Infill Development in Public Housing Estates
: finding solutions both for new supply and stock improvement in Seoul

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Increase in 30+ Years Public Housing owned by SH since 2019

- The number of public housing estates more than 30 years until 2026: 33 (36K housing units)
- The number of public housing estates more than 15 years until 2026: 320 (126K housing units)
※ SH owns and operates 428 public housing estates (152K housing units, ’17.5)
Seoul Needs New Supply due to High Rental Housing Needs

- The number of households with housing needs in Seoul is 150K (year 2014)
  ※ the Seoul City Government is planning to provide 10% of the total households with public housing (Public Housing Supply Strategy in Seoul)

<table>
<thead>
<tr>
<th>Year</th>
<th>Public Housing Residents</th>
<th>Below 40% of Income Households</th>
<th>10% of total households</th>
<th>Occupancy Rate 6.0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2014</td>
<td>150K Households</td>
<td>221K Households</td>
<td>180K Households</td>
<td>221K Households</td>
</tr>
<tr>
<td>June 2026</td>
<td>180K Households</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2014~2026, New 180K Housing Units Required

Occupancy Rate 10%

(Public Housing Households compared to the Total Households)
Considering both New Housing Supply and Renewal of Distressed Public Housing

- 34 public housing sites owned by SH have extra floor area ratio
  ➔ underused lands could be filled

![Bar chart showing floor area ratio distribution for different types of public rental housing sites in Seoul.](image)

- # of permanent public rental housing sites: 14
- # of 50-year public rental housing sites: 17
- # of mixed sites: 3

Average floor area ratio:
- Permanent public rental housing: 181%
- 50-year public rental housing: 210%
- Mixed sites: 183%
The Central Government has begun Infill Development since 2010

- Infill housing built in an unused land of a permanent public rental housing estates (housing + social welfare center)
- New housing eligibility: residents in the estates with disabilities or senior
- Vacant housing eligibility after relocation: persons in the public housing waiting list
- LH’s examples: 5 sites in Seoul Metropolitan Area and 4 sites outside the Area
# Infill Housing with Social Welfare Center in Seoul Metropolitan Area

<table>
<thead>
<tr>
<th>Site</th>
<th># of Households</th>
<th># of building of Infill development</th>
<th># of floors</th>
<th>Floor Area per unit</th>
<th>Previous Land-Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junggye3 (Seoul)</td>
<td>1,325 Original</td>
<td>New 130</td>
<td>Total 1,455</td>
<td>1 B1~15F</td>
<td>Social Welfare Center</td>
</tr>
<tr>
<td>Junggye9 (Seoul)</td>
<td>2,634 Original</td>
<td>New 60</td>
<td>Total 2,694</td>
<td>1 1F~15F</td>
<td>Commercial, Playground, Community Center</td>
</tr>
<tr>
<td>Bundang Mokryeon1</td>
<td>1,240 Original</td>
<td>New 220</td>
<td>Total 1,460</td>
<td>2 B1~15F</td>
<td>Park, Social Welfare Center, Management Office</td>
</tr>
<tr>
<td>Bundang Hansol7</td>
<td>1,420 Original</td>
<td>New 248</td>
<td>Total 1,668</td>
<td>2 1F<del>10F/1F</del>14F</td>
<td>Green Space, Playground</td>
</tr>
<tr>
<td>Samsan1 (Incheon)</td>
<td>1,764 Original</td>
<td>New 208</td>
<td>Total 1,972</td>
<td>2 1F~15F</td>
<td>Commercial, Social Welfare Center</td>
</tr>
</tbody>
</table>
Infill Development Case Studies

Pre- and Post-Infill Development

Before

After

Before

After

711동 전경 (당초)

711동 전경 (사업완료 후)
Infill Development Case Studies

Social Welfare Center in Infill Development
The Seoul Government (SH) has no Plans since Gayang4 Call-off

- In 2010, SH started planning an infill development in Gayang4 to provide new 80 units
- Harsh opposition of residents → SH finally repealed the plan in 2013
  - Opposition Reasons: ① no benefit for original residents ② concern about poverty concentration ③ decrease in green and open spaces ④ decrease in daylight availability ⑤ concern about a change of landscape
Public Housing Estates owned by SH for Infill Development Review

- Permanent Public Rental Housing: 14 Sites
- 50-year Public Rental Housing: 17 Sites
- Mixed Public Rental Housing: 3 Sites
Additional Site Review

Site Selection by Age, Extra Floor Area, Unused Land, and Construction Obstacles

37 Public Housing Sites

- **Age: 15+ years old**
  - YES: 34 sites
  - NO: 3 sites

- **Extra Floor Area**
  - NO: 3 sites

- **Unused Land or Space in the Site**
  - YES: 31 sites
  - NO: 14 sites

- **Construction Obstacles**
  - YES: 17 sites
  - UNCONTROLLABLE: 3 sites

FLEXIBLE: 14 sites

Experts Advice and Field Trip

(immovable facilities such as transmission towers or shape and size of the land or the like)

Site Selection
## Current Land–Use by Site for Infill Development Plan

<table>
<thead>
<tr>
<th>Site</th>
<th># of Households</th>
<th>Completed Year</th>
<th>Current Land–Use for Infill Development</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Social Welfare Center</td>
</tr>
<tr>
<td>① 월계사슴2</td>
<td>775</td>
<td>1995</td>
<td>●</td>
</tr>
<tr>
<td>② 가양9–1</td>
<td>914</td>
<td>1992</td>
<td>●</td>
</tr>
<tr>
<td>③ 중계3</td>
<td>2,619</td>
<td>1991</td>
<td>●</td>
</tr>
<tr>
<td>④ 면목</td>
<td>905</td>
<td>1991</td>
<td>●</td>
</tr>
<tr>
<td>⑤ 성산</td>
<td>1,807</td>
<td>1991</td>
<td>●</td>
</tr>
<tr>
<td>⑥ 중계4</td>
<td>1,979</td>
<td>1991</td>
<td>●</td>
</tr>
<tr>
<td>⑦ 대저1</td>
<td>1,623</td>
<td>1991</td>
<td>●</td>
</tr>
<tr>
<td>⑧ 수서6</td>
<td>1,508</td>
<td>1993</td>
<td>●</td>
</tr>
<tr>
<td>⑨ 신내10</td>
<td>1,432</td>
<td>1996</td>
<td>●</td>
</tr>
<tr>
<td>⑩ 상계은빛3</td>
<td>900</td>
<td>1998</td>
<td>●</td>
</tr>
<tr>
<td>⑪ 가양4</td>
<td>1,998</td>
<td>1992</td>
<td>●</td>
</tr>
<tr>
<td>⑫ 가양8</td>
<td>1,110</td>
<td>1992</td>
<td>●</td>
</tr>
<tr>
<td>⑬ 가양5</td>
<td>2,411</td>
<td>1992</td>
<td>●</td>
</tr>
<tr>
<td>⑭ 월계사슴1</td>
<td>1,372</td>
<td>1995</td>
<td>●</td>
</tr>
</tbody>
</table>
03 Additional Site Review

Current Public Housing Site for Infill Development Plan
Considering Infill Development in the view of ‘Estate Regeneration’

- In order to provide new public housing in the estate successfully, SH should meet resident and neighbor needs first

1. **Negotiation Process with Residents**
   - building up resident engagement models

2. **Infill Housing to Meet Resident Needs**
   - appropriate site selection and housing building

3. **Public Housing Repair and Improvement**
   - remodeling both inside and outside the units

4. **Effective Operation of Social Welfare Center**
   - community-based centers for the disabled and senior

5. **Community Service and Self-Sufficiency**
   - promoting tenant participation by landlord(SH)
Cooperation and Negotiation between Public Sectors and Residents

- Building up a cooperate organization including resident organization and public sectors to plan a development → Negotiation with the resident organization about the plan
- Bottom-up approach and coordination: ① Developing the plan to meet the resident needs ② Civic organization engagement and coordination
Additional Type of the Infill Development by Resident’s Preference

- Infill housing plans ① for the disabled and senior ② for social mix
- Current resident decide which type of infill housing should be planned in each site

<table>
<thead>
<tr>
<th>Purpose</th>
<th>The Disabled and Senior Housing</th>
<th>Social Mix Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Selection</td>
<td>Safe housing and welfare services for the disabled and senior in the site</td>
<td>estate revitalization</td>
</tr>
<tr>
<td>Site Selection</td>
<td>Long term(30+ years) public rental housing</td>
<td>Long term(30+ years) public rental housing</td>
</tr>
<tr>
<td>New Housing Type</td>
<td>public rental housing for the poorest households</td>
<td>Public rental housing for households below 40% (income) or young people</td>
</tr>
<tr>
<td>Eligibility</td>
<td>The disabled and senior in the site</td>
<td>By age and income</td>
</tr>
<tr>
<td>Law</td>
<td>Quality Housing and Welfare Service for Public Housing Resident Act of 2016</td>
<td>Law revision required related to eligibility</td>
</tr>
<tr>
<td>Note</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
Revitalizing Current Distressed Units by Resident Relocation

- Planning to both remodel existing housing units and build new housing
- Keeping balance between current and new housing units in terms of physical improvement → decreasing resident opposition to the infill development
- Requesting financial support from the Central Government

Remodeling Items: Front Door, Restroom, Kitchen, Floor Plan, Balcony, ETC (Barrier-free, Emergency Call, Motion Detector, Window Replacement, Storage...
Social Welfare Center: Expanding its Roles as Community-based Centers

- Social welfare center’s challenges: ① limited finance  ② limited participation for planning the infill development such as floor plans including special care services

<table>
<thead>
<tr>
<th>Current Plan</th>
<th>Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of social welfare center’s participation for floor plans in the center</td>
<td>Participation of Decision-Making Process</td>
</tr>
<tr>
<td>Lack of special care services</td>
<td>Expansion of the Local Government’s Subsidy</td>
</tr>
<tr>
<td>Operation challenges with spacious rooms but the same subsidy</td>
<td>Special care services for the disabled and senior</td>
</tr>
<tr>
<td>Inefficient space use (Some are vacant)</td>
<td></td>
</tr>
<tr>
<td>Limited services</td>
<td></td>
</tr>
<tr>
<td>Unmet resident demands</td>
<td></td>
</tr>
</tbody>
</table>
Expanding and Supporting Community Services by Landlord

- Encouraging resident participation in estate management & community programs
- Solving or relieving socioeconomic problems (job seeking, education, etc.)

SH

Neighbor Relationship

Resident Participation

Encouraging Participation

Residents Reluctant to Participation

Isolated Residents

Estate Management

Seoul City Government

Policy and Law Enactment which can Guarantee Quality Services and Financial Support

Suggestions
How to Revitalize Public Housing with Infill Development

**Physical Improvement**
- Relocation to infill housing and remodeling current units
- Improving the overall sites

**Infill Development**
- Building infill housing in unused or underused lands
- Eligibility: ① the disabled or senior of the residents with special care services or ② Young adults (by income)

**Healthy Community**
- Well-operating social welfare centers to provide care services
- Encouraging resident participation
- Supporting self-sufficiency programs

Resident Participation for all the Infill Development Processes