

Comparisons of the Assessment of Ecological Landscape Design and the Apartment Skylines

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생태학적 조경설계 평가와 아파트 스카이라인의 비교

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초록

본 연구는 건축고도제한에 의해 생태학적 조경설계는 어떻게 통제되며, 또한 생태학적 조경설계가 무엇인가를 구명하는 것이다. 따라서 두가지 다른 단지를 비교하여 건축물 스카이라인이 주변 경관과 조화로운 심미적 설계를 가능하게 하는 영향에 관하여 고찰할 수 있다. 이 비교를 통하여 스카이라인 통제가 아파트단지 계획과 설계에서 생태학적 조경설계에 영향을 주는가를 검증하게 될 것이며, 스카이라인이 통제된 아파트단지가 조경시설 설계에 있어서 전체적, 역동적, 반응적, 직관적 접근을 할 때 상대적으로 우선성을 표출할 수 있을 것이다.

아파트단지 계획·설계에 있어 건물고도제한이 적절하게 검토되어 스카이라인의 통제를 더 강하게 할수록 아파트단지에서 만들어진 조경환경의 특성이 강조되고 강화한 경관이 더 조화롭게 된다는 점에서 경관에 유용하고 편익이 있다.

생태학적 조경설계의 평가사항은 자기 지속적, 자연적·문화적 정체성, 개연적 외관, 생태학적 접근으로 이뤄진다는 전제 아래 세부사항 18개 항목을 표출하였다.

또한 스카이라인 통제는 자연적 경관을 보전하고 수목이 단지의 안팎으로 자연스럽게 펼쳐지는 녹지네트워크와 야생동물 코리도를 획득하기 위하여 독특한 경관을 설계하고 개성적인 것으로 도출하여 조화로운 심미성을 이룩하는데 유용하다는 것을 계량적으로 표출하였다.

아파트단지의 경관에서 의미 있는 것은 다양한 접근으로 설계되고 건물 스카이라인 통제방법을 강화함으로써 관리되는 스카이라인의 실루엣이 다양하고 개성적 형태를 표출한다는 것을 보여준다.

결과적으로 스카이라인의 영향과 생태학적 조경설계가 계량적 요소에 의해 상대적으로 비교될 수 있으며, 생태학적 조경설계의 평가시설지표는 보다 세분화됨으로써 전체적인 설계요소의 강도에 영향을 줄 수 있다.

주요어: 생태학적 조경설계, 높이제한, 스카이라인, 실루엣, 심미성

I. PURPOSE

Skylines can indicate what is valued in a community : who is powerful there : what the principal business of the town is : which factors--social, political or economic--appear to have the greatest impact on the life of the community. The skyline has down to earth utilitarian value as well as providing various kinds of information, and in particular indicates information that aids in orientation. Skylines, which mean landmark, help individuals know where they are and how to get where they want to go. Man-made skyline features have land-marking as an incidental function, a use beyond their intended purposes.

Activities aimed at controlling skylines typically take three forms : convention (or tradition), legislation, and criticism. Legislated control can be accomplished in a variety of ways, including height limits, building design review, setback requirements, etc. The most common legislative constraint affecting skylines in Korea is height limitation.

The objectives of this study are, therefore, as follows :

- To control height limits by building design review and to acquire and unite spaces for ecological landscape architectural designs with progressive site planning.
- To review and compare two different cases concerning the the building skyline effects to sustain aesthetic design harmonized with the landscape.
- To find ways to impact and rectify the poverty of generic apartment site landscape design detail form found within current spatial changes in ecological litera-

ture.

II. METHOD OF STUDY

District A and B, with individual site planning and design, constitute a sequential method of approaching and studying the subject of building skyline control and effect. At the same time, they can be surveyed as apartment site landscapes on landscape design. Conceived as site planning and design, they start with a discussion of the main points of building skyline tool and effect, then continue with case studies, supporting information, and an explanation of the apartment site landscape related to design and plan.

The final findings are based on the comparison of ecological landscape design in the two apartment sites, with the characteristics of design concepts, which can distinguish the holistic, dynamic, responsive and intuitive approach. The comparison will be conceived into a kind of quantitative model of the assessment mechanism for the ecological landscape design. That mechanism is composed of quantitative factors related to ecological landscape design concepts.

The factors will be fractionalized for contributing to present the intensity degree of which building skylines affect the trend of ecological landscape designing and landscape architectural facility designing details follow the identity of site planning and designing to the image ability of apartment sites, related to skyline silhouette.

The comparison will testify whether the skyline control affects on the ecological landscape design in apartment site planning and designing, while the apartment site

controlled skyline presents comparatively, priorities to having holistic, dynamic, responsive and intuitive approach to landscape facilities design.

III. CASE STUDIES

The case studies, which form part 4 and 5, are the core segment of this article. The current poverty of information on skyline control tool and effect, with the accompanying apartment site landscape, has meant that there are few available sources of ecological landscape design from which to implement. There are however, many photos, which have been able to exhibit very clearly the relative comparison of skyline effect on ecological landscape design. The comparisons of apartment site A with site B are especially shown for skyline effect on ecological landscape design. The apartment site A has a formal layout of buildings and forms a rectangular shape silhouette of the apartment building facade and side. The apartment site B has an informal layout of buildings and forms a diversified shape silhouette of the apartment building facade and side. The A site shows a kind of silhouette of skyline that represents a uniform and rectangular shape, designed with simplified approaches and controlled by the method of Laissez-Faire Policies Within Zoning Regulations. The B site shows a kind of silhouette of skyline that represents a diversified and amorphous shape, designed with diversified approaches and controlled by the method of Building Height Control within Total Floor-Area Limit, using the control tool specific to the Central high rise type.

The case studies are presented as examples

Table 1. The Planning and Designing Characteristics of Site A and B

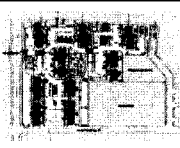


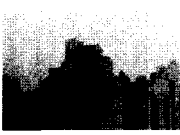


Planning and Designing Characteristics	Gae-shin Dong site A	Gae-shin Dong site B
Site Area(m ²)	35,041,000	51,105,520
Build Plot Area(m ²)	6,339,539	9,372,402
Total Floor Area(m ²)	97,540,397	130,630,936
Plot Ratio (%)	18,090	18,340
Floor-area Ratio (%)	217,540	204,580
Building Stories (F)	15 - 23	8 - 25
Average Building Stories (F)	12	11
Ecological Approach	Non considered	Considered
Natural Scenery Of Background	Non considered	Considered

of what is affected and the impact which investigates to design landscape detailed material that explores the making of ecological landscapes rather than simply presenting photographic demonstration of completed project. Especially, the green corridor should be reviewed and connected with the natural areas and wildlife conditions in surrounding areas, where ecological sources exist naturally.

This article examines the role of skyline control and the effects within the exploited apartment site planning and design that influence landscape architecture which can be exerted given the changing relationship of technology to ecological landscape design and detail in practice.

One of main contributions of this article is not the scale at which landscape projects are conceived and executed or the scope of the work, but rather, the quality of ecological landscape architectural design and precision of design execution that are brought to skyline control and effect. To this end, this article can determine the relationship between planning concept and design detail in ecological

Table 2. Site Arrangement Plan and Skyline Silhouette Character

	site A	site B
Arrangement		
	Uniform & Static	Diversified & Dynamic
Facade		
Skyline Silhouette Character	Uniform & Static	Diversified & Dynamic
Side		

landscape and review in design process as being an important factor of skyline control and effect.

IV. THE BUILDING SKYLINE CONTROL TOOL AND EFFECT FOR ECOLOGICAL LAND-SCAPE DESIGN

1. The Best Skyline Control Tool for Ecological Landscape

There are three ways to apply the building skyline control tool to zoning if it is suitable to development of a skyline control through height and building limits and with setback requirements. The three ways are: (1) Building Height Limit Control, (2) Laissez-Faire Policies Within Zoning Regulations, and

(3) Building Height Control within Total Floor - Area Limit.

No controls are inherently the best. The choice among the control tools depends upon how highly the skyline is valued in the community, on the seriousness of threats to its present form, and on how highly a different skyline form in the future might be valued. There is a strong sense on the part of planners and landscape architects, and some citizens as well, that the traditional skyline should be conserved. In such a situation strong control tools should be required and conceived. In Korea control concerns are popular even in new developing areas as well as existing areas. This is not just an apartment site with high development densities, but conserved skyline silhouette. Not only are height controls imposed, but design review is required as well. The extent to which the skyline is controlled depends on presentation methods utilized, which may be permitted within zoning regulations. Therefore, the best skyline control tool for ecological landscape is a kind of suggestion, which can establish green networks and comply with the building skyline control method within suitable floor area for zoning regulations.

2. The Building Skyline Control Effect And Ecological Landscape Design

It is meaningful to review and compare two different cases, concerning the building skyline effects to sustain aesthetic designs and whether the building skyline maintains a harmonized landscape. The skyline of site A has less influence on the ecological landscape architectural design than site B. The ecologi-

cal landscape architectural design in site A has uniform, separated and simplified shapes and patterns than site B. Therefore, there is a trend to not only follow the layout and shape of the apartments affected to the apartment skyline but also conserve natural geographical conditions and involved ecological resources.

There is a trend that ecological landscape design detail can depend upon decisions about the ecological concept and determining the extent of the ecological landscape architectural design theme, and overall involvement of wildlife and natural scenery. The design can be defined as ecological or not, depending on incorporation of wildlife conditions which determine ecological landscape architectural design concepts. That notion can impact and rectify whether it is the poverty or the affluence of generic apartment site landscape design detail form found within current spatial changes into ecological literature.

“Ecological landscape design is based on an ecological understanding of landscape which ensures a holistic, dynamic, responsive and intuitive approach. The ecological landscape design engages the designer’s rational, intellectual, emotional and creative capabilities. Four main characteristics distinguish ecological landscape design: first, it is to a large extent self-sustained, entailing low economic and environmental costs for its establishment and its long-term maintenance and upkeep; second, it is responsive to existing landscapes whether natural or cultural, seeking to learn and appreciate rather than dictate and impose; third, it adopts a probabilistic outlook which implies that there is no finality that terminates the design activity, i.e. there is no static final end product but the design is a continuous process of learning, understanding and appreciation; and fourth, the holistic, hierarchical and evolutionary approach results

Table 3. Assessment Index Code of Ecological Landscape Architecture Design

Symbol	Division	Function	Assessment index	Code
Holistic	Self sustained	Economic Charge	facility expense	S-1-1
			maintenance expense	S-1-2
		Environmental Expenses	cleaning expense	S-2-1
			environmental expense	S-2-2
Responsive	Natural and cultural identity	Natural Responsive	natural landscape preservation	R-1-1
			natural scenery preservation	R-1-2
		Cultural Identity	regional units	R-2-1
			design identity	R-2-2
Dynamic	Probabilistic outlook	Detail Design	Diversity	P-1-1
			uniqueness	P-1-2
		Continuous Process	learning process	P-2-1
			Contemplation	P-2-3
Intuitive	Ecological approach	Spatial Approach	spatial linkage	E-1-1
			design consistency	E-1-2
		Hierarchical Approach	Order	E-2-1
			Hierarchy	E-2-2
		Evolutionary Approach	Corridor	E-3-1
			continuous process	E-3-2

in a methodological framework that is applicable to different geographic regions and at varying scales of operation.” (Jala Makhzoumi and Gloria Pungetti, 1999)

3. The Assessment of Ecological Landscape Design

The assessment index of ecological landscape design is based on quantitative factors, which follow as comparatively scaled sources, developing and fractionalizing the concept of the four main characteristics of the ecological landscape design (Table 3).

The assessment facility index of ecological landscape architecture design is based on

the assessment index, which can be divided into four classifications (self-sustained, natural and cultural, probabilistic outlook, ecological approach) that can be characteristics by more detailed factors (Table 4).

This study can show the comparisons of the assessment scores and graphs of site A & B. The size of the included area shown by the graph can present, relatively, the intensity of how ecologically landscape architectural design. Because it is approached to the part composed of the more detailed factors (Table 5). It is evident that a trend of the designing method can reflect on the skyline silhouette and that site B can be considered more ecologically than site A.

Table 4. Assessment Facility Index of Ecological Landscape Architecture Design

□ : Assessment Items to Facility Index

				Skyline	Landscape design detail	Green space	Open space	Playground	Parking
Self sustained	Economic charge	Facility expense	S-1-1						
		Maintenance expense	S-1-2						
	Environmental expenses	cleaning expense	S-2-1						
		environmental expenses	S-2-2						
Natural and cultural	Natural responsive	Natural landscape preservation	R-1-1						
		natural scenery preservation	R-1-2						
	Cultural identity	regional units	R-2-1						
		deign identity	R-2-2						
Probabilistic outlook	Detail design	Diversity	P-1-1						
		Uniqueness	P-1-2						
	Continuous process	learning process	P-2-1						
		contemplation	P-2-2						
Ecological approach	Spatial approach	spatial linkage	E-1-1						
		Design consistency	E-1-2						
	Hierarchical approach	Order	E-2-1						
		Hierarchy	E-2-2						
	Evolutionary approach	Corridor	E-3-1						
		Continuous process	E-3-2						

Table 5. Assessment Scores and Graphs the Site A & B

Site	Assessment scores				Graph			
PART 1	self sustained							
	economic charge		environmental expenses					
	facility expense	maintenance expense	Cleaning Expense	environmental expense				
	S-1-1	S-1-2	S-2-1	S-2-2				
	site A	2.87	2.54	2.34			2.34	
site B	3.07	3.00	3.45	3.56				
PART 2	natural and cultural identity							
	natural responsive		cultural identity					
	natural landscape preservation	natural scenery preservation	regional units	design identity				
	R-1-1	R-1-2	R-2-1	R-2-2				
	site A	2.23	1.78	2.23			2.50	
site B	3.67	3.78	3.56	3.39				
PART 3	probabilistic outlook							
	detail design		continuous process					
	diversity	uniqueness	Learning process	contemplation				
	P-1-1	P-1-2	P-2-1	P-2-2				
	site A	2.45	2.27	2.25			2.45	
site B	3.78	3.40	3.50	3.45				
PART 4	ecological approach							
	Spatial approach		Hierarchical approach		Evolutionary approach			
	spatial linkage	design consistency	order	hierarchy	corridor	continuous process		
	E-1-1	E-1-2	E-2-1	E-2-2	E-3-1	E-3-2		
	site A	2.17	2.45	2.34	2.34	2.34		
site B	3.89	3.78	3.50	3.00	3.34	3.50		
Total	sustained	natural & cultural identity	probabilistic outlook	ecological approach				
site A	2.53	2.19	2.36	2.27				
site B	3.27	3.60	3.53	3.50				

V. THE COMPARISONS OF AP-ARTMENT SITE LANDSCAPE

1. Development Site Plan and Design Characteristics in Apartment Site

Site A depicts that a kind of layout of buildings and parking lots that represents a uniform and rectangular shape, the composition of roads are in a grid with easily and the recognized orientation and designed with simplified approaches and controlled by the method of Laissez-Faire Policies Within Zoning Regulations.

Site B has a kind of layout of buildings and parking lots that represents a diversified shape. The composition of roads are amorphous and orientation is difficult. It is designed with diversified approaches and controlled by the method of Building Height Control within Total Floor - Area Limit, using the control tool specific to Central high rising type.

Therefore, we can determine that the more controlled skylines we used, the more recognized the site becomes. Preservation of natural scenery can be strengthened and enforcing features of the built landscape environment in apartment sites, and the easier some tourists remember the site design, the more distinctive characteristics can be united spaces for landscape architectural designs with progressive site planning and designing.

2. Landscape Plans and Design Characters in Apartment Site

Site A has green areas that are separated and small playgrounds for children. The design method is uniform and central squares are not designed for community meeting, designed with simplified approaches and controlled by the method of Laissez-Faire Policies Within Zoning Regulations.

Site B has green areas that are concentrated and large playgrounds for children. The design method is individualized and central squares are designed for community meeting, designed with diversified approaches and controlled by the method of Building Height Control within Total Floor - Area Limit, using the control tool specific to Central high - rising

Table 6. Site Planning Characteristics Table


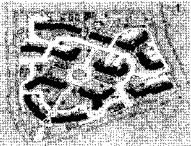
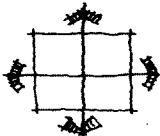
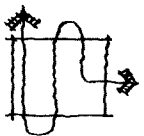
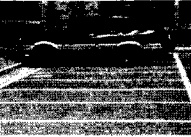
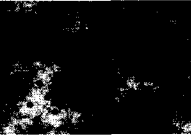








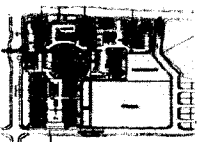

	site A	site B
	Uniform	Diversified
Layout		
	Gridiron	Amorphous
Composition of Roads		
	Artificial	Natural
Parking		
	Un efficient	Efficient
Facility Layout		

Table 7. Landscape Planning & Design Characteristics

	site A	site B
	Partial	Network
Green Area		
	Gridiron	Amorphous
Central Square		
	Artificial	Natural
Play-ground		
	Un efficient	Efficient
Designing Method		

type.

Therefore, we can say that the more controlled skylines we used, the more recognized the site. The building skyline effects to sustain aesthetical designs which maintain a harmonized landscape and strengthened and enforcing features of the built landscape environment in apartment sites were easier for tourists to remember the site design. The more distinctive characteristics can be united spaces for landscape architectural designs with progressive site planning and designing, which should consider ecological resources.

3. Landscape Design Detail Characteristics in Apartment Site

Site A has a organized planting of pergolas. The playground facilities for children are uniform, the lighting is structural and the facilities for exercise are single purpose, designed with simplified approaches and controlled by the method of *Laissez-Faire Policies Within Zoning Regulations*.


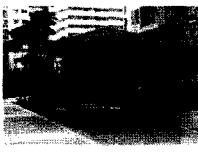
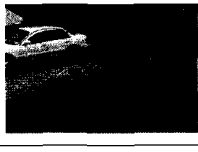
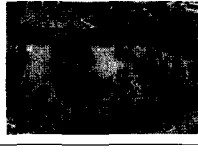




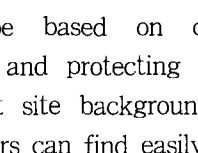
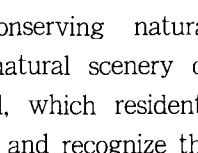
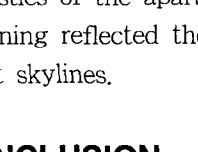
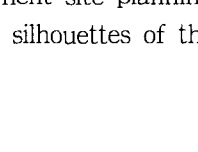
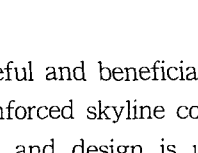
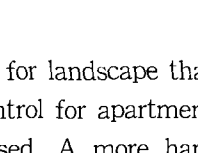
Site B has an informal layouts of pergolas. The playground facilities for children are diversified and colorful, the lighting is aesthetic and the facilities for exercises are multi purpose, designed with diversified approaches and controlled by the method of *Building Height Control within Total Floor-Area Limit*, using the control tool specific to Central high rising type.

Therefore, we can state that the more controlled skylines we used, the more recognized the site. The building skyline effects to sustain aesthetical designs, maintain harmonized landscape, strengthen and enforce features of the built landscape environment in apartment sites, and ease in locating, impact and rectify the poverty of generic apartment site landscape design detail form found within current spatial changes into ecological literature. The more distinctive characteristics can be united spaces for ecological landscape architectural designs with attractive landscape design details, which utilize ecological resources.

Ecological resources should be considered for establishment of green networks and wildlife corridors, which can create profound green spaces connected to natural areas and linked to transition areas and developing residential areas where are the ecological bases and are decreasing place characteristics.

The ecological landscape architectural design

Table 8. Landscape Design Detail Character

	site A	site B
Pergola Material	Combination 	Wood 
	Un safety 	Safety 
Playground Facilities	One Purpose 	Multi Purpose 
	Invisible 	Visible 
Exercise Facilities	Un safety 	Safety 
	One Purpose 	Multi Purpose 
Entrance	Invisible 	Visible 

should be based on conserving natural resources and protecting natural scenery of apartment site background, which residents and visitors can find easily and recognize the characteristics of the apartment site planning and designing reflected the silhouettes of the apartment skylines.

VI. CONCLUSION

It is useful and beneficial for landscape that a more enforced skyline control for apartment site plans and design is used. A more harmonized landscape strengthens and enforces features of the built landscape environment in

apartment sites, while concurring with the appropriate tool to control building height limit.

It is important that landscape architectural designs in apartment sites and planning development of outdoor space are able to be united spaces for landscape architectural designs with progressive site planning and designing.

To control skylines is useful for designing generic landscape and maintaining harmonized aesthetics, for conserving natural scenery of the apartment background and for acquiring green networks and wildlife corridors, where connecting trees and shrubs should spread naturally from outside of the site into the inside.

What is significant in apartment site landscape is a kind of silhouette of skyline that represents a diversified and characteristic shape, designed with diversified approaches and controlled by enforcing the method of the building skyline controls within zoning regulations.

Landscape ecology should be related to holistic design approaches in the perspective of both nature and community. Taking this interrelationship as fundamental, landscape ecology pursues suitable site planning. In order to achieve this, landscape ecology embraces the holistic view of understanding the skyline which is the complex of all relationships already existing before the planning and designing process, compared with different apartment sites and depending on the notion of whether ecological landscape concepts are conceived or not.

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