Building Research Department

This department carries out research and development on housing, architecture and community development that support eco-friendly, high-quality safe living, as well as on communities and industries, while providing extension/technical support to the Hokkaido government, municipalities and related companies and organizations.

Organizational structure

Northern Building Research Institute (Asahikawa City) (Building Research Department)

Building Performance Testing Center (Sapporo City, Asahikawa City)

This center conducts performance evaluation and requested tests, and determines the compatibility of structural drawings based on the Building Standards Act. It also promotes research and technical support on building construction, contributing to the improvement of building safety.

Northern Regional Building Research Institute (Sapporo City, Asahikawa City)

Regional management

Promotion of kita-smile

With kita-smile, a housing project run by the Hokkaido government, we have explored the mitigation of systems for Hokkaido residents to obtain, maintain and consume high-quality housing.

Concentration of residences and reduction in infrastructure costs

To advance regional management, we have compared infrastructure costs and relocation costs and studied the possibility of reorganization.

Enhanced emergency risk assessment system

We have simulated a support system to facilitate risk assessment and have proposed a related manual and training method.

Safe community design

Energy saving in buildings

We have studied energy saving in the construction or refurbishment of buildings to reflect the results to design.

Energy saving in primary industry facilities

We have measured energy consumption and conducted thermal analysis at plant facilities, agricultural greenhouses and other industrial facilities to propose operation improvement measures.

Environment and Energy

Quality building stock

Support for construction planning suited to Hokkaido’s climate

To support construction planning, we have conducted snow wind tunnel testing and other experiments to propose building forms that help prevent obstructions due to accumulated snow, such as snow cornices, snow accumulations and drifts, in design.

Application of existing buildings

To promote the total management of building stock owned by local governments, we have proposed a basic assessment method of existing buildings.

Measures for specific vacant houses

We have studied a standard proposal for determining risky or sanitarily harmful vacant houses, and conducted a survey of how vacant houses are used in local governments, we have proposed a related manual and training method.

Performance evaluation and judgement of structural calculation compatibility

Performance evaluation

As one of the five fire control structure-related organizations designated by the Ministry of Land, Infrastructure, and Transport, we contribute to the fire safety of buildings.

Requested testing and support for problem-solving

To respond to various needs of the government and private companies, we conduct tests upon request and support problem-solving, thereby contributing to the resolution of issues.

Judgement of structural calculation compatibility

As an organization, we designate the Hokkaido government to provide services to judge structural calculation compatibility in building certification.

Major recent achievements

Regional management

Study of rural transportation

We have explored rural residents’ transportation needs to improve existing transportation measures and study conditions for establishing new transportation measures, through collaboration between the municipality and residents.

Proposal of measures to recover flooded buildings

We have surveyed damage due to floods that occurred in various parts of Hokkaido to draw cones to recover flooded housing to residents, business owners, and municipalities.

High-performance construction materials and equipment

For energy saving and amenity improvement, we have developed high-performance insulated windows and equipment items.

Major current research and development

- Development of methods to assess the biggest risk caused by tsunami and the empirical development of disaster mitigation measures (Northern Regional Building Research Institute, Geological Survey of Hokkaido, Forestry Research Institute) [priority research: 2017 - 2018]
- Development of high insulated wooden-walls with fire protection performance that composed of building materials produced in Hokkaido (Northern Regional Building Research Institute, Forest Products Research Institute) [priority research: 2017 - 2018]
- Development of a high-performance energy supply/utilization system for woody biomass (Northern Regional Building Research Institute, Forestry Research Institute, Institute Research, Institute of Environmental Sciences) [priority research: 2016 - 2021]
- Research on building/equipment systems in consideration of heat and power between buildings (Northern Regional Building Research Institute) [ordinary research: 2017 - 2018]
- Field based study on supply and demand balance of phosphorus for its circulation and utilization in Hokkaido (Northern Regional Building Research Institute) [ordinary research: 2018]
- Research on the implementation processes of an autonomous, sustainable area in the Furano area (Northern Regional Building Research Institute) [ordinary research: 2017 - 2018]
- Study on structure characteristics and design method for shear stress in variant column of reinforced-concrete buildings (Building Performance Testing Center) [ordinary research: 2017 - 2018]
- Study of construction resource recycling systems for zero final disposal (Northern Regional Building Research Institute) [ordinary research: 2018 - 2019]
- Research on mandatory compliance with energy efficiency standards for non-residential and residential buildings and their future targets (Building Performance Testing Center) [ordinary research: 2016 - 2018]
- Conversion to an autonomous, next-generation water infrastructure management system (Northern Regional Building Research Institute) [open-type research: 2016 - 2018]
- Construction of technological information for the efficient maintenance cycle of public housing in Hokkaido (Northern Regional Building Research Institute) [research funded by the Hokkaido government: 2016 - 2018]
- Research on the reorganization of public housing in New Town (Hakuchodai New Town in Muroran) (Northern Regional Building Research Institute) [research funded by the Hokkaido government: 2017 - 2018]
- Research on the development of energy conservation department buildings (Northern Regional Building Research Institute) [research funded by the Hokkaido government: 2018 - 2019]

JNLA-registered testing laboratory

JNLA-registered testing laboratory

"adiabatic testing of material" and "adiabatic noise absorption and insulation testing";

Consolidated service for goods testing (samples for testing are limited to Japan)

JNLA-registered testing laboratory

Building Research Department

Building Performance Testing Center (Sapporo City, Asahikawa City)

This center conducts performance evaluation and requested tests, and determines the compatibility of structural drawings based on the Building Standards Act. It also promotes research and technical support on building construction, contributing to the improvement of building safety.

Northern Regional Building Research Institute

Regional management

Study of rural transportation

We have explored rural residents’ transportation needs to improve existing transportation measures and study conditions for establishing new transportation measures, through collaboration between the municipality and residents.

Proposal of measures to recover flooded buildings

We have surveyed damage due to floods that occurred in various parts of Hokkaido to draw cones to recover flooded housing to residents, business owners, and municipalities.

High-performance construction materials and equipment

For energy saving and amenity improvement, we have developed high-performance insulated windows and equipment items.

Major current research and development

- Development of methods to assess the biggest risk caused by tsunami and the empirical development of disaster mitigation measures (Northern Regional Building Research Institute, Geological Survey of Hokkaido, Forestry Research Institute) [priority research: 2017 - 2018]
- Development of high insulated wooden-walls with fire protection performance that composed of building materials produced in Hokkaido (Northern Regional Building Research Institute, Forest Products Research Institute) [priority research: 2017 - 2018]
- Development of a high-performance energy supply/utilization system for woody biomass (Northern Regional Building Research Institute, Forestry Research Institute, Institute Research, Institute of Environmental Sciences) [priority research: 2016 - 2021]
- Research on building/equipment systems in consideration of heat and power between buildings (Northern Regional Building Research Institute) [ordinary research: 2017 - 2018]
- Field based study on supply and demand balance of phosphorus for its circulation and utilization in Hokkaido (Northern Regional Building Research Institute) [ordinary research: 2018]
- Research on the implementation processes of an autonomous, sustainable area in the Furano area (Northern Regional Building Research Institute) [ordinary research: 2017 - 2018]
- Study on structure characteristics and design method for shear stress in variant column of reinforced-concrete buildings (Building Performance Testing Center) [ordinary research: 2017 - 2018]
- Study of construction resource recycling systems for zero final disposal (Northern Regional Building Research Institute) [ordinary research: 2018 - 2019]
- Research on mandatory compliance with energy efficiency standards for non-residential and residential buildings and their future targets (Building Performance Testing Center) [ordinary research: 2016 - 2018]
- Conversion to an autonomous, next-generation water infrastructure management system (Northern Regional Building Research Institute) [open-type research: 2016 - 2018]
- Construction of technological information for the efficient maintenance cycle of public housing in Hokkaido (Northern Regional Building Research Institute) [research funded by the Hokkaido government: 2016 - 2018]
- Research on the reorganization of public housing in New Town (Hakuchodai New Town in Muroran) (Northern Regional Building Research Institute) [research funded by the Hokkaido government: 2017 - 2018]
- Research on the development of energy conservation department buildings (Northern Regional Building Research Institute) [research funded by the Hokkaido government: 2018 - 2019]