

# **Design Guide for Active Ageing Centres (AAC)**

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Agency for Integrated Care (AIC)

## **Disclaimer**

The information in this document serves as a guide in the design development of the Active Ageing Centre (AAC) and is subject to change to adapt to the continual development and evolution of the eldercare landscape. Nothing in this document implies that compliance with them will automatically result in compliance with any legislation, code of practice, standards, performance or statutory requirements. These documents are not intended to replace MOH's policies or licensing requirements. Agency for Integrated Care (AIC) assumes no responsibility for any harm or damage, monetary or otherwise, caused by the use or misuse of these documents.

## **References**

Reference was also made to the following:

1. Part I – Design Reference for Senior Care Centres (SCC) and Active Ageing Hubs (AAH) (October 2019)

## 1. Area Guide for AAC

Table 1 shows the minimum functional areas of a typical AAC. To meet the basic operational requirements and service deliverable of an AAC, mandatory spaces such as the following are required to be provided as part of the centre's space planning.

- a) Activity / Dining Area - For Communal Dining
- b) Multi-purpose room / Space - For Active Ageing Programmes (AAPs)
- c) Multi-purpose room - For Social Connector to Social and Lifestyle Interventions and Community Screening [also known as 2S] & Community Health Post (CHP)
- d) Pantry & Laundry<sup>1</sup>
- e) Toilets

Minor adjustments may be made to the recommended floor area according to the site layout and constraint.

**Table 1 – Area Guide for AAC**

S/N	Functional Spaces	Area (m <sup>2</sup> )	Mandatory Spaces
1	Reception and waiting area	10 sqm	
2	Staff office	12 sqm	
3	Store	10 sqm	
4	Activity / Dining area (For Communal Dining)	80 sqm	
5	Multi-purpose room / Space		
	a) Active Ageing Programme (AAP)	1 x 20sqm = 20 sqm	✓
	b) For Social Connector to Social and Lifestyle Interventions and Community Screening (2S)	1 x 10sqm = 10 sqm	✓
	c) Community Health Post (CHP)	1 x 10sqm = 10 sqm	
6	Gymnasium	20 sqm	
7	Pantry & Laundry	20 sqm	✓
8	Toilets		
	a) Ambulant disabled water closet compartment (AMBWC)	1 x 3sqm = 3sqm	✓
	b) Accessible individual washroom with shower (AIWSH)	1 x 5.5sqm = 5.5sqm	✓
<b>Total</b>		<b>200.5 (~200 sqm)</b>	

<sup>1</sup> Laundry space may not be necessary if centre is not intending to purchase any washing machine & dryer.

## **2. Facility Planning**

### **2.1 Accessibility**

It is presupposed that all accessibility requirements to the AAC and within the facility are in accordance with applicable statutory and regulatory requirements. Elder-friendly and wheelchair accessible features, such as but not limited to ramps, handrails, grab bars, non-slip flooring should be in place. Doors and walkways should be sufficiently wide to allow a wheelchair, a patient using a mobility aid, or two people assisting a patient to pass through. In addition, the following accessibility considerations, which are not exhaustive, are recommended.

- a) All areas should be designed with considerations for the safety and accessibility of different users, including persons with disabilities, persons using mobility aids, caregivers, staff, and visitors.
- b) Universal design concepts and inclusive features that go beyond the minimum accessibility requirements should be incorporated in the design of the AAC. Refer to Universal Design Guide for Public Places (BCA).
- c) The entrance to the AAC should be prominent, sign-posted, and accessible from the external environment.
- d) Where applicable, there should be barrier-free access to outdoor fitness areas or landscape areas from the AAC.
- e) Grab bars / handrails should be provided to assist clients along main client routes, corridors, and areas leading to the toilets.

### **2.2 Doors / Openings**

The following are the provisions for doors/openings:

- a) All doorways / openings should allow for the room's functions and manoeuvring space required by different mobility equipment, such as wheelchair and food trolley.
- b) Doors should not swing into corridors, walkways, and accessible routes. Outward swing doors within a recess or alcove or at a corner to reduce collision risks should be considered. Vision panel can also be provided for all room doors to mitigate possible collision, except for toilets.
- c) Exposure to weather and washing of common areas should be considered when selecting the materials for external facing corridors.
- d) Light switches should be located on the side of the door opening and adjacent to the door handle.
- e) All door handles should be located between 60 mm and 130 mm from the door jamb or door stop when in open or closed position, designed in accordance with the Code on Accessibility in the Built Environment (BCA).
- f) Vinyl stickers should be provided on glass doors, to improve visibility and minimise users from walking into the glass.
- g) If automated sliding glass door(s) is provided at the main entrance of AAC, there should be two sensors, one on the internal and the other on the external, to prevent the door(s) from closing

on user. Backup battery shall be provided as a temporary power source in the event of a power failure.

- h) The following are the provisions for toilet doors:
- i. Hollow core / lightweight sliding door, preferably top-hung and installed to slide within the toilet, should be provided.
  - ii. If swing doors are provided due to site constraints, swing doors should be easy to operate and have a mechanism for the doors to be opened from the outside and for them to swing outwards for ease of rescue. For toilets without windows, consider force of opening with regards to air pressure (suction) from mechanical ventilation.
  - iii. The doors should be equipped with an easy to operate stainless steel thumb turn lock with coin turn on the exterior and a red / green (occupied / vacant) visual indicator (refer to Figure 1).



**Figure 1 – Thumb turn lock**

- i) Table 2 gives the minimum clear widths of doorways / openings. It is presupposed that the width of the doorways/openings shall be in compliance with applicable statutory and regulatory requirements. It should cater for the manoeuvring space required by different mobility equipment and operational needs of the AAC. The clear opening of doorways shall be measured between the face of the door and the face of the doorstop with the door open at 90°.
- j) Emergency call bell with push-button shall comply with the Code on Accessibility in the Built Environment (BCA).

**Table 2 – Clear width of doorways / openings**

Functional areas	Recommended clear opening width (mm)
Reception and waiting area (main entrance doors)	2000
Toilets	900

### 2.3 Hand wash basin (HWB)

It is presupposed that all HWB and its single lever taps are designed in accordance with the applicable statutory and regulatory requirements, including the following provisions:

- a) All HWB are preferred to be equipped with a long lever tap that swivels from side to side (refer to Figure 2).
- b) All HWB and taps should be selected and installed such that clients will not be in contact with the basin when washing their hands.
- c) All HWB or sinks should have a waterproof backsplash to protect the adjacent wall from mould and bacterial growth.

- d) For HWB with paper towel holder, to consider space for placement of hands-free waste bins.
- e) Sanitary accessories at the HWB should not obstructed the tap operation.
- f) All HWB with counter tops should be designed for use by a wheelchair bound client.

Refer to Table 3 for the number of HWB to be provided in the respective areas. Additional HWB may be provided adjacent to toilet cluster, according to the operational requirements.

<b>Table 3 – Provision of HWB Area</b>	<b>Number of HWB</b>
Activity area / Dining (multi-purpose space)	1
Community Health Post (CHP)	1
Toilets	1 (wall-hung) per toilet



**Figure 2 – Thumb turn lock**

## **2.4 Safety and security**

### **2.4.1 General**

The AAC should be designed as a safe, conducive, and secure environment for all seniors, staff and visitors. Safety and security provisions include the following:

- a) Tables, chairs, counters, and cabinetry should have rounded edges to reduce the risk of injury. Sharp edges, rough surfaces, ligature points and high-temperature surfaces that present risks to user safety shall be avoided.
- b) There should be visual contrast and detectable warning surfaces to alert clients of any level change.
- c) Glass or clear acrylic furniture shall be avoided, as these items may not be visible to clients with low vision and they may knock into them.
- d) Lockers, complete with lock and key, may be provided for seniors, staff, and/or volunteers to store their belongings.

### **2.4.2 Fire protection**

It is presupposed that fire safety provisions and fire protection services are provided in all areas in accordance with the applicable statutory and regulatory requirements. Consultants shall seek approval from Singapore Civil Defence Force for all fire safety and fire protection provisions in this document.

## **2.5 Signage and wayfinding**

All signage provisions in the facility should be designed in accordance SS 599: 'Guide for wayfinding signage in public areas' and include the following:

- a) For toilets, preferably to provide a large signage (between 600 mm to 900 mm in height) that contrast with the colour of the toilet door. It should be visible and clear.

- b) Recommended signages should have the following features:
- i. Simple, clear and sized suitably according to viewing distance, and cater for persons with visual impairment;
  - ii. High contrast between text, background and contrast with the surrounding environment;
  - iii. Universal symbols and graphics with text that can be easily understood by all; and
  - iv. Displayed at a location to allow recognition from a distance.

### **3 Facility Briefing**

#### **3.1 Reception and waiting area**

The reception and waiting area is where staff may receive and assist seniors with registration and enquires. It is recommended to be located near the main entrance and unobtrusive to other areas. If there are space constraints, the reception area may be integrated with the staff office or built-in as a mobile reception counter that can be stowed away when required.

#### **3.2 Staff office**

The staff office is an area for administrative operations. The staff office should accommodate three (3) workstations and a copier.

#### **3.3 Store / Janitor Closet**

The store is an area for storage of supplies, equipment, and equipment rack. The store should be located at an area unobtrusive to other areas and seniors.

A janitor closet may also be provided and sized to accommodate pails, cleaning equipment, and liquids. The closet should be equipped with tic-tac doors with louvers at the top of the doors, lock, key and internal shelving.

#### **3.4 Activity / Dining area (For Communal Dining)**

The activity / dining area is an area for seniors to socialise via group activities and communal dining. The space should be wide enough to allow 15 to 20 seniors during each communal dining session.

#### **3.5 Multi-purpose room / Space**

The multi-purpose room / space facilitates staff and client interaction through activities such as one to one consultation, group exercises, health talks, and celebration of special occasions. The area should allow flexibility for multi-purpose usage and may be compartmentalised for small or large group activities. Operable walls with acoustical properties may be installed for the ease of conversion. The multi-purpose room / space should include activities like:

- a) Active Ageing Programme (AAP): For small or large group activities.
- b) Social Connector to social and lifestyle interventions + Community Screening (2S): Assistance with Activities Registration & Screening (e.g. vital sign monitoring).
- c) Community Health Post (CHP): Siting of community health posts from Regional Health Systems to deliver health-related services.

### 3.6 Gymnasium

The gymnasium area is an area used for seniors to improve their muscle strength and flexibility. Reinforcement should be installed at identified walls if mounting of gym equipment is required.

### 3.7 Pantry & Laundry

The pantry is used for the storage, preparation, and cooking (non-open flame) of meals and snacks. It may be used by seniors to socialise and engage in group activities. An open concept pantry with an island counter, located within or adjacent to the dining area, can be provided. A laundry area may be located beside the pantry if necessary.

### 3.8 Toilets

#### 3.8.1 General

It is presupposed that all toilets, sanitary ware, fittings, and accessories are designed in accordance with applicable statutory and regulatory requirements, including the following provisions:

- a) Avoid kerbs and drops at all toilet entrances.
- b) Toilet doors and toilet switches should be coloured and contrast with the adjacent wall for better visibility (refer to Figure 3).



**Figure 3 – Example of toilet switches**

- c) Emergency call bell strobe light with adjustable volume call bell siren, should be installed directly above the toilet door.
- d) Table 4 outlines the recommended toilet provisions

**Table 4- Recommended toilet provisions**

Area (m <sup>2</sup> )	AMBWC	AIWSH
≤200	1	1
201 to ≤300	2	1
301 to ≤400	2	2

#### 3.8.2 Toileting zone

The following provisions should be installed within the toileting zone:

- a) An auto-sensor flush valve with manual bypass for water closet. The flush button should be non-reflective and contrast with the adjacent surface for better visibility. It should be easy to push by a finger, as well as a palm or top of a hand (refer to Figure 4).



**Figure 4 – Example of flush valve**



- b) A toilet seat and cover that has a good fit and strong colour contrast against the toilet bowl (refer to Figure 5).



**Figure 5 – Examples of toilets (colour contrast between toilet seat and cover, grab bars at water closet and shower area)**

- c) A self-closing water spray head with a flexible hose adjacent to the toilet seat for cleaning purposes.
- d) Waterproof emergency call bells (minimum IP 66) with push-button or pull-cord (refer to Figure 6) shall be installed on the wall adjacent to the water closet, that is accessible and within sight of the user.
- i. Emergency call bell with pull-cord, should be located at a height between 900 mm to 1000 mm above the Finished Floor Level (FFL) and located between 150 mm to 200 mm from the front edges of the water closet. The midpoint of the pull-cord handle should be located between 400 to 600 mm from the FFL. Safety features should be provided to prevent the possibility of accidental strangulation or intentional misuse by clients, e.g. pull cord should break at a certain weight threshold.
  - ii. Emergency call bell with push-button shall comply with the Code on Accessibility in the Built Environment (BCA).



**Figure 6 – Examples of emergency call bell with push-button and pull-cord**

### 3.8.3 Showering zone

The following provisions should be installed within the showering zone:

- a) Sturdy and foldable shower seat with armrests and supporting legs should be provided in the shower area (refer to Figure 7).
- b) For AIWSH, provide two-way bib tap (refer to Figure 8). It should be connected to an instant water heater and allow a connection to a rubber hose for miscellaneous use (e.g. filling pails of water for mopping).
- c) Waterproof emergency call bells with pull-cord (refer to Figure 6) shall be installed within the showering zone. The emergency call bell with pull-cord, should be located at a height between 1400 mm to 1600 mm above the FFL and located between 150 mm to 200 mm from the front

edges of the foldable shower seat. The midpoint of the pull-cord handle should be located between 400 to 600 mm from the FFL. Safety features should be provided to prevent the possibility of accidental strangulation or intentional misuse by clients, e.g. pull cord should break at a certain weight threshold.



**Figure 7 – Shower seat**



**Figure 8 – Two-way bib tap**

### 3.8.4 Washroom Accessories

The following washroom accessories should be installed within the toilet:

- a) Stainless steel coat hooks with stainless steel mounting (refer to Figure 9), preferably installed adjacent and not on the toilet door. Minimally, there should be one coat hook provided in each AMBWC and two coat hooks in each AIWSH. The mounting heights and protrusion shall be in accordance with the Code on Accessibility in the Built Environment (BCA).
- b) One hand dryer (plastic, non-reflective, and no sharp edges), adjacent to HWB.
- c) One mirror, for all toilets. For AIWSH, provide tilt mirror for wheelchair users (refer to Figure 10). All mirrors shall not have any sharp edges.
- d) One plastic toilet roll holder, preferably jumbo toilet roll holder, without sharp edges and installed within reach of the water closet (refer to Figure 11).
- e) Grab bars at the water closet and shower area (refer to Figure 5). Grab bars should have the following properties:
  - i. The colour of the grab bars should contrast with the adjacent wall.
  - ii. Grab bars should have a seamless nylon finish with a textured surface to provide an anti-slip grip and is non-reflective.
  - iii. Grab bars shall not have uneven protrusions from the fixing bolts.
  - iv. Grab bars should be of a similar colour with the toilet seat cover.



**Figure 9 – Stainless steel coat hooks**



**Figure 10 – Tilt mirror**



**Figure 11 – Jumbo toilet roll holder**

### 3.9 Lighting

All lighting design and installation requirements shall be in accordance with applicable authority, statutory and regulatory, including the relevant code of practice and standards requirements. The AAC should have good levels of natural lighting and artificial lighting that are designed for different activities. The following are provisions for lighting design:

- a) Lamp efficiency and colour rendering index (CRI) when selecting lamp sources shall be designed in accordance with CP38.
- b) Sudden light contrast and shadows cast from overhead fixtures such as beams and fans should be avoided.
- c) Adequate lighting of 300 lux should be provided in the store room and toilets; and 500 lux should be provided in all remaining functional areas.
- d) Lighting control, i.e. light switches, should be clearly defined.
- e) Manual light switches should be provided for all toilets.

### **3.10 Air-conditioning and mechanical ventilation (ACMV) system**

All ACMV systems shall be designed in accordance with applicable statutory, regulatory and code requirements. The ACMV system for the AAC should provide a comfortable environment for seniors, staff, and visitors with the following provisions:

- a) There should be optimum air movement to enhance natural and cross ventilation within naturally ventilated spaces.
- b) All toilets shall be mechanically ventilated and provided with a wall fan, adjacent to the shower area, to quicken the drying process of wet areas.
- c) All ACMV system and its equipment are recommended to be out of reach of seniors and should be accessible to servicing staff for their safe maintenance.
- d) All functional areas in AAC, except toilets and store should be air-conditioned.
- e) Ceiling or wall mounted fans shall be provided within the reception and waiting area, activity area, dining area, pantry and laundry area, gymnasium/rehabilitation area and internal corridors to enhance ventilation.
- f) Position of ceiling-mounted fans and lighting should be considered to avoid stroboscopic effects and casting of shadows.
- g) With the latest ACMV design guideline, following works should be considered:
  - i. Compliance works to comply with latest code requirement:
    - a. Provide outdoor air supply completed with fan, MERV 6 (BAU) and MERV 14 (during haze) filters for air-conditioned room to comply with SS 553: 2016.
  - ii. Recommended works:  
(To align with BCA / NEA / MOH guidance note and MOHH design requirements)
    - a. Increase outdoor air supply for all air-conditioned rooms to meet min. 10L/sec person (to increase the outdoor air fan capacity).
    - b. Provide centralised or individual outdoor air pre-cooled unit to supply conditioned outdoor air to all the air-conditioning spaces (this will replace outdoor air fan and MERV6 / MERV 14 filters in (i.a)).

- c. Provide room purging system, (e.g. exhaust fan with duct works).
- d. Provide wall/window mounted exhaust fans for NV toilets / assisted bathroom to enhance the room ventilation.
- e. Provide min. MERV 8 filter for all air-conditioning units.

### **3.11 Plumbing, sanitary and drainage system**

Plumbing, sanitary and drainage system provided in the AAC shall be in accordance with the applicable statutory and regulatory requirements. Sanitary / waste pipe shall not be located above water pipes and food preparation areas.

### **3.12 Security system** *(Optional for item a & b – Depending on centre's operation requirement)*

The following are the recommended provisions for security systems:

- a) All entrances and exits shall be secured with one way card access system with push button for exit.
- b) Access to the staff office should be controlled and secured with a one-way card access system with push button for exit.
- c) An unobtrusive surveillance system – CCTV, including cabling and cameras, should be deployed to all areas except the following areas:
  - i. Staff Office
  - ii. Store
  - iii. Toilets
  - iv. Community Health Post

## 4 Finishes

The objectives of the design and specifications of the finishes should be an installation that is safe, neat, durable, easy to clean and maintain.

- a) It is recommended to select non-reflective finishes and avoid glossy paint to reduce glare.
- b) Low volatile organic compounds (VOCs) paints, primers, varnishes, coating materials, and environmentally friendly adhesives certified by approved local certification bodies should be selected.
- c) The slip resistance classification of floor materials shall be in accordance with SS 485. Floor tiles within the pantry and laundry area should have minimum R-10 slip resistance. Floor tiles within toilets should have minimum R-11 slip resistance.
- d) Homogenous, non-slip, and non-reflective floor tiles should be provided in toilets. Dark grey or black floor tiles shall be avoided.
- e) The FFL of the toilets should be at the same level before its entrance, with floor surfaces of wet areas graded to a gentle fall to the floor drainage, away from the door opening.
- f) Refer to Table 5 for schedule of finishes.

### Schedule of finishes for AAC

Table 5 provides the schedule of finishes for AAC.

**Table 5 – Schedule of finishes guide for AAC**

SN	Room	Floor	Skirting	Wall	Ceiling
1	Reception and waiting area	V	S1	P	GB(A)
2	Staff office	V	S1	P	MFB
3	Store	T1	S2	P	MFB
4	Activity / Dining area	V	S1	P	MFB
5	Multi-purpose room / space	V	S1	P	MFB
6	Gymnasium	V	S1	P	MFB
7	Pantry and laundry area	T2	S2	P / T3	MFB
8	Toilets	T3	NA	T3	GB(MR)

### Legend:

Tag	Description of finishes
<b>Floor</b>	
V	Vinyl sheet homogenous or vinyl tiles - anti-slip, anti-stain
T1	Homogenous tile – anti-slip
T2	Homogenous tile – anti-slip, minimum R-10 slip resistance
T3	Homogenous tile – anti-slip, non-reflective, minimum R-11 slip resistance
<b>Skirting</b>	
S1	Timber
S2	Homogenous tile
<b>Wall</b>	
P	Paint emulsion – anti-microbial, low VOC, washable
T3	Homogenous tile
<b>Ceiling</b>	
GB (A)	Gypsum board – acoustic, in paint emulsion finish

GB (MR)	Gypsum board – moisture resistant, in paint emulsion finish
MFB	Mineral fibre board – standard, grid, acoustic, anti-microbial

NOTE 1 – Waterproof backsplash should be provided at all HWB and sinks.