

Slot 3 :

KEPERLUAN REKA BENTUK SEJAGAT
DAN MALAYSIAN STANDARD (MS- 1184)

Oleh :

Hjh Dalilah Bee binti Abdullah

Arkitek

Jabatan Pelaksanaan Projek Dan Penyelenggaraan Bangunan
Dewan Bandaraya Kuala Lumpur





KEPERLUAN REKABENTUK SEJAGAT DAN MALAYSIA STANDARD (MS1184)



oleh
CH'NG GAIK BEE @ HJH DALILAH BEE ABDULLAH, AMW

Timbalan Pengarah
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**(Setiausaha Penyelaras Jawatankuasa Pembangunan
OKU DBKL)**



MALAYSIAN STANDARD

MS 1184:2014

**Universal design and accessibility in the built environment - Code of practice
(Second revision)**

RANGKAIAN LALUAN AKSESIBLE

Pentingnya kesenambungan mobiliti dalam pergerakan dari rumah ke destinasi urusan harian seseorang OKU

RUMAH/TEMPAT
TINGGAL



BAS



KERJA



MEMBELI-BELAH



RUMAH/TEMPAT
TINGGAL



LRT

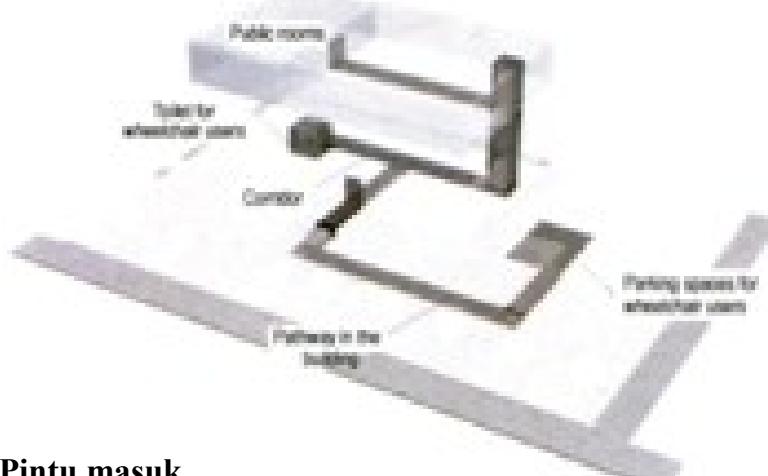


Sekiranya salah satu daripada rantaian link perjalanan ini tidak aksesible maka keseluruhan pergerakan mobiliti seseorang individu OKU tidak tercapai hasratnya untuk urusan sehariannya (contoh: pengangkutan awam boleh diakses tetapi tempat kerjanya ada tangga dan tempat membeli belah pula tiada lif mahupun toilet yang aksesible maka rantaian link tersebut akan terputus)

PERANCANGAN ‘CHECKPOINT’



Menyediakan bilik tandas dan tempat letak kereta bagi pengguna kerusi roda (semasa perancangan rekabentuk tandas awam dan tempat letak kereta), dan



Ruang kakilima dan tangga

- Adakah bentuk dan lebar tangga sesuai untuk pengguna yang dijangkakan?
- Adakah terdapat inskripsi Braille pada susur tangan?
- Apakah petunjuk yang perlu dan jika ya, adalah kaedah yang sesuai ?

Pintu masuk

- Adakah sistem penerimaan dan interkom pengguna mesra?
- Adakah terdapat kaedah yang sesuai melatih pengguna kepada penerimaan dan sistem interkom?

Tandas

Apakah fungsi yang perlu diberi penekanan dalam tandas pelbagai fungsi?
Adakah bilangan yang mencukupi untuk tandas?

Lif

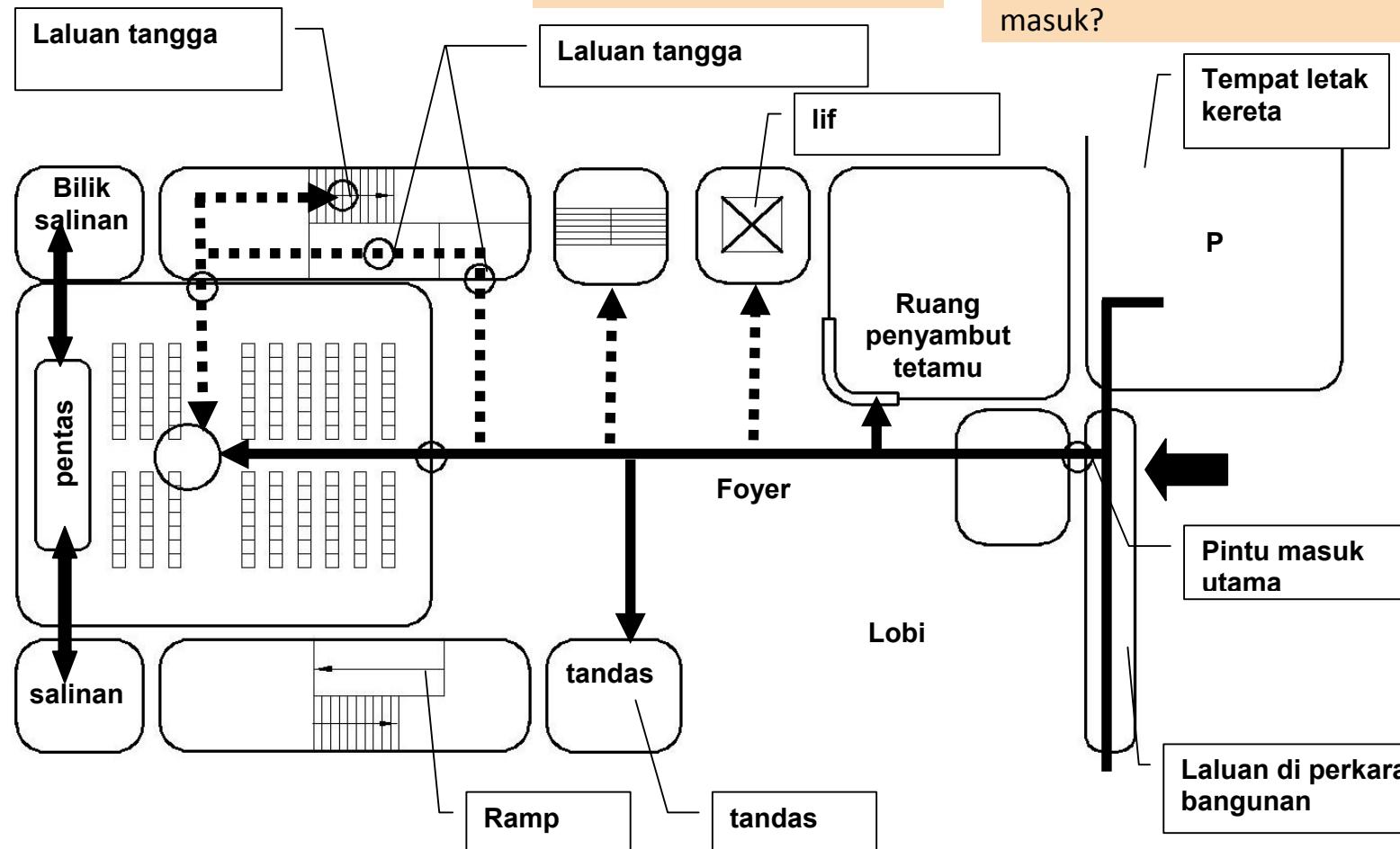
Adakah bentuk dan saiz lif yang sesuai?

Adakah sebilangan besar pengguna kerusi roda yang mungkin menggunakan lif pada masa yang sama?

Tempat letak Kereta

Adakah tempat letak kereta bagi pengguna kerusi roda (saiz, petakan, bilangan ruang, dan lokasinya) sesuai?

Bolehkah orang yang bukan seorang pengguna kerusi roda tetapi mempunyai keperluan khusus letak berhampiran pintu masuk?



GARIS PANDUAN PERANCANGAN KEPERLUAN KEMUDAHAN OKU

BANGUNAN AM

ISU DAN KEMUDAHAN

Terdapat lima isu-isu bangunan awam di mana fasiliti yang paling biasanya dihadapi oleh pengguna:

- (1) menggunakan sistem peredaran,**
- (2) memasuki dan keluar,**
- (3) *wayfinding*,**
- (4) mendapatkan produk dan perkhidmatan, dan**
- (5) menggunakan kemudahan awam.**

Persekutuan infrastruktur dan Bangunan yang bercirikan rekabentuk sejagat (**Universal Design**) mampu untuk memberi akses serta memenuhi keperluan yang mencakupi maksima pengguna yang mungkin dan mesra untuk semua. Menggunakan Sistem Edaran Bergerak di luar rumah dan di dalam bangunan adalah sebahagian daripada kriteria bandar mampan.

Kebersambungan (Connectivity)

Secara makro, penekanan terhadap **perancangan ‘connectivity’** pembangunan yang bebas halangan iaitu sejauh mana ianya dirancang, direkabentuk dan dibina agar **pengunjung dapat akses dan bergerak dengan mudah** melalui laluan yang bersambungan bermula dari drop-off atau Tempat Letak Kereta (TLK) ke ruang/tempat yang menjadi matlamat seseorang untuk datang ke pembangunan tersebut.

Oleh itu fokus adalah terhadap **penyediaan sirkulasi mendatar** (laluan, koridor, pintu masuk) dan **sirkulasi menegak** (lif, tangga, ram). Aras pembangunan juga perlu disesuaikan dengan aras laluan pejalan kaki, jalan raya dan bangunan bersebelahan agar ianya **seamless**.

PENYATA AKSESIBILITI

(dimasukkan dalam Lapuran Cadangan Pembangunan)

Penyata Aksesibiliti adalah lapuran penjelasan tentang bagaimana akses dan kemudahan bagi Kurang Upaya dan orang lain yang telah dikemukakan pada skim tertentu. Kenyataan tersebut akan berbeza dalam saiz bergantung pada jenis dan skala pembangunan tetapi umumnya harus merangkumi unsur-unsur berikut:

1. Penerangan kerja yang dicadangkan dan tujuan penggunaan bangunan
2. Konsep rekabentuk aksesibiliti pada skim projek
3. Sumber-sumber nasihat dan bimbingan
4. Konsultasi dengan PBT berkenaan
5. Penerangan bangunan
6. Isu-isu dan masalah
7. Peruntukan akses sediaada
8. Cadangan atau pengesyoran untuk pembaikan
9. Halangan kepada perbaikan dan / atau justifikasi mengapa sesuatu pendekatan alternatif telah digunakan

Pengenalan kepada **Penyata Aksesibiliti**

- a) Penyata Aksesibiliti
- b) Apa itu Penyata Aksesibiliti
- c) Kriteria Penyata Aksesibiliti
- d) Contoh Penyata Aksesibiliti
- e) Rujukan untuk penyediaan Penyata Aksesibiliti
- f) Tipilogi bangunan
- g) Butiran untuk Penyata Aksesibiliti



JAWATANKUASA PEMBANGUNAN ORANG KURANG UPAYA

Dewan Bandaraya Kuala Lumpur

di Sekretariat JKPOKU,

Tingkat 27, Menara DBKL 3, Bandar Wawasan, Jalan Raja Abdullah, 50300 Kuala Lumpur

Tel: 03 - 26176592/ 26176611 Fax: 03 - 26983869

ACCESS STATEMENT

Objective

'Access to and use of building', impacts on the majority of building work undertaken. An access statement is intended to allow the applicant to demonstrate how well they meet the various legislative requirements and is seen as an essential tool in demonstrating compliance.

Ultimately the driving force for the recent changes is the **Akta OKU 2008**, placing a greater emphasis on designers and occupiers to work towards meeting the Government's commitment to achieving "Thriving, inclusive and sustainable communities in all regions".

An access statement will enable Building Control Bodies to make judgements about whether the proposals make reasonable provision to meet these requirements, therefore one should be submitted to compliment the normal deposit of plans.

In existing buildings, it is also an opportunity to explain, in cases where building constraints make it difficult to meet **UBBL**, that an equivalent level of accessibility is achieved. Equivalency can be shown with reference to other recognized design guides.

The requirement for the production of an access statement should encourage project

The requirement for an Access Statement encourages access issues to be addressed at an early stage.

Access Statements

An Access Statement is an explanation of how access and facilities for people with disabilities and others has been addressed in a particular scheme. The statement will vary in size dependent on the type and scale of the development but should generally include the following elements:

- Description of the proposed works and the intended use of the building
- Access design philosophy on the scheme
- Sources of advice and guidance
- Evidence of any consultation with the Council's Access Officer or the Local Access Group
- Description of the building
- Key issues of the scheme
- Current access provisions
- Proposed areas for improvement
- Areas not proposed for improvement and/or reasons why an alternative approach has been adopted

WHY ?

An Access Statement is intended to allow the applicant to demonstrate how well they meet the various legislative requirement and is seen as an essential tool in demonstrating compliance. Ultimately the driving force for the recent changes is the akta OKU 2008 placing a greater emphasis on designers and occupiers to work toward meeting the Governments commitment to achieving "Thriving, inclusive and sustainable communities in all regions". By considering access issues for all members of society at the earliest opportunity steps can be taken to ensure that facilities are suitable for use

we shape environment. We can all benefit from a more easily accessible built environment. Accessible design is invariably good design for all.

What do I need to consider?

We have included a checklist to help you identify the areas that require addressing (where relevant) in the Access Statement, this then forms part of the submission which is made for Planning Permission/Building Regulation approval. Special considerations need to be given to Listed Building, development in Conservation Areas and other buildings or spaces of special interest.

Matters of consideration for all developments include :-

- Transport links
- Disabled parking provision or setting down points or garaging
- Approach routes to building – wayfinding signage, gradient, width, surface finish
- External hazards/features – hard landscaping, projections, furniture
- External steps/ramps – gradient, width, guarding and heights
- Entrances – primary and secondary
- Doors – operation, size, level threshold, automatic
- Lobby Sizes – for manoeuvrability
- Reception – counter height
- Aids for hearing impaired people – induction loop
- Visibility of signage – size and contrast for people with impaired vision
- Interpretation and Braille facilities
- Internal corridors – width, obstructions, gradients
- Internal step / ramps – height, width, gradients
- Lifts – size, height of controls
- WC accommodation – size, layout, number
- Spector seating – number of spaces, choice of viewing point, facilities
- Access to special facilities – meeting rooms, swimming pools, sports equipment etc.
- Usability of the building / facilities
- Management arrangements – for assisted access and means of escape

What does an Access Statement include?

A sample access statement is also available, complete and submit with your Planning and building regulation applications.

KRITERIA YANG PERLU DIPERTIMBANGKAN

Senarai semak untuk membantu mengenal pasti kawasan-kawasan yang memerlukan ditangani (yang mana berkenaan) dalam pernyataan aksesibiliti, ini kemudian menjadi sebahagian daripada pengemukaan yang dibuat untuk **Kebenaran Merancang / Peraturan kelulusan Bangunan**.

(Pertimbangan khas perlu diberikan kepada Bangunan yang tersenarai di Kawasan Pemuliharaan dan lain-lain bangunan atau ruang kepentingan khas seperti bangunan warisan.)

Perkara-perkara yang perlu diberi pertimbangan ialah termasuk: -

- **Pengangkutan**
- peruntukan **tempat letak kereta OKU**
- Pendekatan **laluan aksesibiliti - papan tanda wayfinding**, kecerunan, lebar, kemasan permukaan
- **bahaya** di luar bangunan / ciri-ciri landskap keras, unjuran, perabot
- langkah-langkah di luar bangunan / **ramp**- kecerunan, lebar, dan ketinggian
- **Pintu masuk** - utama dan sekunder - **cara operasi, saiz, automatik**
- **ketinggian** perkhidmatan kaunter
- peralatan atau kelengkapan untuk mendengar bagi yang kurang pendengaran - **induction loop**
- Kebolehlihatan **papan tanda** - saiz dan Sebaliknya bagi orang-orang yang cacat penglihatan
- Tafsiran dan **kemudahan Braille**
- Dalaman **koridor** - lebar, halangan, kecerunan ramp - ketinggian, lebar, kecerunan
- **Lif** - saiz, ketinggian kawalan
- **WC** - saiz, kedudukan, bilangan
- **Akses** kepada kemudahan khas - bilik mesyuarat, kolam renang, peralatan sukan dan lain-lain.
- **Kebolehgunaan** bangunan / kemudahan - untuk memenuhi Akta
- Pengurusan **keperluan bomba** - **akses** yang perlu dibantu dan cara menyelamatkan diri



JABATAN REKA BENTUK BANDAR DAN BANGUNAN
Tingkat 29, Menara DBKL 3, Jalan Raja Abdullah
50350 Kuala Lumpur Tel: 03-26176639 Fax: 26946237

Kawalan Bangunan : Penyata Aksesibiliti (Building Control Access Statement)

Cadangan pembangunan: _____

Tarikh:

Butiran

Nama Pemohon

Nama: _____
Alamat: _____
Poskod: _____
Telefon: _____

Nama Pemilik

Nama: _____
Alamat: _____
Poskod: _____
Telefon: _____

email: _____

Keterangan Pembangunan

Sila masukkan keterangan tentang cadangan pembangunan iaitu:
saiz pembangunan, kegunaan bangunan, anggaran jumlah penghuni maklumat pengangkutan awam sediada dan lain-lain.

Piauan Reka Bentuk yang Dipatuhi

MS 1184(2014)
Akta OKU 2008

Garis panduan Laluan Bebas Halangan

Keperluan Reka Bentuk Di Wilayah Persekutuan Kuala Lumpur
Lain-lain (sila jelaskan dibawah): _____

Konsep dan Pendekatan

Nyatakan pendekatan yang akan dilaksanakan bagi menjadikan cadangan pembangunan iaitu mesra OKU iaitu termasuk keterangan mengenai konsep reka bentuk.

Berikan perincian yang spesifik dalam bentuk gambarajah/lukisan yang lengkap dengan saiz dan ukuran tentang reka bentuk pendekatan yang dicadangkan.

Gambarajah/lukisan yang diambil dari bahan rujukan piauan yang berkaitan adalah disyorkan.

Kriteria Aksesibiliti

Kriteria aksesibiliti perlu mengambil kira perkara-perkara di bawah:

- persekitaran dan jaluan ke lokasi tapak cadangan
- Tempat Letak Kereta
- Pintu Masuk
- Pergerakkan Melintang (jaluan pejalan kaki, koridor dan lain-lain)
- Pergerakkan Menegak (tangga, lif dan lain-lain)
- Akses kepada Perkhidmatan dan Kemudahan yang disediakan
- Jalan Keluar Kecemasan
- dan lain-lain.

Sumber Maklumat

Sumber nasihat dan maklumat boleh diperolehi:

- dan Malaysian Standard yang berkaitan
- melalui rundingan dengan pegawai/individu yang berkenaan seperti auditor akses dan lain-lain
- melalui rundingan dengan pengguna bangunan yang dirancang (jika ada).
- melalui input dan perswatan-perswatan OKU dan orang awam.

+ Kenalpasti Halangan dan Jalan Penyelesaian

Kenalpasti dan nyatakan halangan terhadap pelaksanaan aksesibiliti seperti faktor:

- geografi
- reka bentuk
- struktur sedia ada.

Pemohon adalah bertanggungjawab untuk mencari jalan penyelesaian atau beberapa alternatif penyelesaian ke atas halangan-halangan tersebut termasuk mengadakan pindaan terhadap reka bentuk (jika perlu).

Makluman kepada Penghuni Bangunan (jika berkaitan)

Silajelaskan langkah-langkah yang akan diambil oleh PSP bagi memastikan konsep bebas halangan ini adalah untuk dimanfaatkan dalam jangka masa panjang bangunan.

Bahan Maklumat Tambahan

Kemukakan sebarang maklumat tambahan yang menyokong pembangunan yang dicadangkan.

CONTOH PENYATA AKSESIBILITI

Contoh Penyata Aksesibiliti

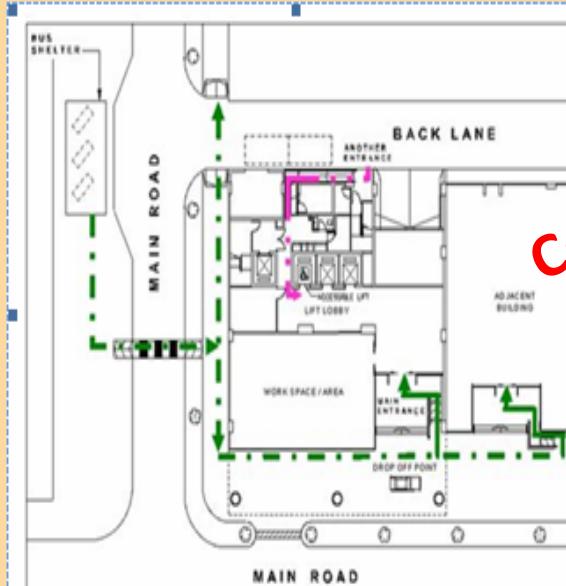


JAWATANKUASA PEMBANGUNAN ORANG KURANG UPAYA DEWAN BANDARAYA KUALA LUMPUR

Jawatan Pembangunan Bandar dan Kawasan
Unit Perancangan Kawasan
Tingkat 29, Menara DBKL 3, Jalan Raja Abdullah
50330 Kuala Lumpur Tel: 03-26176639 Fax: 26046237

APPENDIX A – Pelan Laluan aksesibilitas

Cadangan pembangunan ditandai dengan jelas menunjukkan laluan aksesibiliti, dan di dalam bangunan di mana ciri-ciri aksesibilitas telah disediakan, mesti dimasukkan bersama-sama dengan dokumen-dokumen yang diperlukan yang lain ketika mengemukakan permohonan kelulusan prinsip Aksesibilitas. Sebuah contoh dari rancangan laluan aksesibilitas diberikan di bawah ini.



JAWATANKUASA PEMBANGUNAN ORANG KURANG UPAYA DEWAN BANDARAYA KUALA LUMPUR

Jawatan Pembangunan Bandar dan Kawasan
Unit Perancangan Kawasan
Tingkat 29, Menara DBKL 3, Jalan Raja Abdullah
50330 Kuala Lumpur Tel: 03-26176639 Fax: 26046237

Perubahan kepada cerun riser (mm)	Kesanran tidak melebihi ratio yang ditetapkan
0 hingga 15	1 : 2
> 15 hingga 40	1 : 5
> 40 hingga 200	1 : 10
melebihi 200	1 : 12

(ii) Dimana perubahan menegak naik lebih dari 15mm ke 200mm,

- Peramp dan penderetan harus dari kontres wama, atau
- Sebuah band berwama harus dicat atau ditandai di tingkat atas dan bawah jalan atau lereng alternatif, penunjuk amaran taktil boleh diberikan sebagai pengganti pita berwama. Penunjuk taktil ditetapkan kembali 300 mm daripada tepi jalan.

b) Ramp pegangan tangan (klaus 3.3.6 Kod Etika),

Sebuah jalan berjalan dengan kensikan lebih dari 175 mm harus mempunyai pegangan tangan bahawa:

ACCESS STATEMENT SAMPLE TEMPLATE

DBKL to approve sample template. AECOM to select ROL package to illustrate access statement after template confirmation

Access Statement

Site address Date:

Contact details

Applicant's name:

Address:

Telephone:

Description of development

To include description of proposed works. Size of proposed works, perceived users, transportation provisions etc.

Design standard followed

- Malaysian Standards 10D021R2: 2014
- Garis Panduan rekabentuk laluan Bebas Halangan (DBKL)
- Other (please elaborate below)

Philosophy and approach

Overview of the developer's philosophy regarding access for disabled people and inclusive design.

This section must include specific examples of how individual design proposals within the project reflect this philosophy.

Reference to current/pending legislation may also be relevant.

Key access issues of the design

This should include direct reference to key design attributes in relation to:

- Approach
- Parking
- Entrances
- Horizontal circulation
- Vertical circulation
- Access to services
- Emergency egress etc.

This template can be used as an Access Statement; however its completion does not clarify immunity from legal obligations set out by local and national government in Malaysia.

Drawings and plans may be incorporated, e.g.:



03.2 SEATS AND BENCHES

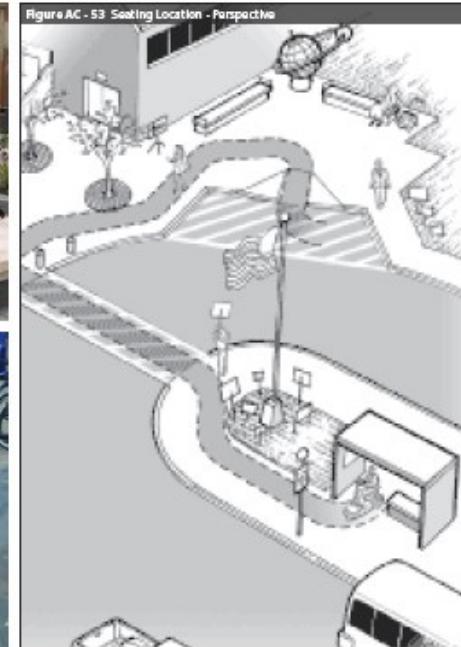
REST IS AN IMPORTANT PART OF ACCESS IN A CITY

Application

Most people don't realise that the provision of rest seating forms a large aspect in whether a city is accessible to people with mobility impairments such as the elderly.

Requirements

- Provision
 - / Rest seating should be provided every 50m.
- Location
 - / Away from paths of travel and on flat ground (less than 1:50);
 - / Strategic locations outside major hubs, transportation nodes, where people are likely to have to wait.
- Circulation
 - / 1200mm x 1500mm Space for wheelchair to be parked adjacent to the seat.
- Design
 - / Variety seating with backrest and armrest;
 - / Allows for side transfer of wheelchair users;
 - / Armrest on both sides in some sections of the seat for the elderly;
 - / Have 30% LRV contrast;
 - / Correct Dimensions (see figure); and
 - / Shelter highly preferable.





RIVER OF LIFE

ACCESS STATEMENT

PHASE 1: PRECINCT 7
EARLY WORKS PACKAGE

00 SEP 2013

2. INTERNAL ACCESSIBILITY - EARLY WORKS PACKAGE (EWP)

Guideline 01 : Cafe 044

Guideline 02 : Sanitary Facilities for People with Disabilities 046

3. APPENDIX

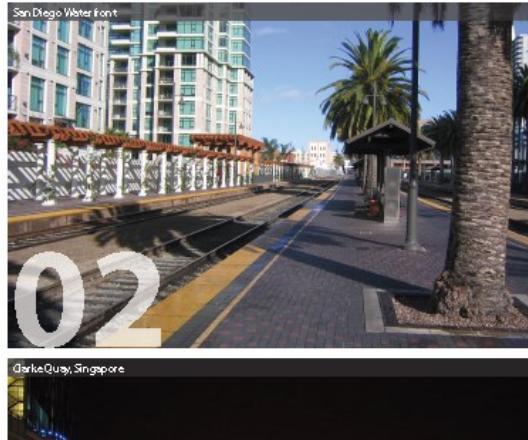
Phase 1: Precinct 7 - EWP OKU Plans 052

Phase 1: Precinct 7 - EWP OKU Details 056

Phase 1: Precinct 7 - EWP OKU Architectural Drawings 074

GOALS & OBJECTIVES

THE VISION ESTABLISHES A SET OF GOALS & OBJECTIVES THAT MUST BE MET IN ORDER FOR THE RIVER OF LIFE TO BE REALIZED



TRANSFORM THE RIVER FROM A BARRIER TO A CONNECTOR

The master plan will provide improved connectivity and accessibility for KL city through the project site. The riverfront will also serve as a connector between an improved network of public transport and key destinations within walking distance of the river.

There will be a connection between the river and the people of KL through water touching experiences. Currently, the river site is characterised by long stretches of unaccessible, under-utilised and unsafe riverfront, forming a barrier in the minds of people. It's important to change this perception by overcoming the prominent infrastructure barriers that exist, creating an environment where people can feel safe.

The River of Life Project will inject gathering spaces and communal areas that will unite the communities adjacent to the river and bring them to the riverside.

PROMOTE TRANSIT NODES

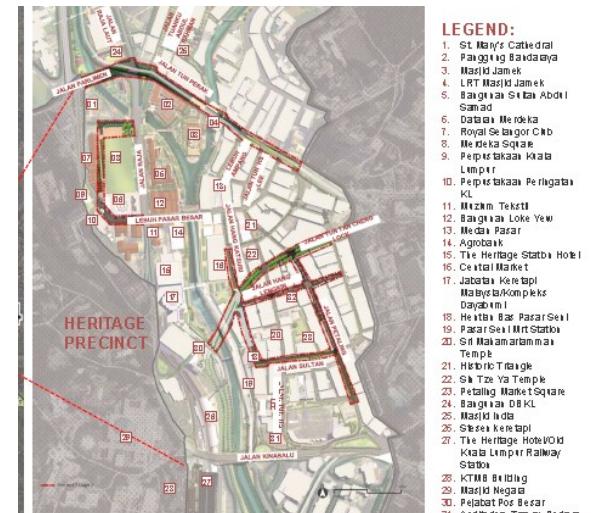
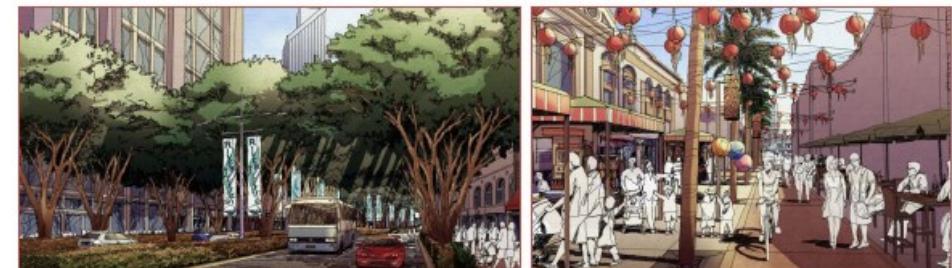
The master plan will increase connectivity and accessibility for the project site. This will occur by improving the existing infrastructure, providing safe and comfortable walking and cycling paths.

A strong emphasis will be placed on transit nodes, which are developments in targeted locations that facilitate movement and activity.



ESTABLISH A NEW CULTURAL LANDSCAPE

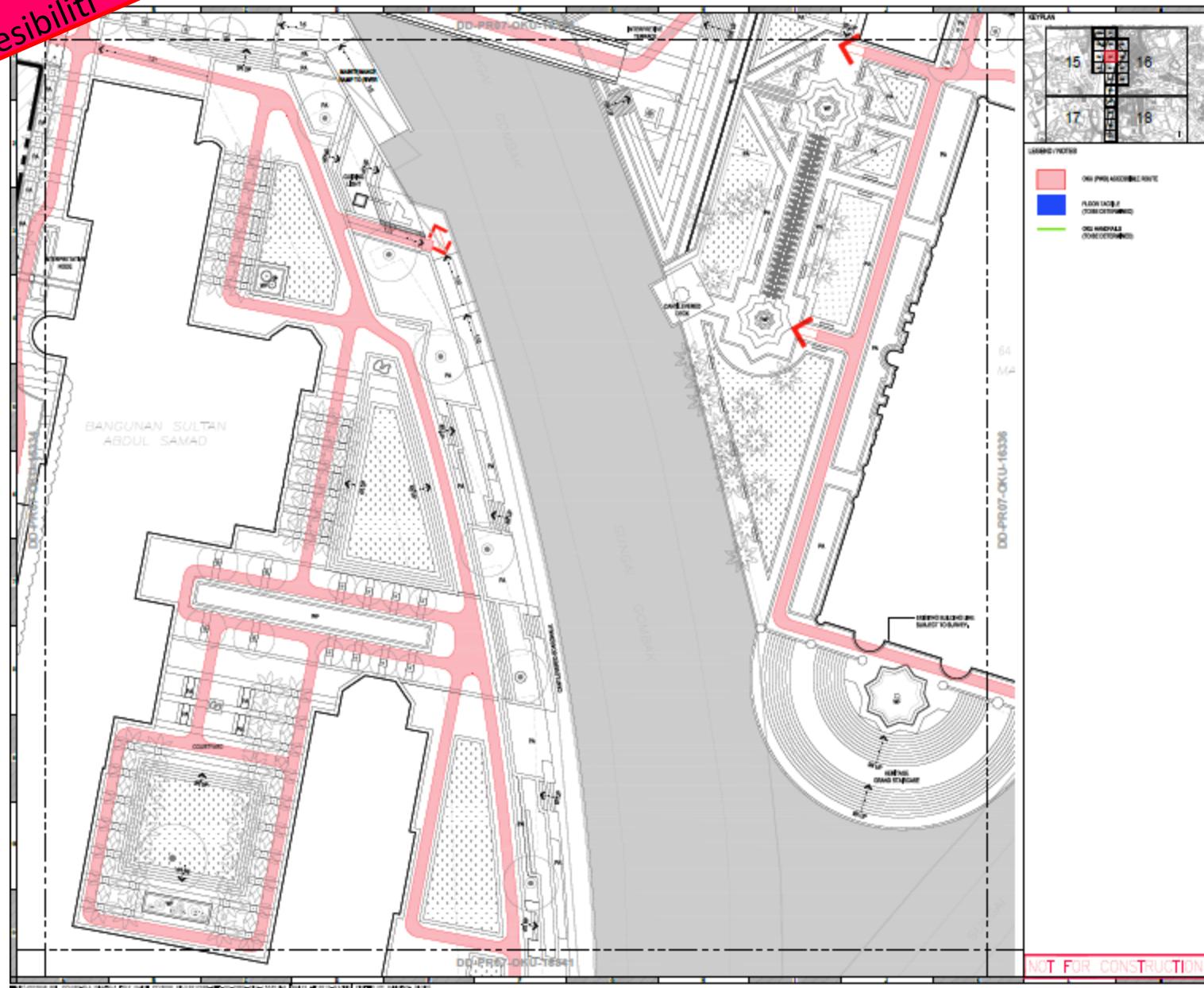
The master plan will create a new cultural landscape that is inclusive and representative of the different cultural and ethnic groups in the area.



LOCATION PLAN

PERSPECTIVE

Contoh Penyata Aksesibiliti





BUTIRAN DARI GARISPANDUAN

MS 1184(2014)

- Senang digunakan kerana banyak gambarajah yang diterapkan dalam pembinaan
- Butiran amalan terbaik
- Ukuran yang mematuhi semua spesifikasi

Reka bentuk sejagat dan akses dalam alam bina - Kod amalan (Semakan Kedua)

- Standard Malaysia ini menetapkan **pelbagai keperluan dan cadangan** bagi kebanyakan unsur-unsur pembinaan, pemasangan, komponen dan kelengkapan yang terdiri daripada alam bina. Keperluan ini berkaitan dengan **aspek-aspek binaan akses kepada bangunan, peredaran dalam bangunan, untuk jalan keluar dari bangunan dalam perjalanan biasa kejadian dan pemindahan sekiranya berlaku kecemasan**. Satu lampiran bermaklumat juga termasuk yang memperkatakan aspek pengurusan akses dalam bangunan.
- Tujuan piawaian ini adalah untuk **menyatakan reka bentuk dan keperluan pembinaan dan garis panduan asas** untuk membuat bangunan-bangunan yang dinyatakan dalam Jadual 1.
- Keperluan dan garis panduan piawaian ini adalah bertujuan untuk di mana bangunan yang perlu direka atau dipasang untuk menampung kanak-kanak kurang upaya, adalah disyorkan bahawa "**Garis Panduan Reka Bentuk untuk Kanak-kanak Kurang Upaya**" dalam Lampiran F diguna pakai dan dipatuhi.
- Di mana persekitaran fizikal yang diperlukan untuk memenuhi keperluan orang yang cacat penglihatan, pereka digalakkan untuk mereka bentuk atau retrofit bangunan yang selaras dengan "**Garis Panduan Reka Bentuk bagi Orang Bermasalah Penglihatan**" dalam Lampiran G.
- Di mana bangunan kediaman perlu direka atau dipasang untuk menyediakan akses dan keselamatan kepada penduduk tua dan sakit masa hadapan, adalah disyorkan bahawa "**Garis Panduan Reka Bentuk untuk Warga Tua**" dalam Lampiran H diguna pakai dan dipatuhi.
- Bagi pemilik bangunan, pemaju dan menguruskan agen yang berminat untuk menyediakan persekitaran yang mesra keluarga yang dalam bangunan di mana keluarga yang mempunyai bayi dan kanak-kanak mungkin berkumpul, "**Garis Panduan Rekabentuk Mesra Keluarga**" dalam Lampiran J adalah disyorkan untuk diterima pakai.
- Dalam kes taman-taman dan kawasan lapang, pereka landskap adalah untuk menerima pakai "**Garis Panduan Rekabentuk Taman dan Ruang Terbuka**" seperti yang ditunjukkan dalam Lampiran K, walaupun ia adalah penting untuk mengekalkan seberapa banyak alam semula jadi yang mungkin.

Table 1. Accessibility for PWDs, the elderly and children in different types of buildings

Types of buildings	Accessible areas
1. Residential buildings: 1.1 Existing buildings: (a) 4-storeys and below (without lift access); (b) 4-storeys and below (with lift access); and (c) 5-storeys and above. 1.2 New buildings shall be provided with lift	All communal areas and facilities at ground floor. All communal areas and facilities. All communal areas and facilities. All communal areas and facilities.
2. Office buildings.	All areas intended for access by employees or public.
3. Shophouses.	All areas intended for access by employees or public.
4. Shopping complexes and multipurpose complexes.	All areas intended for access by employees or public.
5. Hotels, boarding houses and chalets.	All areas intended for access by employees or public.
6. Places of public resort.	All areas intended for access by employees or public.
7. Parks and open spaces including zoo, civic plaza, etc.	All areas intended for access by employees or public.
8. Schools, colleges, universities or institutions of learning.	All areas intended for access by staff, students or public.

9. Hostels, halls of residence or dormitories.	All areas intended for access by staff, students or public.
10. Sports complexes and public swimming pools.	All areas intended for access by employees or public.
11. Restaurants and eating establishments.	All areas intended for access by employees or public.
12. Markets and hawker or food centres.	All areas intended for public access
13. Hospitals, clinics, dispensaries, nursing homes, homes for the aged and welfare homes.	All areas intended for access by staff, patients, inmates or public
14. Factories, workshops, industrial buildings and office/showroom areas in warehouses.	All areas intended for access by employees or public.
15. Transport stations, interchanges, passenger terminals, administration buildings in depots, taxi and bus shelters.	All areas intended for access by employees or public.
16. Vehicle parks (surface parking or vehicle parking buildings).	Prescribed areas. For vehicle parking buildings, carpark decks to be made accessible.
17. Heritage building.	Prescribed areas intended for access by employees or public.

Table 2. Examples of key accessibility issues in the early stages of planning

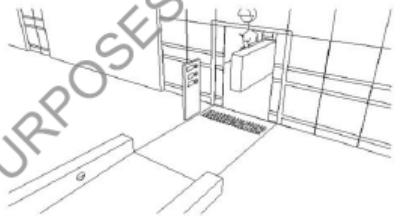
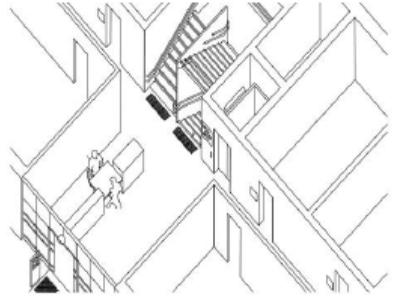
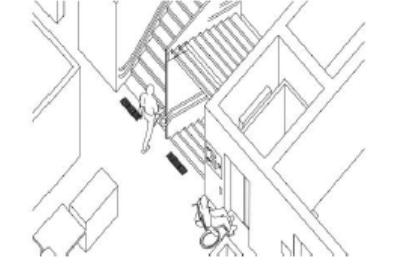
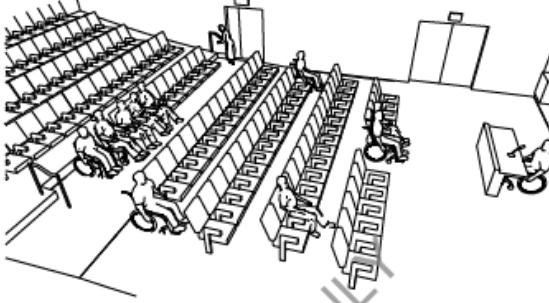
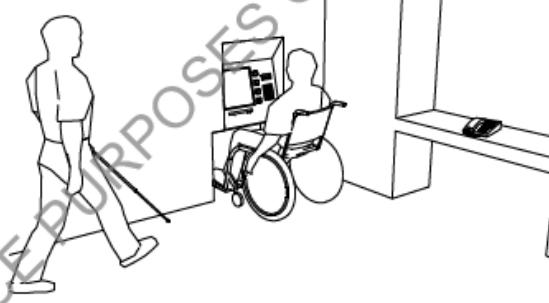
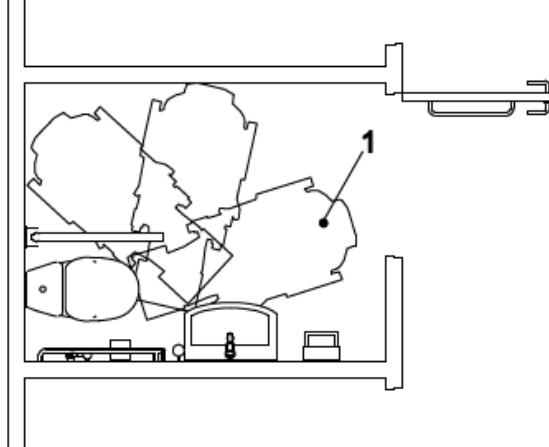
No.	Key accessibility issues	Example
1	Equitable approach to a building, e.g. designated parking, clear pedestrian routes separate from vehicles and cyclists, no steps or obstacles, short distances from parking and public transport, good signage, good lighting and good contrast. See Clauses 5, 6, 7, 8, 9, 31, 33 and 38.	
2	Equitable entry via the same entrances, e.g. easy to locate main entrances, no steps or obstacles, wide openings, adequate manoeuvring space in front of the door, low operating forces, good signage, good lighting and good visual contrast. See Clauses 10, 18, 31, 33, 34 and 38.	
3	Equitable use of the same paths in horizontal circulation, e.g. no steps or obstacles, adequate manoeuvring space, wide door openings, easy to operate doors, resting places, clear layout, good signage, good lighting and good visual contrast. See Clauses 11, 18, 31, 33, 35 and 38.	
4	Equitable access to the same paths in vertical circulation, e.g. safe stairs, spacious lifts with easy operation, good signage, good lighting and good visual contrast. See Clauses 12, 13, 14, 15, 17, 31, 33 and 38.	

Table 2. Examples of key accessibility issues in the early stages of planning (continued)

No.	Key accessibility issues	Example
5	Equitable use of the same rooms, e.g. ample circulation space and different seating possibilities, good acoustics and hearing enhancement systems, good lighting and good visual contrast. See Clauses 20, 21, 22, 23, 24, 30, 31 and 33.	
6	Equitable use of the same equipment and facilities, e.g. easy to understand and operate, adequate manoeuvring space and operating height, information via two senses. See Clauses 11, 19 and 34.	
7	Equitable use of toilet and sanitary facilities, e.g. good signage, adequate manoeuvring space, good transfer options, well-placed equipment, easy operation. See Clauses 25, 37 and 39.	

LAMPIRAN G*** NO. RUJ. :**

* Diisi oleh Jabatan Bangunan

Contoh senarai 'checklist' terbaik

**Jabatan Bangunan
Majlis Perbandaran Selayang**

Menara MPS, Persiaran 3, Bandar Baru Selayang,
68100 Batu Caves, Selangor Darul Ehsan.

Tel : 03-6126 5854/5855 Fax : 03-61360815 Web : www.mps.gov.my

**SENARAI SEMAK ULASAN UNIVERSAL DESIGN
PERMOHONAN PELAN BANGUNAN**

(#) Tajuk Permohonan

tajuk boleh di lampirkan diatas kertas A4 dengan pengesahan PSP sekiranya ruang tidak mencukupi

Perunding / PSP :
Pemilik / Pemaju :
No. Rujukan Fail :

Bil	Perkara	Sila tandakan ✓ di ruang yang berkenaan untuk diisi oleh pemohon			Catatan Jabatan Bangunan
		Dipatuhi	Tidak berkaitan	Memohon kelonggaran	
BAHAGIAN A - SENARAI SEMAK TEMPAT LETAK KERETA					

TEMPAT LETAK KERETA

1.	Parkir kereta OKU perlu disediakan berdekatan dengan pintu masuk utama dan tidak melebihi 50m. (Klausula 6.1: m/s 23)				
----	--	--	--	--	--

LAMPIRAN	G
* NO. RUJ. :	

Jabatan Bangunan

Majlis Perbandaran Selayang

Menara MPS, Persiaran 3, Bandar Baru Sepayang,
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Tel : 03-6126 5854/5855 Fax : 03-61360815 Web : www.mps.gov.my

* Diolah Jabatan Bangunan

**SENARAI SEMAK ULASAN UNIVERSAL DESIGN
PERMOHONAN PELAN BANGUNAN**

(#) Tajuk Permohonan

--

Tidak boleh dilampirkan diatas kertas A4 dengan pergesekan PSP sekranya ruang tidak mencukupi

Perunding / PSP
Pemilik / Pemaju
No. Rujukan Fail

:
:
:

Bil	Perkara	Silatandakan ✓ di ruang yang berkenaan untuk diisi oleh pemohon			Catatan Jabatan Bangunan
		Dipatuhi	Tidak berkaitan	Memohon kelonggaran	
BAHAGIAN A - SENARAI SEMAK TEMPAT LETAK KERETA					

TEMPAT LETAK KERETA

1.	Parkir kereta OKU perlu disediakan berdekatan dengan pintu masuk utama dan tidak melebihi 50m. (Klausula 6.1: m/s 23)				
2.	Bilangan parkir OKU yang perlu disediakan:				
	i. Minimum 1 parkir OKU pada setiap kawasan parkir.				
	ii. Nisbah 1:25 parkir OKU bagi setiap				

Bil	Perkara	Sila tandakan ✓ di ruang berkenaan untuk diisi oleh pihak berkuasa tempat letak kereta			
		Dipatuhi	Tidak berkaitan	Kira-kira	
BAHAGIAN A - SENARAI SEMAK TEMPAT LETAK KERETA					
TEMPAT LETAK KERETA					
1.	Parkir kereta OKU perlu disediakan berdekatan dengan pintu masuk utama dan tidak melebihi 50m. (Klausula 6.1: m/s 23)				
2.	Bilangan parkir OKU yang perlu disediakan: i. Minimum 1 parkir OKU pada setiap kawasan parkir. ii. Nisbah 1:25 parkir OKU bagi setiap kawasan 100 bilangan parkir. iii. 6 parkir OKU bagi ruangan parkir sehingga 200 parkir. iv. Bilangan parkir melebihi 200, tambahan 1 parkir OKU bagi setiap tambahan 100 bilangan parkir. (Klausula 6.2: m/s 23)				
3.	Ruang parkir kereta cukup untuk pengguna OKU keluar masuk kenderaan dengan selamat berukuran minimum 5400mm x 3600mm (P x L) termasuk transfer area minimum 1200mm Rujuk Figure 4 (Klausula 6.3: m/s 24)				
4.	Bagi ruang parkir kendaraan pelbagai guna di bangunan hospital/klinik adalah digalakkan supaya ruang tambahan minimum 2400mm disediakan di antara bangunan dan tempat parkir. Keluasan parkir yang sesuai adalah 9000mm x 2400mm (P x L). Rujuk Figure 5 (Klausula 6.4 m/s 25)				

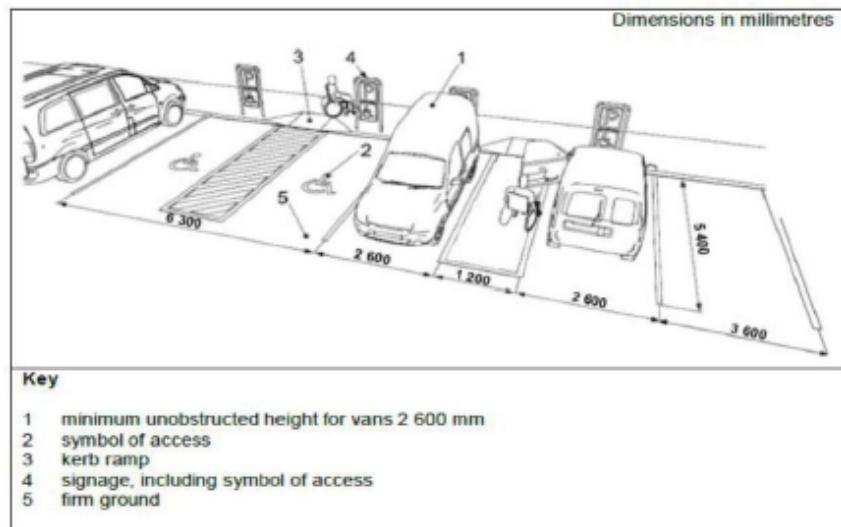


Figure 4: Example of designated parking spaces

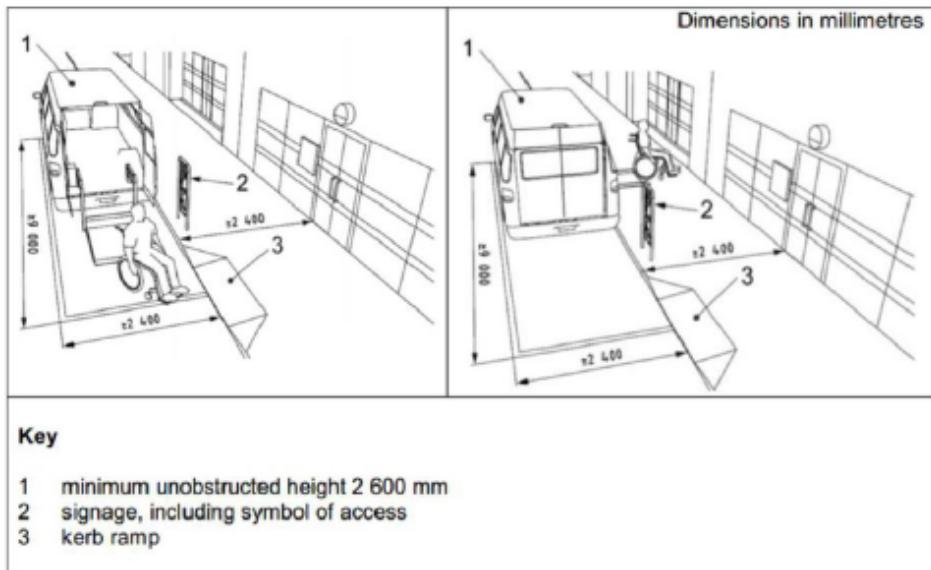


Figure 5: Example of parking space along sidewalk

LALUAN KE BANGUNAN

1.	Laluan ke bangunan perlu disediakan daripada kawasan persekitaran luar atau kawasan parkir bagi aksesibiliti keluar dan masuk ke bangunan. Rujuk Figure 8. (Klausula 7.1: m/s 28)	
2.	Pastikan laluan mempunyai warna yang berbeza dengan warna di sekitarnya serta menggunakan jubin pandu arah untuk OKU cacat penglihatan. Rujuk Figure 9 (Klausula 7.2: m/s 28)	
3.	Laluan ke bangunan dan di antara bangunan yang disediakan adalah rata dan selamat. Rujuk Figure 10 (Klausula 7.3 m/s 30)	
4.	Saiz laluan bebas halangan perlu disediakan seperti berikut : <ol style="list-style-type: none"> Tidak kurang 1800mm lebar untuk laluan (utama) dua hala; Tidak kurang 1500mm lebar bagi laluan (kerap) dua hala dengan <i>passing space</i> disediakan pada setiap jarak 25m; Tidak kurang 1200mm lebar bagi laluan (kurang lengkap) dua hala dengan ruang pusingan serta laluan kerusi roda disediakan ($1800\text{mm} \times 2000\text{mm}$) pada setiap jarak 25m; Tidak kurang 900mm pada laluan yang jarang digunakan oleh pengguna kerusi roda dengan ruang pusingan sekuranya $1500\text{mm} \times 1500\text{mm}$ disediakan pada setiap jarak 25m. Rujuk Figure 11 (Klausula 7.4: m/s 31)	
5.	Bagi laluan bertangga, lebar bersih laluan hendaklah tidak kurang daripada 1200mm dan lebar antara <i>handrails</i> pula adalah tidak kurang daripada 1000mm. Rujuk Figure 13 (Klausula 7.9: m/s 34)	

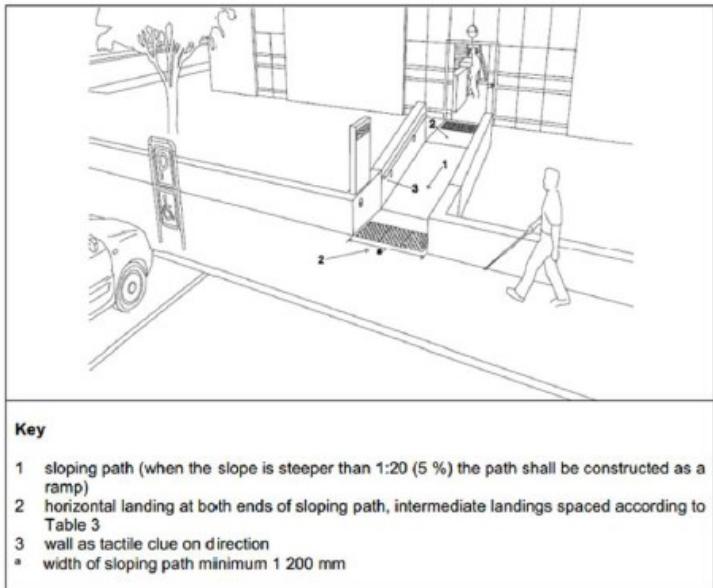


Figure 8: Example of sloping path

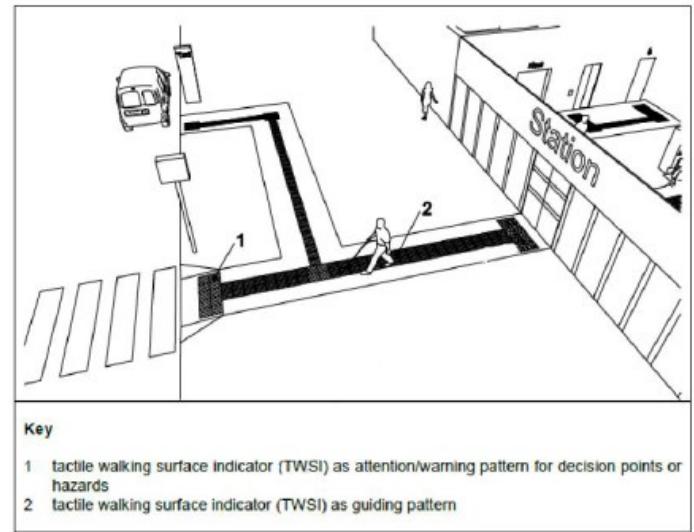


Figure 9: Example of tactile walking surface indicator (TWSI) used in open area

Figure AC - 59 Signs - 2 senses or more - Perspective

Source : Standard Malaysian 2014 (10D021R2)_Figure 88

1. Maximum inscribed circle for handrail profile
2. Minimum subscribed circle for profile
3. Minimum 50mm clearance under top 270° arc along full length of handrail



Figure AC - 60 Symbols

Source : Standard Malaysian 2014 (10D021R2)_Figure 89 - 94

1. Symbol for Accessible Path
2. Symbol for Sloped or Ramped Access
3. Symbol Toilets - Accessible, Female and Male
4. Symbol Toilets - Accessible, female
5. Symbol Toilets - Accessible, male
6. Symbol for Accessible Elevator or Lift



Figure AC - 61 Height of Signs - Perspective

Source : Standard Malaysian 2014 (10D021R2)_Figure 86

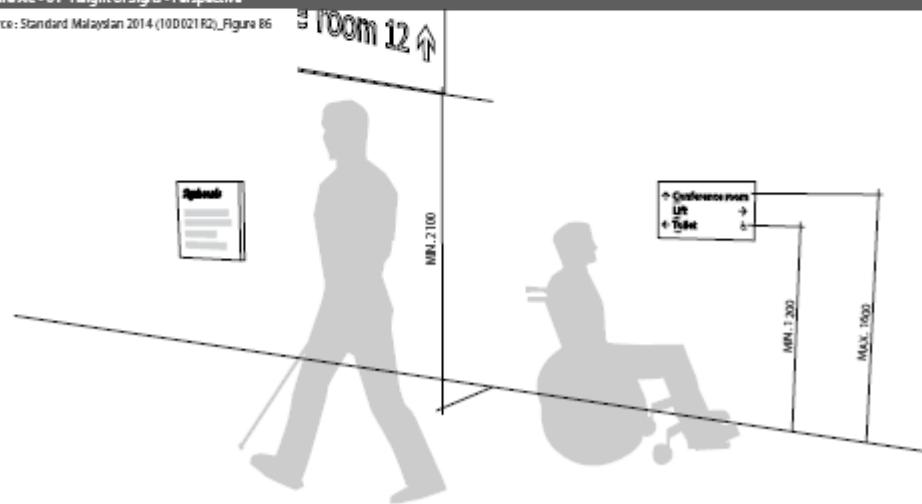
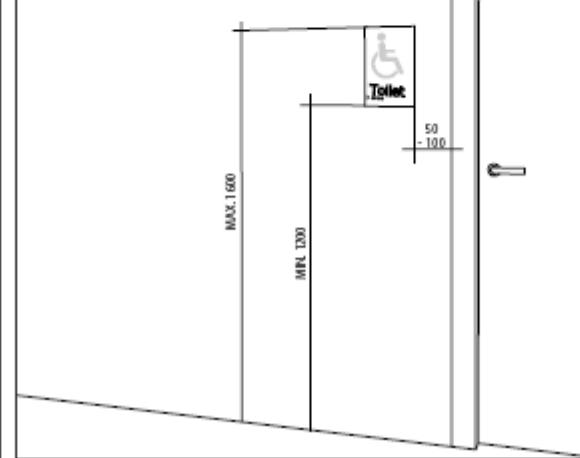


Figure AC - 62 Location of Door Signs on the Latch Side of the Door - Perspective

Source : Standard Malaysian 2014 (10D021R2)_Figure 87



BAHAGIAN D - SENARAI SEMAK TANGGA

- Anak tangga mempunyai ketinggian (rise) tidak melebihi 180mm dan lebar (tread) tidak kurang daripada 260mm.
Rujuk Figure 26
(Klausula 13.1: m/s 51)
- Lebar tangga tidak kurang daripada 1200mm dengan jarak minimum antara handrails tanpa sebarang halangan tidak kurang daripada 1000mm.
(Klausula 13.2 m/s 51)
- Landing area perlu bebas daripada halangan dengan ruang lebar tidak kurang daripada 1500mm bagi memudahkan pergerakan stretcher.
Rujuk Figure 27
(Klausula 13.3: m/s 51)
- Ketiggian bersih di ruang bawah tangga tidak kurang daripada 2100mm.
Jika ketinggian kurang daripada 2100mm, penghadang perlu disediakan. Rujuk Figure 28
(Klausula 13.4: m/s 53)
- Tactile jenis amaran dengan lebar 300mm dipasang pada dengan jarak antara 300mm antara tactile dan hujung anak tangga pertama
Rujuk Figure 29
(Klausula 13.5: m/s 54)

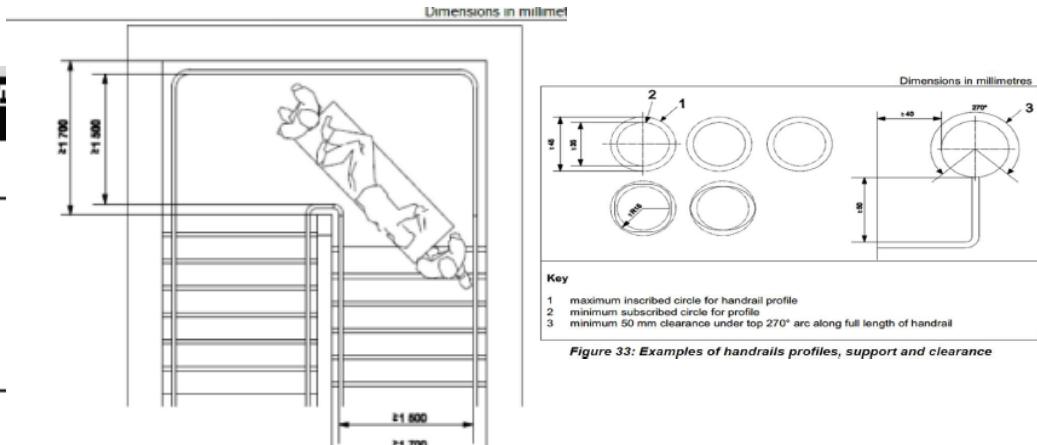


Figure 27: Example of stair and 180° landing for emergency access

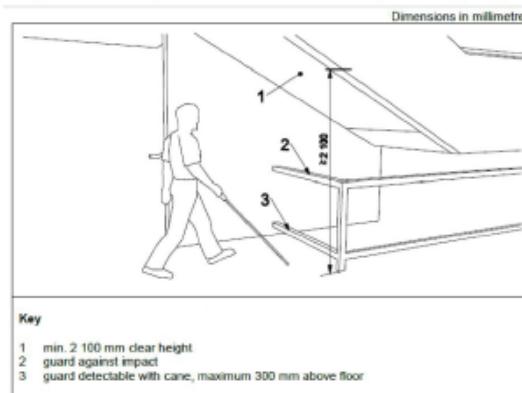


Figure 28: Clear height under stairs

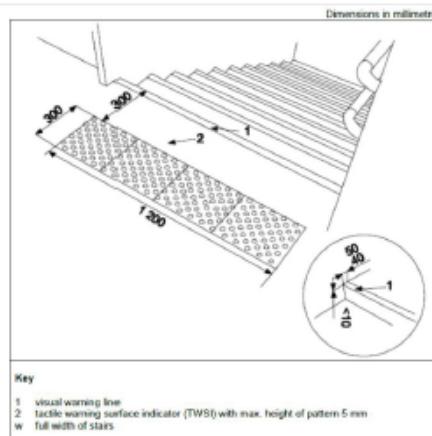


Figure 29: Tactile walking surface indicator (TWSI) and visual indicator

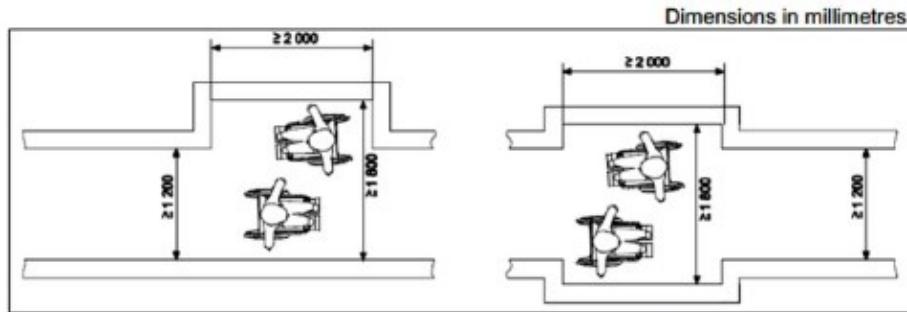


Figure 12: Examples of passing spaces for wheelchair users

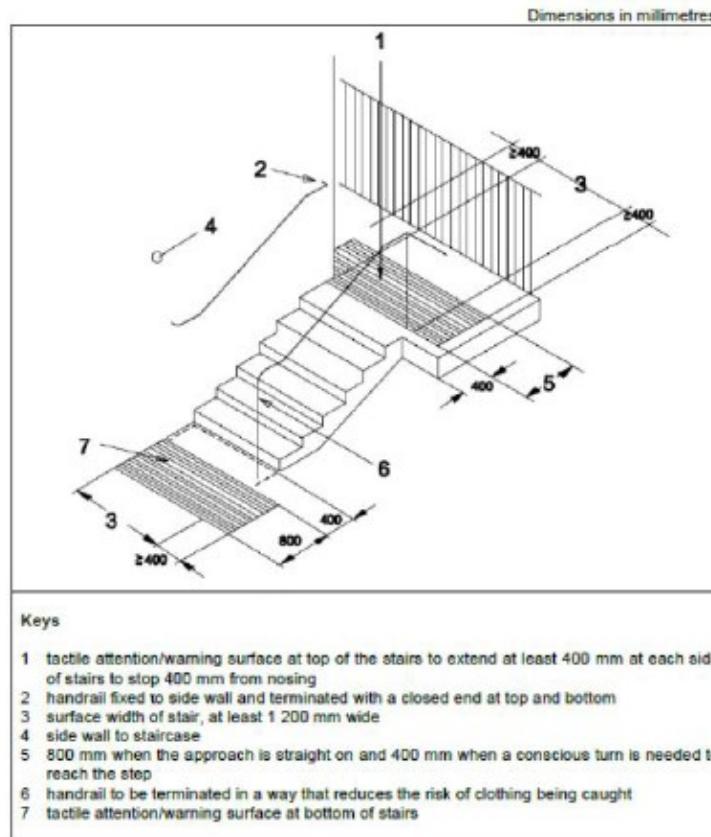


Figure 13: Stairs requirement

RAMP

1. Ramp perlu disediakan bagi sebarang perubahan ketinggian permukaan laluan. Tangga perlu disediakan bersebelahan dengan ramp jika perbezaan aras melebihi 300mm.
 Rujuk Figure 16
 (Klausula 8.1: m/s 38)
2. Kecerunan ramp tidak lebih nisbah 1:12. Rujuk Table 3.
 (Klausula 8.2: m/s 41)
3. Lebar bersih ramp perlu disediakan tidak kurang daripada 1200mm . bagi ramp yang mempunyai handrails , jarak minimum antara handrails adalah 1000mm.
 (Klausula 8.3: m/s 41)
4. Jarak end landing dan intermediate landing hendaklah disediakan tidak kurang daripada 1500mm.
 Bagi bangunan sediada; panjang ramp tanpa halangan perlu disediakan tidak kurang daripada 1200mm.Rujuk Figure 17.
 (Klausula 8.4: m/s 42)
5. Handrails hendaklah disediakan pada setiap laluan ramp yang melebihi 800mm panjang.
 (Klausula 8.5: m/s 42)
6. Drainage grating pada laluan ramp perlu flush in dengan permukaan.
 (Klausula 8.6 m/s 42)
7. Permukaan ramp mestilah stabil dan tidak licin samada dalam keadaan kering dan basah
 (Klausula 8.7: m/s 42)

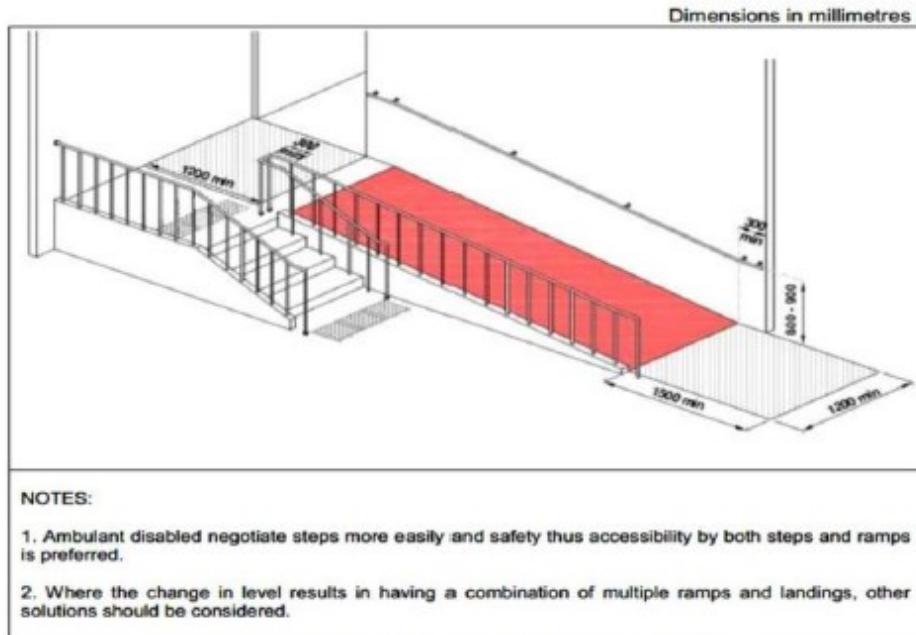
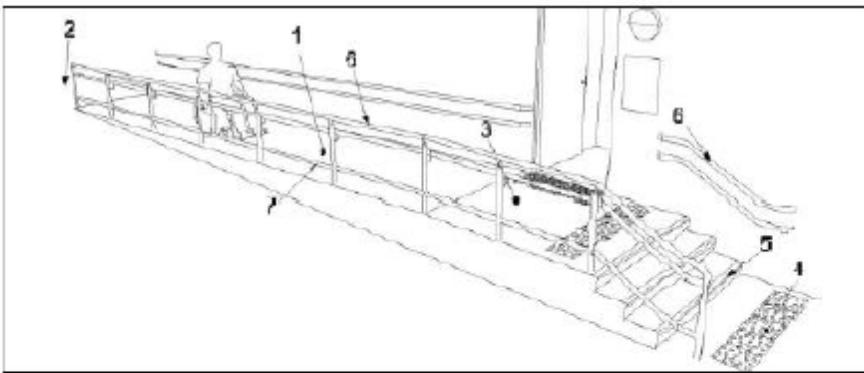


Figure 16: Ramps with alternative stepped approach

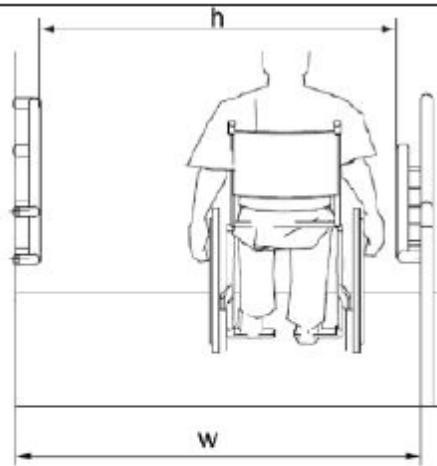
Table 3: Maximum slope and length of ramps

Max. rise (mm)	Max. slope	Max. slope (mm/m)	Max. length between landings (mm)	Outdoor use	Indoor use	Handrails required
≥ 500	1 in 20 (5.0 %)	50	6 000	yes	yes	see 8.5
460	1 in 19 (5.3 %)	53	6 000	yes	yes	see 8.5
420	1 in 18 (5.6 %)	56	6 000	yes	yes	see 8.5
385	1 in 17 (5.9 %)	59	6 000	yes	yes	see 8.5
350	1 in 16 (6.3 %)	63	5 600	yes	yes	see 8.5
315	1 in 15 (6.7 %)	67	4 500	yes	yes	see 8.5
280	1 in 14 (7.1 %)	71	4 000	yes	yes	see 8.5
245	1 in 13 (7.7 %)	77	3 000	yes	yes	see 8.5
210	1 in 12 (8.3 %)	83	2 500	yes	yes	see 8.5
180	1 in 11 (9.1 %)	91	2 000	curb ramps only	not recommended	no
150	1 in 10 (10.0 %)	100	1 500	curb ramps only	not recommended	no
110	1 in 9 (11.1 %)	111	1 000	curb ramps only	not recommended	no
75	1 in 8 (12.5 %)	125	600	curb ramps only	threshold ramps only	no



Key

- 1 ramp surface (see Table 3 for maximum slope and length)
- 2 horizontal landing
- 3 horizontal landing
- 4 tactile walking surface indicator (TWSI) in front of stairs
- 5 complementary stairs with markings
- 6 handrails on both sides of ramp and stairs
- 7 upstand, minimum 150 mm



Key

- h width between handrails
- w width of ramp surface

Figure 17: Example of ramp with slope 1:20 and horizontal landings at the beginnings and end

8.2 slope and length

The slope shall not exceed the maximums set out in Tables 3 and 4.

Table 3. Maximum slope and length of ramps

Max. rise (mm)	Max. slope	Max. slope (mm/m)	Max. length between landings (mm)	Outdoor use	Indoor use	Handrails required
600	Less than 1 in 10 20.45-0.044	460	no limit	yes	yes	no
≥ 500	1 in 20 (5.0 %)	50	6 000	yes	yes	see 8.5
460	1 in 19 (5.3 %)	53	6 000	yes	yes	see 8.5
420	1 in 18 (5.6 %)	56	6 000	yes	yes	see 8.5
395	1 in 17 (5.9 %)	59	6 000	yes	yes	see 8.5
350	1 in 16 (6.3 %)	63	5 600	yes	yes	see 8.5
315	1 in 15 (6.7 %)	67	4 500	yes	yes	see 8.5
280	1 in 14 (7.1 %)	71	4 000	yes	yes	see 8.5
245	1 in 13 (7.7 %)	77	3 000	yes	yes	see 8.5
210	1 in 12 (8.3 %)	83	2 500	yes	yes	see 8.5
180	1 in 11 (9.1 %)	91	2 000	curb ramps only	not recommended	no
150	1 in 10 (10.0 %)	100	1 500	curb ramps only	not recommended	no
110	1 in 9 (11.1 %)	111	1 000	curb ramps only	not recommended	no
75	1 in 8 (12.5 %)	125	600	curb ramps only	threshold ramps only	no

NOTE. A ramp with a gradient higher than 1:12 is difficult to use and can create a risk of an accident; it is therefore not suitable for independent use.

Table 4. Exceptional considerations in adaptation of urban areas or at the entrance of existing buildings

Max. rise (mm)	Max. slope	Max. slope (mm/m)	Max. length between landings (mm)	Exceptional considerations only	Handrails required
1 250	1 in 12 (8.3 %)	83	15 000	yes	see 8.5
1 150	1 in 11 (9.1 %)	91	12 650	yes	see 8.5
1 000	1 in 10 (10.0 %)	100	10 000	yes	see 8.5
750	1 in 9 (11.1 %)	111	6 750	yes	see 8.5
375	1 in 8 (12.5 %)	125	3 000	yes	see 8.5
35	1 in 8 (12.5 %)	125	280	threshold ramps only	no

Ramps should only be used in existing environments under special circumstances.

8.3 Width of ramps

The surface width of a ramp shall be not less than 1200 mm.

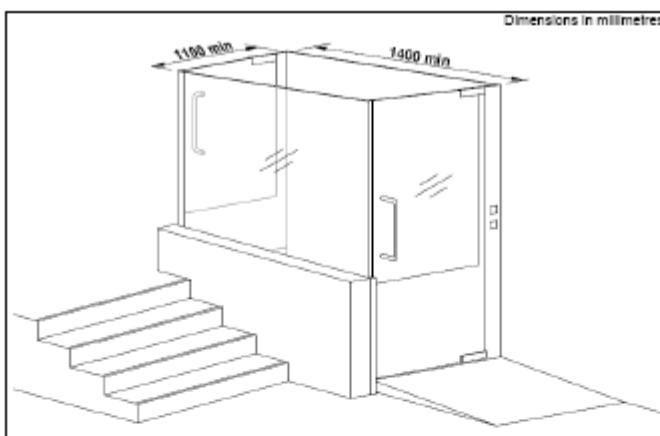


Figure 40. Platform lift

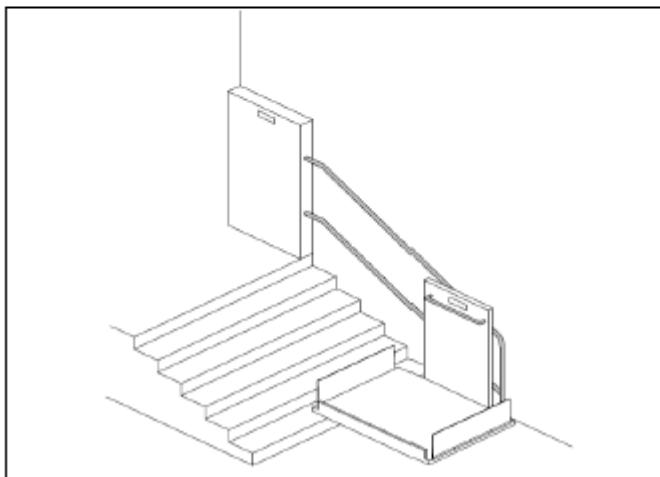


Figure 41. Wheelchair stairlift

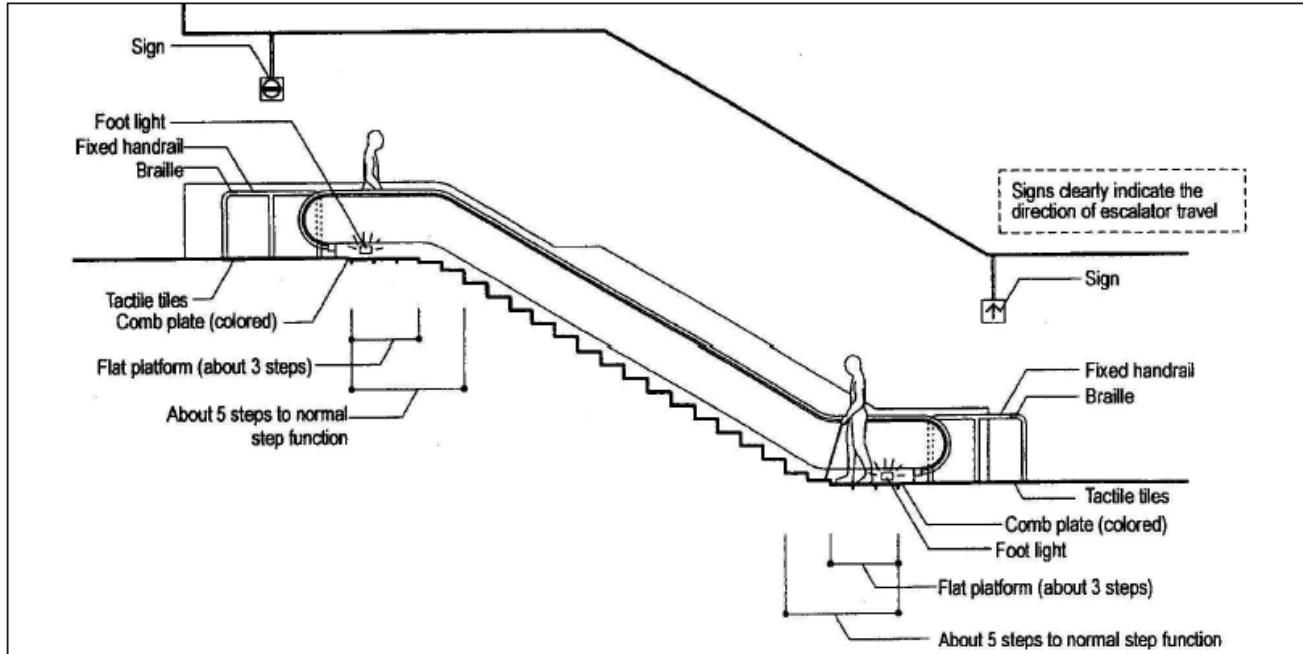


Figure 43. Example of design standards for escalators (side view)

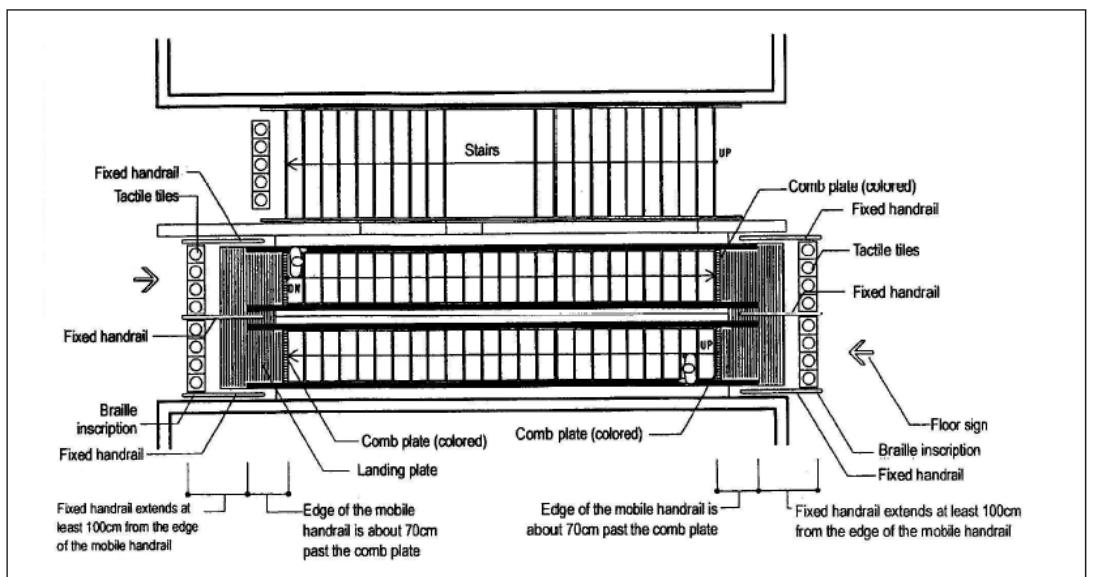


Figure 42. Example of design standards for escalators (plan view)

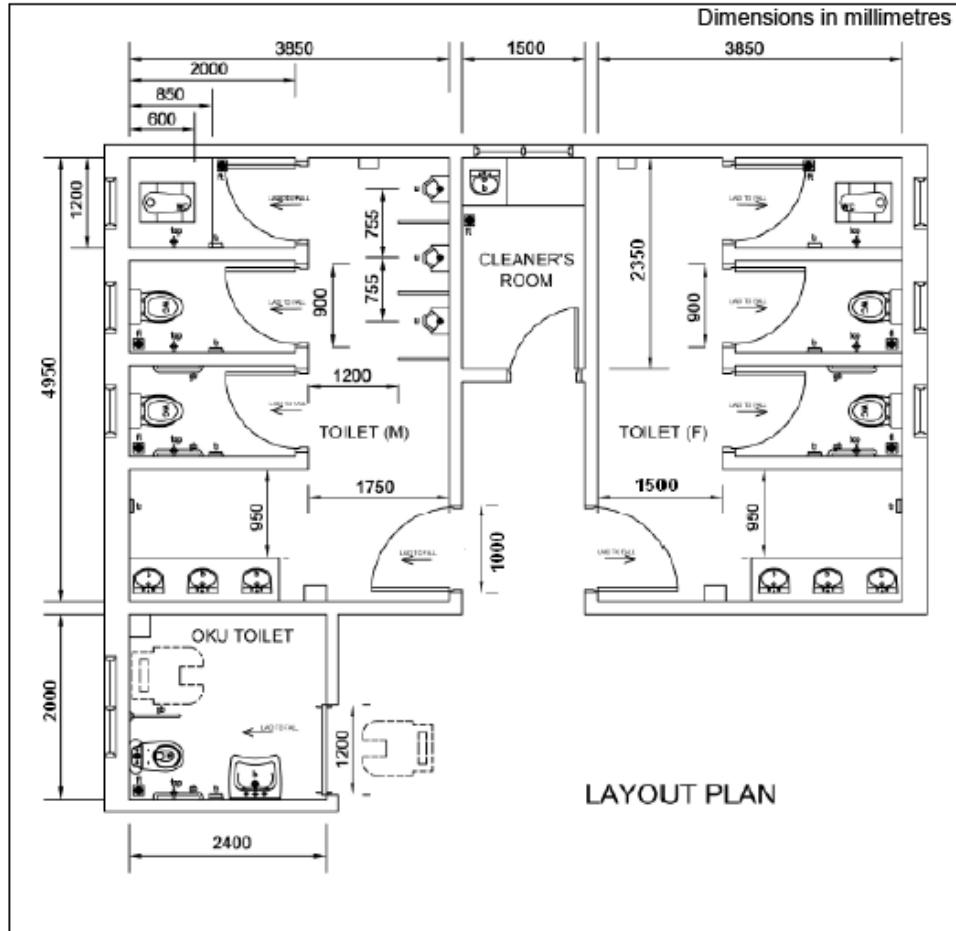
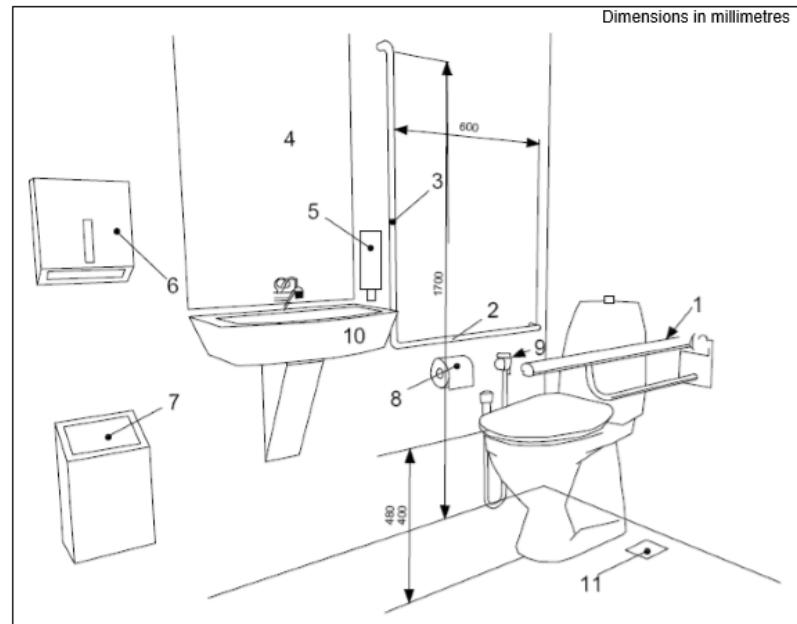


Figure 53. Male, female, cleaner's room and accessible toilet - Layout plan

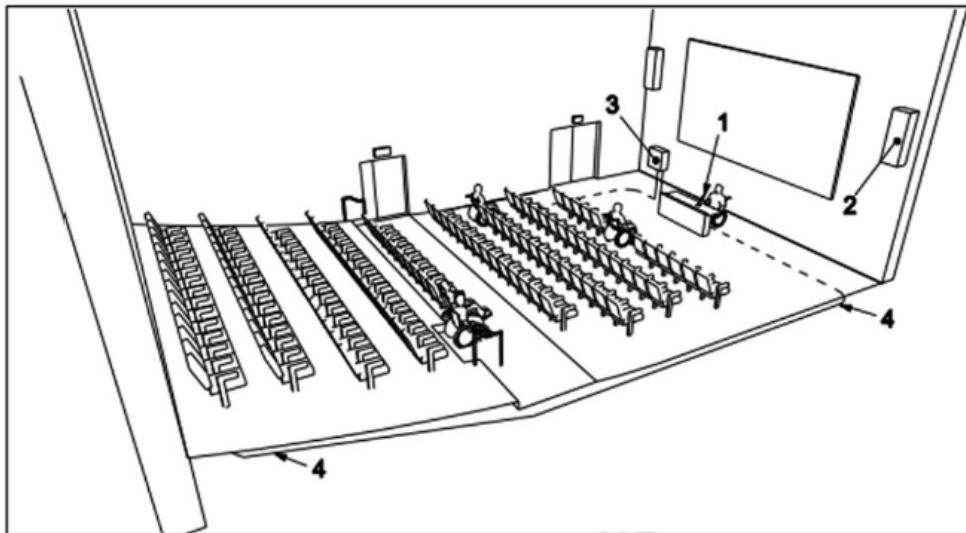


Key

- 1 drop down support rail at seat height plus 200 mm to 300 mm
 - 2 wall mounted horizontal grab rail at seat height plus 200 mm to 300 mm
 - 3 wall mounted vertical grab rail
 - 4 mirror, top height min. 1 900 mm, bottom height max. 900 mm above floor
 - 5 soap dispenser 800 mm to 1 100 mm above floor
 - 6 towels or dryer 800 mm to 1 100 mm above floor
 - 7 waste bin
 - 8 toilet paper dispenser 600 mm to 700 mm above floor
 - 9 independent water supply
 - 10 small finger rinse basin maximum 350 mm projection
 - 11 floor trap

Figure 62. Positioning of grab rails, water supply and toilet paper in type C corner toilet

Bil	Perkara	Sila tandakan ✓ di ruang yang berkenaan untuk diisi oleh pemohon			Catatan Jabatan Bangunan		
		Dipatuhi	Tidak berkaitan	Memohon kelonggaran			
BAHAGIAN O - SENARAI SEMAK PERSEKITARAN AKUSTIK							
PERSEKITARAN AKUSTIK							
1.	Penyediaan penebat bunyi yang mencukupi bagi mengurangkan bunyi dari bahagian dalam dan luar bangunan (Klausa 30.2: m/s 114)						
2.	<i>Hearing enhancement system</i> contohnya <i>induction loops</i> dan sistem isyarat pemancar inframerah disediakan di tempat persidangan dan mesyuarat. Alat bantuan pendengaran mudah alih boleh disediakan sebagai alternatif. Rujuk Figure 74 (Klausa 30.3: m/s 114)						



Key

- 1 microphone
- 2 loudspeakers
- 3 induction loop amplifier
- 4 induction loop

PERAKUAN TANGGUNGJAWAB OLEH PSP

Saya dengan ini memperakukan bahawa maklumat yang dikemukakan di dalam Borang **Senarai Semak Ulasan Universal Design MS1184:2014** dan UUK 34A bagi permohonan pelan bangunan adalah benar dan tepat menurut kehendak-kehendak Undang-Undang Kecil Bangunan Seragam Selangor 1986 (pindaan terkini - Sel.P.U. 142/2012) dan Garis Panduan yang telah ditetapkan oleh Majlis Perbandaran Selayang. Sekiranya terdapat ketidakpatuhan di tapak bina dan aduan bangunan yang melibatkan pembinaan ini, saya bersetuju menerima tanggungjawab penuh dengan sewajarnya dan bersedia menerima sebarang tindakan oleh Majlis Perbandaran Selayang di bawah Akta Jalan Parit Dan Bangunan 1974 (Akta 133).

.....
Tandatangan & Cop PSP

(Arkitek Profesional / Jurutera Profesional / Pelukis Pelan Berdaftar)

No Pendaftaran :

Tarikh :

* Diisi oleh Jabatan Bangunan

Lampiran keperluan khusus

Annex A **Tactile** walking surface indicators (TWSIs)

Annex B Human **abilities** and associated **design considerations**

Annex C **Circulation spaces** at doorways

Annex D **Fire safety** and assisted evacuation for all in buildings

Annex E Management and **maintenance issues**

Annex F Design guidelines for **children with disabilities**

Annex G Design guidelines for person with **visual impairment**

Annex H Design guidelines for **elderly**

Annex J Design guidelines for **family friendly facilities**

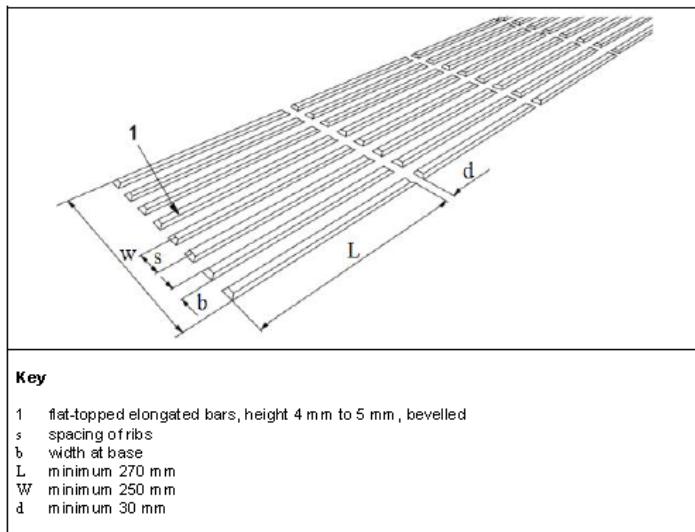
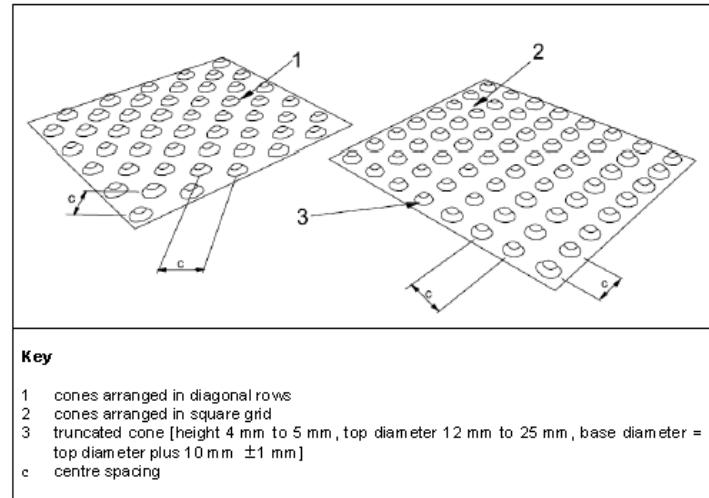
Annex K Design guidelines for **parks and open spaces**

Annex A

(normative)

Tactile walking surface indicators (TWSIs)

- A.1 General
- A.2 Application
- A.3 Detection and discrimination
- A.4 Requirements for attention/warning pattern
- A.5 Requirements for guiding pattern
- A.6 Materials
- A.7 Installation



Annex B (normative)

Human abilities and associated design considerations

- B.1 General
- B.2 Physical abilities
- B.3 Sensory abilities
- B.4 Mental abilities
- B.5 Additional factors
- B.6 General design considerations for wheelchair users
- B.7 Visual contrast
- B.8 Indoor air quality (IAQ)
- B.9 Allergy related materials

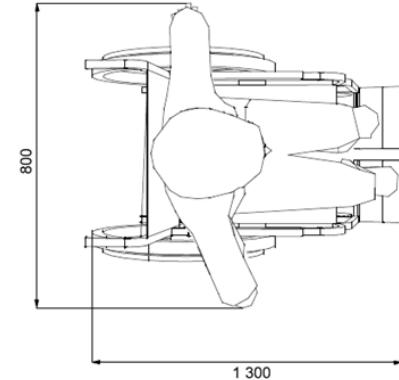
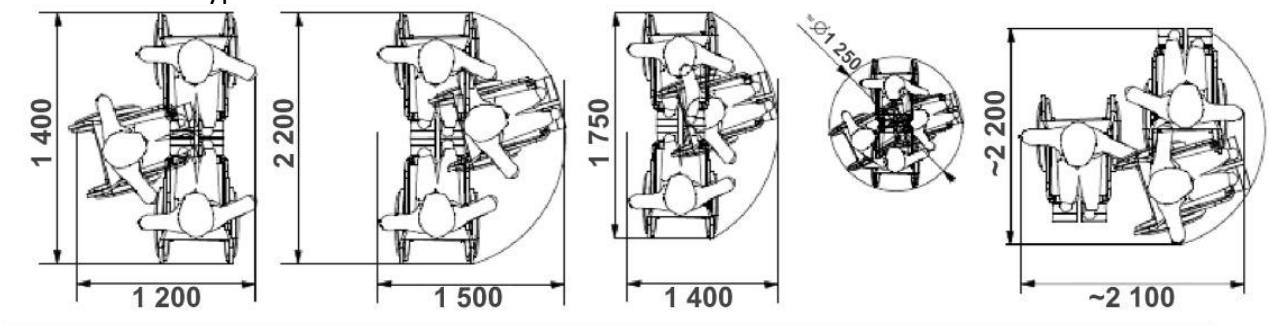
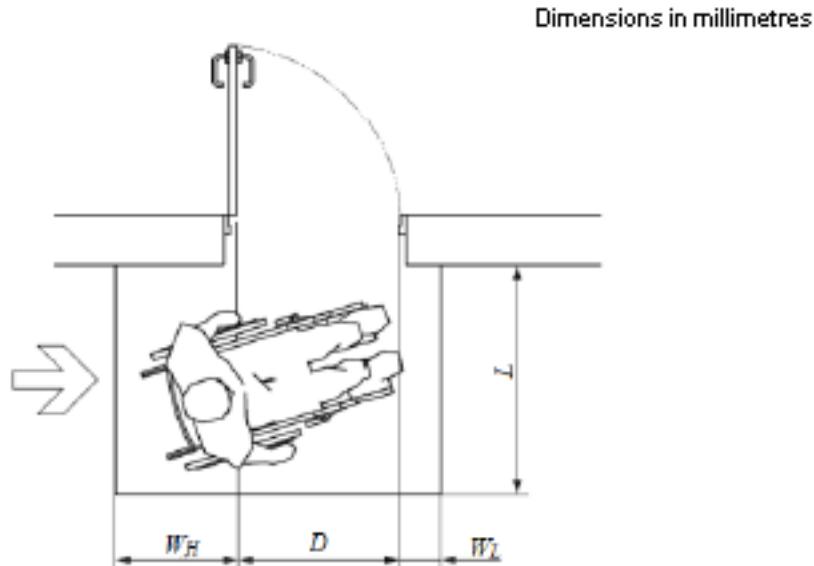


Figure B.2. Examples of simplified 180° space requirements of persons in different types of wheelchairs



Annex C (informative) Circulation spaces at doorways

- C.1 General
- C.2 Swinging doors
- C.3 Sliding doors



Dimension (mm) D	Dimension (mm) L	Dimension (mm) W_H	Dimension (mm)* W_L
800 (retrofitting)	1 260	610	340
850	1 220	560	340
900	1 185	510	340
950	1 160	460	340
1 000	1 140	410	340

* Information only. See requirements given in 18.1.3.

Figure C.1 . Circulation spaces at doorways with swinging doors - Hinge-side approach:
door opens away from user

Annex D
(normative)
Fire safety and assisted evacuation for all in buildings

- D.1.Safety , protection and evacuation for all
- D.2 Assisted evacuation and rescue from buildings - Rescue Techniques
- D.3 Management of fire evacuation lifts in buildings
- D.4 Evacuation skills and self protection from fire in buildings

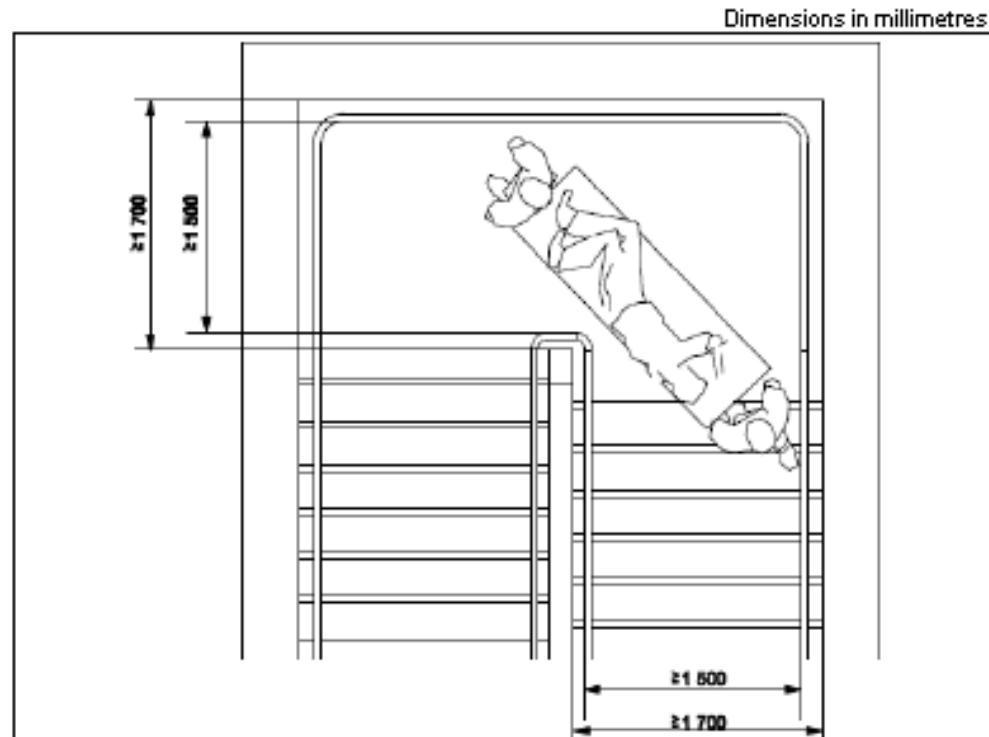


Figure 27. Example of stair and 180° landing for emergency access

Annex E
(normative)

Management and maintenance issues

- E.1 General
- E.2 External issues
- E.4 Maintenance issues
- E.5 Communication issues
- E.6 Policy issues

Annex F
(informative)
Design guidelines for children with disabilities

- F.1 Application
- F.2 Interpretation
- F.3 Handrails/grab bars
- F.4 Seating space
- F.5 Drinking fountain
- F.6 Sanitary provision
- F.7 Children's reach range
- F.8 Lift
- F.9 Public telephone
- F.10 Tuckshop/canteen
- F.11 Computer room
- F.12 Library

Annex G
(informative)

Design guidelines for person with visual impairment

- G.1 Introduction
- G.2 Visual contrast in building interiors
- G.3 Tactile ground surface indicators
- G.4 Application of tactile ground surface indicator

Annex H
(informative)
Design guidelines for elderly

- H.1 General
- H.2 Ageing and safety
- H.3 Falls in the home
- H.4 Advantages of considerate design
- H.5 Mobility
- H.6 design considerations
- H.8 Top ten design points

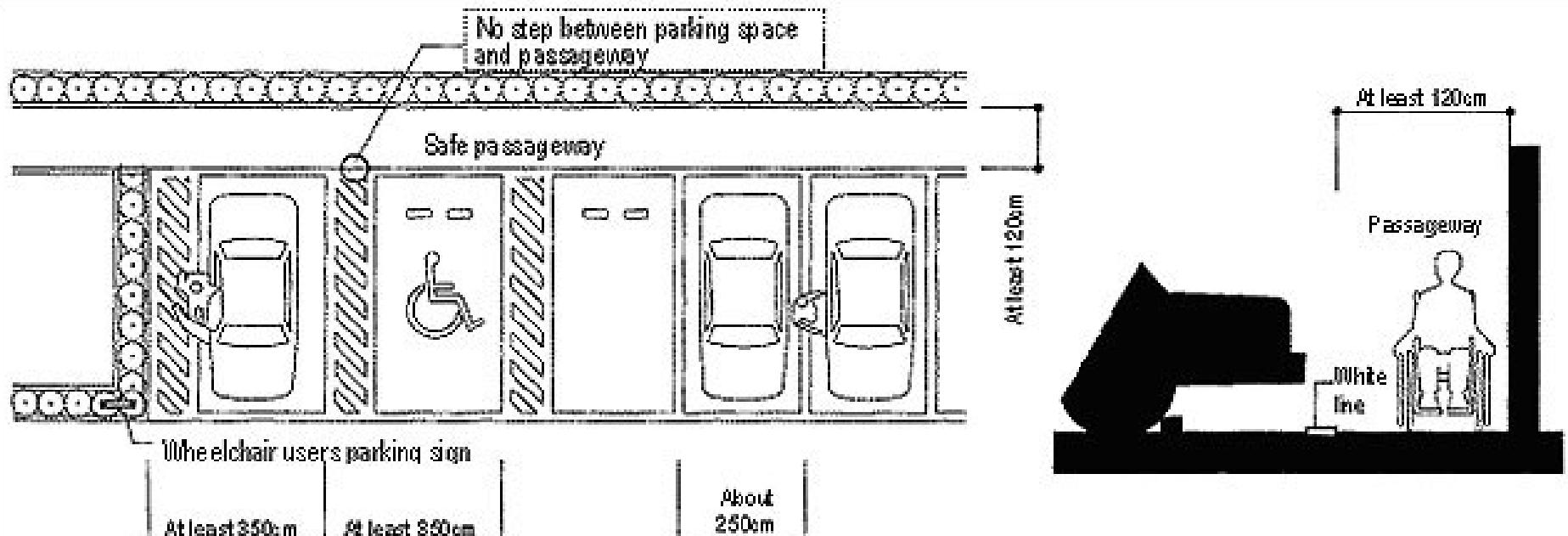
Annex J
(Informative)
Design Guidelines For Family Friendly Facilities

- J.1 Application
- J.2 Recommended facilities
- J.3 Design considerations

Annex K
(informative)
Design guidelines for parks and open spaces

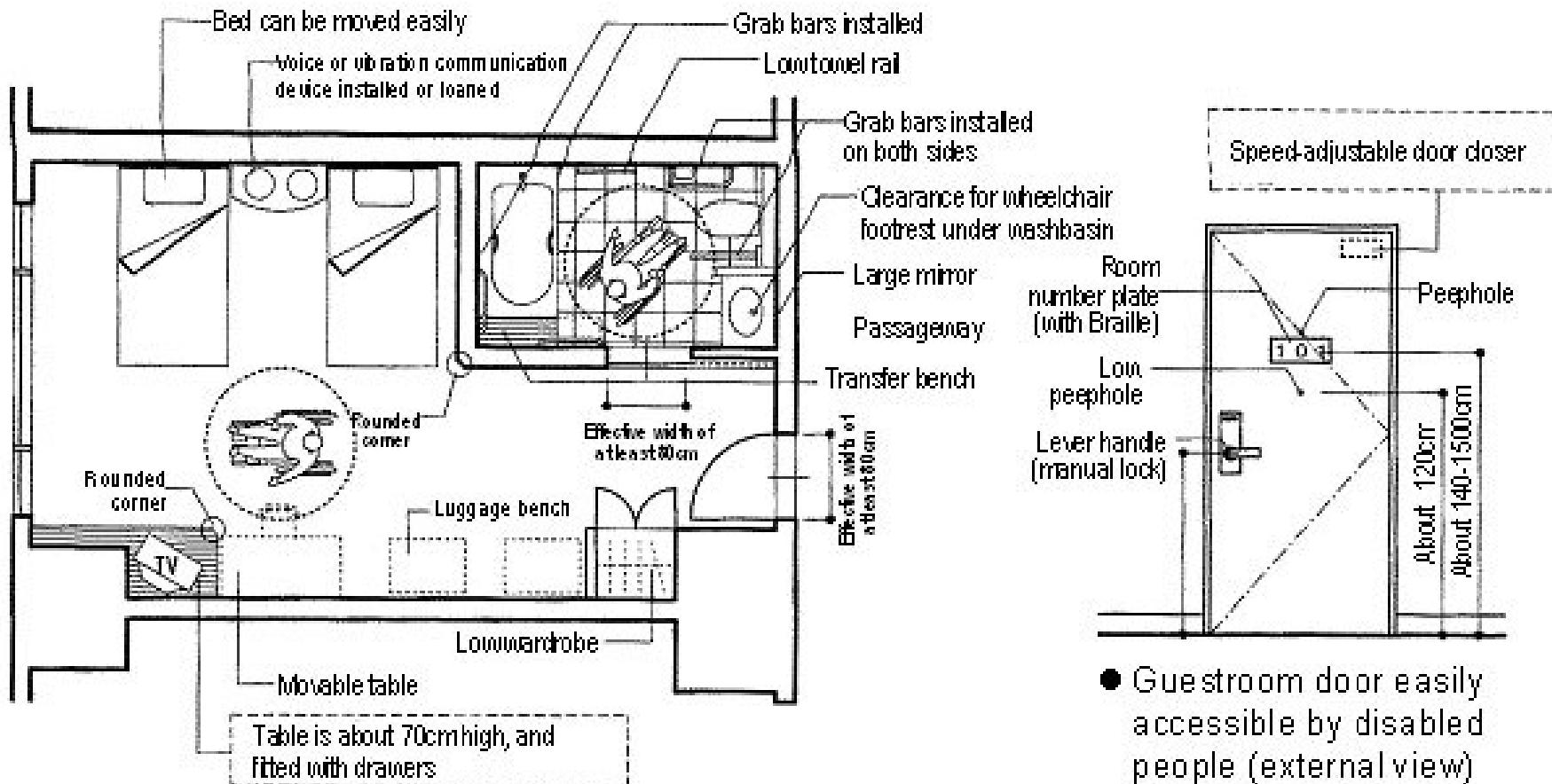
- K.1 General
- K.2 Graduated difficulty of access
- K.3 Outdoor steps
- K.4 Parks furniture
- K.5 Kerb cuts
- K.6 Parks vegetation
- K.7 Accessible parking lot
- K.8 Amenities

CONTOH TEMPAT LETAK KERETA



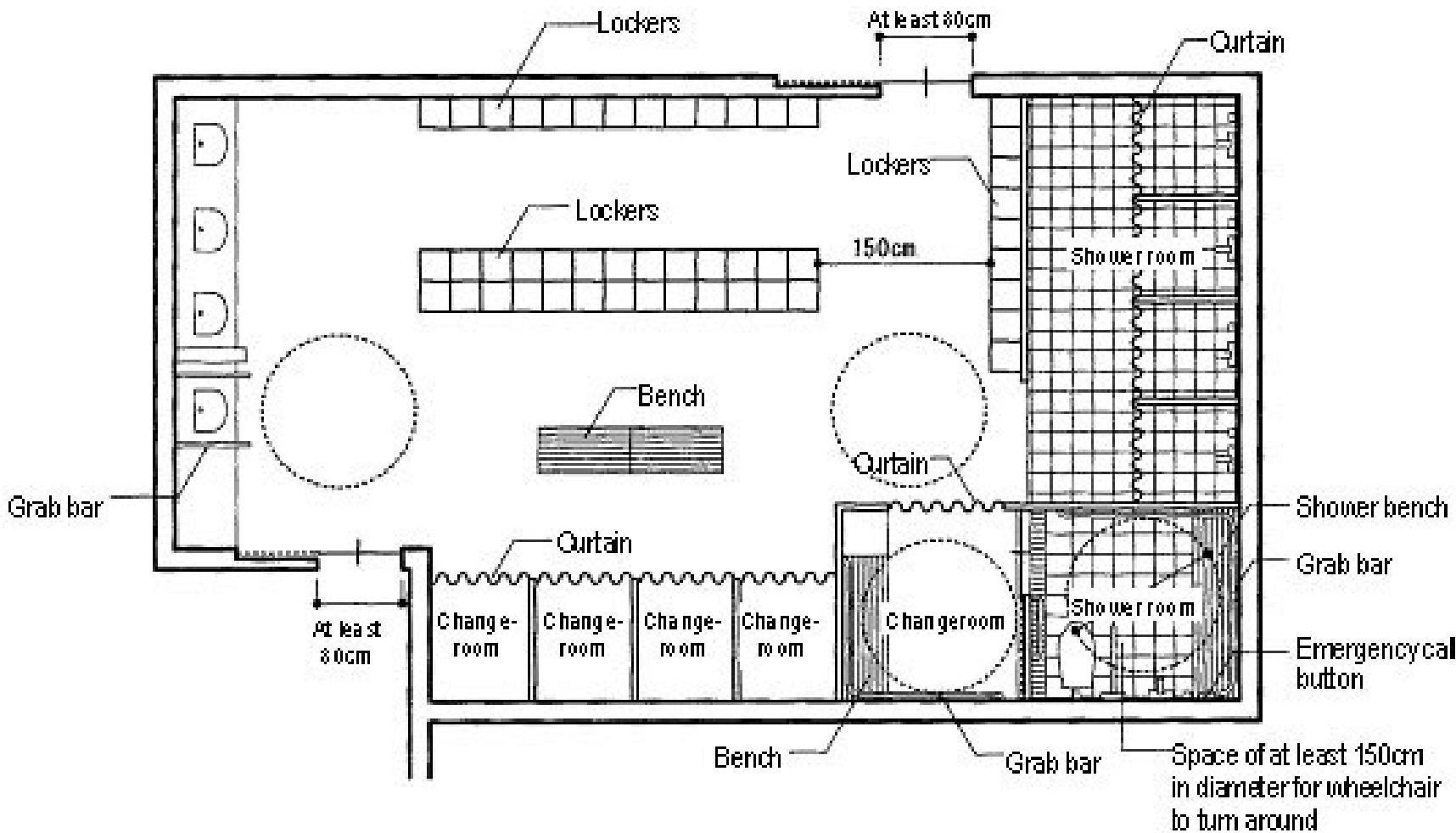
CONTOH

BILIK HOTEL MESRA OKU



CONTOH

BILIK MANDI AWAM



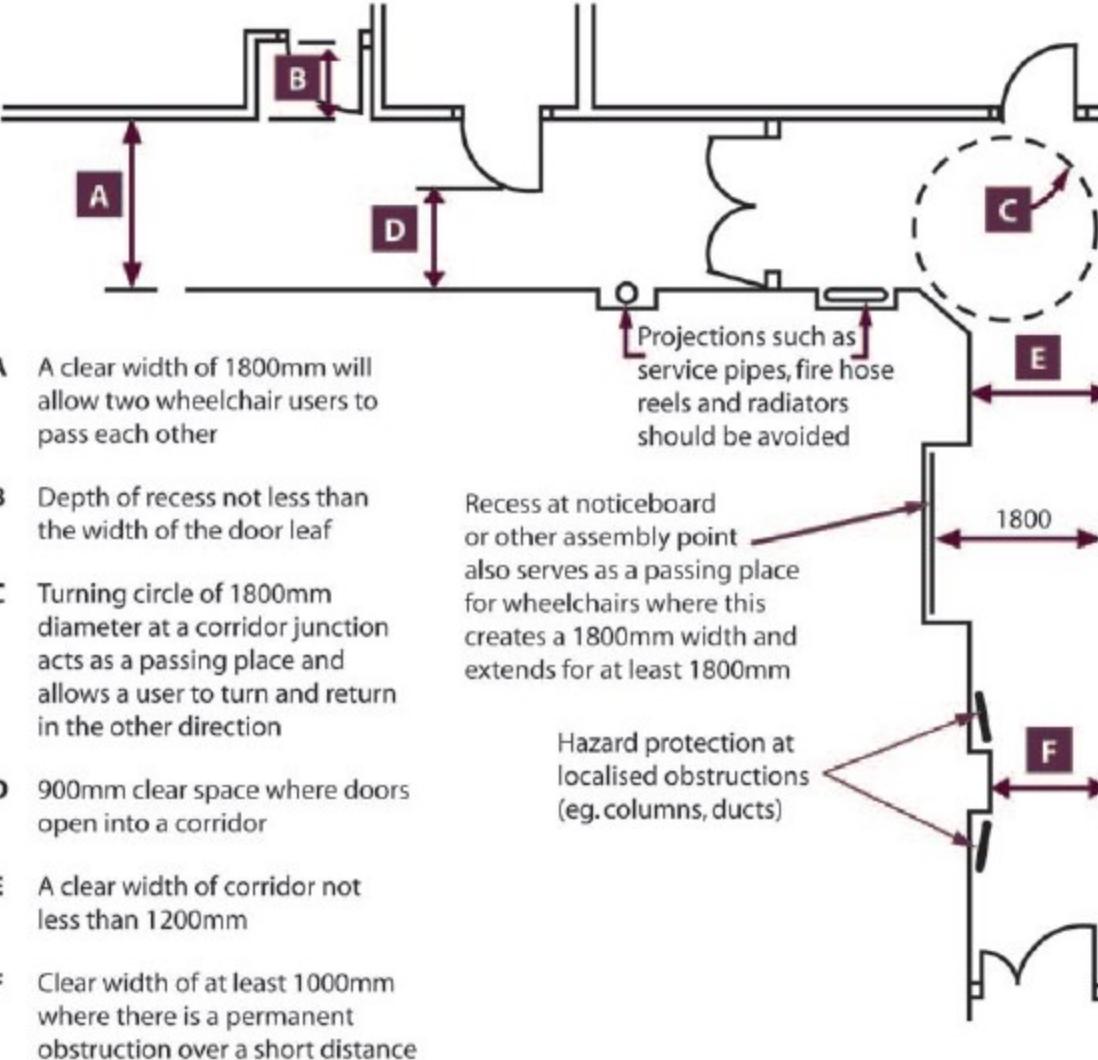
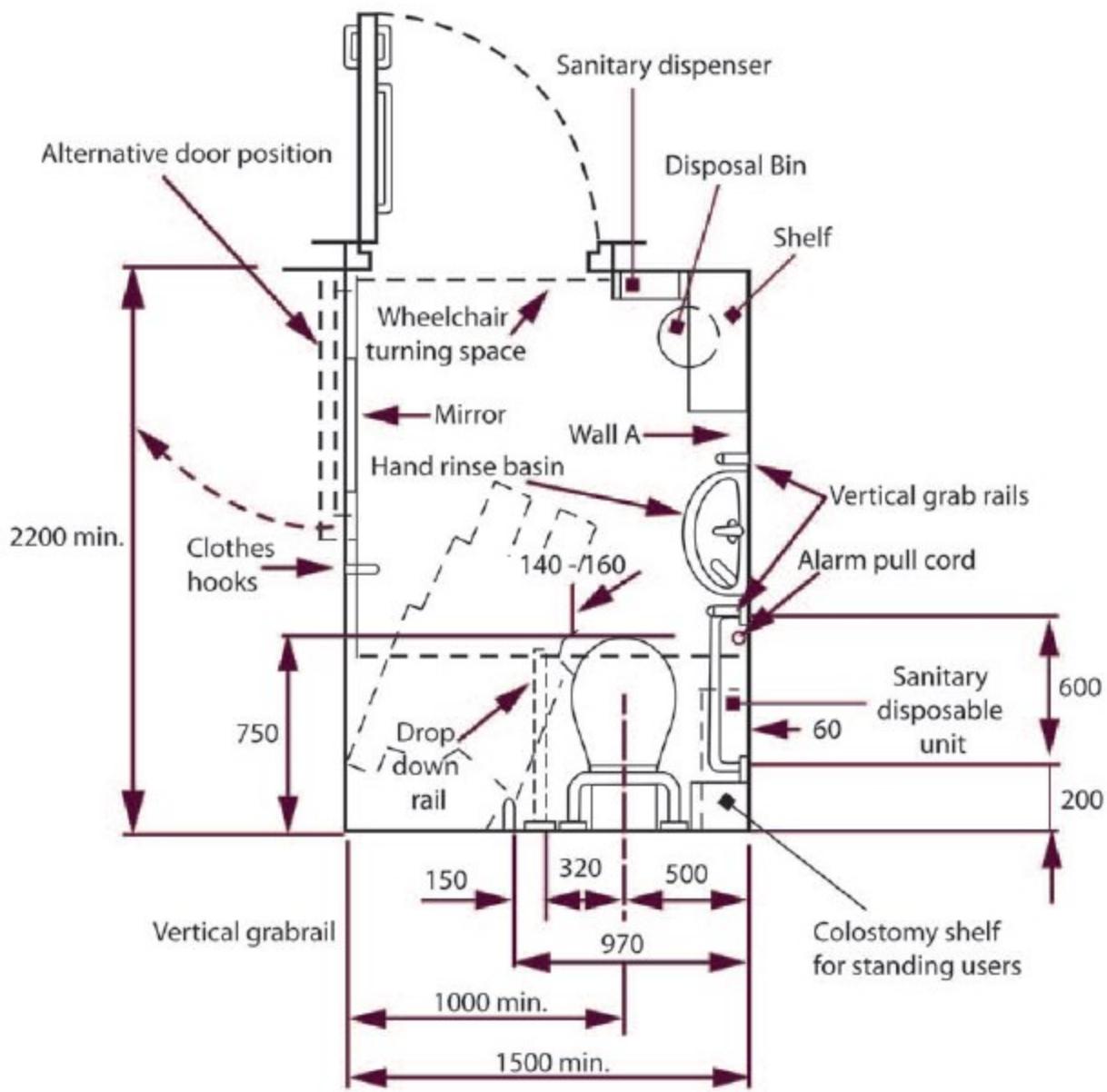


Diagram 4
Corridor



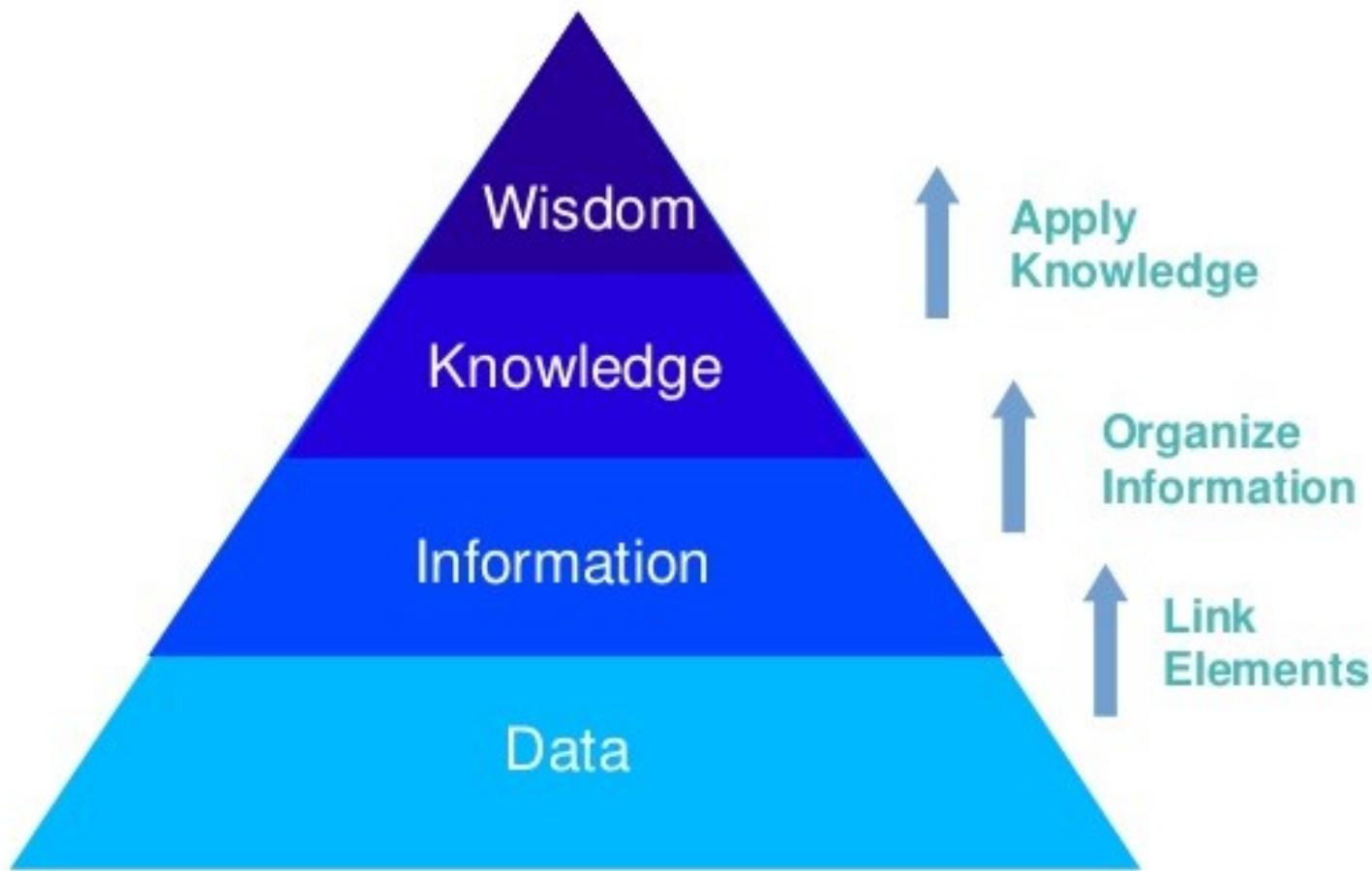
KESIMPULAN

Sekadar berkongsi ...

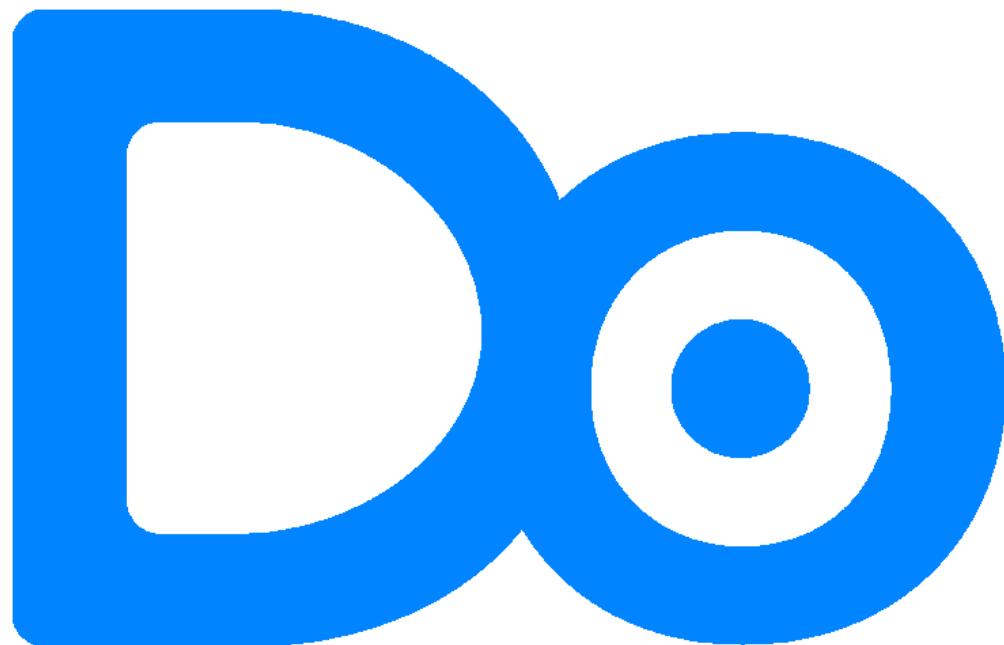
- “ don’t create a new wheel”
- Upgrade
- Share it
- Champion in it

winner
champion achievement success believe
dedication courage
hardwork desire





.....



Slot 4 :

PERANAN PRINSIPAL SUBMITTING
PERSON (PSP) DAN PEMAJU DALAM
MENYEDIAKAN REKA BENTUK SEJAGAT

Oleh :

Prof. Dato' Sri Ar. Dr. Asiah Abdul Rahim

Department Of Architecture / KAED

Universal Design Unit

Kuliyyah of Architecture And Environmental Design (KAED)

International Islamic University Malaysia (IIUM)



SEMINAR PERANAN PERUNDING DALAM MENYEDIAKAN REKA BENTUK SEJAGAT SECARA INKLUSIF



PERANAN PRINCIPAL SUBMITTING PERSON (PSP) DAN PEMAJU DALAM MENYEDIAKAN REKA BENTUK SEJAGAT



6 September 2018

Hotel Ixora, Perai, Pulau Pinang, MALAYSIA

Presenter:

PROF. DATO' SRI AR. DR. ASIAH ABDUL RAHIM

**KAED UNIVERSAL DESIGN UNIT (KUDU),
KULLIYYAH OF ARCHITECTURE AND ENVIRONMENTAL
DESIGN,**

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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 - 2. INTRODUCTION OF UNIVERSAL DESIGN IN THE BUILT ENVIRONMENT**

 - 3. ROLE OF PRINCIPAL SUBMITTING PERSON (PSP)**

 - 4. CASE STUDY – PUTRAJAYA CORPORATION (PPj)**
-



1 ISSUES FACED BY PERSON WITH DISABILITIES (PWDs)

INTRODUCTION

- Accessibility in the built environment is increasingly relevant to Malaysia, not only to prepare for the ageing population, PwDs but also the whole population at large. By year 2050, the ageing population in over 65 years in Malaysia would be 15%.
 - Application of Universal Design in built environment inside and outside, connectivity, accessibility, and facilities for PwDs, the aged, children should be provided.
-

SUSTAINABLE DEVELOPMENT GOAL (SDG)

- UNDP – Malaysia, Singapore and Brunei Darussalam
- 17 goals –
 1. no poverty,
 2. zero hunger
 - 3. Good health and well being**
 4. quality education
 5. gender equality
 6. clean water and sanitation
 7. affordable and clean energy
 8. decent work and economic growth
 - 9. industry innovation and infrastructure**
 - 10. Reduced inequalities**
 - 11. sustainable cities and communities**
 12. responsive consumption and production
 13. climate action
 14. life below water
 15. life on land
 16. peace, justice and strong institution
 17. partnerships for the goals

Convention on the Rights of Persons with Disabilities (CRPD)

- According to Convention on the Right of Persons with Disabilities (CRPD) 2006, the convention follows decades of work by the United Nations to change attitudes and approaches to persons with disabilities. It takes to a new height the movement from **viewing persons with disabilities as “objects” of charity, medical treatment and social protection towards viewing persons with disabilities as “subjects” with rights, who are capable of claiming those rights and making decisions for their lives based on their free and informed consent as well as being active members of society.**
- According to Preamble CRPD (v), recognizing the **importance of accessibility to the physical, social, economic and cultural environment, to health and education and to information and communication, in enabling persons with disabilities to fully enjoy all human rights and fundamental freedoms.**

Understanding deafness :

- Deafness is the complete loss of the ability to hear from one or both ears (*WHO*). 10% of disabled person population in Malaysia.
- 2 categories of deafness :

Deaf	55 decibel and above	<ul style="list-style-type: none">• Sign language• Speech communication
Hard of hearing	54 decibel and below	<ul style="list-style-type: none">• Hearing aids user• Cochlear Implant• Speech communication

- Visually oriented
- Communication : visual language
- Own Deaf Culture

Toward Barrier Free Environment for Deaf and Hard of Hearing Person

- Building Entrance / information counter
- Solution :
 - Glass door
 - 2 way video intercom
 - Induction loops
- Information counter (Busy and noisy place)
- Solution :



Deaf	Hard of Hearing
Pen and paper	Induction loops

- Lift
- Solution :

Deaf	Hard of Hearing
<ul style="list-style-type: none"> • Special emergency button • Receiver for mobile phone 	<ul style="list-style-type: none"> • Special emergency button • Receiver for mobile phone • Induction loop system

- Alarm/alerting system
- Solution :
 - Visible as well as audible to all users, flashing / strobe light designed not to confuse.
 - Placed at isolated places : toilet, bathroom, hotel bedroom

Alerting Devices for Deaf

Hotel Kit for Deaf Client



Flashing Door Bell



- Disaster warning/alerting system
- Solution :
 - Mass short message service (SMS) toDeaf mobile phone.

- Travelling – Airport/public phones
- Solution :
 - Accessible phone – buildin webcam, internet platform for YM, Skype, ooVoo, etc.



SAFETY CONSIDERATION AND ACCESS FOR THE ELDERLY

The components of **internal environment**

- Main entrance
- Doors
- Corridors and Interior Pathways
- Elevators/Lifts
- Stairs
- Ramps
- Toilets
- Resting facilities
- Reception & Information Counters
- Musolla / Prayer Room
- Shops
- Others

For the **external environment:**

- Bus and Taxi stop
- Accessible Parking
- Drop-off zone
- Pathways
- Pedestrian Walkways
- Building's Signage
- Hard Landscape

ISSUES FOR BLIND PERSON reported by Godfrey Ooi Goat See from Malaysian Association for the Blind

- 1.** Engineers and contractors may be ignorant of the PwDs standards in the Code of Practice
- 2.** Lack of knowledge of Principal Submitting Person (PSP) towards facilities of PwDs
- 3.** Cost-cutting by the developers and implementors
- 4.** Lack of coordination between authorities, consultants and developers
- 5.** Broken tiles – warning and guiding tiles
- 6.** Uncut branches protruding into the pathway
- 7.** Uncovered drains
- 8.** Warning tiles right at the edge of the opening
- 9.** Lamp-posts on the tactile blocks
- 10.** Negative attitude of the public like parked vehicles on tactile guides
- 11.** Public education from early age
- 12.** Public awareness through mass media
- 13.** Train more blind persons to be access audit inspectors with certificate

BARRIER ACCESS FOR WHEELCHAIR USERS

Should have, example:

- 1. Accessible toilet**
- 2. Accessible parking for wheelchair users**
- 3. Suitable gradient 1:12 for ramp with railing**
- 4. Avoid floor level with drops eg 25mm, 100mm**
- 5. Rough floor surface with good grip**





2 INTRODUCTION TO UNIVERSAL DESIGN IN THE BUILT ENVIRONMENT

BACKGROUND



1957 – 1980s

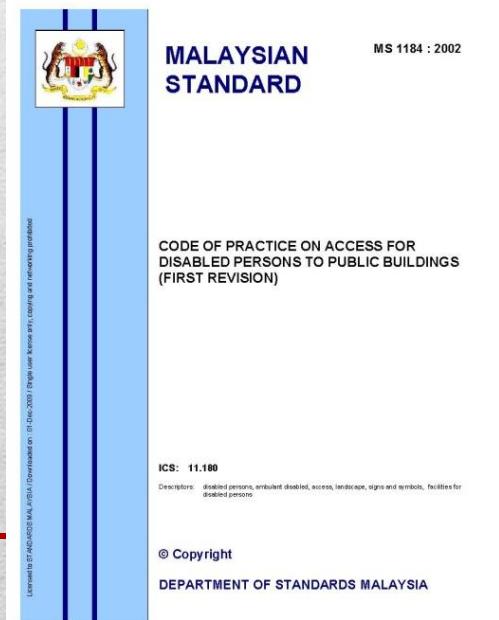
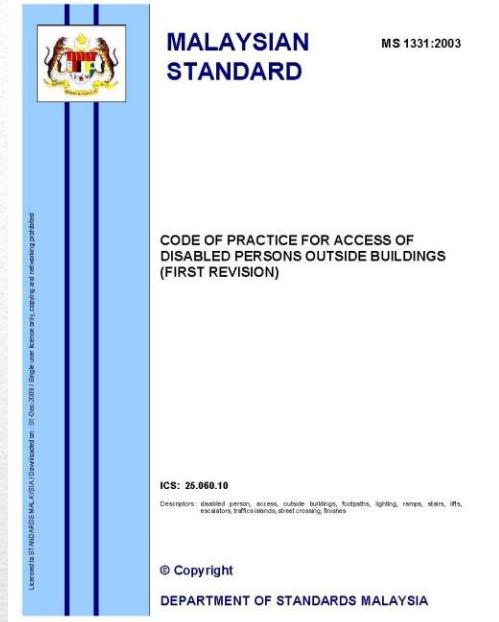
- Malaysia has just regained its independency, and is still underdeveloped. The primary focus of the country at that time was on the development of education, agriculture, economy, infrastructure and basic facilities.
- The buildings erected in this period are mostly not accessible for the disabled.

1980s

Malaysia has started to address the needs of People with Disabilities (PWD) in the built environment with the development of Malaysian Standards and code of practices

3 Standards was initiated in 1980s and published in 1990s

- MS 1183:1990 – Specification for Fire Precautions in the Design and Construction of Buildings
- MS 1184:1991 – Code of Practice on Access for Disabled Persons to Public Buildings
- MS 1331:1993 – Code of Practice for Access of Disabled Persons Outside Buildings



Other Related Malaysian Standard

- MS 2015: Part 1:2006 Public Toilet Part 1: Minimum Design Criteria
- MS 2015-1:2017 Public Toilet - Part 1: Design Criteria (First Revision)
- MS 2577:2014
Architecture and asset management of Masjid – Code of Practice



- "**Universal Design**" means the design of products, environments, programmes & services to be **usable** by all people, to the greatest extent possible, without the need for adaptation or specialized design.
- **UNIVERSAL DESIGN** enables a wider cohort of people to benefit from **accessibility, safety and usability** - Without **discriminating** against anyone.
- The Seven Principles of Universal Design state that facilities should be designed to be **usable to the greatest possible extent rather than 'by all'**

Ron Mace
(1985)

"Housing is too frequently **designed for the 'average' person with 'average' physical ability when, in reality, few people meet this description of 'average'**. People range greatly in size and physical and mental abilities, and they experience many changes throughout their lives."

EMORY BALDWIN (2003)

INTRODUCTION

"Enabling inclusive design requires the **successful capture of information about the end-user** and representing that information in a form that is accessible to the designer since inclusive or **universal design are fundamentally derived from a user-centered design theory**"

S.KEATES & J. CLARKSON (2003)

GLOBAL - PEOPLE WITH DISABILITIES (PWDS)

- **Estimated 15% of the world's population has a disability**
- **More than ONE BILLION people with special needs worldwide**
- **An estimated 80% live in developing countries**

(Source: WHO Report, 2011)

PEOPLE WITH DISABILITIES (PWDS) IN MALAYSIA

- There are **478,369** PwDs registered with the Department of Social Welfare by July 2018
- 169,428 - physically disabled (35%)
- 42,754 - visually impaired
- 35,539 - hearing impaired
- 230,648- learning disabilities, mentally disabled, speech disability and other type of disabilities.

(Source: Jabatan Kebajikan Masyarakat [JKM] Malaysia, 2018)

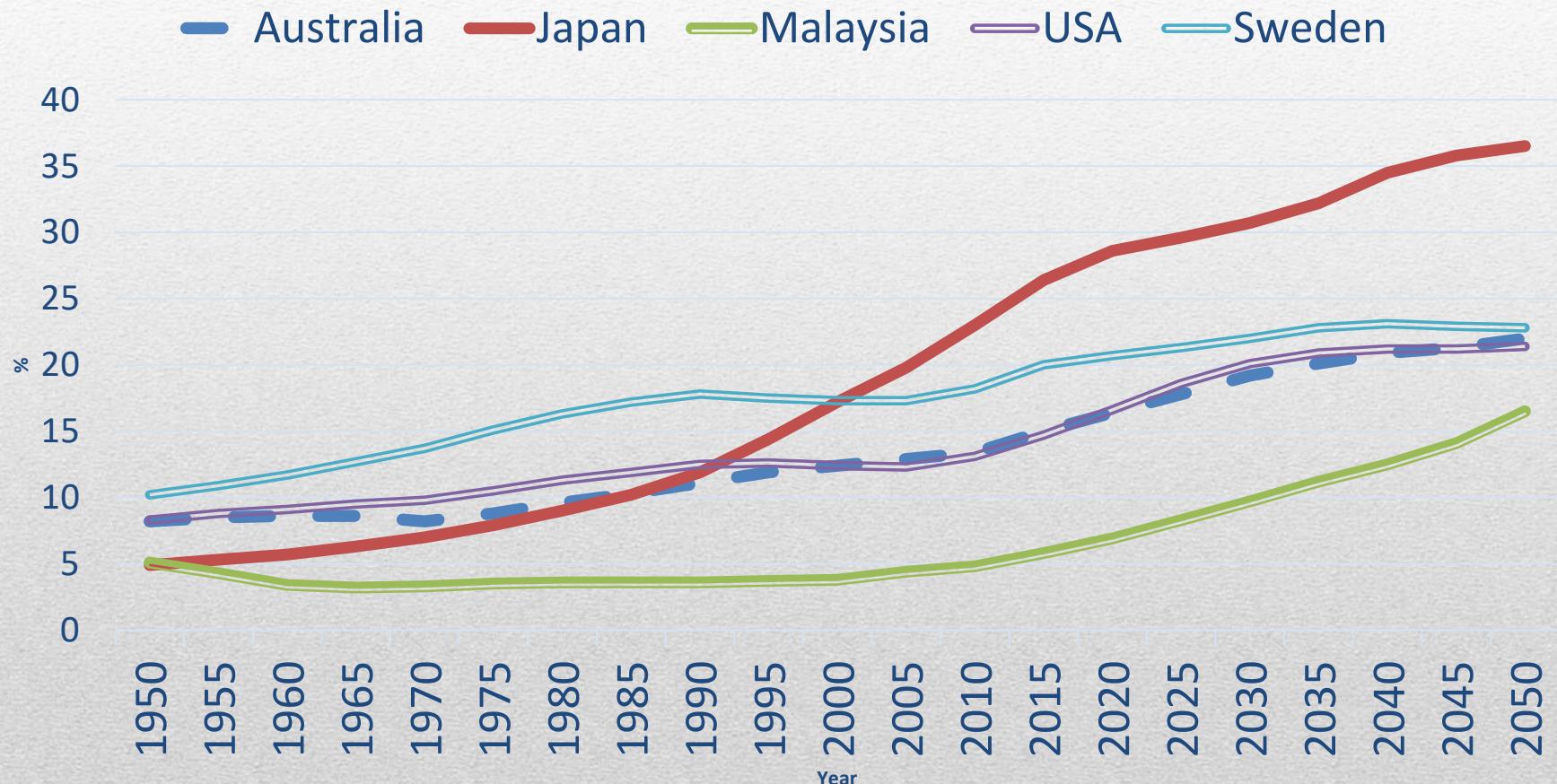
ELDERLY IN MALAYSIA (60+)

- **Population of 60+ in 2010 is 7.9%**
- **Population projection in 2040 will be 16.3%**

(Social Welfare Department, 2013)

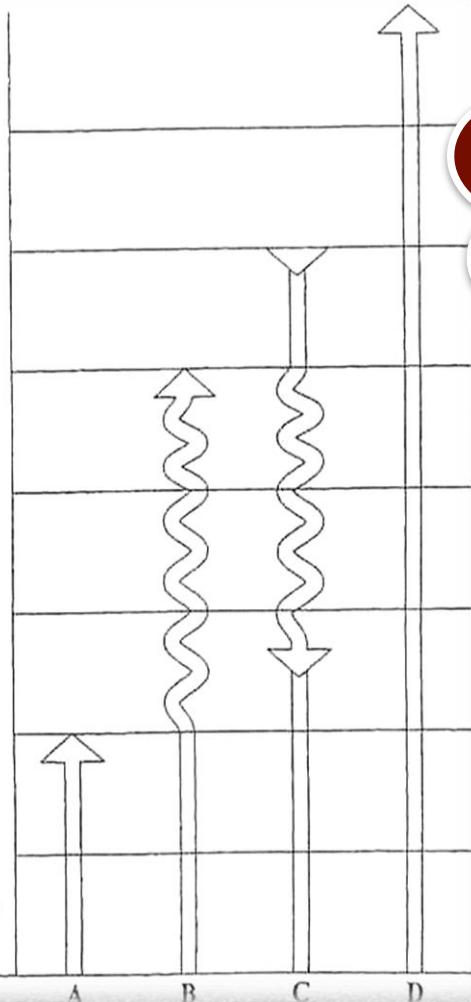
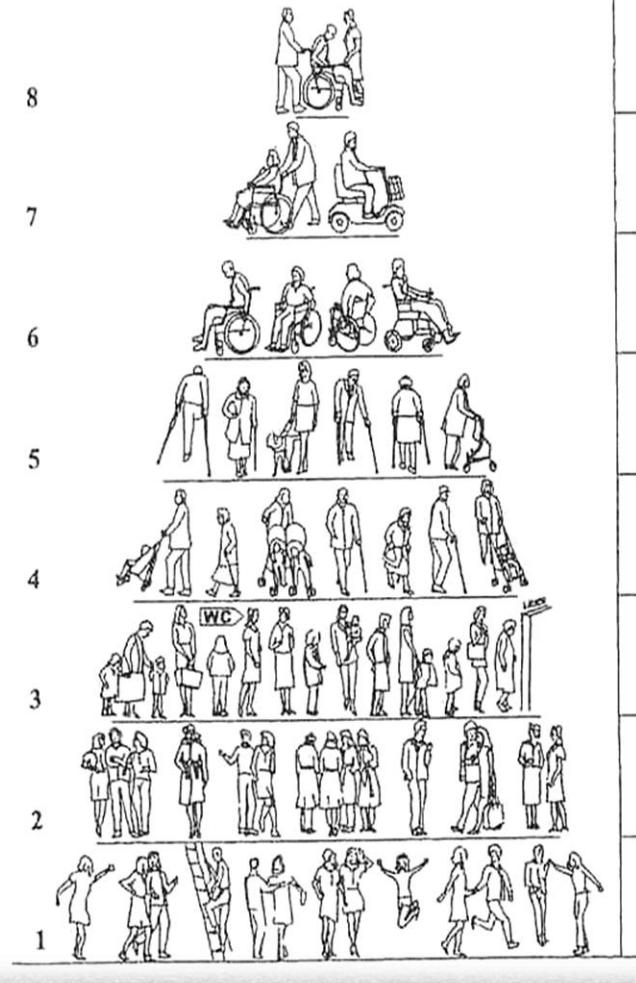
INTRODUCTION

POPULATION RATIO 65+



Source: Satoshi Kose (ICUDBE, 2013)

BUILDING COMMUNITY THROUGH ACCESSIBILITY – DESIGNING FOR THE LIFE OF A FAMILY



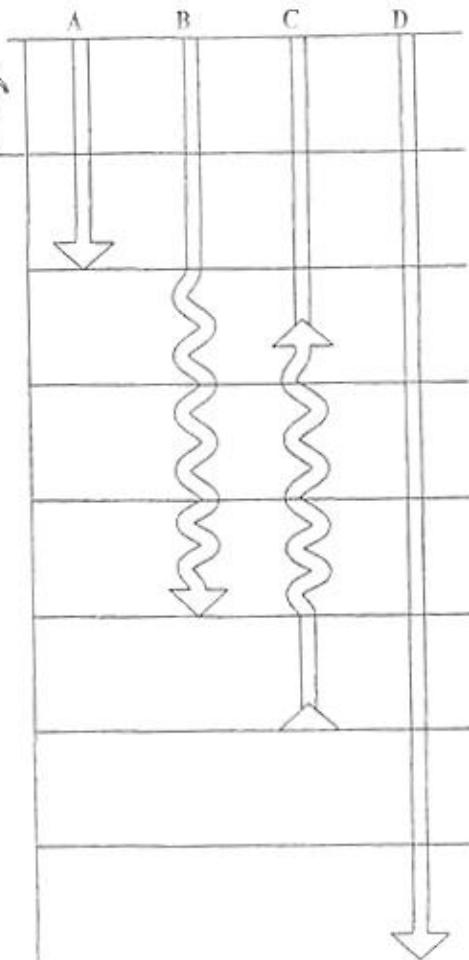
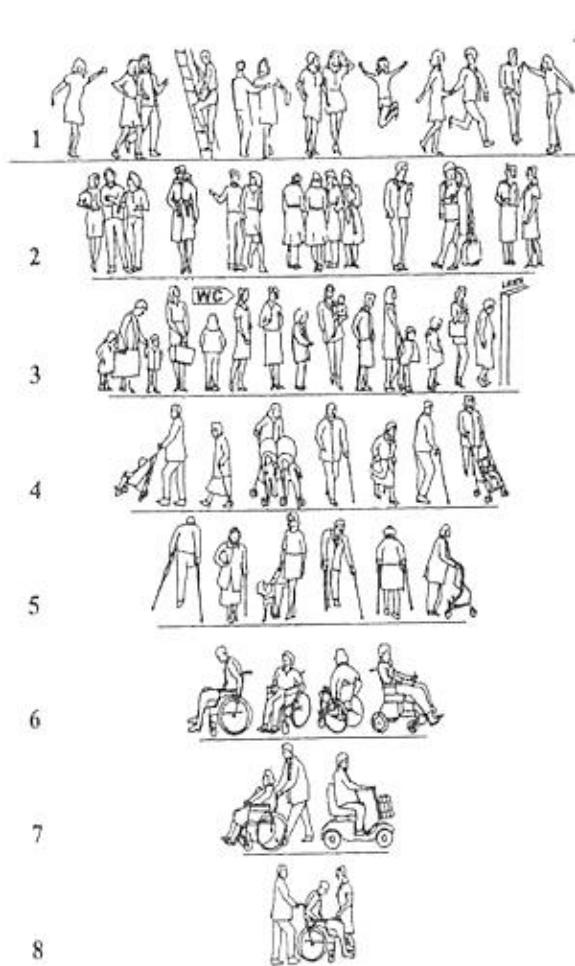
**“PLAN FOR HUMANITY”
“BUILD FOR SOCIETY”
“DESIGN FOR PEOPLE”**

JOSEPH KWAN (2013), *Universal Design: Architect's Social Responsibility*. Hong Kong (ICUDBE 2013)

The Universal Design Pyramid demonstrate the bottom up methodology of universal design.

Source: *Universal Design Pyramid* (Goldsmith, 2000)

BUILDING COMMUNITY THROUGH ACCESSIBILITY – DESIGNING FOR THE LIFE OF A FAMILY

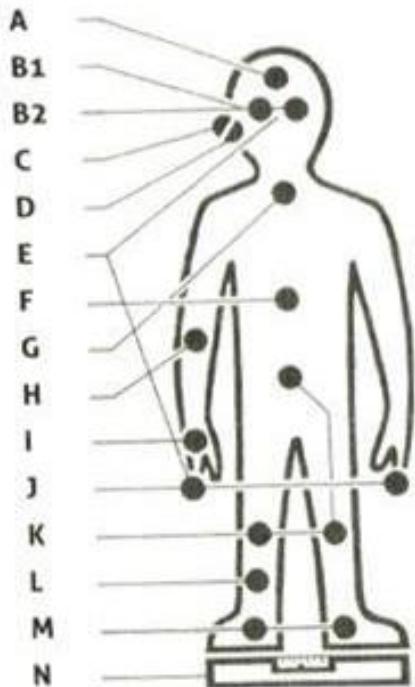


“USER-CENTRIC”

The Universal Design Pyramid
demonstrate the bottom
up methodology of universal design.

Source: Asiah Abdul Rahim (2016)

THE ENABLER



- DIFFICULTY INTERPRETING INFORMATION
- SEVERE LOSS OF SIGHT
- COMPLETE LOSS OF SIGHT
- SEVERE LOSS OF HEARING
- PREVALENCE OF POOR BALANCE
- INCOORDINATION
- LIMITATIONS OF STAMINA
- DIFFICULTY MOVING HEAD
- DIFFICULTY REACHING WITH ARMS
- DIFFICULTY IN HANDLING AND FINGERING
- LOSS OF UPPER EXTREMITY SKILLS
- DIFFICULTY BENDING, KNEELING, ETC.
- RELIANCE ON WALKING AIDS
- INABILITY TO USE LOWER EXTREMITIES
- EXTREMES OF SIZE AND WEIGHT

Steinfeld, E., Schroeder, S. et al. (1979) Access to the Built Environment: A Review of Literature. Washington, DC: U.S. Department of Housing and Urban Development. Quoted in: Mueller, J. (2001) Office and Workplace Design. In Preiser, F.E.Wolfgang and Ostroff, Elaine, eds. (2001) Universal Design Handbook. New York: McGraw-Hill, 45.1-45.11.

In the 70s', Professor Edward Steinfeld, as director and researcher with the Rehabilitation Engineering Research Centre (RERC) of the University at buffalo in New York, developed a usable synthesis of relevant design data related to functional limitations. In *The Enabler* (1979) he compiled an overview of such limitations, without becoming entangled in medical jargon and without revealing confidential medical data.

(Source: Hubert Froyen (Ed.) *Universal Design – A Methodological Approach*)

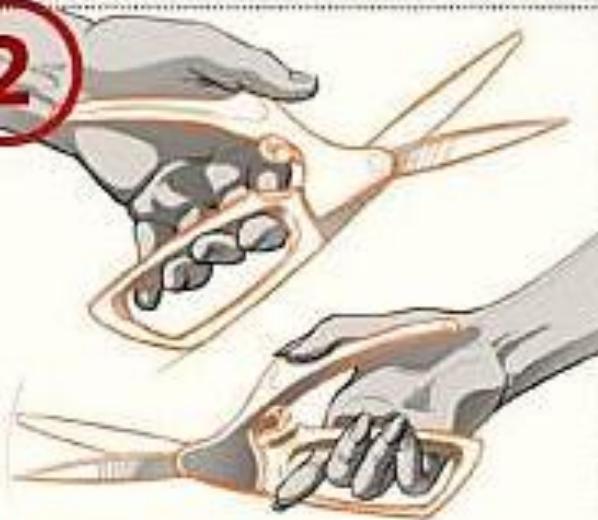
7 PRINCIPLES OF UNIVERSAL DESIGN



1 Equitable Use

The design is useful and marketable to people with diverse abilities.

- 1a. Provide the same means of use for all users; identical whenever possible; equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Provisions for privacy, security, and safety should be equally available to all users.
- 1d. Make the design appealing to all users.



2 Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

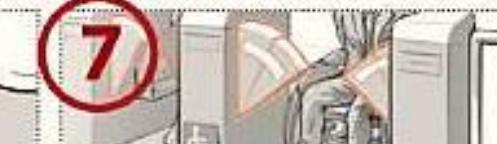


3 Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or education level.

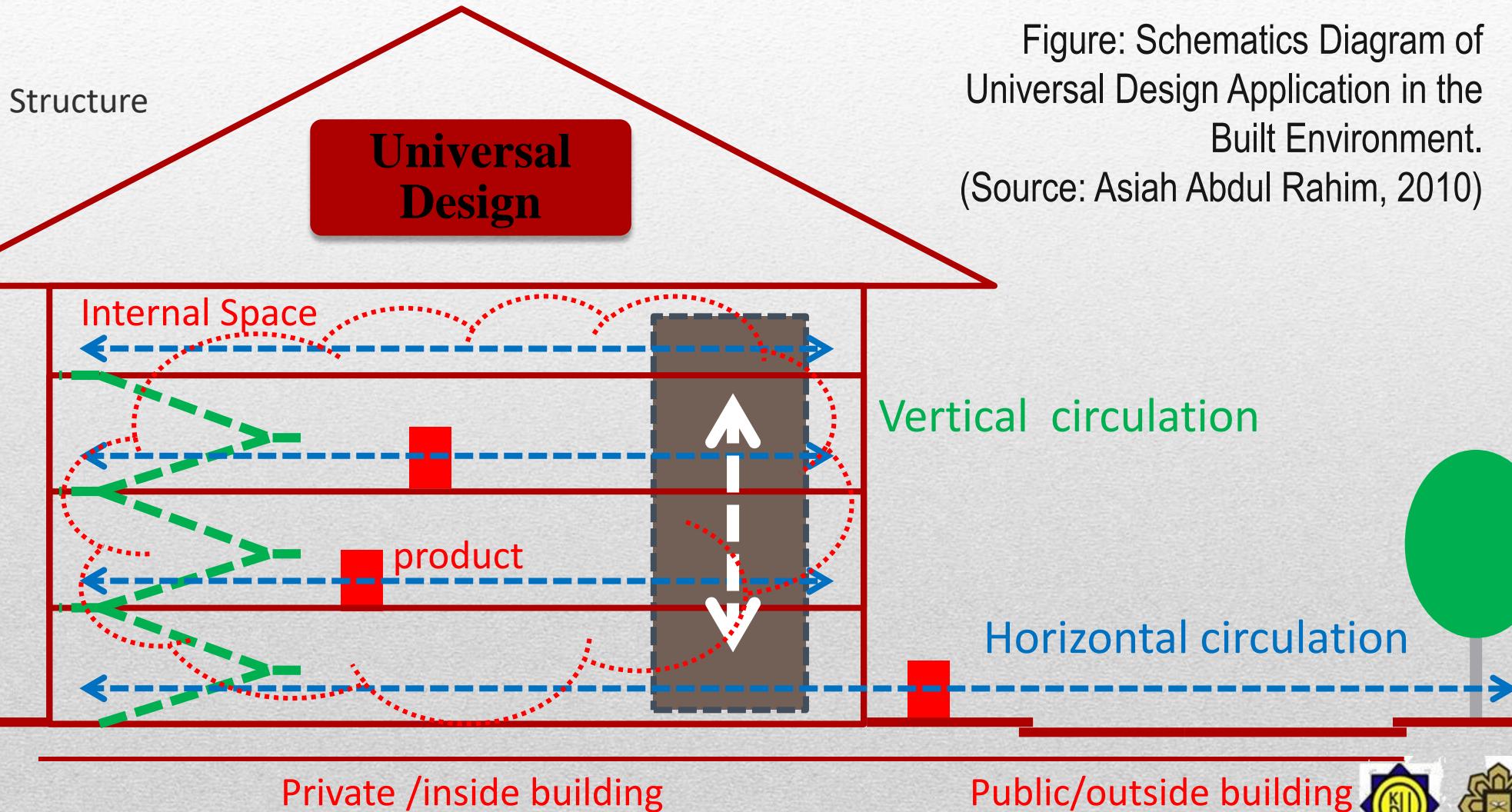
- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

7 PRINCIPLES OF UNIVERSAL DESIGN

 <p>4 Perceptible Information The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.</p> <p>4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information. 4b. Provide adequate contrast between essential information and its surroundings. 4c. Maximize "legibility" of essential information. 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions). 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.</p>	 <p>5 Tolerance for Error The design minimizes hazards and the adverse consequences of accidental or unintended actions.</p> <p>5a. Arrange elements to minimize hazards and errors; most used elements, most accessible; hazardous elements eliminated, isolated, or shielded. 5b. Provide warnings of hazards and errors. 5c. Provide fail safe features. 5d. Discourage unconscious action in tasks that require vigilance.</p>	 <p>6 Low Physical Effort The design can be used efficiently and comfortably and with a minimum of fatigue.</p> <p>6a. Allow user to maintain a neutral body position. 6b. Use reasonable operating forces. 6c. Minimize repetitive actions. 6d. Minimize sustained physical effort.</p>	 <p>7 Size and Space for Approach and Use Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.</p> <p>7a. Provide a clear line of sight to important elements for any seated or standing user. 7b. Make reach to all components comfortable for any seated or standing user. 7c. Accommodate variations in hand and grip size. 7d. Provide adequate space for the use of assistive devices or personal assistance.</p>
--	--	---	--

Source: <http://www.fpinell.fpinnovations.ca/en/2012/07/aging-in-place/>

UNIVERSAL DESIGN IN THE BUILT ENVIRONMENT



Universal Design -I.E. Its Application

Example Building typology	Example of Products Design			Services (human resources)
Waterfront / tourist attraction areas	Digitized information	Guiding Blocks	Warning blocks	Doorman Assistance
Residential	Ramps	Braille Lettering	Hazard Lights	Service Personnel
Public buildings / Religious Building	Accessible toilets' appliances	Grab bars / Hooks	Flashing Lights	Interpreter
Institutional	Railing	Legible / Embossed Graphics	Commercial Wheelchairs	Sign Language
Healthcare				

(Source: Asiah Abdul Rahim, 2010)



3 ROLES OF PRINCIPAL SUBMITTING 3 PERSON (PSP)

PRINCIPAL SUBMITTING PERSON (PSP)

- **Principal submitting person (PSP)** play role to issue the certificate of completion and compliance (CCC) for any types of new development.
- The PSP is a **professional architect, engineer or building draftsman who submits building plans to the Local Authority for approval**. He must be **registered under** the relevant law relating to registration thereof, eg **Architects Act 1967 or Registration of Engineers Act 1967(Revised 1974)**.
- The PSP's responsibilities include **submitting building plans for approval by the Local Authority, supervising the erection and completion of the building in conformity with the approved plans and the requirements of the provisions of Acts or by-laws, ensuring all technical conditions imposed by the LA have been duly complied with and ensuring that the building is safe and fit for occupation**.

- **ARCHITECTS**

JOB DESCRIPTION

Architects design, plan, and supervise the construction of buildings. They are responsible for the safety, usefulness, and aesthetics of their buildings. They must design structures that satisfy their clients' needs while conforming to the laws and regulations of the areas in which the structures will be built.

Architects work with engineers, urban planners, contractors, and landscape architects. They may work for large architectural firms, or they may be self-employed. Some architects work for engineers or builders. Others work for federal, state, or local governments.

ROLE

- Provide professional advice to the client.
 - Produce drawings to be submitted to the local council's planning department for approval.
 - Deal with all the correspondence with the regulatory bodies, such as local authorities and utilities companies, as well as preparing drawings required
 - Negotiate arising matters on client's behalf.
 - Prepare Tender Documents
 - Monitor the construction process to ensure all the design plans are being adhered.
 - Make decisions about any unforeseen circumstances that will no doubt arise during the construction process.
 - Administering the building contract, submitting financial reports, and giving advice whenever needed.
-

CIVIL AND STRUCTURAL ENGINEERS

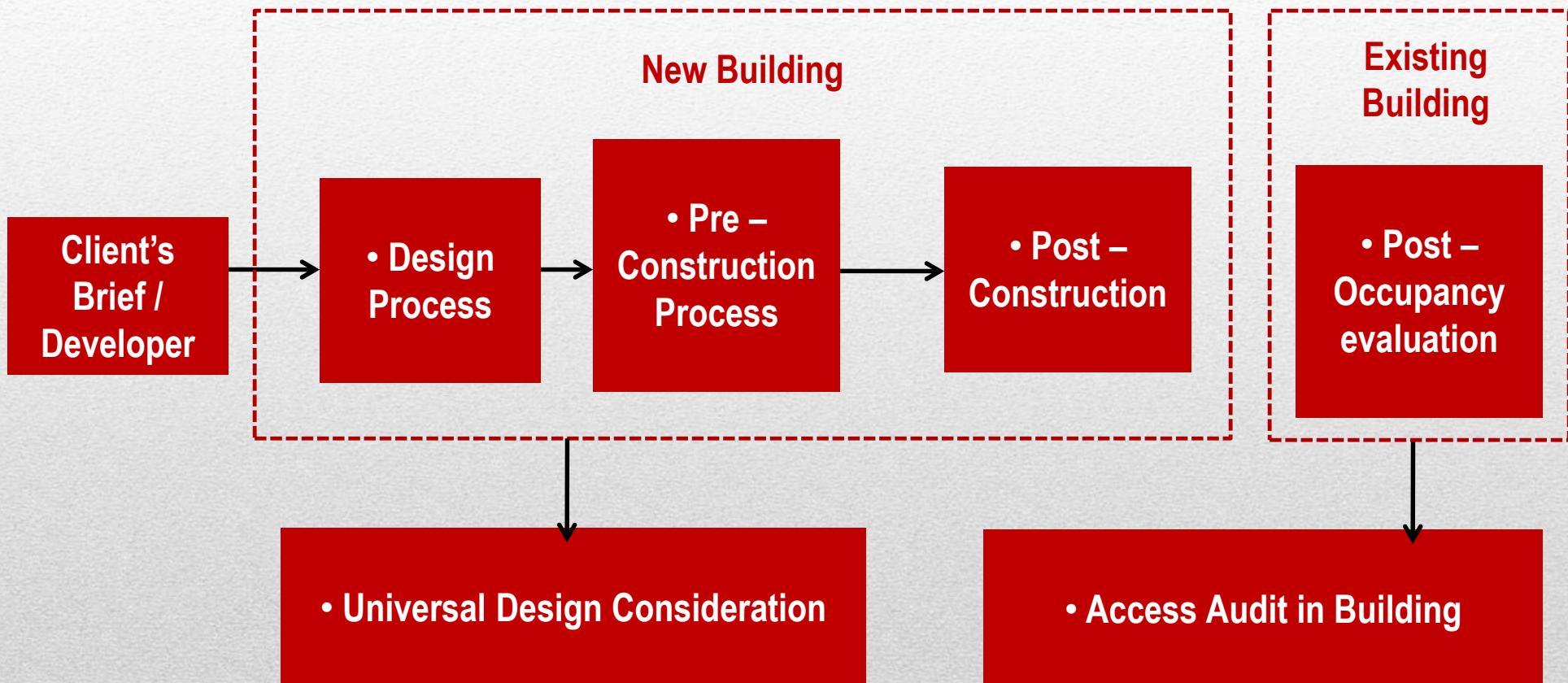
JOB DESCRIPTION

Assist the Architect with specialist engineering works relating to structural and civil works or any other engineering works as may be required by the Architect under the provisions of the Contract.

A civil engineer engages in many general responsibilities on a daily basis. These responsibilities are a crucial part of their job and enable the civil engineer to engage in their profession to the best of their ability. General responsibility of the civil engineer is to analyze various factors concerning a construction job. The civil engineer will analyze the proposed site location as well as **the entire construction job which is to be completed** at such a site. They will analyze the process for completing the construction job every step of the way.

The civil engineer must also plan the construction project that will be taking place in conjunction with the results they found due to their analysis of the proposed project. During the process and at the end, the civil engineer must inspect the product to ensure that all rules, regulations and guidelines have been followed.

UNIVERSAL DESIGN CONSIDERATION



(Source: Asiah Abdul Rahim, 2010)

Figure 1: Involvement of PSP in providing good Access for people with disabilities.
(Source: *Asiah Abdul Rahim, 2018*)

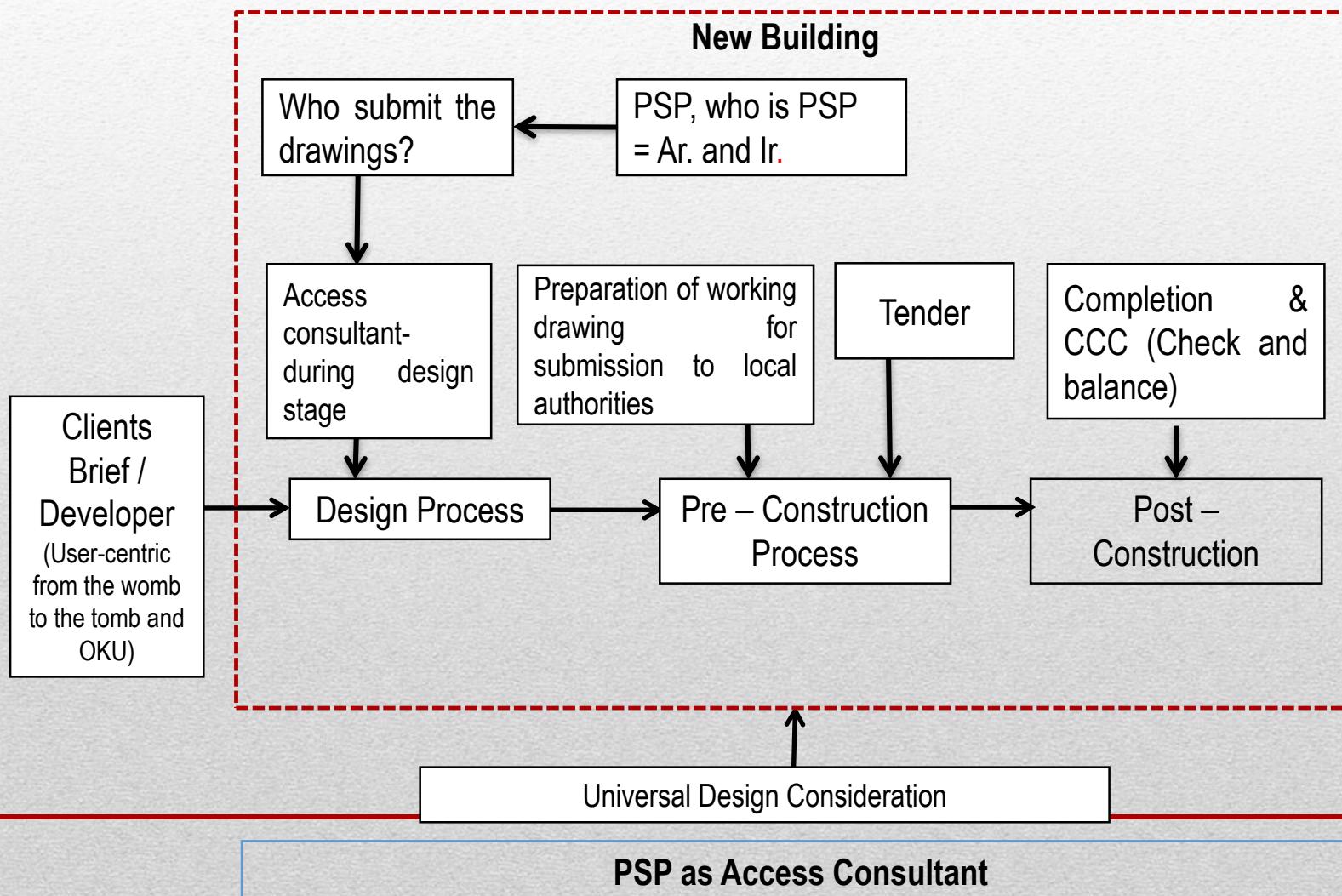
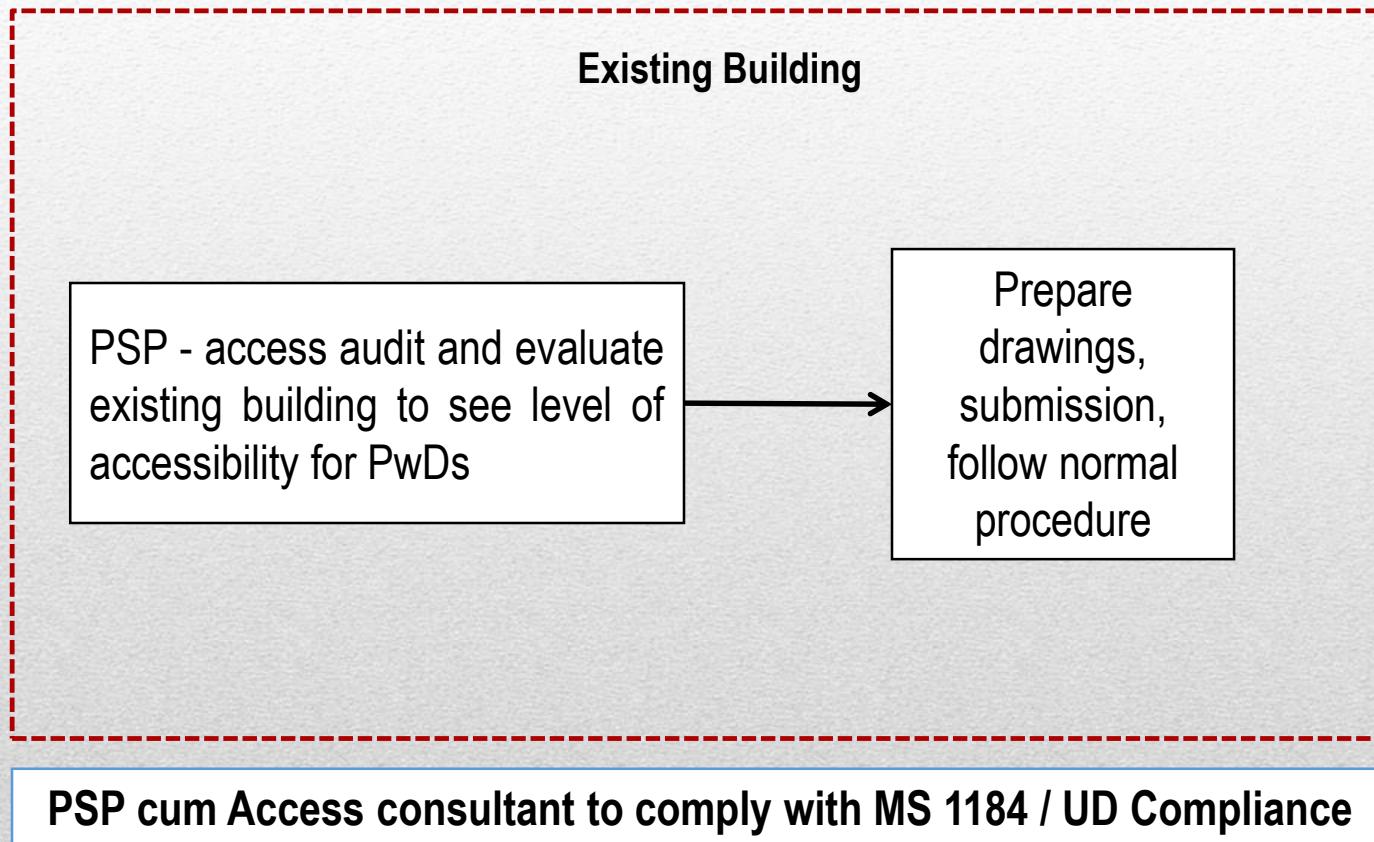


Figure 2: Involvement of PSP to provide Access for PwDs during renovation works.
(Source: *Asiah Abdul Rahim, 2018*)



KAED UNIVERSAL DESIGN UNIT (KUDU), KULLIYYAH OF ARCHITECTURE & ENVIRONMENTAL DESIGN UNIT (KAED), INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM) was involved with Putrajaya Corporation (PPj) since 2011.

Project undertaken:

- 1. Access Audit 2011**
- 2. Access Audit 2013**
- 3. Preparation Putrajaya UD Master Plan**
- 4. Jointly organising International Conference on the Universal Design in the Built Environment (ICUDBE) 2015**
- 5. Jointly organising Symposium**
- 6. Jointly organising International Conference OF Architecture & Built Environment (ICABE) 2015**
- 7. Access Audit 2018**

CASE STUDY

PUTRAJAYA CORPORATION (PPJ)

4 ACKNOWLEDGEMENT: SLIDES WAS OBTAINED FROM PUTRAJAYA CORPORATION (PPJ) AT ICUDBE 2017 & MINISTRY OF TRANSPORT 2018

UNIVERSAL DESIGN IMPLEMENTATION & INITIATIVE

Planning & Development Control

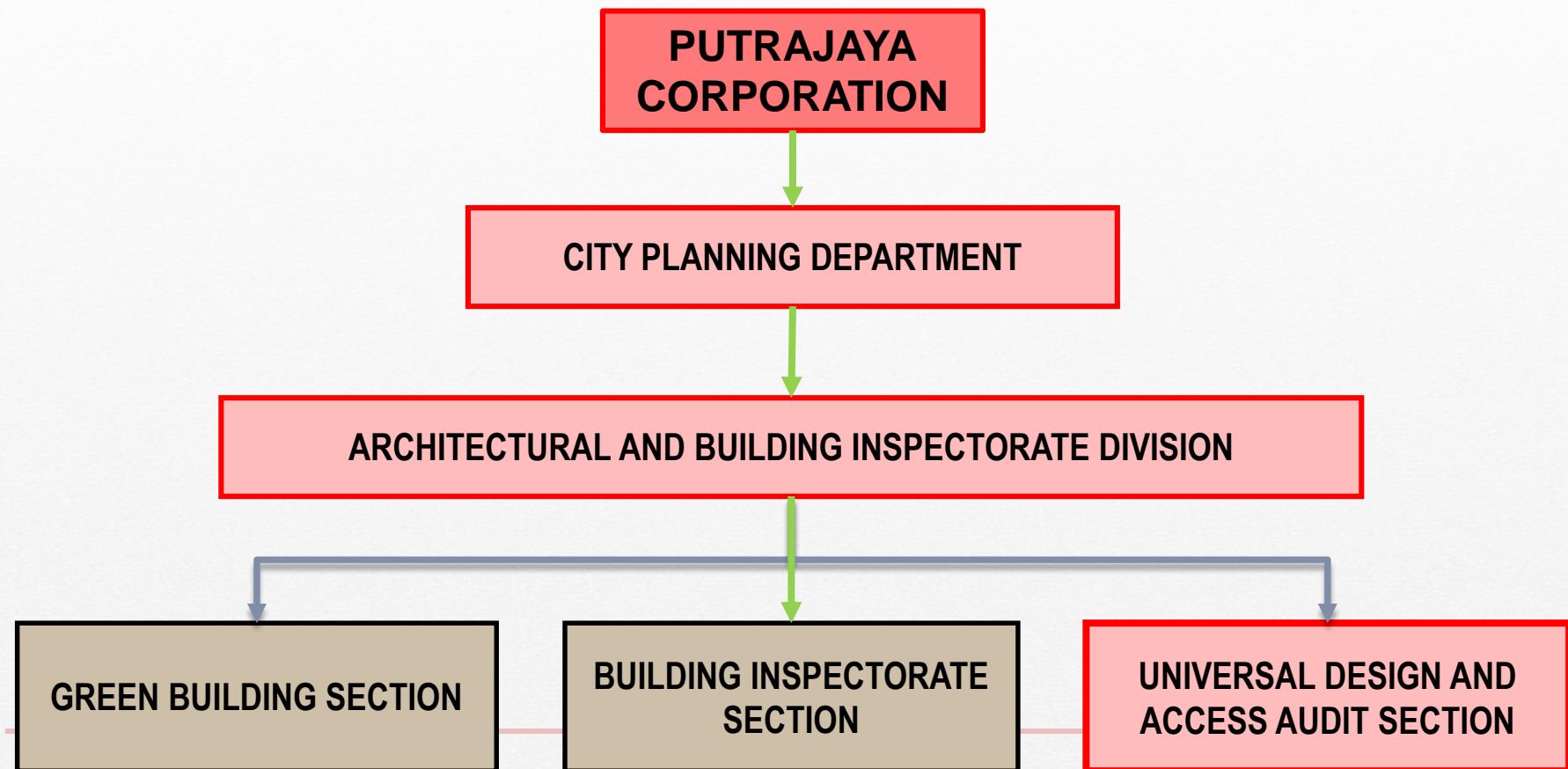


Awareness & Learning Program



UNIVERSAL DESIGN IMPLEMENTATION

PJC's Administrative Structure



UNIVERSAL DESIGN IMPLEMENTATION

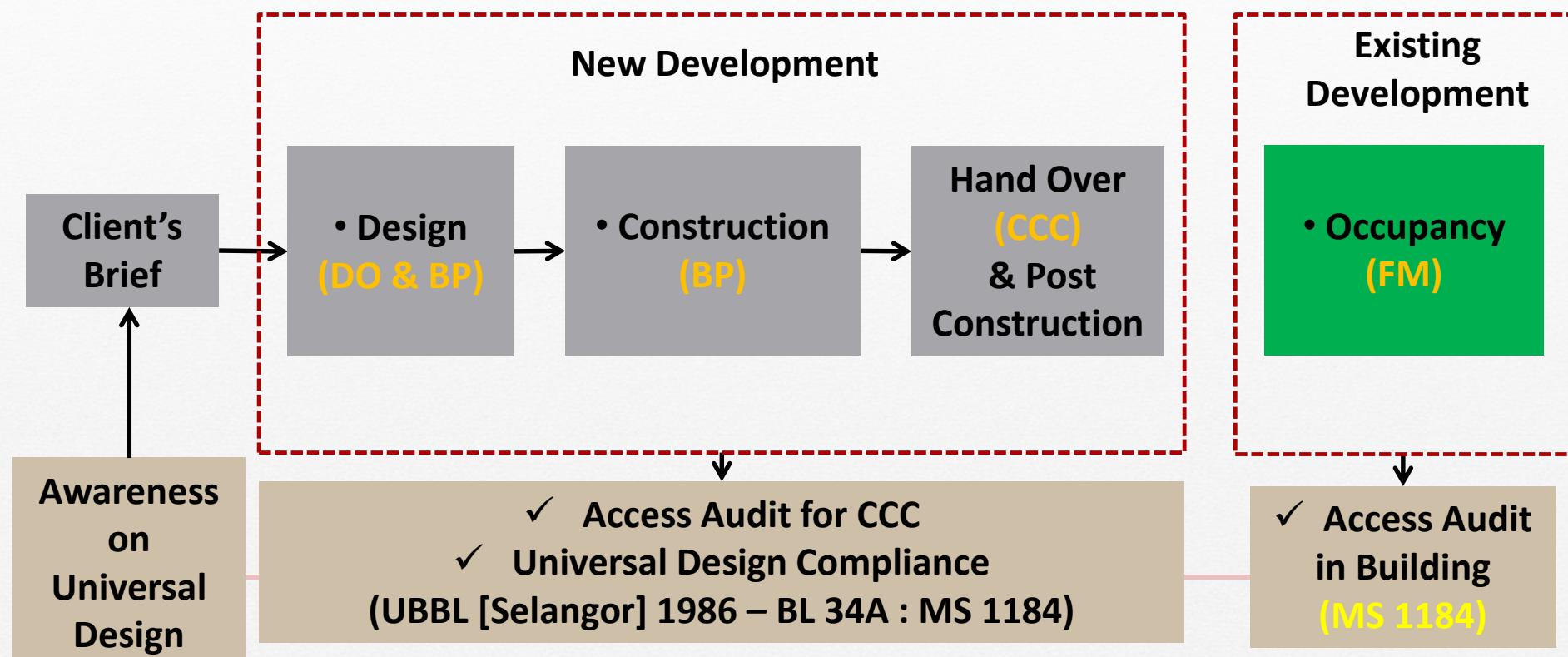
Planning & Development Control

1 - Development Order Approval (DO)

2 - Building Plan Approval (BP)

3 - Certificate of Completion and Compliance (CCC)

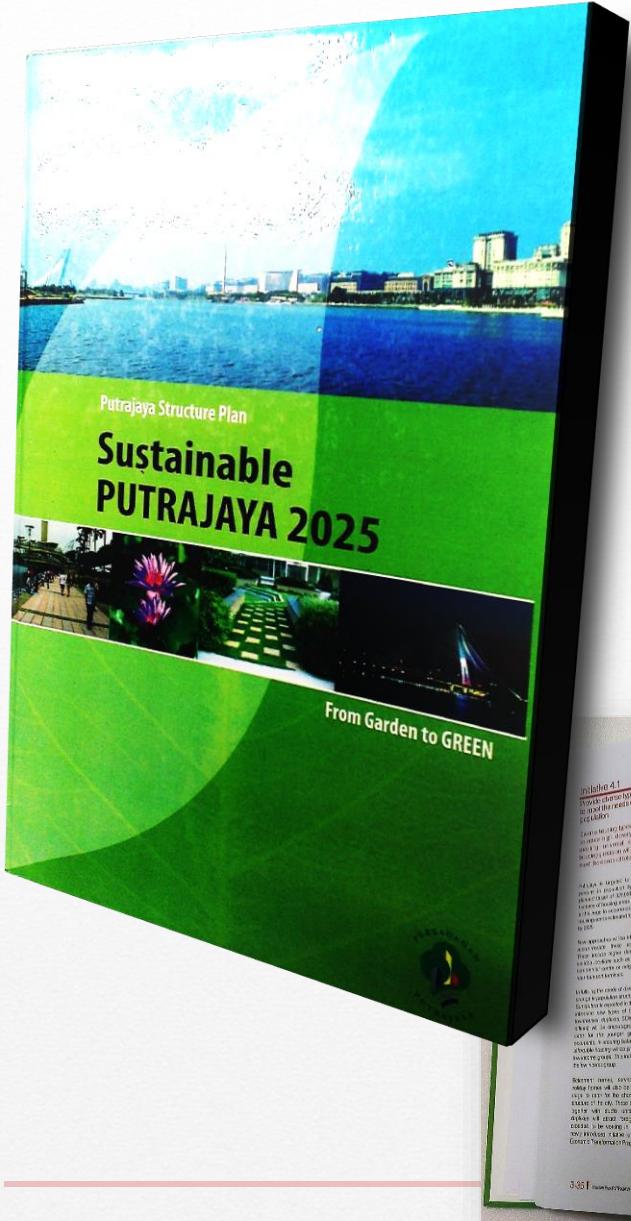
4 - Maintenance / Renovation / Retrofitting / Conservation



UNIVERSAL DESIGN IMPLEMENTATION

*Putrajaya planning & development
base on three (3) main documents*





Initiative 4.1: Provide diverse type of housing units to meet the needs of future population.

...Programmes 4.1C: Provision of housing according to universal design standards (**MS1184 & MS1331**) for elderly and disabled community.

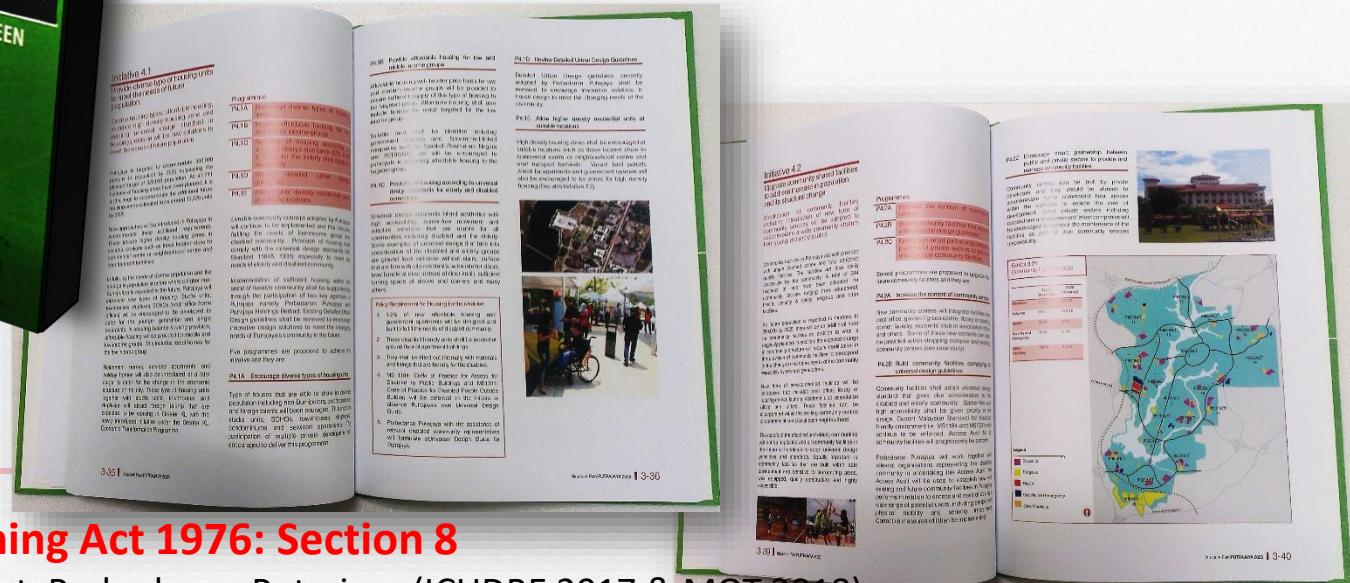
Initiative 4.2: Upgrade community shared facilities to address increase in population and its structural change

...Programmes 4.2B: Build community facilities complying to universal design guidelines..i.e.**MS1184 and MS1331**...

Initiative 4.3: Enhance content and convenience at recreational areas

...Programmes 4.3B: Provide facilities to cater for the **different needs of different community**.

...Programmes 4.3C: Ensure **good accessibility** and transit services to recreational areas.



*Town And Country Planning Act 1976: Section 8

Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

New Development

• Design
(DO & BP)

• Construction
(BP)

Hand Over
(CCC)
& Post
Construction

PUTRAJAYA PLANNING & DEVELOPMENT GUIDELINE

- ✓ ***Putrajaya Master Plan***
- ✓ ***Urban Design Guidelines***
- ✓ ***Irrigation Master Plan***
- ✓ ***Transportation Master Plan***
- ✓ ***Lighting Master Plan***
- ✓ ***Utilities Master Plan***
- ✓ ***Lake use and Navigation Master Plan***
- ✓ ***Detailed Urban Design Guidelines***
- ✓ ***Transport Design Guide***
- ✓ ***Transport Action Plan***
- ✓ ***Fencing Policy & Design Guidelines***
- ✓ ***Signage & Advertisement Design Guidelines***
- ✓ ***Environmental Management Guide***
- ✓ ***Storm Water Management Design Guidelines***
- ✓ ***Putrajaya Lake Catchment Development & Management Plan***

To ensure Putrajaya will be developed as a model city,
a set of guidelines on every subject were prepared & followed

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

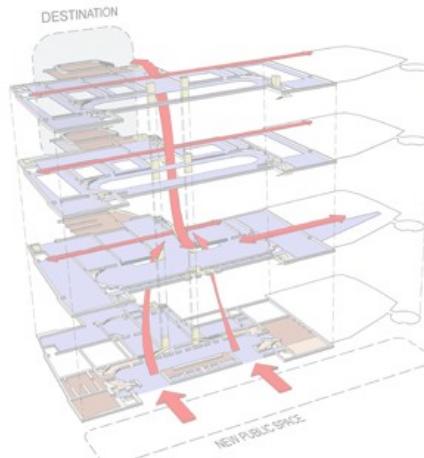
- Plan Approval (DO & BP) :during Pre-Consult

New Development

• Design
(DO & BP)

• Construction
(BP)

Hand Over
(CCC)
& Post
Construction



- Plan Approval (DO & BP): 5 Key Points for Accessibility Plan -

- **Getting to the premises** - access from road or car park or nearest public transportation, lighting, signage, surfaces and street furniture..
- **Getting into the premises** – entrance, steps, thresholds, doors, lobby/reception area, seating, and lighting..
- **Getting around the premises** – corridors, doors, stairs, lifts, signage, floor surfaces, tonal contrasts and lighting..
- **Using the services in the premises** – toilets, washrooms, changing and bathrooms, eating areas, bar, room layout, lighting, heating, switches, handles, seating, furniture, telephone, alarm, health and safety issues, management and staff attitudes..
- **Getting out of the building** in an emergency – fire exits, emergency routes, lighting and warning systems and safe refuge..

UNIVERSAL DESIGN IMPLEMENTATION

New Development

Planning & Development Control

- Plan Approval (DO) : Application for Planning Permission Checklist

• Design
(DO & BP)

• Construction
(BP)

Hand Over
(CCC)
& Post
Construction

PB PERDAGANGAN OSC 3.0_Okt / 2015				
 PERBADANAN PUTRAJAYA Kompleks Perbadanan Putrajaya 24, Persiaran Perdana, Presint 3, 62675 Putrajaya Wilayah Persekutuan Tel: 03-8000 8000 Faks: 03-8887 5003				
BORANG SENARAI SEMAKAN PERMOHONAN KEBENARAN MERANCANG BAGI PENDIRIAN BANGUNAN – PERDAGANGAN				
Sila potong jenis permohonan yang tidak berkaitan. PERDAGANGAN/ KOMPLEKS PEJABAT/ INDUSTRI PERKHIDMATAN/ LAIN-LAIN <small>(Silakan kemasukan borang permohonan yang lengkap dan diajar dalam Bahasa Melayu kepada Kaunter Urus Setia Pusat Selamat OSC, Perbadanan Putrajaya) (Borang ini diberikan secara percuma dan boleh dibuat salinan)</small>				
<small>Note:</small> <ul style="list-style-type: none"> i. Perbadanan Putrajaya berhak mendiskaji permohonan yang tidak lengkap. ii. Borang ini boleh dipinda oleh PP dan semasa ke somua. iii. Tamak pada surat permohonan dan borang A hendaklah pada hari ia dikemasukan di Kaunter Urus Setia Pusat Selamat OSC. 				
<small>Tandakan (✓/X) pada ruang yang berkaitan.</small>				
SENARAI SEMAKAN PERMOHONAN - PB : <small>(Seksyen 21(A) Akta Perancangan Bandar dan Desa 1976)</small>				
BIL.	PERKARA (PB)	NAMA FAIL – SISTEM ELEKTRONIK	SEMAKAN PERUNDING	SEMAKAN JABATAN
1.	Surat Rasmi dan/pada Perancangan Bandar Berdaftar.	S_RASMI.PDF		
2.	Borang A (Jadual Perlama Kaedah Kawalan Perancangan Am).	BORANG_A.PDF		
3.	Satu (1) salinan surat hak milik.	HAK_MILIK.PDF		
4.	Satu (1) salinan surat perlantikan perunding.	LANTIK_RUNDING.PDF		
5.	Satu (1) salinan sijil profesional bagi setiap perunding berkaitan.	SIJIL_PROFESIONAL.PDF		
6.	Dua (2) pelan A1 yang telah disahkan oleh profesional bertauliah berkaitan.			
6.1	Pelan Tapak. (Pelan-pelan perlu disahkan oleh Juru Runding Profesional Bertauliah)	TAPAK.DWG		
6.1.1	Pelan Kunci (menunjukkan tapak cadangan dalam Presint)			
6.1.2	Pelan Lokasi (menunjukkan tapak cadangan dan pembangunan di sekitarnya)			
6.1.3	Pelan Tapak yang berdasarkan kepada Pelan Pra-Hitungan.			
6.1.4	Maklumat dan Jadual Kawalan Pembangunan			
6.1.5	Jadual Pematuhan Development Control Document (DCD)			

PB PERDAGANGAN OSC 3.0_Okt / 2015				
PERDAGANGAN OSC 3.0_Okt / 2015 1. Perkara 2. Semakan 3. Semakan 4. Semakan 5. Semakan 6. Semakan 7. Semakan 8. Semakan 9. Semakan 10. Semakan 11. Semakan 12. Semakan 13. Semakan 14. Semakan 15. Semakan 16. Semakan 17. Semakan 18. Semakan 19. Semakan 20. Semakan 21. Semakan 22. Semakan 23. Semakan 24. Semakan 25. Semakan 26. Semakan 27. Semakan 28. Semakan 29. Semakan 30. Semakan 31. Semakan 32. Semakan 33. Semakan 34. Semakan 35. Semakan 36. Semakan 37. Semakan 38. Semakan 39. Semakan 40. Semakan 41. Semakan 42. Semakan 43. Semakan 44. Semakan 45. Semakan 46. Semakan 47. Semakan 48. Semakan 49. Semakan 50. Semakan 51. Semakan 52. Semakan 53. Semakan 54. Semakan 55. Semakan 56. Semakan 57. Semakan 58. Semakan 59. Semakan 60. Semakan 61. Semakan 62. Semakan 63. Semakan 64. Semakan 65. Semakan 66. Semakan 67. Semakan 68. Semakan 69. Semakan 70. Semakan 71. Semakan 72. Semakan 73. Semakan 74. Semakan 75. Semakan 76. Semakan 77. Semakan 78. Semakan 79. Semakan 80. Semakan 81. Semakan 82. 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UNIVERSAL DESIGN IMPLEMENTATION

New Development

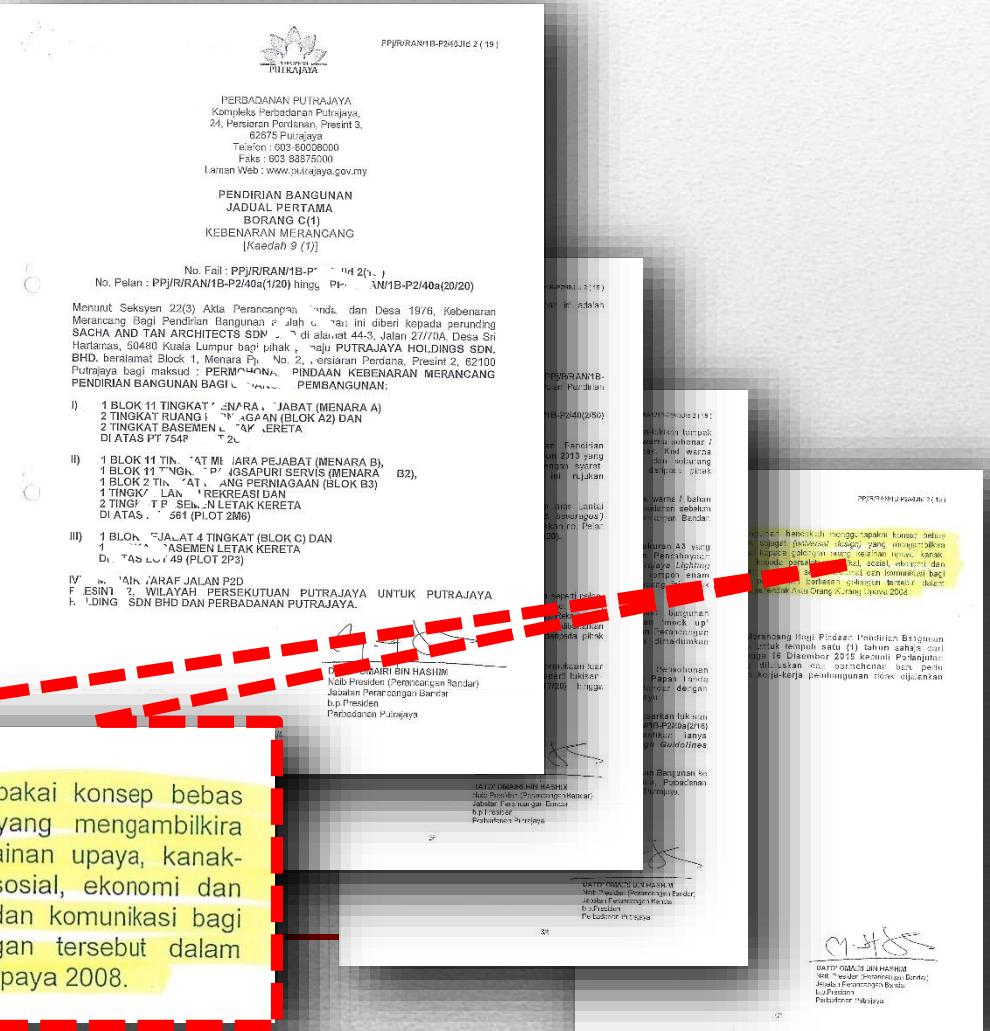
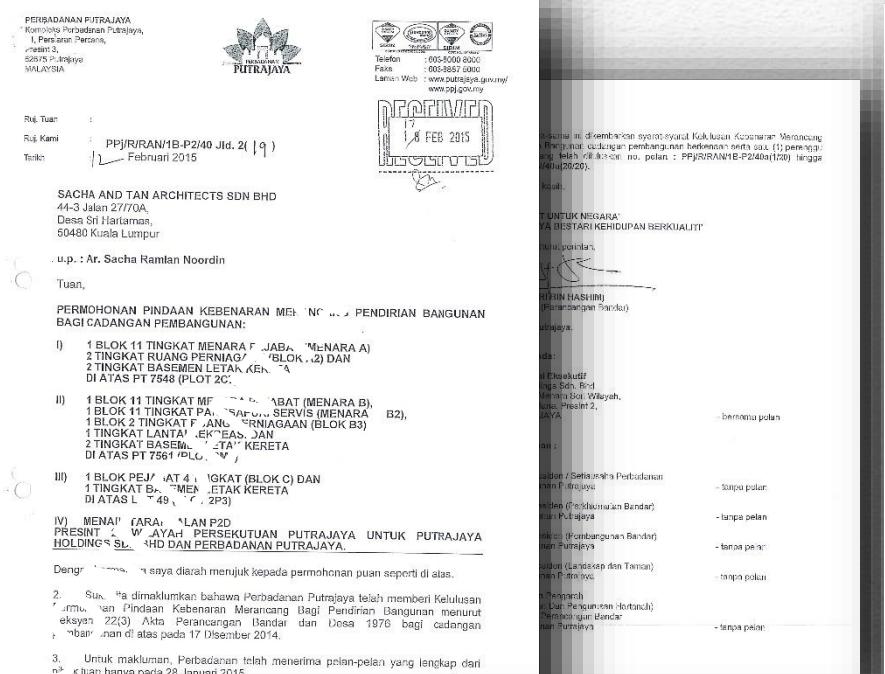
Planning & Development Control

- Sample of... Planning Permission

• Design
(DO & BP)

• Construction
(BP)

Hand Over
(CCC)
& Post
Construction



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

* Uniform Building By Law (Selangor) 1986

New Development

- Design (DO & BP)

- Construction (BP)

Hand Over (CCC) & Post Construction

"34A. Buildings requirements for disabled persons.

(1) Any building or part thereof to which this law applies shall-

(a) be provided with access to enable disabled persons to get into, out of and within the building except for any part of the building for which access is provided wholly or mainly for the inspection, maintenance or repair of the building, its services or fixed plant or machinery; and

(b) be designed with facilities for used by disabled persons.

(1) The requirements of this by-law shall be deemed to be satisfied by compliance with Malaysia Standard MS 1184 and MS 1183.

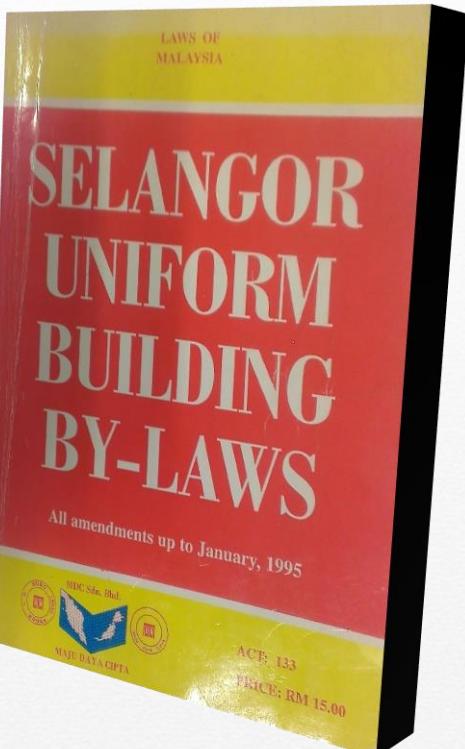
(2) Building to which this by-law applies and which on the date of commencement of this by-law has been erected, are being erected or have not been erected but plans have been submitted and approved shall be modified or altered to comply with this by-law within three years from the date of commencement of this by-law.

(3) Notwithstanding paragraph (3) the local authority may where it is satisfied that it is justifiable to do so-

(a) allow an extension or further extensions of the period within which the requirements of this by-law are to be complied with; or

(b) allow variations, deviations or exemptions as it may specify from any provisions of this by-law.

(4) Any person aggrieved by the decision of the local authority under paragraph (4) may within 30 days of the receipt of the decision appeal in writing to the State Authority, whose decisions shall be final."



UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

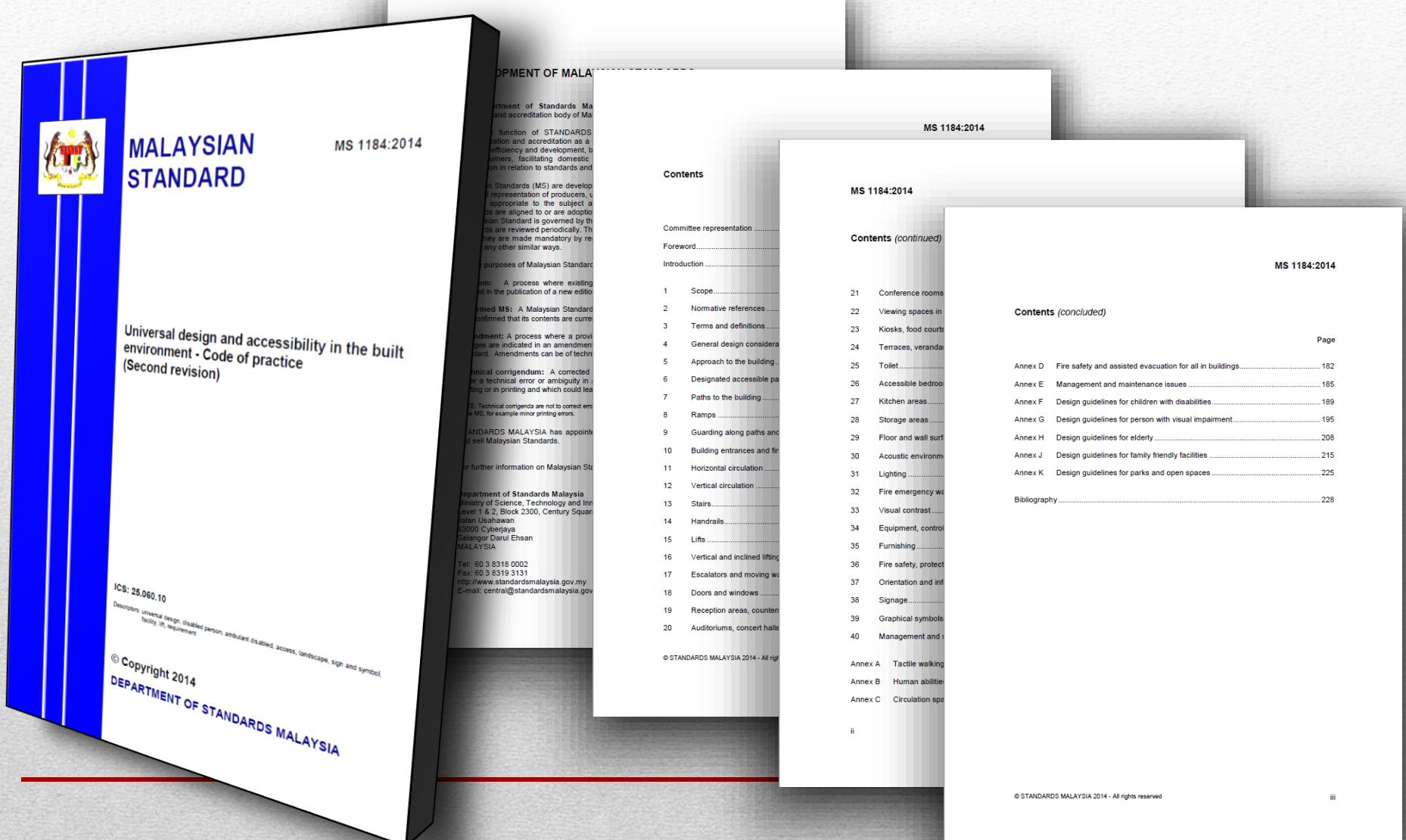
* Malaysia Standard MS1184:2014

New Development

• Design
(DO & BP)

• Construction
(BP)

Hand Over
(CCC)
& Post
Construction



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP): Guideline for Accessibility Plan Submission

New Development

• Design
(DO & BP)

• Construction
(BP)

Hand Over
(CCC)
& Post
Construction

KEBOLEHAKSESAN menurut akta orang kurang upaya 2008

- Orang kurang upaya hendaklah mempunyai hak untuk akses kepada dan menggunakan kemudahan, amaniti, perkhidmatan dan bangunan awam yang dibuka atau disediakan kepada orang ramai atas dasar kesetaraan dengan orang upaya, tetapi tertakluk kepada kewujudan atau kemunculan apa-apa keadaan yang boleh membahayakan keselamatan orang kurang upaya.
- Orang kurang upaya hendaklah mempunyai hak untuk akses kepada dan menggunakan kemudahan, amaniti dan perkhidmatan pengangkutan awam yang dibuka atau disediakan kepada orang ramai atas dasar kesetaraan dengan orang upaya.
- Orang kurang upaya tidak boleh dikecualikan daripada sistem pendidikan umum atas dasar ketidakupayaan, dan kanak-kanak kurang upaya tidak boleh dikecualikan daripada pendidikan prasekolah, rendah, menengah dan tinggi, atas dasar kesetaraan dengan orang atau kanak-kanak upaya, termasuk latihan vokasional dan pembelajaran separjang hayat.
- Orang kurang upaya hendaklah mempunyai hak untuk akses kepada pekerjaan atas dasar kesetaraan dengan orang upaya.
- Orang kurang upaya hendaklah mempunyai hak untuk akses kepada maklumat, komunikasi dan teknologi atas dasar kesetaraan dengan orang upaya.
- Orang kurang upaya hendaklah mempunyai hak untuk akses kepada kehidupan berbudaya atas dasar kesetaraan dengan orang upaya.
- Orang kurang upaya hendaklah mempunyai hak untuk menyertai aktiviti rekreasi, santai dan sukan atas dasar kesetaraan dengan orang upaya tetapi tertakluk kepada kewujudan atau kemunculan apa-apa keadaan yang boleh membahayakan keselamatan orang kurang upaya

"orang kurang upaya adalah berhak kepada peluang dan perlindungan, serta bantuan sama rata dalam segala hal keadaan dan tertakluk hanya kepada apa-apa batasan, sekatan dan perlindungan hak sebagaimana yang diperuntukkan oleh Perlumbagaan Persekutuan"

akta orang kurang upaya 2008

- Nota**
- Semua serahan surat di Kounter Pusat Setempat (OSC), PPJ
 - No. telefon Bahagian Seni Bina dan Inspektorat Bangunan; 03-8887-7389(Am)

ALAMAT SURAT MENYURAT

Nama Presiden
Jabatan Perancangan Bandar
Aras 8, Blok D
Kompleks Perbadanan Putrajaya
24, Persiaran Perdana
Pusat 3
62675 PUTRAJAYA



Keupayaan.

2 Penggunaan Fleksibel (Flexibility In Use)

Reka bentuk pelbagai yang memenuhi dan mampu menampung berbagai pilihan dan keupayaan individu contohnya sama ada pengguna biasa atau kidal

3 Penggunaan Mudah Dan Intuitif (Simple and Intuitive Use)

Reka bentuk yang mudah difahami tanpa berfikir, pengetahuan, pengalaman dan kemahiran membaca (buta huruf).

ampaian Maklumat Mudah Information)

dapat menyampaikan maklumat kepada pengguna tanpa mengira aran dan keupayaan deria

Minimum (Tolerance For Error)

ng meminimumkan risiko dan aya seperti kemalangan atau

eupayaan Fizikal (Low Physical

boleh digunakan secara efisien dan bulkan keletihan.

dan Kecukupan Saiz dan and Space For Approach And Use)

ng bersesuaian serta mencukupi untuk kemudahsampangan dengan dan bentuk badan (posture) serta nik pengguna.

EHAKSESAN

Kebolehaksesan hendaklah merangkumi tetapi tidak terhad kepada perkara-perkara seperti berikut;

AKSES KE PREMIS/PEMBANGUNAN

Reka bentuk laluan selamat yang bersambung daripada;

- Hentian pengangkutan awam berhampiran kawasan pembangunan;
 - Kawasan Tempat Letak Kereta;
 - Laluan pejalan kaki utama;
 - Kawasan "drop-off"; dsbnya
- serta mengambilira kemasan laluan, keperluan pencahayaan, tanda arah (signage) dan perlengkap peraturan laluan.

2

AKSES KE DALAM PREMIS

Reka bentuk yang membenarkan akses ke dalam premis yang merangkumi pintu masuk utama, perubahan aras, lobi/"reception" serta mengambilira kemasan, keperluan pencahayaan dan tanda arah.

3

AKSES UNTUK BERGERAK DI DALAM PREMIS

Reka bentuk laluan selamat yang bersambung yang memudahkan pergerakan dan mempunyai 'sense of direction' bagi;

- Koridor;
- Pintu;
- Tangga;
- Lif;

serta mengambilira kemasan laluan, tanda arah, 'tonal contrast' dan keperluan pencahayaan.

4

AKSES UNTUK MENGGUNAKAN KEMUDAHAN DALAM PREMIS

Reka bentuk kemudahan yang disediakan yang merangkumi (mana berkenaan);

- Tandas/ Bilik Air/ Bilik Persalinan;
 - Bilik Tidur/ Bilik Hotel;
 - Kafe/ Restoran/ Ruang Makan;
 - Kawasan "refresh";
 - Dewan/ Tempat Persidangan;
 - Surau dan Tempat Wuduk;
 - Kolam Renang, dsbnya;
- serta mengambilira kemasan laluan, tanda arah, 'tonal contrast', kedudukan suis, ironmongery' dan keperluan pencahayaan.

5

AKSES UNTUK MELEPASKAN DIRI DALAM HAL KECemasan

Reka bentuk kemudahan untuk melepaskan diri yang merangkumi;

- Lokasi tanda amaran berlampa dan berbunyi;
 - Laluan kecemasan (emergency route);
 - Kawasan perlindungan sementara (refuge area);
 - "Signage" dan tanda arah laluan keluar;
- serta mengambilira kemasan laluan dan keperluan pencahayaan.

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

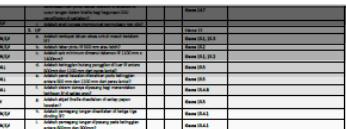
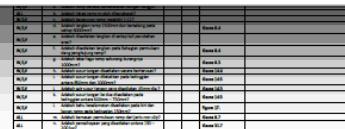
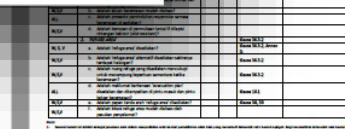
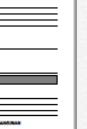
- Plan Approval (DO & BP) : Checklist for Universal Design during Pre-Consult

New Development

- Design (DO & BP)

- Construction (BP)

Hand Over (CCC)
& Post Construction

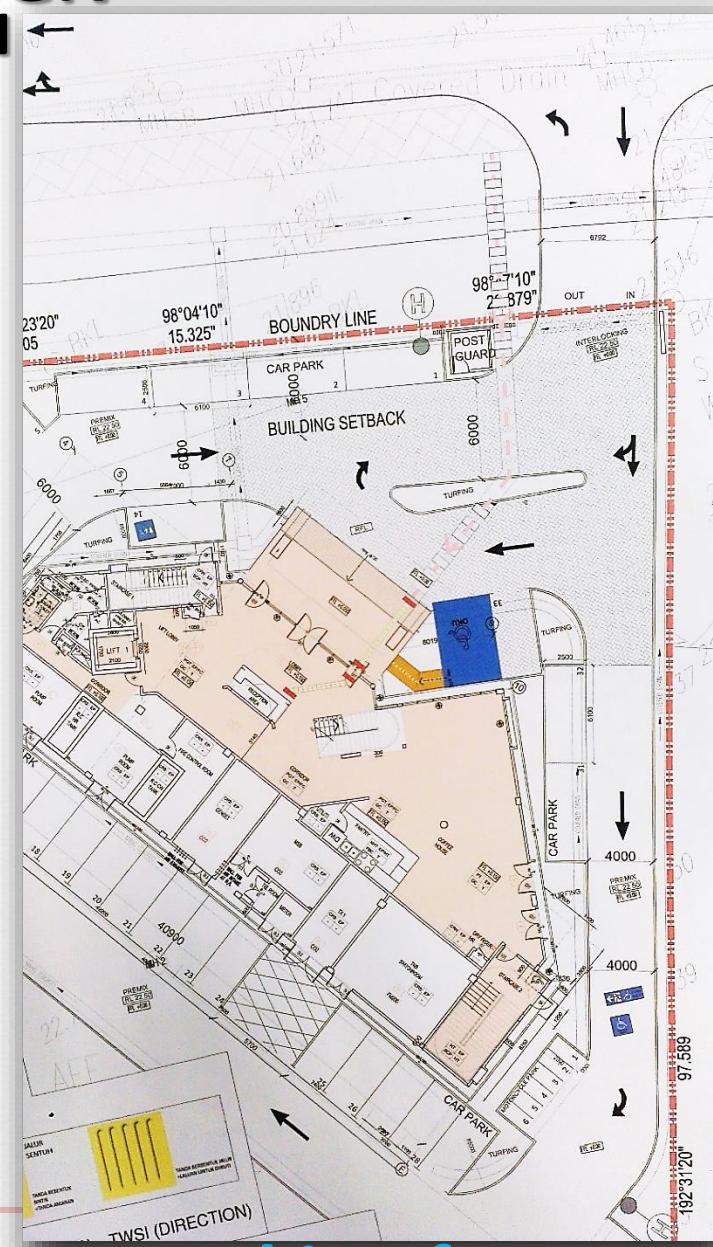
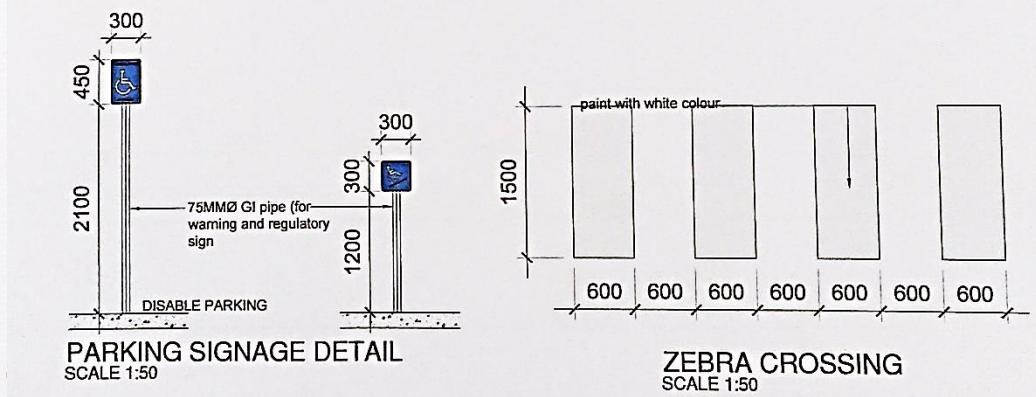
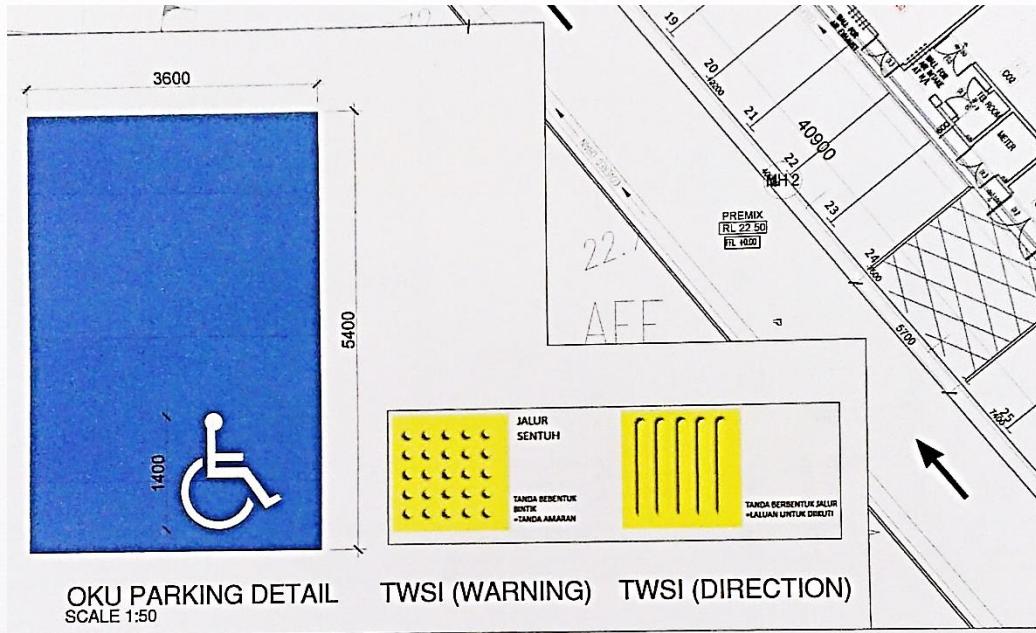
SENARAI SEMAK PENGEMUKAAN PELAN AKSES REKA BENTUK SEJAGAT					
Seksyen Reka Bentuk Sejagat, Akses Audit dan Pengurusan Maklumat Seni Bina, Bahagian Seni Bina dan Inspektorat Bangunan, Jabatan Perancangan Bandar, PERBADANAN PUTRAJAYA					
					
<p>Tajuk Permohonan:</p> <p>.....</p> <p>.....</p> <p>.....</p>					
<p>Nota: W (Wheelchair), V (Visual Impaired), H (Hearing Impaired), S (Stick/Crutches), ALL (All Disabilities).</p>					
KATEGORI KURANG KEUPAYAAN	PERKARA	YA	TIDAK	KLAUSA MS1184	ULASAN/ SEMAKAN PERBADANAN
A. AKSES KE PEMBANGUNAN					
1. LALUAN PEJALAN KAKI					
W, S, V	a. Adakah laluan pejalan kaki bebas daripada halangan?	Klaus 7			
W, S, V	b. Adakah terdapat laluan pejalan kaki tanpa tangan?	Klaus 7.8			
V	c. Adakah tactile guiding blocks dipasang diselanjutnya laluan akses ke pembangunan?	Klaus 7.2			
V	d. Adakah warning block disediakan di kawasan yang mempunyai halangan?	Klaus 7.3			
W, S, V	e. Adakah lebar laluan sekurang-kurangnya 1200mm?	Klaus 7.4, 7.5			
W, S, V	f. Adakah permukaannya rata, lancar dan tidak licin?	Klaus 7.7			
V	g. Adakah laluan jalan mempunyai warna tekstur berbanding dengan permukaan jalan?	Klaus 7.7			
W, S, V	h. Adakah semua lurang (manholes) di letak di luar daripada ruang laluan pejalan kaki?	Klaus 7.13			
W, S, V	i. Adakah lebar bukaan penutup lurang kurang dari 12mm?	Annex K: K.1.5			
W, S, V	j. Adakah grating sesuai dengan arah/ laluan pejalan kaki?	Annex K: K.1.5			
W, S, V	k. Adakah laluan pejalan kaki diasingkan daripada laluan basikal dsbnya?	Klaus 7.1			
<p>Rujukan: (1)- MS1184-2014, (2)- Manual Audit Akses 1Malaysia Sebagai Garispanduan Untuk Fasilitator Reka Bentuk Sejagat, (3)- Prof. Dato' Sri Ar. Dr Asiah Abdul Rahim; Access Audit Checklist For Buildings.</p>					
					
					
					
					
					

Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : Universal Design Plan

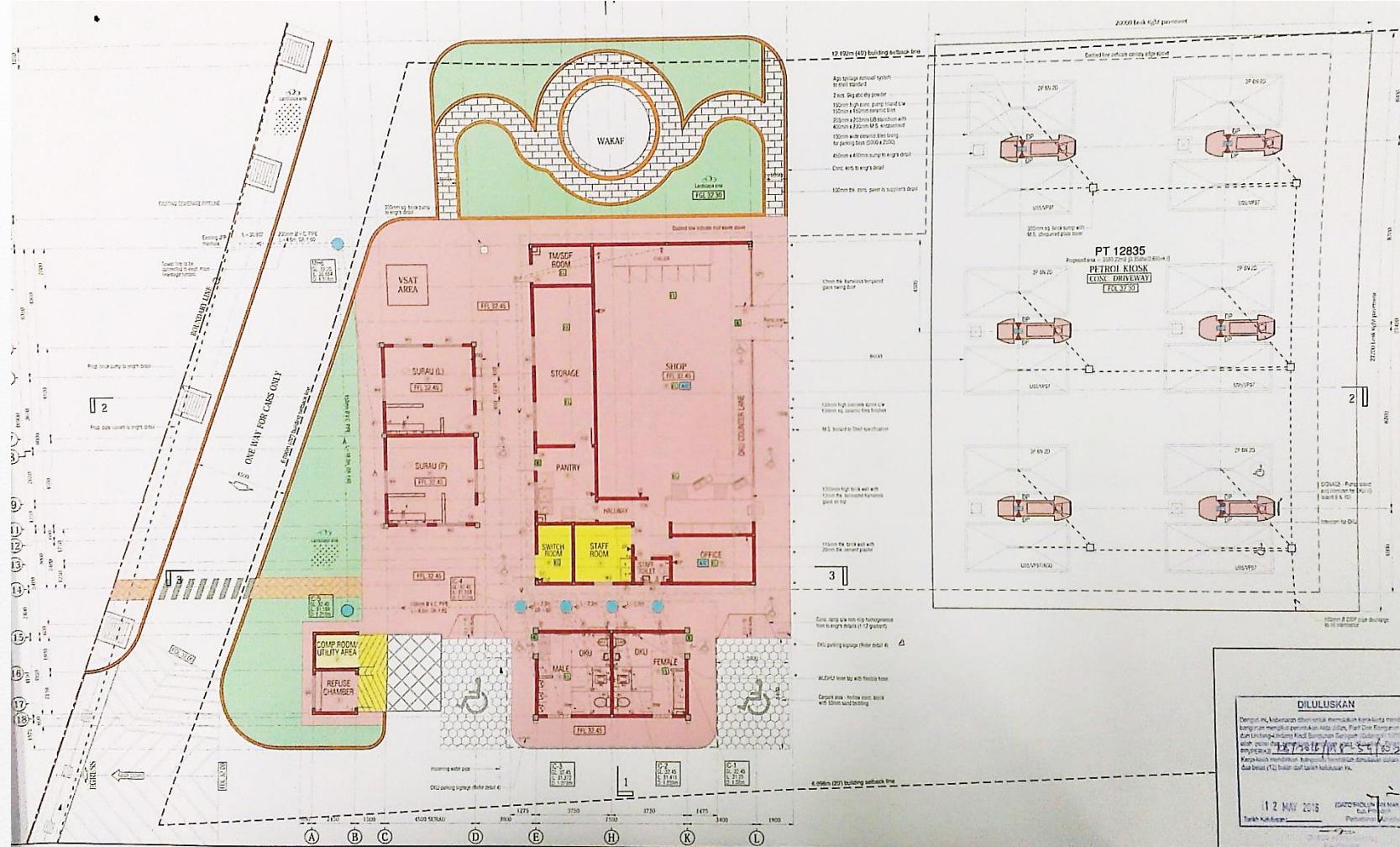


- Parking for PwD

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : Universal Design Plan



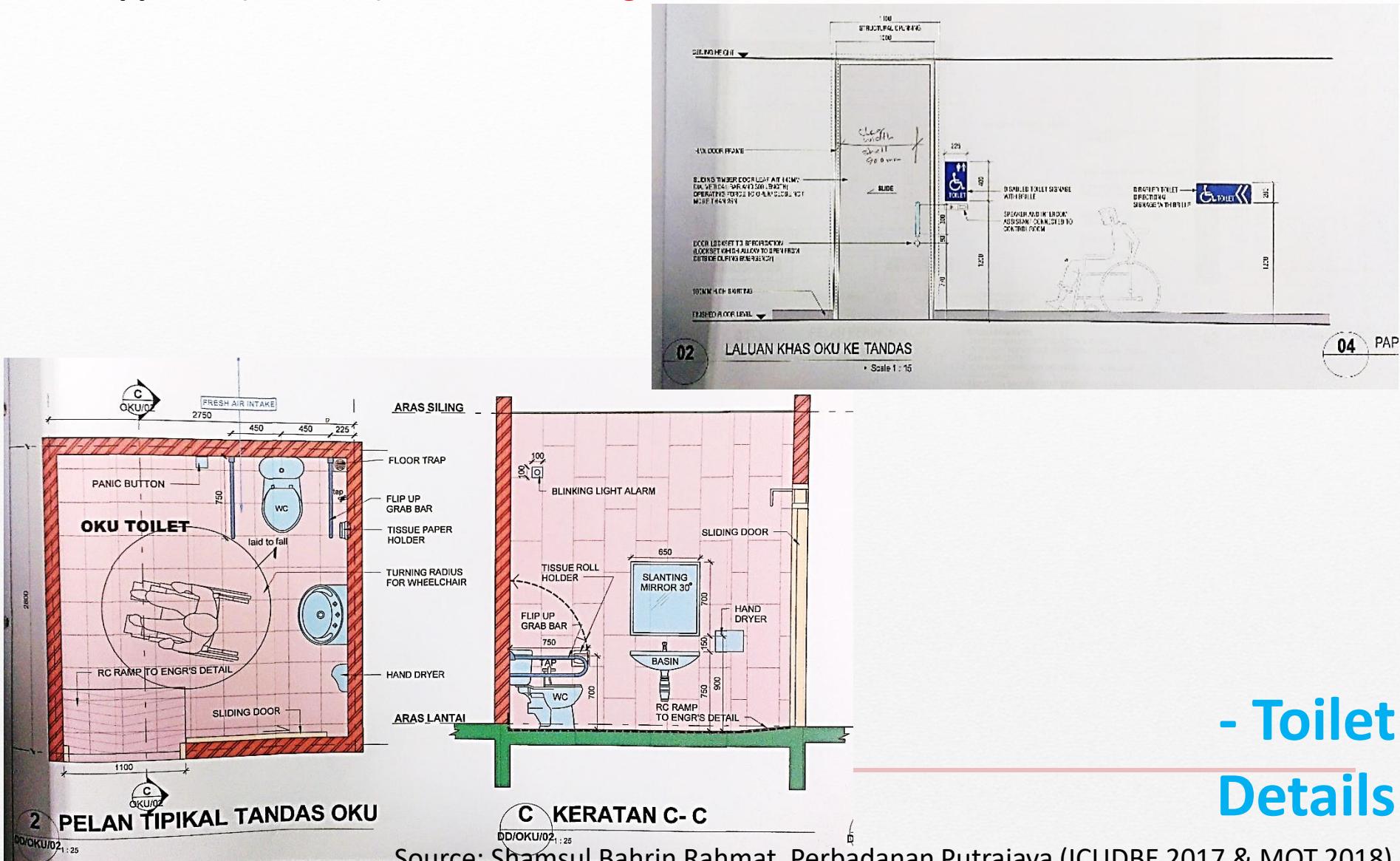
- Floor Plans

Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : Universal Design Plan



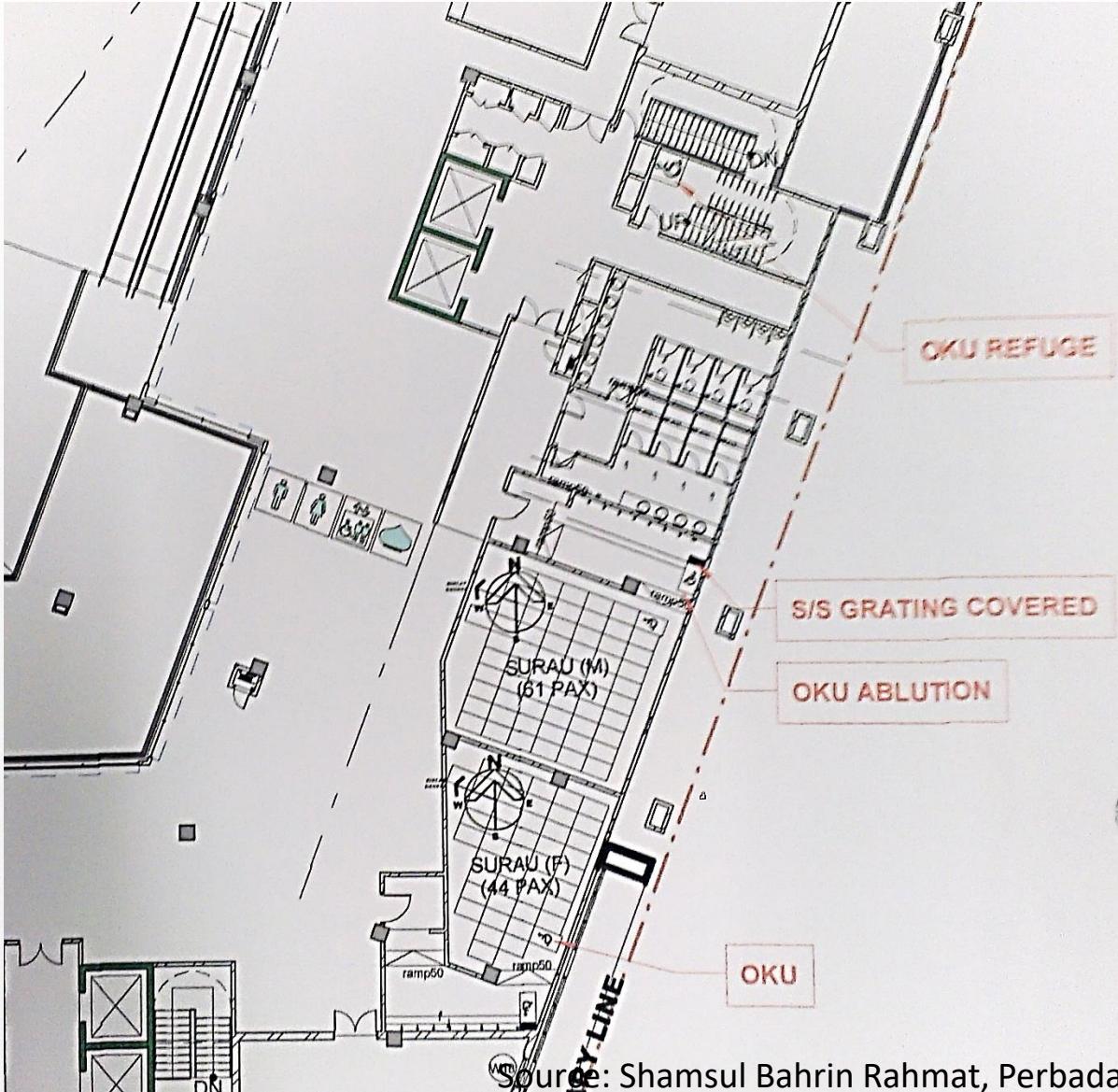
- Toilet Details

Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : Universal Design Plan

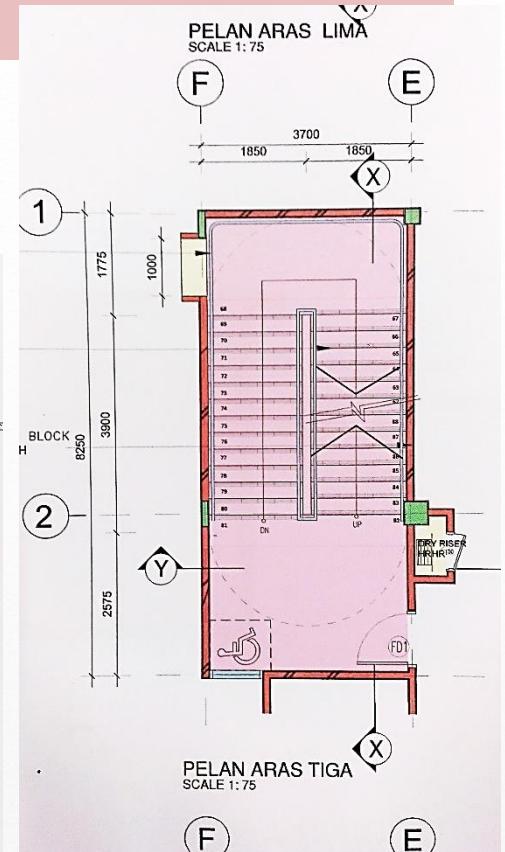
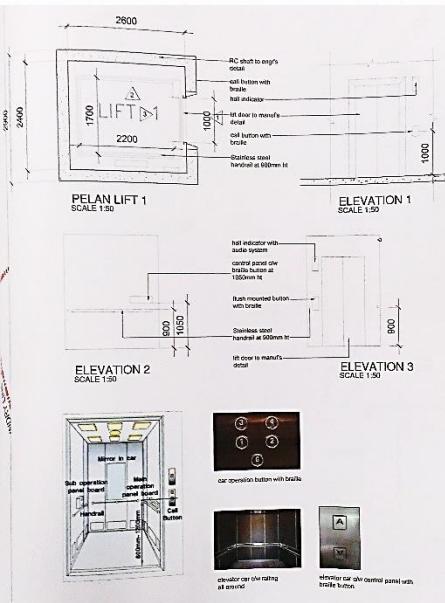
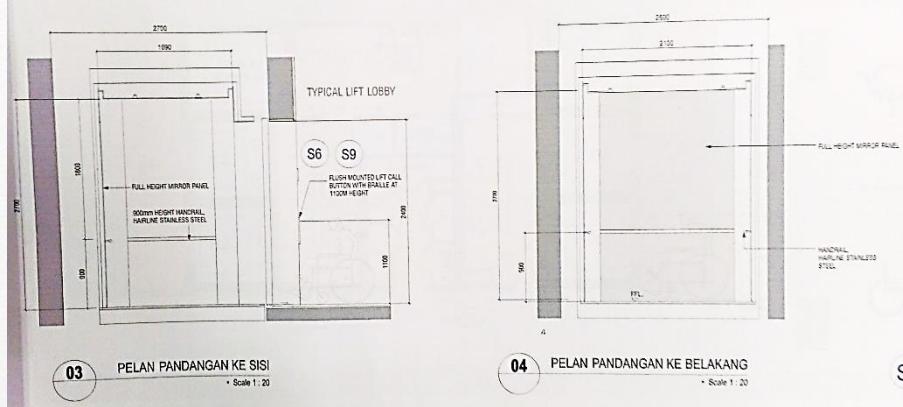
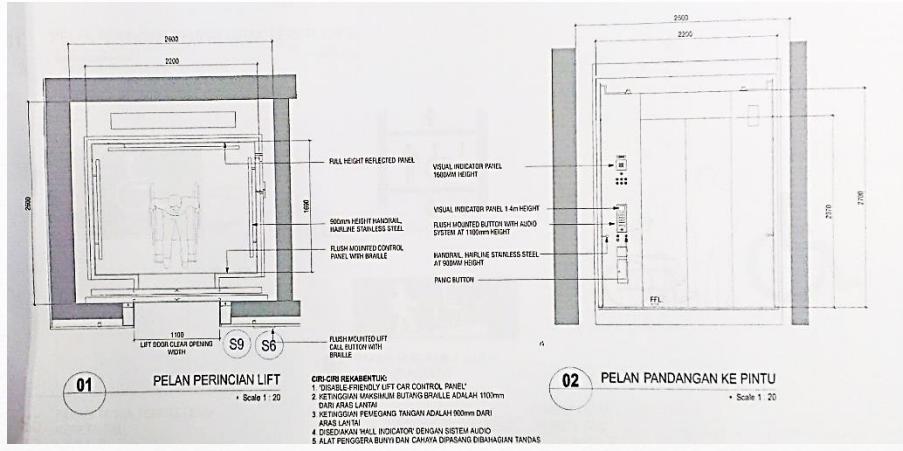


Ablution &
Surau Details

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : Universal Design Plan

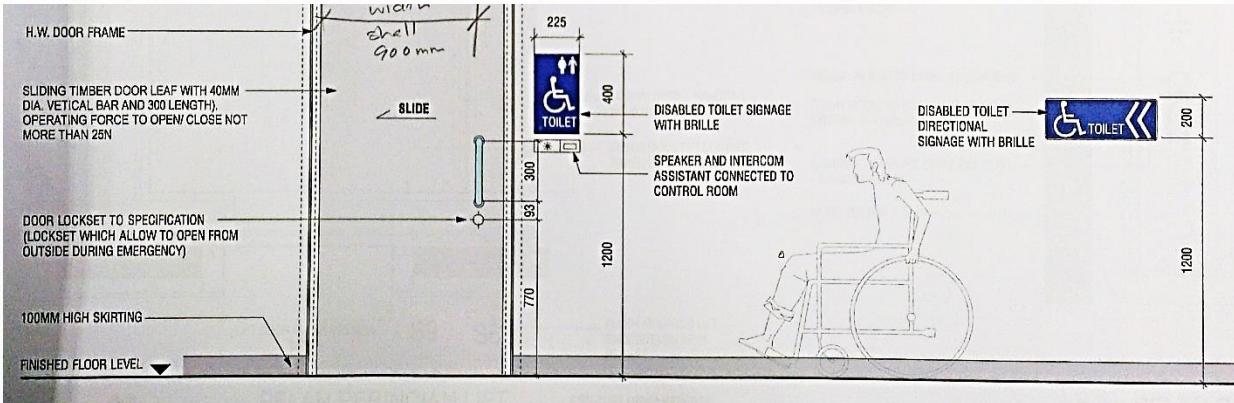


**Verticle Access
Details**

UNIVERSAL DESIGN IMPLEMENTATION

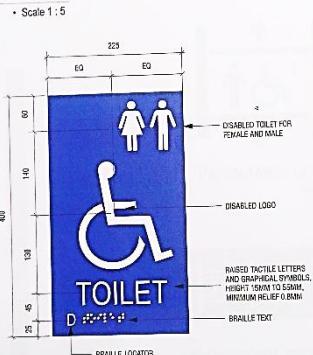
Planning & Development Control

- Plan Approval (DO & BP) : Universal Design Plan



JNTUK S14 PAPAN TANDA UNTUK TANDAS OKU

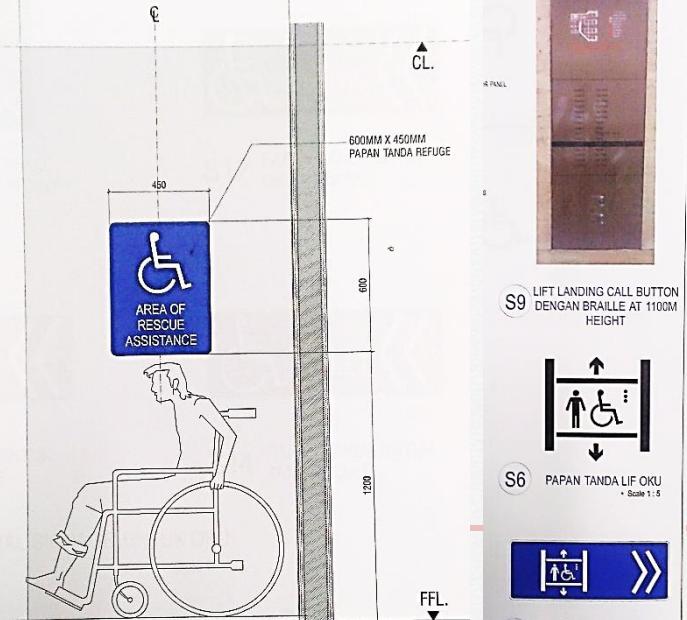
AL SIGNAGE' UNTUK OKU



S15 PAPAN TANDA UNTUK TANDAS OKU

04 PAPAN TANDA TANDAS OKU

(VARIES)
(WALL WIDTH REFER TO PLAN)



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

SIGNAGES		SYMBOL
	ACCESSIBLE TOILET MALE & FEMALE	S1
	ACCESSIBLE LIFT	S2
	RAMPED ACCESS	S3
	REFUGE AREA	S4
	ACCESSIBLE AIRLIFT	S5
	ACCESSIBLE PARKING GO STRAIGHT SIGNAGE	S6
	ACCESSIBLE PARKING TURN RIGHT SIGNAGE	S7
	ACCESSIBLE PARKING TURN LEFT SIGNAGE	S8
	ACCESSIBLE PARKING VERTICAL SIGNAGE	S9
	ACCESSIBLE PARKING VERTICAL SIGNAGE FOR VISITOR	S10
	ACCESSIBLE EMERGENCY EXIT ROUTE	S11
	ACCESSIBLE AREA	

TYPES OF TACTILE		SYMBOL
	DOT TYPE	
	LINE TYPE	

LEGENDS :

	OKU CAR PARK	
	BESMEN 1	- 4 nos.
	PELAN TINGKAT ATAS TANAH	- 2 nos.
	JUMLAH	- 8 nos.
	OKU REFUGE	
	SIGNAGE : SURAU	
	SIGNAGE : INFORMATION CENTER	
	SIGNAGE : LIFT LOBBY	
	SIGNAGE : MALE TOILET	
	SIGNAGE : FEMALE TOILET	
	SIGNAGE : SURAU	
	OKU DIRECTIONAL : RIGHT	
	OKU DIRECTIONAL : LEFT	

- Switches, Signages, Electrical equipments & Legends

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : Universal Design Plan



S11 PAPAN TANDA UNTUK OKU 'ASSEMBLY POINT'



S12 PAPAN TANDA UNTUK OKU PARKING



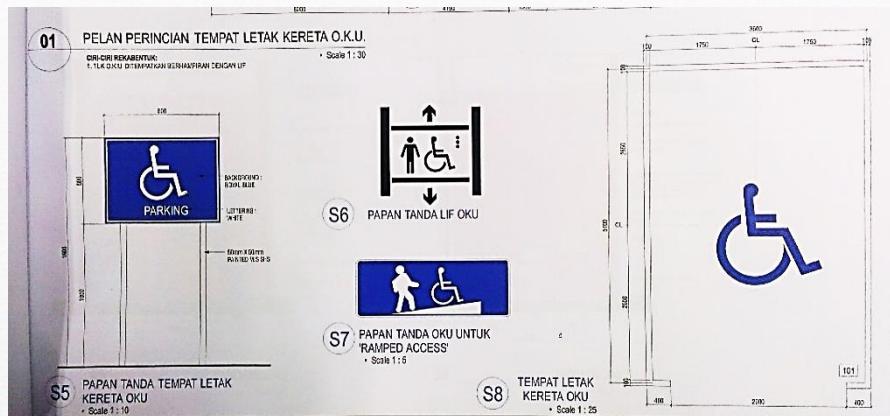
S13 PAPAN TANDA UNTUK OKU ENTRANCE



S14 PAPAN TANDA UNTUK TANDAS OKU

03 'DIRECTIONAL SIGNAGE' UNTUK OKU

• Scale 1 : 5



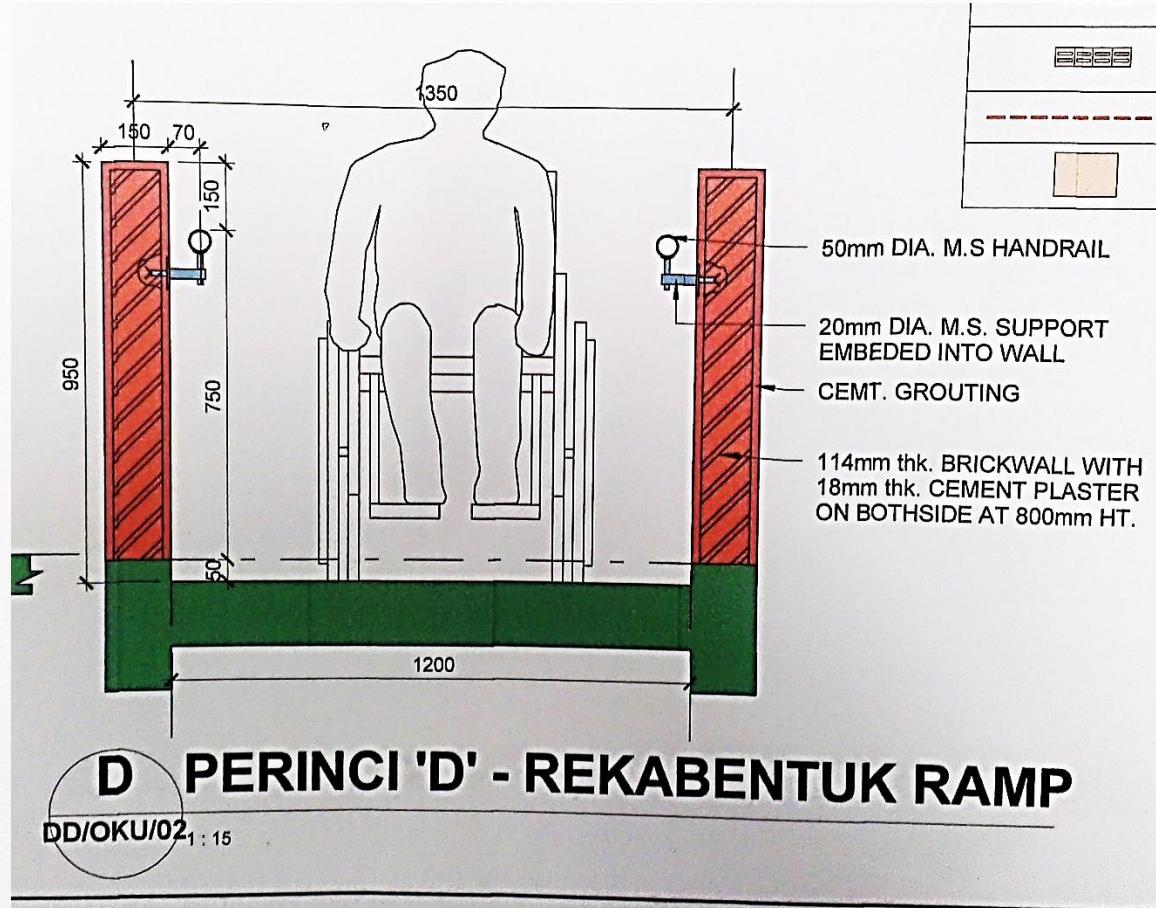
CODE : S1	CODE : S2	CODE : S3	CODE : S4	CODE : S5	CODE : S6	CODE : S4a
TOILET SIGNAGE	LIFT SIGNAGE	ENTRANCE SIGNAGE	REFUGE AREA SIGNAGE	ABLUTION SIGNAGE	SURAU ENTRANCE	REFUGE AREA SIGNAGE DIRECTION
OKU SIGNAGES DETAILS						
SCALE 1 : 10						

- Signages

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : **Universal Design Plan**



- Others

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Plan Approval (DO & BP) : before CCC released

New Development

• Design
(DO & BP)

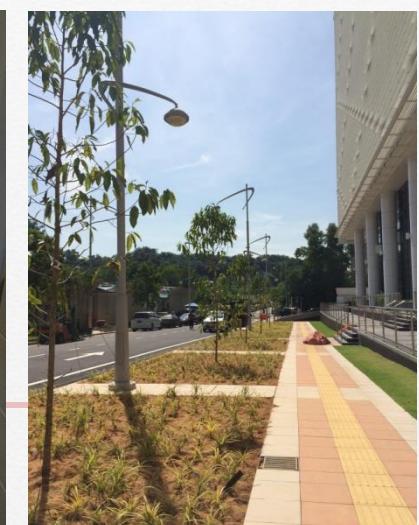
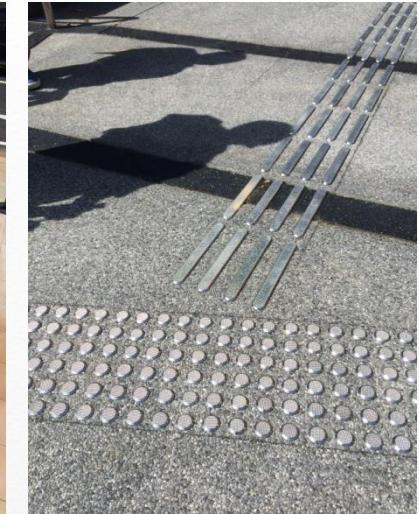
• Construction
(BP)

Hand Over
(CCC)
& Post
Construction

Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

Access Auditing Prior to Issuance of Certificate of Completion and Compliance (CCC)

> Based on the Approved Accessibility Plan



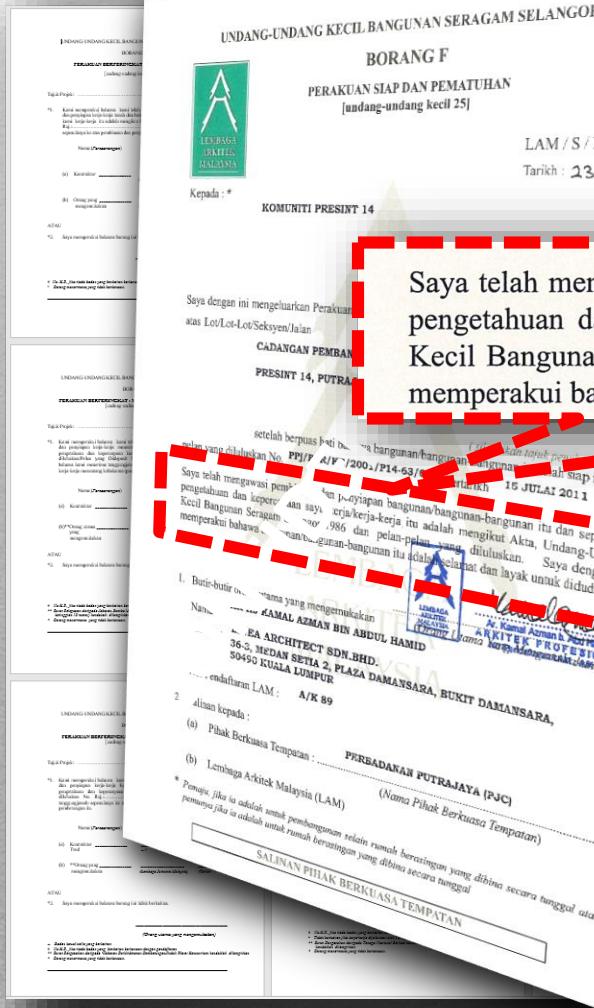
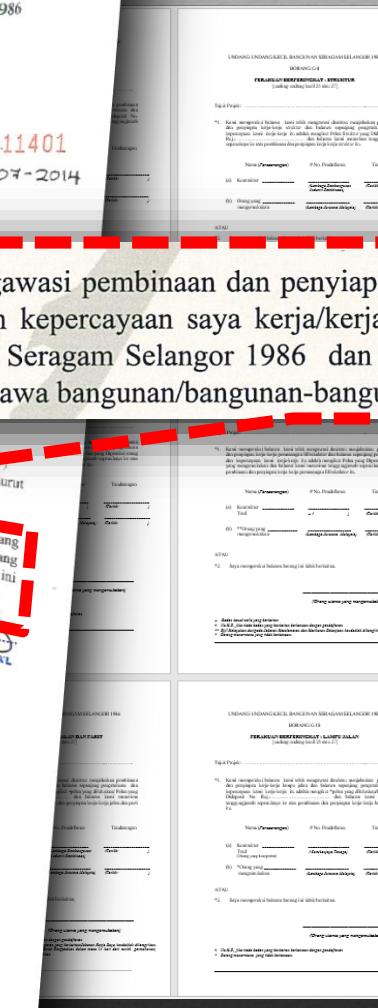
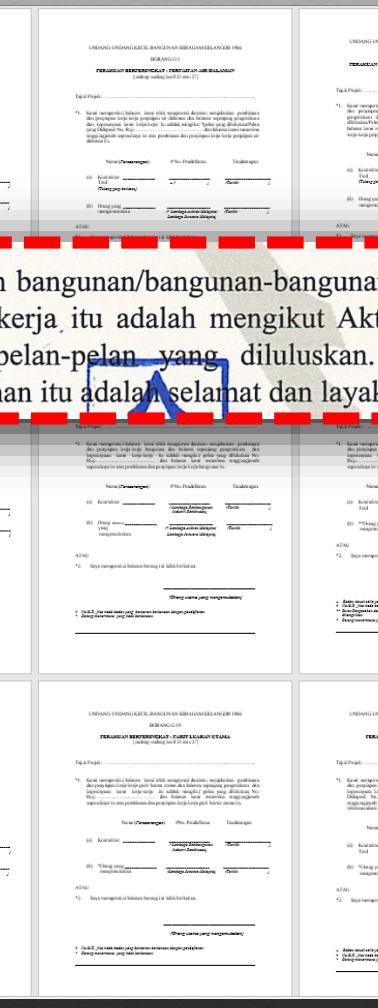
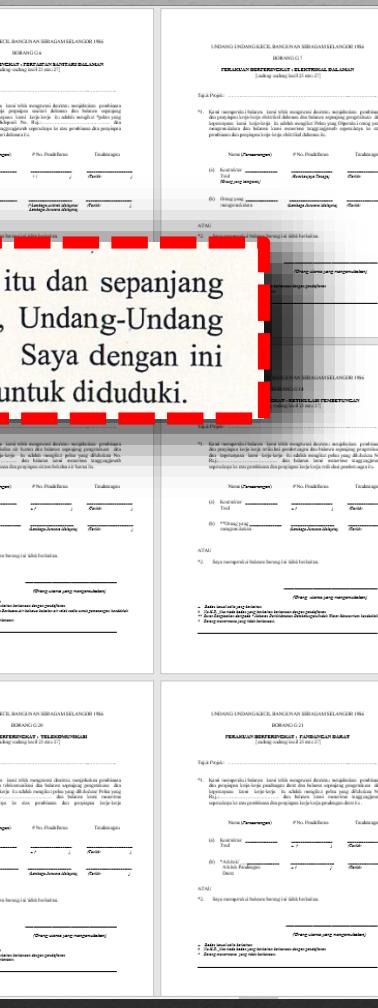
UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

- Sample of...**Certificate of Completion and Compliance (CCC)**

New Development

Hand Over
(CCC)
& Post
Construction

Design (DO & BP)	Construction (BP)	Hand Over (CCC) & Post Construction
		
		

* Street, Building Act 1974 (Amendment)2007: Section 70 (20)

Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN IMPLEMENTATION

Planning & Development Control

New Development

• Design
(DO & BP)

• Construction
(BP)

Hand Over
(CCC)
& Post
Construction

- Access Auditing were done prior to Issuance of CCC and Audit findings have been implemented.



• 8C3 – Shop/Office



• The Everly Hotel



• Ayer@8 – Shop/Office



• Heriot Watt Campus



• National Cancer Institute



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)



• Bazaar – Precinct 8



• Election Commision

• Ministry of Transport

UNIVERSAL DESIGN IMPLEMENTATION & INITIATIVE

Planning & Development Control



Awareness & Learning Program



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)



UNIVERSAL DESIGN INITIATIVE

Awareness and Learning Program

- Symposium / Forum / Talk / Seminars
- Workshop / Lab
- Access Audit Simulation



UNIVERSAL DESIGN INITIATIVE

Sharing Expertise

- Conference

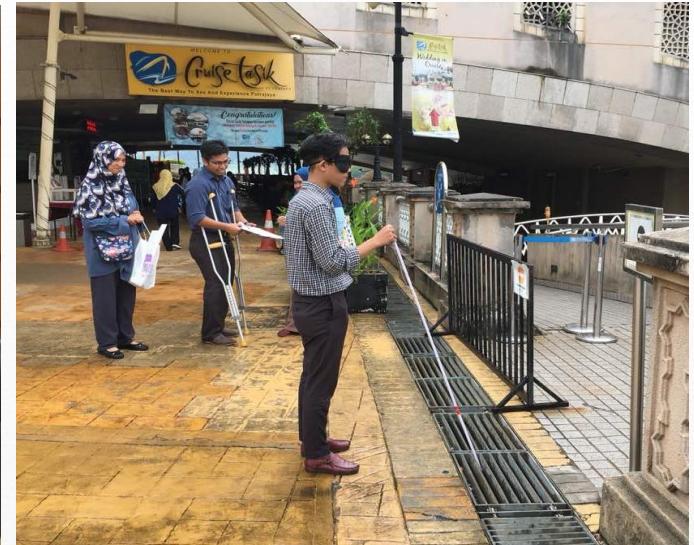


Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN INITIATIVE

Sharing Expertise

- Access Audit 2018



UNIVERSAL DESIGN INITIATIVE

Access Audit Workshop

Access Auditing Existing Built Environment

Existing
Development

- Occupancy
(FM)



Source: Shamsul Bahrin Rabmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN INITIATIVE

Access Audit Workshop

Access Auditing Existing Transportation Stops

Existing
Development

- Occupancy
(FM)



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

UNIVERSAL DESIGN INITIATIVE

Access Audit Workshop

Existing Buildings/ Built Environments That Have Been Audited;

Existing Development

- Occupancy (FM)



• Cempaka Sari Auditorium



• Sri Siantan



• Marina Putrajaya



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

• Putra Perdana Park



• Persiaran Perdana



• Masjid Tuanku Mizan Zainal Abidin

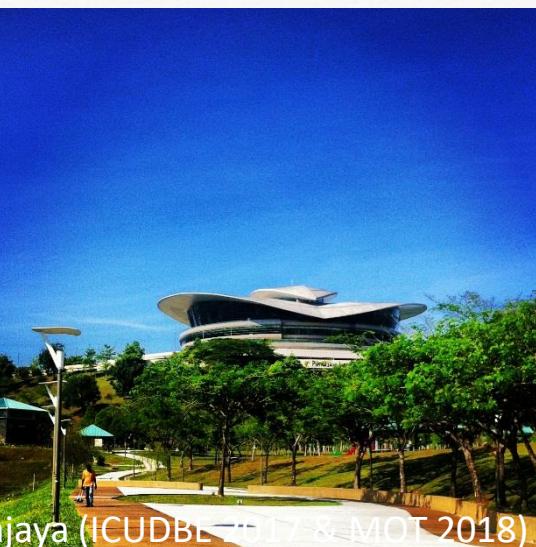
UNIVERSAL DESIGN INITIATIVE

Access Audit Workshop

Existing Buildings/ Built Environments That Have Been Audited;



- Putrajaya Sentral



- Perbadanan
Putrajaya Office

Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

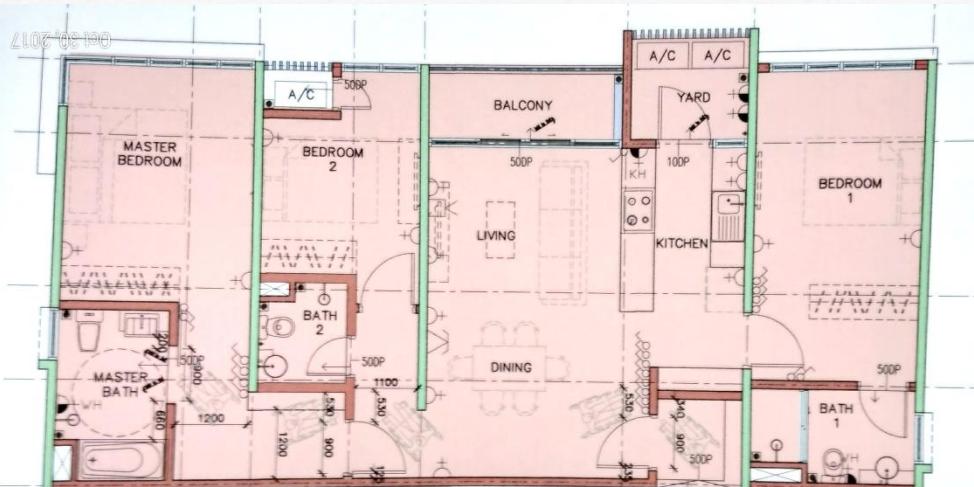
- Dataran Putra and Souq Putrajaya

- Putrajaya International Convention Centre

Existing Development
• Occupancy (FM)

PUTRAJAYA TOWARDS ACCESSIBLE CITY

Residential Unit for OKU (PwD)



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

PUTRAJAYA TOWARDS ACCESSIBLE CITY

Pedestrian Crossing – Office/Commercial/Mix Development Area



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

PUTRAJAYA TOWARDS ACCESSIBLE CITY

Pedestrian Crossing – Residential Area



Source: Asiah Abdul Rahim (2014)

PUTRAJAYA TOWARDS AN ACCESSIBLE CITY

Bus Stop – Office/Commercial/Mix Development Area



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

PUTRAJAYA TOWARDS ACCESSIBLE CITY

Bus Stop – Residential Area



Source: Asiah Abdul Rahim (2014)

PUTRAJAYA TOWARDS ACCESSIBLE CITY

Rental Bicycle

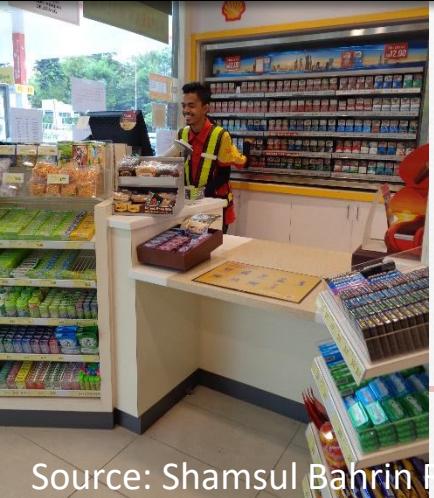


Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

PUTRAJAYA TOWARDS ACCESSIBLE CITY



Petrol Station

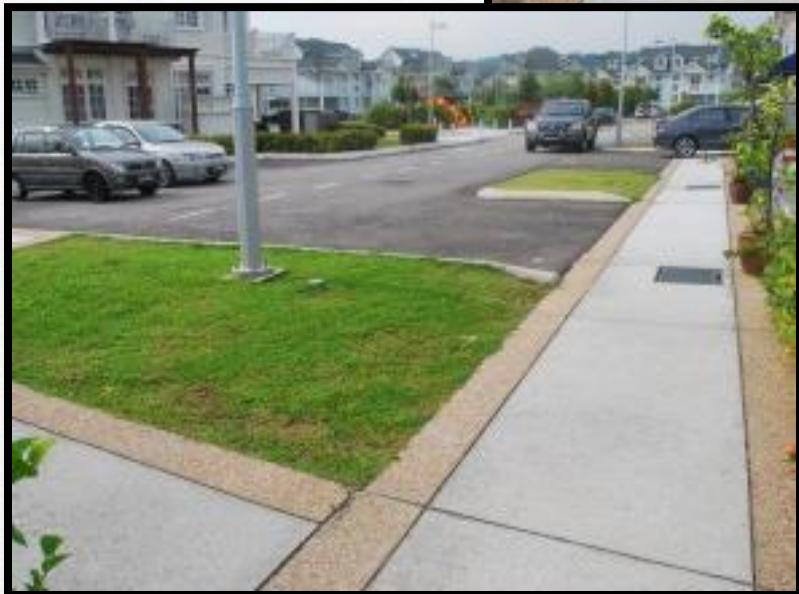


Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

PUTRAJAYA TOWARDS ACCESSIBLE CITY

Source: Asiah Abdul Rahim (2014)

Residential Area



PUTRAJAYA TOWARDS ACCESSIBLE CITY

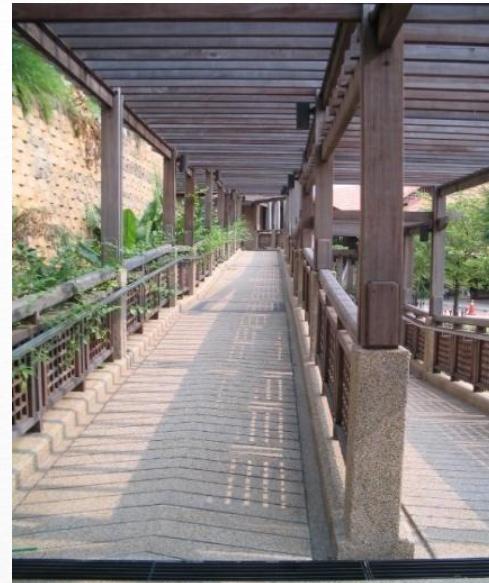
Neighborhood Garden & Promenade



Source: Asiah Abdul Rahim (2014)

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Pedestrian Path



Source: Asiah Abdul Rahim (2014)

PUTRAJAYA TOWARDS ACCESSIBLE CITY

UD Star Rating



Source: Shamsul Bahrin Rahmat, Perbadanan Putrajaya (ICUDBE 2017 & MOT 2018)

CONCLUSION

- 1. All Local authorities should have Universal Design Unit, it should be multidisciplinary – staff from Planning, Building, Engineering, planning & Landscape Architecture Department**
- 2. UD awareness programme to be continued to all both technical and administration staff**
- 3. Existing buildings belongs to local authorities to do Access Audit to check level of accessibilities of PwDs facilities – to have data base**
- 4. Universal Design Master Plan Pulau Pinang 2018-2030, if possible at each local authority. Prepare Plan of Action – Short, Medium and Long term to comply with Plan of Action for PwDs 2016 – 2022. Suggestion to work and collaborate with KUDU, KAED, IIUM**
- 5. Strengthen the implementation and enforcement on Universal Design application in all projects at Local Authority level**
- 6. Promoting Malaysian Standards MS 1184:2014, MS 2015-1:2017 Public Toilet - Part 1: Design Criteria (First Revision) and MS 2577:2014 Architecture and asset management of Masjid – Code of Practice**

Thank You

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