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N I L I M

# News Letter

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## ■ Preparation of Guidelines for Construction of Landscape-friendly Safety Barriers

Nozomu Mori, Head, Advanced Road Design and Safety Division, Road Research Department

As a result of an excessive desire to pursue mass infrastructure development in the past, insufficient consideration was paid to aspects of quality such as harmonization with the landscape and nature. In reflection of this, and based on the ideal of developing the national land as an asset belonging to every citizen, in harmony with Japan's beautiful nature and passing this on to the next generation, the Ministry of Land, Infrastructure and Transport last year compiled the Broad Outline of Beautiful National Development Policy.

Following this, an study committee of academicians and experts was established and compiled a set of guidelines for use by road managers when installing and renewing guard fences in consideration of the landscape.

These guidelines prescribe the following five basic ideals

for guard fence development and maintenance: 1) to fully examine the need for guard fences including alternative measures, 2) to adopt shapes based on structural rationality, 3) to seek harmonization with surrounding landscape, 4) to seek landscape harmonization with other road auxiliary structures nearby, and 5) to give consideration to human affinity. In particular, it is basically prescribed that color should be selected to match with the characteristics of each area, and that drawing up master plans to secure uniformity of color and shape, etc. in certain areas is desirable. Furthermore, with a view to realizing harmonization with general nature, local customs and architecture, etc. in Japan, the yellow-red colors of dark brown and gray beige, etc. have been proposed as the basic colors of guard fences in landscape-friendly safety barriers.

Together with compilation of these guidelines, items related to guard fence standards, etc. was revised, and landscape-friendly guard fences based on these standards and guidelines will be constructed from fiscal 2004 onwards.



Conventional guard fence



Landscape-friendly guard fence  
High transference is excellent for landscape viewing

Figure 1 Example of a Landscape-friendly Guard Fence

## ■ Survey and Research Concerning Technical Standards for Small-sized Vehicle-only Roads

Road Research Department, Traffic Engineering Division

### 1. Introduction

For relieving traffic congestion in cities, it is desirable to construct bypasses and improve intersections, etc., however, there are cases where such measures cannot be taken due to the inability to get land in built-up areas, etc. Moreover, in addition to the need to promote road construction according to local conditions, it is necessary to reduce road construction costs. Here, survey and research concerning geometric structural standards was implemented with a view to introducing small-sized vehicle-only roads which are smaller than conventional roads.

### 2. Outline of Survey and Research Concerning Technical Standards

#### ① Design vehicle

Upon surveying dimensions of common ambulances and passenger vehicles sold in Japan, a design vehicle size of 6.0 m in length, 2.0 m in width and 2.8 m in height and design vehicle load of 30 kN were set.

#### ② Reduction of cross section composition

The road width was set with a view to securing

sufficient overall width to allow vehicles to pass by in cases of emergency stopping, while at the same time securing sufficient side allowance to enable safe passage at each speed. In making the setting, driving tests using actual vehicles were implemented on the test track in NILIM, and as a result it was verified that no problems exist concerning safety and traveling quality under the projected cross section layout.

#### ③ Reduction of clearance limit

Based on the results of surveying vehicle rebound at bridge joint sections, clearance limit was set at 3.0 m, i.e. design vehicle height of 2.8 m plus some allowance for rebound.

#### ④ Easing of longitudinal slope

As a result of surveying the hill climbing performance of the design vehicle, it was found that the car could climb steeper hills than those prescribed in conventional longitudinal slope standards; however, in consideration of safety during descent, a special value of the conventional standard was adopted as the standard value for small-sized vehicle-only roads.

Small-sized vehicle-only road introduced at underpass

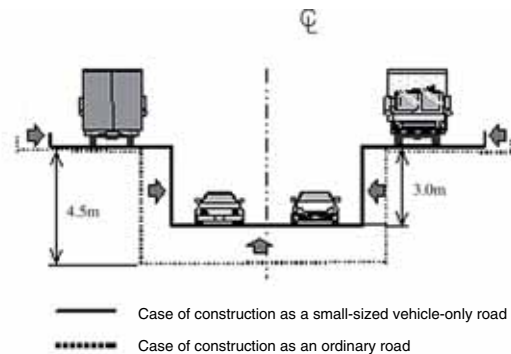
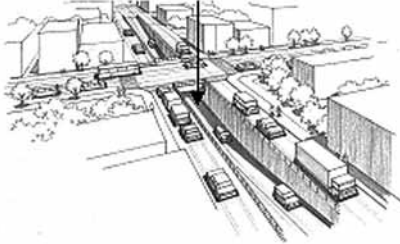


Figure Image of Small-sized Vehicle-only Road Introduction(Underpass intersection)

## ■ Forum on Disaster Prevention in Town Planning

Following the experience of the Kobe Earthquake in 1995, the Ministry of Land, Infrastructure and Transport carried out “Development of Assessment and Countermeasure Technology for Disaster Prevention in Town Planning”(hereinafter, “the project”) as a general technical development project – between 1998 and 2002. In order to disseminate techniques to assess district’s disaster preventive performance to local public authorities, and etc., the “Disaster Prevention Town Planning Forum – How to Promote Future Disaster Prevention Town Planning” was held in Tokyo on February 24, and the “Disaster Prevention Town Planning Seminar – District’s Disaster Preventive Performance Assessment” was held in Osaka on March 11.

The forum in Tokyo was attended by 134 participants and consisted of commentary on the

Densely Built-up Area Improvement Act revised in 2003, an outline explanation of the achievements of the project, and a speech entitled “Disaster Prevention Town Planning Utilizing Simulation” by Research Associate Takaaki Kato of University of Tokyo. Also, a panel discussion was staged with Professor Yoshiteru Murosaki of Kobe University acting as coordinator, and Mr. Shinichi Suzuki of Arakawa Ward Office, Mr. Jin Yoshikawa of J Plan(Co.), and Dr.Takaaki Kato of University of Tokyo acting as panelists. They debated on utilization of new tools like simulation in disaster prevention urban development in the seminar (see Photograph 1).

At the seminar of Osaka, which was jointly staged with the Kinki Regional Development Bureau, there were 136 participants. On this occasion, Professor Yoshiteru Murosaki of Kobe

University gave a speech entitled “Disaster Prevention Town Planning in the Past, Present and Future,” and there was also a commentary on the Densely Built-up Area Improvement Act, an outline explanation of the achievements of the project, and commentary on techniques for finding out hazardous districts and assessing

district disaster prevention functions in detail (see Photograph 2).

In near future, we disclose the achievements of the project on our website, and we also intend to provide technical guidance in response to requests by local public authorities.



Photograph 1 Panel Discussion (Disaster Prevention Town Planning Forum in Tokyo)



Photograph 2 Commentary on District Disaster Prevention Performance Assessment Techniques (Disaster Prevention Town Planning Seminar in Osaka)

## ■ Publication of a Wetland Restoration Guidelines from The International Navigation Association (PIANC)

**Keita Furukawa Head, Marine Environment Research Division**

In consideration of the importance of disappearing wetlands (sea grass meadows, tidal flats, salt marshes, etc.), The International Navigation Association (PIANC) published the Guidelines for Wetland Restoration in November 2003. The aims of this guideline were to provide written technical guidelines for wetlands restoration and to promote greater understanding of the importance of this issue.

The working group charged with compiling the guidelines was chaired by Dr. Telliot of the U S Army Corps of Engineers and consisted of 13

specialists in port development and environmental research from 8 countries. Starting in February 2000, the working group held 7 meetings over the subsequent two years and deepened discussions via e-mail and Web site.

The completed guidelines cover new concepts including the functions and importance of wetlands, necessity of strategic planning, importance of adaptive management, etc. It is anticipated that it will contribute to the restoration of marine and estuarine environment based on scientific argument.



Members of the working group for preparing the wetland restoration guidelines (3 members absent; Dr. Telliot (chairperson) on the front right end, and the author on the back right end)

## ■ Out Line of The Yokosuka New Office

Construction of the Yokosuka offices of the National Land Technical Policy Research Institute was started in January 2003 and finished in March 2004. The building has the following major features:

- ① The facilities layout is designed expansively and with standardized coloring in consideration of securing interval space with the Independent Administrative Institution Port and Airport Research Institute.
- ② The center of the building consists of a void extending from the first floor to the roof, enabling natural light to flow into the structure.
- ③ In an effort to reduce life cycle costs, self-washing tiles have been adopted on exterior walls, together with individual air conditioning control on each floor block, and outdoor equipment is designed with salt-resistant specifications.
- ④ The offices of each research department are located on each floor to enable researchers and personnel to gather in one place.

In terms of the floor layout, the first floor contains the coastal and marine research Department and other joint departments; the second floor contains the executive offices, management and coordination

department, library and tender room; and the third floor contains the port and harbor research department, airport research department and conference rooms.

Outline of facilities:

- Building area .....1,716 m<sup>2</sup>
- Total area .....4,834 m<sup>2</sup>
- Scale of structure....Reinforced concrete, 3 floors above ground



Full view of the new offices (Full view from the entrance side)

## ■ TECHNICAL NOTE of National Institute for Land and Infrastructure Management (October-November, 2003)

No.	Title of Paper	Names of Divisions
104	The 7th Management Panel on Collaboration Research Activities about Building Structural Engineering between JRC-IPSC, NILIM & BRI	Standards and Accreditation System Division
105	Technical documents developed for Building Standard Law, Housing Quality Assurance Act and other building/housing policy measures (Vol.1)	Standards and Accreditation System Division
107	Technical Methods for Evaluating Impact of Traffic on Road Environment(2) [Revision of 2003]	Road Environment Division
115	Investigation Report of the Damages by the Off-shore Miyagi Prefecture Earthquake on May 26th, 2003	Planning Division
116	Report of New Five-yr Program for Road Technology in Japan (FY 1998 to FY 2002)	Road Department
117	Annual Report of Road-related Research in FY 2002	Road Department
118	Report of the 1st Evaluation Committee of NILIM in FY 2003	Reserch Administration and Evaluation Division
119	Report on joint research on development of the system for measuring on inclination and meander of small diameter sewer	Wastewater System Division

## ■ "2004 Annual Report of NILIM" is now on our website (in Japanese only, for the time being)

We publish "2004 Annual Report of NILIM" to show our research activities and accomplishments, and you can see its contents on our website, [www.nilim.go.jp](http://www.nilim.go.jp). English version will be available in the future.



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