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# POE Research on the Role and Effect of Landscape Design Supervision in the Creation of Large Parks: Gwanggyo Lake Park

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**Abstract:** While pursuing rapid urbanization and industrialization, the Korean government has also endeavoured to create large scale urban parks. Despite the number of large parks having increased, issues regarding their quality have been consistently raised. Noteworthy, is the quality of Gwanggyo Lake Park, which has been positively evaluated by landscape experts and citizens, and the introduction of a landscape design supervision system is thought to be one of the important reasons for this evaluation outcome. This study conducts a post-evaluation of the role and effect of landscape design supervision on the process of creation of the park. Open interviews were conducted with five staff who participated in the design and construction of the park. As a result of the study, a landscape design supervisor was defined as the second designer, because the supervisor not only monitored whether the construction complied with design, but also played multiple roles in understanding the designer's concept and intention. The landscape design supervisor also responded to the current conditions of the construction site, which included variables and professional opinions from different entities, thereby establishing and producing the most efficient and reasonable alternatives. The landscape design supervisor plays a role in communicating between the public and construction teams. The landscape design supervisor helped maintain the concept and identity of the initial design of the park, raise its overall quality, and implement a design that reflects the special characteristics of the place. It also helped raise landscape designers' self-esteem and sense of happiness by properly reflecting their original design intentions in the construction. This study is an initial research for a post-evaluation using the method of interviewing, which is meaningful as an initial study to analyse the role of landscape design supervisors. It will contribute to future large park projects and the introduction of the landscape design supervision system in them.

## 1. INTRODUCTION

Urban populations and areas have expanded explosively in the process of Korea's successful modernization and industrialization. Reservoirs, landfills, water purification plants, and military bases that were located outside of cities in the early stages of urban growth have come to be included in city areas because of urban expansion. In the process, ways to reuse former sites of those facilities have been actively explored. The creation of large-scale urban parks (large parks) on those sites has been increasing for the purpose of offering spaces for citizens' welfare and nourishing happier lives. Examples of such

parks include World Cup Park, which was turned into a park from landfill, Seonyudo Park, which had been a water purification site, and Busan Citizens' Park, which had previously been a U.S. military base.

Local governments in Korea have explored various ways to create more efficient large parks that could satisfy citizens' needs. For example, they have selected outstanding plans for parks by hosting international design competitions and managed park plans by working with Professional Advisor (PA) and Operation Committee systems. Despite such endeavours, however, many issues have been raised in the process of creating parks, for example, the unclear identity of parks because of the failure to comply with their initial design, failure of communication between designers and construction staff, insufficient time for detailed design, etc. On the contrary, Gwanggyo Lake Park, which is the case analysed in this study, has been positively evaluated by landscape experts (landscape designers, construction companies, public officials, etc.) for successfully addressing the above-mentioned problems. The first-ever introduction of the landscape design supervisor system in Korea to the park form is thought to have played a central role in its success ([Hong & Park, 2016](#)). The purpose of this research is to analysis the role and effect of the landscape design supervision on the process of creating Gwanggyo Lake Park. Most previous Post Occupancy Evaluation (POE) research about large parks have conducted surveys about user satisfaction levels or behaviour investigations on the completed park. They are limited to understanding of the intrinsic problems and process. This study, however, is carried out by method of interview. Moreover, it is focused on interviewees working in design and the landscape design supervisor who participated in the process of creating Gwanggyo Lake Park because POEs have often been regarded with suspicion in regard to the friction between different stakeholders ([Meir et al., 2009](#)). In particular, most research is sponsored by public government, and they speak for users and the government ([Zimring & Reizenstein, 1980](#)). Therefore, this paper focuses on minor stakeholders in a large park project and POE study. By looking through the designers' eyes, the study identifies how early ideas and designs are reflected and transformed during the construction process, unlike the views of the public and large construction companies.

## 2. HISTORY OF RESEARCH

POE is the examination of the effectiveness for human users of occupied designed environments such as city parks, commercial offices, housing, or academic institutions ([Bechtel & Srivastava, 1978](#)). It is used to improve the complex system of users, designers, builders, managers, financiers and regulators who plan, design, build, occupy, manage, or alter an environment. It can be viewed as single attributes set within holistic systems ([Zimring & Reizenstein, 1980](#)), while some research is concerned with future design and planning in the construction environment. Various methods in POE research are used such as interview, observation, and questionnaire survey, however, POE studies have often been regarded with suspicion because there may be friction between different stakeholders and the methodological backdrops ([Meir et al., 2009](#)). For large parks with POE especially, research has included walk-throughs, observation and user satisfaction questionnaires. For instance, [Whitehouse et al. \(2001\)](#) used a satisfaction survey, [Malkoc and Ozkan \(2010\)](#) adapted a behaviour observation and mapping, [Chen, Song, and Li \(2009\)](#) used a survey and behaviour observation, and [Goličnik and Thompson \(2010\)](#) used a mixed method, considering both behavioural research and GIS

technology to compare the designer's idea and user's behaviour for a large park.

Most of the studies on the post-evaluation of large parks in Korea were in the form of user satisfaction surveys on the quality of the facilities, purpose of using them, and use behaviours. The methods of those studies included questionnaire surveys, interviews, behaviour studies, etc. For example, a study by [Kim, Y. S. and Kim \(1989\)](#) analysed user satisfaction levels for different types of parks, another study by [Kim, S. W. and Heo \(2000\)](#) looked into user satisfaction levels according to different purposes of using parks, and another study by [Mun \(2001\)](#) analysed the decision factors behind user satisfaction levels according to the characteristics of spaces. A study by [Joo and Kim \(2010\)](#) measured park designers' intentions and user awareness to expand the scope of study from a matter of the use of parks to a matter of the design of parks.

Post-evaluations of Gwanggyo Lake Park have been conducted in a similar way. [Seo, Choi, and Kim \(2014\)](#) used a behavioural mapping technique in order to survey users' preferences of different spaces. [Kim, S. H. and Kim \(2015\)](#) compared the priority and satisfaction of the users of the park's trails using a quantitative statistical method. [Jang \(2013\)](#) suggested a strategy to facilitate local residents' use of Gwanggyo Lake Park. [Kim, D. K. and Hong \(2009\)](#) covered the design intention and creation process of the Park. Those studies measured the level of user satisfaction against the outcome of the creation of the park. However, a more effective measurement is necessary for the analysis of the designers' actual intentions and the process of creation of the park, which are difficult to quantitatively understand. Noting this, [Hong and Park \(2016\)](#) analysed the process of the creation of the park from the perspective of the designer using grounded theory.

### **3. SCOPE AND METHOD OF RESEARCH**

#### **Subject Site**

Gwanggyo Lake Park is a large park built on 2,025,418m<sup>2</sup> of land near Woncheon Reservoir and Shindae Reservoir in Gwanggyo District, Suwon City, Gyeonggi Province, with a project budget of 110 billion Korean won. In the past, Woncheon Reservoir and Shindae Reservoir supplied agricultural water to nearby farmlands. Since 1977, when Woncheon Reservoir was designated as the Woncheon Recreation Area, the area has been used as a space for citizens' leisure. A plan to create a film theme park in the area was proposed in the 1990s but failed to materialize. In June 2004, the area was designated as a Gwanggyo housing site development area. The area had been suburban, but it turned into a new city park following the development of a new town area ([Gyeonggi Urban Innovation Corporation, 2008](#)). The master plan for Gwanggyo Lake Park was selected in an international design competition held in 2008, and the detailed design and construction were completed between 2009 and 2013. The public order for Gwanggyo Lake Park made diverse efforts toward the successful completion of the park, hosting an international design competition, writing the guidelines for the competition based on the results of a survey among local residents, holding an international symposium, and working with PAs and an operating committee. As a result of these efforts, Gwanggyo Lake Park has been recognized as more successful than other parks by landscape experts in Korea ([Hong & Park, 2016](#)).

## Research Method

Five people from the landscape design company that participated in designing Gwanggyo Lake Park (the most appropriate five were selected by carrying out telephone interviews with 14 staff who took part in the design)<sup>1</sup> and one landscape design supervisor were interviewed. Open interviews were conducted with the interviewees between April 1, 2016, and March 2017. The lengths of the interviews ranged from 40 minutes to a maximum of 2 hours and 45 minutes, and the total time spent interviewing was 9 hours and 7 minutes. All the interviews were voice-recorded with the consent of interviewees and the recorded content was transcribed. A general phenomenological method was used to interpret the content of the interviews; prominent meaning units were extracted from interviewees' statements, which were then grouped into different central themes to finally analyse interviewees' statements in different groups of comprehensive themes (Ratner, 2002). When the transcribed content of the interviews was analysed, 117 meaning units were extracted after three cleaning processes in the first stage. Then, going through seven cleaning processes in the second stage, they were regrouped into 79 meaning units after excluding units that overlapped 39 central themes or that were irrelevant. After that, they were grouped into five central themes (the background of the introduction of landscape design supervision, introduction, phenomenon, result, and conclusion) after going through three cleaning processes. In this study, general themes were grouped into different processes, not just into themes, in order to interpret the cause and effect in the process of the creation of the park as well<sup>2</sup>. The reason for adopting this method was that a time series analysis was more effective for understanding the actual process of the creation of the park in this study, which attempted to analyse the content of interviews as an alternative to a post-evaluation.

## 4. RESULT

According to the results of the analysis, the contents of the interviews were divided into five central themes: the background of the introduction of the landscape design supervision system, the initial process of the introduction, the phenomenon, the result, and the conclusion (Table 1). The role and effect of landscape design supervision in the process of creating Gwanggyo Lake Park were interpreted in the following ways, based on the analysis of the five central themes.

Table 1. Analysis of statements and themes in interviews about Gwanggyo Lake Park in Korea

Central theme		General theme	General statement
1. Background	1.1. Phenomenon in large park construction	1.1.1. Area	Large area of park
		1.1.2. Cost	Overlapping expenses for special additional design
		1.1.3. Design	Insufficient micro-design
			Difficulty in maintaining the initial design plan
1.1.4. Construction	Detailed design drawings difficult to materialize through construction		

		1.1.5. Time	Long design period
		1.1.6. Planning/facility	Detailed examination and placement of trees
			Placement of proper facilities
			Difficulty in maintaining park's identity
		1.1.7. Decision	Complex decision-making process
		1.1.8. Capability	Lack of landscape designer's competence
			Lack of landscape designer's practical experience
			Designer's operational difficulty
		1.1.9. Reliability	Negative perception of expertise of landscaping
		1.1.10. System	Problems of existing turn-key system
	Need for new roles in the process of creating parks		
	1.2. General phenomenon in landscape department	1.2.1. Cost	Cost-centred discussion on creation of parks
		1.2.2. Reliability	Government's mistrust in landscape experts
			Negative perception of landscaping expertise
Mutual mistrust between the government, construction company, and designer			
1.2.3. Demand		Demands of order	
		Demands of interest groups and citizens	
1.2.4. Construction		Gap between design and civil engineering work	
1.2.5. Decision	Complex and rigid decision-making and work processes in government		
2. Introduction	2.1. Setting	Landscape designer's role as project manager (PM)	
		Landscape designer's general operation of project	
	2.2. Proposal	Landscape designer's design supervision suggestion	
	2.3. Agreement	Government and construction company's understanding and support for the introduction of design supervision	
	2.4. Cost	Decision to take the burden of design supervision cost within total project budget	
3. Process	3.1. Change of design	Frequent changes in design and improved quality	
		Quick change in design in consideration of actual conditions at construction site	
		Difficulty in changing design due to complex decision-making process	
	3.2. Communication	Communication between designer and landscape design supervisor	
		Provision of practical information about construction site to designer and sharing of issues	
		Exploration of design alternative in consideration of constructability	
	3.3. Construction	Gap between design plan and actual construction	
		Suggestion by landscape design supervisor and change in planting	
		Relocation of plants in compliance with design concept	
		Re-design of planting in compliance with on-site conditions	

		Reasonable construction method
		Setting of working hierarchy
		Topographic level different from design plan
		Ground levelling by civil engineering work
		Selection of facility location in compliance with on-site conditions
	3.4. Role	Narrowing of gap between construction conditions and design
		Understanding of on-site conditions and design, flexible responses
		Creation of atmosphere appropriate for on-site conditions
	3.5. Conflict	Design and constructability of structures
		Conflict of opinions with landscape supervisor
		Conflict with construction site manager
	3.6. Demand	Unreasonable demands of order and maintenance of park's identity
		Obsession with Korean traditional facilities and suggestion of alternative
		Demands of interest groups and local residents
		Conflict with existing landscape supervisor
	3.7. Cooperation	Resolution of conflicts using sketching
		Re-design of facilities by coordinating different opinions
		Constant correction by reflecting feedback
3.8. New approach	Understanding and reflection of seasonal characteristics in design	
	Discovery of good locations	
4. Result	4.1. Reflection	Maintenance of initial design concept and direction
		Reflection and materialization of designer's intention
	4.2. Workload	Decrease in general design workload
		Increase in new design workload
	4.3. Communication	Streamlining and rationalization of reporting system
		Refinement of landscape designer's ideas
		Practical and reasonable coordination of opinions
	4.4. Completeness	Enhanced construction quality
		Invisible quality
		Quality reinforced by many changes in design
	4.5. Satisfaction	Level of user satisfaction with completed park
	4.6. Happiness	Designer's happiness
Supervisor's happiness		
5. Conclusion	5.1. Definition	The second designer
	5.2. Survival	Survival and future of landscaping

	5.3. Condition	Experienced expert
		Expert capable of sketching and design
		Expert capable of understanding on-site work and overall project
		Expert capable of understanding and materializing initial design plan
	5.4. Cost	Setting of landscape design supervision cost within total project budget

1. 1 general controller, 1 competition manager, 1 working drawing manager, 1 design supervisor, 2 general designers
2. In the initial stage of the research, the grouping was carried out following a conventional method, but when meaning units were grouped into different themes, it was difficult to understand the cause and effect processes in the creation of the park. Therefore, the researchers discussed the matter and decided to interpret the meaning units using the time series method.

## 4.1 Background of Introduction of Landscape Design Supervision

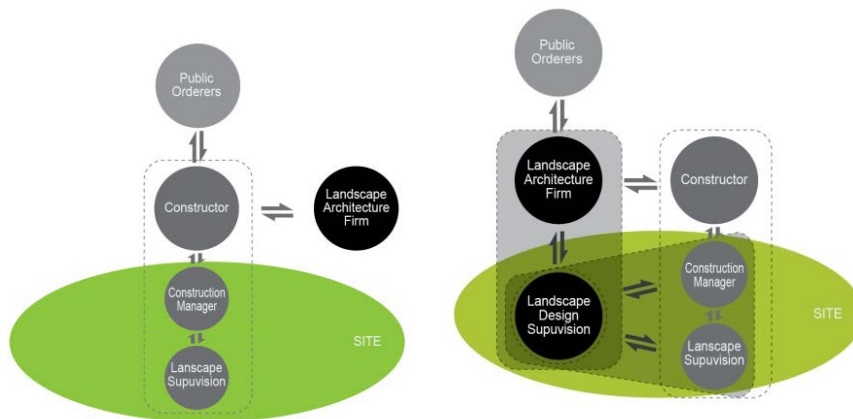
### 4.1.1 Problems in Creation of the Large Park

Regarding the background of the introduction of the landscape design supervision system, the interviewees explained the background for the creation of large parks and the background for general urban park design using similar contents and concepts, but also made distinctions between them. The background for the creation of large parks was determined to encompass 10 general themes. In detail, when they were analysed, large parks were found to have the fundamental problem of needing a design for a large area (1.1.1). This is why there were many practical difficulties in implementing micro-design (1.1.3), even though macro-design was being implemented. As a result, gaps between the actual construction site (1.1.4) and the detailed design were generated. As a solution to this problem, some projects improved detailed design by implementing a special design that required additional expenses (1.1.2), which were not included in the existing official construction process. Due to this re-design process carried out separately from on-site work, however, the level of the government’s and construction company’s mistrust and negative perception (1.1.9) of the expertise of landscape designers increased. On the other hand, landscape designers also found it practically difficult to understand and design every element in the large construction site for parks within the limit of the design budget and workforce (1.1.8). This difficulty that landscape designers faced was a result of the generally long period required for large park construction projects (1.1.5). Additionally, landscape design companies, which are generally small in size, find it difficult to secure enough manpower to cover the entire period. Another reason was the currently used turn-key solutions for large construction projects (1.1.10), which are generally led by large construction companies. Large park projects to which the turn-key solutions are applied focus on budget saving and shortening the construction period rather than on design, so landscape designers find that it is difficult to maintain the initial park design plan (1.1.3) and identity (1.1.6). That is why the need for the landscape design supervision system (1.1.10) was raised as an alternative for better understanding and addressing on-site issues.



### 4.1.2 Issues of General Urban Park Design Work

The background related to general urban park design work was analysed to be grouped into five themes that were largely similar to the problems of the construction of large parks. They include the problem of cost-centred turn-key solutions (1.2.1), the low level of trust in landscape designers (1.2.2), and the gap between design and actual construction (1.2.4). The focus of statements was placed on changes in the direction of parks' design plans according to intervention by public orders and interest groups (1.2.3) and a rigid decision-making process (1.2.5).



a. Role relationships in existing turn-key system    b. Role relationships after introduction of landscape design supervision system

Figure 1. Change in the role and communication relationships after introduction of landscape design supervision system

## 4.2 Process and Setting of Introduction of the Landscape Design Supervision System

For the Gwanggyo Lake Park project, the landscape designer, not the construction company, played the role of project manager (PM) (2.1), unlike in other projects carried out based on turn-key solutions, to raise the quality of the park. However, it is practically difficult for landscape designers who do their work mainly in an office to visit the construction site frequently or dispatch staff to the site. That is why the landscape design company proposed the introduction of landscape design supervision to the public order and construction company (2.2) to reasonably handle work, and obtained their consent (2.3) to introduce and operate landscape design supervision with a budget allocated within the existing project budget. In short, the cost for landscape design supervision was set within the total project budget but the operation fell under the responsibility of the landscape design company.

## 4.3 Roles in the Process of Creating the Large Park

In terms of the process of park creation, landscape design supervision can be understood across eight general themes. The biggest role of the landscape design supervisor is on-site modification of the design in consideration of the current conditions of construction and the immediate demand for design modification if there is too much work to re-design (3.1). In the process, the

supervisor also works as a channel of communication by not only providing precise information about the current status of construction to the designer, but also by coordinating between the construction company, the designer, the construction site manager, and other landscape supervisors, or by selecting good ideas (3.2, 3.4). For example, the supervisor examined plants delivered to the construction site, communicating with the existing landscape supervisor in charge of plants to relocate plants in compliance with the conditions of the site and to find out ways of obtaining new plants that would be better for the site. In addition, the landscape design supervisor also explored alternatives for facilities with better on-site constructability based on discussions with the construction company (3.2). Notably, the landscape design supervisor set the hierarchy of complex tasks at the construction site to ensure that they would be handled in the correct order (3.3). As such, the landscape design supervisor performed the role of coordinating the opinions of different entities including designers, the construction company, and others, and responded to the priorities of tasks (3.4). However, as the landscape design supervisor filled a new role and some of his duties overlapped with those of other staff, he faced many conflicts with the existing construction site manager and landscape supervisor at first (3.5). At the construction site of Gwanggyo Lake Park, the landscape design supervisor helped resolve problems effectively by presenting a sketch of the modified design immediately in case a design change was necessary, or by visually suggesting a reasonable alternative after collecting everyone's opinions (3.7). In addition, the landscape design supervisor stayed at the construction site to experience seasonal changes and to reflect these in the design (3.8).

#### **4.4 Result of Introduction of Landscape Design Supervisor**

The result of the introduction of a landscape design supervisor can be summarized into six general themes. The most important effect was the maintenance of the initial design concept and the designer's intention unlike in other large park projects (4.1). Regarding workload, the existing general workload was reduced as the landscape design supervisor stayed at the construction site to respond to and address problems. However, the entire workload was considered to have increased because of more frequent design changes (4.2). The landscape designer was satisfied by working with the landscape design supervisor, as they could refine their design ideas by referring to more precise information about the construction, and he could implement reasonable alternatives and detailed design in consideration of the current conditions at the construction site (4.3). The landscape designer also evaluated that the overall quality of the park could be enhanced after going through the processes of working with the landscape design supervisor. Notably, the designer said that the quality of even invisible parts of the park could be raised as the design supervisor understood everything about the site and he also observed and checked small details (4.4). Looking at the process of raising the quality of the park, designers evaluated all the relevant entities including public officials and the construction company who were satisfied that the work had been improved despite the workload increase (4.5). Notably, the landscape designer said they were "happy" with the park because his initial ideas were well-reflected by efforts of the landscape design supervisor to raise the quality of the park by materializing the designer's ideas in construction (4.6).

#### **4.5 Conclusion: Definition of Landscape Design Supervisor and Future of Landscaping**

In conclusion, interviewees defined the landscape design supervisor as the second designer (5.1), as the landscape design supervisor's duty was not simply to check whether the design was being materialized in the construction, but to understand the designer's concept and intention, collect professional opinions from each entity at the construction site where diverse variables exist, and find and apply the most effective alternative. For example, living plants and natural objects are handled on site, so the location of plants differed according to the type of plants delivered to the site on the day of landscaping work. In addition, if a beautiful place is discovered during a field inspection, the location must be redesigned in order to enhance its beauty (5.2). In addition, interviewees made a number of remarks about the qualifications of the landscape design supervisor (5.3). According to interviewees' statements, the landscape design supervisor must be an expert with abundant experience who is capable of sketching and on-site impromptu design, materializing the initial concept and the site with a wide perspective, and of responding to issues immediately. They mentioned the resolution of budget problems as a priority for the introduction of the landscape design supervisor system. They insisted that the budget for the system should be allocated separately, as is done for construction, rather than including it in the existing landscape design budget (5.4). They also explained that the system is related to the survival of the landscape field, along with the practical necessity of the system. Recently, the trust in the expertise of landscape professionals has been undermined because of the estrangement of landscape design from actual construction. Landscape design supervision can significantly contribute to closing the gap between landscape design and actual construction, according to results.

### **5. DISCUSSIONS AND CONCLUSION**

In the recent process of land re-use in cities, more large city parks are being built to improve citizens' quality of life. At first, the concern was put on securing enough land for parks, but now, greater focus is put on the enhancement of the quality of parks for citizens. However, because of functionally divided tasks and construction systems, the intentions and ideas of designers are less reflected in the park construction. Furthermore, designers' intentions and ideas are becoming more estranged from the reality of construction sites, leading to the loss of special features of the space. The landscape design supervision system was introduced into the process of creating Gwanggyo Lake Park as a solution to those problems, and as mentioned above, the landscape design supervisor went beyond being a mere monitor to playing the role of enhancing the overall quality of the park and narrowing the gap between design and construction, which has widened in the process of modernization. The role and significance of the landscape design supervisor has been impacted by the following.

First, an increase in large parks and the appearance of landscape design supervisors: More large parks have been created in Korea recently, but many landscape experts point out issues in completed parks. The first issue is the fact that the current park construction system does not allow landscape designers to fully understand the site and reflect its details in their designs because of the large area. More fundamental issues are the mechanical division of labour, increased heavy workload, and low-cost structure of the landscape field, which have arisen in the process of modernization. In other

words, in first-generation projects of creating large parks such as Central Park in New York City and the Emerald Necklace in Boston, USA, landscape designers performed the design on site and supervised the construction, watching the entire process of the creation of parks, but they have come to be estranged from the construction site, in line with the development of computer technologies and the acceleration of industrialization and specialization of labour. Unlike in the construction field, the expertise of landscape designers, who must handle unpredictable conditions and living plants, has been underestimated in the process. That is why the necessity of landscape design supervisors has drawn attention as a reliable solution for closing the gap in large projects. In other words, landscape design supervisors are mediators for large park projects, and they have become necessary as a result of the process of modernization. This new role for landscapers has become essential rather than optional.

Second, the second landscape designer: In the case of Gwanggyo Lake Park, the landscape design supervisor was defined not just as a mere monitor or reproducer, but as the second designer who understood the construction site based on the designer's intentions. This can be regarded as a new alternative model for resolving the problem of the estrangement of landscape experts from the construction field, which has arisen in the process of the division of labour. Still, a clear understanding of the qualifications of landscape design supervisors, the second landscape designers, is needed. Landscape design supervisors must have sufficient expertise and be capable of understanding designers' intentions and the concepts of parks, as well as on-site impromptu sketching and designing. In fact, after the successful completion of the Gwanggyo Lake Park project, which had a landscape design supervisor, a public order applied the system to another project, but it ended up in failure as a public official from the government agency who placed the order was appointed as the landscape design supervisor and he merely checked the progress of the design, unlike in the case of Gwanggyo Lake Park. Therefore, future park projects will have to introduce the landscape design supervisor system with a clear understanding of the qualifications and roles of the post, if they want the landscape design supervisor to fully perform their duties and exert their expertise for the success of the projects.

Third, the efficient process of communication with the construction site: The most important outcome of the introduction of the landscape design supervisor system was the creation of a comprehensive communication channel. In the prior system of construction, the handling of tasks was mostly led by the construction company (Figure 1), so the communication between designers and on-site construction experts was not easy. However, for the Gwanggyo Lake Park project, a landscape design supervisor staying at the construction site communicated with the construction site manager and landscape supervisor and shared the information with the public order body for the project, thereby improving efficiency in the work process and passive communication between different entities of the project. There still existed a limitation of rigid administrative process for a large-scale design modification, as every change in the drawings and specifications had to go through paperwork and a separate decision-making process. Nevertheless, overall, the result of the study confirms the necessity of a landscape design supervisor to conduct efficient communication throughout the entire process of the creation of a park.

Four, introduction of a landscape design supervisor for economic efficiency of large park projects: The introduction of a landscape design supervisor to the Gwanggyo Lake Park project was possible because the public order body and construction company agreed on it, so the financial burden could be

addressed. Currently, many people partially agree with the need for the introduction of a landscape design supervisor system, but they are still hesitant to bear the cost. However, the introduction of a landscape design supervisor is the most effective alternative way to enhance the overall quality of parks with the minimum cost, as the necessary expense is just the cost of one person's labour, which is an insignificant amount of money when compared to the total project budget of a large park project. In addition, in recent park projects, special design is conducted in order to narrow the gap between the detailed design and actual construction, which doubles the design cost. A landscape design supervisor needs to work with the landscape design office, not the construction company, for more efficient communication. But the cost for using a landscape design supervisor needs to be allocated in the construction budget, not design budget, as in the case of the Gwanggyo Lake Park project.

Five, the need for landscape designers to take the lead in large park projects: One of the reasons for the success of Gwanggyo Lake Park was that the landscape designers took the lead in the implementation of the project. In the turn-key system, projects are led mostly by the construction company, so the focus is put on shortening the construction period and budget saving. As a result, landscape designers are perceived as mere subcontractors and they have to handle large workloads with limited budgets, which undermines the quality of projects' landscape design. Therefore, even excellent design plans awarded in international design competitions face difficulties in maintaining their initial concept, contents, and identities. On the contrary, landscape designers took the lead in the entire process of the creation of Gwanggyo Lake Park, and a landscape design supervisor was used as a mediator to resolve many of the problems of the existing turn-key solution. Therefore, it will be better for future park projects to allow landscape designers to take the lead, for the purpose of maintaining the initial intention, purpose, and identity of the park.

Six, self-esteem and happiness as landscape designers: Both the designers and the landscape design supervisor remarked at the end of their interviews that their self-esteem and happiness related to their jobs had increased through their participation in the Gwanggyo Lake Park project. The interviewees are landscape experts, so they also felt happiness when their work was awarded in design competitions, but they said that they were not much satisfied with actually working for projects, as landscape designers cannot take the lead in implementing projects. Notably, in the turn-key system, initial design plans are modified for construction companies' convenience and even though their works are awarded in design competitions, landscape designers end up playing only a supporting role in the process of implementing actual construction. However, they were able to experience increased self-esteem and happiness as landscape experts with the introduction of the landscape design supervisor system, as the ideas and identity they initially suggested could be maintained. In other words, the landscape design supervisor system not only contributes to better efficiency and functionality of work, but also works as a source of self-esteem and happiness for landscape experts.

Seven, the survival and expertise of landscape designers: Another important implication of the introduction of the landscape design supervisor system is the survival and expertise of the landscape field. Recently, criticism about the expertise of landscape designers has risen not only in the construction field, but also in the landscape field itself. The major motivation of this criticism is landscape designers' sense of their estrangement from the actual construction process. Therefore, the introduction of the landscape design supervisor system can help recover confidence in the expertise of landscape experts by narrowing the gap between landscape designers' work and on-site construction work.

As explained above, this study found that landscape design supervisors play a very important role not only in raising the quality of parks by facilitating communication between designers and on-site staff, but also in recovering the expertise, confidence, and self-esteem of landscape experts, which have been undermined in the process of the division of labour following modernization. This study also has limitations, as interviews for POE were only conducted with designers, so it does not reflect the opinions of the other entities involved in the Gwanggyo Lake Park project. Future studies will be able to more precisely diagnose and identify the effects of the introduction of the landscape design supervisor system if they include the perspective of public officials, construction companies, construction site managers, and landscape supervisors, etc. This study is significant as an initial study for a post-evaluation using interviews, which analyses the role of a landscape design supervisor. It will be able to contribute to the creation of other large parks to be implemented in the future, and to the process of the introduction of landscape design supervisors for those projects.

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