

Supplementary information

(1) Information on the consultation with property developers on the draft revised *Design Manual* during the six-month consultation period.

On 20 January 2006, Buildings Department wrote to the Real Estate Developers Association of Hong Kong (REDA) inviting comments on the draft revised *Design Manual*. REDA replied with comments on 29 March 2006. Copies of the correspondence are attached in Appendices I and II.

(2) Information on the consultant's reports relating to overseas practices in providing barrier-free access for PWDs.

Five countries selected for review regarding the provisions of barrier-free access include Australia, United Kingdom (England and Wales), United States, Norway and Japan. The consultant's findings, extracted from his Review and Research Report (Appendix III) and Rationalized Requirement Report (Appendix IV) attached, are summarized below:

- In the aforementioned overseas countries, the provision of tactile guide path in private buildings is for the following situation on a voluntary basis only:
 - (a) where traditional guidance given by a standard footway between the property line and carriageway does not exist, e.g. in a pedestrian precinct;
 - (b) where pedestrians need to be guided around obstacles/hazardous environment;
 - (c) where a number of visually impaired persons need to find a specific location; and
 - (d) in transport terminals to guide visually impaired persons between facilities.

- While the minimum illumination recommended by the Lighting Industry Federation Handbook, the Chartered Institution of Building Services Engineer (CIBSE) Lighting Design Guide and the views of Illuminating Engineering Society (IES) is mostly 100 lux, except for restroom, church and bed head in hospital, CIBSE recommended that 50 to 80 lux would be adequate if no detailed activities are to be carried out in public areas. According to the consultant's findings, the above minimum illumination standards have not been made mandatory in the five countries selected for the review.



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20 January 2006

Real Estate Developers Association of Hong Kong
 Room 1403, World Wide House,
 19 Des Voeux Road Central,
 Hong Kong

Dear Sir,

Review of the Design Manual : Barrier Free Access 1997

The Buildings Department has commissioned a consultancy study to review the current Design Manual : Barrier Free Access 1997 on the obligatory and recommended requirements for provision of a barrier-free built environment for people with disabilities and other sectors of the population, who do at times require the same provision as people with disabilities. A draft revised Design Manual incorporating the views received so far is now available for public information at the Health, Welfare and Food Bureau's website at www.hwfb.gov.hk/ and the Buildings Department's website at www.bd.gov.hk/.

Two public forums will also be held to introduce the draft Manual to the public and to collect their views as detailed below :

- | | |
|------------------|---|
| Public forum (1) | Date: 15 February 2006 (Wednesday) Time: 2:15 p.m. to 4:30 p.m. Venue: Leighton Hill Community Hall, 133 Wong Nai Chung Road, Happy Valley, Hong Kong. |
| Public forum (2) | Date: 21 February 2006 (Tuesday) Time: 2:15 p.m. to 4:30 p.m. Venue: Tai Hang Tung Community Centre, 17 Tong Yam Street, Tai Hang Tung, Kowloon. |

You or your representatives are welcomed to attend the forums. Meanwhile, I enclose a CD-ROM containing a soft copy of the draft Manual and would be grateful if you could let me have your comments on or before 31 March 2006.

Should you have any queries, please do not hesitate to contact our Mr Anderson C B CHAN at telephone number 2626 1532 during office hours.

Yours faithfully,

FORWARDED
20 JAN 2006


 (Alex K P CHOW)
 for Director of Buildings



香港地產建設商會

THE REAL ESTATE DEVELOPERS ASSOCIATION OF HONG KONG

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29 March 2006

Director of Buildings
 12-18/F, Pioneer Centre
 750 Nathan Road
 Mongkok
 Kowloon
 (Attn.: Mr. Alex K. P. Chow)

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 2 & D Section
 BUILDINGS DEPT.

Dear Mr. Chow

Review of the "Design Manual: Barrier Free Access 1997"

We refer to your letter of 20 January and as requested would like to provide our comments on the subject as follows:

1. The current draft covers in great detail with fully annotated diagrams and illustrations all the design elements catering the need of persons with a disability, the elderly, and people with other forms of physical infirmities or limitations. Noting that this is the first review since 1997, we would recommend that the Manual should be revised and updated more regularly to cope with the changing needs of the community and rapid development of new technology.
2. The exemptions listed in para. 2.2.2 (page 8) should also be reviewed from time to time as there are uses which at this moment may not have surfaced and attracted our attention.
3. While we support that where possible efforts should be made to allow disabled persons barrier free access, a balanced view must be maintained in the process of approving building plans for alterations or additions to existing buildings. In addition to the areas or parts of a building exempted from the application of the Manual as stipulated in para. 2.2.2, exemptions should also be granted in cases where the physical conditions of the premises render the provision of barrier free access for the disabled not feasible because of design, usage or financial difficulties.



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4. Lastly, the colour of the signage's background in Figure 29 of page 74 should be kept consistent with the International Symbol of Accessibility as mentioned in page 21 and page 73, where a colour close to dark navy blue is commonly used.

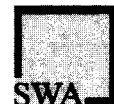
Yours sincerely

Louis Loong
Secretary General

Review and Research Report

| | Hong Kong | Australia | UK | USA | Norway | Japan |
|---|---|------------------------------|--|---|--------|-------|
| Sections | Requirement | | | | | |
| 4.9.2 Special Obligatory Design Requirements to Assist Persons with Visual/Hearing Impairment in Buildings intended to be used by the Public | <ul style="list-style-type: none"> (Fig 11)* | | | | | |
| 4.9.2 (a), (b), (c) & (d) | <ul style="list-style-type: none"> Tactile guide path to lift zones and functional areas shall be provided | To lift and accessible areas | | Yes | | |
| | <ul style="list-style-type: none"> International signs shall be provided to indicate the provision of an inductive loop system for persons with hearing impairment, if any | Yes | Preferably, tactile signs should be complemented by audible information for visually impaired people | In assembly areas where permanently installed assistive listening systems are required by 4.1.3 (19)(b) the availability of such systems shall be identified with signage that includes the international symbol of access for hearing loss | Yes | |

* See Appendix C



**Extract of Rationalised Requirements Report
on Tactile Guide Path (P.43 to 47) and Illumination(P.112 to 115)**

| Item 3.3 | CATEGORY OF BUILDINGS & EXTENT OF THE APPLICATION OF DESIGN MANUAL (TABLE 1) | | | | | |
|----------------------------|--|--|---|--|--|--|
| RECOMMENDED CHANGES | <u>Category of buildings</u> | <u>Extent of application of this Manual</u> | | | | |
| | Domestic buildings | <ul style="list-style-type: none"> - All common areas of buildings of more than 4 storeys. - Main entrance and common area of the ground floor and means of access thereto for buildings which do not exceed 4 storeys. | | | | |
| | Composite buildings | <ul style="list-style-type: none"> - Non domestic parts of such building. - All common areas of the domestic parts of such buildings, if the domestic parts exceed 4 storeys. - Main entrance and common area of the ground floor and means of access thereto, if the domestic parts do not exceed 4 storeys. | | | | |
| | Amended Buildings which are places of public entertainment, schools halls, community halls, places with performance stages and lecture theatres/halls. | <ul style="list-style-type: none"> - The area of the main foyer. - The auditorium, <i>stage and backstage facilities</i> provided in accordance with 3.5 and means of access thereto. - Toilets for the use of the public. | | | | |
| | Public swimming pools, gymnasia, games halls and sports stadia | Areas include any swimming pools, changing rooms, toilets and other facilities open to the public, and the means of access thereto. | | | | |
| | Hotels | <ul style="list-style-type: none"> - Public areas and means of access thereto. - Rooms for persons with a disability provided in accordance with 3.6 and means of access thereto. | | | | |
| New | EXTENT OF APPLICATION OF ADDITIONAL ASSISTIVE PROVISIONS TO VARIOUS CATEGORIES OF BUILDINGS (TABLE 2) | | | | | |
| | Types of buildings | Required Additional Assistive Provisions | | | | |
| | | Visual display boards (only if there is an announcer to regularly inform persons inside of matters relating to the purpose of their entry) [4.9.1(d)] | Braille & tactile layout plan showing the main entrances, toilets and major common facilities [4.9.2(a)] | Tactile guide path to lift zones, toilets for persons with a disability, information / service counters, Braille & tactile floor plans and staircases/escalators [4.9.2(b)] | Accessible Public Service Information Counter [4.10.1(a)] | Assistive Listening System with International Sign [5.6.1(a)] |
| | 1. Domestic buildings | - | - | - | - | - |
| | 2. Office | - | - | - | - | - |
| | 3. Bank, wholesale shops and shopping complexes | - | - | - | Y | - |

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|----------------------------------|--|--|---|--|--|--|
| Item 3.3 | | | | | | |
| RECOMMENDED CHANGES | EXTENT OF APPLICATION OF ADDITIONAL ASSISTIVE PROVISIONS TO VARIOUS CATEGORIES OF BUILDINGS (TABLE 2) (Cont'd) | | | | | |
| | Types of buildings | Required Additional Assistive Provisions | | | | |
| | | Visual display boards (only if there is an announcer to regularly inform persons inside of matters relating to the purpose of their entry) [4.9.1(d)] | Braille & tactile layout plan showing the main entrances, toilets and major common facilities [4.9.2(a)] | Tactile guide path to lift zones, toilets for persons with a disability, information / service counters, Braille & tactile floor plans and staircases/escalators [4.9.2(b)] | Accessible Public Service Information Counter [4.10.1(a)] | Assistive Listening System with International Sign [5.6.1(a)] |
| | 4. Hotels, Guest houses, Hostels or Dormitories | - | Y | - | Y | - |
| | 5. Places for worship e.g. Church | - | - | Y | - | - |
| | 6. Cinemas, theatres, concert halls, stadia or other places of public entertainment where permanent seating arrangement is provided. | Y | Y | Y | Y | Y |
| | 7. Places of public entertainment other than Item 6 | Y | Y | Y | Y | Y |
| | 8. Schools, colleges, universities or institutions of learning. | - | Y | Y | - | - |
| | 9. Factories, workshops and industrial buildings. | - | Y | - | - | - |
| | 10. Sports complexes and public swimming pools. | - | Y | Y | Y | - |
| 11. Restaurants and food courts. | - | Y | - | - | - | |

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| Item 3.3 | | | | | | |
| RECOMMENDED CHANGES | EXTENT OF APPLICATION OF ADDITIONAL ASSISTIVE PROVISIONS TO VARIOUS CATEGORIES OF BUILDINGS (TABLE 2) (Cont'd) | | | | | |
| | Types of buildings | Required Additional Assistive Provisions | | | | |
| | | Visual display boards (only if there is an announcer to regularly inform persons inside of matters relating to the purpose of their entry) [4.9.1(d)] | Braille & tactile layout plan showing the main entrances, toilets and major common facilities [4.9.2(a)] | Tactile guide path to lift zones, toilets for persons with a disability, information / service counters, Braille & tactile floor plans and staircases/escalators [4.9.2(b)] | Accessible Public Service Information Counter [4.10.1(a)] | Assistive Listening System with International Sign [5.6.1(a)] |
| | 12. Indoor markets and supermarkets. | - | Y | Y | - | - |
| | 13. Hospitals, clinics, dispensaries, nursing homes, homes for the aged and welfare | Y | Y | Y | Y | Y |
| | 14. Club house | - | Y | - | Y | - |
| | 15. Transport stations, interchanges, passenger terminals and administration buildings in depots. | Y | Y | Y | Y | Y |
| 16. Carparks | - | Y | - | Y | - | |

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|--|---|
| Item 3.3 | |
| RECOMMENDED CHANGES | EXEMPTIONS (TABLE 3) |
| <p>New</p> <p>(c) to (h) New</p> | <p><i>The obligatory design requirements shall not apply to the following buildings or parts of buildings: -</i></p> <p>(a) Buildings of 13 m or less in height above ground level which are used, or intended to be used, for occupation by a single family.</p> <p>(b) Temporary buildings or contractor's sheds referred to in Part VII of the Building (Planning) Regulations (Cap.123 sub.leg.).</p> <p>(c) <i>Cleaners' store room, commercial kitchen, staff serving area in a bar and cool room.</i></p> <p>(d) <i>Areas only used for building services and maintenance (testing, inspections, verification, repair and overhaul) including: -</i></p> <p>(i) <i>A plant, cooling tower and power plant;</i></p> <p>(ii) <i>equipment and a lift motor room, an electrical transformer room and switch room, a battery room, a machinery room, a battery room, a machinery room, a plant room and a pump room;</i></p> <p>(iii) <i>a boiler house;</i></p> <p>(iv) <i>non-occupiable spaces accessed only by ladders, catwalks, crawl spaces, tunnels or freight (non-passenger) elevators;</i></p> <p>(v) <i>an access route for maintenance, pits, lift shafts and ventilation shafts; and</i></p> <p>(vi) <i>a sub-station, telecommunication equipment room, metering area, or the like.</i></p> <p>(e) <i>Areas containing raw materials, produce or bulk storage filling the volume of space / storage where:</i></p> <p>(i) <i>hazardous; or</i></p> <p>(ii) <i>the public is not permitted to enter.</i></p> <p><i>Such as waste containment area, chemical store, or the like.</i></p> <p>(f) <i>Mezzanine areas used only for storage, plant and equipment or the like.</i></p> <p>(g) <i>Raised areas used primarily for purposes of security or life or fire safety, including, but not limited to, guard towers or fixed life guard stands.</i></p> <p>(h) <i>Any path of travel providing access only to an exempted area.</i></p> |
| RECOMMENDED CHANGES | ALTERNATIVE SOLUTION |
| New | <p><i>Where it is not practicable to provide access under the guidance of the Design Manual and where the person seeking approval wishes to take a performance-based design approach by departing from the obligatory requirements in this Design Manual, a Statement shall be submitted to the Building Authority for approval, such Statement shall set out the rationale for the design approach adopted and the reasons for departing from the requirements.</i></p> <p><i>Where an alternative approach is adopted, the Building Authority will assess its acceptability by reference to a set of criteria. This includes the means of alternative design, the achievement of performance standard, the equivalency of the proposed alternative solution, the management control and regulatory provisions.</i></p> <p><i>In the case of existing buildings, such Statement shall identify the constraints posed by the existing structure and its immediate environment and shall propose compensatory measures where full access proves to be impracticable or only achievable at disproportionate cost. The Statement shall also provide justification and assessment for situations where a less-than-fully accessible means is proposed to an otherwise fully accessible altered area of a building. For example, if, as part of the reconstruction or alteration of a building or its change of use, it is impractical to make adjustments to the level of the existing principal entrance or any other appropriate existing entrance, to permit independent access for users with a disability, or to provide a new entrance which is suitable, the other requirements of the Design Manual should still apply and the Statement shall state why it is not practical to adjust the level of the existing entrance.</i></p> |

| Item 3.3 | CATEGORY OF BUILDINGS & SCOPE OF THE APPLICATION OF DESIGN MANUAL INCLUDING EXTENT OF APPLICATION OF ADDITIONAL ASSISTIVE PROVISIONS (Cont'd) | | | | |
|--|--|---|---|------------------------|--|
| JUSTIFICATIONS | <ul style="list-style-type: none"> The interpretation of the existing term "Buildings intended to be used by the public" is vague and would give rise to different implication of provision of BFA facilities to certain buildings. "Functional areas" in existing Design Manual shall be defined to specify areas such as toilet and information counter. Scope of areas and types of buildings as well as "Exempted Areas" must be clearly defined to avoid ambiguities for future implementation. Some premises such as private club house appeared not governed under the existing manual. The best solution is to design a table depicting clearly the required additional assistive facilities which shall be provided to various categories of buildings. Aim to provide the best accessibility to persons with a disability and at the same time accounting for various stakeholders' interests. | | | | |
| STAKEHOLDERS' VIEWS | <ul style="list-style-type: none"> The ambiguity of the terms "buildings intended to be used by the public" and " functional areas" as set out in the existing Design Manual should be eliminated to provide clearer definition. [2.3 (e)] Wheelchair users, blind people, deaf-blind people are most likely to have difficulties accessing buildings as well as premises like cafeterias, restaurants, bars, theatres, cinemas, concert halls, supermarkets, banks and public lavatories. [2.3 (e) & (g)] To provide additional definitions of essential terms [2.3] Clearer definition of applicable buildings (e.g. clubhouses, private estates, prisons, etc.) had to be included in the new Design Manual. [3.3] Alternative Solution based on performance approach should be allowed for in the forthcoming Design Manual to accommodate more flexible and innovative designs. | | | | |
| OVERSEAS BENCHMARKING | | | | | |
| Hong Kong | Aus | UK | US | Norway | Japan |
| Extent of Application to Various Categories of Buildings | Yes | Yes | Yes | Yes | Yes |
| | Australian Standard 1428 Design for access and mobility Part 1 Sec.1 & 2, and Part 2 Sec, 1 & 2, Appendix B. | Application of Part M of Building Regulations | Section 4.1 (Pt.36, App. .A) of ADA Standards | The Nordic Regulations | Article 1 of The Act on Buildings Accessible and Usable for the Elderly and Physically Disabled. |

| Item 5.2 | ILLUMINATION |
|---|--|
| <p>RECOMMENDED CHANGES</p> <p>New</p> <p>New</p> <p>No Change</p> <p>New</p> <p>New</p> <p>New</p> | <p>5.2 ILLUMINATION</p> <p>5.2.1 Obligatory Design Requirements</p> <p>(a) <u>Accessible sign shall have illumination level on the sign surface of not less than 120 lux.</u></p> <p>(b) <u>The following designated areas of a building shall have illumination level measured at the finished floor level as follows: -</u></p> <p><u>Ground floor entrance lobby and lift</u> <u>120 lux (minimum)</u></p> <p><u>Lift lobby of upper floors</u> <u>85 lux (minimum)</u></p> <p><u>Corridor and accessible paths</u> <u>45 lux (minimum)</u></p> <p>5.2.2 Recommended Design Requirement</p> <p>(a) Common areas of a building should have an illumination level of not less than 120 lux measured at the finished floor level.</p> <p>(b) <u>Low level lighting should be provided at the entrances and exits to provide a contrast between the treads and the risers.</u></p> <p>(c) <u>Uniformity of illumination level should be maintained throughout the designated confined area.</u></p> <p>(d) <u>Higher illumination should be positioned at flat entrance doors and exit doors.</u></p> |

| Item 5.2 | | ILLUMINATION (Cont'd) | | | | | |
|------------------------------|-----|--|-----------|--|---------------|--------------|--|
| JUSTIFICATIONS | | <ul style="list-style-type: none"> Adequate illumination level not only provides safer environment to the people with a disability and the elderly but also to the general public. The minimum illumination recommended by the Lighting Industry Federation Handbook and the CIBSE Lighting Design Guide and the Illuminating Engineering Society (IES) is mostly 100 lux/m², except for restroom, church and bed head in hospital. But if no detailed activities are to be carried out in public areas, CIBSE recommended that 50 to 80 lux would be adequate. The Consultant has carried out comprehensive field tests to various types and standards of buildings (including private and public residential buildings and commercial buildings) throughout Hong Kong to set the benchmark for recommendation. Sufficient contrast between the treads and the risers of the stairs and escalators, lift car and landing, lift control button and surrounding are necessary to enhance safety. Existing Design Manual does not provide any obligatory requirements which is considered insufficient for implementation. | | | | | |
| STAKEHOLDERS' VIEWS | | <ul style="list-style-type: none"> Whilst professionals considered that the existing lux illumination level was excessive and waste of energy, people with low vision as well as elderlys found that the illumination level for common areas of most buildings were not adequate. [5.2.1 (a)] Government Departments have to consider energy wastage and operation budget. Staircases will be seldomly used during normal daily life, and that the main function of back stairs are for the purpose of escape in case of emergency such as fire hazard. The COP for MOE has already set appropriate guidelines of illuminance requirements. | | | | | |
| OVERSEAS BENCHMARKING | | | | | | | |
| Hong Kong | | Aus | UK | US | Norway | Japan | |
| Illuminance Level | | | | | | | |
| Common Area | | | | | | | |
| Lift | 150 | 100 | 100 | Satisfactory lighting without unpleasant heat load | | 150-300 | |
| Stairs | 150 | 100 | 100 | | | 75-150 | |
| Escalator | 150 | 100 | 100 | | | 75-150 | |
| Entrance Hall | 150 | 200 | 200 | | | 200-500 | |
| LOCAL CONSTRAINTS | | <ul style="list-style-type: none"> Operation budget may have to be adjusted to accommodate such increases in running costs. It is difficult to strike a perfect balance of setting an agreed standard illumination level. The comfortability of the environment, energy wastage and safety to the public are the prime factors governing the setting of obligatory illumination level. Various stakeholders held very different views. It was argued that 100 to 120 lux for all common areas would result in unnecessary wastage of energy and public resources and environmentally unfriendly. Some Government Departments have their own guidelines set for illumination level. | | | | | |

| Item 3.2 | | ILLUMINATION (Cont'd) | | |
|----------|---|---|--|--|
| IMPACT | ECONOMIC | | | |
| | Description of Changes | Construction Cost | Maintenance Operation Cost | Remarks |
| | Minimum 120 lux on surface of accessible signs, by 1) Re-position the lights closer to the sign 2) Small light (e.g. 10W) at signage top 3) Small light (radioactive) at signage top | 1) No extra cost 2) \$100/No 3) \$2500/No | 1) Minimal 2) Replacement of light bulb at \$10/No, twice a year, extra electricity charge at \$88 per no per year 3) Replace every 10 years, no electricity charges | No effect on property value |
| | Minimum 100 lux to designated common area 1) Add reflector above fluorescent tube 2) Replace with a higher wattage light tube (e.g. 25W to 40W) | 1) \$200 / No 2) Minimal cost | 1) No change 2) Extra electricity charge at 0.015 kW x 365 days x 24 hours x \$1 = \$131 per no per year | No effect on property value A 36W Fluorescent tube, without any diffuser, can generate a luminance level of around 120 lux/m ² for an area of 3m x 3m, at an utilisation factor of 0.4 and a maintenance factor of 0.8. Similar calculation for a 20W fluorescent tube is around 70 lux/m ² , the effect of a reflector may improve the illuminance level slightly. |

| Item S2 | ILLUMINATION (Cont'd) |
|--|--|
| | <p>SOCIAL</p> <ul style="list-style-type: none"> • Additional provisions to provide basic level of guidance aiming to create a safer and more harmonious environment for the whole of the general public. |
| BALANCE OF VIEWS | <ul style="list-style-type: none"> • Even though the electricity cost would be increased by increasing the illuminance level, the increase in illumination level could minimize the potential risk such as careless tripping down the stair caused by low illuminance, and the financial burden medical cost and insurance claims. • Balance of views have to account for energy wastage, public resources and environmental effect. • The result of the Consultants' comprehensive survey stipulates the general illumination level of common areas being widely adopted in Hong Kong, which provides some benchmark for the Consultant in proposing the new obligatory requirements. (Refer overleaf for details) • Since staircases will be seldomly used during normal daily life, it would be more appropriate to remain this as recommended requirement of 120 lux (minimum) for the designer to determine the suitable illumination level for different situations. • There are many effective means to achieve savings in energy costs, such as using energy saving lamps, photocell and timer control to switch on / off, etc. • Enhanced security measures such as CCTV surveillance can be provided to tackle security concern. |
| RECOMMENDATION & CONCLUSION | <ul style="list-style-type: none"> • Based on the above considerations, to counteract the setting of obligatory design standards of illumination level for various common areas, more recommended design requirements are also put forward for designers' consideration. |