



THE UNIVERSITY
of ADELAIDE

METHODS OF AREA MEASUREMENT

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revision

-

comment

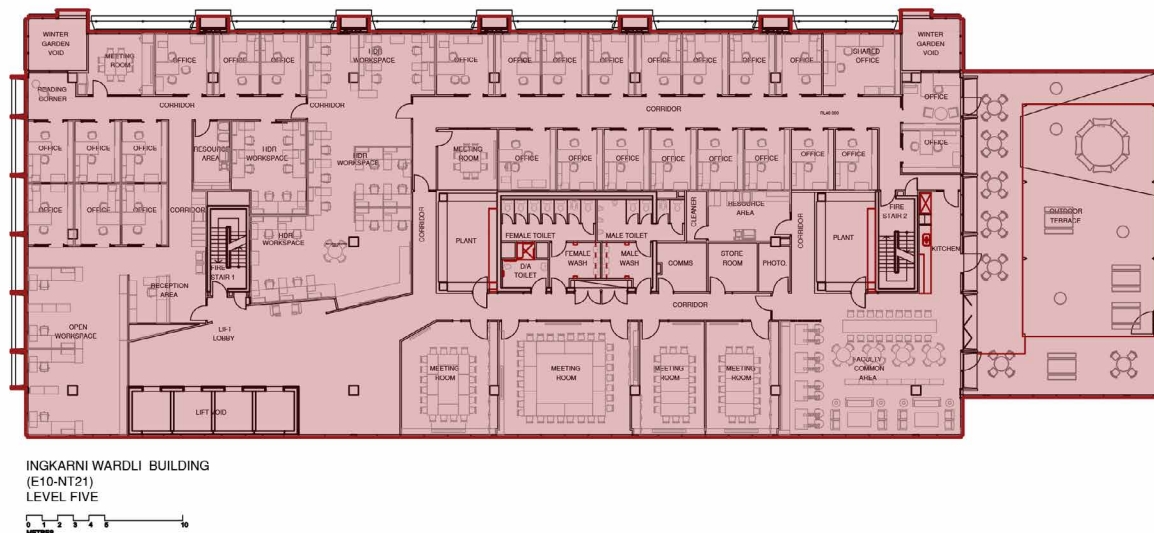
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2019-09-17

Generic area definitions

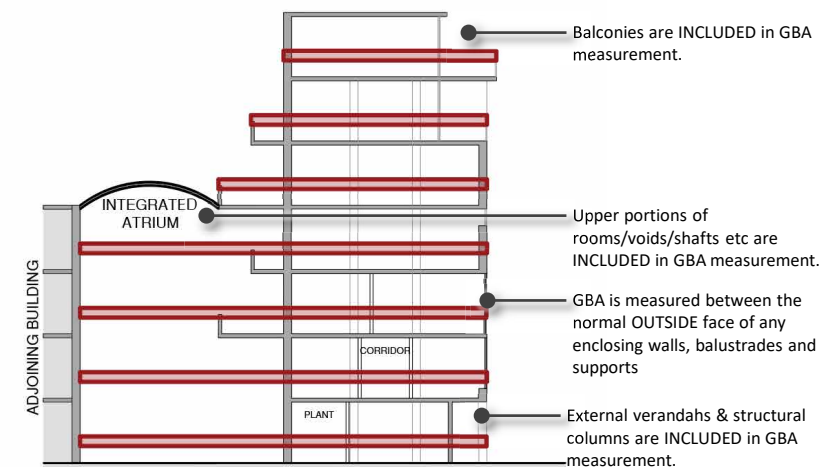
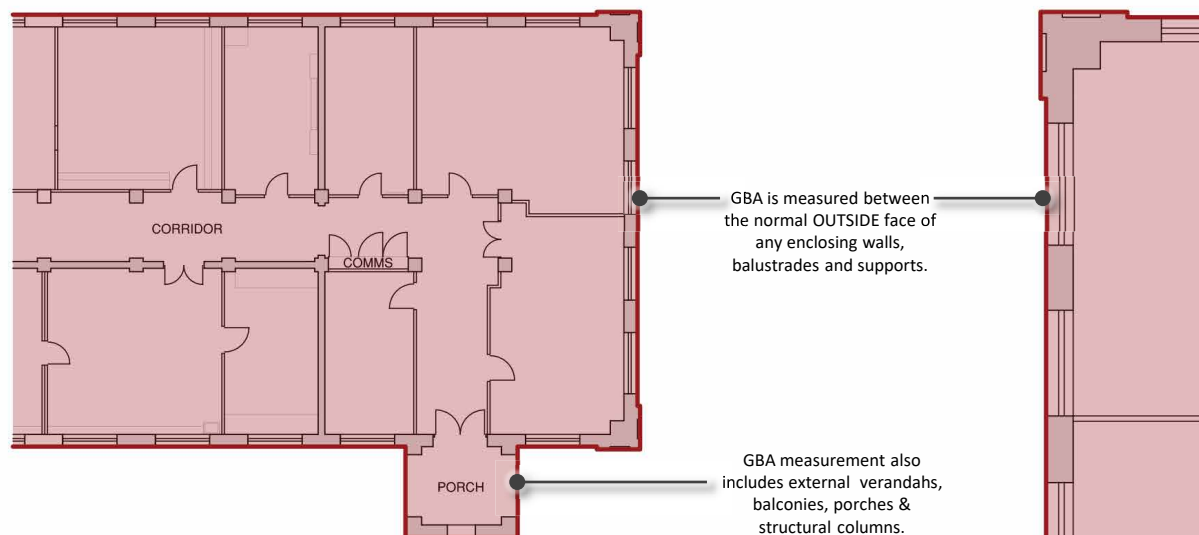
GBA – UFA – NLA – FECA – UCA - GFA

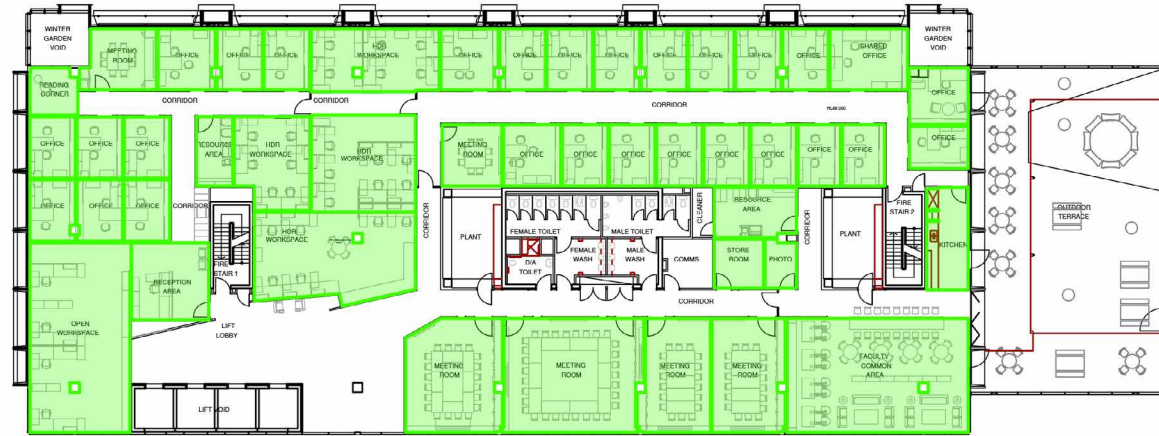


Gross Building Area

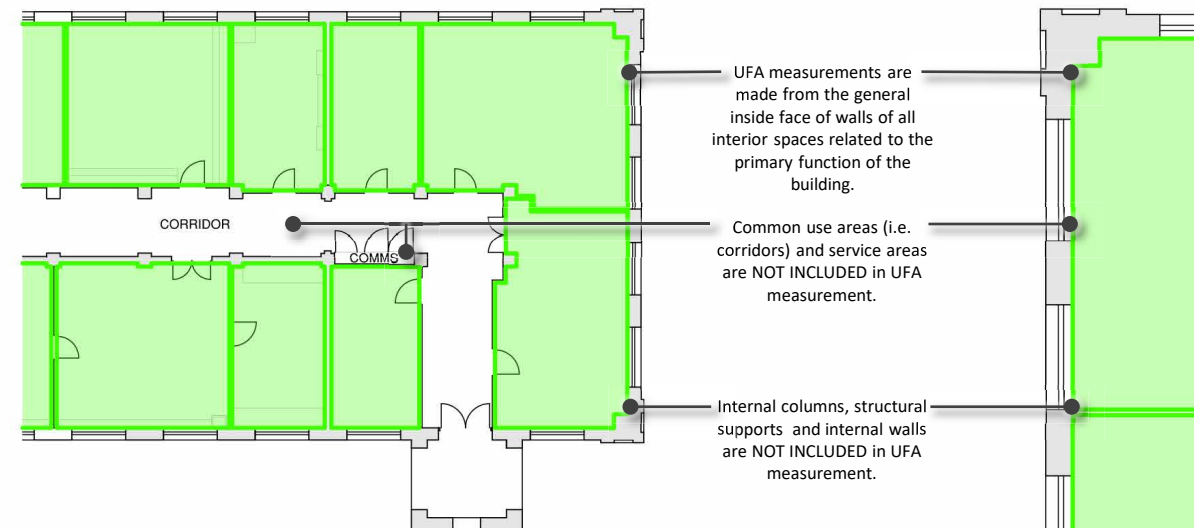
The total enclosed and unenclosed area of the building at all building floor levels measured between the normal OUTSIDE face of any enclosing walls, balustrades and supports

Source: www.ofm.mq.edu.au/PDF/s_04_measurement.pdf





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LEVEL FIVE



Usable Floor Area

Note: Below is the true UFA definition. Please see **Section 2** for how it is applied at the University of Adelaide.

The sum of the floor areas measured at floor level from the general inside face of walls of all interior spaces related to the primary function of the building. This will normally be computed by calculating the 'Fully Enclosed Covered Area' (F.E.C.A.) and deducting all of the following areas supplementary to the primary function of the building: *deductions*

(a) Common Use Areas

All floored areas in the building for circulation and standard facilities provided for the common use of occupiers, tenants and/or the public such as lobbies and fire escapes, verandahs and balconies, corridors and passages, toilet and rest rooms areas, cloak and locker areas, cleaner's rooms including stores and cupboards, tea making and similar amenities areas.

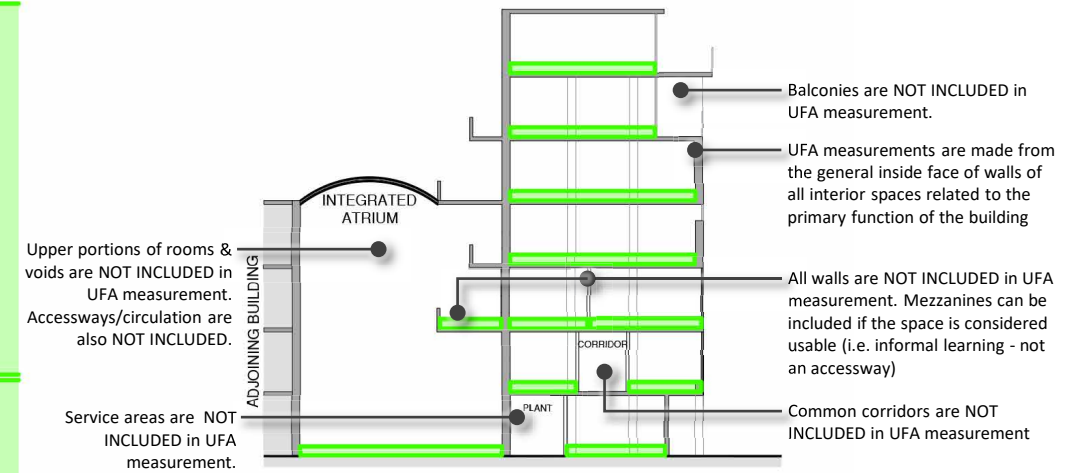
(b) Service Areas

All areas set aside for building plant supplying services and facilities common to the building for the use of occupants, tenants and/or public, such as mechanical plant and equipment rooms, electrical equipment and switchrooms, tank rooms, lift motor rooms, meter cupboards, telecommunication switchrooms, refuse collection areas, loading bays and all car parks including access ways thereto. However, some ancillary areas should be included such as plant rooms housing equipment directly used in the department and workshops.

(c) Non-habitable Areas

All non-habitable building space such as that occupied by internal columns and other structural supports, internal walls and permanent partitions, lift shafts, service ducts and the like.

Source: www.ofm.mq.edu.au/PDF/s_04_measurement.pdf



Net Lettable Area

Note: Below is the true NLA definition. Please see **Section 2** for how it is applied at the University of Adelaide.

The net lettable area of a building is the sum of its whole floor lettable areas.

The whole floor net lettable area is calculated by:

Taking measurements from the internal finished surfaces of permanent internal walls and the internal finished surfaces of dominant portions of the permanent outer buildings walls.

Included in the lettable area calculation are:

Window mullions, window frames, structural columns, engaged perimeter columns or piers, fire hose reels attached to walls and additional facilities specially constructed for or used by individual tenants.

Excluded from the lettable area calculation are:

Stairs, accessways, fire stairs, toilets, recessed doorways, cupboards, telecommunications cupboard, fire hose reel cupboards, lift shafts, escalators, smoke lobbies, plant / motor rooms and tea rooms and other service areas where all are provided as standard facilities in the building. Lift lobbies where lifts face other lifts, blank walls or areas listed above as excluded. Areas set aside for the provision of all services such as electrical or telephone ducts and air-conditioning risers to the floor.

Areas dedicated as public spaces or thoroughfares such as foyers, atria and accessways in lift and building service areas. Areas and accessways set aside for use by service vehicles and for delivery of goods where such areas are not for the exclusive use of occupiers of the floor or building. Areas for car parking. Areas with less than 1.5m clearance.

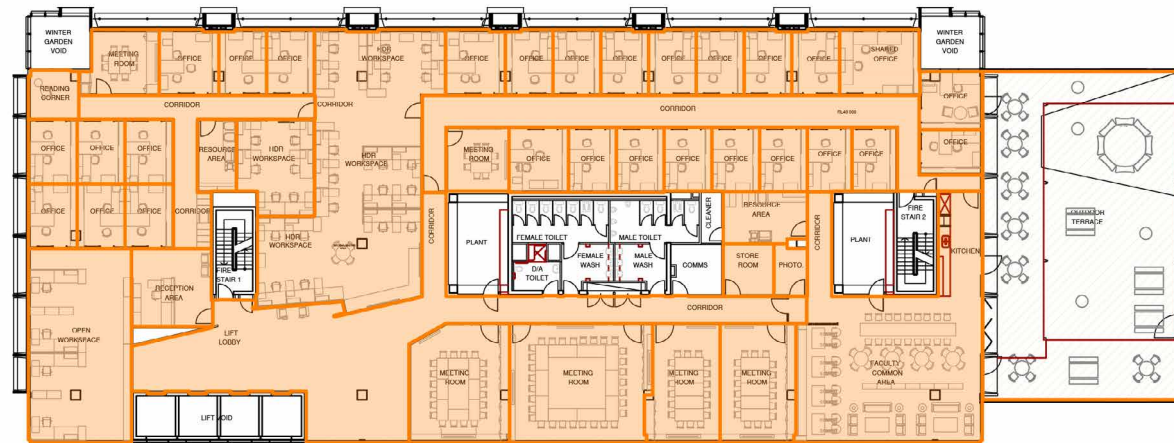
Net Lettable areas - Subdivided floors:

As above but measure to the centre line of inter-tenancy walls or partitions except where walls or partitions adjoin public areas such as lobbies or corridors, in which case measure to the line of the dominant portion of their public area faces.

Treatment of Balconies, Verandahs etc:

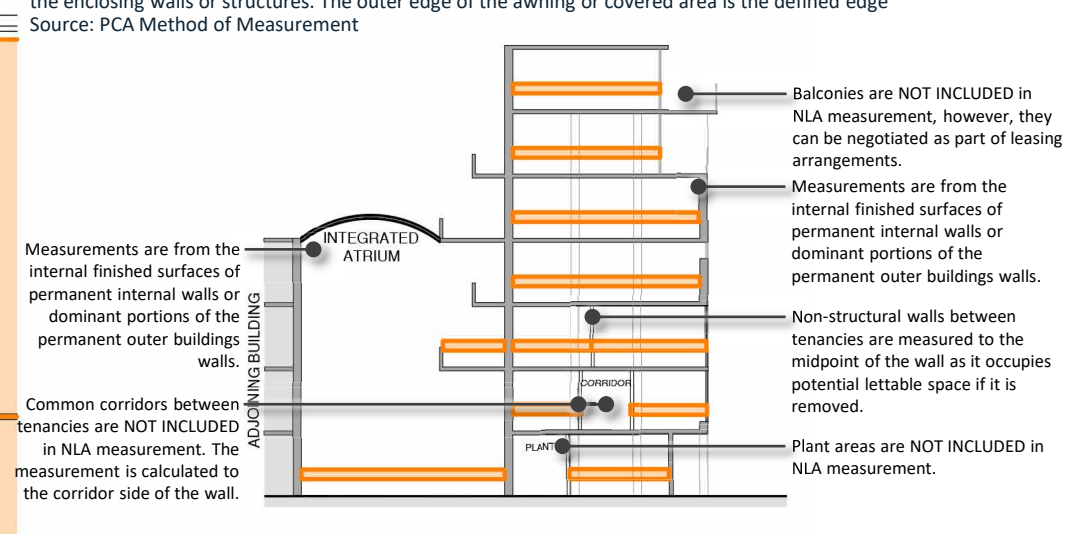
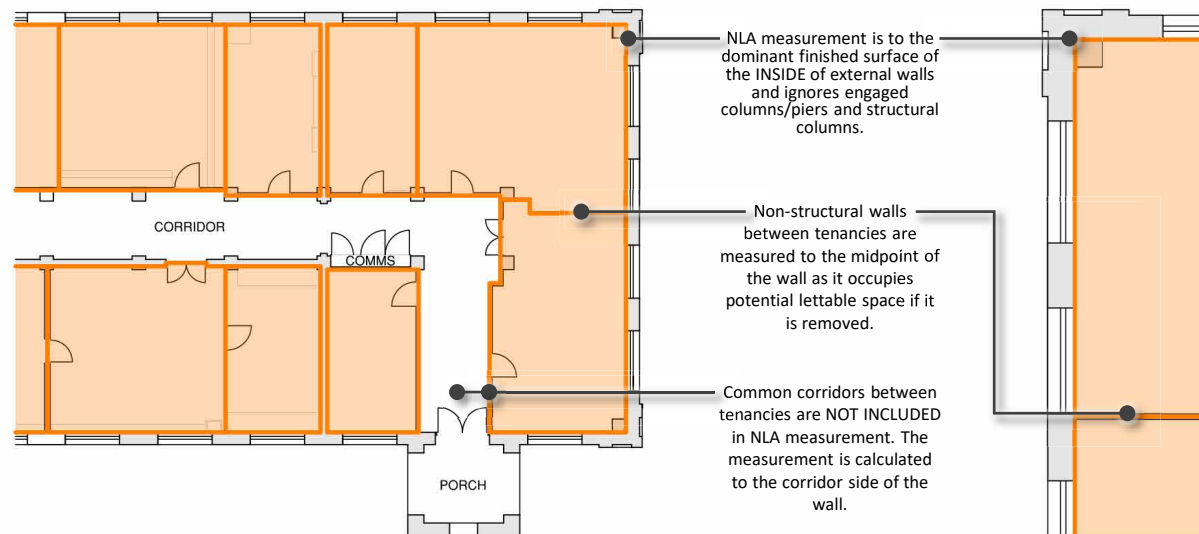
Balconies, terraces, planter boxes, verandahs, awnings and covered areas should be excluded from tenancy area calculations but may be separately identified for negotiating rentals. Areas should be measured to the inside face of the enclosing walls or structures. The outer edge of the awning or covered area is the defined edge

Source: PCA Method of Measurement



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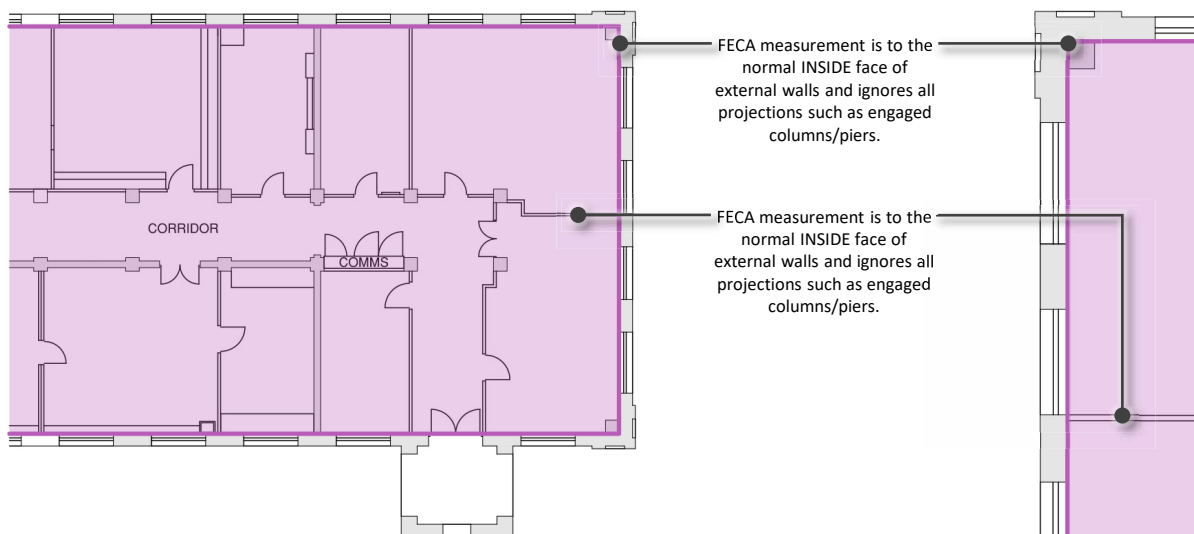
0 2 4 6
METRES





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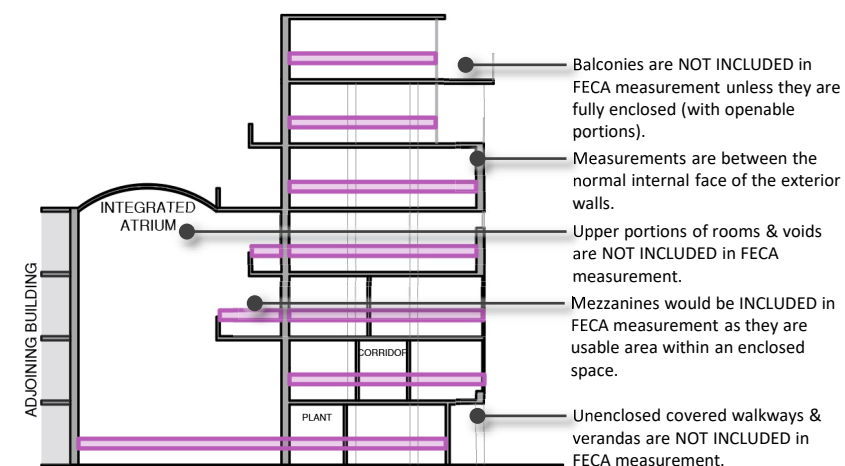
0 1 2 3 4 5 6 7 8 9 10
METRES



Fully Enclosed Covered Area

The sum of all such 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.

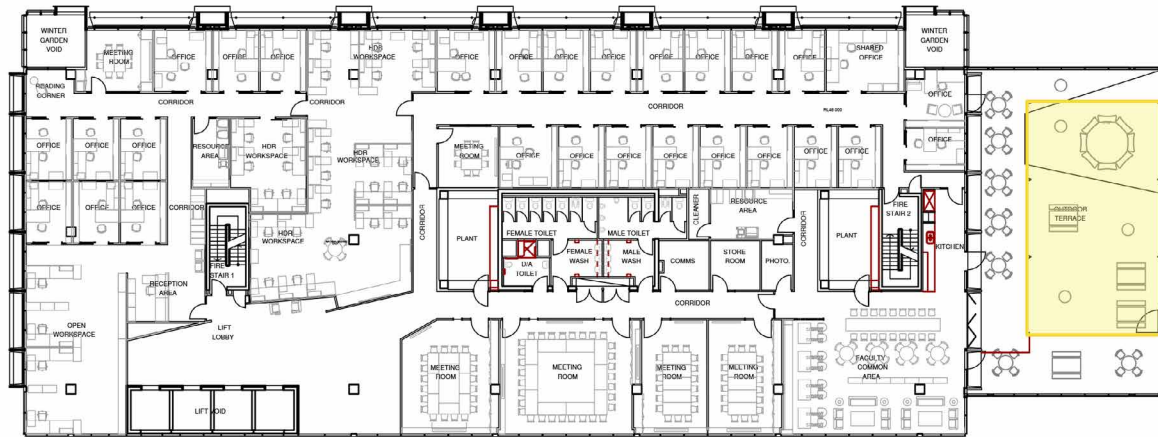
Source: Source: www.ofm.mq.edu.au/PDF/s_04_measurement.pdf



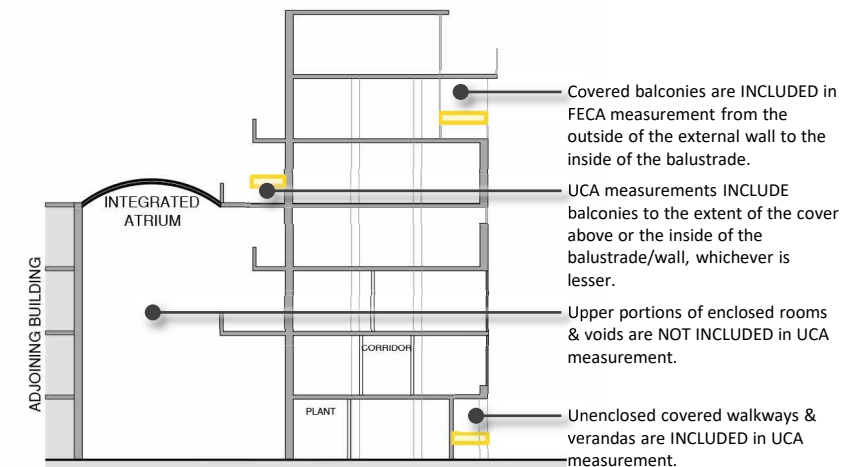
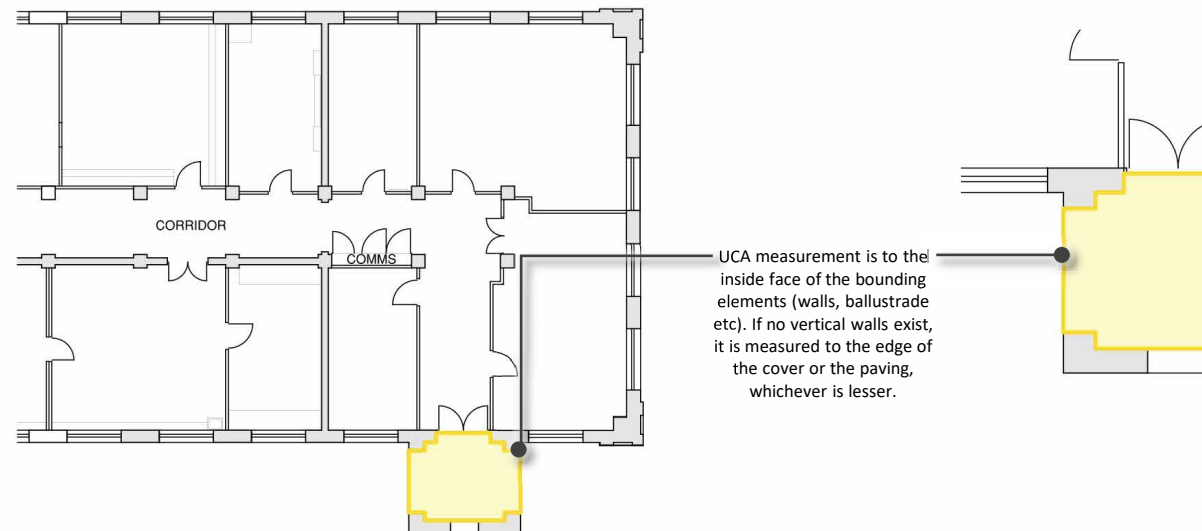
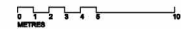
Unenclosed Covered Area

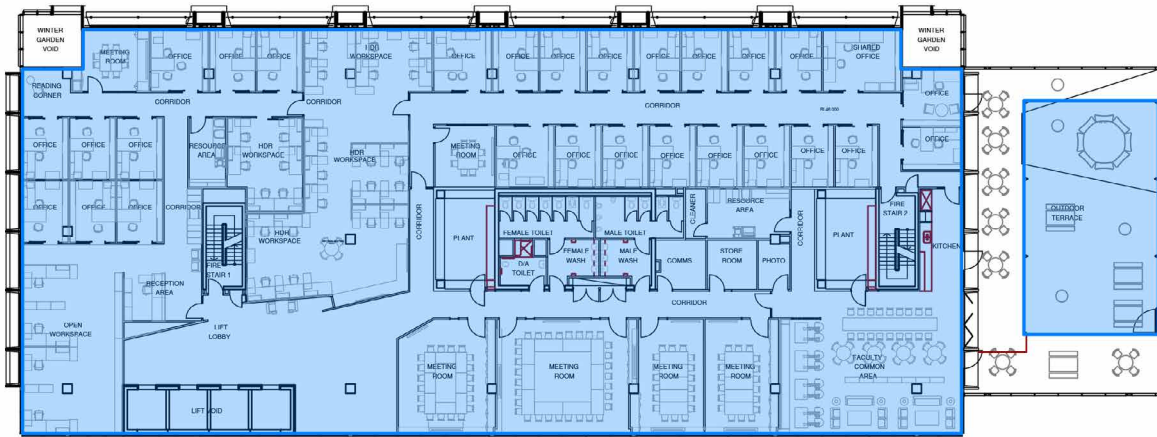
The sum of all such areas at all building floor levels, including roofed balconies, open verandahs, porches and porticos, attached open covered ways alongside buildings, undercrofts and usable space under buildings, unenclosed access galleries (including ground floor) and any other trafficable covered 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 U.C.A. excluding the wall or balustrade thickness). When the covering element (i.e. roof or upper floor) is supported by columns, is cantilevered or is 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, U.C.A. 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.

Source: www.ofm.mq.edu.au/PDF/s_04_measurement.pdf



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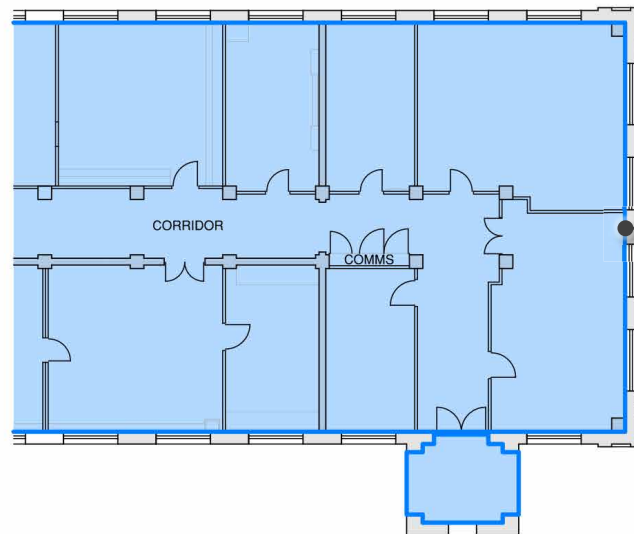


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LEVEL FIVE

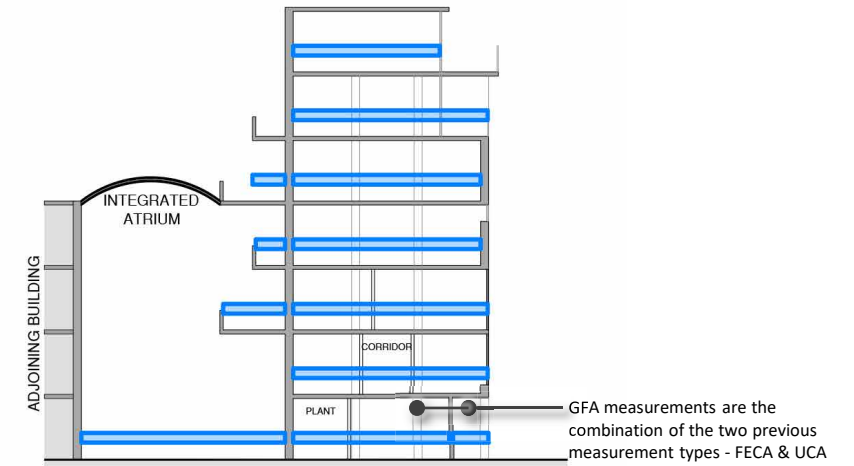
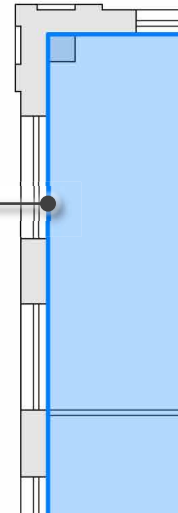
0 1 2 3 4 5 6
METRES

Gross Floor Area

The sum of the 'Fully Enclosed Covered Area' and 'Unenclosed Covered Area' as defined (previous pages).



GFA measurement is the combination of the two measurement types above - FECA & UCA. It is measured to the inside face/edge of the bounding elements.

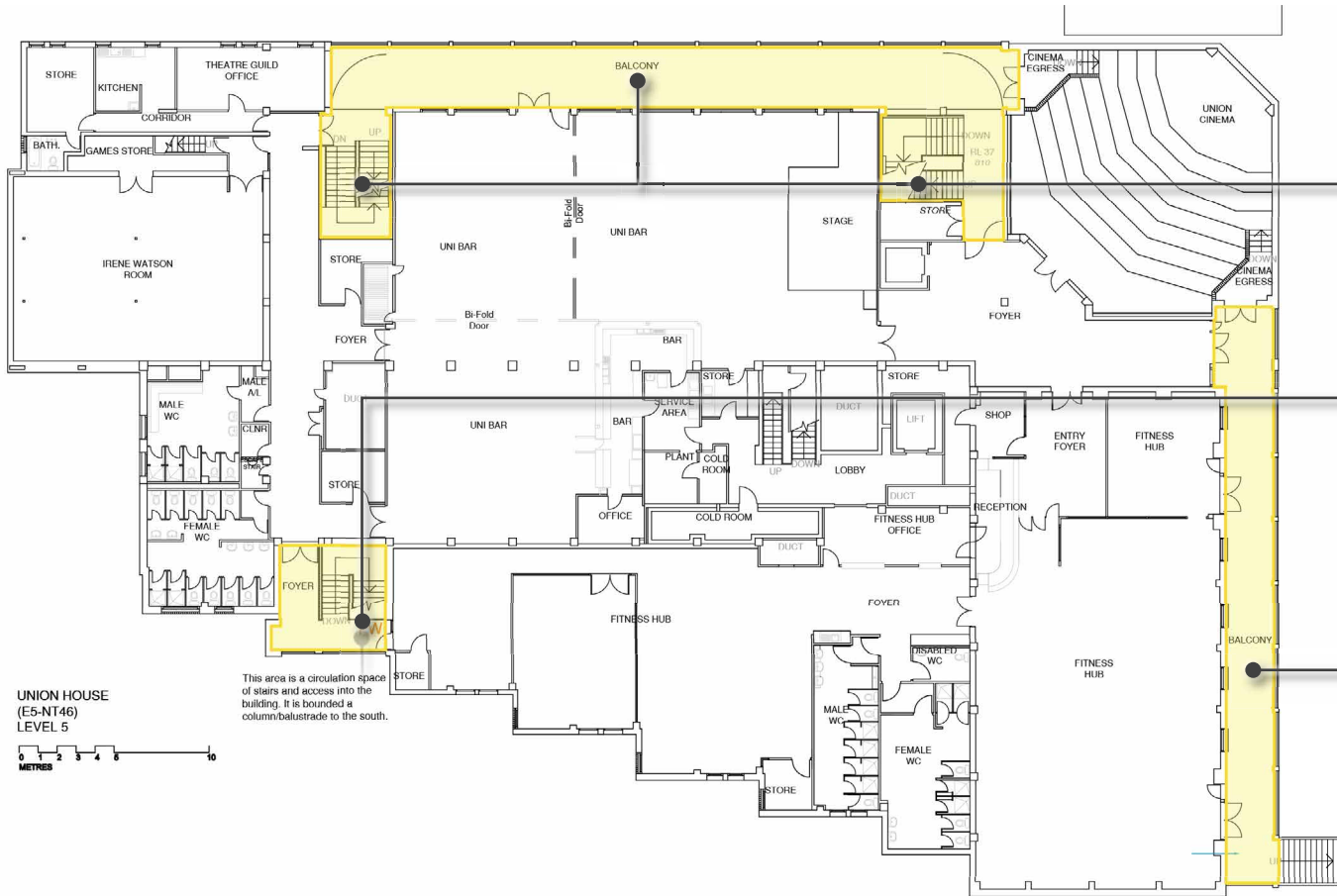


Measured area examples

University of Adelaide specific

Unenclosed Covered Area Example

Examples of UCA, as per the definition, applied to Level 5, Union House, North Terrace Campus.



UCA Example A:
This area is a balcony/verandah that is used as outdoor dining space for the bar. The adjacent stairwells and circulation space are also open to the elements, only screened to divide the spaces. It is bounded by the exterior walls to the south and columns/balustrade to the north. The area is covered by the balcony/floor above.



UCA Example B:
This area is a circulation space of stairs and access into the building. It is bounded by a column/balustrade to the south.

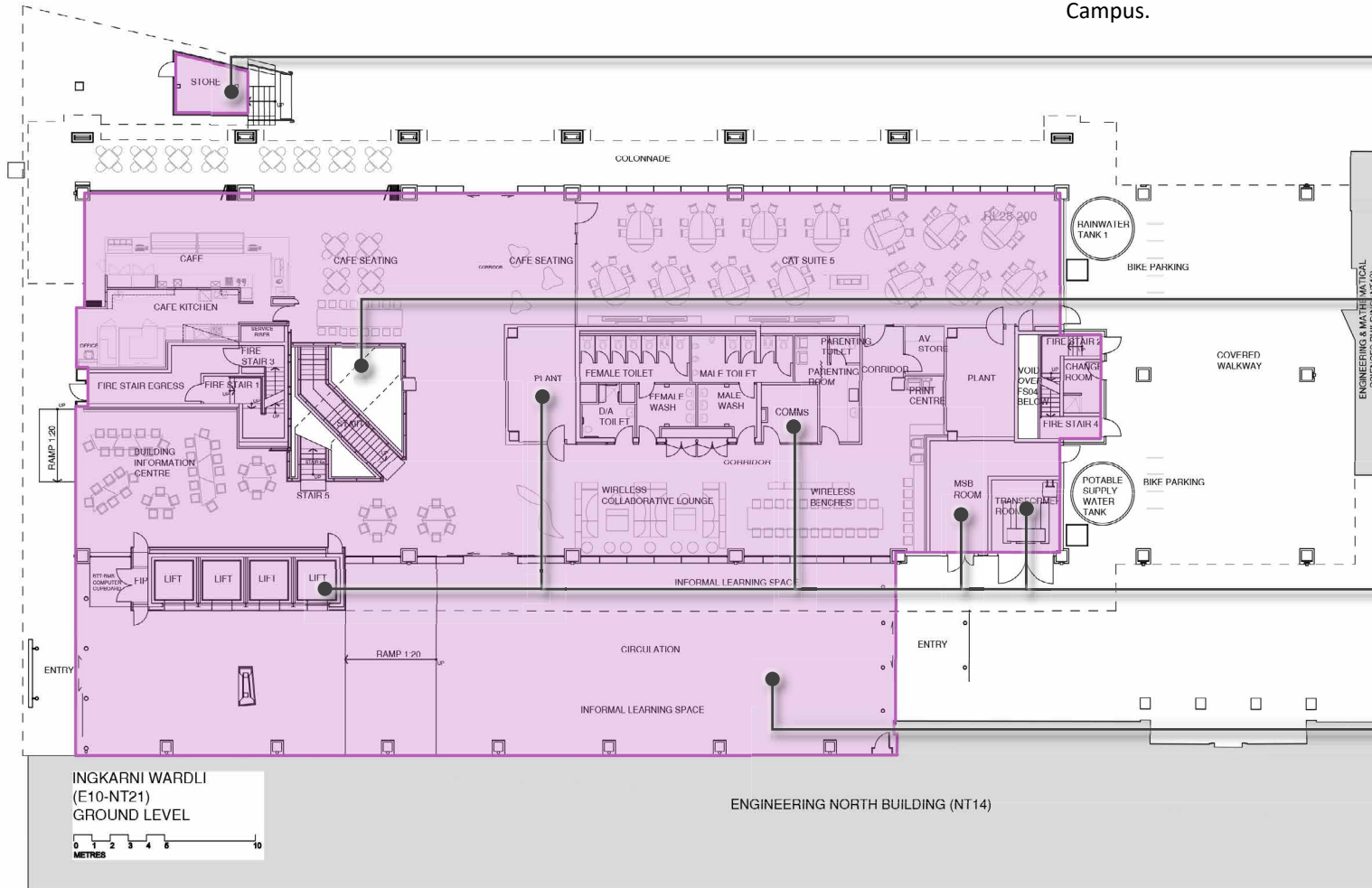


UCA Example C:
This area is a balcony/verandah that is used as a main access route into the building. It is bounded by the exterior walls to the west and columns/balustrade to the east. The area is covered by the main roof.



Fully Enclosed Covered Area Example

Examples of FECA, as per the definition, applied to Ground Level, Ingkarni Wardli, North Terrace Campus.



FECA Example A:
Although it is separated from the main building envelope, the storage area under the external stairway would be included as a Fully Enclosed Covered Area as it is part of the overall building.



FECA Example B:
The void surrounding/above the stairs from the basement level are NOT included in FECA measurement as they are 'net open areas of upper portions of rooms'.



FECA Example C:
Equipment rooms, lift shafts, vertical ducts & staircases are all included in FECA measurement.

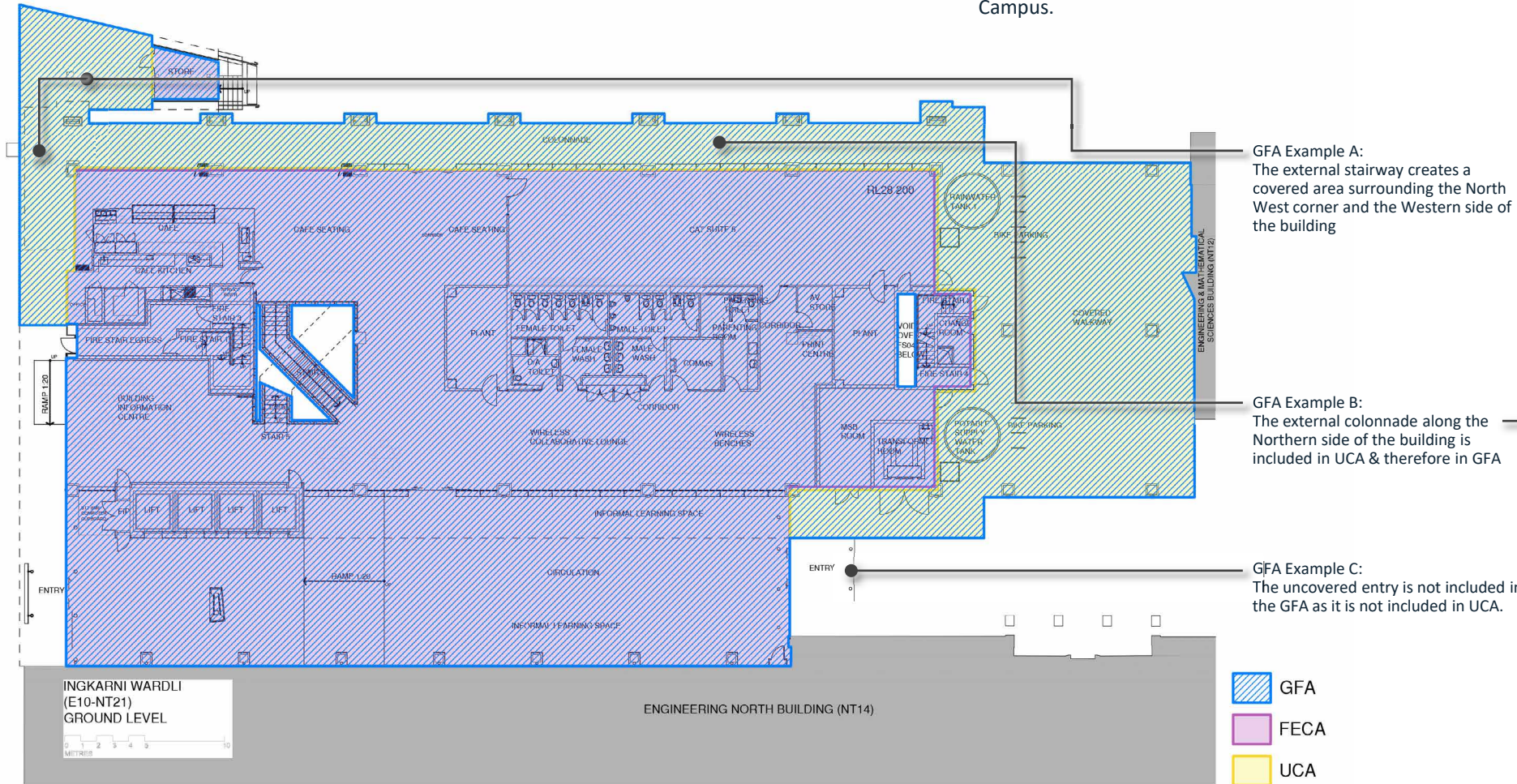


FECA Example D:
The atrium between buildings is included in FECA measurement. It is enclosed & is regularly used for circulation & informal learning.



Gross Floor Area Example

Examples of GFA, as per the definition, applied to Ground Level, Ingkarni Wardli, North Terrace Campus.

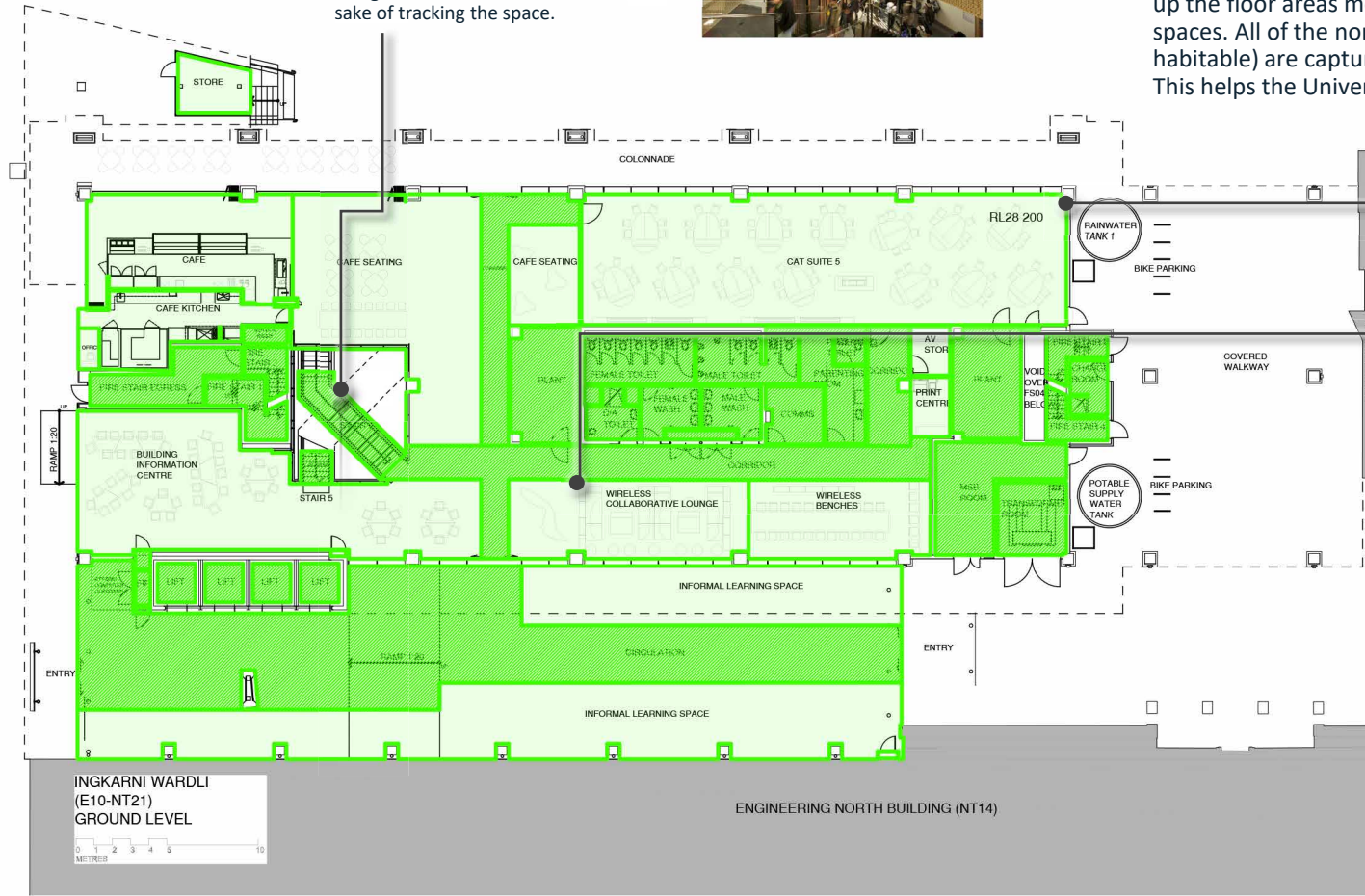


Usable Floor Area Example

Examples of UFA as applied at the University of Adelaide.

The university captures all spaces using the UFA measuring principals, room by room, summing up the floor areas measured at floor level from the general inside face of walls of all interior spaces. All of the normally deducted areas from UFA measurement (common use/service/non-habitable) are captured but separated out by being assigned an unusable room type category. This helps the University track all spaces within each building regardless of use.

UFA Example B:
The circulation is normally not included in UFA measurement, however, the University measures these spaces (stairs/corridors) and categorizes them as 'unusable' for the sake of tracking the space.



UFA Example B:
The measurement of usable space such as this computer room is to the normal inside face and around all columns/ piers etc.



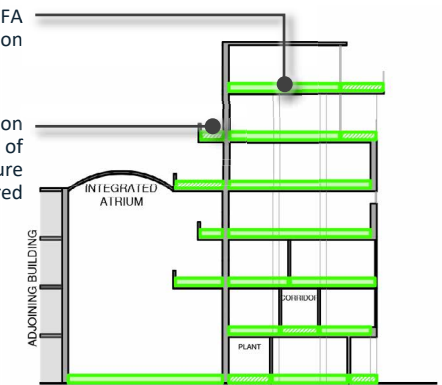
UFA Example C:
Not all circulation ('unusable') space will be defined by walls. A change in floor covering can define the edge or even simply a clear pathway within a room.



UFA
- as per the definition

UFA by exception
- used by Uni of
Adelaide to make sure
all spaces are captured

- UFA (as per the definition)
- UFA by exception (unusable in definition)



Office & Workstation Area Example

Examples of UFA as applied at the University of Adelaide.



This utilities space is used for all elements that support an open office such as storage tambours, photocopier, bins etc. It is considered true UFA space.

The circulation space between workstations is counted as part of the workstations area. This is divided between the adjoining workstations.

Space that is set aside for building services is to be measured using UFA principles but classified as 'unusable' space.

This secondary open plan office circulation space allows access from the doors to all rows of workstations. This is to be measured using UFA principles but classified as unusable space.*

This photocopy room, tea room & secure store in this scenario are all occupied by the same group, therefore the circulation spaces is included as part of their 'usable' area as it is exclusively for their use.*



* Capturing circulation space within the office areas reflects the true nature of the space usage for planning & reporting purposes i.e. the office needs this space to function

Open Plan Office Area Example

Open plan offices are a great example of how the University captures areas with UFA measuring principles but captures all spaces, regardless of meeting the definition of inclusions/exclusions.

Service risers are captured as 'unusable' UFA at every level of the building.

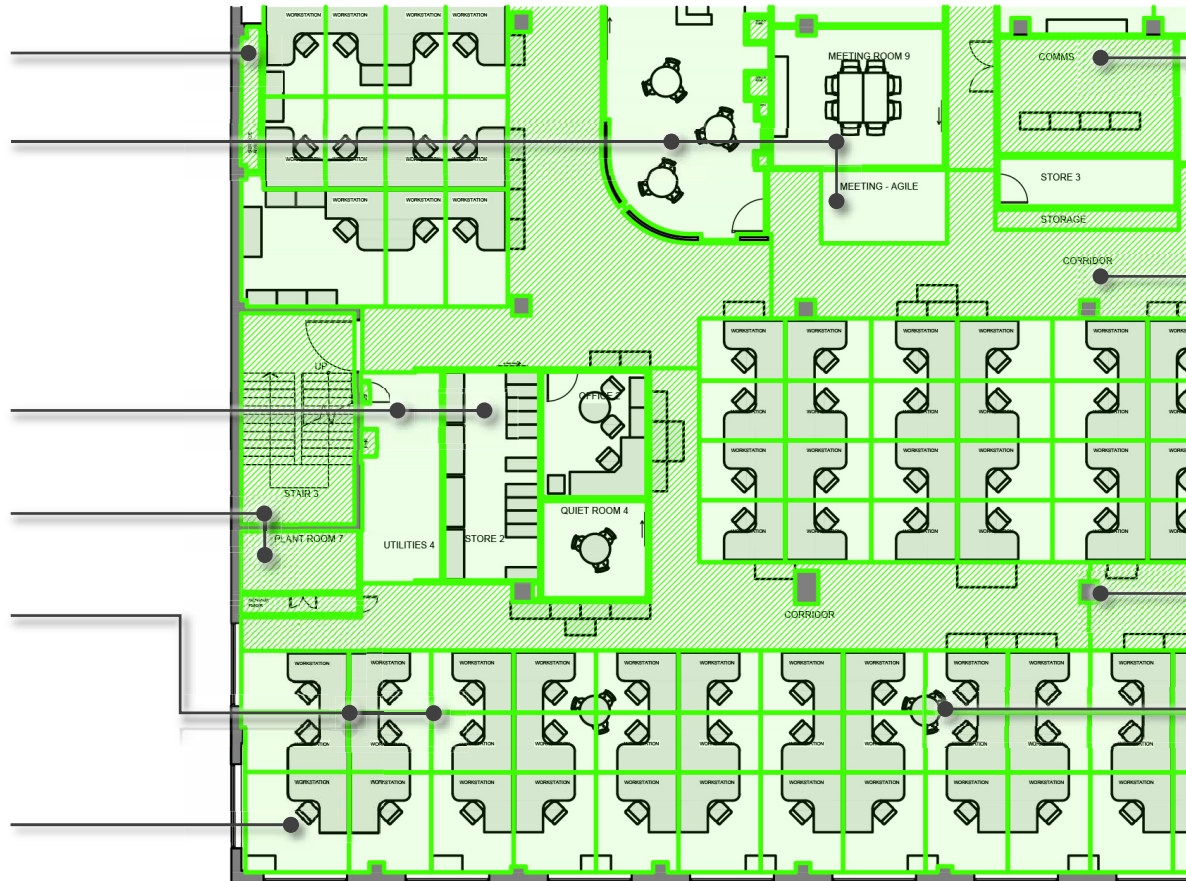
Break out and meeting rooms are considered as UFA as they are usable spaces occupied by the 'tenant'.

Store rooms and general utility spaces are considered as UFA as they are usable spaces occupied by the 'tenant'.

Stairs and plant rooms are captured as 'unusable' UFA to allow for tracking and assignment of assets to the space.

The division of the individual workstations areas is based on the edge of the desks or the centre-line of the joining partition. The 'circulation' space around each desk is then evenly divided between the workstation and those adjoining/adjacent.

Each workstations UFA is measured to include its individual circulation space and any relevant supporting area such as space occupied by tambours/ filing cabinets/ loose furniture & FF&E.



Comms rooms are captured as 'unusable' UFA to allow for tracking and assigned to ITDS as the occupants.

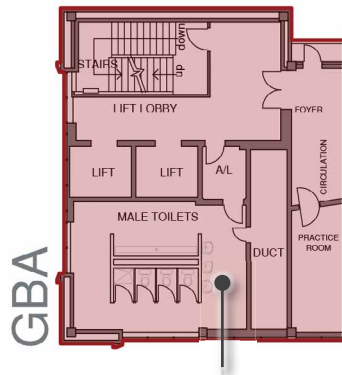
Circulation/corridors are captured as 'unusable' UFA to allow for tracking and assignment of 'tenants' (occupants) to the space. In open plan offices, circulation is 'owned' by the group occupying the adjoining UFA (workstations/meeting rooms etc). Major access routes (egress) will not be assigned to a particular group as it is shared by all

Columns & engaged piers are NOT INCLUDED in UFA measurement.

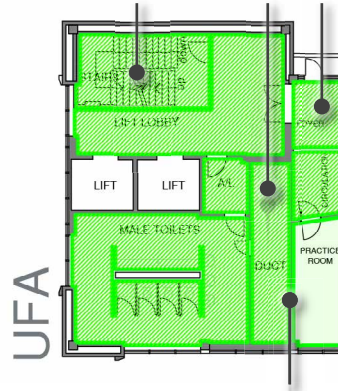
A separate UFA space is not measured for incidental meeting & storage spaces such as these examples. It is understood that the furniture may move at anytime and if it is being used, it will be by the occupants of who's space it occupies.

UFA (as per the definition)
UFA by exception (unusable in definition)

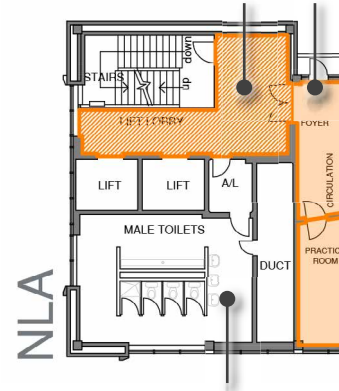
Lift Shaft & services Area Examples



All toilets, ducts, service areas, lift shafts, stairs etc are INCLUDED in GBA. Measurement is taken from the outside face of the external walls



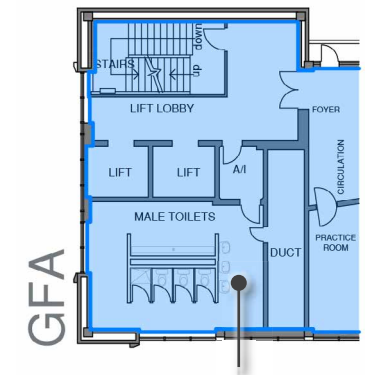
In this example, the practice room is the only 'true' UFA space.



All toilets, ducts, service areas, lift shafts, fire stairs (core services) are NOT INCLUDED in NLA measurement.



FECA measurement covers the whole floor plate up to the normal inside face of the external walls. All light wells, upper portions of rooms etc are NOT INCLUDED.



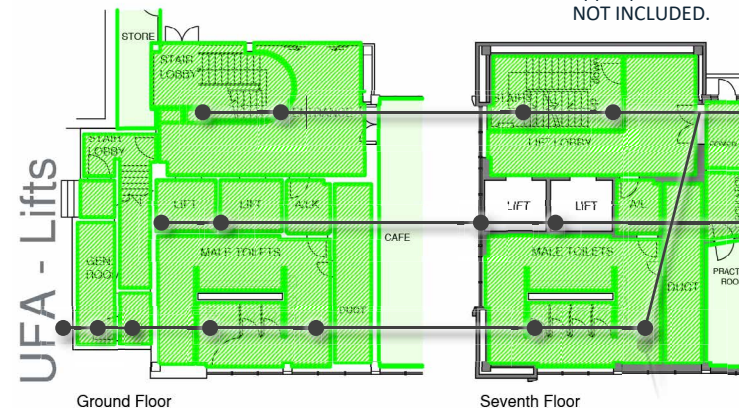
As there is no UCA in this example, GFA is the same as FECA (GFA = FECA + UCA).



Toilets



Foyer

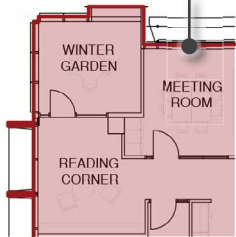


All service & circulation areas are measured as 'unusable' UFA on all levels as they may vary from floor to floor.

The university only tracks lifts as 'unusable' UFA at the ground floor or main level of entry to the building. All upper levels (& lower if applicable) are left blank with no area measured. If a dedicated lift motor room appears on a plan it is also measured as 'unusable' UFA for the purpose of tracking the space i.e. the lift cart.

Voids & lightwell Area Examples

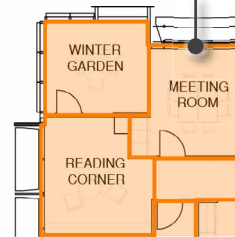
GBA measurement is to the normal OUTSIDE face of the external walls & supports. Sun shading is NOT INCLUDED.



UFA measurement is to the normal INSIDE face of the external/internal walls & supports.



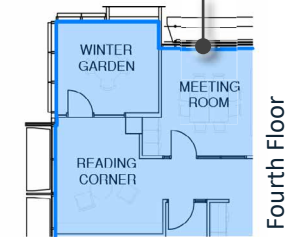
NLA measurement is to the dominant INSIDE face of the external walls. In this example it is the glass line.



FECA measurement is to the normal INSIDE face of the external walls.

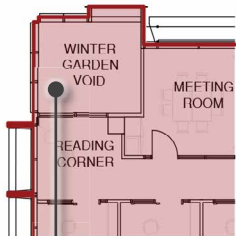


As there is no UCA in this example, GFA is the same as FECA (GFA = FECA+UCA).



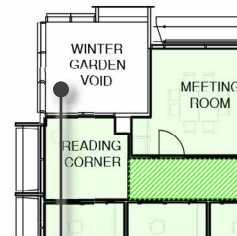
Fourth Floor

GBA



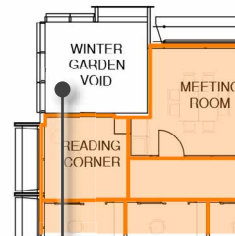
All voids & upper portions of rooms are INCLUDED in GBA measurement.

UFA



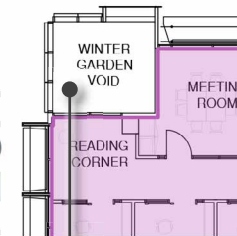
All voids & upper portions of rooms are NOT INCLUDED in UFA measurement.

NLA



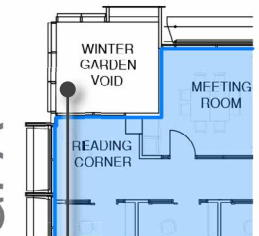
All voids & upper portions of rooms are NOT INCLUDED in NLA measurement.

FECA



All voids & upper portions of rooms are NOT INCLUDED in FECA measurement.

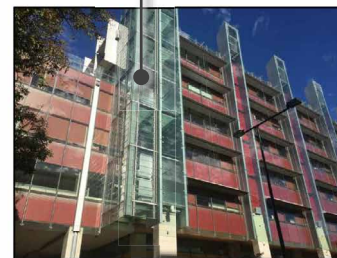
GFA



All voids & upper portions of rooms are NOT INCLUDED in GFA measurement.

Fifth Floor

Winter Garden room



Winter Garden rooms with voids above – viewed from outside

Stair Area Examples

GBA is NOT INCLUDED under the stairs as it has no bounding walls/balustrades. The structure is picked up on the level above.

GBA is measured for the rest of the level as per the regular GBA definitions. This is to the outside of the structure & walls.

The outside spaces surrounding the building (covered/uncovered) are NOT INCLUDED in the UFA measurement.

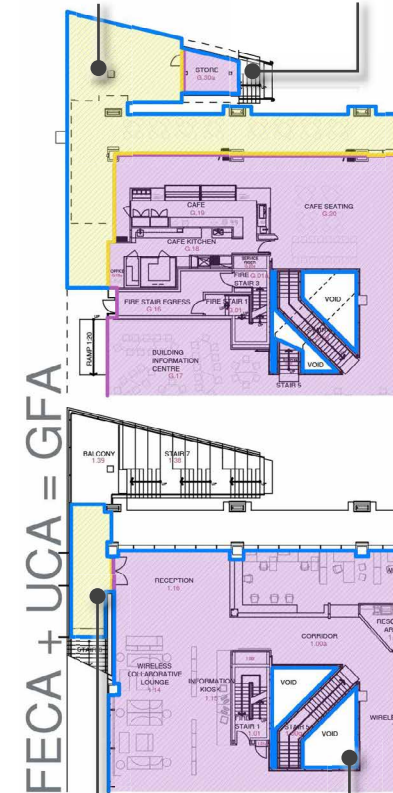
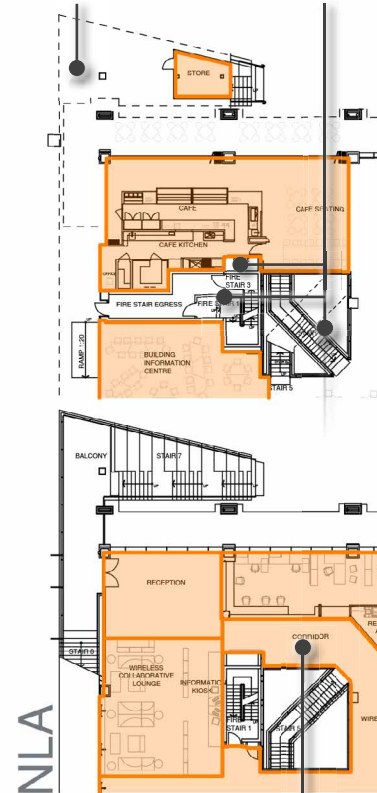
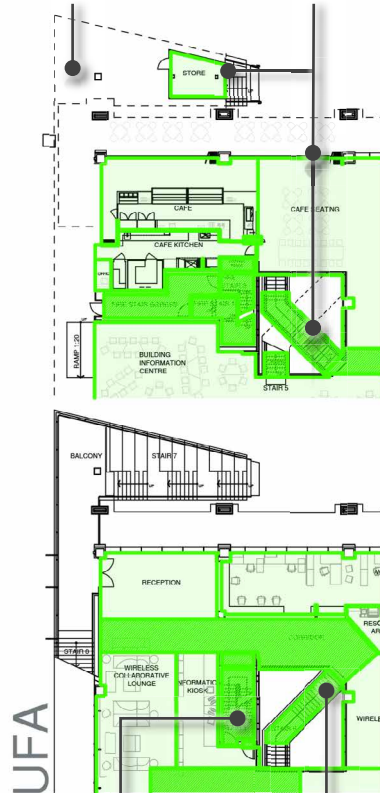
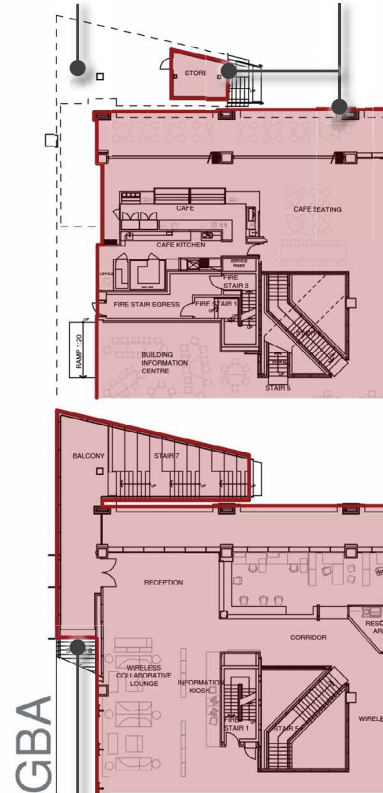
The rest of the building is measured as per the usual University of Adelaide combination of 'true' & 'unusable' UFA.

The outside spaces surrounding the building (covered/uncovered) are NOT INCLUDED in the NLA measurement.

All stairs are NOT INCLUDED in NLA measurement, likewise, all service areas and fires escapes.

If the upper levels of stairs/balconies provide cover for the area below it can be included as UCA.

Usable rooms under the stairs can be included in FECA measurement.



Ground Floor



First Floor

The upper levels of the stairs are picked up in the GBA measurement of level above.

This whole interior area of the enclosed fire stairs is measured as it covers the two landings and the equivalent of one level of stairs.

The stairs are measured as 'unusable' UFA for the sake of tracking the space. The measurement ends at the end of the stairs and the 'break' between levels in plan.

For normal NLA measurement, the main circulation area of a floor can be left out if multiple 'tenants' occupy the floor (common space). For the university we included this space on all levels but Ground as it is its own tenant.

This accessway is under cover from the building above so it can be included in UCA measurement.

The voids surrounding the stairs are NOT INCLUDED in FECA measurement and therefore NOT INCLUDED in GFA.



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