A Comparative Study on the Neighborhood Street Characteristics of Seongnam City

Focused on Taepyungdong, Sanseongdong, Sinheungdong, and Dandaedong -

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Abstract

Starting with architectural & urban concern to sustain the community, this study includes behavior and daily life of residents in Seongnam City. Despite the most of residential areas are located on steep slope, there have been autonomously formed Neighborhood Streets in their Spheres of Living. And the humane & social organizations of residents are integrated within these physical spaces and these have been the very city compositional factor so far. In order to understand the Neighborhood Street characteristics of residential areas in Seongnam city, study areas are categorized into Four : the first one in residential area, the second one in semi-residential area, the third one near general commercial area, and the fourth one changed by large apartment block, depending on their locational relations with district use. So, Taepyeongdong, Sanseongdong, Sinheungdong, Dandaedong are selected as the representative of each areas. This study is to investigate ①Road system (about 6m road) ②District use ③Relation of Neighborhood Facilities' location and distribution ④ Formation time of residential area. We decide to take these factors as main criteria of analysis and draw analytic maps of reciprocal relations for daily Neighborhood Facilities in 4 dongs.

Through this comparative study on Neighborhood Streets of residential areas, it is found out that in order to achieve sustainable urban residential area regeneration for the original part of Seoungnam City, it is necessary to keep and support existing communities with its Neighborhood Streets. And we believe that the enhancement of these Neighborhood Streets will improve the true quality of residents' daily lives, which are closely integrated with these. Therefore, we strongly propose the small scale Regeneration Plan of each residential blocks with improving these Neighborhood Streets for pedestrian residents.

Keywords: Seongnam City, Neighborhood Street, Sphere of Living, Neighborhood Facilities, Regeneration Plan

## 1. Neighborhood Street and Sphere of Living

The Original part of Seongnam city was planned in a hillside and most parts of the city are old so that these have been targets of reconstruction and redevelopment. Despite the most of residential areas are located on steep slope, several autonomously formed Neighborhood Streets in their spheres of living and the social organizations of residents integrated within these physical spaces have been the very city compositional factors. Streets usually have comprehensive spaces for various activities of street users. Usually Neighborhood Streets are recognized as one concept like path, road, alley and *etc*. But, these are not completely same meanings. Unlike path or alley, Neighborhood Streets are paved roads of certain width and elaborate its environment with surrounding facilities and shops.

And the Sphere of Living contains Neighborhood Streets, Facilities and life services for dwellers around their residential area. This dong range implies the boundary consciousness, which has been perceived by Neighborhood dwellers. Neighborhood Streets are composed of small stores, supermarket, convenience stores, hospitals, kindergartens, primary school, town shuttle bus station, parking, street trees, small green space and *etc.*, and these are the roads of architectural spaces embracing Neighborhood dwellers' daily lives.

2. Neighborhood Streets in Seongnam City

The Original part of Seongnam City is the town inside the large city. This has many urban problems like lack of infrastructure, public spaces and buildings superannuated but on the other hand, the present communities have sustained since its birth time. Neighborhood Streets support variety of behavior and are very closely integrated to the residential areas and have organic relationship with it. Depending on district use of Neighborhood Streets' location, these are categorized into residential area / semi-residential area / general commercial area. The town with similar environment type of each district distribution, selected as a representative of ①common residential area: Taepyeongdong(First land for sale and former dong with concentration of single residence), ②semi-residential area: Sanseongdong(Mix of multiplex and multi-family housing), former Dandaedong, ③general commercial area: Sinheungdong(mix of residential area and commercial area). ④Dandaedong is adjacent to the semi-residential area and recently have developed as several large scale apartment blocks, which used to be blocks of small lot with multiplex houses and overcrowding area, so this is a representative case of urban fabric transformation process with disconnected Neighborhood Streets (Figure 1).

We prescribe Neighborhood Streets with Neighborhood facilities as supportive and basic constituent elements for Neighborhood Sphere of living. These facilities are located in and outside of residential area along Neighborhood Streets and take the medium roll of Neighborhood.
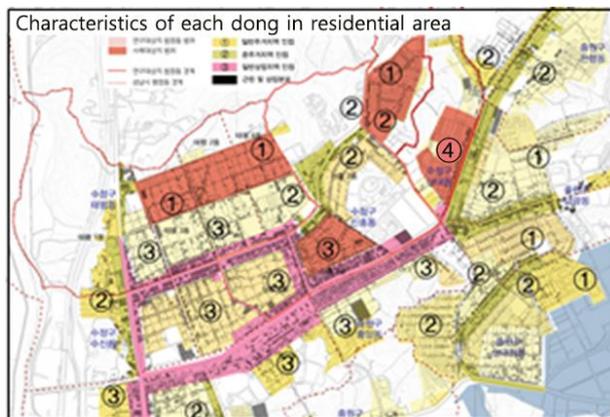
Distribution of Neighborhood & commercial Facilities

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Distribution of Neighborhood & commercial Facilities in district use

Figure 1. Distribution of Neighborhood Facilities with Distict Use of Seongnam City

Category	Neighborhood Facilities		Taepyeong-dong	Sanseong-dong	Sinheung-dong	Dandae-Dong
Neighborhood public facilities	School, Church, Bank, Office, Pharmacy, Kindergarten, Prayer House, Gym, Hospital, Senior center, Parking, Temple, Community center, Public park, Empty space, Fortune-telling, Animal hospital, Police station, Tax Office	Number	168	70	70	45
		Ratio	21%	16%	18%	36%
		Main Facility	Church, Private institute	Church, Private institute	Church, Private institute	Tax office
Neighborhood retail businesses	Butcher's, Mill, Fruit & Vegetable, Ice, Flower, Bread, Dried fish, Glasses, Rice, Rice cake, Grocery, Shoes, Supermarket, Stationary, Jewelry, Side dish	Number	130	92	62	20
		Ratio	17%	30%	16%	16%
		Main Facility	Butcher shop, Supermarket	Butcher shop, Supermarket	Supermarket, Grocery shop	Supermarket, Optician's
Neighborhood service businesses	Cosmetics, Baths, Laundry, Gas station, Clothes, Liquor, Garage, Restaurant, Beauty salon, Billiard, Internet cafe, Photo, Video, Esthetic	Number	256	100	170	39
		Ratio	33%	33%	43%	31%
		Main Facility	Restaurant, Beautysalon	Restaurant, Beauty salon	Restaurant, Liquor shop	Restaurant, Beauty salon
Neighborhood construction businesses	House repair, Hardware store, Repair, Electronics, Glass, Machine equipment, Wallpaper and linoleum store, Carpentry, Paint, Interior, Cement	Number	147	25	41	6
		Ratio	19%	8%	10%	5%
		Main Facility	House repair, Interior shop	House repair, Interior shop	Interior shop	Electronics, Beauty salon
Other Neighborhood Facilities	Moving company, Apartment management office, Warehouse, Factory, Newspaper, Machine, Second hand shop, Communication, Sideline, Junk shop, Real estate, Sign	Number	84	41	56	16
		Ratio	11%	13%	14%	13%
		Main Facility	Warehouse	Machine	Sign	Apartment management
		Total	785	306	399	126
		Ratio	100%	100%	100%	100%

Figure 2. Various Kinds of Neighborhood Facilities (from Korean Building Codes)

And we individually classify these by road system, district use, and residential area construction period to define characteristics of Neighborhood Streets for each dongs. For categorizing Neighborhood Streets, ratio between Neighborhood Facilities is analyzed in accordance with enforcement ordinance of building codes with a classified table of Neighborhood Facilities. Figure 2 is the category of commercial facilities in kinds and types according to the building codes. And the big category of subsection is facility environment of dongs, which are convenient facility, nature environment, leisure facility and education environment due to a classified table of Neighborhood Facilities from building code.
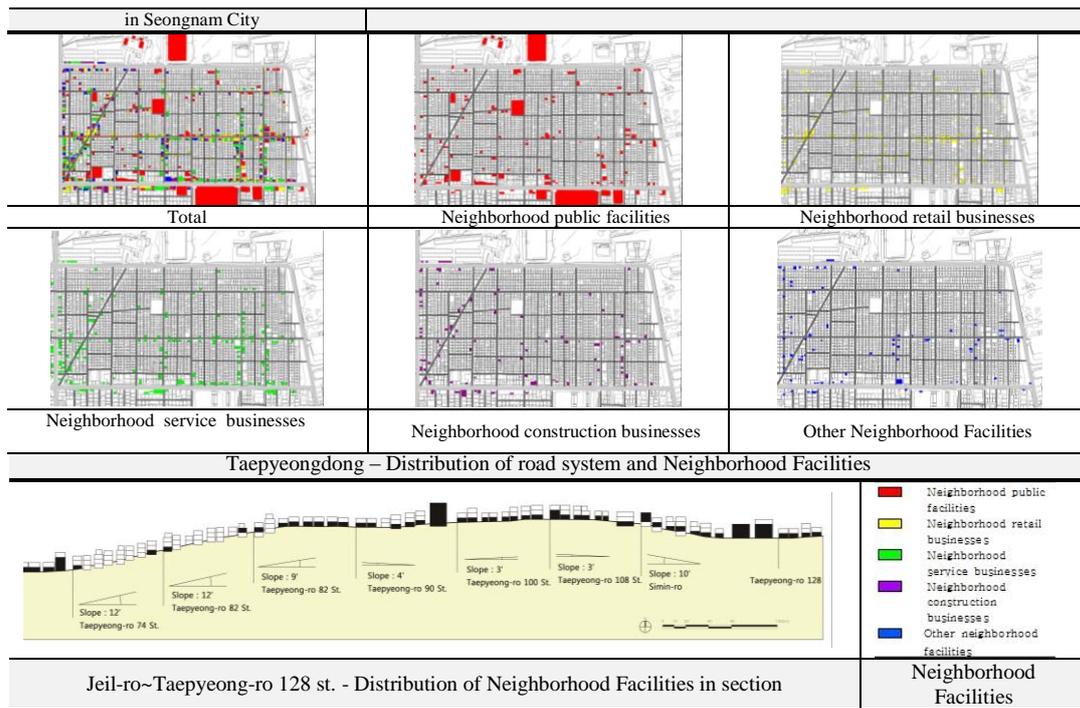
This Figure 2 shows that Taepyungdong was the first settlement for early comer, so still there are 20% of house repair shop and interior shop around this dong. And in Sanseungdong, retail businesses are 30% which is twice as much as other target areas and in Sinheungdong, 40% are Restaurants and liquor shops. And in Dandaedong, there used to be a local tax office, which have attracted 36% private tax accountant offices.

3. The Characteristics of Neighborhood Streets in Seongnam City

We define the criteria of Neighborhood Streets in the original part of Seongnam City based on the completion period and the width of road. And then, figure out characteristics of Neighborhood Streets of target areas through distribution of road system and Neighborhood Facilities.

3.1. Taepyeongdong – Life Oriented Neighborhood Street (Residential Area)

Category	Summary	Area 2.60km², Population 6,663
Street	Road width	6m Road
	Grid-Pattern	Linear-form distribution of neighborhood streets
	Slope	steep slope(Gradient more than 20°)
Buildings	Arrangement	Taepyeong-ro centered linear arrangement
	Use	1st Floor : Single family, multi-family, multi-housing, Ground Floor : Neighborhood commercial facilities Exclusive residential area for small lot less than 70m²
Location of Taepyeongdong		Current state and characteristic

	in Seongnam City		
	Total	Neighborhood public facilities	Neighborhood retail businesses
	Neighborhood service businesses	Neighborhood construction businesses	Other Neighborhood Facilities

Taepyeongdong – Distribution of road system and Neighborhood Facilities

Jeil-ro~Taepyeong-ro 128 st. - Distribution of Neighborhood Facilities in section

Neighborhood public facilities
Neighborhood retail businesses
Neighborhood service businesses
Neighborhood construction businesses
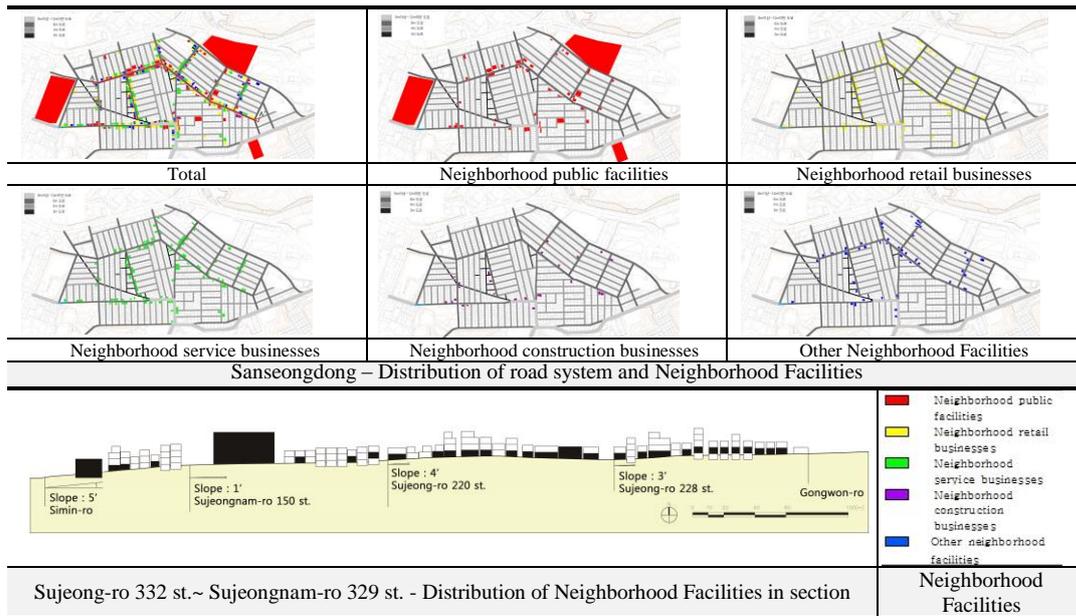Other neighborhood facilities

Neighborhood Facilities

Figure 3. Distribution and Characteristics of Neighborhood Streets in Taepyeongdong

Streets inside the residential area of Taepyeongdong have distinct character, function and hierarchy. Its Neighborhood Facilities and residences are coexisting along 6m wide street. Jeil-ro 224 st. ~ Gongwon-ro 445 st., Taepyeong-ro 128 st. and Tanri-ro are two-lane road, located on the steep slope more than 20° and the Neighborhood Streets have formed along the East-West side of the road, which gradient is rather gentle. Daily life supporting facilities which are necessary to residential area, are the various commercial facilities like grocery store, convenience store, hypermarket, market, laundry, pharmacy, small park, playground, sports facility, café, internet café, bank, side dish store, shoes repair shop, house repair, beauty salon, public bath are concentrated along this street, the Neighborhood Street. Taepyeongdong is the initial subdivision lot area where buildings are worn out and initial settlers are mostly engaged in construction business. Other Neighborhood Facilities are also related to construction business in this spontaneous Neighborhood Streets (Figure 3).

3.2. Sanseongdong – Settled Neighborhood Street (Semi-Residential Area)

	Category	Summary	Area 0.58 km², Population 17,288
	Street	Road width	6m Road
		Grid-Pattern	Radial-form distribution of neighborhood streets
		Slope	Middle gradient slope(Gradient less than 10~20°)
	Buildings	Arrangement	Sujeongnam-ro centered linear arrangement
		Use	1st Floor : multi-family, multi-housing Ground Floor : Neighborhood commercial facilities
Location of Sanseongdong in Seongnam City	Current state and characteristic		

Figure 4. Distribution and Characteristics of Neighborhood Streets in Sanseongdong
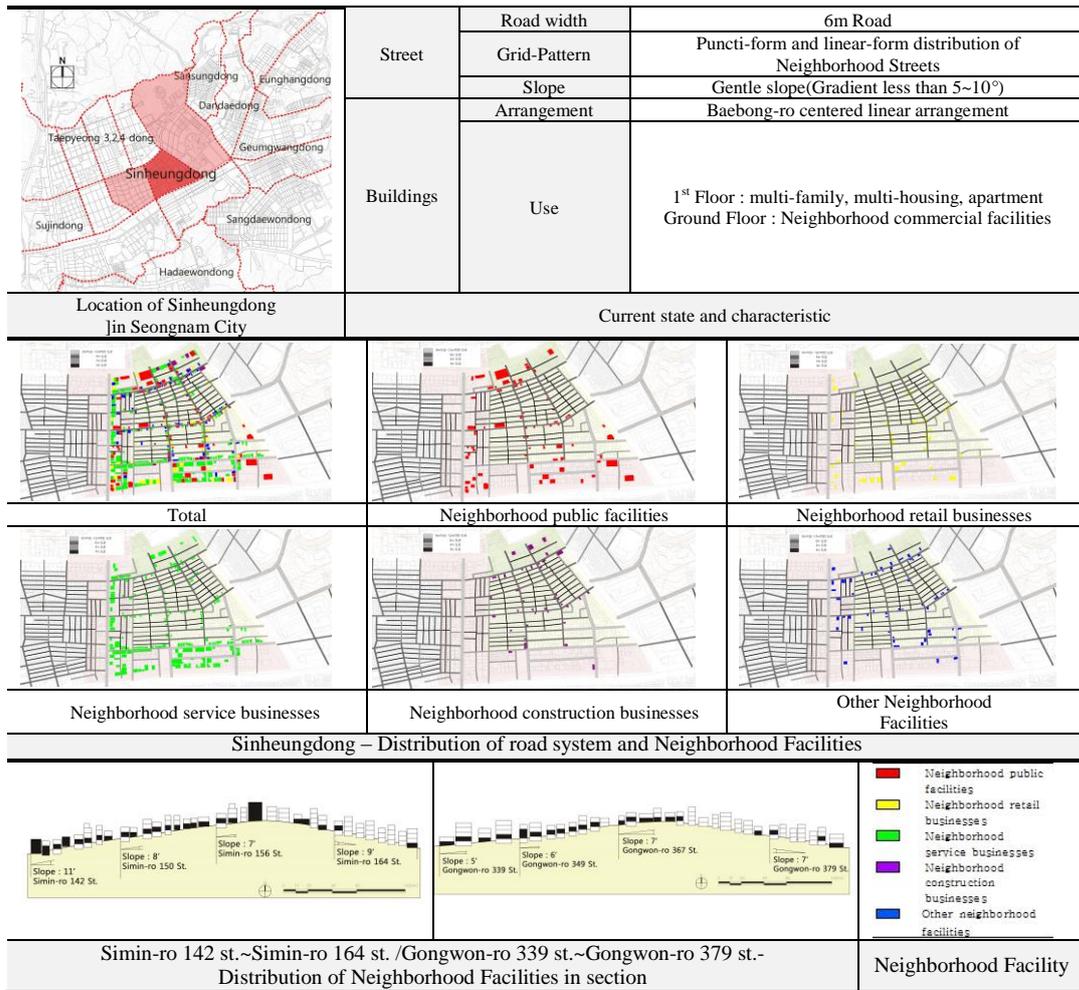
Neighborhood Streets with concentrated facilities have formed along both side of Sujeong-ro 356 st. and Sujeongnam-ro in Sanseongdong. Main area of Sanseongdong is 100m far from Namhansanseong subway station. Neighborhood Streets have formed with the gentle slope of 6° both for cars and pedestrians together. In Sanseongdong, there are 6 blocks in 2 rows of concentrated 3~4 story housing, where initial subdivision lots and later subdivision lots coexist. Most of buildings near 6m road are residences combined with commercial facilities on the ground floor (multi-family house). Dwellers traffic is rather frequent except at night due to mixed use of buildings. It appears that Neighborhood Facilities and residences are coexisting within the radius 100m of Neighborhood Streets. Grid pattern formation of streets are remarkable. We have selected 650m length of Sujeongnam-ro as the representative Neighborhood Street. The width of road is about 5~6m wide and Neighborhood commercials are mainly amenity facilities. Neighborhood commercials are becoming scarce at the east end of Neighborhood Street. Distribution of retail businesses is 30% which is twice as much as other target areas. In this distribution, supermarket, grocery store, side dish store, laundry, beauty salon and mend clothes shop are showing high distribution. Sanseongdong is different from Taepyeongdong which has geological advantage located in the station influence area. It shows that Sanseongdong has characteristics of residential settlement. According to this, Neighborhood Streets are mainly about Neighborhood Facilities relevant to food, clothing and shelter. Therefore, Sanseongdong can be called as settled Neighborhood Street (Figure 4)

However, recently the city allowed to carry out the redevelopment proposal of the residents. This will definitely bring a new super blocks filled with apartments with disconnected Neighborhood street, which will be the exactly same case like Dandaedong.

3.3. Sinheungdong – Commercial Neighborhood Street (General Commercial Area)

6m road is a main road in this district. Average ground level is 60m which is rather high. This district is like a hill, high in the middle and low at the both end (SuJeong-ro and Joongang-ro) and is mixed area of initial subdivision lot and later subdivision lot. The shape of lots can be classified into 5 shapes (square, triangle, free form, trapezoid, long and thin shape). And the residential areas are surrounded by the commercial area,

therefore facilities are influenced by surrounding commercial area so that rate of service related facilities is rather high. Especially, actual neighborhood commercial supremacy type is mainly divided into restaurant, liquor sale business and *etc*. Even though Neighborhood Streets of Sinheungdong are physically near to general commercial areas, however at the same time, Neighborhood Streets are very close to the residential areas also. Therefore, commercial supremacy near residential is affecting residents' walking range within short distance. Also, we have confirmed that daily activities are occurring within 5 minutes walking distance less than 400m, which is equal to Taepyeongdong (Figure 5).
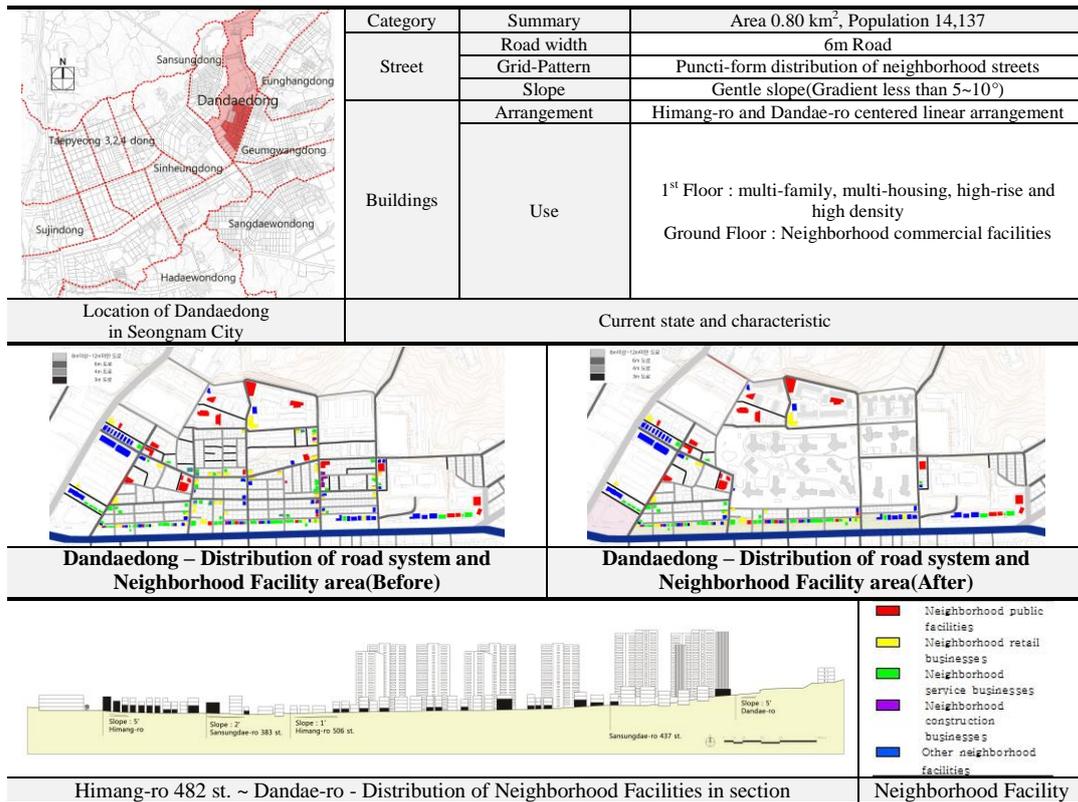
	Street	Road width	6m Road
		Grid-Pattern	Puncti-form and linear-form distribution of Neighborhood Streets
		Slope	Gentle slope(Gradient less than 5~10°)
	Buildings	Arrangement	Baebong-ro centered linear arrangement
		Use	1st Floor : multi-family, multi-housing, apartment Ground Floor : Neighborhood commercial facilities
Location of Sinheungdong Jin Seongnam City		Current state and characteristic	

Total	Neighborhood public facilities	Neighborhood retail businesses
Neighborhood service businesses	Neighborhood construction businesses	Other Neighborhood Facilities

Sinheungdong – Distribution of road system and Neighborhood Facilities

Simin-ro 142 st.~Simin-ro 164 st. /Gongwon-ro 339 st.~Gongwon-ro 379 st.- Distribution of Neighborhood Facilities in section	Neighborhood Facility

Figure 5. Distribution and Characteristics of Neighborhood Streets in Sinheungdong

3.4. Dandaedong – Disconnected Neighborhood Street (Semi-Residential Area)

The ratio of apartment in Dandaedong is the highest among dongs, 76.04% and Neighborhood Facilities are distributed in overall places. The ratio of apartment is the highest and multiplex & multi-family housing, single family housing and etc. are distributed fairly. The Sphere of Living in Dandaedong is the third class general residential area and distance to semi-residential area is about 50m~300m far. Dandaedong has good accessibility to many commercial facilities and street semi-residential area commercials infiltrated into Dandaedong so that boundary of residential area is blurred. Neighborhood Streets in the general residential area of Dandaedong are quite near to the

main road, so residents are already accustomed to commercial facilities in the semi-residential area and general commercial area in walking distance. So it would have been hard to form strong commercial supremacy inside general residential area and many small stores are in this Neighborhood Street. Through uniting lots development for apartment block, Sanseong-daero 413 st, Sanseong-daero 419 st and Sanseong-daero 405 st. are expanded from 4m to 6m. Higher side of this road functions as retaining wall of the closed apartment block boundary. Therefore after the road expanded, the boundary retaining walls around apartment blocks lead to disconnection of Neighborhood Street, which used to be vital to this Neighborhood (Figure 6).

Category	Summary	Area 0.80 km^2, Population 14,137	
Street	Road width	6m Road	
	Grid-Pattern	Puncti-form distribution of neighborhood streets	
	Slope	Gentle slope(Gradient less than 5~10°)	
Buildings	Arrangement	Himang-ro and Dandae-ro centered linear arrangement	
	Use	1st Floor : multi-family, multi-housing, high-rise and high density Ground Floor : Neighborhood commercial facilities	
Location of Dandaedong in Seongnam City		Current state and characteristic	

Dandaedong – Distribution of road system and Neighborhood Facility area(Before)	Dandaedong – Distribution of road system and Neighborhood Facility area(After)

Himang-ro 482 st. ~ Dandae-ro - Distribution of Neighborhood Facilities in section	Neighborhood Facility

Neighborhood public facilities
Neighborhood retail businesses
Neighborhood service businesses
Neighborhood construction businesses
Other neighborhood facilities

Figure 6. Distribution and Characteristics of Neighborhood Streets in Dandaedong

4. Conclusion – small scale Regeneration Plan with Neighborhood Street

As mentioned earlier, the original part of Seongnam City contains not only the rundown physical environment but also precious value of emotional environment which is the accumulation of residents' lives. As the paradigm of economic status and residential regeneration have changed lately, large scale apartment block is no more of residential regeneration counterplan. Instead, small scale multi-housing block plan emerges as a new alternative for urban residential regeneration and this requires new understanding for the hidden value of surrounding environment of existing dongs including property value of houses. Still outdated development plans relying on physical expansion like floor area for old residential area contradicts to various limits of realistic goal for quick and easy improvement of some rundown residential areas. On the contrary, for genuine residents centered residential regeneration plan, the advanced research is required for studying visible, non-visible orders embedded in existing residential areas with its Neighborhood Streets.

On behalf of the sustainable maintenance for the Original part of Seongnam City, existing Neighborhood Streets and its compositional urban fabrics should be preferentially studied and thoroughly defined and with these research results, future urban and residential regeneration plan for Seongnam City should be executed step by step.

Category	Item	Life oriented Neighborhood Street	Settled Neighborhood Street	Commercial Neighborhood Street	Variations of Neighborhood Street
		Taepyeong dong (Residential)	Sanseongdong (Residential +Commercial)	Sinheungdong (Adjacent to Commercials)	Dandaedong (Residential +Commercial)
Classify by each 'dong'	Similar Environment	Taepyeong 2,3,4dong /Geumgwang 2dong /Sangdaewon 2,3dong /Hadaewon dong	Sanseongdong /Eunhangdong /Sangdaewondong /Sungnamdong	Sinheung1dong, Sinheung3dong /Taepyeong1dong /Sujin1,2dong /Jungangdong /Sungnamdong	Dandaedong /Sanseungdong /Taepyeong1dong /Sinheungdong2dong /Sungnamdong /Sujin2dong /Yangjidong /Eunhang1,2dong, Sangdaewon2,3dong
Concept deduction of Neighborhood street	① Road system	Less than 6m road	Less than 6m road	Less than 6m road	Less than 6m road
	② Use district	General residential area (Pure residential use)	General residential area + Semi-residential area (including commercial area inside the Sphere of Living)	General residential area + Semi-residential area (including commercial area inside the Sphere of Living)	General residential area + Semi-residential area (including commercial area inside the Sphere of Living)
	③ Neighborhood Facility	Supermarket, repair house	Beauty salon, Side-dish store, Mend clothes	Restaurant, Liquor shop	Restaurant, Liquor shop
	④ Residential formation period	Initial Subdivision	Initial Subdivision + Partial later subdivision	Initial Subdivision + Later subdivision	Initial Subdivision + Later subdivision
		* Commercial facilities on the 1st floor and residences are in higher than 2nd floor. These shows residential and commercial spaces are coexisting and composed within autonomously formed Neighborhood Street.			

Figure 7. Types of Neighborhood Streets in Seongnam City by each Dong's Characteristics

Through this comparative study on Neighborhood Streets of residential areas, it is found out that in order to achieve sustainable regeneration for residential area in the original part of Seoungnam City, it is necessary to keep and support existing communities with its Neighborhood Streets. And we believe that enhancement of these Neighborhood Streets is to improve the true quality of residents' daily lives, which are closely integrated with these Neighborhood Streets. Therefore, we strongly propose the small scale regeneration plan for each residential blocks with improving these Neighborhood Streets, which have existed so far for pedestrian residents.

These streets connect the future neighborhoods on the site with the city and landscape. The new axis constitutes a strong framework to which multiple projects can be anchored. It fosters flexible development, as well as reusing the existing buildings to provide new residential locations. The newly evolved Neighborhood Streets will come to play a major role as the catalyst of a new history on the site.
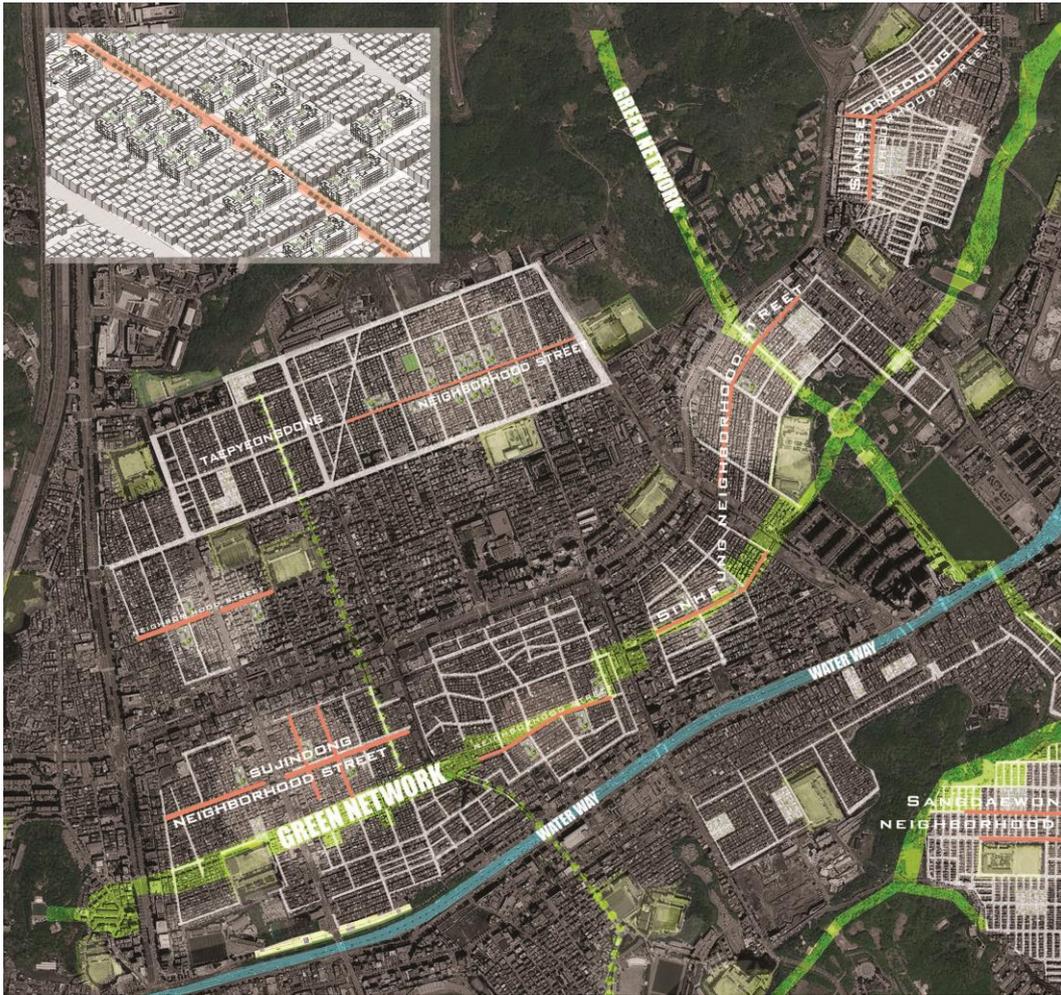
Figure 8. Small Scale Regeneration Plan for Residential Blocks with Improving Neighborhood Streets

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