

# Barrier-free School Facility Promotion Guideline

March, 2004

Ministry of Education, Culture, Sports, Science and Technology  
Secretariat Department of Facilities Planning and Administration

## Introduction

In the partial revision of "the Law concerning the promotion of construction of the specific building that the senior citizen and the physically handicapped person were able to use smoothly" (promulgation in July, 2002 and enforcement in April, 2003), school facilities were newly specified as a target to be barrier-free.

On the other hand, "Handicapped Basic Project" (Cabinet Decision in December, 2002) requires barrier-free designs for school facilities and a new city or product planning for all people from the viewpoint of the universal design.

Therefore, "Research Committee concerning school facility barrier-free" was established in the Ministry of Education, Culture, Sports, Science and Technology in August, 2003 to promote the basic idea and plan and design and notes for planning and design to promote the school facility barrier-free mainly for the elementary schools and junior high schools. The committee has compiled the report "Promotion of School Facility Barrier-free" in March, 2004.

This is a reconfiguration of summary by the Ministry of Education, Culture, Sports, Science and Technology including the basic notes concerning promotion of the school facility barrier-free promotion and the notes for design and planning concerning promotion the school facility barrier-free as a guideline based on the report above. In the Chapter 2 of this guideline, the notes in the plan and design concerning school facility barrier-free projects are specified in categories: "important matters to be standard from the viewpoint of facility maintenance for safety and smoothness of students", "matters that need to be prepared for more safe and convenient use for students", and "matters need to be added or considered in considering characteristics and facility usage of facility users" to promote participation of handicapped students".

Parties concerned are requested to promote barrier-free designs of school facilities according to this guideline in a prompt and immediate manner.

## Contents

### Introduction

Chapter 1. Basic idea concerning promotion school facilities barrier-free .....	1
1. Aspects of school facility barrier-free.....	1
(1) Consideration for handicapped students to spend the time in school safely and smoothly.....	1
(2) Consideration in educational meanings of school facility barrier-free project.....	1
(3) Cooperation with the support system in operation .....	1
(4) Use of school facilities as the place of participation for neighbors to participate in school education and lifelong learning .....	1
(5) Emergency evacuation place in case of disasters .....	3
2 Promotion of making of existing school facilities barrier-free .....	3
(1) Participation, Understanding and Consensus of Parties Concerned.....	3
(2) Rational retrofitting plan concerning barrier-free .....	3
(3) Implementation of retrofitting concerning barrier-free plans.....	3
Chapter 2. Notes for planning and design to make school facilities barrier-free .....	4
1 Basic notes in plan and design .....	4
(1) Participation, understanding and consensus of parties concerned.....	4
(2) Setting of appropriate retrofitting target .....	4
(3) Implementation of inspection of barrier-free works .....	4
2 Accessible and Easy Layout Plan of Building.....	4
(1) Layout accessible from outside to building .....	4
(2) Layout accessible between buildings .....	4
(3) Site secret communication road that moves safely easily .....	4
(4) Outdoor ground easily accessible from building .....	5
(5) Accessible parking.....	5
3. Floor plan accessible and easy to see .....	5
(1) Floor plan for smooth access .....	5
(2)Planning with concise traffic line .....	5
(3) Clear layout for easy reorganization and understanding .....	5
(4)Securing of safe and accessible evacuation route .....	6
(5) Easy guide.....	6
4 Room plan accessible, easy, and safe to use.....	6
(1) Classroom easy to use .....	6
(2)The indoor passage with easy access .....	6
(3) Stairs that can be smoothly used.....	7
(4) Elevator to use easily.....	7
(5) Accessible lavatory .....	8

(6) Accessible entry to classroom.....	8
(7) Accessible entrance and door.....	9
(8) Building equipment with easy operation.....	9
(9) Furniture easy to use.....	9
(10) Suitable lighting fixture.....	10
(11) Color phase plan .....	10

## Chapter 1. Basic idea concerning promotion school facilities barrier-free

### 1. Aspects of school facility barrier-free

The school facility is a place for study and life for students to spend most of the time during the day time. Therefore, it is necessary to maintain schools as a comfortable and affluent space for students as well as to secure the health and safety of students. Moreover, the school facilities shall not only be a friendly public facility for neighbors to be the center of city planning and a place for the lifelong learning, but also to play a role as a disaster prevention base for the community.

Therefore, when a school facility is newly retrofitted, it is important to plan and design from the viewpoint of the universal design so that various people not only students but also teachers, parents, and neighbors to use it easily. On the other hand, it is also essential to make a concrete plan to promote barrier-free projects by fully studying policies to remove the barriers for students to use the facility safe and smoothly, based on the design of universal design, such as conducting a few steps of retrofitting works as necessary for the existing facilities.

#### (1) Consideration for handicapped students to spend the time in school safely and smoothly.

It is necessary to execute measures corresponding to individual needs in the school facility so that handicapped students can spend the school life safely and smoothly.

Measures to consider the handicapped students are also effective as measures for not only the students but also various people such as teachers, parents and neighbors to use facilities safely and smoothly.

#### (2) Consideration in educational meanings of school facility barrier-free project

The barrier-free school facilities are expected to improve understanding of students on handicapped persons through the use of the facility, as well as to use the facility in related curriculums with specific examples.

In the case of developing school facilities, it is necessary to create a plan in which senior citizens and children with disabilities can safely and smoothly use them. This will allow for more interaction between senior citizens and children with disabilities, as well as for the smoother communication between elementary schools, junior high schools, and schools for the visually disabled and hearing impaired.

#### (3) Cooperation with the support system in operation

It is necessary to consider hardware operation/management of the facilities and software such as human support for handicapped students, by taking measures of educational materials and classrooms and restrooms for them to access safely and smoothly. Moreover, assuming that human supports be necessary not only for educational aspects but also for life styles to meet the individual needs, the school facilities should be designed in cooperation with these various support systems.

#### (4) Use of school facilities as the place of participation for neighbors to participate in school education and lifelong learning

It is necessary to make a plan assuming that various people would use as a place for lifelong learning and participation in school education for communities, such as accepting human resources from the community for the educational activities of the schools.



#### (5) Emergency evacuation place in case of disasters

It is necessary to make a plan assuming that the school facilities would be used by neighbors as it can be used for temporary evacuation in case of disasters such as earthquakes.

### 2 Promotion of making of existing school facilities barrier-free

It is necessary to actively promote barrier-free projects of the existing school facilities for further promotion of barrier-free of school facilities.

#### (1) Participation, Understanding and Consensus of Parties Concerned

It is important to achieve consistency with the middle and long term administration plan and barrier-free retrofitting projects of the applicable municipal authorities, to have understanding and consensus of the parties concerned in a wide range by participation of schools, families, community and municipal authorities (e.g. education committee, construction division, city planning division, finance division and disaster prevention division) and make a retrofitting plan concerning barrier-free measures of the existing school facilities.

#### (2) Rational retrofitting plan concerning barrier-free

It is important for designers of facilities of municipal authorities to promptly create a retrofitting plan for barrier-free of the existing school facilities and promote a plan of barrier-free based on the basic concept of the above based on the notes for planning and design as states in Chapter 2.

In order to make a retrofitting plan for barrier-free of the existing school facilities, the first thing to do is to research the current status of school facilities barrier-free under supervision and to understand the barriers against safe and smooth use of the facilities for handicapped students. Afterwards, retrofitting measures to eliminate the barriers will be studied and the cost for the whole project should be confirmed. In addition, it is important to set a numerical target for barrier-free retrofitting of each school facility based on the data of handicapped students who belong to facilities, including the future presumption, in order to establish a rational retrofitting plan concerning the school facilities in question.

It is also effective to set a stepwise maintenance target in cooperation with the operational system for the maintenance program concerning barrier-free.

#### (3) Implementation of retrofitting concerning barrier-free plans

It is important to implement the retrofitting program of school facility barrier-free based on the retrofitting plan of the school facilities under supervision.

From the viewpoint to eliminate the barriers against using school facilities safely and smoothly for handicapped students, it is important to install slopes and elevators to make the school accessible. In addition, it is also important to execute retrofitting concerning barrier-free to meet individual needs of handicapped students.

It is also effective to retrofit facilities to be barrier-free as well as earthquake proof and securities of school facilities, as well as small-scale maintenance and using existing products.

## Chapter 2. Notes for planning and design to make school facilities barrier-free

### 1 Basic notes in plan and design

#### (1) Participation, understanding and consensus of parties concerned

To promote making of the school facility barrier-free, it is important to make a comprehensive study in participation of schools, family, community, authorities (education committee, construction division, city planning division, financial division and disaster prevention division) in each phase of retrofitting projects from planning, basic design, implementation design to construction.

#### (2) Setting of appropriate retrofitting target

It is important to set a maintenance target appropriate to cope with support systems to meet the characteristics of users, usage of facility and operation of each school in planning a barrier-free program of school facilities, in order not to make excess facilities. In setting the maintenance target, it is important to consider the facilities from the viewpoint of universal design for safe and smooth use of the existing buildings for various people.

Moreover, it is also effective to set the maintenance target in stage as necessary to make a certain plan.

#### (3) Implementation of inspection of barrier-free works

It is important to plan Barrier-free works for flexible implementation of retrofitting to meet the various needs and diversification of users.

Moreover, it is effective to set up the organization to conduct post-inspection, exchange information with users on a regular basis and to study the conditions of barrier-free of the facilities.

### 2 Accessible and easy layout plan of building

#### (1) Layout accessible from outside to building

It is important to make an accessible layout without steps, such as that the building border and parking areas are clear to see.

#### (2) Layout accessible between buildings

[1] It is important to make a layout accessible for handicapped people between school buildings, school building and indoor ground with minimum and flat access.

[2] It is important to adequately examine and understand the future trend of the number of students, and make a building layout from a long-term viewpoint.

#### (3) Site secret communication road that moves safely easily

[1] It is important to make a plan to separate pedestrians and cars on the passage in the site of buildings such as site borders, passage from parking area to building and passage between buildings for safe and smooth access.

[2] It is important to make a non-slip finish for the passage in the site with minimum steps. If there has to be slopes, it should be appropriately designed with slopes and adjusters for steps.



[3] It is important to take measures in designing slopes and stairs safe and accessible with a mark to recognize it, in taking consideration of slopes and handrails.

[4] It is important to avoid steps between lids of gutters that cross the passages and slopes, and take measures to design the slit to prevent cranes and casters of wheelchairs from being fallen into it.

[5] It is important to consider the design such as installation of audio/Braille guide or blocks for visually-handicapped persons for them to access from the site border to reception or guide facilities such as interphones with safe.

[6] It is preferable to consider an accessible design such as change of color phase or intensity for stairs, slopes from other areas or change of materials.

#### (4) Outdoor ground easily accessible from building

It is important to minimize steps for passages from the building entry/exit to outdoor ground in planning. If there has to be steps, it is important to install appropriate slops and adjusters for steps.

#### (5) Accessible parking

[1] It is preferable to secure the parking lot for the wheelchair users with a sufficient space wherever accessible and safe near the two entries of building.

[2] In the parking lot, it is preferable to have a clear mark for the parking lot for wheelchair users.

### 3. Floor plan accessible and easy to see

#### (1) Floor plan for smooth access

[1] It is important to provide a flat access with minimum steps for a floor. If there has to be steps, it is important to install appropriate slops and adjusters for steps.

[2] When the classroom etc. that the child student etc. who have the trouble use extend to the floor of the plural, it is important to set up the going up and down equipment such as elevators.

#### (2) Planning with concise traffic line

[1] It is important to make a plane floor plan to allow simple movement such as consolidating the space for students or design a minimum passage to classrooms.

[2] It is important to design a clear traffic line for students to move smoothly as necessary to meet their needs without passing an activity space.

#### (3) Clear layout for easy reorganization and understanding

It is important to design a clear layout for the students to recognize their locations in the building and for teachers to oversee the behaviors of the students.

#### (4)Securing of safe and accessible evacuation route

[1] It is important to secure an accessible evacuation route with minimum steps and for handicapped students to evacuate to outdoor or temporary evacuation space alone as much as possible. For evacuation of students who are unable to evacuate from the temporary evacuation space to outdoor alone, it is important to design a plan with support of the operation personnel for safe and smooth evacuation.

[2] It is important to design a plan to allow immediate evacuation in case of emergency such as setting multiple traffic lines, if a number of people use a facility on the non-evacuation floor.

[3] It is preferable to consider the regular passage for the students as an evacuation route.

[4] It is preferable to design a fire door in the specification to allow people on wheelchairs to access.

#### (5) Easy guide

[1] It is important to provide guide displays for users to acknowledge easily at wherever important on the traffic line such as the entry of buildings and elevator lobbies. Graphic symbols for the guide of Japanese Industrial Standards (JIS) shall be used to make it easy for them to recognize.

[2] It is effective to provide a sign of the name of facilities in an appropriate size and at an appropriate location wherever recognizable from outside for facilities which unknown number of users would use as a temporary evacuation space in case of emergency or for open school such as outdoor ground, indoor ground and library.

[3] It is effective to provide Braille displays and large signage in consideration of visually handicapped persons.

[4] It is effective to install evacuation lamp equipment of evacuation alarm, flashing and emergency text display to activate in coincidence with the automatic fire alarm, considering the use of visually handicapped persons and hearing impaired.

### 4 Room plan accessible, easy, and safe to use

#### (1) Classroom easy to use

[1] It is important to design a space without a convex/concave with sharp edges and secure safety to various activities of people such as eliminating projections and obstacles, as well as chamfering the corners of column and wall.

[2] It is important to adopt ceiling and wall materials with a proper performance of absorbing sound. Especially, it is important to make the specification with moderate sound insulating properties for areas where a constant silence is necessary.

[3] It is effective to adopt materials elastic, soft and warmth in texture in consideration of safety and comfort.

[4] It is effective to securing a space to allow educational materials to be placed in an appropriate manner to cope with the educational patterns of handicapped students and to provide a study space exclusive for handicapped students to use.

#### (2)The indoor passage with easy access

[1] It is important to design a passage in a building which is easily accessible, by minimizing steps, projections and obstacles on the way to be safe and understandable. It is important to design an appropriate slope and steps if there has to be steps on a passage.

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\*1 Graphic symbol for the guide: limited to JISZ 8210 of Japanese Industrial Standards (graphic symbol for the guide).

[2] It is important to secure a certain width for the indoor passage to allow users to move safely and smoothly.

[3] It is important to consider slopes, handrail locations for easy and safe access not only wheelchair users but also various people.

[4] It is preferable to consider finishes of floors and walls, by designing a distinguish color phase and intensity or use various materials to secure high visibility of the border of rise of floor and wall.

[5] It is effective to provide a cushion for wheelchairs on the wall of passage as required, considering wheelchair users.

[6] It is effective to design a handrail in no slippery material as required, considering the use of handicapped students.

[7] It is effective to provide a rest to sit for an open space in the passage, considering a space for wheelchair users.

### (3) Stairs that can be smoothly used

[1] It is important for the stairs to secure width and the inclination that can be used safe and smoothly, and to assume the surface to be regret finish to the slip.

[2] It is important to consider color phase and intensity to make the top and bottom ends of steps of stairs recognizable.

[3] It is important to have major stairs to be a straight or return type with a constant size of tread and rise.

[4] It is important to design the nosing easy to recognize and non-tripping.

[5] It is effective to design handrails, as an effective guide sign for visually handicapped people, considering its installation location and consecutiveness.

[6] It is effective to have Braille letters for the number of stairs at the handrail of stairs considering visually handicapped people.

### (4) Elevator to use easily

[1] It is important to design an elevator adjacent to major routes for handicapped students to use easily, with a guide sign on wherever appropriate.

[2] It is important to design the opening of elevator, shape/size of box, location of the control panel and handrails to place wherever appropriate for the use of handicapped students.

[3] It is important to secure a certain space for wheelchair users to turn around in front of the elevator. It is also preferable to design for wheelchair users to enter or exit the elevator going straight.

[4] It is preferable to provide elevators wherever appropriate for handicapped students to smoothly move during the break time.

[5] It is preferable to design glass windows at the elevator or lift doors to see the inside of elevator.

[6] It is effective to display Braille signs on the elevator buttons in the lobby or the control panel of the box, considering visually handicapped people.

[7] It is effective to provide visual information, for the audio alarm such as excess loading buzzer or emergency response, considering hearing-impaired people.

#### (5) Accessible lavatory

[1] It is important to plan lavatories assuming handicapped students and provide toilets for wheelchair users.

[2] It is important to secure a certain width for wheelchair users to pass the entry and passage of the toilet and lavatory.

[3] It is important to finish the floor non slippery, make the floor on the entry and passage to the lavatory and toilets flat and design the specification of doors for users to smoothly use.

[4] It is important to have one or more floor-type or wall –type urine bowls and it is preferred to have handrails.

[5] It is preferable to set up a wheelchair toilet teach floor considering wheelchair users to move the classroom in break time.

[6] It is preferable to install a multi-function toilet wherever appropriate such as an integrated type with other toilets or near the entry.

[7] It is preferable to install an emergency alarm button for wheelchair toilets and multi-function toilets.

[8] It is preferable to take measures for one or more washing sink such as that securing a height for wheelchair users to use on a sitting position, installation of water taps at wherever easy to us, and space under the sink for wheelchair to access.

[9] It is effective to unite the arrangement of equipment such as the flushing buttons and the paper holders considering the visually handicapped person's use.

[10] It is effective to display locations of toilets and gender on the guide with Braille letters considering the visually handicapped person's use.

[11] It is effective to set up a display whether it is occupied or not on the door of the toilet considering the use of the visually handicapped person and the hearing impaired.

#### (6) Accessible entry to classroom

[1] It is important to consider safe and smooth access to classrooms such as securing a certain width for wheelchairs to access without difference of levels. If the difference of level is unavoidable, it is important to set up an appropriate slope etc.

[2] It is important to have a door which is easy to open and close.

[3] It is preferable to secure a space necessary for wheelchair users to use around the door to open or close or entry with ease.

[4] It is preferable to consider glasses of the entry door considering a measure to prevent accidents of collision.

[5] It is preferable to display a sign in Braille or convex letters considering the use of visually handicapped.

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\*2 Wheelchair user toilet: a toilet with a certain space with sitting type urine bowls and handrails are properly arranged so wheelchair users can easily use.

\*3 Wall type low lip: A urine bowl with lop projecting forward, which is designed in low height same as a floor type.

\*4 Multi-function toilet: A toilet for not only handicapped students, senior citizens, physically handicapped persons but also various people including those who are with infants to easily use, which are equipped with sitting type urine bowl, handrail, flush and cocks for Ostomate, and diaper exchange counter with a certain space for wheelchairs to rotate or helpers to attend.

(7) Accessible entrance and door

[1] It is important to plan the arrangement of the entrance, door, and reception wherever easy to see to allow easy access to the building. It is also important to plan the arrangement of the teacher's room and offices from the viewpoint of operation.

[2] It is important to consider the entrance and door design to finish non-slippery, without difference of levels to hinder access of wheelchairs but to secure a sufficient width for wheelchairs to pass safely and smoothly. If the difference of level is unavoidable, it is important to set up an appropriate slope and adjuster etc.

[3] It is important to secure a space for wheelchair users to rotate in the area before and behind the entry.

[4] It is important to install a door whatever easy to close and door for the lift and the entrance. It is preferable to install an automatic door if necessary.

[5] It is preferable to consider glasses of the lift entry and entrance to avoid accidents of collision.

[6] It is effective to plan the position of reception in consideration of the operation for information provision and support for senior citizens and physically handicapped persons.

[7] It is preferable to set up the guide equipment such as reception desks and interphones in the vicinity of the entrance. In this case, it is effective to provide guide blocks or voice guide for visually handicapped persons to access.

[8] It is effective to properly display the guide of information about the building and facilities appropriately by Braille letters, voice, and texts considering the use of visually handicapped persons and hearing impaired.

[9] It is effective to design a roof for the car porch considering the use of cars for handicapped students.

(8) Building equipment with easy operation

[1] It is important to have building equipment with easy operation.

[2] It is important to arrange equipment such as switches, outlet, and hand wash sink etc. in a large size wherever easy to access.

[3] It is important to consider broadcasting and the sound system so that it would be easily audible. It is also effective to set up the illuminating signboard etc. that present text information with broadcasting and sound systems considering the hearing impaired.

[4] It is effective to set up a mobile or fixed type magnetic loop, etc. considering the use of hearing impaired in consideration of characteristics of facilities users, usage and locations.

(9) Furniture easy to use

[1] It is important to set up furniture such as blackboard, desks, chairs, and various shelves considering user's physique.

[2] It is preferable to set up desks, chairs, and blackboard, etc. that the height etc. can be adjusted.

[3] It is effective to arrange furniture that considers the characteristic of handicapped persons such as adjustable desks with a top board to lean for visually handicapped persons to read and write in an easy position, or desks with a large top board for them to use Braille letter readers and visually support equipment.

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\*5 The magnetic loop: It is a loop of electric cord to be placed under the floor of classroom and hall, which is to form a magnetic field by applying a current of voice signal through an amplifier. This is a system to make the sound audible by the hearing aid with an induction coil (telephone coil) to receive the magnetism. It is designed to not to be disturbed by noise so that the person with the hearing aid can receive the voice signal in a

stable condition wherever they are, regardless of the distance, within the loop of the electric codes.

(10) Suitable lighting fixture

It is important to select proper lighting fixtures in good quality with appropriate brightness and plan a certain lighting intensity and layout in consideration of the facility users, usage, location and use of lighting etc.

(11) Color phase plan

As the color phase plan may be substituted by area marking, guide sign and other signage depending on the combination of colors, it is important to consider the difference of color phase and brightness and fully study the effects of colors concerning visual or psychological impacts of the users.