Handbook on
GROSS FLOOR AREA

This handbook is subject to revision from time to time. Nothing herein shall be construed to exempt the person submitting an application or any plans from otherwise complying with the provisions of the Planning Act (Cap 232, 1998 Ed) or any rules and/or guidelines made thereunder or any Act or rules and/or guidelines for the time being in force.

While every endeavour is made to ensure that the information provided is correct, the Competent Authority and the Urban Redevelopment Authority disclaim all liability for any damage or loss that may be caused as a result of any error or omission.

Important Note:
You are advised not to print any page from this handbook as it is constantly updated.

URBAN REDEVELOPMENT AUTHORITY
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Items counted as gross floor area

5.01 Airwells (in old developments)
Air wells and open courtyards of shophouses and old developments which existed before the introduction of the Planning Act in 1960 will be computed as existing gross floor area.

5.02 ATM kiosk
ATMs housed in permanent kiosk-type structures.

5.03 Balconies
Balconies are intended to be covered semi-outdoor spaces. Covered balconies constitute gross floor area (GFA). See Figures 5-1, 5-2 and 5-3.

Provision of balconies is encouraged to achieve the planning objective of enhancing the garden city ambience and promote greenery in the sky. The GFA of the balconies is allowed to be computed over and above the Master Plan control, subject to a cap of 10%. Existing developments, whose gross plot ratio (GPR) have exceeded the Master Plan intensity would also qualify for the additional balcony gross floor area (GFA), subject to a cap of 10% of the existing and approved GPR.

However, this would not apply to existing developments whose building form, height or use are not in accordance with the planning intention as indicated in the Master Plan, Building Height Plan or Special and Detailed Control Plan. For example, an existing flat and condominium development within a Designated Landed Housing Area or Good Class Bungalow Area would not qualify for the 10% additional GFA.

The additional 10% balcony GFA is applicable to:
   a) residential developments (flats & condominium)
   b) residential components within mixed-use developments and hotel developments

The balconies must have a continuous perimeter opening of at least 40% to qualify for the additional GFA. See Figure 5-4. This is to safeguard a reasonable degree of openness in balconies to distinguish them from indoor spaces. It also reinforces the planning objective of giving GFA incentive for balconies to facilitate planting and high-rise greenery.

The guideline will allow more flexibility in designing balconies where a variety of balcony forms can be considered in addition to the usual rectilinear forms. See Figure 5-5.

Balcony screens can be allowed provided that they comply with the following performance criteria:
   a) The proposed balcony screens allow for natural ventilation within the balcony at all times; and
   b) The proposed balcony screen is capable of being drawn open or retracted fully.

See Figure 5-6 for some possible designs of balcony screens. Such screens are intended to enhance the functionality and usability of balconies to meet homeowners changing needs (e.g. enclosing the balconies for safety and security reasons at some time but keeping the balcony open at other times). It will also avoid inconsistent ad-hoc enclosures by individual owners which could detract from the original building design and result in a messy and unattractive look, hence adversely affecting the property value.
The additional balcony GPR can only be used for balcony GFA and will not form the future development potential of the site upon redevelopment. The additional balcony GFA is subject to payment of development charge or differential premium, where applicable.

Inward facing balconies, overlooking a small internal air well, and service balconies, which are commonly provided at utility areas for the purpose of drying clothes, would not qualify for the additional GFA incentive.

[updated as at Feb 2007- Circular No:URA/PB/2007/01-DCD]
Figure 5-2  GFA Treatment on balcony & terrace

Figure 5-3  GFA treatment on Balcony & Terrace
Figure 5-4 Computation of Balcony Perimeter Opening

Total Balcony Perimeter = X + Y
Open Balcony Perimeter = X
Percentage of Balcony Perimeter Opening = X / (X + Y) x 100% ≥ 40%

Figure 5-5 Balcony Forms that can be considered as long as they meet the min 40% perimeter opening control
**Note:**
The screen designs shown above are from overseas and are meant as examples only. Actual design proposals need not be limited to those shown above as long the performance criteria are met.

### 5.04 Bay Windows

With effect from 1 Jan 2009, bay windows in all types of developments will be counted as GFA, regardless of dimensions and materials. (Circular in URA/PB/2008/18-DCD dated 22 Sep 2008)

### 5.05 Bicycle and motorcycle parks

Covered bicycle and motorcycle parks have to be computed as gross floor area. If the bicycle and motorcycle parks are located within the car park floor or adjoining a driveway, they can be exempted from gross floor area.
5.06 Car parks

Private car parking lots which form part of a residential strata titled unit (flat, condominium) or are used exclusively by a residential strata titled unit are counted as GFA if they are not sited on a common car park floor. For example, private car parking lots directly accessible from the residential strata units on the upper floors. (see example below)

Car park lots which form part of a mechanized car parking system adjacent to residential units can be treated as machinery and be excluded from GFA computation, if it meets ALL the following criteria:

a) There should not be fixed concrete or metal floor slabs or platforms where the cars are parked.

b) Carpark spaces should be accessed through common areas (e.g. staircase landing).

c) Carpark spaces are common property managed by the MCST and not to be strata-subdivided.

d) Carpark spaces are used solely for car parking and are to be annotated on plans as such.

Private car/lorry parking lots proposed within strata-titled industrial and commercial developments are computed as GFA, and are subject to the following criteria:

i. The private parking lots are surplus parking lots over and above LTA’s minimum parking provision;

ii. The private parking lots are physically contiguous with the respective commercial strata unit

The additional car parks provided in excess of the Land Transport Authority’s (LTA) minimum standard are to be computed as gross floor area if they fall within the category mentioned below:

(i) commercial and hotel development for new erection applications submitted on or after 24 Feb 1999.

(ii) any amendment and/or additions and alterations applications to the new erection proposals mentioned in a) above.

(iii) commercial and hotel components in white sites and mixed-use developments submitted on or after 26 Apr 2001 where the commercial and/or hotel components form more than 20% of the total GFA.

(iv) Any subsequent amendment and additions and alterations applications for White sites and mixed-use developments.
The additional car parks only apply to integrated car park lots within a development e.g. multi-storey or basement car parks which can be converted to other uses without affecting the building bulk. However, in a development where other car park lots (mechanised or surface car parking lots) are provided, the mechanized and surface car park lots will be first counted to meet LTA’s minimum requirements. Any excess car park lots, excluding mechanized and surface car parks, over and above LTA’s minimum requirement, will be calculated as GFA.

Note: Applicant is required to submit Form DC 17 for computing the excess car park GFA.

See Figure 5-6

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**B — BREAK DOWN ON TYPES OF CAR PARK PROVIDED**

<table>
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<tr>
<th>S/No.</th>
<th>Types Of Car Park</th>
<th>No. Of Surplus Car Parking Lots</th>
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<td>1</td>
<td>Mechanised car park</td>
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<td>2</td>
<td>Surface car park</td>
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<tr>
<td>3</td>
<td><em>Integrated car park</em></td>
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**C — CALCULATION OF SURPLUS CAR PARK GROSS FLOOR AREA**

1. Average Gross Floor Area (GFA) per car parking lot 35m²
2. No of surplus car parking lots (as per B3 above) m²
3. Surplus Car Park GFA (C1 x C2) m²

**D — DECLARATION**

I certify that the particulars given above are correct.

Name & Signature of **Architect / Professional Engineer** Date

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* Integrated car park refers to multi-storey or basement car parks within a development.
** To delete accordingly

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**Figure 5-6  Form DC/PR 17**

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**5.07 Catwalk**

Covered catwalk within a building constitutes gross floor area. Catwalk less than 1 m wide provided for the maintenance purpose can be excluded from gross floor area. See para 7.7 (ii).
5.08 Floors

5.08.1 Perforated floors

Covered perforated floors or heavy duty mesh floor constitutes gross floor area. Material is not a criterion for exclusion from gross floor area. See Figure 5-7 below.

![Figure 5-7 Floor Plan](image1)

5.08.2 Intermediate floors

Intermediate load-bearing floor over toilet, lunch room, offices, bin centre, substation & etc. in buildings with high ceiling constitutes gross floor area. Sloping floor is not a criterion for exclusion from GFA. See illustration below.

![Figure 5-8 Section of a building](image2)

5.08.3 Floor under a pitch roof

If the height of the roof measured from the springing line to the ridge is \( \geq 1.5m \), the load bearing floor under the roof, regardless of accessibility or use (except for M&E use) is computed as GFA. See illustration below.
5.08.4 Floor under a raised platform

If the height of the raised platform measured from the floor to the underside of the platform or seats is > 1.5m, such area has to be computed as GFA. For example, raised platform in cineplexes. However, a floor with retractable seats need to be counted once.

5.08.5 Voids

Enclosed dead space at any level (commonly annotated as void space). Covered enclosed space (regardless of accessibility use or height) constitutes GFA.
5.09 Guardhouse & sentry post

5.10 Household shelters

Household shelters constitute gross floor area. However certain areas created as a result of these shelters are excluded from GFA. See illustration below for area to be included as GFA. For non-household shelter areas to be excluded from GFA, refer to para 7.19.
5.11 Lift Motor Room

Lift motor room constitutes GFA. See Figure 5-13 below.

5.12 Loading and unloading platforms

5.13 Outdoor refreshment areas (ORA)

An area demarcated outside a building meant for outdoor eating only, as an extension of eating / drinking establishment (such as restaurant and fast-food) with kitchen located inside the building. It constitutes gross floor area and it shall form part of the total GFA for the development, except for those mentioned in para 5.13.1 and 5.13.2.

5.13.1 ORA Located at the rooftop

The ORA use (both covered or uncovered areas) on roof tops will be computed as GFA.

Existing buildings within Orchard and Downtown Core Planning areas with provision of rooftop landscaping are granted additional gross floor area (GFA), beyond the Master Plan permissible GPR. The proposed ORA should not take up more than 50% of the overall roof space or 200sqm, whichever is lower. An application for this incentive scheme is to be accompanied with a landscaping proposal for the rooftop of buildings as part of their submission.

Existing buildings refer to developments that have obtained TOP as at 29 April 2009. The outdoor refreshment areas will only be allowed in developments of compatible use (e.g commercial buildings & hotels), subject to the prevailing landuse and development control guidelines.

The outdoor refreshment areas will only be allowed in developments of compatible use (e.g commercial buildings & hotels), subject to the prevailing landuse and development control guidelines. The bonus GFA scheme does not apply to ORA use on sky terrace, which is to be computed as part of the Master Plan maximum allowable GFA.

The additional GFA can only be used for ORA use and will not form the future development potential of the site upon redevelopment and the GFA will be subject to development charge, temporary development levy or differential premium, where applicable.
5.13.2 ORA located next to pedestrian mall level within Orchard Planning Area

ORA located next to the Orchard pedestrian mall is computed as GFA. The ORA GFA inclusive of the markers can be computed over and above the approved or the total permissible GFA for the development. However, this outdoor refreshment area shall be confined to the boundary of the subject development and defined by markers, e.g. planters or flower pots. Umbrellas, retractable canopies, light weight structures can be used for the ORA to add more interest and diversity to the streetscape. The GFA for ORA at other levels shall form part of the total GFA for the development.

The combined length of the frontage for ORA and outdoor kiosks shall not exceed 60% of the total length of the development facade along the same side of the road.

The GFA will be subject to development charge, temporary development levy or differential premium, where applicable.

Each proposal will be evaluated on a case-by-case basis and on the merits of the individual proposal.

5.13.3 ORA located next to pedestrian mall level along Singapore River Promenade

ORA located along Singapore River Promenade is computed as GFA. This outdoor refreshment area shall be confined to the boundary of the subject development and defined by markers, e.g. planters or flower pots. Umbrellas, retractable canopies, light weight structures can be used for the ORA to add more interest and diversity to the streetscape.

The combined length of the frontage for ORA and outdoor kiosks shall not exceed 60% of the total length of the development facade along the same side of the road. The frontage guideline does not apply to the Clarke Quay and Boat Quay Conservation areas.

As the proposals sit on state land, applicants will have to obtain the temporary occupational licence (TOL) from SLA or its appointed agent.

Each proposal will be evaluated on a case-by-case basis and on the merits of the individual proposal.

5.14 Outdoor refreshment kiosk

A small structure which provides independent services with very minimum servicing requirement. Outdoor kiosk and ORAs are encouraged to add vibrancy to a specific area. There is no control on the size of the kiosk except for those mentioned in para 5.14.1 and 5.14.2.

5.14.1 Within Orchard Planning Area

Outdoor refreshment kiosk complements the use inside the main building. However, it has to comply with the following:

(i) Located within the boundary of the subject development. It does not encroach onto the safeguarded 3.0m green buffer and areas approved for pedestrian walkways and covered walkways. It also keeps a minimum width of 6.0m for pedestrian path.

(ii) The size of the kiosk should not exceed the range of 30m² – 60m². Larger kiosks over 60m² will be evaluated on a case by case basis.

(iii) Maximum height of kiosk shall not exceed 6m.
(iv) Structure - light frame. Opaque panels, should not exceed 1.2m high.

(v) Opaque panels for kiosk structure, including doors and internal partitions, shall not exceed 1.2m height. Up to 2m width, with an additional 1m return, of the kiosk can be walled with opaque panels to conceal storage space.

(vi) GFA for the kiosk next to the pedestrian mall can be computed over and above the total permissible GFA for the development.

(vii) The GFA will be subject to development charge, temporary development levy or differential premium, where applicable.

(viii) The total length of the frontage for outdoor kiosks should not exceed 25% of the development facade along the same side of the road.

(x) The combined length of the frontage for outdoor kiosk and ORA should not exceed 60% of the development façade along the same side of the road/promenade.

5.14.2 Along Singapore River Promenade

(i) The maximum allowable size of kiosk is 15m². 600mm wide apron is permitted if the kiosk sits on a turfed area.

(ii) Maximum height of kiosk shall not exceed 4m.

(iii) The total length of the frontage for outdoor kiosks should not exceed 25% of the development facade along the same side of the road.

(iv) The combined length of the frontage for outdoor kiosk and ORA should not exceed 60% of the development façade along the same side of the road/promenade.

(v) The frontage guideline does not apply to the Clarke Quay and Boat Quay Conservation areas.

5.15 Planter boxes located within a residential unit

As of 1 Jan 2009, planter boxes which are located within a residential* unit will be counted as GFA. Residential developments refer to flats, condominiums, services apartments, strata landed and landed housing.

Please cross-reference to Item 7.23 which explains the types of planter boxes that can be exempted from GFA. You may also cross reference to the external circulars dated 7 Jul 2008 and 22 Sep 2008 for more details.

5.16 Recessed windows (Reversed of bay window)

Area under a recessed window regardless of the height of the window. It is considered part of the internal floor plate. See illustration.
5.17 Refuse chambers

Refuse chamber regardless of height constitutes GFA.

5.18 Staircases

The floor plate containing the staircases has to be counted once. Staircases collapse upwards has to be counted at the upper floor plate. See illustration below.

Figure 5-15 Section of a recessed window

Figure 5-18 Section of staircases
5.18.1 Scissor staircases

The staircases have to be counted separately i.e. if there are 2 sets of staircases, they have to be counted twice.

5.19 Swimming Pools

Covered swimming pool constitutes gross floor area.

5.20 Urban Verandahs (for Orchard Planning area)

Urban Verandahs are unenclosed porch-like extensions from the front facade of existing developments at the 2nd storey that can support outdoor refreshment areas. They add vibrancy, variety and also enhance pedestrian connectivity by providing sheltered connections between bus stops and the covered walkways of buildings, as well as between buildings.

The urban verandahs must comply with the following:

(i) Maximum projection of the verandah from the building facade should not exceed 7.5m except where it connects to an existing bus-stop. In this case, the width of this connection should not exceed the length of the bus-stop.

(ii) Total length of the verandah for one building should not exceed 40% of the length of the building frontage.

(iii) Total length of frontage for outdoor kiosk and ORAs on the 1st storey, including the area under the UV should not exceed 60%.

Urban Verandahs between developments will be allowed over and above the 40% building frontage allowed for the verandah, subject to conditions.

The GFA for the urban verandah can be computed over and above the approved or the total permissible GFA for the development and is subject to payment of development charge or differential premium, where applicable. Urban verandahs used for commercial purposes will be counted as GFA while the non-commercial urban verandahs forming part of the pedestrian circulation network will not be counted as GFA.

In the event of redevelopment, owners will be allowed to provide another urban verandah with the same quantum of GFA, provided that it is similar in spirit, concept and objective as those set out in the guidelines. This GFA will not be transferable for other uses elsewhere in the development.

5.21 Void deck of residential buildings

Void deck of residential building constitutes gross floor area. This area, used exclusively by the residents does not qualify as public spaces. The 45-degree exemption can be applied if it is used as a communal landscaped areas, see item 6.1.

5.22 Walls and columns

All walls and columns including those which form part of an enclosed area in car park floors such as staircase, lobby area, service ducts are to be included in GFA computation.
Easy Search Help

At the Toolbar above, key in the Item No in the Search Box e.g. “6.01” and click

Toolbar

6 Items partially counted as gross floor area

6.01 Communal landscaped areas on the 1st storey
6.02 Major public space
6.03 Secondary public space
6.04 Lift lobbies in car park floors
6.05 Lift shaft
6.06 Service ducts
6.07 Sky terraces
Items partially counted as gross floor area

6.01 Communal landscaped areas on the 1st storey

To encourage a more generous provision of covered landscaped communal areas and greenery on the 1st storey, such landscaped areas at the 1st storey that are shaded by a structure or a floor or overhang above can be exempted from GFA. The maximum area to be exempted is defined by a 45-degree line taken from the edge of the overhead projection. The communal landscaped areas within this 45-degree line must be unenclosed and accessible and can be used for communal activities.

The communal area to be exempted from GFA should have a luxurious provision of quality landscaping with a variety of vegetation, turfing or simulation of natural terrain. These landscaping should enrich the identity of the communal area with elements of nature and contribute substantially to the greenery of the environment.

To enable us to evaluate the application, the architect has to submit a landscaping plan for URA's consideration. In addition, the extent of the areas to be exempted from GFA is to be shown by indicating the 45-degree line with dimensions on the 1st storey floor plan and sectional drawings. See Figure 6-1.
6.02 Major public space

The entire covered area dedicated for public space can be excluded from GFA computation if they satisfy the eligibility, locational, urban design and operational guidelines spelt out below.

<table>
<thead>
<tr>
<th>Eligibility criteria</th>
<th>Office, shopping, hotel and institutional developments (civic &amp; community institutions) and tertiary educational institutions only</th>
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<tr>
<td>Locational criteria</td>
<td>Must be located within commercial areas in the Central Area, Regional Centres (Tampines, Jurong East &amp; Woodlands) &amp; major commercial areas around Bishan MRT Station, Buona Vista MRT Station, Paya Lebar MRT Station &amp; Serangoon MRT Station</td>
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<td>Must be located at a pedestrian node along a heavy pedestrian route</td>
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<td>Must be located at the focal point of a visual corridor</td>
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<td>Must be located at the 1st storey level of a prominent building</td>
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<td>Urban design guidelines</td>
<td>Must be easily-accessible and well-linked to adjacent developments and pedestrian network</td>
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<td>Must not affect the flow of shopping and pedestrian activities</td>
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<td>Must have a high volume ceiling height</td>
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<td>Must have appropriate public amenities</td>
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<td>Operational guidelines</td>
<td>Must be open to the public at all times</td>
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<td>Public spaces cannot be enclosed and cannot be converted to any other uses in the future</td>
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The 45-degree exemption can be applied to the covered public spaces which satisfies the following:

(i) the space must face a main road (excludes service road and backlane), public pedestrian promenade/ mall and/ or public open space/ landscape area.

(ii) width of the external opening of the covered public space should not be more than *40% of the length of the same building façade.

(iii) the space must be kept open at all times for public use as part of the public pedestrian network.

(iv) *it shall be kept open at all times and not rented out.

The 45 degrees is measured from the building edge or the canopy, if applicable. For cases where there are drop panels constructed of permanent and opaque structures; for example brickwalls or rc beams, the 45 degrees is to be measured from the edge of the brickwalls or rc beams. See Figure 6-2 and 6-3.
Figure 6-2  Secondary public space
6.04 Lift lobbies in car park floors

GFA computation is limited to an area equivalent to the size of the lift shaft or to the actual size of the lift lobby, whichever is smaller. This is intended to provide flexibility in design and ease of computation.
6.05 Lift shaft

Lift shaft including the thickness of the walls are computed as GFA. They are counted once at the 1st storey level. See Figure 6-4.
6.06 Service ducts

Service ducts including the thickness of the walls are computed as gross floor area. They are counted once at the 1st storey level. Service ducts are counted once provided the vertical space is hollow. If the service ducts starts from the 2nd storey, the service ducts at the 2nd storey are counted as gross floor area. Service ducts are to be counted at every level if they are slabbed over.

Non load-bearing fire-stop material to compartmentalise the service duct will not be deemed as gross floor area.

![Service duct diagram](image)

6.07 Sky terraces

Sky terraces are open-sided areas at the intermediate floors of a building. The floor area of the open-sided terrace which can be excluded from gross floor area computation, is defined by the 45-degree line taken from the underside of any permanent or opaque structure, and not from the underside of a drop panel. See Figure 6-6.

The 45-degree can only be applied from the external wall inwards and not from the recessed walls. See Figure 6-7.

In granting the GFA exemption, URA will take into consideration the quality of the landscaping and the design of the space as a communal area. The sky terrace must satisfy the following:

(i) the sky terrace is to be lushly landscaped.
(ii) the sky terrace is used for communal activities and access to the sky terrace must be from the common areas.
(iii) at least 40% of the perimeter wall of sky terrace must be open. See Figure 6-8.
Landscaping*
- The sky terrace is to be lushly landscaped with a suitable variety of plants;
- The greenery on the sky terrace should be enjoyed by the building users as well as be visible from the surrounding environment;
- Planting should be incorporated on permanent and sunken planting beds to enhance the spatial and visual quality of the sky terrace. The sunken planting beds should have sufficient soil depth to accommodate plants and landscaping. If it is not possible to provide sunken planting beds due to FSSD’s fire safety requirements, low raised planting beds at 300mm high may be provided but they must be well landscaped and planted with trees or shrubs (i.e. no turfing allowed). Otherwise, they will be treated as habitable spaces for determining fire safety requirements.

Communal usage*
- The sky terrace should be as meaningful and effective communal gathering and activity spaces.
- The sky terrace must be accessible to all occupants of the building and there should be at least one set of communal access via a lift or staircase serving the sky terrace. Secondary access to the sky terrace from strata units can be supported.
- The sky terrace should be of a meaningful size and configuration to facilitate communal usage. As a guide, the proposed depth of the sky terrace should be at least 5m.
- For sky terraces in residential developments that occupy less than 60% of the floor plates, the sky terraces should serve a minimum of 2 strata units to ensure that they remain as communal space.

* A Landscape Plan and relevant sections for the sky terrace showing the proposed landscaping scheme and communal facilities is to be submitted as part of the development application. (See Sample in Figure 6-9)

Drop Panel
In order to ensure that sky terraces still appear as lofty and voluminous spaces that provide effective visual relief to the façade of a development from the surrounding area, the drop panels within the 45 degree line shall be subject to the following:

(a) The drop panel shall be a maximum of 1/3rd of the height of the external opening (see Figure 6.6); and

(b) The drop panel shall be visually transparent and may be in the form of louvres, fins, transparent glass, or other sun shading/weather protective devices. Drops panels of solid or opaque façade elements will not qualify for such GFA exemption.

Additional Residual GFA for Sky Terraces outside 45- degree line

On top of the GFA exemption defined by the 45-degree line, additional residual GFA, subject to a cap of 20% of the area of the floor plate, that form part of the sky terrace but fall outside the 45-degree line can be exempted from gross floor area computation subject to the following criteria:

(a) The sky terrace areas within the 45-degree line must occupy at least 60% of the floor plate. The remaining 40% (max) of the floor plate can be used for ancillary/complementary uses.

(b) The residual area (outside 45- degree line) eligible for GFA exemption under the revised guidelines must form an integral part of the sky terrace, which must remain unenclosed, communal and non-commercial in nature. Residual areas which serve as corridor spaces to residential units, commercial units or other ancillary/ complementary areas will not qualify for GFA exemption.
(c) The at least 60% of the perimeter of the sky terrace floor should be kept open with low wall.

See Figure 6-10 and 6-11.

Sky terraces occupying less than 60% of the floor plate can continue to enjoy the current GFA exemption based on the 45-degree line. The additional 20% GFA exemption for the residual areas would not apply in such cases. See Figure 6-12.

Corridors provided within 45-degree line contiguous to Sky Terrace

GFA can be granted for the barrier-free access and fire-escape corridors located within the 45 degree line subject to the following:

a) The corridor serves both the sky terrace and the ancillary/complementary uses.
b) The sky terrace areas within the 45-degree line must occupy at least 60% of the floor plate.
c) At least 60% of the perimeter of the sky terrace must not be enclosed.

All corridors provided outside 45-degree line are to be computed as GFA. See figure 6-13

Plan presentation for GFA computation

To facilitate the evaluation of whether GFA exemption is applicable for sky terraces proposed, the following are required to be incorporated in the Calculation Floor Plan and Sectional Drawings:

(i) the extent of the areas to be exempted by indicating the 45-degree line with dimensions;
(ii) computation details for the residual area and the extent of perimeter opening (at least 60% must be opened); and
(iii) the sky terrace areas that are within the 45-degree line and the residual areas are to be clearly illustrated and annotated as shown in Figure 6-14.

The above detailed plans/sections supplement the landscape plan.
Note:
45 degree can be applied from the external wall inwards as illustrated by the arrows provided the perimeter wall is open sided. 45 degrees cannot be applied from the recessed walls marked with a cross.

Figure 6-6  Sky terrace

Figure 6-7  Plan of a sky terrace
Figure 6-8    Sky Terrace - Plan showing how the % of perimeter wall is computed

Satisfy criteria = \( \frac{a + b}{2a + 2b} = 50\% \) (i.e. greater than 40\%)
Figure 6-9: Example on submission a landscaping plan
Figure 6.10 – Plan illustrating the concept of the residual GFA exemption

Figure 6-11 – Sample computation (1) of GFA exemption

Figure 6-12 – Sample computation (II) of GFA exemption
Figure A: A Predominant Sky terrace occupying more than 60% of floor plate
Corridor located within the 45 degree line, can be exempted from GFA computation.

Figure B: Sky terrace occupying less than 60% of floor plate
Corridor is to be computed as GFA.

Figure 6-13 – GFA exemption of corridor areas at sky terrace floor
Figure 6-14 – Detail calculations for sky terrace at 6th storey plan (Not to Scale)

<table>
<thead>
<tr>
<th>Computation of GFA Exemption For Sky Terrace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sky Terrace Area</td>
</tr>
<tr>
<td>Residual Area</td>
</tr>
<tr>
<td>Area of Floor Plate</td>
</tr>
<tr>
<td>% of Perimeter Opening</td>
</tr>
<tr>
<td>% of Sky Terrace vs Floor Plate</td>
</tr>
<tr>
<td>% of Residual Area vs Floor Plate</td>
</tr>
<tr>
<td>Total GFA to be exempted</td>
</tr>
</tbody>
</table>

> 60%, therefore 345 sq.m of sky terrace area can be exempted from GFA.

> 60%, therefore additional GFA exemption for sky terrace residual area is applicable.

< 20%, therefore 60.0 sq.m of the residual area can be exempted from GFA.

Figure 6-14 – 45-degree line to be shown in Section A-A (Not to Scale)
7. Items not counted as gross floor area

7.01 Aesthetic mouldings
7.02 AHU
7.03 Balancing tank
7.04 Basement diaphragm walls
7.05 Bin point
7.06(i) Cable chambers
7.06(ii) Catwalk not exceeding 1m wide
7.07 Car parks and car park floors
7.08 Curtain wall or cladding system
7.09 Driveways
7.10 Drop-off point
7.11 Entrance canopy/main entrance
7.12 Ledges
7.13 Letter boxes
7.14 Linkages
7.15 Loading & unloading bay
7.16 M&E spaces
7.17 Meter compartment
7.18 Non household shelters
7.19 Ornamental pond/Reflective pool
7.20 Pavilions
7.21 Perforated structures
7.22 Planter boxes (within non-residential developments, or within communal areas of residential developments)

7.23 Private enclosed space

7.24 Pump rooms with less than 1.5m headroom

7.25 Rainwater holding tanks

7.26 Racking system

7.27 Refuse chute

7.28 Roof covers to screen roof top services

7.29 Roof eaves & sun shading devices

7.30 Roof terraces

7.31 Shadow areas

7.32 Staircases

7.33 Structural protrusion from building wall line

7.34 Unroofed staircases to ESS

7.35 Metal ceiling grids within indoor performance venues
7.01 Aesthetic mouldings
Aesthetic mouldings are architectural features or ornamental mouldings to express a particular style or to enhance the facade of the building. These features are purely decorative. For example; cornice.

7.02 AHU
AHU suspended and supported by metal brackets or beams within voids. They are regarded as equipment and not structures per se.

7.03 Balancing tank
Balancing tank are akin to water tank.

7.04 Basement diaphragm walls
Basement diaphragm walls inclusive of the basement walls are built along the periphery of the site and are usually required to meet structural conditions in basements.

7.05 Bin point
Bin point at gate post.

7.06(i) Cable chambers
For standalone electric substation or substation that is located away from the main building, the following must be satisfied:

(a) if the height of the cable chamber, measured from the floor to the underside of the upper floor, is less than or equal to 2.0m or

(b) if the combined height (a + b) as shown in Figure 7-2 below does not exceed 4.5m for residential, 5.0m for commercial or 6.0m for warehouse development, the cable chamber can be excluded from GFA.

If the electric substation is integrated within the main building, the height of the cable chamber, is allowed to exceed 2.0m subject to a maximum 2.5m. See Figure 7-3 below.

The 2.0m height includes the structural beams. The cable chamber has to be computed as gross floor area if it deviates from the above guidelines.
7.06(ii) Catwalk not exceeding 1m wide
Catwalk for maintenance purposes.
7.07 Car parks and car park floors

Generally, car parks are excluded from gross floor area computation. Please refer to item 5.5 for exceptions.

7.07.1 Car porch and garages in landed housing

The exemption strictly applies to parking spaces and do not apply to terrace/patios and other areas adjoining the car porches/garages which are not used for car parking.

7.07.2 Car park floors – Left over spaces or residual spaces

This refers to all left over spaces like pedestrian walkways, pavements, planting boxes and residual areas (including areas enclosed on 3 sides regardless of shape or size) arising from the layout of parking lots. *The residual area is incapable of accommodating an additional car park lot (see Figure 7.4).

M&E spaces enclosed by chain-link fencing or low parapet wall will not be counted as gross floor area. However, area enclosed by chain-link fencing for storage purposes (other than M&E equipment & water tank), enclosed staircases, loading/unloading platforms, stores, toilets, lift lobbies are to be counted as gross floor area.

*Pure Car Park Floors
i. For pure car park floors, corridors with a maximum of 3 sides enclosed that lead directly from the carpark to the lift lobby can be considered as residual car park area (figure 7.5);

ii. Areas within pure car park floors that have a concentration of columns that render parts of the car park floor unusable can be considered residual and exempted from GFA (Figure 7.6). However, this design is discouraged because it is not considered optimal.

*Car Park Floors Integrated with Other Uses
i. For a floor containing part car park integrated with other uses e.g. residential units, commercial shops/offices, etc, the car park floor area should be clearly carved out from the non-parking area (see Figure 7.7);

ii. Corridors within integrated car park floors that lead to other areas of the main building will not be considered residual and shall be computed under the main building use GFA (Figure 7.7a);

iii. Areas within integrated car park floors that have a concentration of columns and do not contain car parks or vehicular circulation area will be evaluated on a case-by-case basis to confirm whether the area is to be considered residual and qualify for GFA exemption.
Figure 7-4: Residual areas incapable of accommodating additional car park lot

Figure 7-5: Corridors leading from car park to lift lobbies in pure car park floors
Figure 7-6: Areas with large concentration of columns on pure car park floors that renders the space unusable.

Figure 7-7: To demarcate car park area from other non-car park areas on the same floor.
7.08 Curtain wall or cladding system

For buildings with curtain wall or cladding systems fixed onto the main structure, the gross floor area shall be measured up to edge of the main structural floor slab. However, if there are external walls, the gross floor area shall be measured up to the thickness of the external walls excluding the curtain wall or cladding systems.

See illustration below
7.09 Driveways

Driveways are treated as part of the vehicle circulation area.
7.10 Drop-off point

Drop-off point can be excluded from GFA.

7.10.1 Covered leftover landscaped communal space at the 1st storey created by the driveway or drop-off point

These are covered leftover spaces that are created due to the layout of the driveway or drop-off point. However, these areas must be communal areas and be landscaped. See illustration

![Plan](Image)

**Figure 7-9** Cover Landscaped area

7.11 Entrance canopy/main entrance

Only one main entrance is exempted from gross floor area computation. If there are more than one entrance, the second and subsequent entrances have to be included in the gross floor area computation.

7.12 Ledges

7.12.1 Air-conditioner ledges

Air-conditioner ledges, including L-shaped a/c ledges not exceeding 1m wide, as measured perpendicularly from the external wall, are excluded from GFA.

This also applies to the situations illustrated below, where the a/c ledges may project more than 1m at the corner, as measured from the wall.

For a/c ledges exceeding 1m width, the entire area is computed as GFA. This is to ensure that a/c ledges are used for the sole purpose of supporting a/c equipment and not as extended ledges that may be converted later to liveable area (e.g. balcony, room extension).
7.12.2 Firemen's ledge

Firemen's ledge is defined as reinforced concrete plate outside the building without any railing or parapet wall. The firemen's ledge must not exceed 1.4m wide for residential development and 1.0m wide for non-residential development. For firemen's ledge exceeding 1.4m wide or 1.0m wide for residential development and non-residential development respectively, the additional area has to be counted as GFA.

7.12.3 RC ledge (for sunshading purpose only)

This exemption strictly applies to RC ledge located on the external façade of the building and is not applicable to internal void space/courtyard.

RC ledge is defined as reinforced concrete plate outside the building without any railing or parapet wall. The RC ledge must not exceed 2.0m. For RC ledge exceeding 2.0m wide, the area to be excluded from GFA can be allowed up to 2.0m. The remaining portion has to be counted as GFA. The same method is applied to area exempted under the roof eaves.
### 7.13 Letter boxes

Unenclosed letter boxes in car park floors.

### 7.14 Linkages

To enhance design flexibility in providing more pedestrian thoroughfares and linkages for ease of pedestrian movement, covered walkways, footways and linkways can be excluded from gross floor area computation.

#### 7.14.1 First storey

##### 7.14.1.1 Covered public footway/walkway

- **(i)** Covered footway/walkway abutting existing or proposed roads at the 1st storey level only.

- **(ii)** Covered footway/walkway facing any existing or proposed public road, public pedestrian mall, public open space/landscaped area or which links 2 public areas. The footway or walkway is required by the Competent Authority or other Government agencies and is to be kept open at all times for public use as part of the public pedestrian network.

##### 7.14.1.2 Covered linkways

- **(i)** Open sided linkways incorporated as part of landscaping area.

- **(ii)** Linkways that connects one building to another and do not form part of the main building.

##### 7.14.1.3 Through-block pedestrian linkages

The following criteria must be satisfied.

- **(i)** The link must run through a building block and directly connect two parcels of public areas i.e. main road (exclude service road and backlane), public pedestrian promenade /mall and public open space/landscaped area.

- **(ii)** In each building only one through-block pedestrian link is allowed. The link must give a through view of the pedestrian route from one end to the other.

- **(iii)** The internal clear width of link should be more than 4m and less than 7m.

- **(iv)** Changes in the floor levels of the linkage shall be accommodated by ramps.

- **(v)** The link must be kept open at all times for public use. Clear and prominent signages with minimum size of 4m² are to be displayed above the entrances to inform the public that the linkage is open 24 hours for pedestrian circulation.
7.14.2 Upper level linkages

7.14.2.1 High level pedestrian linkages between different developments.

They must satisfy the following:

(i) The link must connect two common public areas at upper floors of different developments and be used strictly for circulation only.

(ii) The link must span across minor road. However, the link that span across development boundary can also be considered.

(iii) The internal clear width of the link should be more than 4.0m and less than 7.0m.
(iv) The link must be open during normal business operation hours for public use as part of the public pedestrian network. The link should be directly accessible via lifts and/or staircases from the 1st storey public lobby.

See Figure below.

**Figure 7-12  2nd storey and high level pedestrian link**

7.14.2.2 Communal sky bridge between different buildings in a single development

The communal sky bridges linking blocks within a single development must satisfy the following criteria:

(i) The sky bridge must connect two communal areas within the development.
The sky bridge should form part of the communal circulation network within the development.

No part of the sky bridge shall be rented out or form part of any strata unit.

See illustration below.

**SECTION**

**Figure 7-13** Communal sky bridges linking within a development

7.14.2.3 Elevated pedestrian linkages within developments that are identified as key connections under the Jurong Gateway Elevated Pedestrian Network (EPN)

To qualify for GFA exemption, the elevated walkways will be subject to the following guidelines:

a. The walkway shall be 6m wide for development parcels directly adjacent to the Jurong East MRT station, and 5m wide for other parcels. GFA exemption will not be given to portions of the walkway exceeding the required width;

b. The walkway shall be open and accessible to the public during the opening hours of the MRT. Portions of the EPN which also function as public pedestrian overhead bridges (POB) across public roads are required to be accessible to the public at all times;

c. The internal walkway route within the building that links the connection points with adjacent buildings shall be as direct as possible. A winding internal walkway route that is provided with the intention of maximising pedestrian flow to retail or other commercial uses for commercial considerations will be considered to be an internal corridor space and will not qualify for GFA exemption. The layout of the proposed walkway will be subject to URA’s evaluation for purpose of GFA exemption at the Formal Application stage;
d. Vertical circulation points that connect the EPN with the at-grade pedestrian network, as shown in the Jurong Gateway EPN, including stairs, escalators and lifts, will be exempted from GFA;

e. Clear and prominently displayed signage is to be provided at the entrances of the elevated walkways within developments to inform pedestrians that they are accessible for public use. Adequate signage along the EPN is to be provided to guide pedestrians to the MRT Station and other key developments along the EPN; and

f. The walkway shall be used strictly for pedestrian circulation purpose only. Commercial uses are not allowed within the walkway.

7.14.3 Underground

7.14.3.1 Underground pedestrian links to rapid transit system (RTS) stations

As the underground pedestrian links function as a public thoroughfare, the floor area of the underground pedestrian walkway can be exempted from the gross floor area computation if the following criteria are satisfied.

The underground pedestrian link will have a clear pedestrian walkway width of:

(i) Between 6m - 7m for walkway with single-loaded uses; or

(ii) A minimum width of 7m for walkway with double-loaded uses. For walkways that are greater than 7m wide, the exemption is given up to 7m only.

See Figure below.
7.15 Loading & unloading bay

Loading and unloading bay is excluded from gross floor area computation. However, loading and unloading platform has to be included in the gross floor area computation.

7.16 M&E spaces

7.16.1 M&E floors with limited headroom(< 1.5m)

M&E floors with 1.5m or less headroom can be excluded from gross floor area computation. The height of the M&E floor is measured from the floor to the underside of the upper floor. See illustration below. False or suspended ceiling cannot be deemed as the upper floor. M&E floors with headroom > 1.5m constitute gross floor area. For M&E floors with varying headroom i.e. the height of the headroom varies from below 1.5m to exceeding 1.5m, the entire floor would be computed as gross floor area.
7.16.2 M&E floor for commercial and hotel buildings which make use of the rooftop guidelines in 7.29

To complement the objective to encourage good roof design, some activity-generating uses on the rooftop of commercial and hotel developments are encouraged under the following guidelines:

i. To allow the rooftop M&E services to be transferred from the roof to one of the top three floors directly below the roof (see Figure 7-15.1). Any remaining M&E services to serve the activity generating uses, such as lift motor rooms, should be neatly integrated with the activity generating uses.

ii. To exempt from GFA computation the covered M&E areas up to one floor only. The activity generating uses at the rooftop would constitute as GFA.

iii. The GFA exemption for M&E floors will not apply to commercial and hotel developments that share common boundaries with residential developments, where activity generating uses are not allowed at the rooftops.

iv. For commercial and hotel developments that are in close proximity to residential developments, such as across the road, such activity generating uses at the rooftops will be evaluated on a case by case basis.
7.17 Meter compartment

Meter compartment integrated within the gate post.

7.18 Non household shelters

The part of the household shelter core that extends to the building foundation is not counted as gross floor area. Refer to Non-GFA (C) in illustration. If the r.c. slab is located at an intermediate level between floors then it is not counted as GFA. Refer to Non-GFA (A) in illustration. If the r.c. slab is located at the roof level then it is not counted as GFA. Refer to Non-GFA (B) in illustration.
7.19 Ornamental pond/Reflective pool

Covered ornamental pond/reflective pool which forms part of the communal landscaped deck at the 1st storey. Area to be exempted is delineated by the 45 degree line taken from the edge of the floor or overhang above the landscaped deck.

7.20 Pavilions

7.20.1 Located at 1st storey

Open sided pavilions (with no commercial use) incorporated as part of landscaping.
Open sided pavilions with BBQ pit facilities can also be exempted from gross floor area computation.

7.20.2 Located at rooftop

The objective of allowing pavilions on rooftops is to encourage roofs for communal usage, at the same time, it should not cause disamenity to the surrounding developments. Hence, such pavilions at the rooftop of buildings are allowed on a case-by-case evaluation basis. For cases where pavilions are allowed, they must satisfy the following criteria for exemption from GFA computation.

(Note: Rooftop pavilions in landed housing developments does not qualify for GFA exemption since there is no communal use involved in such developments.)

(i) The pavilion can be free-standing or partially attached to the main building provided the attachment is less than 50% of the pavilion’s perimeter. See illustration.

(ii) Single-storey (overall height less than 6 m) with non-load-bearing roof cover. It can be open sided or partially enclosed provided the enclosed portion shall not exceed 50% of the pavilion’s perimeter. See illustration.

(iii) The coverage of the pavilion shall not be more than 50% of the area of the same flat roof containing the pavilion.

(iv) The pavilion must be used as part of the landscaped features.

(v) Access to the pavilion must be from communal areas only. The pavilion and the open area around it will be counted as GFA if they are used for commercial purposes. See details in 5.13.1.
Figure 7-17  Rooftop pavilion
Fig 7-18  Illustration of a pavilion attached to the main building with 50% perimeter enclosure

Illustration of a free standing pavilion with 50% perimeter enclosure
7.21 Perforated structures

All covered perforated structures (including the area covered by the perforated structures) will be considered as GFA, except for perforated metal catwalk or platform that does not exceed 1m in width. For such perforated metal catwalk or platform, the catwalk/platform will not be considered GFA if the width does not exceed 1m.
7.22 Planter boxes (within non-residential developments, or within communal areas of residential developments)

Cantilevered planter boxes which are located within non-residential developments, or within the communal areas of residential developments can be excluded from gross floor area computation, subject to the following criteria:

(i) Maximum width of 1m width
(ii) Minimum 500mm depth (for planting purpose)
(iii) They shall be sufficiently externalized

The objective of granting GFA exemption for such planter boxes is to encourage the provision of sky-rise greenery which contribute to the overall environment of the city.

Therefore, while low-height railings can be provided for safety purposes (as shown in Figure 7-20), internalized planter boxes, or those which are provided behind full-height screening cannot be exempted from GFA computation since they do not meet the intended objective. Figure 7-21 and 7-22 illustrate examples which cannot qualify for GFA exemption.

There will also be no partial GFA exemption granted for planter boxes. For planter boxes that exceed 1m width, or do not satisfy the minimum 500mm depth, the entire area will be computed as GFA (see Figure 7-23). This is to ensure that planter boxes are used solely for planting purposes and not as an extended area, that may be converted later to other usable floor space.
Example (1): Fully screened planter boxes **do not** qualify for GFA exemption (see Figure 7-21 below)

**Figure 7-20 Examples of allowable planter box configurations**

**Figure 7-21 Fully-screened planter boxes**
Example (2): Internalized planter boxes (inward facing planters proposed within a recessed area of the building) **do not** qualify for GFA exemption:

Figure 7-22 Internalized planter boxes

Figure 7-23 Planter Boxes

7.23 Private enclosed space

Private enclosed space on the 1st storey or on the podium roof shadowed by the roof eaves or building structures not more than 2m in depth measured from the external wall (See Figure 7-22).
7.24  Pump rooms with less than 1.5m headroom

7.25  Rainwater holding tanks
Rainwater holding tanks buried in the ground. This includes underground tank and water tanks.

7.26  Racking system

7.27  Refuse chute
Only the hollow space is exempted from GFA. However, it has to be counted once similar to a service duct if it does not end at a bin chamber.

7.28  Roof covers to screen rooftop services
The provision of roof covers to screen off unsightly rooftop services would be exempted from gross floor area computation. To qualify for exemption, it must satisfy the following:
(i) The cover must be non-load bearing and rest on the springing line or spring from the main roof.

(ii) The covered area must house the M&E and other service equipment.

Besides pitched roofs and other non-load bearing roof, other tightly enclosed non-usable space at the ceiling level would be similarly exempted. See Figure below.

**Figure 7-23 Rooftop Covers**

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### 7.29 Roof eaves & sun shading devices

#### 7.29.1 Roof eaves and sun shading devices located below 6th storey

For area shadowed by the roof eaves and sun shading devices located below 6th storey for all types of developments, only 2m of the shadowed area can be excluded from gross floor area and site coverage computation if the features comply with the following conditions:
(i) The roof eaves and sun shading devices shall be column-free and shall not be accessible except for maintenance purposes only (the QP is to declare this on the proposal plans).

(ii) The roof eaves and sun shading devices has to comply with the setback guidelines from the common boundaries of the development, as follows:

(a) 1.0m for landed housing in non-GCBAs, 1.6m for landed housing within GCBAs.

(b) 2.0m for non-landed residential developments and non-residential developments.

(iii) For roof eaves and sun shading devices facing public roads shall be allowed within the physical buffer but not within green buffer. This is allow sunlight and rain to reach the plants grown in the green buffer.

(iv) The owner of the development shall comply with the Written Permission condition to take appropriate measures to prevent spillage of rainwater to the neighbouring sites arising from the roof eaves and sun-shading devices.

See illustrations below.

Figure 7-24 Roof eaves exemption
7.29.2 Roof eaves and sun shading devices located at the 6th storey and above

For area shadowed by the roof eaves and sun shading devices located at the 6th storey and above for all types of developments, the entire area will not be computed as gross floor area and site coverage if it satisfies the conditions (i) – (iv) stated in item 7.30.1 above.

See Figure below.
7.30 Roof terraces

Roof terraces which are covered by roof eaves/overhang can be excluded from gross floor area computation. However, only 2m of the covered area can be excluded from gross floor area computation if the roof eaves are located below 6 storeys. If the roof terraces are covered by roof eaves/sun shading devices that are located 6th storey or more from the terrace, the entire covered area would be excluded from gross floor area computation. See illustration below.

Figure 7-27 Roof Terrace

7.31 Shadow areas

Shadow areas under building projections e.g. a/c ledge, firemen’s or reinforced concrete (RC) ledge, planter box, bay window, balcony, design feature, structural projection (platform or decking), sunshading devices can be excluded from gross floor area subject to the following:

7.31.1 Shadow area cast by building projections from the building facade, which are located below the 6th storey.

The shadow area up to 2.0m only, measured from the building façade can be excluded from gross floor area computation. See Figure below.
7.31.2 Shadow area cast by any structure which are located on the 6th storey and above

The entire shadow area can be excluded from gross floor area computation. See illustration below.
7.31.3 The shadow area cast by the structure projections could fall on flat ground, sloping ground, communal area or private enclosed space on the ground. However, the shadow area must not fall within a walled-up enclosed space and balcony area. The shadow area must be column free. See Figure below.

Figure 7-30  Shadow area below building projections - for projections located at 6th storey or above

7.31.4 Sloping ground

Shadow areas on existing undulating sloping terrain or sloping ground below building structures, platform or deck can be excluded from gross floor area computation. To qualify for exemption, the exempted shadow areas cannot be enclosed on the sides. See Figure below.
Figure 7-31  shadow area on sloping ground below building or platform/deck

7.31.5 Gondola platform at roof top
Shadow area cast by roof top level gondola platforms. See Figure below.
7.31.6 Elevated linkway
Shadow area cast by link bridges or elevated linkway. See illustration below.
7.31.7 Shadow area of columns within the 45-degree line

See illustration below
7.32 Staircases

The floor plate containing the staircase has to be counted once. Staircases collapses upwards has to be counted at the upper floor plate.

7.32.1 Staircases – intermediate staircase

Staircases at intermediate levels that is not connected to any floor can be excluded from gross floor area. However, staircases within a floor though not accessible to that particular floor has to be computed as gross floor area.
7.32.2 Staircases – connecting floors with high floor-to-floor height

For residential blocks that proposed high void deck which is counted as multiple virtual floors (see Figure 7-35a). Such a design takes advantage of the higher aggregated building height as the virtual floors are proposed as additional floors to the real habitable floors. The staircases connecting from the ground to the lowest accessible floor (say on 4th storey) are often proposed as intermediate staircases with GFA exemption.

For purpose of GFA exemption, an intermediate staircase shall connect between consecutive floors (e.g. 1st to 2nd storey, see Figure 7-35b). However, flights that connect between 1st to 4th storey with a virtual floors in between will not be exempted from GFA, even if there is no access to the in-between "virtual" storeys (Figure 7-35a).
Figure 7-35a: Staircases connecting virtual floors not intermediate staircase

Figure 7-35b: Intermediate staircase
7.32.3 Staircases - Uncovered external perforated staircases

All uncovered external perforated staircases, regardless of materials, will be counted as GFA, except where such staircases serve industrial or warehouse developments.

For pure industrial/warehouse developments, uncovered external mild steel perforated staircases can be allowed and be excluded from gross floor area computation provided the development already provides a covered internal staircase to serve users of the building. In addition, if the width of the uncovered external mild steel perforated staircase is more than 1m, the developer would be required to provide an undertaking not to cover up the external staircase subsequently. The width of the external staircase includes the staircase landings. See Figure 7-36 on how the width of the external staircase is measured.

Example 1

![Building Block Plan](image)

Example 2

![Building Plan](image)

Note: All uncovered external perforated staircases are to comply with FSB’s requirements, if any.

Fig 7-36 Uncovered external perforated staircase width of staircase = w
7.33 Structural protrusion from building wall line

Non-GFA building features can be allowed to be extended from the building wall line to meet different needs. These features were intended to be short appendages to the external building wall and not extensive overhangs. As such, the intent has always been to measure the GFA-exempted distance of these building projections from the building wall for the purpose of GFA exemption.

In situations where one feature is “added” on to another feature, the width of projection of these structures should be measured from the building wall line. If the proposed feature as measured from the wall line exceeds the dimension prescribed for GFA exemption, it would not qualify for any GFA exemption. See illustration and detailed footnote below.

Illustration: Cross section showing an example where there is more than 1 structural protrusion from the building wall line

The width of the projection of each GFA exemption item measured from the external building line cannot exceed the max allowable width, otherwise the entire item would not qualify for GFA exemption.

For example, if the maximum allowable width of GFA exemption item 2 is 1m, then x shall not exceed 1m in order for it to qualify for GFA exemption.

7.34 Unroofed staircases to ESS

7.35 Metal ceiling grids within indoor performance venues

Metal ceiling grids which are proposed directly above the stage area within indoor performance venues can be exempted from GFA, as these grids are an integral part of performance stage design and are used for placement of audio, visual and stunt equipment for the performances (see illustration below)
Illustration: Metal ceiling grids within indoor performance venues
Part 1 GROSS FLOOR AREA

1 Introduction

1.1 Prior to 1989, the development intensity for residential development was measured in terms of density i.e. persons per hectare. For non-residential developments such as industrial and warehouse buildings, institutional buildings, commercial buildings, and etc., the intensity was measured in terms of plot ratio. The methods used also changed over the years.

1.2 In 1989, following the introduction of the new development charge system, the Gross Floor Area (GFA) concept was adopted to determine the development intensity of a building. Under this GFA concept, all covered floor areas of a building except otherwise exempted, and uncovered areas for commercial uses are deemed the gross floor area of the building.
Part 1 GROSS FLOOR AREA

2 Objectives

Gross floor area (GFA) measures the bulk and intensity of a development for the purposes of plot ratio control and computation of development charge. Using this GFA concept, the owners or developers are free to determine how much neutral areas they want to provide in their buildings.
Part 1 GROSS FLOOR AREA

3 Definition of Gross Floor Area

3.1 All covered floor areas of a building, except otherwise exempted, and uncovered areas for commercial uses are deemed the gross floor area of the building for purposes of plot ratio control and development charge. The gross floor area is the total area of the covered floor space measured between the centre line of party walls, including the thickness of external walls but excluding voids. Accessibility and usability are not criteria for exclusion from GFA.

3.2 URA reserves the right to decide on GFA matters based on the specific design of a development proposal on a case-by-case basis.
Part 1 GROSS FLOOR AREA

4 Basic information required for computing gross floor area

4.1 Site Area

The site area is the area of a development plot measured between the survey boundary lines. The boundary line defines the legal ownership of the property or development site. The development plot could either sit on a full lot or on a part lot. If there are areas within the development site to be vested to the State, for example for road widening or drainage purposes, these areas can be included as part of the development site for plot ratio calculation. Once these areas are vested to the state, they cannot be used for plot ratio calculation, subsequently.

4.2 Plot Ratio

The plot ratio of a site is defined as the ratio of the gross floor area of a building(s) to its site area.

4.2.1 Proposed plot ratio

The proposed plot ratio as declared by the qualified persons in the EDAtform/application form. Generally, this plot ratio is not allowed to exceed the current Master Plan plot ratio.

4.2.2 Allowable plot ratio

The allowable plot ratio is the prescribed plot ratio in the current Master Plan.

4.2.3 Computation of plot ratio

Plot ratio = Gross Floor Area / Site Area
Part 2  SITE COVERAGE & COMMUNAL OPEN SPACE (COS)

8.00 Objective of Site Coverage and Communal Open Space (COS)

8.01 What is site coverage?

8.02 Site coverage control for residential and non-residential development

8.03 Items counted as site coverage

9.00 Communal Open Space (COS)

9.01 What is communal open space (COS)

9.02 The Communal Open Space requirement

9.03 Items counted as Communal Open Space

9.04 Items not counted as Communal Open Space
8.00 Objective of Site Coverage and Communal Open Space (COS)

Site coverage and communal open space (COS) are planning parameters to determine the extent of built-upness of the site. The primary objective of site coverage control and COS requirement is to ensure that the development site is not over-built and that adequate areas can be devoted to greenery and landscaping to achieve a high environmental quality.

8.01 What is site coverage?

Site coverage is the area of all the buildings or structures measured along the outermost external walls where the roof projection is equal or less than 2.0m, expressed as a percentage of the net site area. It is an indication of how much the site has been built on. See illustrations in Figures 8-1 & 8-2.

Net Site Area means the area of the site excluding areas to be vested to the State for public roads, public road widening reserves, and drainage reserve.
Net Site Area = Site Area - Road Widening - Drainage Reserve

Site Coverage = Building Block Area
Net Site Area

Note:
For roof eaves and sun-shading devices with projection greater than 2.0m, a 2.0m width from the roof eaves line will be excluded from site coverage computation.

Figures 8-1 (NTS)
Building Coverage

Note: For roof eaves and sun-shading devices with projection greater than 2.0m, a 2.0m width from the roof eaves line will be excluded from site coverage computation.

Figure 8.2 (NTS)
### 8.02 Site coverage control for residential and non-residential development:

<table>
<thead>
<tr>
<th>No.</th>
<th>Residential development</th>
<th>Site Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Detached houses (outside GCBA)</td>
<td>Site ≤ 800</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40% maximum or 45% maximum applicable only to bungalow in 2-storey mixed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>landed and 2-storey semi-detached housing areas</td>
</tr>
<tr>
<td></td>
<td>Site area &gt; 800</td>
<td>40% maximum</td>
</tr>
<tr>
<td>ii</td>
<td>Detached houses (GCBA)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35% maximum</td>
</tr>
<tr>
<td>iii</td>
<td>Strata-landed housing (outside GCBA)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40% maximum</td>
</tr>
<tr>
<td>iv</td>
<td>Strata-landed housing (within GCBA)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35% maximum</td>
</tr>
<tr>
<td>v</td>
<td>Condominium &amp; flats</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40% maximum</td>
</tr>
</tbody>
</table>

### 8.03 Non-residential development

<table>
<thead>
<tr>
<th>No.</th>
<th>Site Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>Petrol Station</td>
</tr>
</tbody>
</table>

### 8.03 Items counted as site coverage

Structures which are to be included in the site coverage computations are as follows:

#### 8.03.1 Air-conditioner ledges

Air-conditioner ledges which are projected from the external wall of the building shall form part of the site coverage regardless of projection width. (See Figures 8-3)
8.03.2 Building blocks including basement raised more than 1m from the ground level

**Exception:** For residential flats and condominium developments submitted under the landscape deck scheme (Refer circular No: URA/PB/2004/09-DCD dated 5 Apr 2004), the landscape deck complying with the landscape guidelines need not be counted as site coverage, but the residential blocks on top of the deck would still be computed as site coverage.

8.03.3 Balcony

All balconies which are projected from the external walls of the building are counted in as site coverage regardless of projection width. (See Figures 8-4)

![Diagram of Balcony](image)

8.03.4 Bay window

Bay window which is projected outwards from the wall shall be included in site coverage computation. (See Figures 8-5)

![Diagram of Bay Window](image)
8.03.5 Bin Centre / Covered bin point > 1m height

Bin centre and covered bin point exceeding 1.0m high form part of the site coverage.

8.03.6 Car parking shed

The covering of the car park shall form part of the site coverage. The site coverage shall be measured from the columns, while area beyond the columns can be excluded subject to the projection does not exceed 2.0m.
(See illustration in Figures 8-6)

8.03.7 Covered link-ways

Covering of the link-way shall form part of site coverage. The site coverage shall be measured from the columns, while area beyond the columns can be excluded subject to the projection does not exceed 2.0m. (Same as car parking shed) (See illustration in Figures 8-7)
Examples of 1st storey covered link-ways included for site coverage

Covered linkway without column support

Covered linkway supported by columns on both sides.

Covered linkway supported by columns on one side

Covered linkway supported by columns at the centre

Figure 8.7

Building Coverage
8.03.8 Covered entrance / car porch

Covered entrance / car porch exceeding 2.0m width, measured inwards from the outer roof line will be excluded and the remaining area to be computed as site coverage. However, if these structures are vertically supported by columns, the area between the main walls and the columns are to be computed as site coverage while area beyond the columns can be excluded subject to the projection does not exceed 2.0m. (See illustration in figure 8-8)

Examples of 1st storey covered entrance / car porch included for site coverage computation
8.03.9 Electrical substation

Stand-alone or independent substation building shall be counted as site coverage except for exposed transformer equipment. (See Figure 8-2)

8.03.10 Firemen’s ledge

Firemen’s ledge is a reinforced concrete slab which is projected from the building without any railing or parapet wall. Such structure shall form part of the site coverage regardless of projection width. (See Figure 8-9)

8.03.11 Guard house / guard post

Guard house / guard post forms part of the site coverage. (See Figure 8-2)

8.03.12 Planter box

All cantilevered planter boxes form part of the site coverage regardless of projection width. (See Figure 8-10)
8.03.13 Roof-terrace / Sky-terrace

All cantilevered portion of roof-terrace and sky-terrace form part of the site coverage regardless of projection width. (See Figure 8-11)
8.03.14 Roof eaves and RC ledge (for sun-shading purpose only)

If the roof eaves and sun-shading device are located below the 6th storey, the cover areas are to be included in site coverage calculation. However, the area within 2.0m as measured from the outer edge of roof eaves and sun shading device can be excluded from site coverage. (See illustration in figure 8-12) If the roof eaves and sun-shading device are located at 6th storey and
above, the covered area will not be computed as site coverage, regardless of the width. (See illustration in figure 8-13)
8.03.15

Structures that protrude more than 1.0m above the existing ground level or approved platform level such as external perforated staircases, swimming pool decks, water-tanks or car parks ramps etc will be computed as site coverage. (See figure 8-14)

![Diagram of Structures and Site Coverage](image)

Figure 8-14

9.00 Communal Open Space (COS)

9.01 What is communal open space (COS)

Communal open space (COS) forms part of the common property area, and includes gardens and landscaped areas for the common enjoyment of the residents of the Strata-landed housing. It also includes other facilities like open-sided pavilions, uncovered swimming pools, sand pits, fountains and other recreational facilities if these structures are raised not more than 1m from the ground level. See illustrations in Figure 9-1
9.02 The Communal Open Space requirement is:

<table>
<thead>
<tr>
<th>Development Type</th>
<th>Communal Open Space</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential development</strong></td>
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</tr>
<tr>
<td>i Strata-landed housing</td>
<td>30% minimum</td>
</tr>
<tr>
<td><strong>Non-residential development</strong></td>
<td></td>
</tr>
<tr>
<td>i Home for the Aged</td>
<td>35% minimum</td>
</tr>
</tbody>
</table>
9.03  Items counted as Communal Open Space.

See illustrations in figure 9-1

9.03.1  Recreational facilities if these structures are uncovered and raised not more than 1m above ground level such as:

a)  Uncovered exercise equipment and structures in the fitness park
b)  Uncovered court for games (e.g. tennis court, basket-ball court, etc.)
c)  Uncovered swimming pool and wading pool
d)  Uncovered sand pits at children play ground, etc

9.03.2  Structures which formed part of landscaping features such as:

a)  Art sculptures
b)  Fountains
c)  Pavilions (covered but open-sided)

9.04  Items not counted as Communal Open Space.

See illustrations in figure 9-1

9.04.1  Buildings and other ancillary structures which are already included in site coverage

9.04.2  Driveways & car parks

9.04.3  Fire-engine hard-standing ground

9.04.4  Voids at ground level overlooking basements (void space)

9.04.5  Private enclosed space
Part 3 Apportionment of floor areas in mixed developments

10.1 If the approved development comprises more than one purpose falling within different Use Group in the Development Charge Table, the following rules shall apply in the calculation of development charge payable.

10.2 The same rules also apply in the calculation of use quantum associated with a particular land use zone. For example, in the calculation of the commercial quantum in a Commercial & Residential zone, which is not to exceed 40% of the maximum allowable floor area.

Where the approved building is divided into parts, each to be used exclusively for a purpose, each part will be treated as a separate development. The development charge for the entire approved development will be the aggregate of the development charge for each part. See example below.
Where it is impracticable to divide the common area on a floor of the approved development into parts as in (1) above, the highest development charge rate attributed to the approved purposes on that floor will be used in calculating the development ceiling for the common area on that floor. See example below. DC rate for Use Group A will be applied to the common lobby serving the hospital Reception Counter and the Medical Suite (Use Group A) and Hospital Reception Counter (Use Group C) on that floor.

Where the floor comprises service area serving the various approved purposes of the approved development, the average of the development charge rates corresponding to the approved purposes of the development, will be used in calculating the development ceiling for that floor. See example below.
10.3 The illustrations are not exhaustive in covering all possible building designs. In evaluating the development applications, URA may if the circumstances of a case or the planning considerations relevant to a case so warrant, depart from these rules. Persons intending to carry out a development are advised to take this into consideration and check with URA through enquiries or development applications to confirm the application of the rules on their proposals.
Part 4 Re-computation of GFA for Existing Developments

11.1 Prior to 1 Sep 1989, the identity of residential developments was determined using the population density (i.e. persons per hectare) method while that for commercial developments was based on the nett floor area method (i.e. excluding neutral areas). With effect from 1 Sep 1989, the different methods of determining development intensity for different types of development were standardized by the current Gross Floor Area (GFA) method. The GFA was re-defined by counting all covered floor space within a development (unless specifically exempted) and including open areas used for commercial purposes.

11.2 To determine the intensity of such developments approved before 1 Sep 1989, there is a need to convert the approved GFA of the developments under the old GFA definition to a GFA figure under the current GFA definition. For such developments, the approved building would need to be recomputed based on the 1993 GFA definition.

11.3 The approved floor areas previously counted as GFA (updated to 1993 GFA definition) but are exempted following the GFA reviews since 1993 can be “credited” to the site. These “credits” GFA can be used to off-set any additional floor space being added to the development on the site, provided that the prevailing planning parameters e.g. building height, building setback requirements, etc. are complied with.

Circulars relating to calculation of GFA based on 1993 guidelines

<table>
<thead>
<tr>
<th>Nos</th>
<th>Circular Reference</th>
<th>Description</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>URA/PB/1993/18-DCD</td>
<td>Revised gross floor area (GFA) definition</td>
<td>15 Jul 1993</td>
</tr>
<tr>
<td>2</td>
<td>URA/PB/1993/23-DCD</td>
<td>Revised gross floor area (GFA) definition – Clarification</td>
<td>24 Aug 1993</td>
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### Items at a glance on Site Coverage & Communal Open Space

<table>
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<th>Communal Open Space (COS)</th>
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<tbody>
<tr>
<td></td>
<td>Not counted</td>
<td>Partially counted</td>
</tr>
<tr>
<td></td>
<td>as Site</td>
<td>as Site coverage</td>
</tr>
<tr>
<td></td>
<td>coverage</td>
<td></td>
</tr>
<tr>
<td>Air conditioner ledge</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Bldg or structure &gt; 1m above ground level</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Balcony</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Bay window</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Covered Bin point</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Car park in landed housing</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Covered walkway/footway</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Carpark (Covered)</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Carpark (Uncovered)</td>
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<td>/</td>
</tr>
<tr>
<td>Canopy</td>
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<td>/</td>
</tr>
<tr>
<td>Driveway</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Drop-off point (Covered)</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>External perforated floor</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Firemen’s ledge</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Fire-engine hard-standing ground</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Fitness park (uncovered)</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Fountains (uncovered)</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Guardhouse</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Link-ways – 1st storey</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Main entrance (Covered)</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Pavilion (Covered but open sided)</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Planter box</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Private enclosed space</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>R C ledge (Sun-shading)</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Roof eaves</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Roof terrace</td>
<td></td>
<td>/</td>
</tr>
<tr>
<td>Items</td>
<td>Site Coverage</td>
<td>Communal Open Space (COS)</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
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<tr>
<td></td>
<td>Not counted</td>
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<td>8.03.11</td>
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<td>8.03.13</td>
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<tr>
<td>Staircase – External</td>
<td>/</td>
<td>8.03.15</td>
</tr>
<tr>
<td>Staircase – perforated</td>
<td>/</td>
<td>8.03.15</td>
</tr>
<tr>
<td>Sun shading device</td>
<td>/</td>
<td>8.03.14</td>
</tr>
<tr>
<td>Swimming pool &amp; Wading (uncovered)</td>
<td></td>
<td></td>
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<tr>
<td>Swimming pool decks ( &gt; 1.0m height)</td>
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<td>8.03.15</td>
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<tr>
<td>Void on ground level overlooking the basements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water tank located on ground ( &gt; 1.0m height)</td>
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<td>8.03.15</td>
</tr>
<tr>
<td>Unroofed staircase to ESS ( &gt;1.0m height)</td>
<td>/</td>
<td>8.03.15</td>
</tr>
</tbody>
</table>

Note:

/ hyperlink to the items in the GFA handbook
* subject to conditions. See details
## Part 5 ITEMS AT A GLANCE

**Items at a glance on Gross Floor Area (GFA)**

<table>
<thead>
<tr>
<th>Items</th>
<th>Not counted as GFA*</th>
<th>Partially counted as GFA*</th>
<th>GFA counted over and above the Master Plan Control*</th>
<th>Have to be counted as GFA</th>
<th>Paragraph (Refer to Part 1-item 5,6,7)</th>
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<tbody>
<tr>
<td>Aesthetic mouldings</td>
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<td>Air conditioner ledges</td>
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<td>Airwell in old developments</td>
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<td>5.01</td>
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<td>ATM kiosk</td>
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<td>5.02</td>
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<tr>
<td>Basement diaphragm walls</td>
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<td></td>
<td></td>
<td>7.04</td>
</tr>
<tr>
<td>Balancing tank</td>
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</tr>
<tr>
<td>Balconies</td>
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<td>5.03</td>
</tr>
<tr>
<td>Bicycle parks</td>
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<td>Bin point</td>
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<tr>
<td>Cable chambers</td>
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<td>7.06(i)</td>
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<td>Car parking lots</td>
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</tr>
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<td>Car parking lots - excess lots</td>
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<tr>
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<td>Catwalk</td>
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<td>5.07</td>
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<td>Catwalk not exceeding 1m wide</td>
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<td>7.06(ii)</td>
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<td>Covered walkway/footway</td>
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<tr>
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<td>Curtain walling</td>
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<td>7.08</td>
</tr>
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<td>Driveways</td>
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<td>Entrance canopy</td>
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<td>7.11</td>
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<tr>
<td>Firemen's ledge</td>
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<td></td>
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<td>7.12.2</td>
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<td>Floors – perforated floors</td>
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<tr>
<td>Items</td>
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<td>Partially counted as GFA*</td>
<td>GFA counted over and above the Master Plan Control*</td>
<td>Have to be counted as GFA</td>
<td>Paragraph (Refer to Part 1-item 5,6,7)</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
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Notes:

/   hyperlink to the items in the GFA handbook.

*   subject to conditions. See details.
PREFACE

The Urban Redevelopment Authority (URA) is Singapore’s national planning authority. Its task is to plan and facilitate the physical development of Singapore and ensure that Singapore’s limited land resource is put to optimal use. Through this role, URA aims to make Singapore a great city to live, work and play in.

As part of URA’s on-going efforts to provide excellent service to the public to facilitate property development, it has produced a series of handbooks on development control to inform and guide the public on the procedures in submitting development applications.

This Handbook on Gross Floor Areas is the latest in the series. The other handbooks in the series are:

Conservation Guidelines

Parameters for Residential Development

Parameters for Non-Residential Development

PURPOSE OF THIS HANDBOOK

This handbook explains the principles of what constitutes gross floor areas. It also provides a listing of items that are counted as GFA, partially counted as GFA, and not counted as GFA. If you wish to seek further clarification, please call DCG Enquiry Line at 6223 4811.

The principles and illustrations used in the handbook are not exhaustive in covering all possible building designs. URA reserves the right to interpret GFA matters based on the specific design of a development proposal on a case-by-case basis.

This handbook is subject to revision from time to time. Nothing herein shall be construed to exempt the person submitting an application or any plans from otherwise complying with the provisions of the Planning Act (Cap. 232) and any rules and/or guidelines made thereunder or any other written law and/or guidelines for the time being in force.

While every endeavour is made to ensure that the information provided is correct, the Competent Authority and the Urban Redevelopment Authority disclaim all liability for any damage or loss that may be caused as a result of any error or omission.

Important Notes:
You are advised not to print any page from this handbook as it is constantly updated.