

Recent results of the Housing Department activities

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1. Foreword

As the the idiom "food, clothing and shelter" implies, housing is one of the fundamental factors in human living, and it is our mission at the Housing Department to contribute to the technical aspects of providing housing that allows for "healthy and comfortable living conditions" for our people. Here, we will showcase some of the main research topics that the Housing Department is involved in.

2. Goals the Housing Department are involved in to attain

As one of the related policy goals of housing, measures based on the establishment of a "basic housing plan" (National Plan, 2011-2020) based on the Basic Act for Housing are being promoted. The Housing Department is specifically involved in the attainment of four objectives as defined in this basic housing plan, and research/development for the purpose of analyzing housing related information, drafting measures and spreading technical information will be conducted accordingly.

(The four objectives regarding the basic housing plan)

Objective 1: Structuring a living environment that is safe/stable and prosperous

Objective 2: The appropriate management and recycling

of houses

Objective 3: The environmental maintenance of housing market that appropriately attains tenant needs

Objective 4: The securing of stability for tenants, especially those who take securing a house into consideration

On top of the above basic housing plan objectives, research/development will be conducted to contribute to the improvement of indoor environment performance including energy-saving functions in non-residential buildings in the building environment field.

3. Recent results and making it widespread

1) Comprehensive technological development project "Facilitation of the distribution of used housing/development of performance evaluation technology for the recycling of stock" (Completed in fiscal 2014)

Long-life quality housing reform plans for existing houses, standards (plans) that set the current specifications of existing houses have been compiled, and along with the materials/structure database that contribute to the design estimate duties of designers, is scheduled to be proposed and released. As well, regarding inspections of existing housing, an inspection method(plan) of current conditions pertaining to

Table: The main issues the Housing Department believes must be tackled, and its correlation with the nation's policy objectives

	Main policies of the country	Policy purpose etc.	Main issues NILIM should tackle
(1)	Promoting the securing and improvement of living stability in accordance with the basic housing plan based on the Basic Act for Housing	Structuring a living environment that is safe/stable and prosperous	<ul style="list-style-type: none"> •Development and spread of housing plans and repair technology for elderly/handicapped people •Maintenance/spread of hardware and software technology contributing to housing for elderly people including senior citizen housing with welfare services
(2)		The appropriate management and recycling of houses	<ul style="list-style-type: none"> •Maintenance/spread of methods regarding the evaluation/diagnosis of existing houses, operation and maintenance and reforms to promote appropriate maintenance and repairs of the housing stock •Development/spread of housing life-extension methods
(3)		The environmental maintenance of housing market that appropriately attains tenant needs	<ul style="list-style-type: none"> • Technical development and enhancement of provided information in the diagnosis/function evaluation to support the smooth circulation of used housing •BIM information technology development to optimize design constructions
(4)		The securing of stability for tenants especially for those who take securing a house into consideration	<ul style="list-style-type: none"> • Technical development contributing to the active utilization etc. of public housing stock for the stable securing/promotion of the housing safety net •The gathering of knowledge and its spread regarding housing provision/maintenance in disaster restorations
(5)	Promotion of CO2 reduction and global warming countermeasures according to international agreements and the Basic Act on Energy Policy	<ul style="list-style-type: none"> •Making the conformity to an energy-saving standards mandatory regarding new houses/buildings by 2020 •Reducing the world's greenhouse effect gas to half by 2050, and reduce by 80% for all advanced countries 	<ul style="list-style-type: none"> •Developing/providing easy to understand software to calculate energy consumption so that housing conforming to energy-saving standards can be provided for small and medium size businesses as well •Developing shifting methods when electricity use is peaking and its evaluation methods through the respective technologies of heat storage and electricity accumulation

degradation conditions will be swiftly proposed, and will be reflected in the evaluation method standards etc. of housing performance indication regulations. Furthermore, evaluation methods of neighborhood environment standards like sunshine/lighting in urban areas with existing housing, will be reflected in the technical evaluation methods pertaining to the certification standards of long-life quality houses (new and existing structures), which are based on the promotion methods of securing the quality control of housing.

2) The matter of "Research regarding the new maintenance methods for the living security of elderly people" (completed fiscal 2013)

With the rapidly progressing super-aging society, securing housing where increasing numbers of care-dependent elderly can live a stable and independent life, has become one of the most important policy issues. This research developed planning methods in both the hardware (building/facility design) and software (living support services design/management) facets of senior citizen housing with home-care services provided¹⁾. As well, the planning method of creating effective barrier-free reforms according to the various psychosomatic conditions of the elderly people has also been developed²⁾.

3) Result overview of the housing construction investigation costs "Investigation pertaining to the accurate maintenance/provision measures for disaster public housing in a large-scale disaster" (completed fiscal 2013)

Based on the survey results of fiscal 2013, the basic plan of disaster public housing that was created in direct

- Developing the technology to grasp the specifications and easily evaluate the performance of existing houses whose performance is uncertain, and reflect it on technical standards pertaining to site surveys of existing houses.
- At the same time, the performance of existing houses will be evaluated through circulation/reforms, and an index plan will be proposed on the integrated management method of performance information.

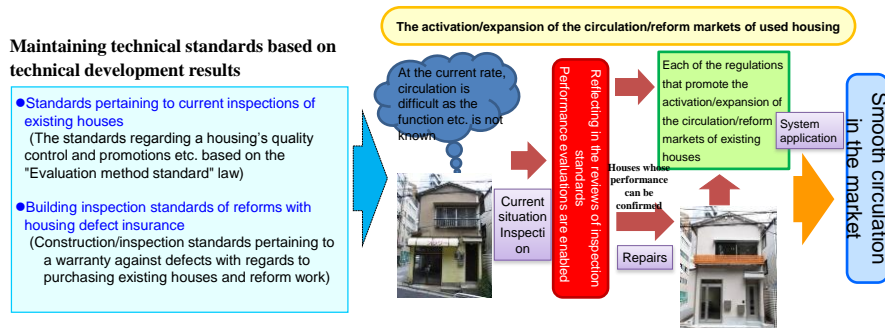


Figure Result overview of Comprehensive technological development project "Facilitation of the distribution of used housing/development of performance evaluation technology for the recycling of stock" (Completed in fiscal 2014)

control surveys pertaining to the Great East Japan Earthquake, will be compiled as a casebook, including examination processes that can be easily referenced .

4. Representative research themes that will be newly undertaken in fiscal 2015

1) Comprehensive technological development project "Strategic stock management technology development of regional stable living functions" (2015-2017)

Based on fluctuations in medium-and-long term population structures and demands, individual housing deterioration/situation/performance, we aim to develop policies for the optimum use (integrated/abolished/relocation/life-extension etc.) of individual facilities including public housing and technical methods to justify the rational reform/repair content according to its period of use. From this, we will contribute to the reviews of life-extension plan policies of public housing etc. and enable more effective life-extension planning measures according to the current conditions of future forecasts and facilities of local public bodies.

2) The matter "Developing evaluation standards of evacuation support technology for elderly/handicapped people in residential complexes at the time of a disaster" (2015-2017)

There are still many unresolved issues remaining surround the support technology for weak evacuees, or barrier-free issues, in residential complexes at the time of a disaster. As a result, we will develop downward evacuation support techniques based on building ergonomic experiments, as well as evaluation standards towards building-related laws and ordinances, after conducting systematic rearrangements of evacuation

plans and evacuation support technology. (Reference)

1) Hiroshi Hasegawa: Research regarding planning methods of senior citizen housing with home-care services provided, NILIM report (forthcoming publication)

http://www.nilim.go.jp/lab/bcg/siryou/rpn/rp_nilim.htm

2) Hiroshi Hasegawa: Knowledge base of barrier-free housing repairs - Research regarding planning methods of barrier-free housing repairs for the housing of elderly people etc., NILIM report (forthcoming publication)

http://www.nilim.go.jp/lab/bcg/siryou/tn/tn_nilim.htm