

■ Technical Support and Assistance with Relief Supplies in Response to the Torrential Rain Disaster of September 2015 in Kanto and Tohoku regions

Planning and Research Administration Department, Planning Division

In response to damage caused by the Torrential Rain of September 2015 in Kanto and Tohoku regions, the NILIM dispatched experts in three areas, rivers, sediment disasters, and road structures, to the disaster region, where they provided technological support. They also provided relief supplies to Joso City in Ibaraki Prefecture.

The Torrential Rain of September 2015 in Kanto and Tohoku regions breached levees on 19 rivers including the Kinugawa River, inundated the land along 67 rivers, and triggered sediment disasters at 177 locations in 17 cities and prefectures (October 5, 9:00 a.m.), resulting in considerable damage and the deaths of 8 people (Fire and Disaster Management Agency, October 2, 6:00 p.m.).

The NILIM responded to the disaster by sending a total of 13 experts in the three fields of rivers, sediment disasters, and road structures, to places such as the site of damage on the Kinugawa River, the location of a sediment disaster in Nikko City, the site of road damage, and the location of a levee breach in Tohoku (October 1).



Photo: Hattori Atsushi, Head of the River Division briefing media representatives on the survey of levee-breaching (Kinugawa River)

Of these, the river experts surveyed the causes of damage by the breach on the Kinugawa River beginning in the early morning of the day after the disaster (September 10), and also carried out a survey of causes of levee breaches in the Tohoku region and provided technical support for emergency countermeasures.



Photo: The Sabo Department conducting a survey of the state of sediment runoff in a torrent (Nikko City, Serizawa District)

The sediment disaster experts conducted a field survey in the Serizawa District of Nikko City to find out whether or not conditions

in torrents where sediment was run off were such that a second disaster could occur, and provided technical advice with monitoring and observation methods and precautions necessary to establish a warning and evacuation system in Serizawa and to take emergency countermeasures at the mouths of torrents.

The road structures experts were sent to locations in Tochigi Prefecture where roads were collapsed by the runoff of sediment to survey causes of damage and give technical guidance with precautions to be taken during restoration.



Photo: Masayuki Yabu, Head of the Pavement and Earthworks Division, giving technical guidance concerning the restoration of a collapsed road (Nikko City)

And since the dispatch of the experts, technical support has continued, including guidance with emergency restoration work methods and helping a committee formed to plan permanent countermeasures. And to study measures to relieve damage including human suffering, the NILIM is continuing its energetic activities including a joint survey by experts on rivers and buildings conducted to clarify the characteristics of building damage caused by river inundation, and to clarify damage occurrence mechanisms.



Photo: Providing goods to Joso City in Ibaraki Prefecture (transporting goods with city employees and volunteers)

And in addition to technical support offered to deal with damage, disaster use emergency materials have been provided to Joso City in Ibaraki Prefecture where the Kinugawa River caused widespread flood damage in its basin. Beginning the evening of the day of the disaster, the NILIM started to communicate closely with Joso City, and with the cooperation of the Geographical Survey Institute, Public Works Research Institute, and the Building Research Institute, began to supply water, food, blankets and other goods that Joso City requires early the next morning.

Field Survey on Tsunami triggered by Earthquake occurred off central coast of Chile in 2015

Coastal, Marine and Disaster Prevention Department, Coastal Disaster Prevention Division

The NILIM took part in a field survey of the tsunami and inundation generated by the earthquake, which occurred off the central coast of Chile, covering the 330km long survey area in order to identify the characteristics of the tsunami along with the status of damage and evacuations.

The earthquake occurred on September 16, 2015 around 19:54 (Chile time) off the central coast of Chile. Its scale was magnitude of 8.3 and it brought damage to the coastal areas of the central Chile.

Mr. Kazuhiko Honda, senior researcher in the Coastal, Marine and Disaster Prevention Department of the NILIM, took part in the field survey team jointly formed by researchers from the NILIM, the Port and Airport Research Institute (PARI) and Chuo University and JICA expert dispatched by Ports and Harbours Bureau of the Ministry of Land, Infrastructure, Transport and Tourism, and visited the damaged areas in Chile to conduct the field survey (from September 21 to 24). The survey was part of a Japan-Chile Joint Research Theme, Enhancement of Technology to Develop Tsunami-resilient Community, (representative research body: PARI) under the Science and Technology Research Partnership for Sustainable Development (SATREPS) between the Japan Science and Technology Agency (JST) and the Japan International Cooperation Agency (JICA).

The field survey was carried out over an area extending 330km from north to south across the hypocenter to measure the traces of the tsunami in 9 coastal districts including ports (55 points in total) and to conduct interviews with inhabitants.

The tsunami height in the survey areas reached as high as 5m to 6m depending on the topography, and in some cases shipping boats were

washed up into harbours, with the mean tsunami height of 3m to 4m.

Many of the inhabitants started evacuating immediately after they felt the strong tremor without awaiting a tsunami alert which is designed to give warning 10 minutes after an earthquake has occurred, resulting in the tsunami causing fewer fatalities.



Photo : stranded fish boat (in Coquimbo)



Photo : damaged house (in Puerto Aldea)

Practical Use of Cultural Heritage in Town Planning and Community Development - Web Database of Plans for the Maintenance and Improvement of Historic Landscape -

Research Center for Land and Construction Management, Landscape and Ecology Division

The division has opened a website on various initiatives to develop historical communities in cities designated under the Law on the Maintenance and Improvement of Historic Landscapes in a Community.

In order to maintain and improve historic landscapes, the Law on the Improvement and Maintenance of Historic Landscapes in a Community was enacted in 2008. In 49 cities and towns designated under this law (as of October 2015), regional governments have carried out community development projects to preserve each region's unique traditional lifestyle, buildings with historical value and their surrounding environments, taking advantage of preferential treatment offered under this law and various subsidy programs.

In order to share ideas and know-how in the field of historic preservation and community development, in collaboration with local governments of the designated cities, the NILIM has built an integrated database of their initiatives to preserve historic landscapes. It has collected and organized information such as components of historic landscapes to preserve (historic buildings, traditional events and local industries, etc.), outlines of plans and projects, and programs

that have been utilized for historic preservation in the designated cities.

In July 2015, the Rekimachi Information Website was opened at the NILIM website to provide the database information not only to concerned personnel in the designated cities, but also to public officials and private companies involved in historic preservation and to ordinary people interested in community development. It is hoped that this website will be of great use in sharing ideas and know-how about various initiatives which the designated cities have carried out for the historic preservation, and through the utilization of historic and cultural resources, each region's attraction will be enhanced and thereby advance tourism promotion further.

Details Rekimachi Information Website
<http://www.nilim.go.jp/lab/ddg/rekimachidb/>

認定都市名
 都市の成り立ち
 文化財の種類
 時代区分

Search information by topic



認定都市の基本情報 『岐阜市』 Web page of each designated city

各認定都市の基本情報を紹介しています。「歴史的風致維持向上計画」等の詳細を知りたい方は、右側にある緑色のアイコンをクリックして下さい。「評価シート」は、各認定都市が計画の進捗状況を評価・分析したものです。各認定都市の「観光案内サイト」のリンクも掲載していますので、興味がある方は観光案内を見て、是非『歴まち』を訪ねて下さい。

歴史的风致維持向上計画

観光案内サイト

都道府県	岐阜県	都市の状況		認定の背景・目的
市町村名	岐阜市	人口(人)	416625	地域の中核的な歴史資源の復原や修復など、主に歴史まちづくりの拠点となる場の整備、充実を図るため
地方公共団体の区分		市域面積(ha)	20289	
歴史的風致維持向上計画の認定		都市計画地域の有無	有り	歴史まちづくりの熟度
最初の計画認定	平成25年4月11日	都市計画地域面積(ha)	20289	始動タイプ
最終の計画変更	平成27年4月1日			

Photo: Image of the website

■ Publication of the 2015 Commentary on Structure Related Technical Standards for Buildings (Editorial Supervision) and Contribution by the NILIM

Building Department, Evaluation System Division

The 2015 Commentary on Structure Related Technical Standards for Buildings has been published. This is an introduction to the NILIM's contribution to its contents and its publication.

The Commentary on Structure Related Technical Standards for Buildings¹⁾²⁾ was published in June 2015. This book, which is a revision of a book with the same title published in 2007, contains complete explanations of structure related regulations under the Building Standard Law of Japan. This book is handled as a document which must be first referred to when performing work related to building approvals or judgments of the correctness of structural calculations. The Building Department worked with researchers involved in the structure and materials fields in other departments and at the Building Research Institute and with the book's editorial committee and actually wrote the document. Its contents include items such as the following which the NILIM studied to tackle research challenges in the course of General Technology Development Projects and as part of its work on Building Standards Provision Promotion Projects³⁾.

- Explanations of the contents of and technological background to structure related regulations enacted and revised (special ceiling fall prevention regulations incorporated after the Great East Japan Earthquake for example) during the eight years since the previous revision.
- Descriptions of conditions etc. for the use in a range in conformity with the law of knowledge including the most recent standards and guidelines of the Architectural Institute of Japan (AIJ Standard for Structural Calculation of Reinforced Concrete Structures (revised 2010) for example).

The NILIM participated in the editorial supervision of the publication of this book, and at the same time, took part in lecture meetings on the book held by its publishers at 21 venues centered in major cities throughout Japan (held for structural designers and building officials etc., they were attended by a total of 6,500 people) where the NILIM offered lectures on technical precautions and practical problem points when applying the contents of the book to structural design of buildings, clarifying items frequently pointed out in the course of building approvals and judgments of the correctness of structural calculations in order to give explanations so that the technical standards it stipulates can be applied correctly.

In the future, we will not only conduct research, but make efforts to spread knowledge of technical standards in order that society is supplied with safe buildings structurally designed appropriately reflecting research achievements.

Details

- 1) Commentary on Structure related Technical Standards for Buildings Published by the Japan Building Disaster Prevention Association and the Information Center for Building Administration, June 2015.
- 2) Information Center for Building Administration
http://www.icba.or.jp/index/index_law.html
- 3) Ministry of Land, Infrastructure, Transport and Tourism: Building Standards Provision Promotion Projects
http://www.mlit.go.jp/jutakukentiku/house/jutakukentiku_house_fr_000016.html

■ Overview of Budget request in Fiscal 2016

Planning and Research Administration Department, Planning Division
Administrative Coordination Department, Planning and Coordination Division

The NILIM conducts research on the infrastructure that will create the society of the future by focusing its sights on five priority themes: "Disaster Prevention, and Disaster Mitigation and Crisis Management", "Infrastructure Maintenance", "Intelligent Utilization", "Innovative Work Execution Method Development", and "Regional Revitalization and Livability Improvement".

In its 2016 budget request, it proposes to tackle five new challenges in four fields: preventing and mitigating storm surge disasters, efficiently prolonging the service life of port and harbor facilities, improving the productivity of building sites, popularizing good-quality housing, and reducing energy consumed by construction equipment. (230 million yen: including 13 ongoing challenges)

- Disaster Prevention, and Disaster Mitigation and Crisis Management
 - Research on Disaster Risk Reduction Measures for Port-related Area against Storm Surge

To enhance the safety of port and harbor regions from storm surges to ensure the foundations of a sustainable economic society, the NILIM develops technologies to advance observations of tide levels and waves and to clarify and evaluate storm surge risk information.

- Infrastructure Maintenance

— Research on a practical evaluation method in order to prolong the service life of, and effective use of, existing port and harbor facilities

The NILIM develops a simple and practical method to evaluate the state of facilities by utilizing inspection results. That method provides optimal timing and area of inspections and repairs.

- Innovative Work Execution Method Development

— Research on work site productivity improvement in public capital provision processes

The NILIM is responding to the aging of the skilled work force and decline of young people entering the work force, by developing construction production systems (design and execution, supervision and inspection methods etc.) that permit the appropriate use of technologies that help lower labor requirements on construction sites below levels required using conventional technologies.

- Regional Revitalization and Livability Improvement

— Development of simplified structural performance evaluation methods for wooden houses

The NILIM develops methods that can be used to easily evaluate the structural performance of wooden houses in order to promote wooden housing performance indication system.

— Developing methods of evaluating the energy saving effects of automatic control technologies for building equipment

The NILIM provides new evaluation methods for the energy saving effectiveness of control methods based on automatic control technologies for building equipment, which are counted on to play important roles in future energy saving buildings.

In addition to the above, the NILIM, as a research institute under the MLIT, receives budgets from this ministry which it applies to survey and research concerning housing and public infrastructure improvement related to rivers, roads, buildings housing, ports and harbors, airports etc.

Details document presented at a press conference on August 28, 2015. (NILIM web site)

<http://www.nilim.go.jp/lab/bcg/kisya/journal/kisya20150828.pdf>

● Schedule of Principal Events

Scheduled Dates	Event Name
December 3	The Lecture Meeting of NILIM (2015)
December 9	Lecture Meeting on Port and Airport Research in Kyushu 2015 Lecture Meeting on Port and Airport Research in Kobe 2015
December 14	Lecture Meeting on Port and Airport Research

● Publication (research achievements) < September, 2015-November, 2015 >

Download from here ● <http://www.nilim.go.jp/lab/bcg/siryou/index.htm>

PROJECT RESEARCH REPORT of NILIM

No.	Title of Paper	Project Leaders
49	Development of Land Suitability Assessment Technology for City Planning	Urban Planning Department

TECHNICAL NOTE of NILIM

No.	Title of Paper	Names of Divisions
798	Damage to Ports and Port-related Facilities by the 2011 off the Pacific coast of Tohoku Earthquake	Coastal, Marine and Disaster Prevention Department/ Port and Harbor Department
843	Damage to Road Bridges by the 2011 off the Pacific coast of Tohoku Earthquake and Tsunami	Bridge and Structures Division
844	Research on Fatigue Durability Evaluation for Highway Bridge Concrete Slabs	Bridge and Structures Division
850	Report of the Evaluation Sub Committee of NILIM in FY 2014 Evaluation Committee of NILIM	Research Administration and Evaluation Division
851	The Analysis of Cargo Flow of Maritime Container Cargo of Japan in the United States	Port Systems Division
852	The Current Status of SCM by Japanese Firms And Future Direction of Port Logistics Service Improvements	Port Planning Division
853	Study of the Influence of Security Checking to Ensure Smooth Passage through Gates at Container Terminals	Disaster and Emergency Management Division
854	Damage of Nemuro Port and its surrounding areas due to the storm-surge in 17 December 2014	Coastal Disaster Prevention Division
855	Estimation of Sea Level Rise Using the Tide Gauge Records in Port Areas and Their Characteristics	Coastal Disaster Prevention Division
856	Study on the impact of climate change on the water quality of dam reservoirs	Water Cycle Division
857	Guideline for planning and design of disaster prevention parks (Draft) (September 2015 revised version)	Landscape and Ecology Division

● We provide you with research information.

- 2015 Annual Report of NILIM

This web site introduces NILIM activities throughout the year, including research activities and achievements, future initiatives, etc.

Go to this web site: ● <http://www.nilim.go.jp/english/annual/annual2015/ar2015e.html>



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