

The Re-Post-Occupancy Evaluation of the Neighborhood Park - With Focus on Bundang Central Park -

Kim, Sung-Hee* · Kwon, Young-Hyoo** · Sim, Woo-Kyung***

*Master of Landscape Architecture, Korea University

**Ph.D. Candidate, Korea University

***Division of Environment Science and Ecological Engineering, Korea University

ABSTRACT

The purpose of this study is to provide guidelines for planning, designing and managing neighborhood parks. Results from POE(Post-Occupancy-Evaluation) and RPOE(Re-Post-Occupancy-Evaluation) are analyzed for this study. Bundang Central Park in Bundang Newtown was selected for this study.

This study compared the previous POE completed in 1996 with a RPOE conducted in 2001 to find out how the user, proximate environmental context, and the park administration changed in time and apply feedback for purposes of immediate problem solving.

The results of this study showed that RPOE has to be initiated and utilized periodically as a device and the guideline for neighborhood park design, conservation, administration and operation.

Key Words : POE(Post-Occupancy-Evaluation), RPOE(Re-Post-Occupancy-Evaluation), User

I. INTRODUCTION

1. Background and Purpose of the Study

Although, the neighborhood park which is a very important leisure place for the big city's local residents has been developed in the aspects of quantitative and qualitative, the errancy of urban planning and the population concentration phenomenon have illuminated the problems in park utilization and management. Recently POE(Post-Occupancy-Evaluation) has been attempted as

evaluation after the design process to solve these problems.

Sustainable conservation and management for fixed park and green area can be debated as a very important visual element because we are forced with a crisis of not knowing when the city will be paralyzed by indiscreet planning. The city already exceeded the planned population size in March, 2001. The purpose of this study is to provide guidelines for planning, designing and managing neighborhood parks. It resulted from analyzing a POE from a previous study and a recent RPOE(Re-

Post-Occupancy-Evaluation).

2. Literature Review

POE has been developed as a touchstone in the application of research activity and its relevant scope has been extended.

Previous overseas studies on POE are as follows; People's space utilization, which can differ depending on culture, was analyzed by observation(Edward, 1966).

「Environmental Design Evaluation」 was the first comprehensive book on POE, thereby setting the standard for evaluation of object place, proximate environmental context, design process and social historical context and so on(Friedmann, 1978).

Environmental evaluation's concept and context are extensively presented providing distinct areas of study such as original environmental evaluation, future environmental evaluation and post construction evaluation and so on(Zube, 1980).

Theoretic and methodical evaluation are introduced. Overall technicality on the history, theorization and activity process about evaluation are surveyed and analyzed(Preiser, 1988).

Domestic case studies are as follows; The theory, concept, historical background, data collection and method of evaluation were suggested, and devices and guidelines which are beneficial for a small park or square design were presented(Jang Byoung-Gwan, 1985). Guidelines were suggested to minimize the problems in the construction of a children's park by presenting the urban park's function, user's satisfaction and reasonable devices for construction(Kack, 1996).

The EXPO exhibition site located in Dae-Jun was evaluated to re-use enormous resources to provide opportunities for region development(Kim,

1999). But until now, there has been no study which researches object place to find out how the user, proximate environmental context and the park administration change in the social historical context as time passes.

II. SCOPE AND METHOD OF THE STUDY

To conduct this study, Bundang Central Park was selected and this study compared the previous POE by the Korea Land Corporation in 1996 with the RPOE conducted in 2001 to find out how the user, proximate environmental context and the park administration have changed in the social historical context.

The study employed the following methods: interviews and questionnaires completed within the park by users and administrators, document review and site observation. The evaluation of environmental context was researched by document review, site observation and interviews with Bundang Central Park users.

The evaluation by Bundang Central Park users were compared the previous POE with the RPOE completed in 2001 to find out how utilization and satisfaction changed in the social historical context.

The evaluation of park administrators who were working in Bundang Central Park was investigated by interview and questionnaire to determine the administrators' understanding of park user's impression regarding the most inconvenience facilities, the most memorable place and facilities which require immediate improvement.

The Korea Land Corporation surveyed 300 park users and 52 neighborhood inhabitants from October 17, 1996 to October 20, 1996. The POE was conducted twice on weekdays and 4 times on weekends, both in the day and at night. The RPOE

utilized 550 users as respondents within Bundang Central Park from May 4, 2001 to May 17, 2001. The RPOE was collected 4 times on weekdays and 4 times on weekends both during the day and at night. Fourteen administrators working in Bundang Central Park were used as respondents.

The contents of the questionnaire were as follows; 5 questions on the utilization of Bundang Central Park, 4 questions on the user's satisfaction about space and facilities of Bundang Central Park, the most inconvenience facilities, the most memorable place and facilities that should be improved urgently in the Bundang Central Park.

III. CASE STUDY

1. Overview of Bundang Central Park

Bundang Central Park keeps elements of nature in the city which provide a natural setting within a vast urban zone(Figure 1; Figure 2).

Location : 65, 66 Sunae-Dong, Bundang-Gu, Seongnam City, Korea

Area : 420,982m²

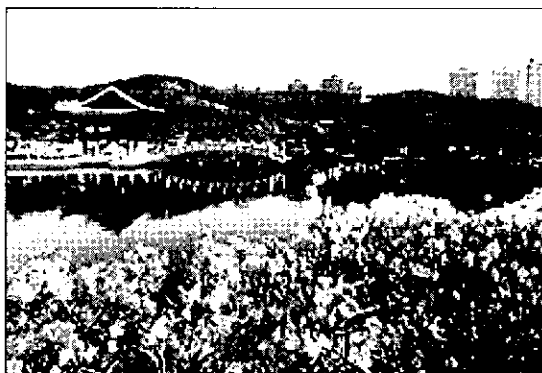


Figure 1. Bundang Central Park
Resource: www.saeter.co.kr

Construction period : 1990. 11. 24 ~ 1994. 7. 31

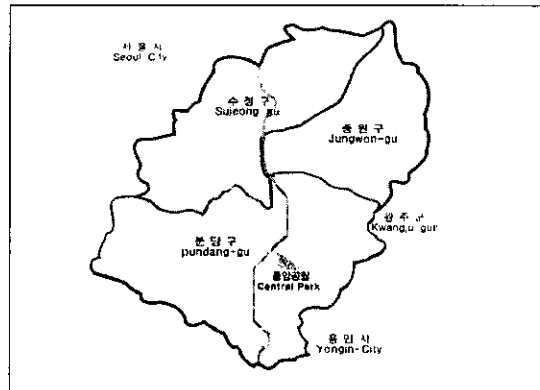


Figure 2. Location of Bundang Central Park

2. The Evaluation of Bundang Central Park

1) Attributes and Profile of Users

The majority of user were between 31 and 50 years of age. It is recommended that more facilities and programming of events should be offered which cater to all age groups(Table 1).

Table 1. Proportion of Park Users of Different Ages

Estimated Age	POE Frequency (%)	RPOE Frequency (%)
Under 20	39(11.27)	39(7.40)
21~30	114(32.95)	104(19.73)
31~50	146(42.20)	364(69.07)
Over 51	47(13.58)	20(3.80)
Sum	346(100.0)	527(100.0)

The number of user who live in other places; south of the river in Seoul, Su-ji in Young-in and Kwang-Ju neighborhood areas of Bundang, increased as compared with the POE and the result shows that the extent of utilization increased. Therefore diversity in park utilization should be recommended(Table 2).

The frequency of park utilization increased as compared with the POE but the daily user's rate decreased. The user's rate of 1~2 times a month

Table 2. Residence of Park Users

Residence	POE Frequency(%)	RPOEF requency(%)
Soojung-Gu	20(5.95)	48(9.25)
Joongwon-Gu	28(8.33)	61(11.75)
Boondang-Gu	242(72.02)	279(53.76)
The other places	46(13.69)	131(25.24)
Sum	336(100.0)	519(100.0)

Table 3. Frequency of the Park Utilization

Frequency of the Park Utilization	POE Frequency(%)	RPOE Frequency(%)
Everyday	43(12.22)	25(4.74)
1~2 times per week	88(25.00)	107(20.30)
1~2 times per month	143(40.63)	288(54.65)
Few using	78(22.16)	107(20.30)
Sum	352(100.0)	527(100.0)

Table 4. Day of Park Utilization

Day of Park Utilization	POE Frequency(%)	POE Frequency(%)
Work day	30(8.62)	18(3.42)
Saturday	13(3.74)	37(7.03)
Sunday or Holiday	207(59.48)	379(72.05)
Regardless of the Day	98(28.16)	92(17.49)
Sum	348(100.0)	526(100.0)

Table 5. Arrival Method to Visit the Park

Arrival Method	POE Frequency(%)	RPOE Frequency(%)
On Foot	119(34.10)	132(25.05)
By Bicycle	14(4.01)	9(1.71)
By Car	163(46.70)	315(59.77)
By Bus	42(12.03)	57(10.82)
The Other Method	11(3.15)	14(2.66)
Sum	349(100.0)	527(100.0)

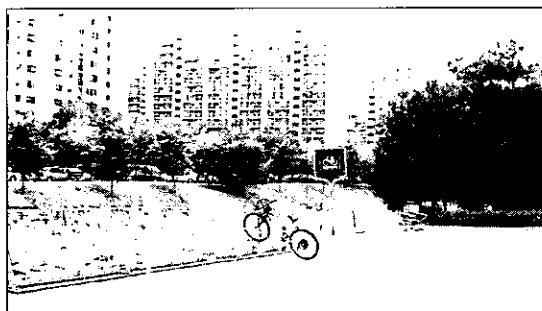


Figure 3. Empty Bicycle Rental Facility in Bundang Central Park

increased as compared with the POE. This shows that most users used the park less than in 1996 because they were tied up their life, work and so on(Table 3).

The ratio of park usage on weekends or holidays increased as compared with the POE, so it was evaluated that Bundang Central Park is most frequently used on weekends or holidays(Table 4).

The ratio of car use to visit the park increased and the ratio of bicycle use or walking decreased as compared with the POE so it has to device proper measures for parking or encourage public transportation use(Table 5; Figure 3).

2) Satisfaction Rate of Park Users

The satisfaction rate in the natural environment increased as compared with the POE. If we consider that the secondary purpose for using the park at POE was the time of the scenery appreciation, we can conclude that Bundang Central Park has successfully improved landscaping through by suitable management(Table 6). The administration must not neglect the significance of cultural

Table 6. Satisfaction with Naturalness

Naturalness	POE Frequency(%)	RPOE Frequency(%)
Extremely Dissatisfied	5(1.42)	8(1.52)
Dissatisfied	13(3.69)	27(5.14)
Mixed Feelings	153(43.47)	156(29.71)
Satisfied	162(46.02)	255(48.57)
Extremely Satisfied	19(5.40)	79(15.05)
Sum	352(100.0)	527(100.0)

Table 7. Satisfaction with Impression of Local Cultural Asset

Impression of Local Cultural Asset	POE Frequency(%)	RPOE Frequency(%)
Extremely Dissatisfied	6(1.73)	30(5.74)
Dissatisfied	66(19.02)	135(25.81)
Mixed Feelings	170(48.99)	261(49.90)
Satisfied	85(24.50)	83(15.87)
Extremely Satisfied	20(5.76)	14(2.68)
Sum	347(100.0)	523(100.0)

assets(Table 7).

The dissatisfaction rate on the location and size of the parking lot increased. The parking problem is considered seriously and it should have innovations for parking and encourage public transportation(Table 8).

The dissatisfaction rate on the location and quantity of restroom facilities increased as compared with the POE in 1996 suggesting the necessity to consider the location and expansion of the facilities(Table 9).

Table 8. The Satisfaction with Parking Lot's Position and Area

Parking Lot's Location and Size	POE Frequency(%)	RPOE Frequency(%)
Extremely Dissatisfied	46(13,41)	157(30,08)
Dissatisfied	143(41,69)	173(33,14)
Mixed Feelings	111(32,36)	138(26,44)
Satisfied	41(11,95)	45(8,62)
Extremely Satisfied	2(0,58)	9(1,72)
Sum	343(100,0)	522(100,0)

Table 9. Satisfaction with Position and Quantity of Restroom Facilities

Position and Quantity of Restroom Facilities	POE Frequency(%)	RPOE Frequency(%)
Extremely Dissatisfied	16(4,61)	70(13,36)
Dissatisfied	126(36,31)	225(42,94)
Mixed Feelings	147(42,36)	167(31,87)
Satisfied	52(14,99)	51(9,73)
Extremely Satisfied	6(1,73)	11(2,10)
Sum	347(100,0)	524(100,0)

3) Evaluation of the Park Administrator

The result of park administrator's responses to the question about 'what facilities seem to be inconvenient for user?' indicated that the administrators are becoming increasingly aware of public opinions.

The parking lot was indicated as the most inconvenient place on weekdays and weekend, so the shortage of parking should be addressed and public transportation use encouraged(Figure 4;



Figure 4. Parking lot investigated in Bundang Central Park on weekdays



Figure 5. Parking Lot investigated in Bundang Central Park on Weekend

Figure 5).

Park administrators have not grasped the problem concerning restroom facilities rated 9th problem in the POE of 1996 but, which has risen to 4th in the RPOE of 2001. The result of interviews with park administrators showed that they didn't have any plans regarding restroom facilities. The park administrators should be aware of inconvenience facilities in the park and they should try to solve the problem(Table 10).

The result of the administrator's responses on the question; 'where seems to be the most memorable place for user?' indicated that administrator was not grasping exactly what is memorable and which places are preferred. The

Table 10. The Most Inconvenient Facilities for User

Classification	Result of Questionnaires by User		Result of Questionnaires by Administrator	
	POE	RPOE	RPOE	
The Most Inconvenient Facilities for User	1st	Parking Lot	Parking Lot	Parking Lot
	2nd	Wastebin	Booth	Booth
	3rd	Booth	Shady Rest Areas	Shady Rest Areas
	4th	Water Fountain	Lack of Restroom	Water Fountain, No Walking on the Lawn, Lack of Telephone
	5th	Shady Rest Areas	Water Fountain	
	6th	Lack of Telephone	Wastebin	
	7th	No Walking on the Lawn	No Walking on the Lawn	
	8th	Information Sign	Lack of Telephone	
	9th	Lack of Restroom	Information Sign	



Figure 6. Promenade around the Woods in Bundang Central Park

Resource: www.saeter.co.kr

preference rate of traditional houses dropped but the park administrators rated them 1st(Figure 7).

The result of interviews showed that users wanted to go inside the traditional house but it was designated to be utilized only for old-age clubs. The preference rate on the pond decreased and the user's preference shifted to the promenade in the woods. There were a lot of complains about the pond's odor among the users therefore, fundamental measures instead of makeshift solution from the authorities



Figure 7. Traditional House in Bundang Central Park

Table 11. The Most Memorable Place in the Bundang Central Park

Classification	Result of Questionnaires by User		Result of Questionnaires by Administrator	
	POE	RPOE	RPOE	
The Most Memorable Place in the Park	1st	Pond & Promenade	Promenade in the Woods	Traditional House
	2nd	Dolmakak	Pond & Promenade	Pond & Promenade
	3rd	Palgakjung	Central Square	Fountain
	4th	Traditional House	Fountain	Dolmakak
	5th	Soonaejung	Dolmakak	Promenade in the Woods Observation Place of Animal
	6th	Central Sqaure	Traditional House	
	7th	Promenade around the Wood	Viewpoint of Animal	
	8th	Exercise Area	Palkakjung	
	9th	Badminton Area	Exercise Area	
	10th	-	Soonaejung	
	11th	-	Badminton Area	

are imperative(Table 11; Figure 6).

The results of the administrator's responses to the question about 'what facilities should be improved urgently in Bundang Central Park?' indicated that the administrators understood the user's concerns. The result of the administrator's

response indicated that the purification and maintenance of the pond was the second priority. However, the user perceived that shaded area was the number two priority(Figure 8).

It was concluded that the cognition of park administrators has improved. Most users desired better shady sitting areas which would be more intimate. Sitting spaces within the park should be designed so as to facilitate a sense of privacy and considered as a place for shady relaxation(Figure 9; Figure 10).

The new requests from the users in Bundang Central Park included programming of events and creation of an efficient wildlife habitat. It was necessary to develop various and appropriate programming and create an efficient wildlife habitat

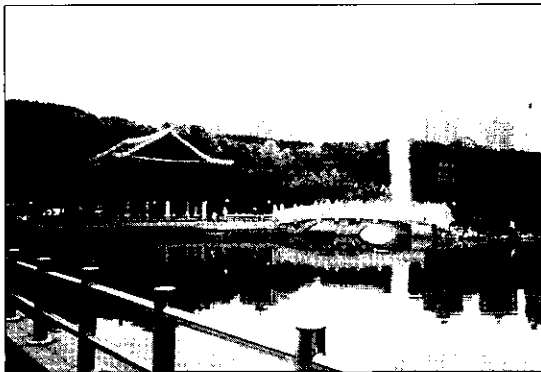


Figure 8. Pond in Bundang Central Park

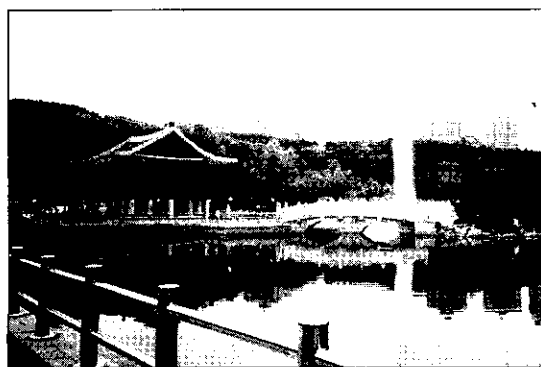


Figure 9. Empty Sitting Place in Bundang Central Park

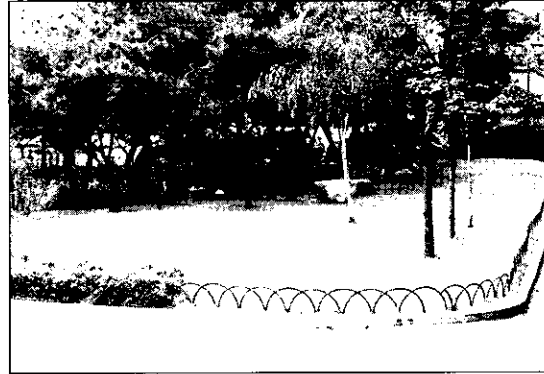


Figure 10. Shady Sitting Place in Bundang Central Park

to satisfy the users(Table 12).

The results of interviews with park administrators showed that there were a lot of complaints among the park managers because of the pond's odor and although there is a fundamental solution to the problem, it has not been executed because of the budget. Therefore consideration of the maintenance of the pond by authorities is imperative.

The park administration knew about the POE executed by the Korea Land Corporation in 1996 but, they did not put the information obtained to practical use. They just managed the park by relying on their experience and through the reaction to the civil appeals. POE could offer many devices and guidelines for park management so, the park administrators should use the POE or RPOE in their works.

IV. CONCLUSIONS

1. Consideration on the Results of the Study

- The satisfaction rate of the user on restroom and location and size of parking lot was very low. Authorities should take appropriate steps to improve these problems.

Table 12. Facilities which should be improved urgently in Bundang Central park

Classification	Result of Questionnaires by User			Result of Questionnaire by Administrator
		POE	RPOE	RPOE
Facilities which should be improved urgently	1st	Purification and Management of Pond	Expansion of Parking Lot	Expansion of Parking Lot
	2nd	Expansion of Parking Lot	Proper Arrangement of Shady Rest Areas	Purification and Management of Pond
	3rd	Disposition of Administrator	Purification and Management of Pond	Proper Arrangement of Shady Rest Areas
	4th	Expansion and Cleanliness of Restrooms	Expansion of Booth	Expansion of Booth Disposition of Manager
	5th	Expansion of Booth and Water Fountain	Expansion and Cleanliness of Restroom	Expansion of Wastebin, Expansion of Security Department and Lighting, Expansion of Water Fountain, Expansion and Cleanliness of Restrooms, Prohibition of Forest Destruction
	6th	Expansion of Security Department and Lighting	Creation of an Efficient Wildlife Habitat	
	7th	Prohibition of Forest Destruction Expansion of Wastebin	Expansion of Wastebin	
	8th	Proper Arrangement of Shady Rest Areas	Various Programming of Events	
	9th	-	Expansion of Water Fountain	
	10th	-	Expansion of Security Department and Lighting	
	11th	-	Prohibition of Forest Destruction	
	12th	-	Improvement of Information Center and Sign	
	13th	-	Publish an Information Guide	
	14th	-	Disposition of Administrator	

• The traditional house should be open for all park users not exclusively for clubs.

• Most users desired better shady sitting places instead of only crowded sitting areas. Sitting spaces within the park should be designed so as to facilitate a sense of privacy and considered as a place for shady relaxation.

• The preference rate on the pond decreased and the user's preference shifted to the promenade in the woods. There were a lot of complaints about the pond's odor among the users. Therefore fundamental measures instead of makeshift from the

authorities is imperative.

• The new requests from the users in Bundang Central Park were various programming of event and creation of the efficient wildlife habitat so, it was necessary to develop various and proper programming of the event and create the efficient wildlife habitat to satisfy the users.

2. Suggestions

• RPOE should be initiated periodically to provide guidelines for neighborhood park design,

park conservation, administration and operation.

- The neighborhood park should promote its image as an efficient and agreeable place. It is necessary to employ a plan specialist, who can develop and publicize various and proper programming events, to superintend special operations and performance of programs.

- The park administration should contact with the original design company and deviate from the primary plan and manage the park with continuity. The establishment of a position for a landscape architect should be considered as imperative.

REFERENCES

1. Kack Nam-Hyun(1996) The Re-Post-Occupancy Evaluation of the Children's Park. Korea University Master's thesis.
2. Kim Ji-A(1999) A Study on the Post-Occupancy Evaluation of the Exposition Site, Korea University Master's thesis.
3. Jang Byoung-Gwan(1985) A Study on the Evaluation of Small Urban Park. Seoul University Master's thesis.
4. Korea Land Corporation(1997a) Post-Occupancy Evaluation of Bundang Central Park, Report by Korea Land Corporation
5. Korea Land Corporation(1997b) The Development History of Bundang New Town, Report by Korea Land Corporation
6. Korea Land Corporation(1999) The Bundang Central Park, Seoul : Environment and Landscape 135 : 40-45.
7. Friedmann, A.(1980) Trees in Urban Design. New York : Van Nostran Reinhold Co. pp.10-35.
8. Friedmann, A., C. Zimring, E. Zube(1978) Environmental Design Evaluation. New York : Plenum Press. pp.75-157.
9. Zube, E.(1980) Perception and Public Policy. In Environmental Evaluation. California : Wadsworth Inc. pp.58-62.
10. <http://www.saeter.co.kr>

Accepted August 31, 2001

Refereed anonymously