

### **[Restoring confidence in the safety and security of buildings]**

The problem of fabricated structural calculation data sheets not only created a major obstacle to the safety of residents and the stability of homes, it is also causing the spread of uneasiness about the earthquake resistance of buildings among the general public.

Under these circumstances the Architectural Subcommittee of the Panel on Infrastructure Development put together a mid-term report in February 2006, laying out the course given below in connection with the enforcement of policy for ensuring the safety of buildings. Based on these propositions, efforts must be made to restore public trust in the safety and security of buildings by reexamining the system in an appropriate manner to prevent recurrences of fabrication problems.

(Steps that must be taken immediately to ensure the safety of buildings)

- (1) Tighten building approval and inspection
- (2) Strengthen oversight of designated verification and inspection institutes
- (3) Stiffen punishments and penalties for architects
- (4) Broaden home sellers' defect liability
- (5) Broaden and strengthen the information disclosure system for architects, architectural offices, and designated verification and inspection institutes
- (6) Increase the retention period for drawings and documents

(Issues warranting continued review toward the actualization of policy)

- (1) Issues relating to the architect system
- (2) Strengthen oversight and review systems at specified national, prefectural, and metropolitan administrative government agencies and enrich their stock of information on buildings

Based on this mid-term report, MLIT submitted the "Bill to Partially Amend the Building Standards Law to Ensure the Safety of Buildings" at the 164<sup>th</sup> session of the Diet. The bill covered tightening of the verification and inspection system, stiffening of penalties, and so on. MLIT will continue to examine other issues like those surrounding the architect system, as well, including the implementation of an architect system divided up by field of specialization. MLIT is committed to putting together the policy by this summer and proceeding with the required amendments.

### **[Promoting the development, implementation, and utilization of technology]**

Not only administrative methods but also methods utilizing science and technology are crucial for solving the problems that must be dealt with for the realization of a safe and secure society.

From now forward MLIT is committed to resolving serious societal issues through the mutual complementation and coordination of administrative methods with science and technology, which is developed by combining, integrating, and enhancing various elemental technologies that make their way back to citizens' lives (social technology), aiming toward the creation of a "new social infrastructure."

(Research and development warranting intensive efforts)

In order to prevent and mitigate damage from natural disasters, MLIT will make intensive efforts toward improvement of local disaster prevention capabilities, early restoration, and accommodation of unforeseen events, with focus on research and development of technology.

(Enhancing the reliability of communications infrastructure)

In order to mitigate damage from natural disasters, speedy collection and provision of information when a disaster occurs is of the utmost importance.

(Technical development to issue the Earthquake Early Warning)

Earthquake Early Warning (EEW) aims to issue earthquake information before the arrival of major shaking by analyzing seismic waveform data observed by seismographs near the epicenter quickly to determine the location and magnitude of the earthquake, and to estimate the time at which the principal shock (major shaking) will arrive and the seismic intensity for each area. EEW is effective in mitigating the damage caused by earthquakes and tsunamis when utilized properly.

(Development of preventive safety technology)

In the transportation sector there are calls for development of “preventive safety technology,” which prevents accidents caused by human error. Examples of this include technologies that detect promptly when a driver has moved to a potentially dangerous state (deviating from the normal state, although danger is not yet present) and accelerate their return to a normal state, technologies that enhances the driver’s situation awareness (awareness support), and technologies that allow for situation assessment and support from the flight (drive) control side.

(Technical development and accelerated dissemination of ITS)

Intelligent transportation systems (ITS) are systems constructed to unify people, roads, and vehicles using the latest information and communication technology. These systems also contribute to road traffic safety. One of these is the automated highway system (AHS), which uses IT to coordinate between the road and the vehicle and supports the driver’s safe driving. There are calls for further research and development on this technology.

Industry, educational institutions, and government are also working in collaboration to promote the development and dissemination of advanced safety vehicle (ASV) technology, which uses new electronics technologies to increase intelligence and dramatically improve safety. In the future, along with promoting the practical use of ASV, which is made safer by the employment of communication technology, examination of steps for its dissemination based on evaluation of its effectiveness must be promoted.

(Technological development and implementation relating to railway, aviation, and maritime transport safety)

The following must be carried out to improve railway safety: from the standpoint of enhancing backup equipment in case of driver error, install speed limiting devices in places like curves and track terminals where there is a danger of a serious accident as well as installing devices that automatically stop the train when driver conditions turn abnormal; from the standpoint of preventing secondary damage after a derailment or other accident has occurred, make efforts to improve the reliability of security radios; from the standpoint of preventing recurrence of accidents by inspecting their causes, install recording devices so that the operational situation at the moment of accident can be ascertained.

For aviation, future air navigation systems utilizing new technologies, such as satellite navigation, need to be established in order to expand the capacity of airspace and en-route and cope with the future increase of air traffic.

For maritime transport, it is necessary to promote the implementation of technologies that aid in and allocate crew operations, such as automatic radar plotting aids (ARPA) and automatic identification systems (AIS), in addition to promoting research on technologies like work analysis technology, which evaluates the burden of ship handling operations and makes appropriate adjustments.

(Technology development to strengthen terrorism countermeasures in transportation facilities)

The risk of terrorist acts targeting transportation facilities and the risk that dangerous articles that could be used for terrorism may blend in with normal cargo and be transported has been pointed out. In order to forestall this sort of problem, there have been calls to promote research and development into next-generation detection technologies that would improve detection capabilities for dangerous items, the practical application of security screening devices using new technology, and other technological applications.

(Information security measures for critical infrastructure)

IT disturbances in critical infrastructure like railways, airways, and distribution can have grave effects on public life and socioeconomic activities. Matters like the following must be addressed as information security measures for this critical infrastructure in coordination with concerned government bodies and private businesses: reinforcing measures across sectors, raising information security standards, and enhancing systems for information sharing and provision.

**[Responding to the risks posed by hazardous substances]**

In order to respond to the risks posed by hazardous substances and ensure the safety and security of Japan's citizens, it is important to take appropriate measures against environmental risks and address the recent asbestos problem in light of the mistakes that need to be reflected on in that area.

With hazardous substances it is crucial to prevent harm to health before it occurs. This is why we must address these issues based on the concept of the preventive approach.

In addition, based on the fact that coordination between concerned government ministries and agencies on the asbestos problem has not always been adequate in the past, concerned government ministries and agencies will exchange information and opinions relating to new expertise on the toxicity of chemical substances and so on. Furthermore, when examination of individual substances becomes necessary these matters will be reviewed in communications conferences and other meetings.

**[Promoting appropriate maintenance and renewal of infrastructure]**

As the infrastructure developed up to now successively deteriorates, it needs to be systematically and efficiently maintained and renewed in the future in order for it to continue serving its original purpose of ensuring safety. The matter of how to balance appropriate maintenance and renewal with investments in new construction to accommodate new needs is something requiring a great deal of consideration.

Considerations like the following are also required in going forward with appropriate maintenance and renewal: the promotion of systematic repairs to keep life cycle costs (total expenses through the course of the life of the facility) to a minimum, further cost reduction, efficient maintenance utilizing the private sector as well, the conducting of maintenance with appropriate management standards, equalization of infrastructure renewal periods, and review of facility renewal policies in light of depopulation.

In addition, since maintenance and renewal is a major issue for local authorities as well, the national government must review policies on matters like local authority maintenance and renewal systems as well as the provision of technical assistance.