongik University, which is known for Korean indie music, clubs, and urban arts, with which the trail functions as a Korean youth and foreign tourist destination. This simple and considerate gesture transformed derelict transportation facilities into public green spaces and generated new identities for Korean post-industrial landscapes by providing linear, healthy walking paths for residents of downtown Seoul.

Seoulo is a famous linear elevated park, constructed atop a former highway overpass itself constructed in 1970, situated right next to Seoul Station. In 2015, an international design competition for its transformation into green public space selected MVRDV's proposal Seoul Arboretum plan, and the arboretum opened in 2017 (Kim, 2015). The winning proposal created a novel design idea for the arboretum, which transforms linear post-industrial structures into a raised public green space full of a variety of local plants and flowers. Using the original infrastructure's linear form and direct connection to the city, the proposal created green veins permeating adjacent places at the center of

<sup>7</sup> This design strategy for West Seoul Lake Park reflected the recent interior and architectural design trend of industrial style or industrial chic, which tends to reuse industrial structures by artificially embellishing them.

<sup>8</sup> Large park discourse is part of Landscape Urbanism. Landscape Urbanism has often been criticized by adherents of New Urbanism for fostering spatial inequality through the spectacularization and commercialization of space encouraged by Landscape Urbanism projects. Responding to these criticisms, it revised and strengthened its ideas and evolved into Ecological Urbanism (Duany & Talen, 2013; Lee & Pae, 2015), which still influences the practice and theory of Korean landscape architecture (Kim & Jeong, 2014).

<sup>9</sup> Because unforeseeable changes including rescindment of the plan for an international business district surrounding of the site and also led to the temporary presence of the ROK/US Combined Forces Command, the initial basic plan was revised responding to the changing social circumstances of the site and its surrounding in 2014 (Ministry of Land, Infrastructure and Transport, 2014). Furthermore, although the planning and construction of the park have been carried out by Ministry of Land, Infrastructure and Transport, different needs of related ministries, including the Ministry of Environment and the Ministry of National Defense, as well as SMG and related civic groups, make further planning and construction hard to carry out.

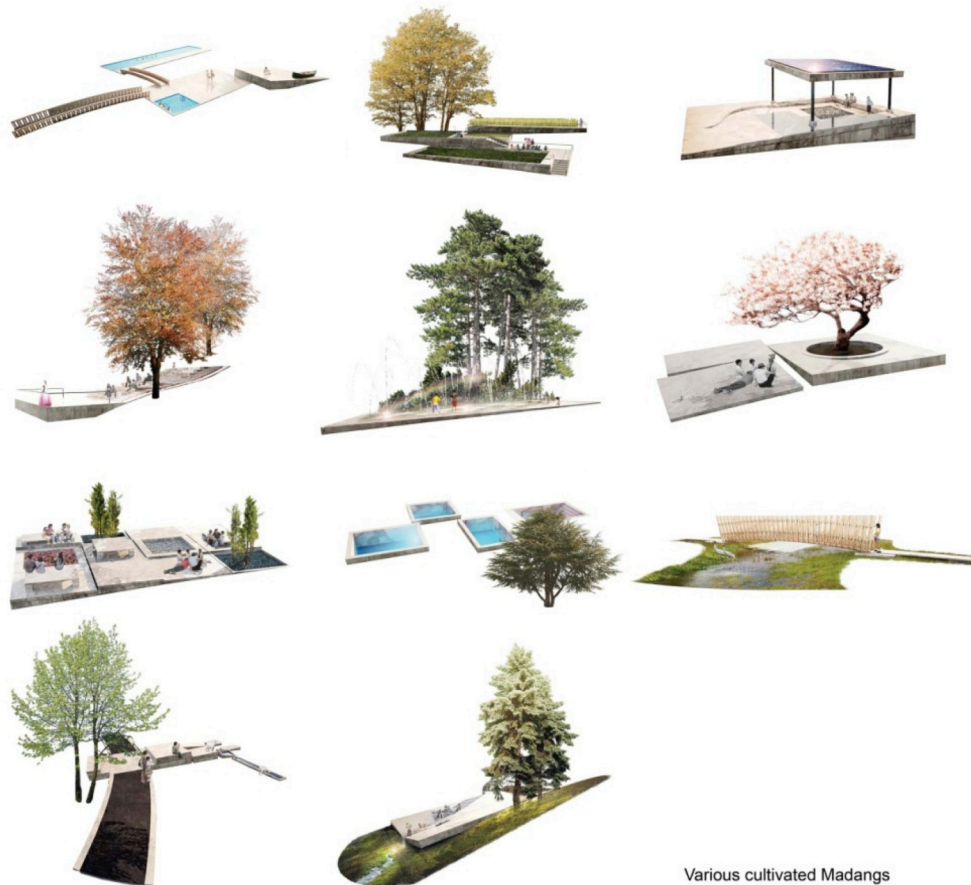


**Fig. 10.** New platforms for various activities and cultural affordances recycling various traces of the existing buildings. Winning proposal of Yongsan Park competition, 2012.

(Source: West 8 and Iroje et al.).

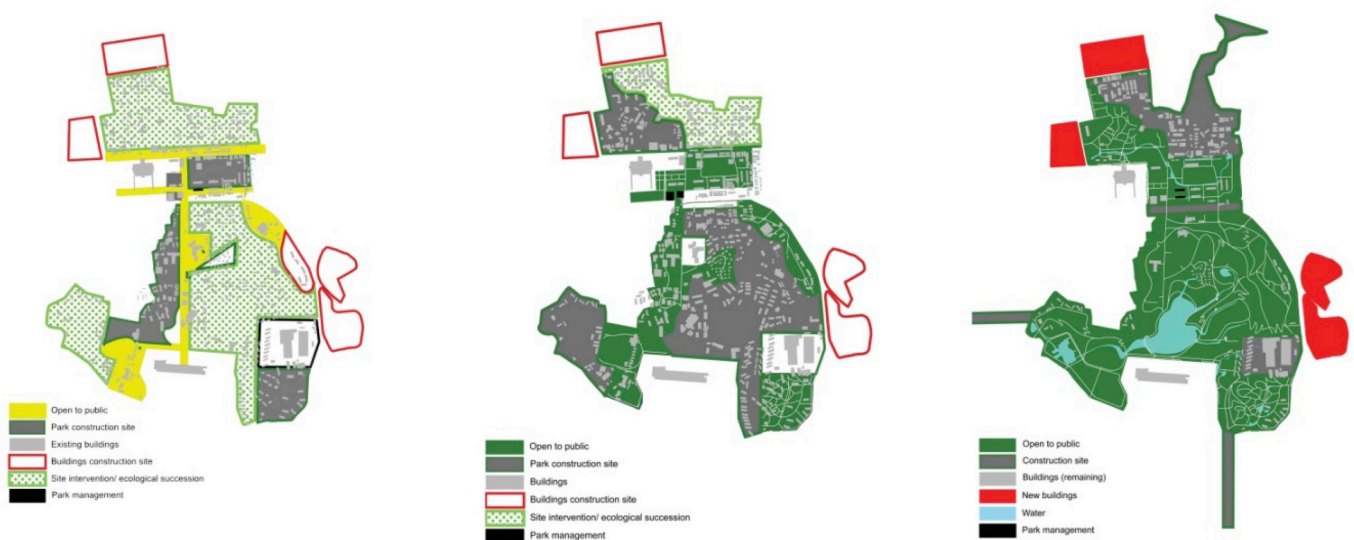


**Fig. 11.** Phasing plans for resilient long-term design and management of large park. Winning proposal of Yongsan Park competition, 2012.

(Source: West 8 and Iroje et al.).

the city. Furthermore, the park functions as a viewing place for Seoul's historic landmarks, including the old Seoul Station, built in 1925, and Namdaemun built in 1398, which is one of the Gates in the Fortress Wall of Seoul dating to the Joseon Dynasty, designated the first National Treasure of Korea. At present, the Seoulo functions as one of the

city's most famous places and provides nighttime views of Seoul that attract visitors (Fig. 12). It was highly influenced by High Line Park in New York (designed by James Corner Field Operations, Diller Scofidio + Renfro, and Piet Oudolf in 2005 and opened in 2009), the regeneration of an abandoned railway to create an elevated linear park



Fig. 12. Seoulllo functioning as viewing place for Seoul's historic landmarks including the old Seoul Station. Seoulllo. (Source: author's photograph, 22 August 2018).

(Zorthian, 2017).<sup>10</sup> Seoulllo shows how the exploration of creative design ideas has become important to the construction of new identities for post-industrial landscapes. Because the ecological park strategy has become a cliché in design for Korean brownfields, as discussed earlier, distinctive design concepts and suitable programs have needed development.

SMG too has increasingly promoted regeneration projects for derelict industrial sites, including several of the ones looked at here. Among them, the Culture Tank project converted a former oil tank into public space (Fig. 13). The tank was built after the oil crisis in 1973, in 1976–1978, for emergency oil storage, and then it was closed in 2000. In 2014, for its regeneration into public culture complex, SMG held an international design competition won by Heo Seo Goo + RoA architects; Culture Tank opened in 2017. This work reused/recycled the rusting oil tanks into containers for various types of cultural content, including exhibitions of site history, art exhibitions, and performances (Fig. 5) (Lee, 2017). As shown in this and other recent projects, Seoul's post-industrial sites are increasingly converted into open spaces that embrace not only ecological processes but also a variety of cultural materials, uses that become new identities for these derelict sites. Since urban regeneration projects will continue to be promoted in Seoul, a range of creative design ideas suitable for the site conditions (aesthetic characteristics, history, and future ecological, cultural, educational value) needs to be explored.

## 5. Conclusion

As this article has shown, in relation to Seoul's urban park design projects that reuse post-industrial sites, attitudes towards the sites and

the specific design strategies applied to them, since the first projects in 1998, have been gradually but constantly changing in response to the changing social needs and circumstances of metropolitan Seoul and also in response to landscape design trends and theories. This work first discussed Korea-specific contextual matters related to post-industrial landscapes. Specifically, in terms of urban conditions, Korean post-industrial sites tend to be located in or near cities; most of Seoul's post-industrial sites for urban park design were constructed after the mid-twentieth century; no legislation covers these facilities constructed since the mid-twentieth century, allowing designers to transform such sites into urban open spaces; and overall, Korean public design projects tends to depend on the political and social situation. In terms of practice and theory of landscape architecture in Korea, practitioners have tended to rapidly embrace Western design trends as well as Western landscape-architectural theories. Next, this work discussed Korean landscape architects' three main attitudes towards post-industrial landscapes. Specifically, they have treated the architectural structures of post-industrial sites as aesthetic objects; they consider industrial structure to be a repository of memory; and such sites have been used to generate or support ecological processes and cultural and educational programs.

Chronologically, design attitudes and specific design strategies have changed, in interaction with landscape architectural design theory. In terms of practice, early projects reused the industrial ruins as exhibition objects, and then, after Seonyudo Park in the early twenty-first century, Seoul's many post-industrial sites were converted into ecological parks, in which rusting industrial ruins became venues for ecological process. In more recent works, other cultural functions have been embedded in post-industrial sites, establishing these open spaces' new identities. In terms of theory, early practices were mainly influenced by the discourse of the sense of place, which inspired designers to reuse industrial ruins and exploit their history and memory. Since the early twenty-first century, under the influence of Landscape Urbanism, with its discourse of large park design and resilience of urban parks, Korean landscape architecture practitioners began to produce flexible long-term plans

<sup>10</sup> The High Line Park competition review was carried out by LAK in May 2005, and the opening of the park was featured by LAK in July 2009 (Jeong, 2005; Yoon, 2009). An academic article of the design was carried in this Korean journal in April 2010 (Yoon, 2010). Website Seoulllo describes the High Line as an important foreign regeneration work at this post-industrial site (Seoulllo).



Fig. 13. Remodeled and existing rusting oil tanks performing as containers for various cultural content. Culture Tank.  
(Source: author's photograph, 3 November 2018).

responding to various changing urban contexts, including social, political and environmental conditions. In other words, the latest Western-driven design trends and theory have largely influenced those in Korea, especially Seoul.

Several problems remain. First, Korean practitioners need to rethink their frequent reliance on urban projects reusing post-industrial structures in Korea's small, mountainous land area; the SMG's urban regeneration projects are inspired by just one urban design trend, and alternative approaches might better fit Korean conditions. Second, thus, the legislation of preservation of post-industrial facilities constructed after the mid-twentieth century, considering their historical and cultural value, need to be more discriminating. In other words, whereas valuable cultural heritage needs to be preserved, less valuable facilities do not. Third, landscape architects and urban designers need to explore creative design strategies for reuse of post-industrial sites. Of course, as seen in most recent projects, creative design ideas have been applied and have gradually helped construct new identities for open spaces. Ecology is still a dominant concept in transforming post-industrial sites into urban parks (Pae, 2007, pp. 56–73; Kang, 2014). Finally, most importantly, the practice and theory of Korean landscape architecture including transformation of post-industrial sites into urban parks need to more fully consider the specific conditions of Korea. Landscape Urbanism and other aforementioned discourses and related design trends reflect mainly Western conditions, including culture, history, and environment.<sup>11</sup> Thus, they need to be adequately revised to address Korean circumstances. In doing so, Korean landscape-architectural projects reusing post-industrial sites will improve in design quality and help establish a new identity for Korean urban parks.

<sup>11</sup> For instance, whereas in Western culture the term landscape tends to refer to horizontal surface or infrastructure, in Korean culture it tends to refer to ecological environment including mountainous land (Lee, 2018; Zoh, 2010).

## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.habitatint.2019.102023>.

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