

# ANZRPNG 4 METHODS OF MEASUREMENT

## 1.0 Introduction

### 1.1 Purpose

The purpose of this Guidance Note is to provide a national guide to members for the consistent measurement of buildings. It is intended to be used for the purpose of valuations, property management, property analysis, leasing and sales.

### 1.2 Status of Guidance Notes

Guidance notes are intended to embody recognised 'good practice' and therefore may (although this should not be assumed) provide some professional support if properly applied. While they are not mandatory, it is likely that they will serve as a comparative measure of the level of performance of a Member. They are an integral part of the Valuation and Property Standards Manual.

### 1.3 Scope of this Guidance Note

In Australia properties covered by this guideline are listed in 6.0, below. For the purpose of consistency, the Property Council of Australia (PCA) Method for the Measurement of Lettable Area (Copyright 1997) has been adopted for the purpose of defining lease space in Commercial, Retail and Industrial premises. Properties not within the scope of the PCA document are included in this guideline and additional properties may be added from time to time. This is a national document and is being harmonised with international practice.

#### New Zealand Members Note:

This guidance note was originally intended for use by Australian Members. Sections are relevant to New Zealand, although some Australian definitions differ from those used in New Zealand. New Zealand Members are specifically referred to the PCNZ/PINZ Guide for the Measurement of Rentable Areas revised in 2006. This publication is an update of the former BOMA/PLEINZ guide

### 1.4 Use of this Guidance Note

The guideline provides definitions of the various

types of measurement generally used in the property industry. It then lists property types in alphabetical order together with the relevant method of measurement.

### 1.5 Limitations

Some building areas (particularly retail) may be defined in some state and territory legislation and will over-ride the definitions in this Guidance Note where appropriate.

## 2.0 Principles of Measurement

### 2.1 Accuracy

Physical measurements are a matter of fact (not opinion) and should be accurate. The degree of accuracy, for example 'rounding' (see 2.2, below), will depend upon the circumstances, but should never be misleading. Where appropriate, an area may be obtained from a registered surveyor to ensure accuracy.

### 2.2 Unit of Measurement

All measurement should usually be in Square Metres (sq m) and/or cubic metres (cub m). There may be some circumstances where cubic capacity may be relevant such as in industrial buildings. Recommended guidelines include:

- Areas <100 sq m usually shown to one (1) decimal place (e.g. 85.6 sq m)
- Areas >100 sq m usually rounded to nearest whole figure (e.g. 120.4=120 sq m)

Measurement of buildings is usually rounded up if '.5' or more

(e.g. 120.5=121 sq m).

### 2.3 Height

In some types of property such as industrial, the height or cubic capacity of the premises can be an important aspect of the measurement of the building. This is usually shown in the building description, with a reference to a 'clear span' building height from the finished floor surface to the underside of a beam or roof truss.

### 2.4 Agreement

Where an area of measurement is to be used for negotiations or determinations, it is important for the parties to agree the method of measurement and the area before entering into negotiations or making a valuation determination.

### 2.5 Analysis

The guidelines seek only to set out an acceptable method of measurement for each type of property. The methodology for analysing market information, including a judgement on the relative building efficiency, design, presentation, quality, etc is generally outside the scope of this guideline. It is either covered by other Standards & Guidelines or left to the professional judgement of the member.

### 2.6 Method Adopted

The method of measurement adopted can vary depending upon the purpose for which it is used. For example, an area may be used for calculating building costs or insurance (gross basis), or it may be used for assessing rents (net basis). Care should be taken to ensure the purpose and method of measurement is clearly stated.

### 2.7 Shared Facilities

Where there are shared or common facilities, a separate area should be provided for the space used as a sole occupancy, with a separate description (and where appropriate) a separate area provided for the shared space.

### 2.8 Use Of Premises

For the purpose of analysis, the use of the property will generally determine the method of measurement, but not in all cases. For example, a house located on a zoned industrial site may be used as a residence and may not necessarily be the highest and best use of the building. In this case the method of measurement could be either (GBA or GLA) depending upon the purpose of the report. The methodology used and reasons for adopting a certain method of measurement should be clearly stated.

## 3.0 Area Definitions (Commonly Used)

### 3.1 Gross Building Area [GBA]

Gross Building Area (GBA) is the most commonly used method of measurement. The Gross Building Area is the area of the building at all building levels, measured between the normal outside face of any enclosing walls (or the centre line of common walls between different properties), balustrades and supports. The enclosed and unenclosed areas (see FECA and UCA definitions for detail) are usually shown separately and added together to give the total GBA.

(Note: Gross Building Area should not be confused with Gross Floor Area)

### 3.2 Strata Area (leases) [Various PCA]

The strata area is usually measured from the inside face of the wall. The area is calculated by a registered surveyor and is shown on a registered strata plan. The strata area is not usually used for the purpose of leases (although this may occur in some markets). Rental valuations and lease negotiations should usually be based upon the appropriate PCA definition for retail, commercial and industrial premises.

### 3.3 Stratum Area [SUA]

The stratum area is the area shown on a registered plan of subdivision as calculated by a registered surveyor. Adopt the same principles as for Strata (sales) and Strata (leases).

### 3.4 Strata Area (sales) [SA]

The market generally adopts the strata area shown on a registered strata plan as the basis of negotiation and sale. The strata area is usually measured from the inside face of the wall and the area calculated by a registered surveyor. The strata area is usually adopted as the basis for negotiations for individual and whole building strata units. Valuations generally show the PCA leasable areas for the capitalisation approach and the strata area for analysis of direct comparables (this may vary in some markets). In all cases, the basis for the method of measurement being used should be clearly stated.

### 3.5 Company Title

Company Title units should generally be treated on the same basis as strata title.

### 3.6 Community Title

Community Title areas definitions should be treated on the same basis as strata title, except where specific legislation over-rides this approach.

## 4.0 Area Definitions (Property Council of Australia)

### Gross Lettable Area Retail [GLAR]

Applies to retail uses.

### Gross Lettable Area [GLA]

Applies to warehouses, industrial buildings, freestanding supermarkets, and showrooms.

### Net Lettable Area Office Buildings [NLA]

Applies to office buildings, offices, and business parks.

## 5.0 Area Definitions (Others)

### 5.1 Building Area [BA]

(See Gross Building Area definition)

### 5.2 Equivalent Main Area [EMA]

The calculation of the EMA of a building is usually used for analysis and costing, with only a \$ rate per square metre to be stated as a single figure, rather than a set of different \$ values on each component of the building. The EMA uses the Gross Building Area as the basis of common measurement. The main building is counted as 100% of the GBA, with the other components of the building counted at lower percentages (see Residential) in accordance with their associated added value. Detached Improvements including rooms, studios, garages, carports, swimming pools and other improvements are not included in the EMA.

The EMA should not be quoted in a report unless its calculation is also shown as it maybe misleading. It should also be clearly noted as an EMA.

### Floor Space Area [FSA]

(See Gross Floor Space definition)

### 5.3 Fully Enclosed Covered Area [FECA]

The Fully Enclosed Covered Area (FECA) is the sum of all areas at all building floor levels, including basements (except unexcavated portions), floored

roof spaces and attics, garages, penthouses, enclosed porches and attached enclosed covered ways alongside buildings, equipment rooms, lift shafts, vertical ducts, staircases and any other fully enclosed spaces and usable areas of the building, computed by measuring from the normal inside face of exterior walls, but ignoring any projections such as plinths, columns, piers and the like which project from the normal inside face of exterior walls. It shall not include open courts, light wells, connecting or isolated covered ways and net open areas of upper portions of rooms, lobbies, halls interstitial spaces and the like, which extend through the storey being computed. (See N.P.W.C)

### 5.4 Gross Floor Area [GFA]

The GFA (or FSA) is the sum of the 'Fully Enclosed Covered Area' and 'Unenclosed Covered Area' (as defined by Quantity Surveyors and Architects).

The GFA (also described as the FSA) is often used by councils to define the floor space that can be developed on a site based upon its Floor Space Ratio. It can be used for determining the development potential of sites. Care should be taken that GFA is clearly defined (and not confused with Gross Building Area) if used in analysing values or in negotiations for development sites.

Definitions change in various LGA's and States and individual codes should be checked. A typical definition is as follows:

GFA means the sum of the areas of each floor of a building where the area of each floor is taken to be the area within the inside face of the external walls as measured at a height of 1,400 millimetres above each floor level, excluding the following:

- Columns, fin walls, sun control devices, awnings, and any other elements, projections or works outside the general lines of the outer face of the external wall;
- lift towers, cooling towers, machinery and plant rooms and ancillary space and vertical air-conditioning ducts;
- carparking needed to meet the requirements of the Council and any internal access thereto;
- space for loading and unloading of goods;
- Internal public arcades and thoroughfares, terraces, balconies with outer walls less than 1400 millimetres high and the like.

### 5.5 Unenclosed Covered Area [UCA]

The sum of all such areas at all building floor levels, including roofed balconies, open verandahs, porches and porticos, attached open covered ways alongside buildings, undercrofts and usable space under buildings, unenclosed access galleries (including ground floor) and any other trafficable areas of the building which are not totally enclosed by full height walls. Computed by measuring the area between the enclosing walls or balustrade (i.e. from the inside face of the UCA excluding the wall or balustrade thickness). When the covering element (i.e. roof or upper floor) is supported by columns, is cantilevered or suspended, or any combination of these, the measurements shall be taken to the edge of the paving or to the edge of the cover, whichever is the lesser. UCA shall not include eaves overhangs, sun shading, awnings and the like where these do not relate to clearly defined trafficable covered areas, nor shall it include connecting or isolated covered ways. (See N.P.W.C).

## 6.0 Special Building Types [Method of Measurement]

### 6.1 Backpacker Hostels [GBA]

To be measured using the GBA method. It is also desirable to show both the number of rooms and beds in the description, and indicate whether there is a manager's residence or room, number of bathrooms (showers, toilets per bed), kitchens, living room, laundry area.

### 6.2 Banks (Retail) [GLAR]

To be measured in accordance with the GLAR Method. The building area should include vaults and substantial masonry walls.

### 6.3 Boarding (Guest) Houses [GBA]

To be measured using the GBA method. It is also desirable to show both the number of rooms (singles, doubles, etc) in the description, and indicate whether there is a manager's residence or room, number of bathrooms, kitchens, and laundry area, etc.

### 6.4 Bottle Shops [GLAR or GBA]

If the bottle shop (same as liquor store) is a stand-alone operation it should be measured in accordance with the GLAR method. However, if

it is part of a larger hotel operation, it should be measured using the GBA method.

### 6.5 Carparks (Commercial) [GBA]

To be measured on GBA basis. It is desirable to provide a separate break-up of the parking bays/ vehicle circulation area and the service areas (office toilets and amenities). The parking bays/vehicle circulation can be analysed on the number of cars to gross floor area to show the efficiency ratio (e.g. 1 space to 28 sq.m of gross floor space). Where there is a 'split floor' system, the GBA is calculated on the total gross floor plate area.

### 6.6 Cinemas [GLAR or GLA]

Freestanding cinemas should be measured on a GLA basis. Cinemas located in retail and commercial complexes should be measured on a GLAR basis. Measurement should include the foyer, box office, concessions sales areas, toilets, back of house, 'bio box' or projection area and cinema auditorium area. The seating capacity and cinema screen numbers is usually part of the market analysis.

### 6.7 Clubs (Recreation) [GBA]

Clubs should generally be measured using the GBA method. A description can provide a break-up of the uses in the club including reception, office administration and boardroom areas auditorium, restaurants, gaming areas, recreation facilities such as bowling greens, etc.

### 6.8 Hotels (Accommodation) [GBA]

The accommodation component of hotels should be measured on a GBA basis. A further description of the upper floors is desirable showing the number of rooms, average rooms sizes and net efficiency between the room sizes and common areas (service core and lifts, corridors, linen rooms, etc) on typical upper floors. Specialised uses such as retail arcades, which are attached to the hotel, should be measured as separate components and in accordance with the PCA retail method of measurement.

### 6.9 Industrial [GLA]

To be measured using the GLA method

### 6.10 Liquor Stores [GLAR or GBA]

If the liquor store (same as bottle shop) is a stand-alone property it should be measured in accordance with the GLAR method. However, if

it is part of a larger hotel operation, it should be measured using the GBA method.

### 6.11 Motels [GBA]

To be measured using the GBA method. It is desirable to show separate areas for the following:

- Managers Residence
- Office and Back of House
- Motel Rooms
- Restaurant
- Facilities (games room, pool, etc)

(Market analysis is usually on a per room and/or per bed basis.)

### 6.12 Nursing Homes & Hostels [GBA]

To be measured on a GBA basis. It is desirable to show separate areas for the following:

- Wards (including approved and actual number of bedrooms/beds)
- Managers Residence
- Offices
- Garages
- Parking Spaces Facilities and common area

(A market analysis may also show a component break-up based upon the various levels of care.)

### 6.13 Offices [NLA]

To be measured using the NLA method.

### 6.14 Residential (Houses, Units, Town Houses, Flats)

#### 1. [GBA]

Residential property is generally measured on a GBA basis (non strata) or SA (strata) basis where there is a registered strata plan. Investment flats which are not on strata title are usually shown on a GBA basis.

#### or 2. [EMA]

For the purpose of analysis or costing, the GBA can be converted to an Equivalent Main Area (EMA) using the example percentages shown below:

Main Structure - Masonry (example only)

- Solid construction -under main roof 100%
- Solid Construction -skillion roof 75%
- Timber, cement sheet, iron or 75%

glass wall under main roof

- Timber, cement sheet, iron or glass wall under skillion roof 66%
- Unlined timber framed walls 33%

Main Structure- Timber or Steel Framed

- (with external cladding such as timber, cement sheets, etc)
- Solid construction under main roof 100%
- Solid construction under skillion roof 75%

General (masonry, timber or steel framed)

- Porch under main roof 33%
- Verandah under main roof 33%
- Verandah not under main roof but true to style 25%
- Extensive Verandah (e.g. homesteads) 20%
- Galvanised Iron verandah attached to dwelling 0%

Car Parking - (Dwellings Only)

- Garage under main Roof 66%
- Basement Garage and under main roof 66%
- Carport under main roof with brick pillars or timber posts 33%
- Carport under main roof with parapet wall 50%
- Skillion galvanised iron or timber post carport attached to dwelling 0%
- Space under elevated house 0%

These percentages may vary between States and Territories and from region to region due to variations in relative costs.

### 6.15 Restaurants [GLAR or GBA]

If a restaurant is a stand alone operation it should be measured in accordance with the GLAR method. However, if it is an integral part of a larger hotel operation, it should be included in the measurement of the hotel using the GBA method.

### 6.16 Retirement Villages [GBA]

To be measured showing separate areas for the following:

- Residential units
- Garages
- Managers Residence

- Offices
- Facilities and common areas

## 6.17 Rural Buildings [GBA]

Rural buildings should generally be measured on a GBA basis. Note homesteads should be measured in accordance with the residential guideline. In addition the following information may be used as a further unit of description/comparison.

Type	Additional Unit Of Description/Comparison
<i>Air Strips</i>	Length
<i>Bore</i>	Flow rate (litres per second)
<i>Broiler Sheds</i>	Bird Capacity (number of mature birds accommodated comfortably)
<i>Dairies</i>	Capacity Per Head at any one point in time
<i>Dams</i>	Volume (per cubic metres)
<i>Fruit Drying Racks</i>	Length (and Capacity)
<i>Grain Storage Sheds</i>	Capacity (Tonnes)
<i>Grain Silos</i>	Capacity (Tonnes)
<i>Haysheds</i>	Expressed as either square or round bale capacity
<i>Homestead</i>	See definitions in Residential
<i>Piggeries</i>	Capacity Per (Lactating) Sow at any one point in time
<i>Pipelines</i>	Length (in metres) and Diameter (express in mm)
<i>Shearers Quarters</i>	Number of Shearers plus Cook accommodation
<i>Shearing Sheds</i>	Number of Stands or Per Head Basis
<i>Stables</i>	Number of Stalls i.e. individually subdivided stalls
<i>Stock Yards</i>	Maximum capacity ie, the number of head (cattle or sheep) the yards could hold & remain workable and /or number of panels/rails within each panel
<i>Tanks</i>	Volume in Litres Capacity
<i>Winery SS Store Litres</i>	
<i>Winery Barrel Store</i>	Barrel Capacity
<i>Windmills</i>	Diameter (windmill head) & Height (of Tower)

## 6.18 Service Stations [GLAR]

Service stations are generally to be measured in accordance with the GLAR method. However, some larger service centres may need to be broken into other categories as follows:

<i>Office</i>	NLA Square Metres.
<i>Workshop</i>	GLA Square Metres.
	Number of Work Bays.
<i>Other</i>	Number of Pumps
<i>Canopies</i>	Covered Roof Area Square Metres
<i>Tanks</i>	Number and volume in litres
<i>Hardstand/Parking</i>	Square Metres

## 6.19 Shopping Centres, Shops (Strip shops, In commercial Buildings, semi-detached, terraces) [GLAR]

To be measured using the GLAR method.

### Showrooms [GLA]

To be measured using the GLA method.

### Supermarkets (Freestanding) [GLA]

To be measured using the GLA method.

### Warehouse [GLA]

To be measured using the GLA method