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조경학석사학위논문

Design Strategy for Reusing Schools
in the Urban Landscape System
-Focusing on Kyodong Elementary School in Seoul-

도시경관시스템을 위한 학교 재사용 설계
-서울시 교동초등학교를 중심으로-

2014년 8월

서울대학교 환경대학원

환경조경학과

박계정

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지도교수 Wybe Kuitert
이 논문을 조경학석사학위논문으로 제출함

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서울대학교 환경대학원
환경조경학과
박 계 정

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위 원 장 _____ (인)

부 위 원 장 _____ (인)

위 원 _____ (인)

Abstract

Design Strategy for Reusing Schools in the Urban Landscape System: Focusing on Kyodong Elementary School in Seoul

Kye Jeong Park
Department of Landscape Architecture
Graduate school of Environmental Studies
Seoul National University

Recently, dropping student populations have left a large number of classrooms in Seoul vacant. However, instead of closing down the schools, we need to see this change as an opportunity to revitalize old villages by emphasizing the school's role as the center of each neighborhood.

This study aims to investigate the pattern of urban landscape elements within a school and design an elementary school as the center of village community. The school would work as a new element in the residential area of the city center and enhance the urban landscape system.

Kyodong Elementary School, the selected site, was established in 1894. As a result of the decrease in the number of students after 1970s, it became a small school with only 117 students. Through careful analysis, I have found that the school represented the village center for a long time. The urban landscape elements, such as soil landscape, water, vegetation, urban form and land use, were also related to the school's shape and use. However, the correlation between the school and the elements has weakened due to the declining number of residents who were the foundation of the school.

Accordingly, the school has several key issues. First is the inconsistency between the school district and the neighborhood, second, the confliction of different hierarchies involving urban structure and program, and last, the unreadable Urban Landscape System in the school.

To resolve this, Kyodong Elementary School must become 'the school of Kyo-dong(town)'. To become the center of a large area, such as 'Kyo-dong', we need a strategy for enhancing the landscape patterns that have been weakened. The revitalized Kyodong Elementary School, the current school and real center of the village, will connect and promote the following elements: road, blue & green infrastructure, history, view & open space and land use.

The proposed spatial structure will not only bind together the various landscape elements, but also achieve flexibility for the changeable school's program. The main open areas will act as green spaces and provide buffer zones between areas of different functions. In addition, by following the texture of the existing city, the new plan could be integrated to the residential area, and the consistency of the master plan could be achieved.

The three main open spaces represent city, town and green, each with its own unique character and hierarchy. The interior continues to the exterior. The view and spatial volume create various atmospheres and redefine the school's function. The blue-green infrastructure also contributes to the ambiance of each zone. The planting design focuses on using the existing resources. Each zone adheres to the atmosphere formed by foothills and valleys. Native plants are preferred over exotic species.

Therefore, the new Kyodong Elementary School will become the backbone of Kyodong and proceed to revitalize this old residence in Seoul.

Keywords: **New urbanism, Revitalize, Neighborhood, Urban community, Pattern analysis, School districts**

Student Number: 2012-22071

Contents

I . Introduction	001
1-1 Closing Down Schools in Seoul	002
1-2 Major Premises of Reusing Schools	006
1-3 Finding the Design Factors	008
1-4 Site Selection	009
1-5 Structure of Thesis	012
1-6 Fundamental Research	014
II . Reading the Urban Landscape System of Kyodong Elementary School	025
2-1 History	027
2-2 Water	032
2-3 Soil Landscape and Forest Type	033
2-4 Potential Green Infrastructure	036
2-5 Urban Form	037
2-6 Road, Subway and Bus	038
2-7 School District and District Plan	039
2-8 Land Use	040
2-9 Open Space	041
III . Issues	043
3-1 Inconsistency between the School District and Neighborhood	044
3-2 Confliction of Structures, Programs and Hierarchies	046
3-3 Unreadable Urban Landscape System	051

IV. Urban Landscape System as Strategy	053
4-1 Concept	054
4-2 Strategy of Kyodong	055
4-3 Detailed Strategy	060
V. School Development	075
5-1 Design Synopsis	076
5-2 Alternative Design Test Studies	077
5-3 Conclusion of Test Studies	081
5-4 Developing Schemes	082
VI. Reusing School : The Design Narrative	089
6-1 Floor Plan	092
6-2 Schemes of Open Spaces	096
6-3 Greenscape	097
6-4 Cityscape	104
6-5 Townscape	110
6-6 Planting	116
VII. Conclusion	122
REFERENCES	124
ABSTRACT IN KOREAN	128

List of Tables

Table 1-01	Urban schools see student decline	003
Table 1-02	35 Seoul elementary schools suffer shortage of students	003
Table 1-03	Student population by year	004
Table 1-04	The number of schools by year	004
Table 1-05	Existing building condition	010
Table 1-06	Kumho Elementary School	019
Table 1-07	Chodang Elementary School	020
Table 1-08	Jangsung Elementary School	021
Table 6-01	Existing plan (for using)	117
Table 6-02	Planting plan	118

List of Figures

Figure 1-01	The number of elementary students and schools	005
Figure 1-02	Objectives of thesis	008
Figure 1-03	Site area	011
Figure 1-04	Structure of thesis	012
Figure 1-05	Structure of issue, concept and strategy	013
Figure 1-06	School's duration in center of Seoul	016
Figure 1-07	History of schools in center of Seoul	017
Figure 1-08	Kumho Elementary School's facilities	019
Figure 1-09	Chodang Elementary School's plan	020
Figure 1-10	Jangsung Elementary School 's planting plan	021
Figure 2-01	Suseon jeondo & the school	028
Figure 2-02	Gyeongseong sigoado & the school	028
Figure 2-03	History of village	029
Figure 2-04	1918, 8th graduation and original wood building	031
Figure 2-05	1963, at its highest number of students, 5,250 people	031
Figure 2-07	1927, stream way	032
Figure 2-08	2014, stream way	032
Figure 2-09	Soil landscape and schools in Jongro-gu	034
Figure 2-10	Forest type	034
Figure 2-11	School symbols : tree, flower and small mt. in school yard	035
Figure 2-12	Potential green infrastructure	036

Figure 2-13	Blocks and stream	037	Figure 4-03	Recover old stream	057
Figure 2-14	Figure ground and blocks	037	Figure 4-04	Intergrated with urban texture	058
Figure 2-15	Urban tissues	037	Figure 4-05	Extension of residence and forest	059
Figure 2-16	Road, subway and bus	038	Figure 4-06	Strategy element diagram	061
Figure 2-17	District plan	039	Figure 4-07	Existing road hierarchy	062
Figure 2-18	School district	039	Figure 4-08	Restructure roadsystem	063
Figure 2-19	Actual Building use	040	Figure 4-09	Existing connection	064
Figure 2-20	Planning land use + Actual use of residence and retail shop	040	Figure 4-10	Proposal connection	065
Figure 2-21	Open space and public facilities	041	Figure 4-11	Constructed edge	066
Figure 2-22	Accessibility	041	Figure 4-12	Existing edges	067
Figure 3-01	Boundary of Kyo-dong	045	Figure 4-13	Proposal for blue infrastructure	068
Figure 3-02	School district	045	Figure 4-14	Proposal for green infrastructure	069
Figure 3-03	Conflict between disabled and non- disabled students -Kyeongun school Lobby	046	Figure 4-15	Proposal for open space & view	070
Figure 3-04	Specialized tour spot & shop	047	Figure 4-16	Surrounding open spaces	071
Figure 3-05	Different hierarchy	048	Figure 4-17	Changeable school program	072
Figure 3-06	Chaotic urban structure	049	Figure 4-18	Existing sites around program	073
Figure 3-07	Change the dwellings of type and use	050	Figure 5-01	Design synopsis	076
Figure 3-08	Unreadable urban landscape system	051	Figure 5-02	Alternative 1 test	078
Figure 4-01	Strategy	055	Figure 5-03	Alternative 2 test	079
Figure 4-02	Change structure of road	056	Figure 5-04	Alternative 3 test	080
			Figure 5-05	Tracing the urban landscape system	082
			Figure 5-06	Follow the block structure	083
			Figure 5-07	Intergrating the open space & the school	084

Figure 5-08	Redefining urban fabric	085	Figure 6-17	Cityscape blue-green infrastructure	105
Figure 5-09	Continue interior and exterior	086	Figure 6-18	Cityscape program	106
Figure 5-10	Threshold & sequence	086	Figure 6-19	Cityscape flow and activity	107
Figure 5-11	Program for fading the edge	087	Figure 6-20	Cityscape spacial volume study 1	108
Figure 5-12	Choice of Flow and Activity	087	Figure 6-21	Cityscape spacial volume study 2	109
Figure 6-01	Ground floor plan	091	Figure 6-22	Open space for townscape	110
Figure 6-02	1st floor plan	092	Figure 6-23	Townscape blue-green infrastructure	111
Figure 6-03	2nd floor plan	093	Figure 6-24	Cityscape program	112
Figure 6-04	3rd floor plan	093	Figure 6-25	Townscape flow and activity	113
Figure 6-05	4th floor plan	094	Figure 6-26	Townscape spacial volume study 1	114
Figure 6-06	5th floor plan	094	Figure 6-27	Townscape spacial volume study 2	115
Figure 6-07	Basement floor plan	095	Figure 6-28	Planting plan	116
Figure 6-08	Different characters of open space	096	Figure 6-29	Existing plants	117
Figure 6-09	Open space for greenscape	097			
Figure 6-10	Greenscape blue-green infrastructure	098			
Figure 6-11	Greenscape program	099			
Figure 6-12	Greenscape flow and activity	100			
Figure 6-13	Greenscape spacial volume study 1	101			
Figure 6-14	Greenscape spacial volume study 2	102			
Figure 6-15	Greenscape spacial volume study 3	103			
Figure 6-16	Open space for cityscape	104			

I .Introduction

- 1-1 Closing Down Schools in Seoul
- 1-2 Major Premises of Reusing Schools
- 1-3 Finding the Design Factors
- 1-4 Site Selection
- 1-5 Structure of Thesis
- 1-6 Fundamental Research

Introduction

1-1 The Closing Down Schools in Seoul

As a metropolitan city, Seoul's large number of elementary schools contain many diverse aspects. While the number of elementary schools has been increasing as a result of the 'New Town Project'¹⁾, there has been a decrease in overall student population. With the declining number of inner city residents, the increasing number of vacant classrooms in old villages has become an issue.

However, instead of closing down the schools, we need to see them as opportune sites to revitalize old villages in places where it would be difficult to plan an entirely new community facility for the residents due to the high cost and the lack of the sites for developments.

With growing interests in elementary schools as complex facilities, new definitions of schools are required. Not only as educational establishments but also as public community facilities which are related to landscape systems.

In addition, the school design needs to be related to the urban landscape system. Landscape systems are patterns about structure, function and process of soil, water, vegetation and human settlement. 'Landscape' is not regarded as a foundation for human settlement but as a system in movement and in process.²⁾

If we can read the urban landscape system and propose as a complementary design, the plan will be more sustainable and flexible .

¹⁾ 이화룡, et al., "서울형 소규모대규모학교기준 및 적정화 방안 연구," (서울특별시 교육청, 공주대학교 산학협력단, 2012).p. 4

²⁾ Kuitert, "Urban landscape systems understood by geo-history map overlay," in Journal of Landscape Architecture (Routledge, 2013b). p.55

<Table 1-01>
Urban schools see student
decline
(ref.SEOK-MAN, Apr 12,2014)

Urban schools see student decline

Institutions forced to shutter as population of inner-city decreases

Jongno's Soongshin Elementary School, meanwhile, is slated to find its way to Wangsimni, in northeastern Seoul, by 2015.

While the schools' relocations now are largely voluntary and based on resolving shortages in students, 40 years ago, in the 1970s, many educational institutions were forced to relocate as part of urban development projects.

At the time, the northern part of Seoul was overpopulated, while the southern area was largely underdeveloped. In an effort to attract more students, the government pushed more than a dozen well-known high schools in northern Seoul - such as Whimoon High School and Kyunggi High School - to move south.

<Table 1-02>
35 Seoul elementary schools
suffer shortage of students
(ref.Bo-eun, 2013.01.02)

35 Seoul elementary schools suffer shortage of students

Thirty-five elementary schools in Seoul will have less than 50 first-year students this year, due to the nation's low birthrate.

Until recently, declining enrollment was limited to schools in rural communities. It is estimated that about 100 schools in rural areas face an acute shortage of students.

But this year's numbers indicate that the trend is steadily creeping into the nation's capital. Kyodong Elementary School in Jongno has only 15 students registered to start school in March, the lowest among the 35 Seoul elementary schools. The school's location in the center of the city, far from most residential areas partly explains the low enrollment rate. Its reported enrollment rates for first-year students in 2012 and 2011 were 21 and 11 respectively.

Kongjin Elementary School in Gangseo, Bukhansan Elementary School in Eunpyeong, Eonnam Elementary School in Seocho and Soongshin Elementary School in Jongno also have less than 30 new students set to attend in March.

Introduction

(unit : 1,000 persons)

	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12
Elementary school	763	759	759	737	711	689	665	633	599	561	536	502
Middle school	365	361	359	371	379	385	376	366	356	345	330	315
High school	410	378	367	356	353	349	355	362	368	362	354	344

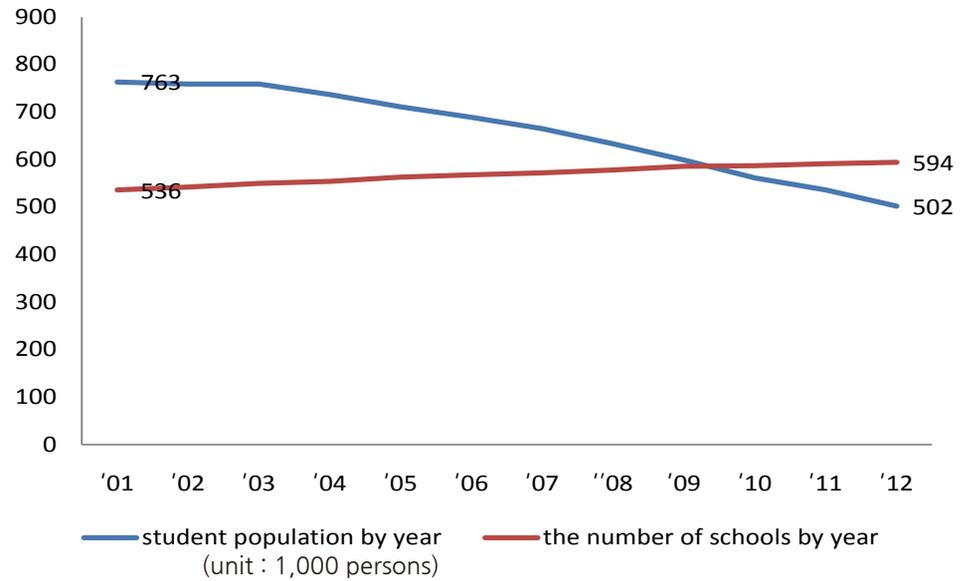
<Table 1-03>
Student population by year (ref.
2013 Statistics Korea)

(unit : schools)

	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12
Elementary school	536	542	550	554	563	568	572	578	586	587	591	594
Middle school	354	357	358	362	363	367	368	369	374	376	377	379
High school	278	282	284	289	292	295	297	302	308	311	314	317

<Table 1-04>
The number of schools by year
(ref. 2013 Statistics Korea)

<Figure 1-01>
The number of elementary
students and schools
(after 2013 Statistics Korea)



Introduction

1-2 Major Premise of Reusing Schools

Before discussing how to relate the landscape system to an elementary school, several key questions must be addressed, such as, 'Why should a school be left in the center of a city?' and, 'Does an old village need a school for revitalization?'

There are many theories about the neighborhood unit¹⁾ and new urbanism²⁾ that address such questions. However, as this thesis focuses on the question how a school can be reused in the urban landscape system in depth discussion about overall urban theory has to be summarized.

For that reason, we need to adhere to the following major premises.

Firstly, residence in the urban center has to be promoted by policy in order to revitalize the area.

¹⁾ Perry, "The neighborhood unit : from the Regional survey of New York and its environs, volume VII, Neighborhood and community planning," (London: Routledge/Thoemmes Press, 1929; reprint, 1998). p. 34
Neighborhood- Unit Principles

1. Size - A residential unit development should provide housing for that population for which one elementary school is ordinarily required, its actual area depending upon population density.

²⁾ Bohl, "New urbanism and the city: Potential applications and implications for distressed inner-city neighborhoods," (2000). p. 34

New Urbanism is a movement in architecture and planning that advocates design-based strategies based on "traditional" urban forms to help arrest suburban sprawl and inner-city decline and to build and rebuild neighborhoods, towns, and cities. Shared principles call for organizing development into neighborhoods that are diverse, compact, mixed use, pedestrian oriented, and transit friendly.

Secondly, elementary schools have played an important role in neighborhoods from early history onward¹⁾. Ideal schools function as the center of neighborhood communities, and they reinforce their status as public spaces as time goes by.

Lastly, for these sites to be successful, one must not only maintain use of existing dwellings and infrastructure, but also develop new residential areas. Therefore reusing the schools seeks to retain its original function as a school.

¹⁾ 김호일 and 유남해, "Hyanggyo (郷校) of Korea," (서울: 대원사, 2000). p.10

Hyanggyos were established in every Gun and Hyeon(province) in the country to educate Neo-Confucianism which had been adopted as the guidance ideology of Joseon. [translation Park, Kye Jeong]

ibid. p.117

Hyanggyos were not only educational institutions but also in charge of large area such as religious functions, social reformation, public opinions and the centers of local culture. [translation Park, Kye Jeong]

Introduction

1-3 Finding the Design Factors

This study aims to investigate the design factors of the elementary schools that could relate to the urban landscape system. The factors are expected to have a number of patterns in relation to the locations of the schools, and that would lead to the new design strategy of each school.



<Figure 1-02>
Objectives of thesis

1-4 Site Selection

The selected site for analysis is Kyodong Elementary School which is located in the middle of Seoul and has a long history.

This is not because Kyodong is particularly representative of the city's elementary schools but because the location of the site seems to have a strong correlation with the landscape system of Seoul. Besides, the school is currently in the process of closing down.

This thesis is to research that relationship between elementary schools and the urban landscape system through this one specific case.

Of course, each elementary school has its own specificity in regards to its location or foundational background. Because of this reason, one case cannot represent all commonly found issues.

However, this thesis explores the possibility that a school can evolve a site's landscape system. The conclusion of this thesis gives the general idea about how an old school can revive the landscape system. Refer to it in Chapter 7, Conclusion.

Introduction

1) Location

446, Samil-daero, Jongno-gu, Seoul, Korea

2) Research area

About 1km radius of Kyodong Elementary school

3) Land use plan

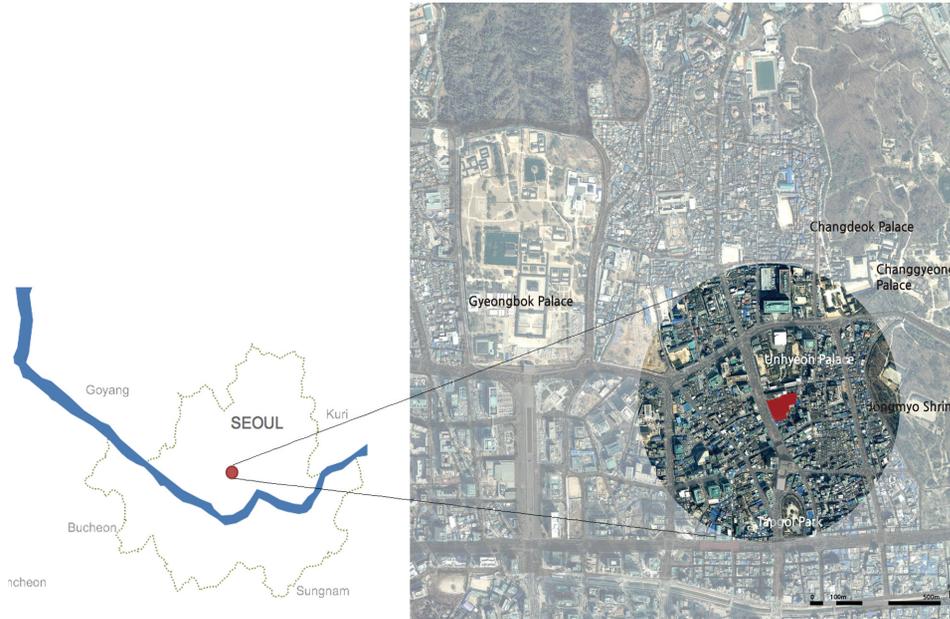
General commercial area / Fire protection district
District Unite plan (Unhyeongung area)

4) Existing building condition

<Table 1-05>
Existing building condition
(ref. certified copy of the
register)

	Kyeongun school	Kyodong elementary	annexe
B1	953.25	809	11.88
1F	891.25	1300.58	
2F	1079.94	975.33	
3F	1252.06	1002.23	
4F	1259.59	571.96	
5F	774.26		
TOTAL	5257.1	3850.1	11.88

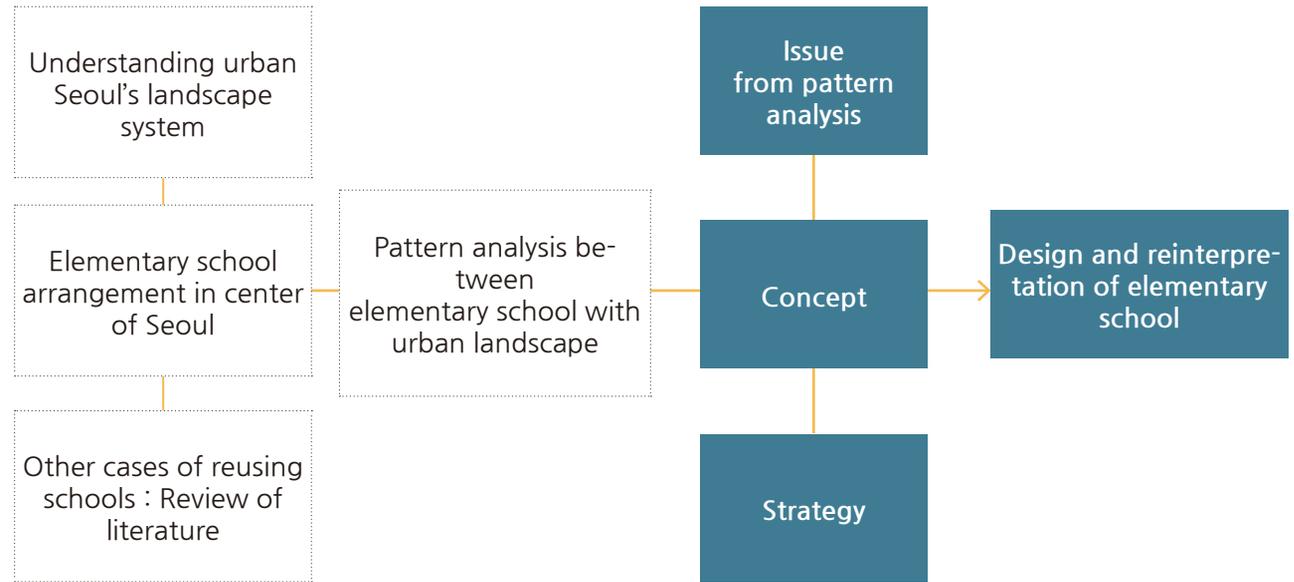
- Lot area : 9036 m²
- Roof area : 2203.71 m²
- Gross floor area : 9119.08 m²
- Roof area ratio : 24.39%
- Floor area ratio : 100.92%
- Structure : reinforced concrete



<Figure 1-03>
Site area
(ref. satellite image map from
Never <http://map.naver.com/>)

Introduction

1-5 Structure of thesis



<Figure 1-04>
Structure of thesis

ISSUE	CONCEPT	STRATEGY
<ol style="list-style-type: none"> 1. Inconsistency between School District and Neighbourhood 2. Confliction between Structures, Programs and Hierarchy 3. Unreadable Urban Landscape System 	<p>Kyodong = School Village</p> <p>School connecting a village with a city</p> <p>School to be the center of a village</p> <p>School revealing urban landscape elements</p>	<ol style="list-style-type: none"> 1. Recovery of the stream and designing patch forests 2. Defining the hierarchy of the village 3. Restructure landscape elements to be the backbone of the village 4. Add green spaces to be buffer zones achieving flexibility

<Figure 1-05>
Structure of issue, concept and strategy

1-6 Fundamental Research

1) Urban Landscape System in Seoul

Landscape is a system that is defined by geomorphology. Geomorphology has a structure and patterns that stay in place and define the genesis and change of layers of soil.¹⁾

Furthermore, Seoul has a strong and unique landscape system. Hills in the city are well over 800m high and are intersected by complex dendrite systems of alluvial valleys and terraces, locally with colluvium at the upper ends.²⁾

Throughout the site, today, we can still find the unique landscape of Seoul. Its historical buildings and residence areas have a beautiful, scenic view of Bugak Mountain, and it has remained a popular living area. As proof, there are still a lot of schools left.

¹⁾ Kuitert, "The nature of urban Seoul: potential vegetation derived from the soil map," in *International Journal of Urban Sciences* (Routledge, 2013a). p.96

²⁾ Kuitert, "Urban landscape systems understood by geo-history map overlay," in *Journal of Landscape Architecture* (Routledge, 2013b). p.58

2) Schools Arrangement in the Center of Seoul

The establishment of the schools in the historic center of Seoul started in the late Joseon dynasty with a different intention than the ones in nearby satellite cities. These were founded for the education of elites of the Korean independence movement or patriotic enlightenment movement¹⁾ while the schools founded in satellite cities were for the modern education of the public.

Existing government office buildings or the house complexes of Yangban were transformed into schools as they had large sites suitable for school construction. Therefore, these schools easily functioned as the center of the existing community.

After the explosive expansion of Seoul, in the 1970s, these schools were abolished or relocated. It was not only because of a rapid decreasing population in center of Seoul but also a result of the settlement policy for new towns.²⁾

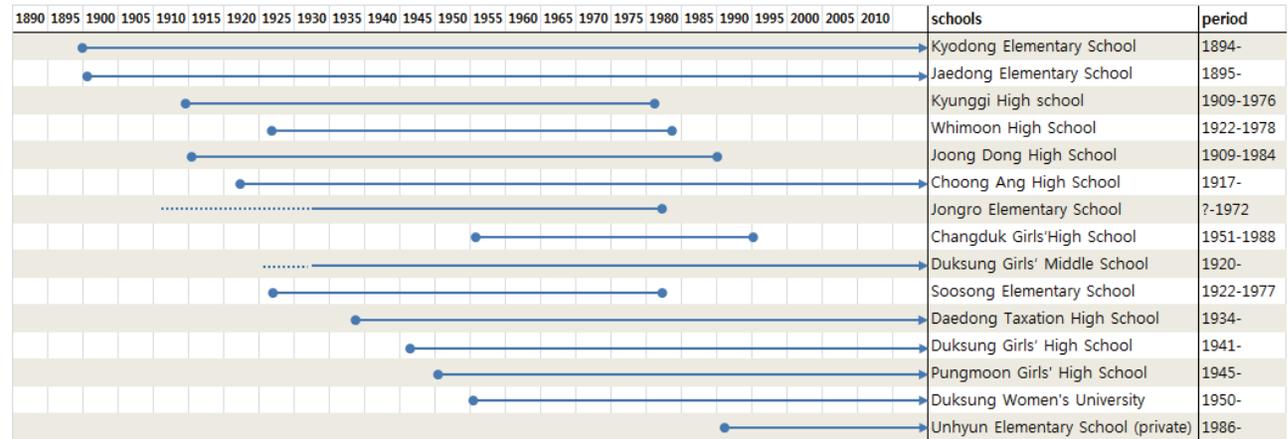
The loss of a school meant the loss of a neighborhood center. The community without its center often collapsed and the quality of residence declined.

If you look at the locations of schools left standing, they are often on rolling hills. As it is not easy to develop a plot on rolling hills, these schools have often been left. Therefore, it can be considered a repeated pattern among schools. Is it possible to relate it to the landscape system? Following analysis, it will be discussed in greater detail.

¹⁾ 피정만, "한국교육사 이해," (서울: 夏雨, 2010)

²⁾ 이영석 and 민유기, 도시는 역사다 [The city is the history] (파주: 서해문집, 2011) p. 285
길연진, "서울시 도심부 이전적지의 개발에 관한 연구 : 휘문 중교 이전적지 사례를 중심으로" (서울대학교, 1990). p. 11

Introduction



<Figure 1-06>
 School's duration in center of
 Seoul
 (Park, K. J. unpublished
 research and 길연진, 1990)

- 01 Choong Ang High School
- 02 Daedong Taxation High School
- 03 Kyunggi High school
- 04 Jaedong Elementary School
- 05 Whimoon High School
- 06 Duksung Girls' Middle School
- 07 Duksung Girls' High School
- 08 Pungmoon Girls' High School
- 09 Duksung Women's University
- 10 Joong Dong High School
- 11 Soosong Elementary School
- 12 Jongro Elementary School
- 13 Changduk Girls'High School
- 14 Unhyun Elementary School
- 15 Kyodong Elementary School



<Figure 1-07>
 History of schools in center of
 Seoul
 (base on Park, K. J. unpublished
 research)

 existing school
 non-existing school

3) Other cases of reusing schools : Review of literature

The reuse of schools is classified into 2 categories; maintaining its use as a school and its reuse for an entirely different function.

In this thesis, I am focusing on the cases which exclude closing down a school or change its function, as they are not consistent to the major premise-keeping the function of schools. The studies about cases dealing with complexation of unused school space were proceeded, and they were referred to in this thesis. ^{1) 2)}

¹⁾ 차주영, et al., "A Basic Research for Using School Buildings As Center of Community Facility : Focusing on Elementary School Complex Facility by Remodeling," (2009).

²⁾ 김승제, "A Study on the Architectural Planning of Functional Mixed-use between School Buildings and Community Facilities," in *Korean Institute of Educational Facilities* (2009).

Case 1: Kumho Elementary School

<Table 1-06>

Kumho Elementary School
(ref. 차주영, 임현성, & 심경미, 2009)
(ref. 김승제, 2009)

- Location: 511, Geumho-dong 2-ga, Seongdong-gu, Seoul
- Construction area : 10,869 m²
- Facility : swimming pool, gym, parkinglot, culture center
- Completion year: 2001
- Bear budget : city-49, local government-51

Kumho Elementary School in Seoul is the first case of function complexation in Korea.

To improve the situation of the lack of culture facilities in the region, the unused school space were reconstructed and extended. Keeping part of the existing building, underground parking lots and a swimming pool were planned.

The principal of the school administrates the facility and operation is committed.

The person in charge mentioned during an interview that it was just sharing of the facility in a different time zone rather than a connection between the school and the neighborhood(차주영, 임현성, & 심경미, 2009).



<Figure 1-08>

Kumho Elementary School's facilities
(ref. 차주영, 임현성, & 심경미, 2009)

Introduction

<Table 1-07>

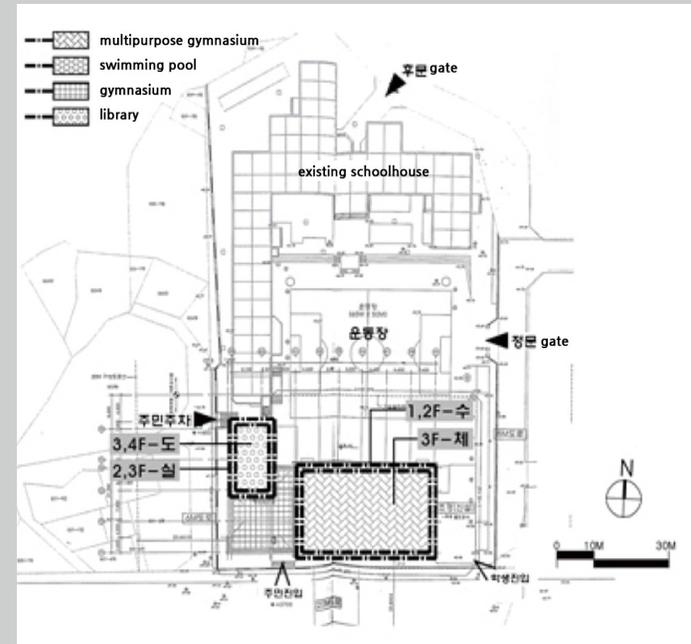
Chodang Elementary School
(ref. 차주영, 임현성, & 심경미,
2009)

(ref. 김승제, 2009)

- Location: Banghak 4-dong, Dobong-gu, Seoul
- Construction area : 4,000 m²
- Facility : swimming pool, gym, information center
- Completion year : 2006
- Bear budget : Education Office-52, city-34, local government-14

This is the case of complexation by extention. It uses an outdoor playground instead of indoor spaces. Residents are able to approach directly from the outside of the school and main pathways for circulation are separated from the ones in school. The school has management right and operation is committed.

Case 2: Chodang Elementary School



<Figure 1-09>

Chodang Elementary School's
plan

(ref. 김승제, 2009)

<Table 1-08>
 Jangsung Elementary School
 (ref. (사)생명의숲)

Case 3: Jangsung Elementary School

- Location: 48, Janggi-dong, Dalseo-gu, Daegu
- Construction area : 7,447 m²
- Facility : neighborhood park
- Completion year : 2012
- Bear budget : corporate sponsorship-₩60,000,000, city-34, Education Office-₩2,000,000, local government-₩1,000,000, working expenses -₩ 2,000,000

This is a case that shares the outside space as a neighborhood park to provide green space to city center and educational space for students. The school carries out funding and education about forests to teachers, students and parents. As compensation for funding the forest planting project, this space is open to neighbors all the time.



<Figure 1-10>
 Jangsung Elementary School 's
 planting plan
 (ref. (사)생명의숲)

Review of literature: Conclusion

Cases of limitation to reusing school spaces

There is a tendency to only focus on the site's programs and facilities. They are also considered to demonstrate only passive movement of government disciplines rather than the active participation of residents. It is because a school is considered as a limited site for reusing. In other words, it is a one dimensional approach which comes up with utilization methods. It ignores the urban landscape system. Therefore, regionality is not reflected, and the outcome of the project is limited in its success.

Thus, the new way of analysis based on the urban landscape system will be adapted to uniquely define Kyodong Elementary School, the site of this thesis.

II . Reading the Urban Landscape System of Kyodong Elementary School

2-1 History

2-2 Water

2-3 Soil Landscape and Forest Type

2-4 Potential Green Infrastructure

2-5 Urban Form

2-6 Road, Subway and Bus

2-7 School District and District Plan

2-8 Land Use

2-9 Open Space

Reading the Urban Landscape System of Kyodong Elementary School

Why is Kyodong Elementary School in danger of closing down? Are there patterns as to where land is left for schools? Why are the neighborhoods in the center of Seoul being left? If you said simply that the reason is due to population policy, the finding factors would leave you mistaken.

To reuse the school for its neighborhood requires an understanding of how the site came to be, how the built landscape evolved, through what processes and actions, and when and which of its features have had a sustained impact on their surroundings over time.¹⁾

What kind of landscape elements do we need to know to understand the school?

First, I will analysis the history of human occupation and Kyodong Elementary School. Then, for reading the landscape of school's site, I will research water, soil, landscape and forest type. Finally, I will check the urban form, traffic system, district plan, land use and open spaces. These findings will help to determine what processes and actions contributed to the development of the current school.

¹⁾ Anne Whiston Spirn, "Restoring Mill Creek: Landscape Literacy, Environmental Justice and City Planning and Design," in *Landscape Research* (Routledge, 2005). pp. 396-7

2-1 History

1) Human occupation

'Kyodong(校洞)' means a village which has a 'Hyanggyo(鄉校)¹⁾, the Confucian temple and school which the government founded to teach local students²⁾ in the Joseon Dynasty period. From the Koryo Dynasty, there has been a hyanggyo located in this village in Seoul, and, therefore, its elementary school still bears the name "Kyodong"³⁾.

'Since the first king of the Joseon Dynasty, Yi Seong-gye had moved the seat of government, the form and structure of Seoul were outlined. As lands were distributed according to social hierarchies, instead of private landownership, the location of a house indicated the status of the person who lived in it.⁴⁾

- the early Joseon dynasty :

Residence of Yangban(nobleman) and Jungin(middle class)

- the late Joseon dynasty ~ Japanese colonial era :

population growth, residence of Koreans - contrasted with the Japanese settlement in Namsan area.

- after 1950s :

transformation of land uses, invigorated commercial area and central business district(C.B.D.), penetration of commerce and business

1) 김호일 and 유남해, "한국의 향교." p.11

2) Ibid. p.71 local students :of the pyongmin and yangban classes

3) 서울교동국민학교백년사편찬위원회, 校洞百年史 : 1894~1994 (서울: 서울校洞國民學校同窓會, 1994). p.111

4) 이광노, 가회동 : 무애연구소 OB seminar 가회동 최초 최후의 실측 조사 보고서 개정판, vol. 개정판 (서울: 공시, 2011). p.17

Reading the Urban Landscape System of Kyodong Elementary School

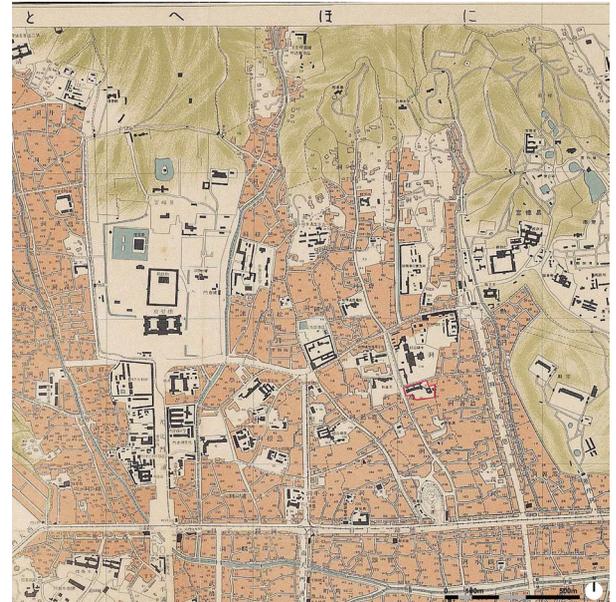
1861, Suseon jeondo 首善全圖

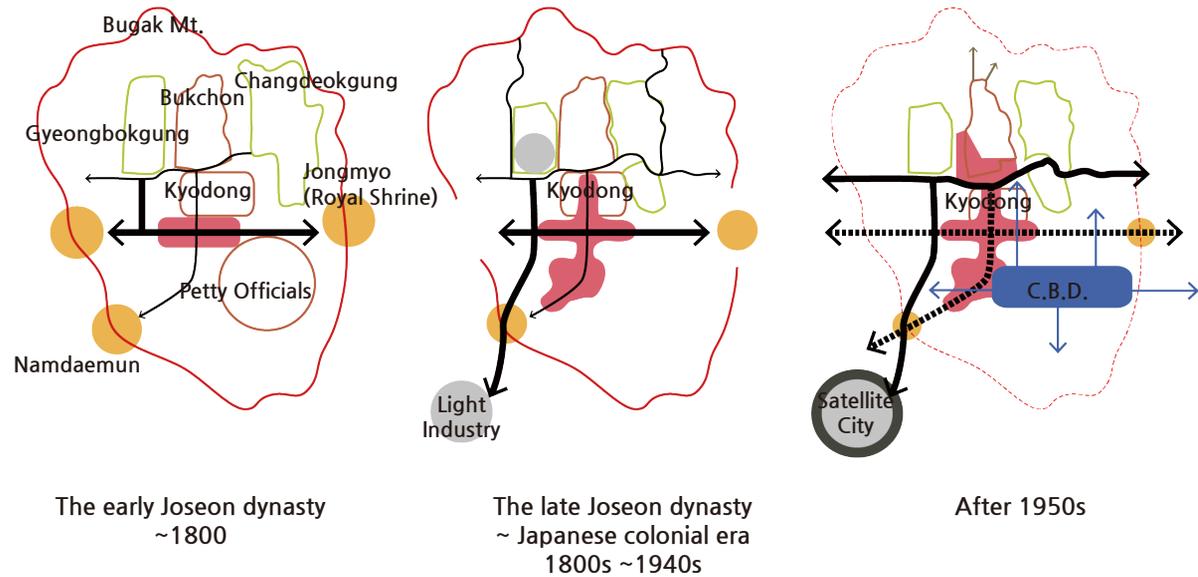


<Figure 2-01>
Suseon jeondo & the school location (ref. Kim, 1861)

<Figure 2-02>
Gyeongseong sigado & the school (ref. "京城市街圖," 1927)

1927, Gyeongseong sigado





<Figure 2-03>
 History of village (ref. 이광노, 2011)

2) History of Kyodong elementary school.

Selected site for analysis is Kyodong Elementary School. The school is one of the first modern elementary schools in South Korea, initially founded as Gojong Royal School in 1894.

1894 Founded

1920 The original building was consumed by fire.

1921 New construction of two-story brick building

1927 The building was consumed by fire.

1928 New construction

1972 A merger with Jongro Elementary School

1977 A merger with Soosong Elementary School

1997 Construction of new classrooms

2000 New construction of Kyeongun School

At present, Kyeongun School has 125 disabled students. And the entire Kyodong Elementary School has 117 students on the whole and only 21 students enrolled in 2014, becoming the smallest elementary school in Seoul. Although the school is a complex facility with Kyeongun School (for handicapped students,) the space isn't shared between disabled & non-disabled students.^{1) 2)}

¹⁾ school, "Kyodong elementary school," <http://www.skyodong.es.kr/index/index.do>, (viewed when March 2014).

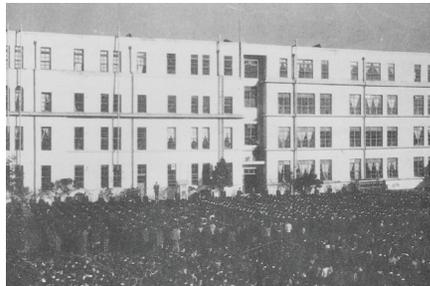
²⁾ school, "Kyeongun school," <http://www.gyeongun.sc.kr>, (viewed when May 2014).

Kyeongun school is a public school which is combined elementary, middle and high school. In 2002, it opened. Its' land is owned by Kyodong elementary school but the management is seperated. It provides education service only for developmental disorder students.

<Figure 2-04>
1918, 8th graduation and
original wood building
(ref. 서울교동국민학교백년사편찬
위원회, 1994)



<Figure 2-05>
1963, at its highest number of
students, 5,250 people
(ref. 서울교동국민학교백년사편찬
위원회, 1994)



<Figure 2-06>
2014, the present



Reading the Urban Landscape System of Kyodong Elementary School

2-2 Water

The stream from the mountain to Cheonggyecheon was disconnected from the original route and rerouted to flow into sewage channels. The soil of site is an alluvial fan, meaning there exists naturally occurring wells. As proof, the old village name references wells(井) and moisture(雲, 濕).

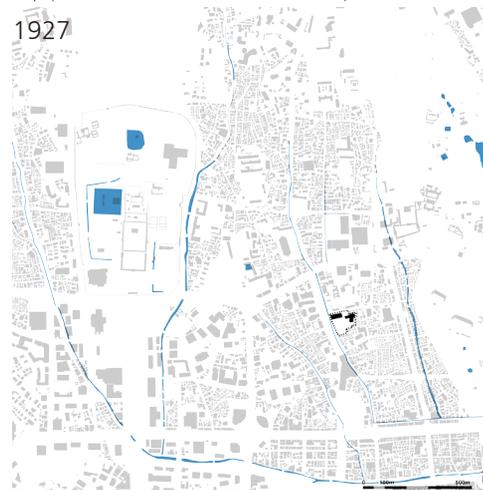
-Seockjeong-dong(石井洞) : well made of stone

-Unhyun(雲峴) : hill has cloud- the origin from moisty soil¹⁾

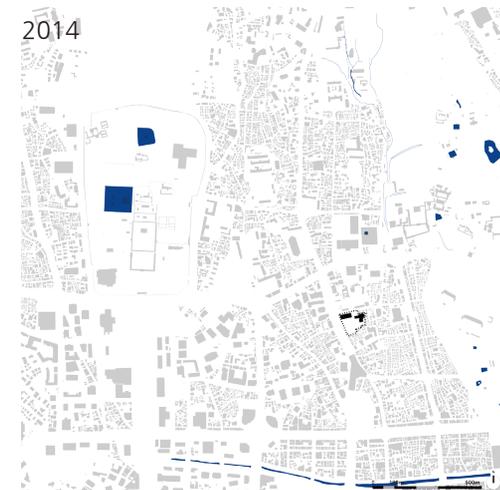
Today, it is not easy to trace the original stream way. However, the site has great potential for water infrastructure.

¹⁾ Office, "Jongno-gu Office," <http://www.jongno.go.kr/Tour.do?menuId=2370&tour=01&menuNo=2370&incPage=dong03>, (viewed when March 2014).

<Figure 2-07>
1927, stream way
(ref. "京城市街圖," 1927)



<Figure 2-08>
2014, stream way



2-3 Soil landscape and Forest type

1) Soil Landscape and Forest Type in Jongro-gu

Kyodong Elementary School sits within foothills and valleys. The landscape of foothills and valleys is found below the mountain landscape at a lower elevation. It is defined by ridges and watersheds in between and is divided into three categories: local alluvial, alluvial fan, and dilluvial terrace¹⁾. Most of the schools which are left in the center of Seoul are located on rolling hills, and this would be advantageous to the recovery of certain landscape elements. Especially of note, Kyodong Elementary School is located on the boundary of a rolling hill and an alluvial fan.

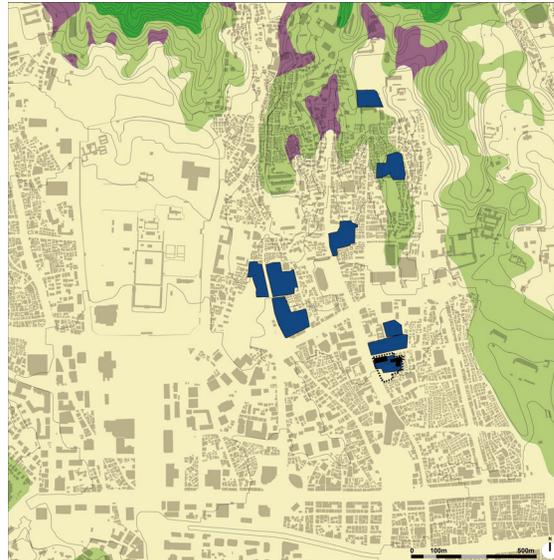
Jongmyo and Changdeokgung are the most important forests in the area, which have been well managed over a long time. On the ridge and south side of the palaces and Jongmyo, there are *Pinus densiflora* communities. The school's site has no existant forest, even though it has the same soil conditions as Jongmyo.

¹⁾ Kuitert, "The nature of urban Seoul: potential vegetation derived from the soil map." p.99

Reading the Urban Landscape System of Kyodong Elementary School

<Figure 2-09>
Soil landscape and schools in Jongro-gu
(ref. National Academy of Agricultural Science)

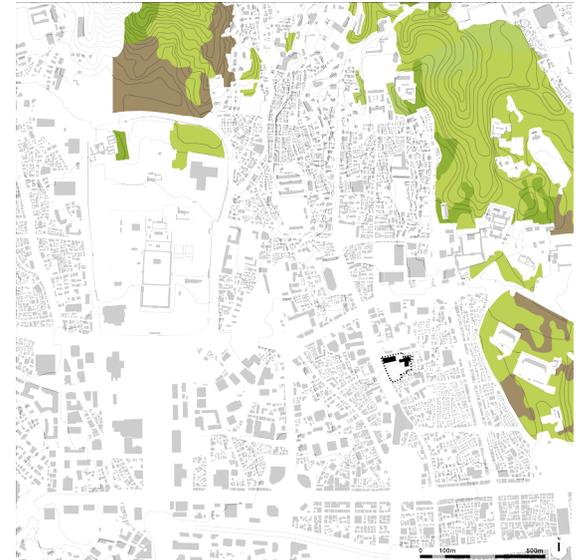
soil landscape



- Mountain foot
- Mountain and hills
- Rolling hills
- Alluvial fan
- Existing school

<Figure 2-10>
Forest type
(ref. Korea Forest Service)

forest type



- Fagaceae family
- Other broadleaf tree
- Mixture forest
- Pinus densiflora

2) The school's plants

There are an old tree, *Buxus koreana*, which is planted 100 years ago. It is also school's symbol.

Tree : *Buxus koreana*



Flower : *Magnolia kobus*



Historic small mt. in school yard



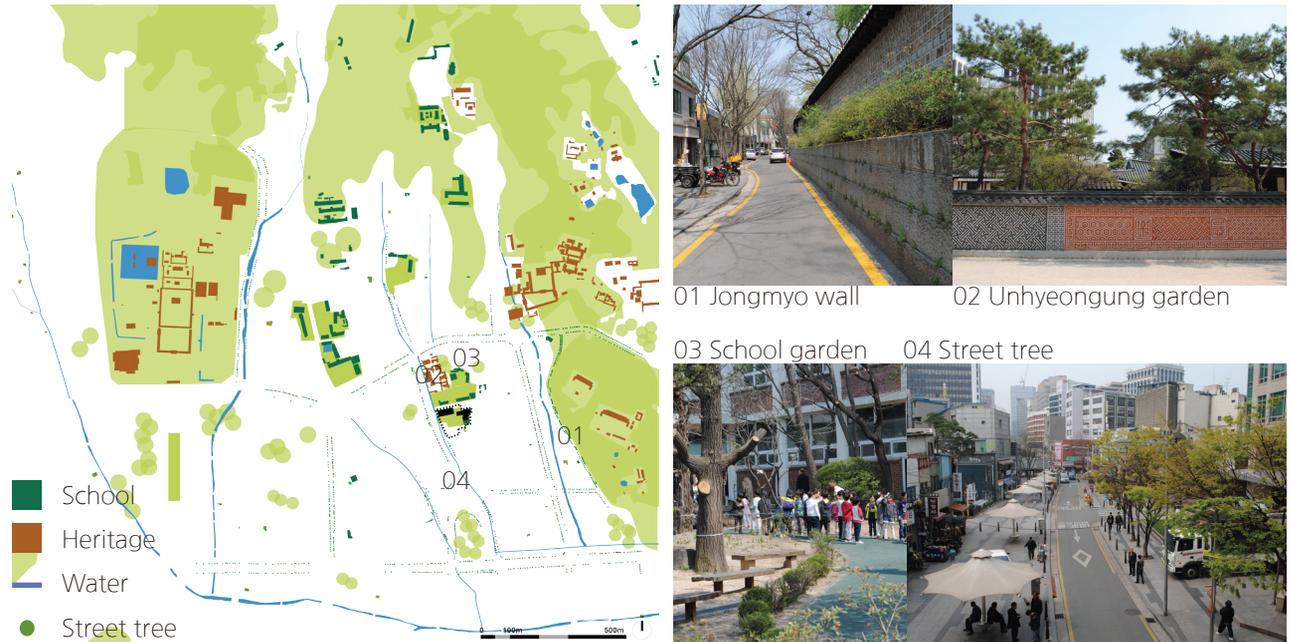
<Figure 2-11>
School symbols : tree, flower
and small mt. in school yard
(ref. 서울교동국민학교백년사편찬
위원회, 1994)

Reading the Urban Landscape System of Kyodong Elementary School

2-4 Potential Green Infrastructure

Potential green infrastructure means the existing forest and the river including open spaces of the school, palaces, street trees and old covered stream. Private gardens and public open spaces are included as well .

The potential green infrastructure has a relationship not only with contour lines and water but also with existing land use, such as schools and various heritage sites. If these locations can be revealed, the relationship will be far easier to maintain.



<Figure 2-12>
Potential green infrastructure

2-5 Urban Form

The blocks are different in their sizes and shapes. Some blocks are formed along the stream or terrain, while properties along other blocks are land-locked.

<Figure 2-13>
Blocks and stream



<Figure 2-14>
Figure ground and blocks
(ref. "서울시 1:1000 수치지형도," 2012)



<Figure 2-15>
Urban tissues



Reading the Urban Landscape System of Kyodong Elementary School

2-6 Road, Subway and Bus

Existing roads follow the old stream way. Hierarchy of the roads is changing too radically.

In the level 4 and 5, dead-end streets with the poor accessibility of cars prevent the area from developing. However, these streets create the unique street views with traditional houses and residents occupying this space for the temporary uses such as storing personal items, and cooking.

<Figure 2-16>
Road, subway and bus
(ref. Seoul Transport Operation & Information Service)

Kyodong elementary school's main road, Samil-daero is level 1 road, but the actual volume of traffic is a different story. Comparing as a same level road, the nearby Yulgok-ro function to main traffic but Samil-daero can't function. For example, two lane are used as a parking lot on weekdays. The road have no blue or red bus(long distance bus). This situation come from a wrong hierarchy definition of road.

- Level 1
- Level 2
- Level 3
- Level 4
- Level 5
- Subway line 3
- Subway line 5
- Subway line 1
- Red bus (distance bus)
- Blue bus
- Green bus
- Yellow bus



2-7 School District and District Plan

Several district plans share the same school district, yet each district plan has different goals. For example, Insadong District Plan focuses on the tourist industry, while Unhyeongung District Plan focuses on heritage preservation.

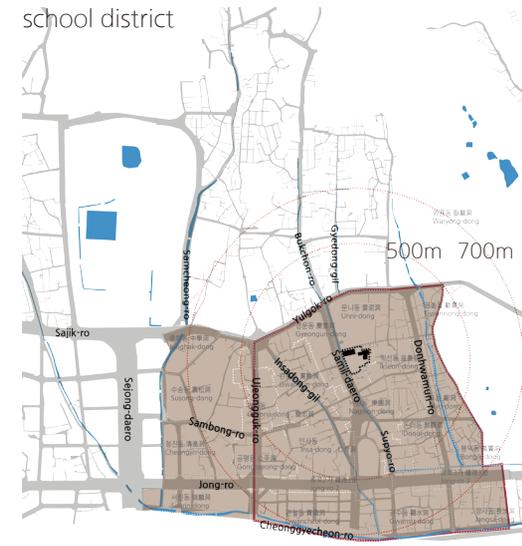
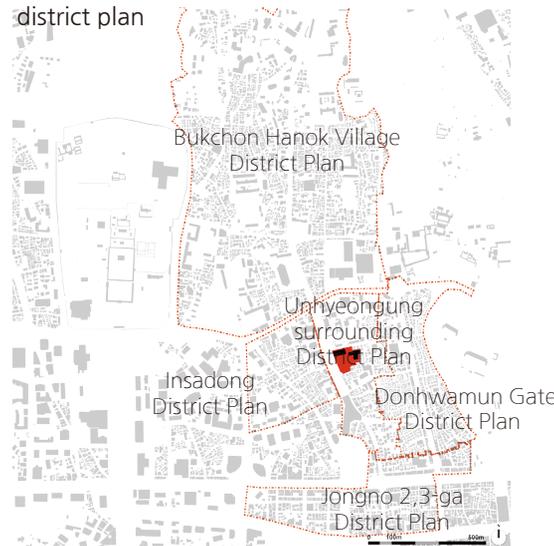
That means school districts do not create a cohesive neighborhood, and the school and the town have a weak relationship.

Additionally, these district plans cater to the tourist industry or commerce, rather than the residents.

<Figure 2-17>
District plan
(ref. 서울도시계획포털)

<Figure 2-18>
School district
(ref. Kyodong elementary school)

- District plan area
- Planned district
- Actual district



Reading the Urban Landscape System of Kyodong Elementary School

2-8 Land Use

There is a big gap between planned land use and actual use. In fact, one of the reasons why the number of residents has decreased is because living condition is low.

As the blocks in the southern part of Yulgongno were designated as a single commercial area, residences in the middle of the blocks were not maintained properly. The poor quality of living led to a drop in the area's resident population.

Besides, retail shops are not located within the big block and Yulgongno. Actual commercial use follows the terrain & the road.

<Figure 2-19>
Actual building use
(ref. "서울시 1:1000 수치지형도," 2012)



Actual building use



<Figure 2-20>
Planning land use + Actual use
of residence and retail shop

Planning and Actual



2-9 Open Space

There are many open spaces in the area which are not connected. They have no rhythms and hierarchy, and it is difficult to find their characters and directions. Even the open spaces amidst public buildings have no patterns.

Most open spaces are small and used mainly as parking spaces, but it is in the larger open spaces, such as schools and parks, that people can actually connect with each other within the city. Although they are surrounded by the fences for security and are only accessible after school hours, schools offer great potential to be changed into the central space of a village.

<Figure 2-21>
Open space and public facilities



Open space and public facilities

<Figure 2-22>
Accessibility

- Public facility
- School

- Public
- Semi-public
- Education



Accessibility

III . Issues

- 3-1 Inconsistency between the School District and Neighborhood
- 3-2 Confliction of Structures, Programs and Hierarchies
- 3-3 Unreadable Urban Landscape System

3-1 Inconsistencies between the School District and Neighborhood

1. **Oversized school district due to the CBD decline phenomenon**
2. **One school district includes more than one neighbourhood**
3. **Necessary strategy to make the school the center of the school district**

By analysing the old map of Seoul and the streams, I was able to find the original neighborhood of Kyodong.

However, this area is different from the school district as it exists today. Due to the CBD decline phenomenon, several neighborhoods share this one school district.

Due to the decreasing student population, the school district has been stretched to include several different neighborhoods, rather than following divides along actual community boundaries. Due to its central position in this oversized district, the necessary revitalization of Kyodong Elementary School demands particular strategies.

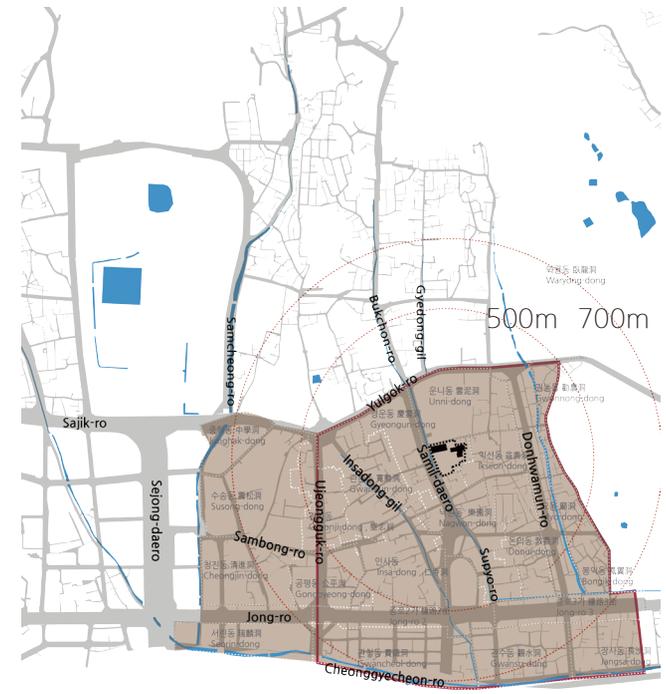
- Boundary of Kyodong
- 1891 stream way
- Planned district
- Actual district

Boundary of Kyo-dong



<Figure 3-01>
Boundary of Kyo-dong

School district



<Figure 3-02>
School district

Issues

3-2 Conflict of Structure, Program and Hierarchy

1) Disabled and Non-Disabled Students

General residents, parents of students, disabled students and non-disabled students do not currently share the general school space. In this picture we find Kyeongun School isolating itself voluntarily.

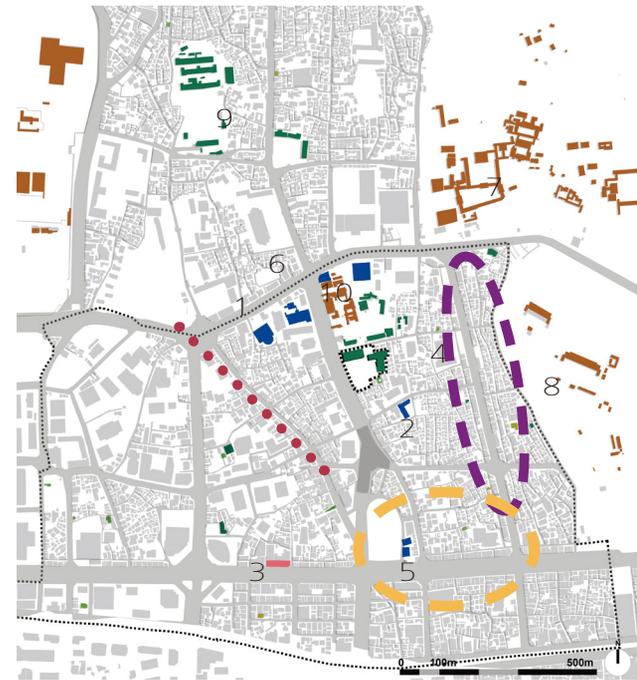
<Figure 3-03>
Conflict between disabled
and non-disabled students-
Kyeongun school lobby



2) Daily Life & Events

The school district includes major tourist spots, heritages, and many specialized workshops.

These contribute to the important identity of Seoul, but at the same time, disturb the daily life of residents.



<Figure 3-04>
Specialized tour spot & shop

3) Hierarchy : Seoul and the Village

Jongmyo and Unhyeongung have a different hierarchy than most urban traditional houses. One represents a city or a country and the other represents a village or a family.

Of course, the classes and management conditions are different from each other. Even construction of the general dwellings has been limited to preserve the heritage of certain sites, such as Unhyeongung.

Although the older residents take great pride in their town and heritage, limited development is preventing young families from moving into this area.



Unhyeongung

VS



Old dwelling

<Figure 3-05>
Different hierarchy

4) Urban Tissue : The High-Rise Building and the Hanok

When it comes to the urban structure of the site, various sizes, types, shapes and ages are mixed together without consideration for the other elements.

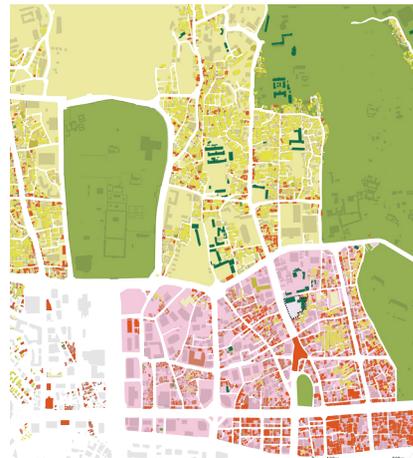


<Figure 3-06>
Chaotic urban structure

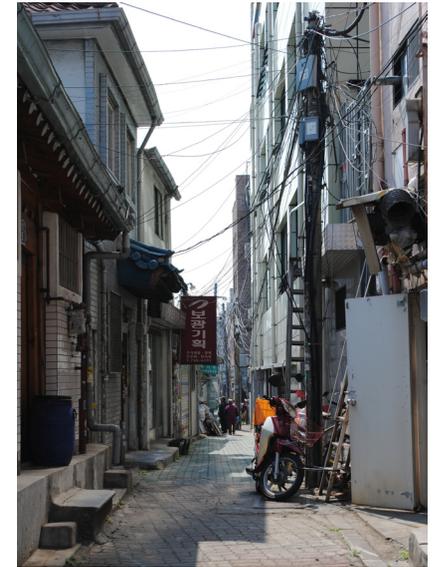
6) Land Use: Residential and Commercial

The current condition of the site creates a low quality of living. This assessment refers not only to building conditions but also to the town's atmosphere. Most Hanoks have changed from residences into retail shops like bars and restaurants. For a number of reasons, hanoks are not well suited for families with children. The reasons are as follows.

- the high price of lots
- the shortage of dwellings that can accommodate young families
- the district plan's preference for commercial development
- insufficient facilities for housing



Planning Land Use + Actual Use
of Residence and Retail Shop



<Figure 3-07>
Change the dwellings of type
and use

3-3 Unreadable Urban Landscape System

Mega-structures disregard urban landscape elements

Kyodong elementary school is on the edge of rolling hills and alluvial fans. This area has dynamic landscapes made up of hills, valleys and flat lands in only a short distance.

However, these elements are not readable on site of the school. Mega-structures have been located in the wrong locations. There is no clear point to the village and the city's future.



<Figure 3-08>
Unreadable urban landscape
system

IV . Urban Landscape System as Strategy

4-1 Concept

4-2 Strategy of Kyodong

4-3 Detailed Strategy

4-1 concept

校洞

Kyodong = School Village

School connecting a village with a city
School becoming the center of a village
School revealing urban landscape elements

To resolve the aforementioned issues, I suggest that the village be renamed 'Kyodong', which means village with a school.

4-2 Strategy of Kyodong

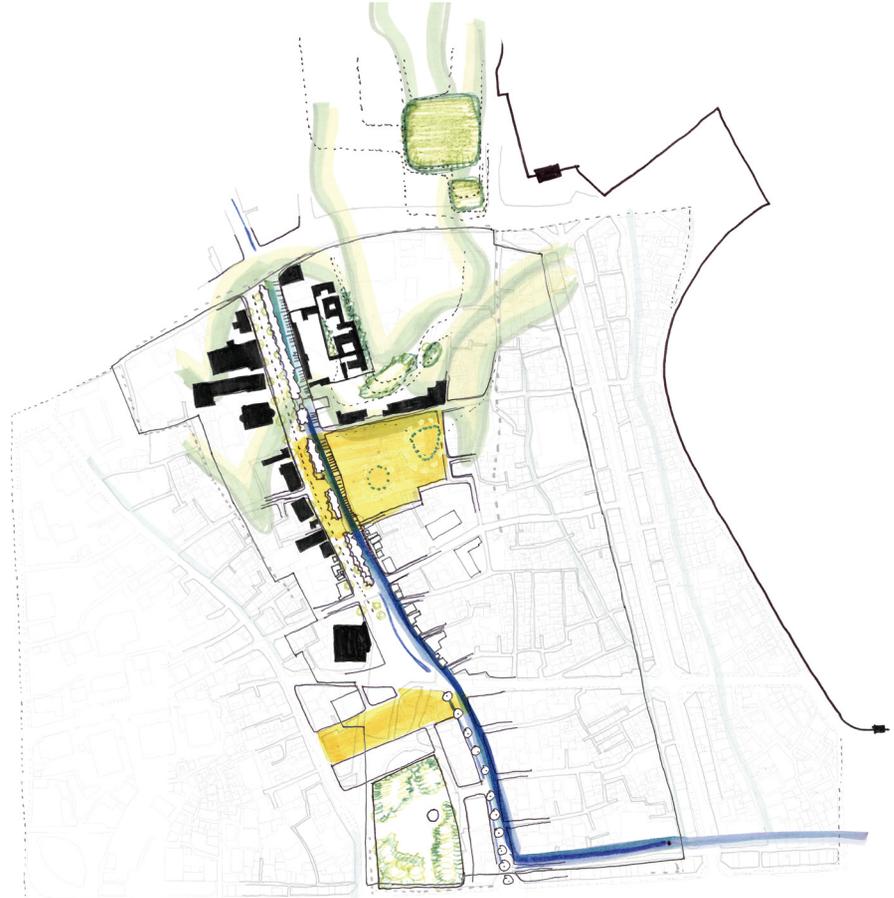
To overcome inconsistency and conflict, the new Kyodong school would make use of the surrounding landscape elements. Although they are currently unreadable, these elements hold great potential for the site.

Therefore, I suggest the following;

- 1) Recovery of the stream and designing patch forests
- 2) Defining the hierarchy of the village
- 3) Restructuring landscape elements to be the backbone of the village
- 4) Adding green spaces to be buffer zones that achieve program flexibility

This strategy would be executed through the following key phases.

<Figure 4-01>
strategy



Urban Landscape System as Strategy

Step 1. Change Structure of Road

If the road, Samil-daero, can be changed, it will become a neighborhood street.

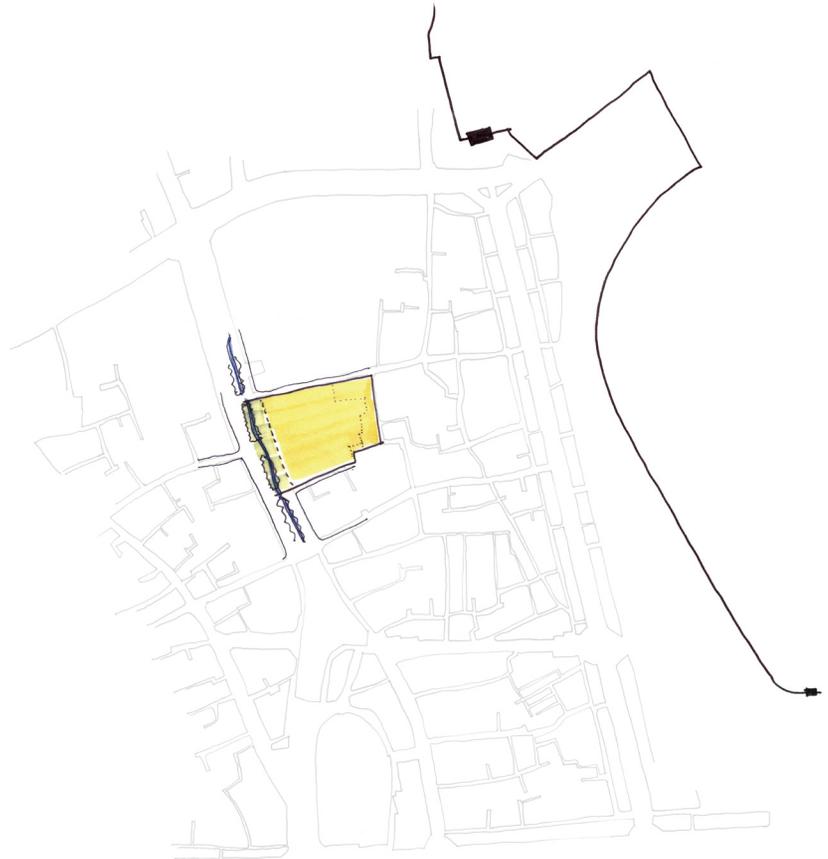
- Enhancing mobility
- Adding ecosystem
- Binding the school district

Step 2. Extension of School Area

The street will become a new school zone.

- Easy connection
- Wide selection of path
- Increasing the site's depth and threshold

<Figure 4-02>
Change structure of road



Step 3. Recovering the Old Stream

Students & villagers can easily read the water structure and ecosystem of the village.

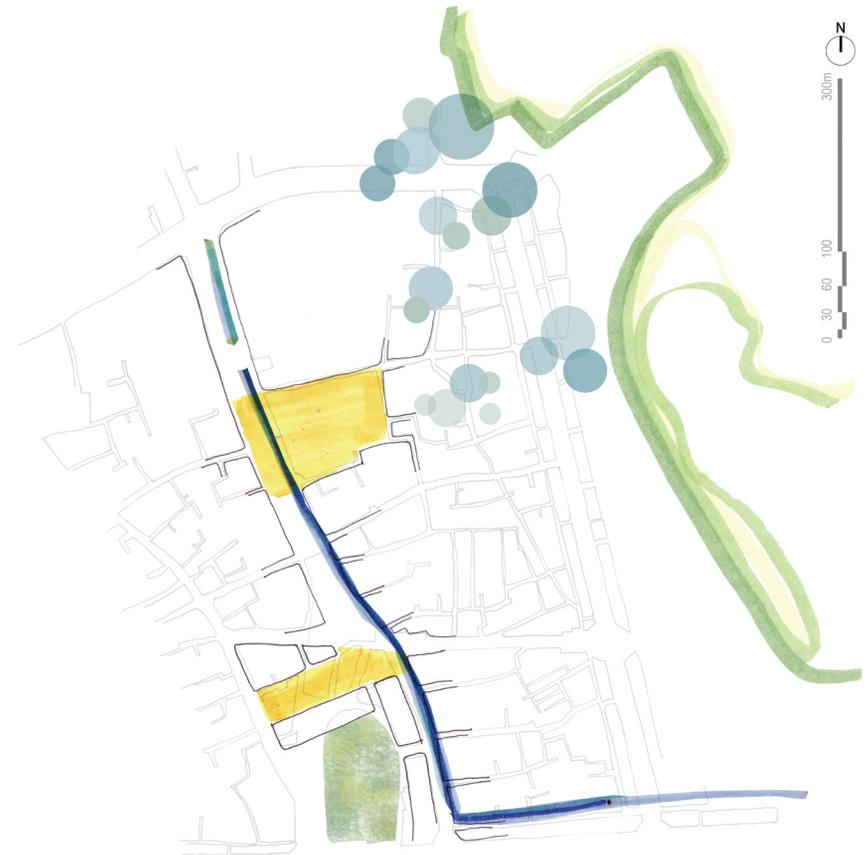
- Initial suggestions of blue & green infrastructure

Step 4. Connection between Open Spaces

The new school zone connects the open spaces of the school and its surrounding area.

- Defining the unique character of each open space

<Figure 4-03>
Recover old stream



Step 5. Integration with Urban Texture

The new school zone creates specific spaces for Kyodong.

- figure out urban fabric
- reflect past
- prepare future demand



<Figure 4-04>
Intergrated with urban texture

Step 6. Extension of Residence and Forest

The new school will be the important base of the urban landscape system. The students in the village will learn how to coexist and harmonize.

- multi-purpose land use
- promote dwellings
- retain sustainability



<Figure 4-05>
Extension of residence and
forest

Urban Landscape System as Strategy

4-3 Detailed Strategy

The forementioned strategies require detailed development of each urban landscape system element. The detailed strategy will be used for checking how much each element reinforces the patterns and how they connect to one other.

To achieve this, the problems and proposals must be clarified and the objectives and the actions must be concretely proposed. This thesis focuses on roads, green infrastructure, open space, and views.



<Figure 4-06>
Strategy element diagram

Urban Landscape System as Strategy

1) Road

Objective

Promote mobility with Ecosystem

Action

Define road hierarchy

Encourage pedestrians

Recover the stream



Issue

Wrong design & defined hierarchy of a road - level 1

- for cars, not for pedestrians
- drivers avoiding parked vehicles

Proposal

Road prescription

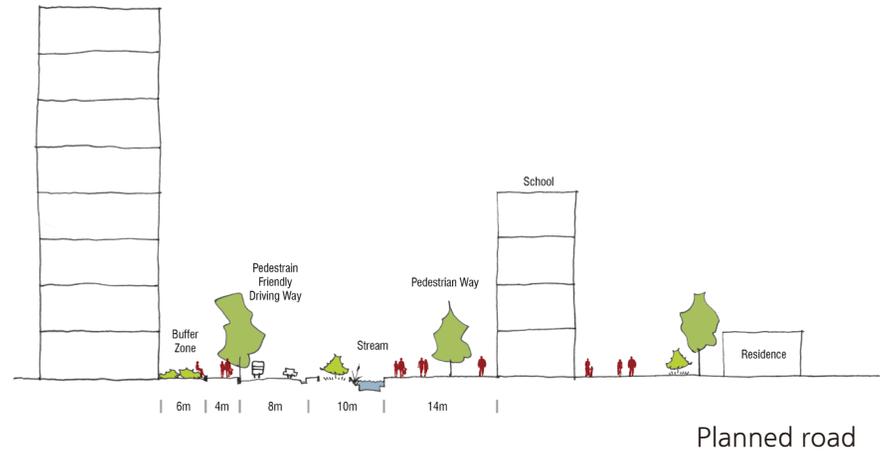
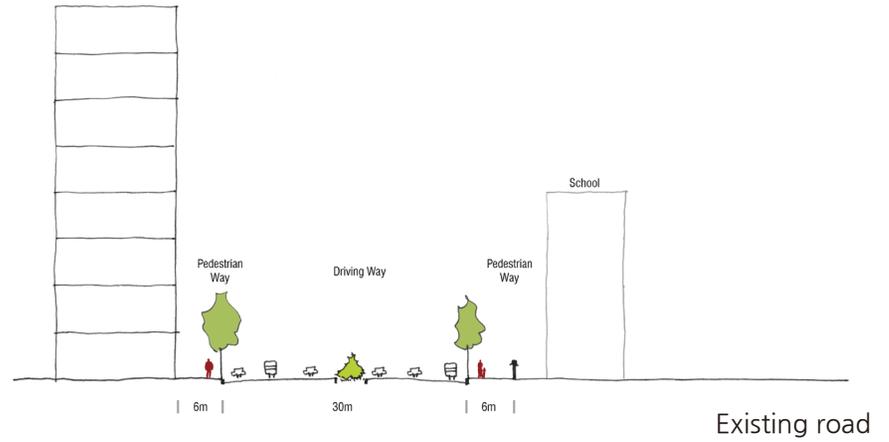
- lower the level of road : level 1 → level 3 or 4
- barrier free for bikes and wheelchairs
- add loading zone and parklets

Ecosystem

- increased open spaces
- rainwater garden:
 - support growth of aquatic plants
 - passage for groundwater

<Figure 4-07>
Existing road hierarchy

<Figure 4-08>
Restructure roadsystem



School Development

2) Connection

Objective

Easy connection

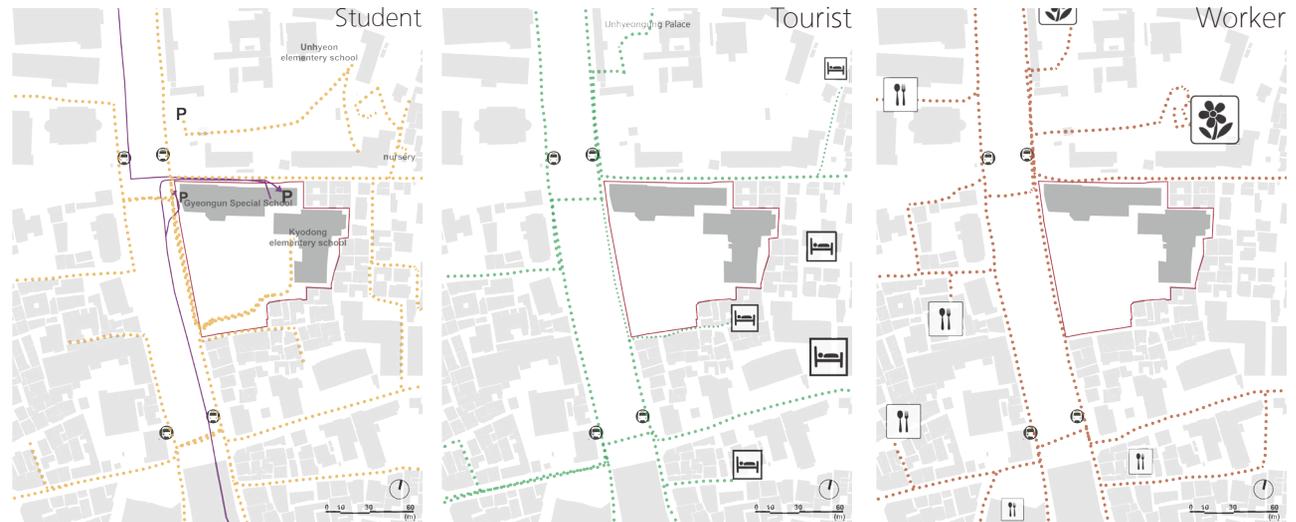
Action

a wide selection of routes to accommodate various users and their purposes.

Issue

- Inconveniently long walk to enter the schoolyard
- gate physically separates disabled and nondisabled students
 - school surrounded by a fence and a wall
- One-dimensional path
- ignores the variety of users
 - space used only for passages

- Non disable student
- Disable student
- Tourist
- Worker



<Figure 4-09>
Existing connection

Proposal

Open school

Enhance pedestrian network

- sharing the school gate
- Consideration of future changes to the surrounding urban fabric

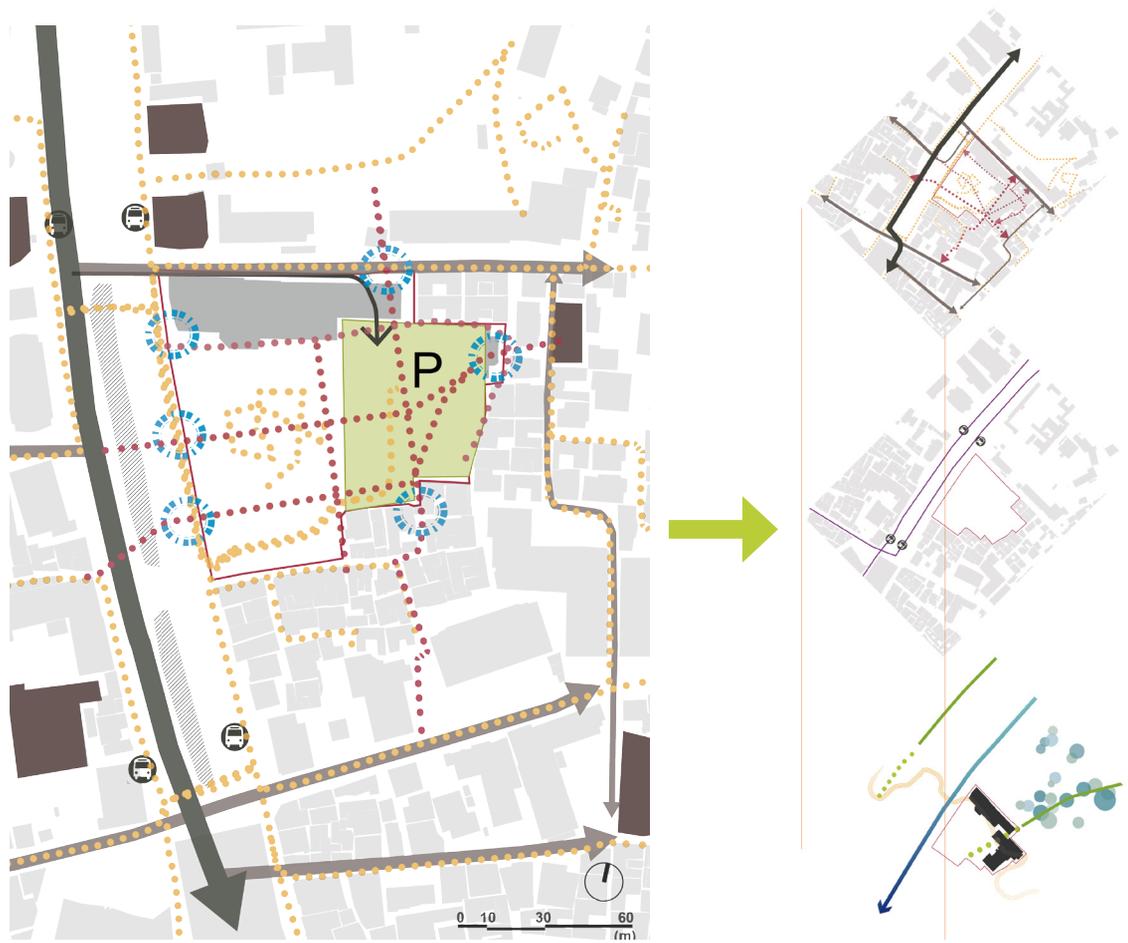
Facility for nearby residents

- add public parking lot in underground
- short path to open space
- street furniture

-  New pedestrian path
-  Pedestrian
-  Car
-  Access to school
-  Existing parking
-  Temporarily parking
-  Bus stop

<Figure 4-10>

Proposal connection



School Development

3) Constructed edge

Objective

Making the depth and threshold of the site reflect its urban context.

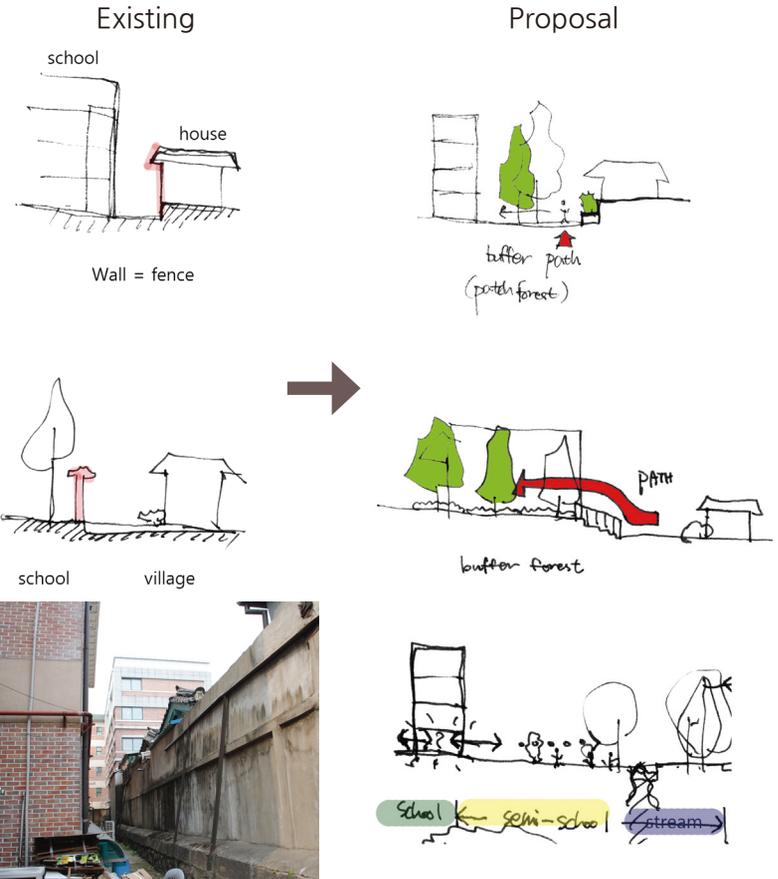
Action

Suggest new paths

Choose where it's proper to have a hard edge

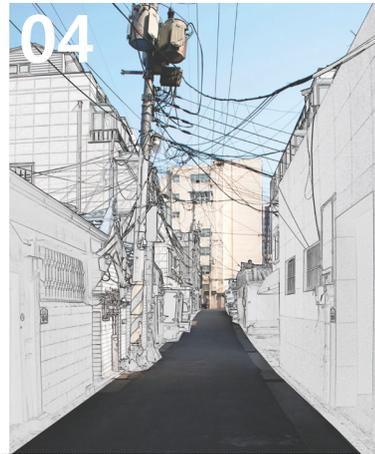
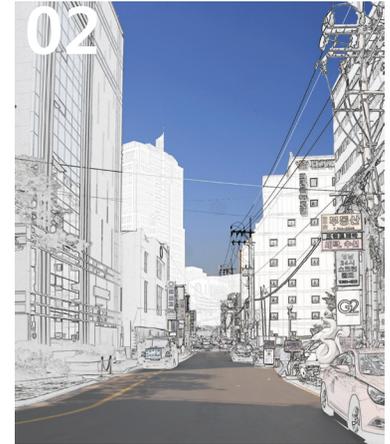
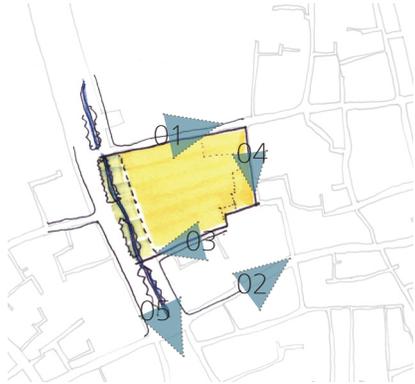
Using contour gaps to divide different areas

Creating buffers for flexibility



<Figure 4-11>
Constructed edge

<Figure 4-12>
Existing edges



Urban Landscape System as Strategy

4) Blue-Green infrastructure

Objective

Initial suggestions of using the rolling hills as a bridging point between the village and the city

Action

Finding potential blue-green infrastructure

Preparing for climate change

Recovery of the old stream

Connecting forest patches

Green space as a buffer zone

Issue

Disappearance of water connection

- covered old stream
- potential wells hidden

Proposal

surface contact

- healing and education
- using touch & sound
- wells for village
- attraction of wild animals

treatment

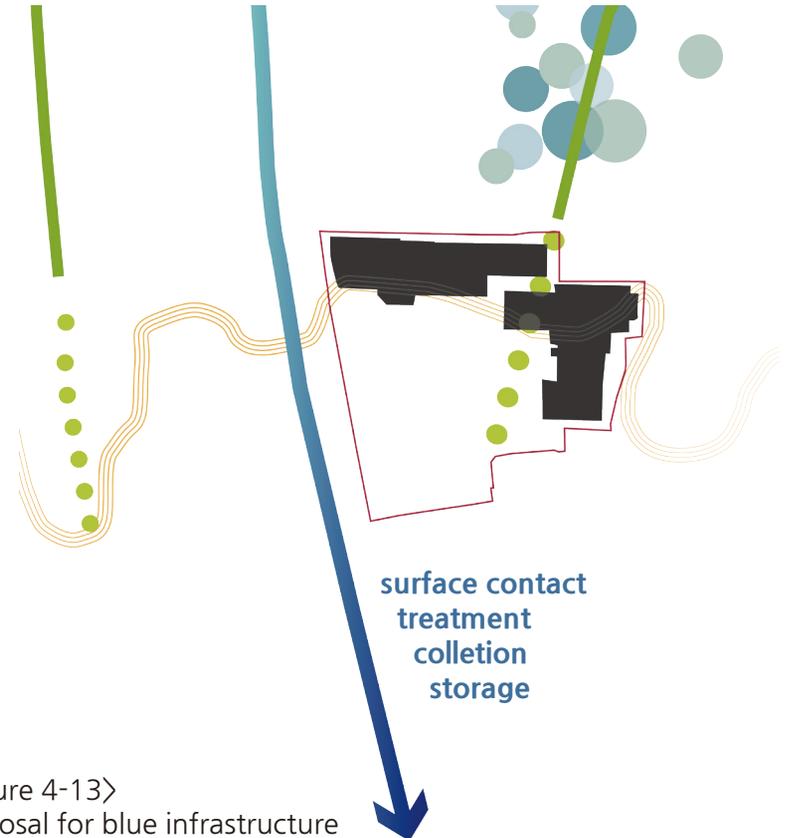
- aquatic plants & pond
- rainwater garden

collection

- rainwater
- surface water
- underground water

storage

- storm-water tank



<Figure 4-13>
Proposal for blue infrastructure

Issue

Shortage of green space

Proposal

Patch forest

- connect potential green spaces
- a patch of land for a small garden in the residential area

Buffer zone

- enhance mixed land use
- preservation for site's future

- Existing green
- Open
- Connect green space



Existing green



Proposal

<Figure 4-14>
Proposal for green
infrastructure

Urban Landscape System as Strategy

5) View & open space

Objective

Defining the character of each space

Action

Rhythmical open space

Increased views to improve the depth of space

Issue

Disconnected open space

- closed semi-public open space
- hierarchy not well-adjusted

Proposal

View corridor

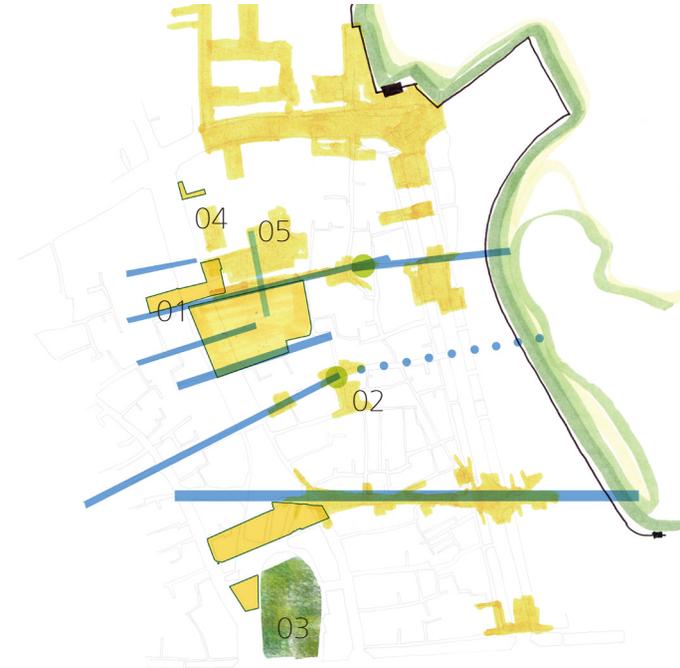
- provides visual clues to upcoming open spaces
- enhanced new pathway

New open space

- demolish Nagwon Arcade
- connect to Tapgol Park

Defining hierarchy

- clarify character of open space
- adjust the size and form



<Figure 4-15>
Proposal for open space & view

■ Open
— View corridor



01 Cheondogyo plaza



02 Parkinglot near Jongno Tax Office



03 Tappgol Park



04 Unhyeongugn



05 Duksung Women's Univ.

<Figure 4-16>
Surrounding open spaces

Urban Landscape System as Strategy

6) Program

Objective

Multi-purposed land use

Issue

Tendency: population reduction

- need to promote residence
- change education system

Action

Improve function

Proposal

Mixable structure with green buffers

Diversify choice

Flexibility for changing use

Life

- Social housing
- Weekend market
- Kindergarten
- ATM
- Vegetation garden

Sports Facility

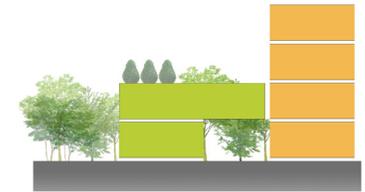
- Swimming pool
- Gym
- Jogging course

Education

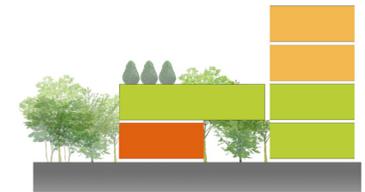
- Library

<Figure 4-17>
Changeable school program

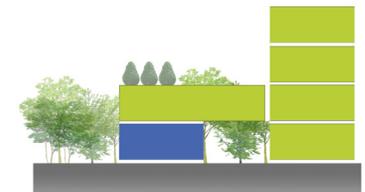
- House (social)
- School
- Public facility
- Shop



Alternative 01



Alternative 02

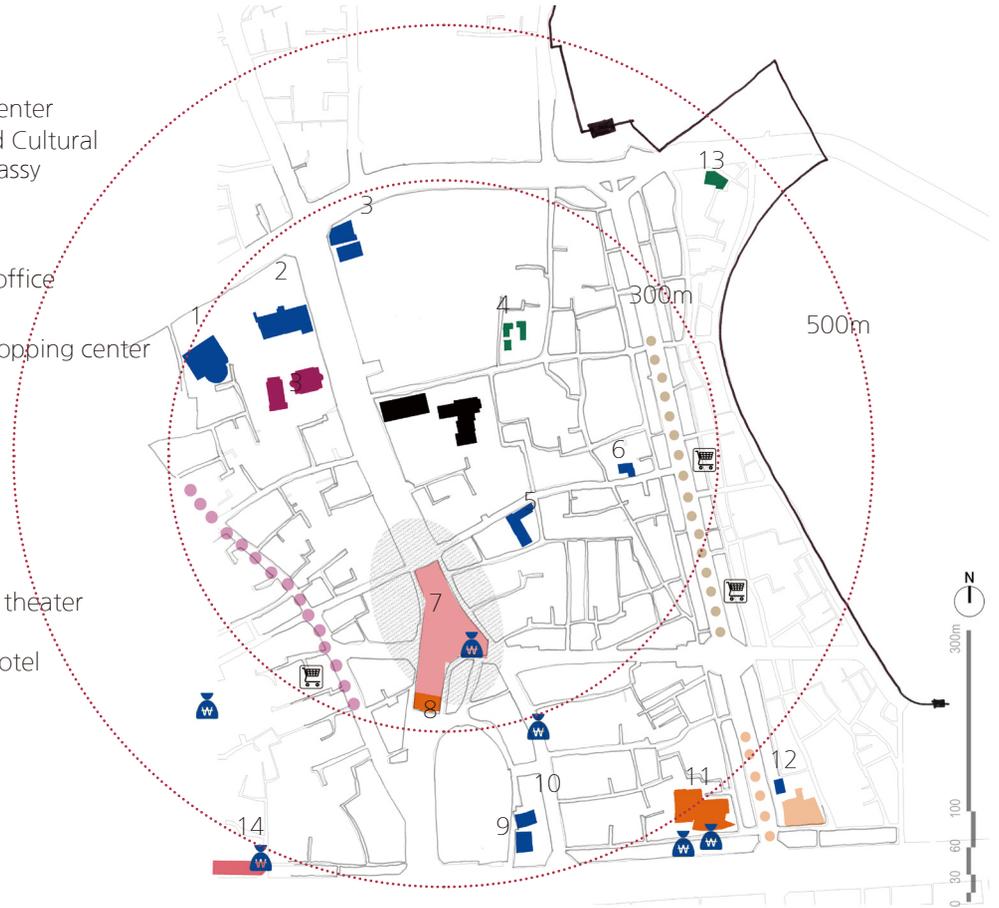


Alternative 03

<Figure 4-18>
Existing sites around program

- Jewelry shop
- Traditional musical instruments
- Gallery street
-  Grocery store
-  Bank
-  Rice-cake shop
-  Shop
-  Public facility
-  Education
-  Religion
-  Cinema

- 01 Police station
- 02 Seoul senior welfare center
- 03 Public Information and Cultural Center, Japanese Embassy
- 04 Daycare center
- 05 Jongno Tax Office
- 06 Jongno 1,2,3,4 dong office (under construction)
- 07 Musical instrument shopping center
- 08 Cinema for senior
- 09 Police box
- 10 Post office
- 11 Cinema
- 12 Fire station
- 13 Korean classical music theater (under construction)
- 14 Seoul YMCA Tourist Hotel



V . School Development

- 5-1 Design Synopsis
- 5-2 Alternative Design Test Studies
- 5-3 Conclusion of Test Studies
- 5-4 Developing Schemes

School Development

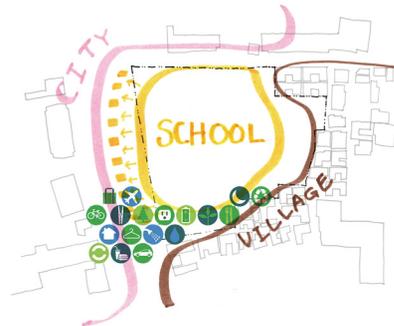
5-1 Design synopsis

The school as the village center

- Harmonising the city and the village
- The center of the blue and green infrastructure system
- Sustainable backbone of the village
- Easy access to people with various purposes and using patterns



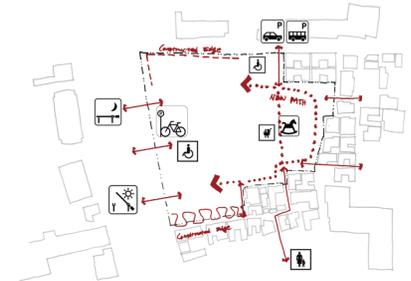
Bridging school= city + village



Bridging school= water + green



Bridging school= connect diversity



<Figure 5-01>
Design synopsis

5-2 Alternative Design Test Studies

Collage

; Finding the inheritance urban pattern in the unrefined structure for New urban pattern¹⁾

The aim of this test is to ascertain various possibilities for a design synopsis which bridges separated landscape elements. To find the possibility of each case, I collaged a variety of city patterns; the existing city, medieval city and modernist city.

In each test, I either emphasized the street, the scale of space or the axis, and observed what are the strong or weak points. After testing, I selected several cases.

¹⁾ Rowe and Koetter, *Collage city* (Cambridge, Mass.: MIT Press, 1978).

School Development

1) Unhyeongung collage

Void

- making a buffer zone between new school area and existing town
- private exterior space

Zoning

- wide green area
- mixed function

Access

- establish direct connection with the existing building
- main gate : centered off of main road

Reuse existing building

Roof area : 3828.25 m²

Gross floor area : 11749.43 m²

Roof area ratio : 42.48%

Floor area ratio : 130.03%



<Figure 5-02>
Alternative 1 test

2) Objective tissues collage

Void

- major space runs longer north to south - of particular merit in the winter

Zoning

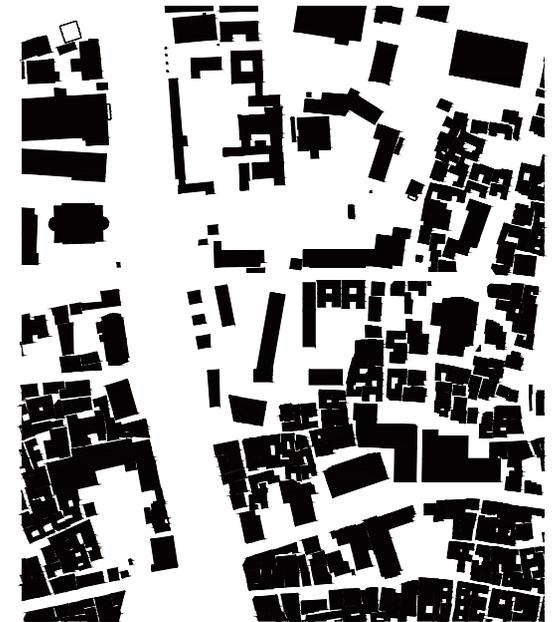
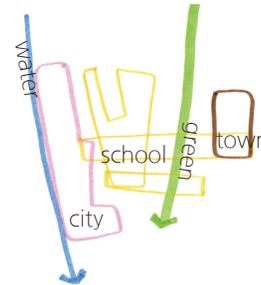
- strong axis of green
- separation of zones
- low density

Access

- a wide selection of routes
- no main gate: variously scaled spaces to meet the main road

totally new building

Roof area : 2009.04 m²
Gross floor area : 7604.19 m²
Roof area ratio : 22.23%
Floor area ratio : 84.15%



<Figure 5-03>
Alternative 2 test

School Development

3) Extend of Hanok(dwelling)

Void

- various scales of open spaces

Zoning

- dot-like formation of green area
- mixed function

Access

- easy access
- main gate : north side of the main road

Reuse existing building

Roof area : 3000.59 m²
Gross floor area : 9252.1 m²
Roof area ratio : 33.21%
Floor area ratio : 102.39 %



<Figure 5-04>
Alternative 3 test

5-3 Conclusion of Test Studies

As a result of these tests, the test case collage of Unhyeongung demonstrated the most potential for the new school of Kyodong. The possibility created by the courtyard is the most advantageous. It is inclosed and open at the same time. In other words, it permits a wide variety of approaches to the school and makes control and management easy. It works as a buffer zone between different programs, as well. The integration of programs increases the space's density and makes efficient full use of the site.

Secondly, this test case reflects the most accurate historical progression. Kyodong was built on the same site where the school was first founded. After the destruction of that school building, Kyeongun School was reconstructed in the same location. Therefore, in adherence to its historical context, maintaining the site for a building clearly makes sense. Adapting a traditional space-making technique also has historical meaning, as arranging the buildings to face the courtyard is a traditional way of interiorizing the exterior space used for large buildings, such as Unhyeongung, Hyanggyo.

However, it has disadvantages as well. The existing buildings are not harmonised due to the uninitiated of the courtyard. Moreover there is weak connection with the open space in Duksung Women's University.

The clues to solving these problems can be found in another test cases. For example, in Test Case 2, a strong axis can be established to enhance the connection to the open space of Duksung Women's University and Unhyeongung. In Test Case 3, to avoid monotonous space and make the space more rhythmical, small scaled open spaces can be overlapped.

To compensate for this, I will suggest the reusing Kyodong elementary school.

School Development

5-4 Developing Schemes

1) The urban landscape literacy for reusing the school's open space

- Adjust the gap in hierarchy between the city and the town, between residences and the central business district
- The school's open space will become the major open area of the village
- Green infrastructure will redefine the identity of the village



<Figure 5-05>
Tracing the urban landscape
system

2) Block structure

- Figure out the vectors & patterns of the city blocks
- Determine the access to the zones of the city, town and school area
- Leave the existing building as it conforms with the block structure



<Figure 5-06>
Follow the block structure

School Development

3) Intergration with open space and the school's function

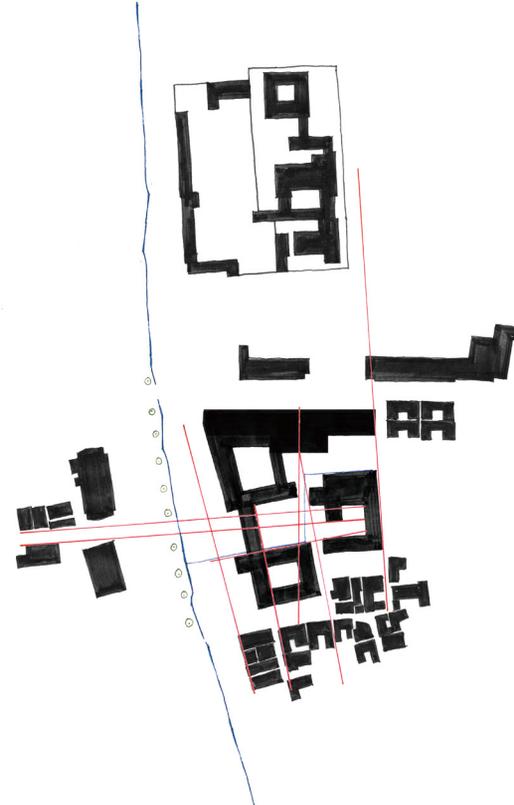
- Maximize the surface area of the school
- Strongly attach open spaces that have different characters



<Figure 5-07>
Integrating the open space &
the school

4) Urban fabric

- respect the existing urban fabric and construct new urban tissue
- reinterpret traditional architectural space



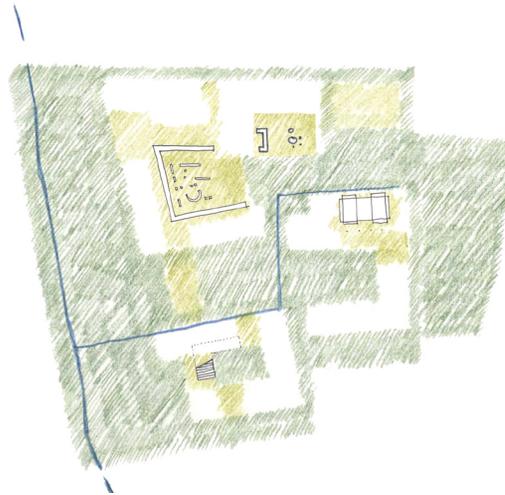
<Figure 5-08>
Redefining urban fabric

School Development

5) Continue interior and exterior

- Scatter the flexible program throughout the site in the order of the urban fabric
- Program acts like a magnetic in the green spaces
- Sharing the school's facilities with town
- The school extends into the town
- Fading the edge between the disabled and nondisabled students between the village and school

<Figure 5-09>
Continue interior and exterior



<Figure 5-10>
Threshold & sequence



6) Thresholds & Sequence

- The garden as an inner world
- The transparent spacial change creates sequential views

7) Program, flow & activity

- Implementation of the program will assist in fading the edge.
- People can choose the flow and the activity.

Program in green (flexible)

- 01 Green house or library
- 02 Gym or auditorium
- 03 Daycare center or shop
- 04 Workshop or cafeteria

Education

- 05 School parent waiting room & counseling office
- 06 Library
- 07 Kindergarten
- 08 After school class

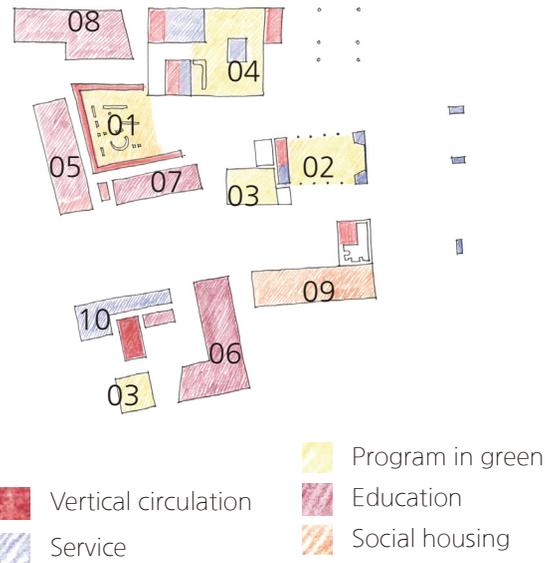
Social housing

- 09 social house type A

Service

- 10 Management Office

<Figure 5-11>
Program for fading the edge



<Figure 5-12>
Choice of flow and activity



VI. Reusing the School : The Design Narrative

6-1 Floor Plan

6-2 Schemes of Open Spaces

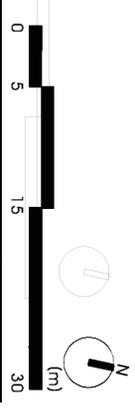
6-3 Greenscape

6-4 Cityscape

6-5 Townscape

6-6 Planting

Reusing Kyodong Elementary School

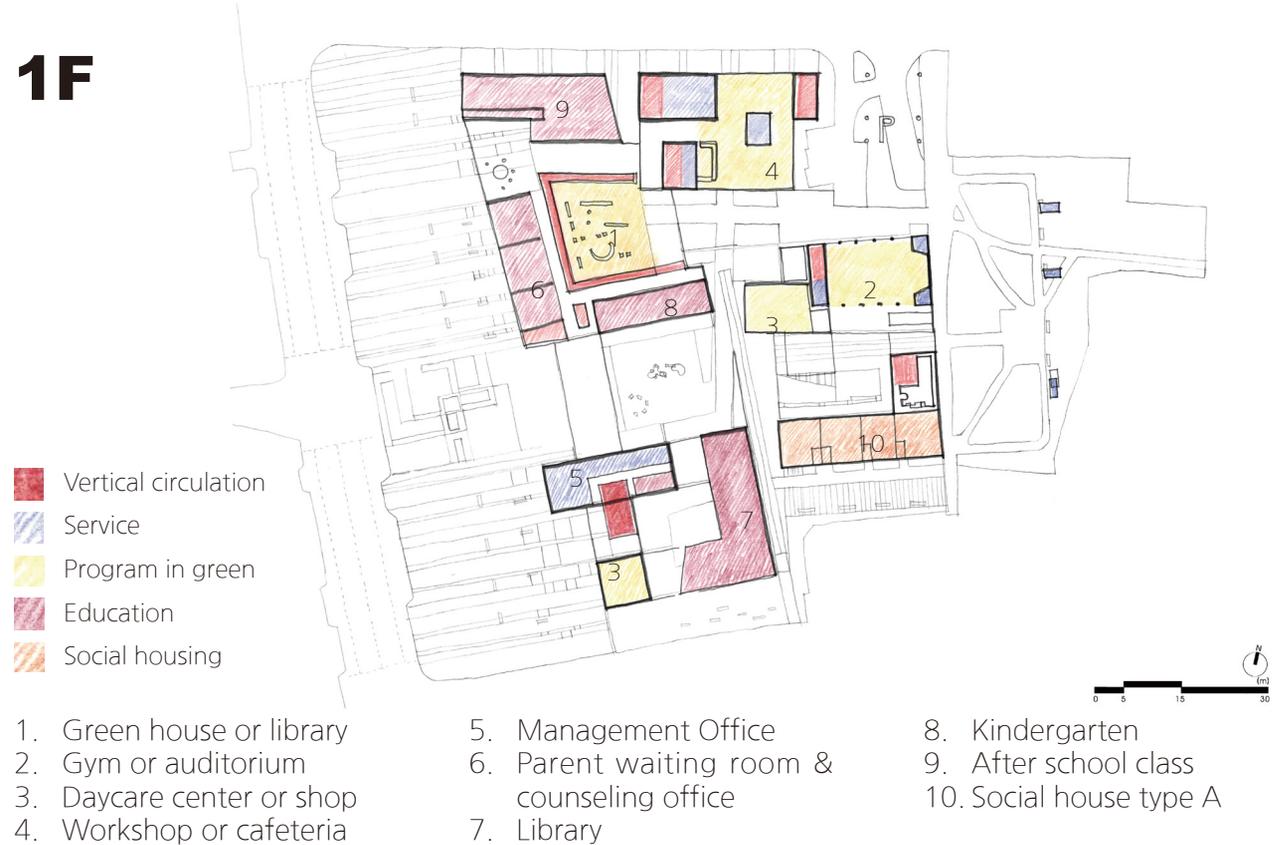


GROUND FLOOR

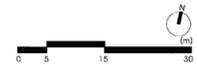
Reusing the School : The Design Narrative

6-1 Floor Plan

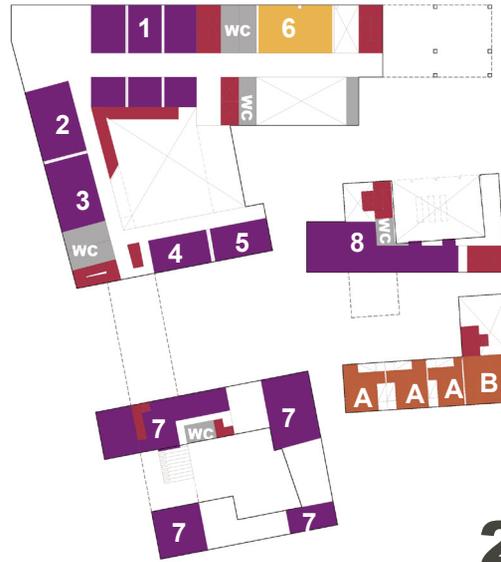
1F



<Figure 6-02>
1st floor plan



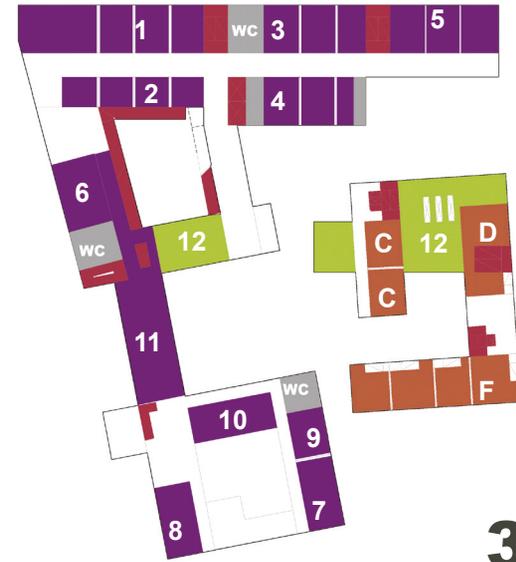
- Vertical circulation
- Service
- Program in green
- Education
- Social housing



2F

- | | |
|-------------------|-----------------|
| 1. Class room | 6. Workshop |
| 2. Teacher's room | 7. Library |
| 3. 3rd year class | 8. Dancing room |
| 4. 5th year class | |
| 5. 4th year class | house type A/B |

<Figure 6-03>
2nd floor plan

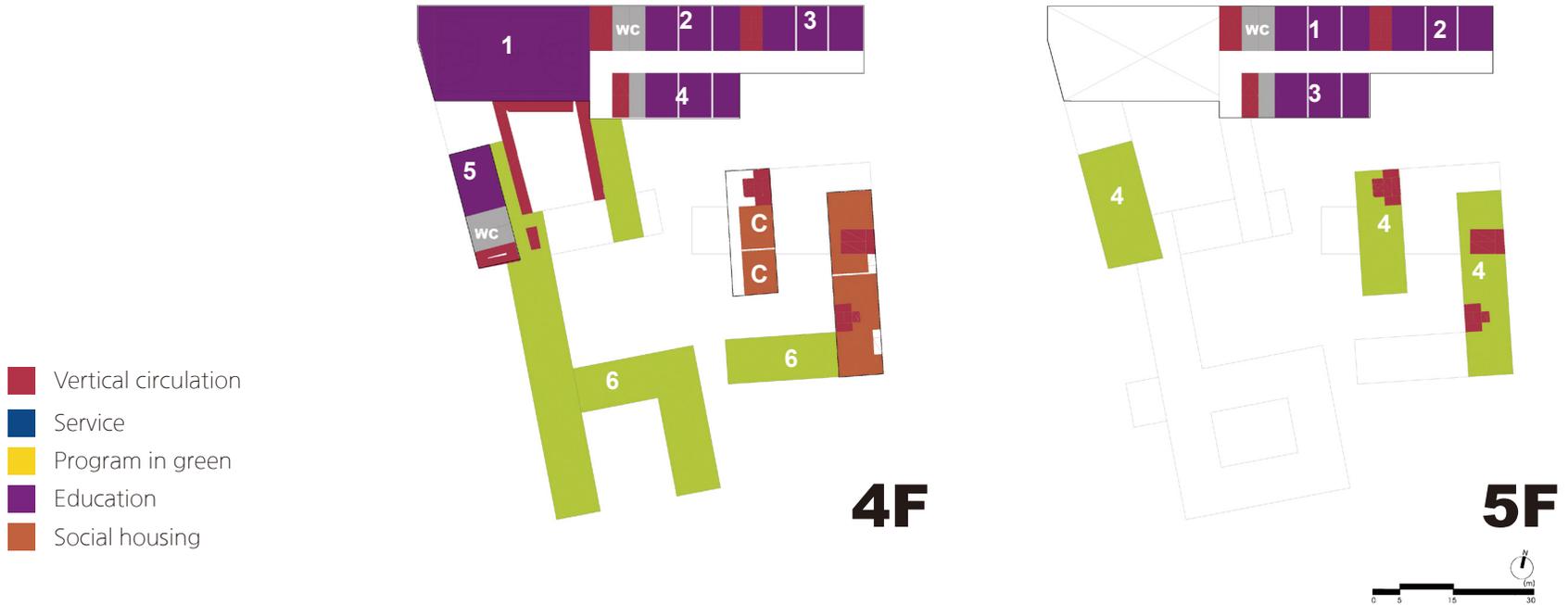


3F

- | | |
|------------------------------|--|
| 1. Math & science class room | 8. 2nd year class |
| 2. Class room | 9. Teacher's room |
| 3. Preparation room | 10. 6th year |
| 4. Teacher's room | 11. Open class room & history gallery |
| 5. Language class room | 12. Roof garden (gravel & wild flower) |
| 6. Art room | |
| 7. 1st year class | House type C/D/F |

<Figure 6-04>
3rd floor plan

Reusing the School : The Design Narrative



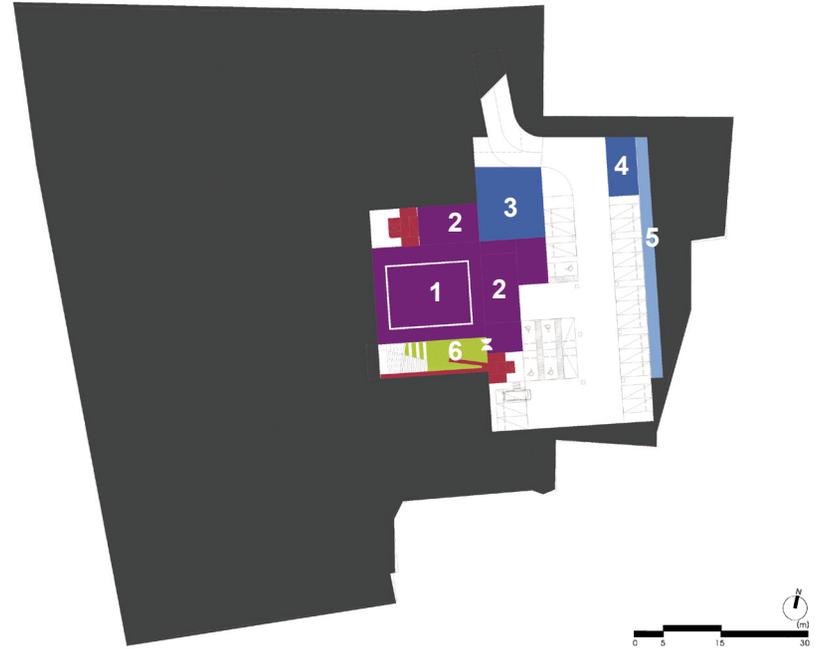
<Figure 6-05>
4th floor plan

- | | |
|---------------------|----------------|
| 1. Gymnasium | 5. Music room |
| 2. Preparation room | 6. Roof garden |
| 3. Classroom | |
| 4. Teacher's room | House type C |

<Figure 6-06>
5th floor plan

- | | |
|---------------------|-------------------|
| 1. Preparation room | 3. Teacher's room |
| 2. Classroom | 4. Roof garden |

B1



- Vertical circulation
- Service
- Program in green
- Education
- Social housing

- 1. Swimming pool
- 2. Locker
- 3. Water tank & machine room
- 4. Machine room
- 5. Dry area
- 6. Sunken area

<Figure 6-07>
Basement floor plan

Reusing the School : The Design Narrative

6-2 Schemes of Open Spaces

Each open space has a different character and hierarchy. The interior continues to flow into the exterior.

The views and spacial volume create various atmospheres and redefine the school's function. The blue-green infrastructure contributes to the unique identity of each zone.

<Figure 6-08>
Different characters of open space



6-3 Greenscape

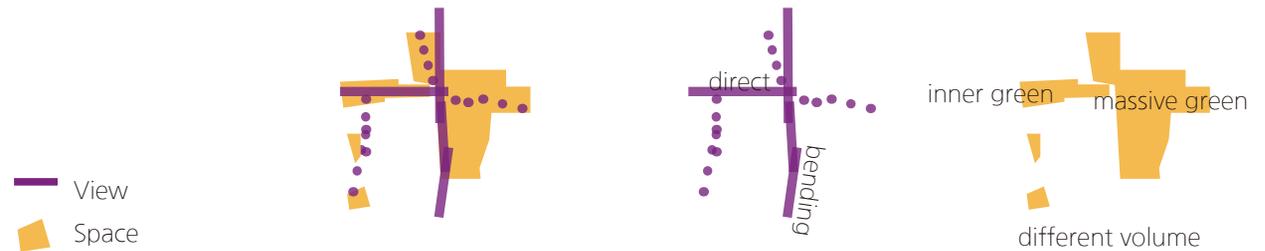
It represents the real nature. Also it is a connecting point with other schools' openspace which locate on rollinghills by patching forest.

1) CHARACTER

- adventure
- prelude
- expectation with hesitation

2) VIEW

- control the velocity



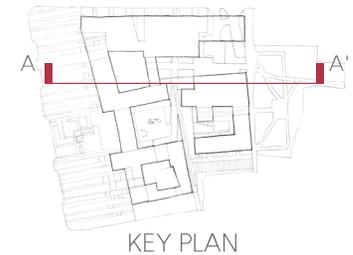
<Figure 6-09>
Open space for greenscape

Reusing the School : The Design Narrative

3) BLUE-GREEN INFRASTRUCTURE

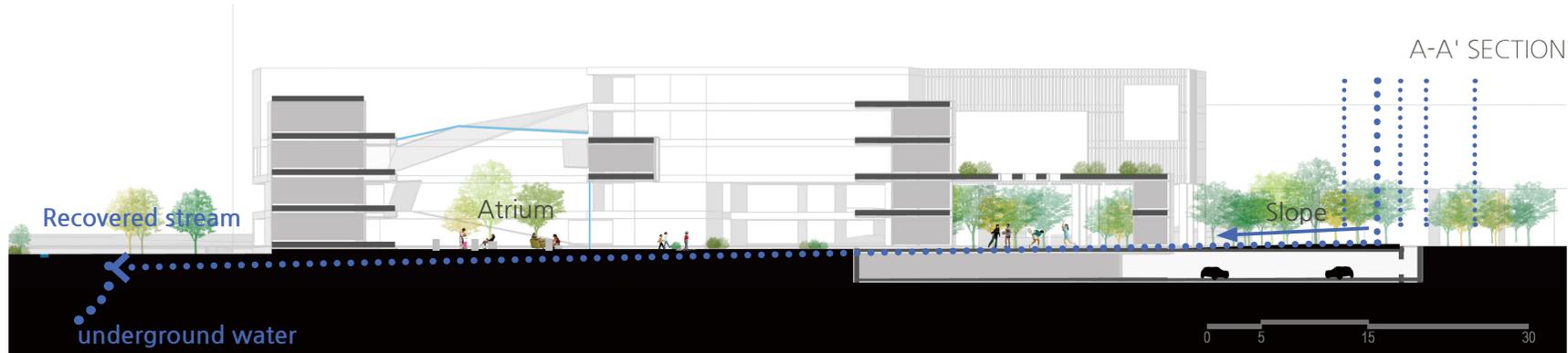
Gradual change from artificially created nature into the village forest lets people's expectations mount as they move toward the forest.

- Village forest
- Artificial nature
- Moisture herb ground
- Village forest
- Collected rainwater from forest



<Figure 6-10>
Greenscape
Blue-green infrastructure

expectation to the forest

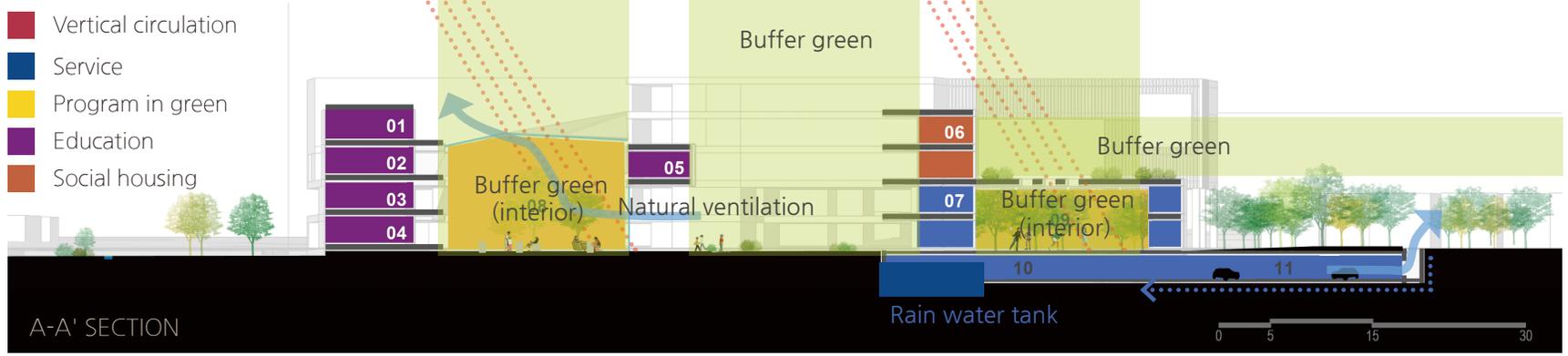


4) PROGRAM

Programs can be flexible plenty of sunshine and natural because Green works as a ventilation. buffer zone between different programs. At the atrium and the gym, we can feel the green, because of

1. music room
2. art room
3. 3rd year class room
4. parents waiting room
5. gallery
6. socail house lobby
7. storage, audio control roomgreen house or library (flexible)
8. gymnasium + assembly (flexible)
9. machine room
10. parking lot

<Figure 6-11>
Greenscape
Program



Reusing the School : The Design Narrative

5) FLOW & ACTIVITY

The interior green is a common place for various users.

Citizens

- lifelong education
- waiting room
- parking

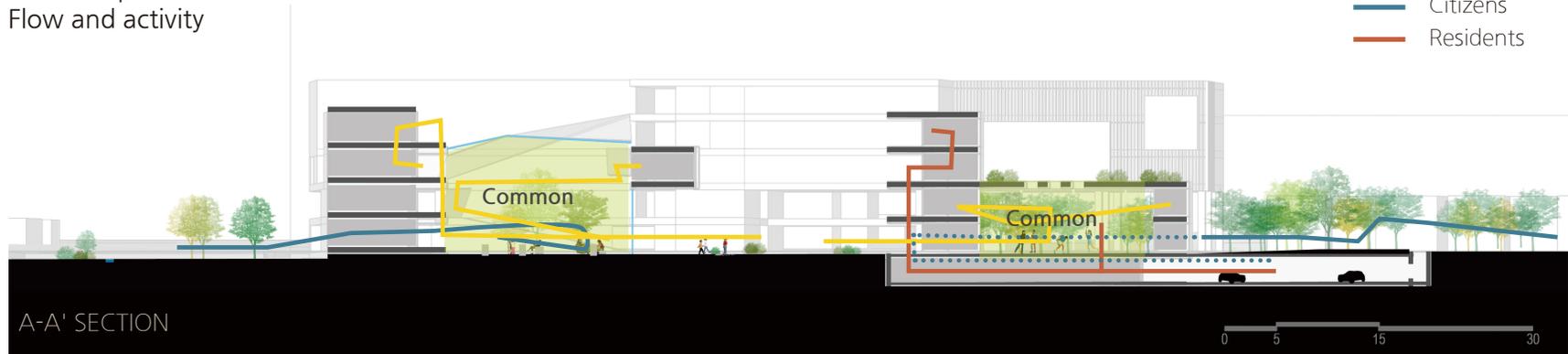
Students

- gallery
- classroom
- after school class
- parking

Residents

- gym
- parking

<Figure 6-12>
Greenscape
Flow and activity



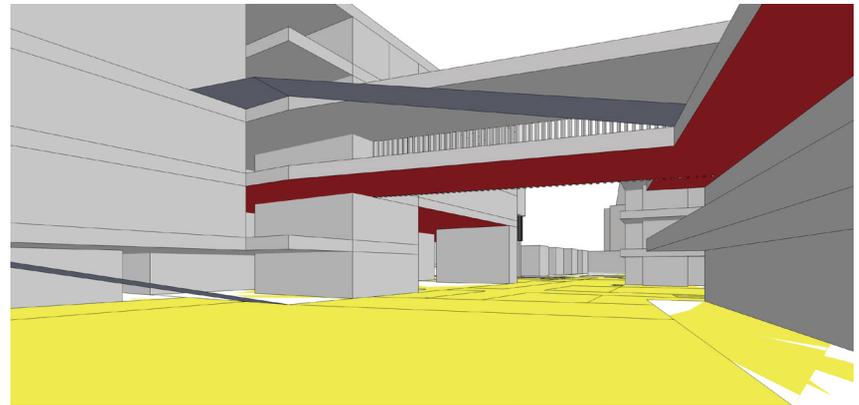
5) SPACIAL VOLUME STUDY



01 Scene



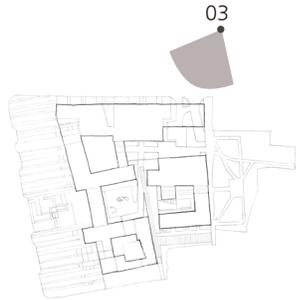
02 Scene



<Figure 6-13>
Greenscape
Spatial volume study 1

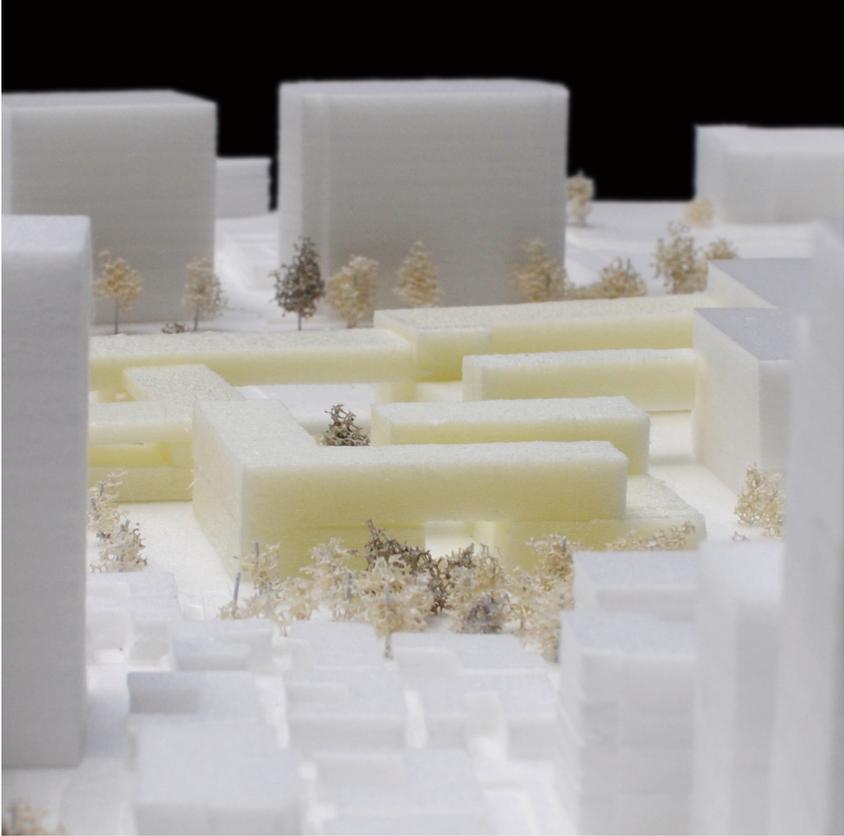
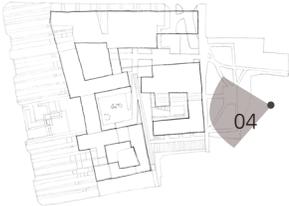
Reusing the School : The Design Narrative

03 Scene



<Figure 6-14>
Greenscape
Spatial volume study 2

04 Scene



<Figure 6-15>
Greenscape
Spatial volume study 3

Reusing the School : The Design Narrative

6-4 Cityscape

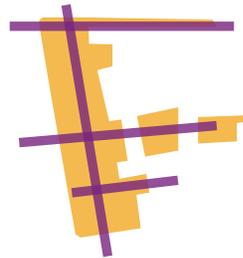
This open space is important in establishing urban scale. It handles various sequences at a time while allowing for easy passage through the space.

1) CHARACTER

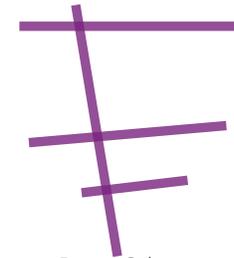
- straight toward
- intersecting
- pause-changing material, slope

2) VIEW

- deep & variety sequence
- penetration



- View
- Space



Deep & long



Major open space

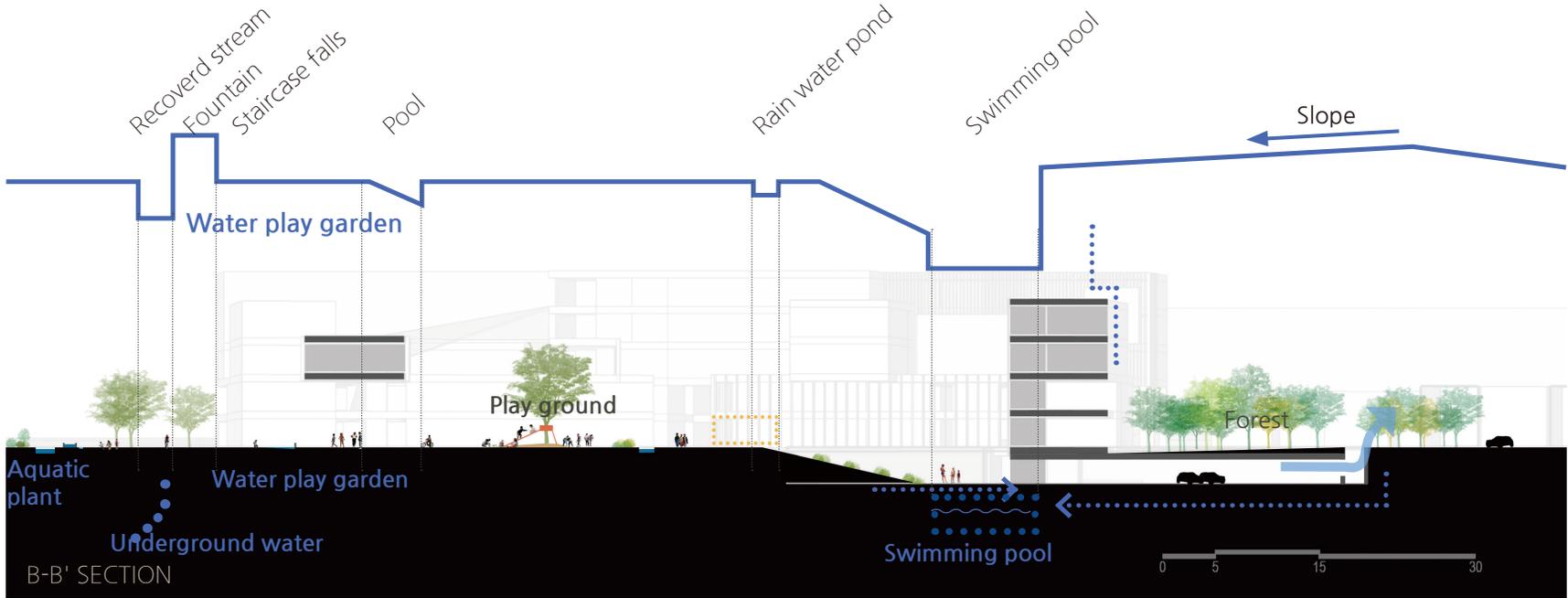
<Figure 6-16>
Open space for cityscape

3) BLUE-GREEN INFRASTRUCTURE

<Figure 6-17>
Cityscape
Blue-green infrastructure

Connects many amenities using water ways, such as a swimming pool and a water play garden. Changing slopes create the various water channels, which allow the different zones to intersect one other.

- water play garden
- swimming pool
- recovered stream
- rain water pond
- water treatment



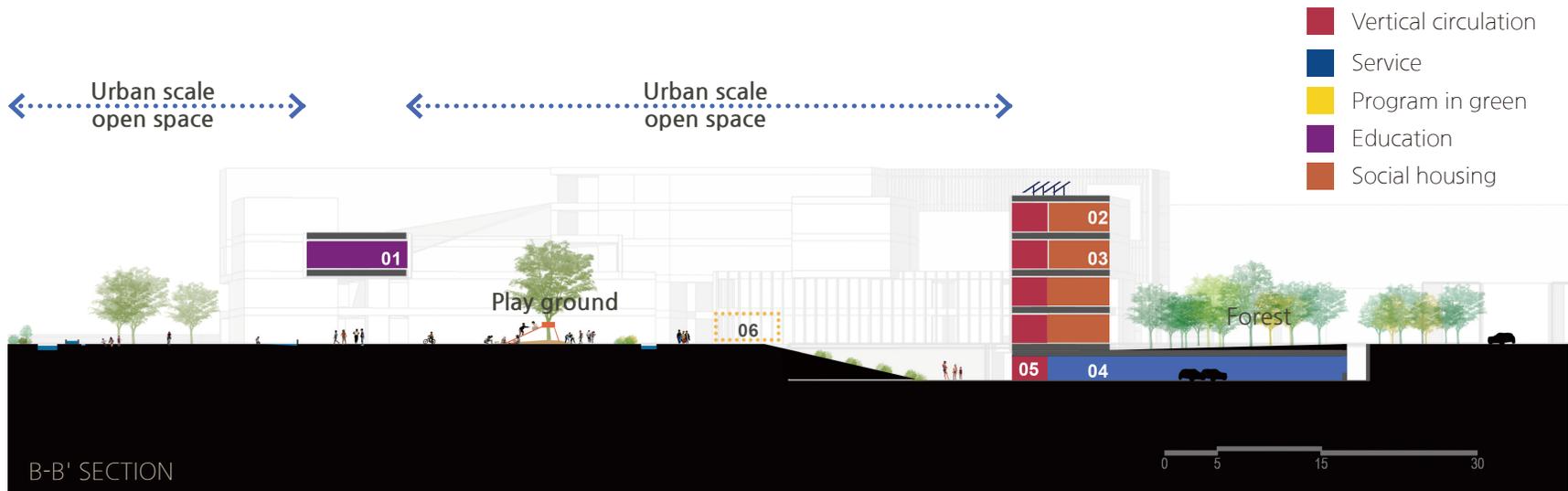
Reusing the School : The Design Narrative

4) PROGRAM

<Figure 6-18>
Cityscape
Program

Open spaces in urban scale require high flexibility. It is achieved by the intersection of different zones. For example, when the school needs more classrooms, the social housing can be changed into the school.

1. Opened class + history gallery
2. Social house type F (flexible)
3. Social house lobby + residential facilities
4. Parking lot
5. Vertical circulation
6. Kindergarten or shop(flexible)



5) FLOW & ACTIVITY

<Figure 6-19>
Cityscape
Flow and activity

The various flows and the activities in this open space can be observed by different users.

Citizens

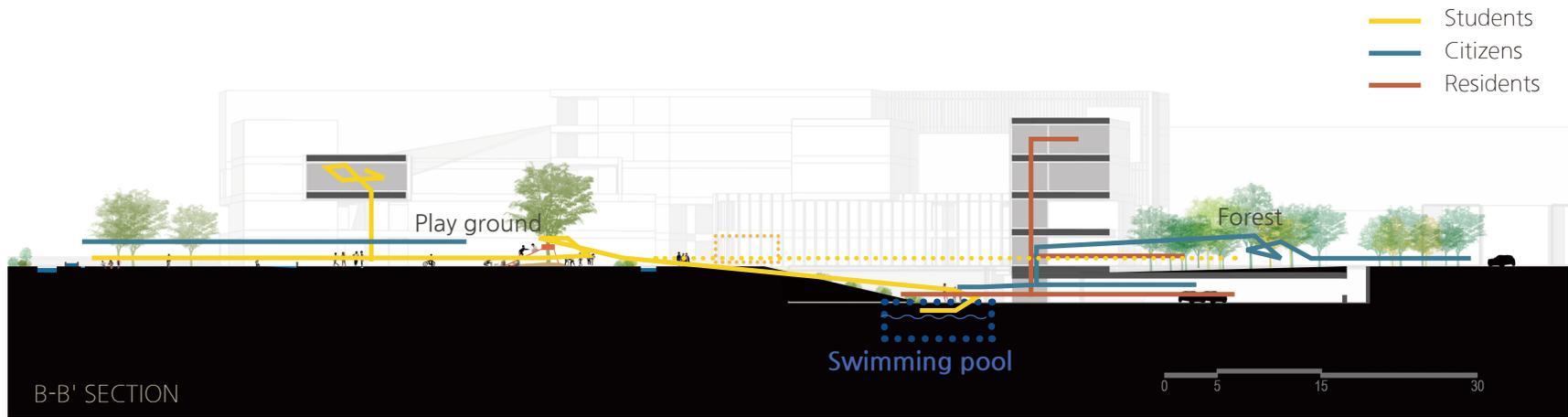
- weekend market
- swimming
- parking

Students

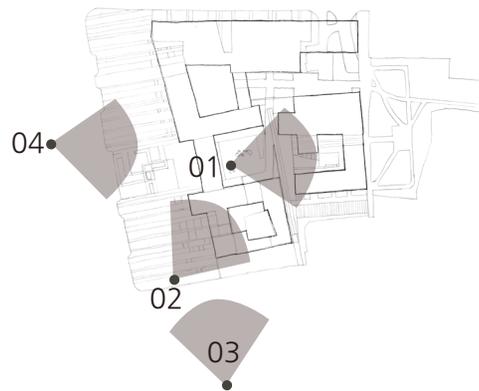
- opened classroom
- swimming
- play ground

Residents

- parking
- swimming
- play ground
- walking



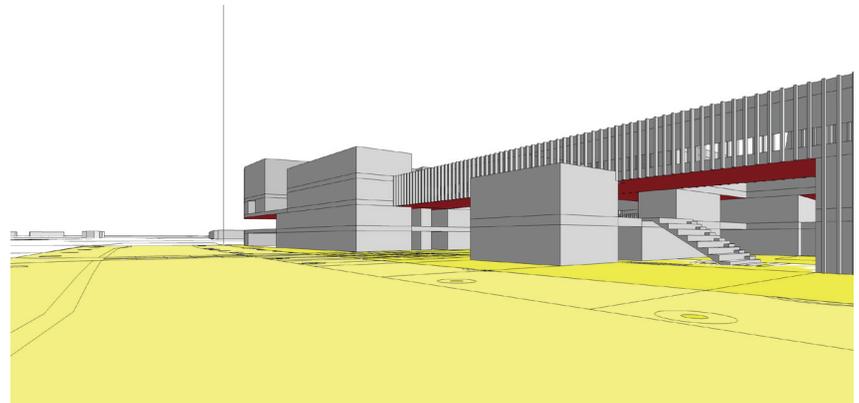
5) SPACIAL VOLUME STUDY



01 Scene



02 Scene



<Figure 6-20>
Cityscape
Spatial volume study 1

03 Scene



04 Scene



<Figure 6-21>
Cityscape
Spatial volume study 2

Reusing the School : The Design Narrative

6-5 Townscape

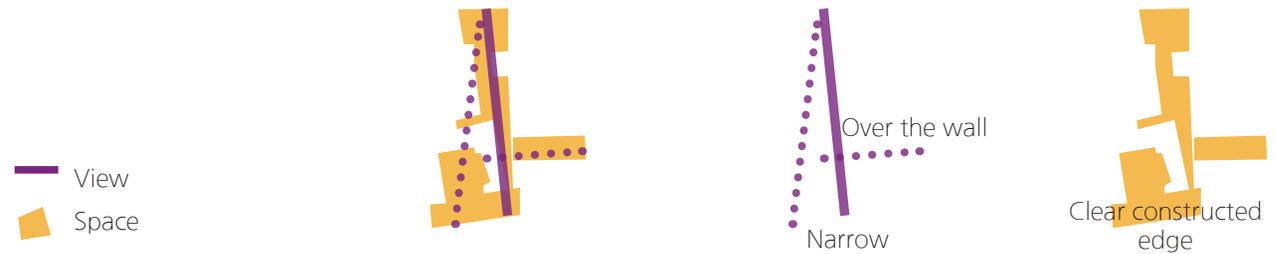
Enhance the level of privacy

1) CHARACTER

- landscape rooms closely nestled together
- intimate
- enclosed garden

2) VIEW

- narrow
- indirect

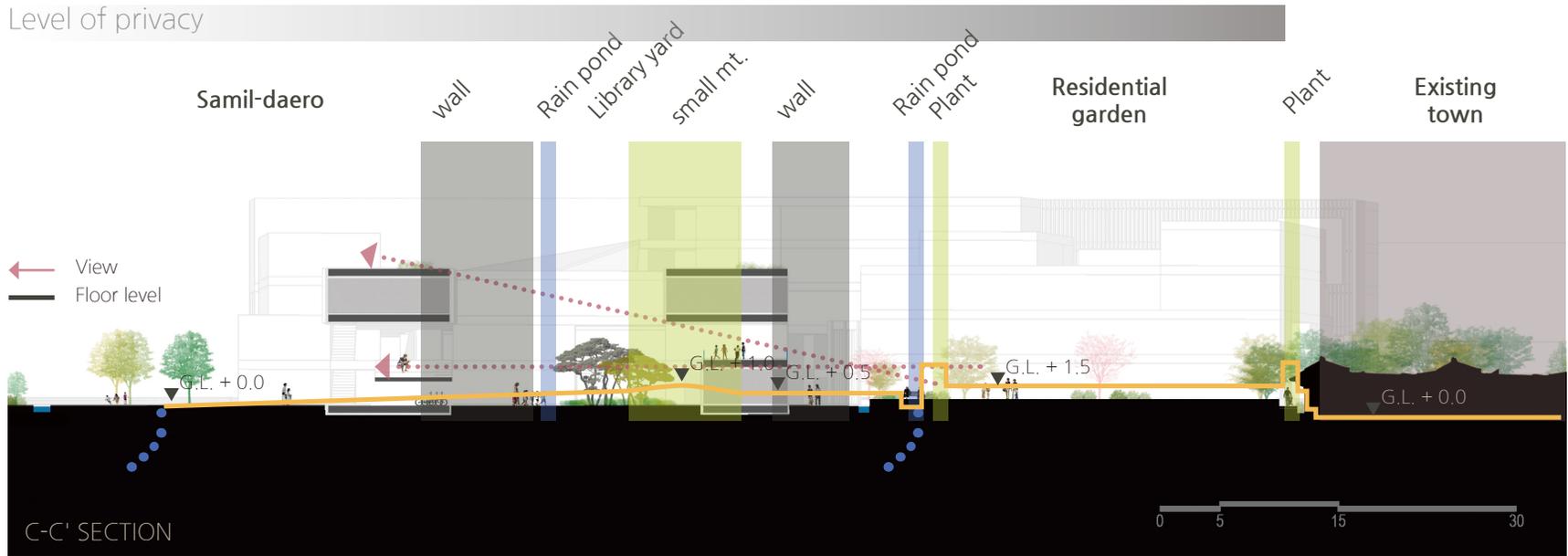


<Figure 6-22>
Open space for townscape

3) BLUE-GREEN INFRASTRUCTURE

<Figure 6-23>
 Townscape
 Blue-green infrastructure

The residents have their own floor levels. The layers of water, plants, and walls are overlapped. These make the space deep and indirect. The strong edges between the school and the residential area are made by the various



Reusing the School : The Design Narrative

4) PROGRAM

- library : fixed
- connecting city and residential area

1. Home room
2. 1st year classroom
3. Library

- Vertical circulation
- Service
- Program in green
- Education
- Social housing

<Figure 6-24>
Cityscape
Program



5) FLOW & ACTIVITY

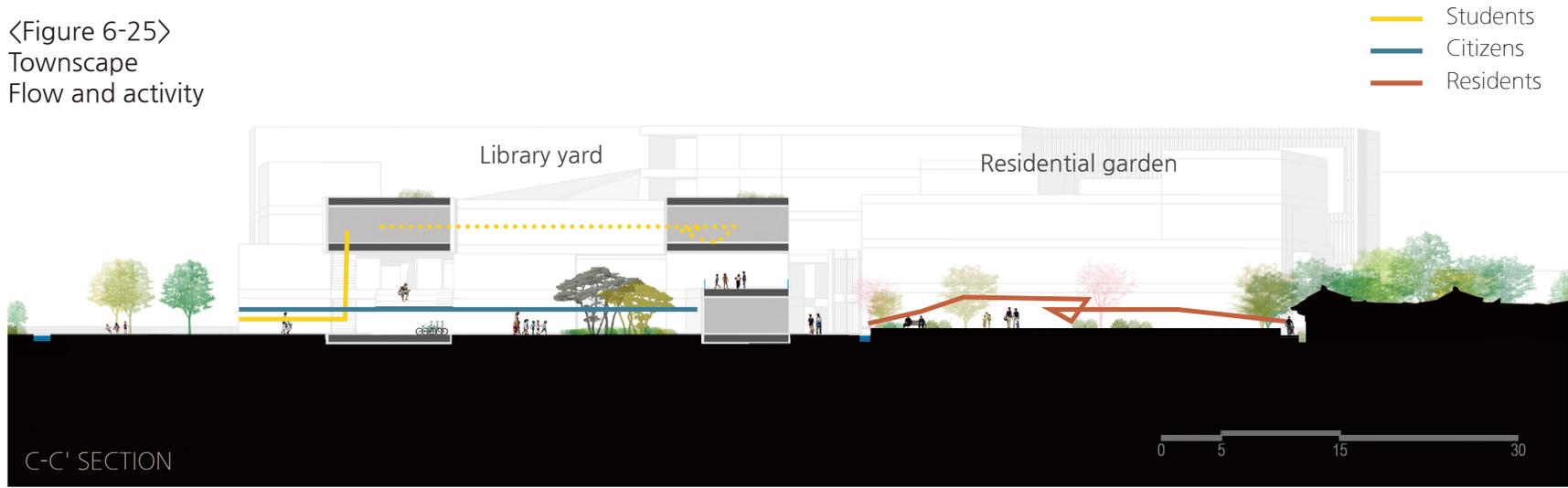
Residents have their own path to return home. Citizens have easy access to the library and the common yard.

- Citizens
- reading
 - rest
 - meeting

- Students
- vegetable garden
 - garden party
 - reading
 - walking

- Residents
- classroom
 - reading
 - small open concert

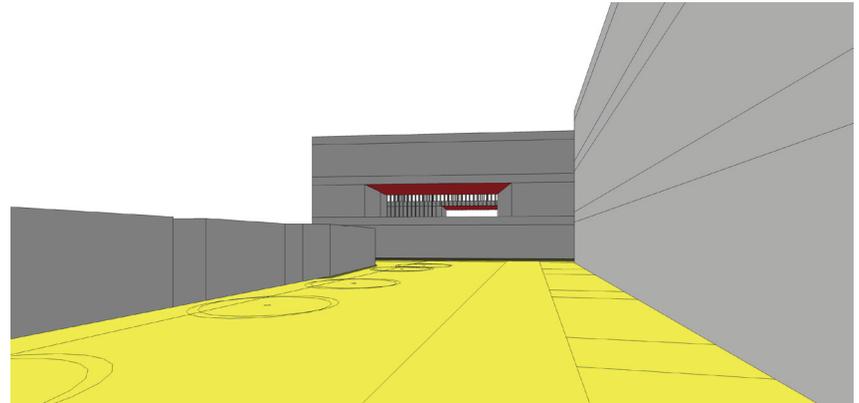
<Figure 6-25>
Townscape
Flow and activity



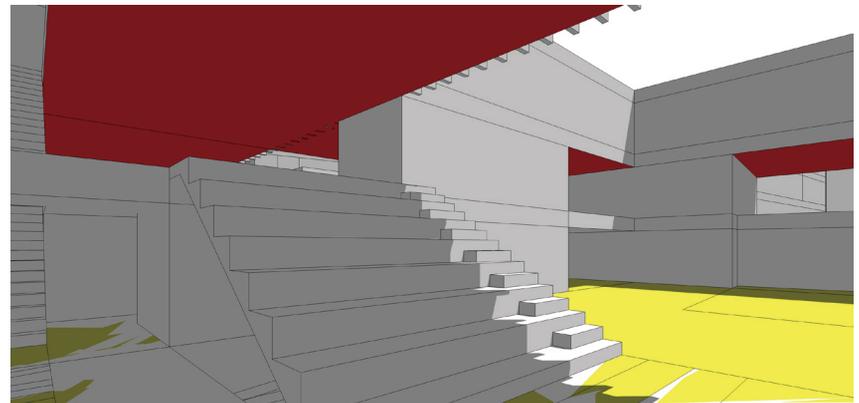
Reusing the School : The Design Narrative

5) SPACIAL VOLUME STUDY

01 Scene



02 Scene



<Figure 6-26>
Townscape
Spatial volume study 1

03 Scene



04 Scene



<Figure 6-27>
Townscape
Spatial volume study 2

Reusing the School : The Design Narrative

6-6 Planting

The planting design focuses on using the site's existing resources. I preserved the small mountain that has the *Pinus densiflora*, *Magnolia kobus* and *Buxus koreana*, as they are symbols of the school. Each zone follows the

atmosphere formed by foothills and valleys. For example, 'C' area is a new village forest made of *Buxus koreana*, *Acer palmatum* and *Rhododendron mucronulatum*. It will not only provide habitat for small wild life but also act as a corridor

which connects the forest and the urban village. Native plants are preferred over exotic species. The selected plants are also safe and useful for teaching children.



<Figure 6-28>
Planting plan

<Table 6-01>
Existing plan (for using)

• Existing plants

1	소나무	<i>Pinus densiflora</i>	
2	목련	<i>Magnolia kobus</i>	Symbol flower of school
3	벚나무	<i>Prunus serrulata var. spontanea</i>	
4	느티나무	<i>Zelkova serrata</i>	
5	양버즘나무	<i>Platanus occidentalis L.</i>	
6	수수꽃다리	<i>Syringa dilatata</i>	
7	은행나무	<i>Ginkgo biloba</i>	Symbol of Hanggyo
8	단풍나무	<i>Acer palmatum</i>	
9	주목	<i>Taxus cuspidata S. et Z.</i>	

Shrub

11	회양목	<i>Buxus koreana</i>	Symbol tree of school
12	사철나무	<i>Euonymus japonica</i>	
13	원추리	<i>Hemerocallis fulva</i>	
14	철쭉	<i>Rhododendron schlippenbachii Maxim.</i>	
15	제비꽃	<i>Viola verecunda</i>	

Street plants



Plants of school gate



Small mt.



<Figure 6-29>
Existing plants

A. moisture-loving herb & ferns

고사리+ 나리	<i>Filicales and Disporum smilacinum</i> communities
제비꽃	<i>Viola verecunda</i>
고마리	<i>Persicaria thunbergii</i>
등글레	<i>Polygonatum odoratum var. pluriflorum</i>
바위취	<i>Saxifraga stolonifera</i>
물봉선화	<i>Impatiens textori</i>

B. fruit trees and traditional trees

매실나무	<i>Prunus mume</i> Siebold & Zucc.
벚나무	<i>Prunus serrulata var. spontanea</i>
느티나무	<i>Zelkova serrata</i>
잣나무	<i>Pinus Koraiensis</i>
목련	<i>Saxifraga stolonifera</i> Meerb
계수나무	<i>Cercidiphyllum japonicum</i> Siebold et Zucc.
산수유	<i>Cornus officinalis</i>

Shrub

긴병꽃풀	<i>Glechoma grandis</i>
개나리	<i>Forsythia koreana</i> (Rehd.) Nakai
종작살나무	<i>Callicarpa dichotoma</i>
화살나무	<i>Euonymus alatus</i> (Thunb.) Siebold

<Table 6-02>
Planting plan
ref. (Kuitert, 2013a) (국립수목
원, 2010)

C. Village forest trees

소나무	<i>Pinus densiflora</i>
신갈나무	<i>Quercus mongolica</i>
팔배나무	<i>Sorbus alnifolia</i>
서어나무	<i>Carpinus laxiflora</i>
쪽동백나무	<i>Styrax obassia</i>
단풍나무	<i>Acer palmatum</i>

Shrub

진달래	<i>Rhododendron mucronulatum</i>
철쭉	<i>Rhododendron schlippenbachii</i>
싸리	<i>Lespedeza bicolor</i>
쑥	<i>Astemisia princeps var. orientalis</i>

D. Aquatic trees

오리나무	<i>Alnus japonica</i>
버드나무	<i>Salix koriyanagi</i>

Shrub

갯버들	<i>Salix gracilistyla</i> Miq.
부들	<i>Typha orientalis</i>
수련	<i>Nymphaea tetragona v. angusta</i>
붓꽃	<i>Iris nertschinskia</i>

VII. Conclusion

Conclusion

A. General conclusion about reusing schools in the urban landscape system.

A school of the village is also a school of the urban landscape system. Its historical context must not be forgotten, and the village must not be disassociated from the landscape system. This assertion is the very meaning of Hanggyo(郷校 향교),

But today, schools can not connect with the village. Isolated behind their locked gates, current schools demonstrate a passive attitude and throw away possible connections to the village. We make excuses that these layouts make for easy planning and maintenance and are beneficial to children's safety. Besides, the number of students is dropping anyway.

But for that very reason, the idea of reusing schools cannot remain merely an issue of the schools themselves. We need to incorporate the needs of everyone living in the surrounding village. This idea can only be obtained from a greater understanding of the landscape system. We have to analyse the urban landscape formed by history, natural environment, policy and capital. These patterns are not difficult to find, especially in the old center of the city. Using these patterns can determine the most sustainable and promising development for the school and village.

Therefore, the changes must be related to the Urban Landscape System. The key to change is already held within the landscape system of the school.

B. Kyodong Elementary School's conclusion about reusing schools in the urban landscape system.

The pilot site of Kyodong Elementary School proves that a school can optimally reintegrate into the Urban Landscape System.

In the center of Seoul, school locations create a pattern. This pattern consists of a location on rolling hills, the large size of sites, and a similar history. Kyodong Elementary School has many potential factors similar to other schools in the center of Seoul.

For instance, the school has a rich history and the potential for blue and green infrastructure. The school also has many issues, however, such as inconsistencies between its school district and neighborhood, conflict of structure, program and hierarchy, and a disconnect from the Urban Landscape System.

The strategy I have laid out resolves these issues, as it enhances each landscape element and connects them together for synergy. Kyodong Elementary School will become the real center of the village, duly connecting and promoting the following elements: road, blue & green infrastructure, history, view & open space and land use.

The proposed spacial structure for binding the landscape elements together also achieves flexibility. Green space will be planned as a buffer zone between areas of different functions. By following the texture of the existing city, the new plan fully integrates the site into the residential area and achieves the consistency of the master plan.

The new Kyodong Elementary school will become the backbone of Kyodong and revitalize this historic district of Seoul.

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도시경관시스템을 위한 학교 재사용 설계 : 서울시 교동초등학교를 중심으로

박계정
서울대학교 환경대학원 환경조경학과

최근 대도시 서울도 학령인구가 감소하고 빈 교실이 늘어남에 따라, 소규모 학교의 통폐합을 추진 중이다. 그러나 단순히 폐교를 추진하기 보다는, 근린생활의 중심인 학교를 도심 활성화를 위한 주거장려 정책의 한 방법으로 고려하는 게 바람직하다.

본 연구의 목적은 학교와 도시경관요소 사이의 관련성을 찾고 학교를 재설계하여, 학교가 마을 커뮤니티의 중심을 이루는 것이다. 이렇게 설계된 학교는 도심주거지의 새로운 요소로 작용하고, 도시경관시스템을 강화할 것이다.

대상지인 교동초등학교는 1894년에 개교하였다. 1970년대 이후 도심공동화 현상으로 학생 수가 줄어, 현재 전교생이 117명인 소규모 학교이다. 분석을 통해, 교동초등학교는 오랜 시간 마을을 대표하여 왔음을 알 수 있었으며, 지형과 수계, 식생, 도시적 형태, 토지용도와 같은 도시경관요소가 학교의 형태, 이용과 관계가 있음을 확인할 수 있었다. 그러나 학교의 배경인 주거지가 사라지면서 그 관계성은 약해졌다.

따라서 교동초등학교는 몇 가지 문제점을 가지고 있다. 첫째, 학구도와 근린주구가 일치하지 않고, 둘째, 위계가 다른 도시구조와 프로그램은 서로 혼재하며 충돌하고, 마지막으로, 학교에서 기존의 도시경관시스템을 읽을 수 없다는 것이다.

이러한 문제를 해결하려면, 교동초등학교가 '교동(校洞)의 학교'라 불릴 수 있어야 한다. '교동'이라는 넓은 영역의 중심이 되려면, 약해진 경관요소 사이의 패턴을 강화하는 전략이 필요하다. 새로운 마을의 중심, 마을의 학교인 교동초등학교는 도로, 물, 녹지 인프라스트럭처, 역사, 조망과 오픈스페이스 그리고 용도와 같은 각 요소를 연결하고 촉진시킬 것이다.

제안된 공간 구조는, 다양한 경관요소를 묶어낼 뿐만 아니라 변화하는 학교의 프로그램을 유연하게 담는다. 주요 공간은 서로 다른 기능간의 경계를 완화시키는 녹지공간이 된다. 또한 기존 도시의 결을 유지하여, 건축 배치를 주거지와 일체화 하고, 이를 통해 마스터플랜의 지속성을 확보한다.

도시와 마을, 녹지경관으로 대표되는 각각의 오픈 스페이스는, 고유의 성격과 위계를 갖는다. 디자인된 공간과 조망은 다양한 분위기를 이끌고, 학교 기능을 재정의 한다. 블루-그린 인프라스트럭처 또한 각 영역 환경에 맞게 발전한다. 식재는 현재 있는 자원을 최대한 활용하는데 중심을 두고, 구릉지와 골짜기가 만들어내는 각 영역의 자연스런 분위기를 잘 반영한다. 또한 외래종보다 자생종을 우선으로 선정한다.

이렇듯, 경관시스템과 함께 하는 새로운 교동초등학교는 마을의 중심축이 되고, 나아가 서울의 오래된 주거지를 활성화 할 것이다.

주요어 : 뉴어바니즘, 활성화, 근린주구, 도시공동체, 패턴분석, 학구도
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