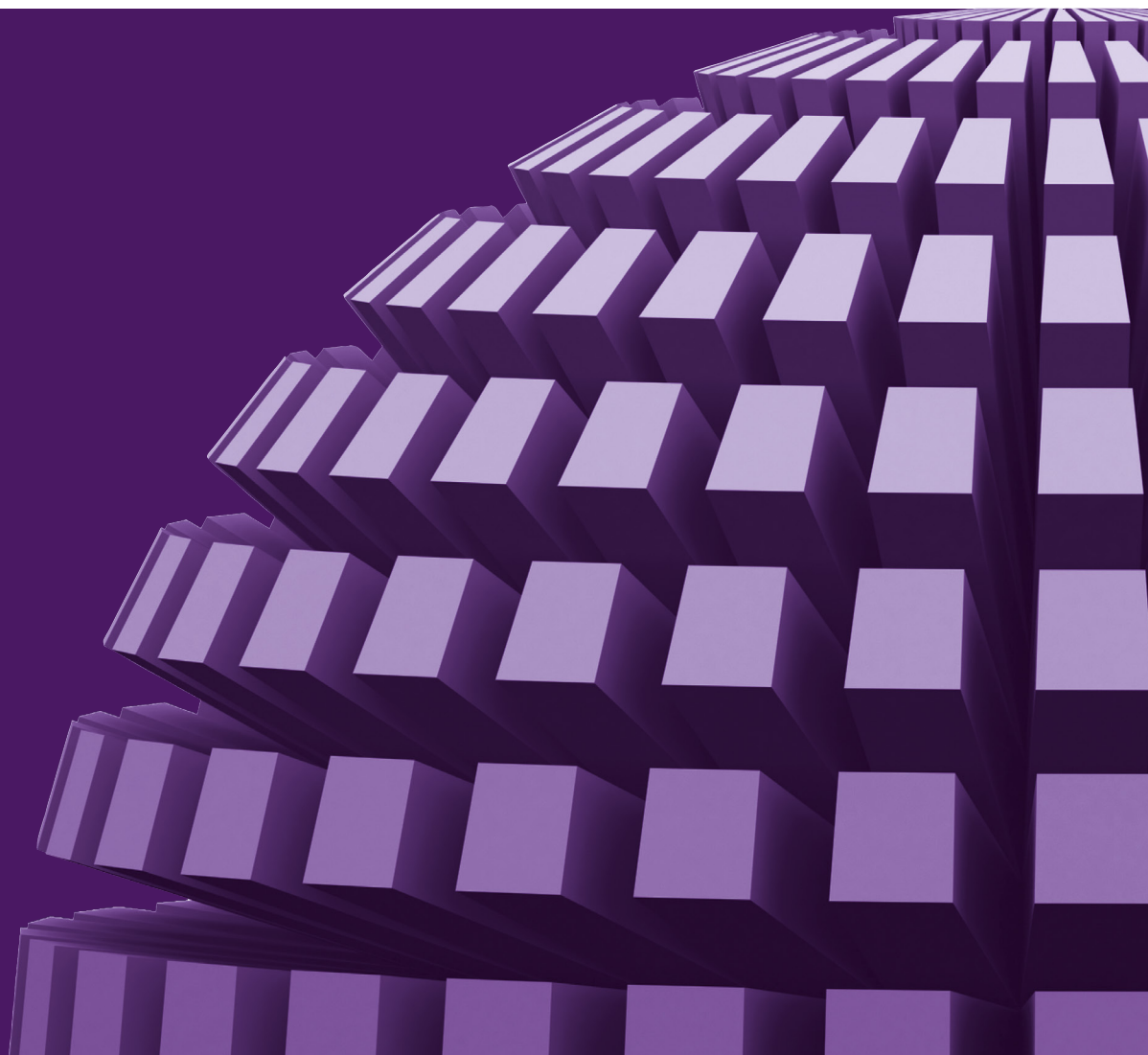




RICS professional standards and guidance, Global

RICS property measurement

2nd edition, January 2018



RICS property measurement

Professional statement, Global

2nd edition, January 2018

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Contents

RICS professional standards and guidance	1
RICS professional statements	1
Glossary	3
Part 1 – Professional statement: property measurement	5
1 Application of this professional statement	7
1.1 Application	7
1.2 Use of IPMS	7
1.3 Unit of measurement	7
1.4 Accuracy	7
1.5 Effective date	7
2 Technical definitions	8
2.1 IPMS core definitions	8
2.2 Application of IPMS	9
2.3 Limited use areas	10
2.4 Internal dominant face	10
2.5 Component areas	13
2.6 Interface adjustment	20
3 IPMS: Office Buildings as applied in the RICS professional statement	21
3.1 IPMS 1	21
3.2 IPMS 2 – Office	26
3.3 IPMS 3 – Office	30
3.4 Vehicle parking and ancillary areas within an office site boundary	44
4 IPMS: Residential Buildings as applied in the RICS professional statement	45
4.1 IPMS 1	45
4.2 IPMS 2 – Residential	52
4.3 IPMS 3 – Residential	59
4.4 Comparing IPMS 3C – Residential with effective floor area (EFA) as defined in the Code of measuring practice, 6th edition	70
4.5 Vehicle parking and ancillary areas within a residential site boundary	70
Appendix A: Tolerances	71
Appendix B: Further information	72
Part 2 – RICS IPMS data standard	73
5 RICS IPMS data standard	74

RICS professional standards and guidance

RICS professional statements

Definition and scope

RICS professional statements set out the requirements of practice for RICS members and for firms that are regulated by RICS. A professional statement is a professional or personal standard for the purposes of RICS Rules of Conduct.

Mandatory vs good practice provisions

Sections within professional statements that use the word 'must' set mandatory professional, behavioural, competence and/or technical requirements, from which members must not depart.

Sections within professional statements that use the word 'should' constitute areas of good practice. RICS recognises that there may be exceptional circumstances in which it is appropriate for a member to depart from these provisions – in such situations RICS may require the member to justify their decisions and actions.

Application of these provisions in legal or disciplinary proceedings

In regulatory or disciplinary proceedings, RICS will take account relevant professional statements in deciding whether a member acted professionally, appropriately and with reasonable competence. It is also likely that during any legal proceedings a judge, adjudicator or equivalent will take RICS professional requirements into account.

RICS recognises that there may be legislative requirements or regional, national or international standards that have precedence over a RICS professional statement.

Document status defined

The following table shows the categories of RICS professional content and their definitions.

Publications status

Type of document	Definition
<i>RICS Rules of Conduct for Members and RICS Rules of Conduct for Firms</i>	These Rules set out the standards of professional conduct and practice expected of members and firms registered for regulation by RICS.
International standard	High-level standard developed in collaboration with other relevant bodies.
RICS professional statement [PS]	Mandatory requirements for RICS members and regulated firms.
RICS guidance note [GN]	A document that provides users with recommendations for professional advice and areas of good practice.
RICS code of practice [CoP]	A document developed in collaboration with other professional bodies and stakeholders that will have the status of a professional statement or guidance note.

What is included in this document?

This document, *RICS property measurement*, 2nd edition, updates the 1st edition by including residential measurement practice. It comprises the following two elements:

- 1 *Professional statement: property measurement* (applies to all properties and includes IPMS measurements for office and residential buildings only).
- 2 *RICS IPMS Data Standard*.

This document reflects the first two IPMS standards (*IPMS: Office Buildings* and *IPMS: Residential Buildings*) and will be updated over time to comply with other IPMS standards, including industrial and retail, as they are published.

Glossary

Balcony	An external platform at an upper floor level with a balustrade to the open sides projecting from or recessed from an External Wall and including in this definition generally accessible rooftop terraces, external galleries and loggia.
Building	An independent Structure forming part of a Property.
Catwalk	An internal or external walkway above the surrounding area that provides higher level access.
Clearance Height	The maximum height within a Building or section of a Building measured to the lowest point of the roof structural element, roof access door or building equipment such as ducting, gantries, pipework and sprinklers.
Coalition	The Trustees of IPMS, comprising not-for-profit organisations each with a public interest mandate.
Common Facilities	Those parts of a Building providing shared facilities that typically do not change over time, including for example, circulation areas, stairs, escalators, lifts/ elevators and motor rooms, toilets, cleaners' cupboards, plant rooms, fire refuge areas, maintenance rooms and unallocated parking spaces.
Component	One of the main elements into which the Floor Area of a Building can be divided.
Component Area	The extent at ground level of the area of a Building covered by one or more roofs, the perimeter of which (sometimes referred to as the drip line) is the outermost structural extension, exclusive of ornamental overhangs.
EFA	Effective Floor Area, which is used in the UK for council tax banding of flats and maisonettes.
External Wall	The external enclosure of a Building, which comprises the area between the Internal Dominant Face and the outside of a Building.
Finished Surface	The wall surface directly above the horizontal wall-floor junction, ignoring skirting boards, cable trunking, heating and cooling units, and pipework.
Floor Area	The area of a normally horizontal, permanent, load-bearing structure for each level of a Building.
GEA	Gross External Area as defined in the <i>Code of measuring practice</i> , 6th edition.
GIA	Gross Internal Area as defined in the <i>Code of measuring practice</i> , 6th edition.
Internal Dominant Face (IDF)	The internal finish comprising more than 50% of the floor to ceiling height for each IDF Wall Section. If such does not occur, the Finished Surface is deemed to be the IDF.
Internal Dominant Face (IDF) Wall Section	Each internal finish of a section of an External Wall, ignoring the existence of any columns, that is either recessed from or protrudes from its adjacent section. [See Section 2.4 and Diagram 1.]
IPMS	International Property Measurement Standards.
IPMSC	The International Property Measurement Standards Coalition.
IPMS 1	The sum of the areas of each floor level of a Building measured to the outer perimeter of external construction features, which may be reported on a Component-by-Component basis for each floor of a Building.
IPMS 2 - Office	The sum of the areas of each floor level of an office Building measured to the Internal Dominant Face and reported on a Component-by-Component basis for each floor of a Building.
IPMS 2 - Residential	The sum of the areas of each floor level of a Building measured to the Internal Dominant Face, which may be reported on a Component-by-Component basis for each floor of a Building.
IPMS 3 - Office	The Floor Area available on an exclusive basis to an occupier, but excluding Standard Facilities, and calculated on an occupier-by-occupier or floor-by-floor basis for each Building.
IPMS 3 - Residential	The Floor Area available on an exclusive basis to an occupier.
Loading Bay(s)	Area(s) designed for vehicles next to or adjacent to a Loading Dock.
Loading Dock(s)	Elevated platform(s) designed for receiving or dispatching goods or equipment.

Mezzanine	An intermediate or partial storey, other than a Catwalk, between the floor levels or roof of a Building and usually fully or partially open on one or more sides.
NIA	Net Internal Area as defined in the <i>Code of measuring practice</i> , 6th edition.
Office Buildings	A Building predominantly used for office purposes, whether or not part of the Building is used for other purposes.
Patio	A paved or floored terrace, adjacent to a Building, which may or may not be covered by an independent framework.
Permanent Mezzanine	A Mezzanine that is an integral part of the structure of a Building.
Property	Any real estate asset in the built environment.
Property Industry	Service Providers, Third Parties and Users with interests in real estate assets.
Residential Building	A Building predominantly used for residential purposes, whether or not part of the Building is used for other purposes.
Service Provider	Any entity providing real estate advice to a User or Third Party including, but not limited to, Valuers, surveyors, facility managers, property managers, asset managers, agents and brokers, Space Measurement Professionals, cost consultants, interior designers and architects.
Sheltered Area	Any part of a Covered Area that is not fully enclosed.
Space Measurement Professional	A Service Provider qualified by experience or training to measure Buildings in accordance with IPMS.
SSC	The Standards Setting Committee appointed by the IPMSC to develop global standards for property measurement.
Standard Facilities	See Common Facilities.
Structure	A construction that provides shelter or serves an ancillary function, but is not necessarily fully enclosed.
Temporary Mezzanine	A Mezzanine that is not an integral part of the structure of a Building.
Third Party	Any entity other than a User or Service Provider with an interest in property measurement including, but not limited to, governments, banks, other property financing bodies, data analysts and researchers.
User	An owner-occupier, developer, investor, purchaser, vendor, landlord or tenant.
Valuer	A Service Provider with an appropriate professional qualification in valuation or appraisal.
Veranda	An open or partly enclosed area on the outside of a Building at ground level (Level 0), and covered by a roof that is an integral part of the Building.
Vertical Section	See IDF (Internal Dominant Face) Wall Section.

Part 1 – Professional statement: property measurement

1 Application of this professional statement

1.1 Application

All **RICS members** and **RICS regulated firms** involved with work that includes the measurement of buildings **must** comply with the following requirements and retain the following information on file or in their report:

- purpose of the measurement instruction
- date of the measurement instruction
- date of measurement
- measurement standard adopted
- if IPMS is not used, document the reason for departure
- measurement methodology adopted [e.g. laser measurer or tape measure]
- scale of any plans used
- floor area schedule with relevant areas cross-referenced to floorplans
- unit of measurement and conversion factor, if applicable [e.g. square feet to square metres] and
- name of the RICS member and/or RICS regulated firm responsible for the instruction.

1.2 Use of IPMS

RICS members are expected to advise their client or employer on the benefits of using IPMS. However, it is understood that IPMS is not suitable in all circumstances and in these circumstances RICS members **must** document the reason for departure.

RICS has prepared IPMS conversion pro formas (see www.rics.org) that provide the formulas to convert *Code of measuring practice*, 6th edition measurements into IPMS. These will be updated to include other IPMS building conversions when future IPMS standards are published.

Adopting IPMS terms when calculating or reporting the area of office and residential floor space on an IPMS basis is **mandatory**.

1.3 Unit of measurement

This PS does not prescribe a specific unit of measurement. RICS members and RICS regulated firms should adopt metric or imperial units in accordance with the generally accepted unit for the market or the legal requirements of the jurisdiction.

1.4 Accuracy

It is the responsibility of RICS members and RICS regulated firms to adopt appropriate measuring and computing processes so as to satisfy the requirements of clients and users. These requirements can range from a very broad approximation of measured area for some temporary purpose to a precise area calculation for contractual or other reasons.

RICS members and RICS regulated firms **must** consider the following parameters when evaluating the level of accuracy that could be expected from a measured survey and one that is both achievable and acceptable:

- What is the purpose of the measurement exercise?
- What are the client's requirements and expectations in terms of accuracy and confidence in measurement?
- What are the building or site conditions at the time of survey that would influence how measurements are undertaken?
- What are the time/cost elements involved in the measurement and reporting?
- What would be the ramifications if the level of accuracy is deemed insufficient for the purpose?

Consideration of these issues will enable the necessary equipment and procedures to be adopted for the various stages of measurement and area calculation.

1.5 Effective date

This professional statement (PS) takes effect from 1 May 2018.

2 Technical definitions

2.1 IPMS core definitions

IPMS: Office Buildings and *IPMS: Residential Buildings* avoid using the various existing descriptions that have different interpretations between countries and even within a country. The comparison between IPMS for offices and residential and the generic descriptions for area bases contained within the *Code of measuring practice*, 6th edition are shown below:

- IPMS 1, which equates closely to the former GEA (gross external area).
- IPMS 2 – Office, which equates closely to the former GIA (gross internal area).
- IPMS 2 – Residential, which equates closely to the former GIA (gross internal area) and net sales area (NSA).
- IPMS 3 – Office, which equates somewhat to the former NIA (net internal area).
- IPMS 3A – Residential, which equates somewhat to the former GEA (gross external area).
- IPMS 3B – Residential, which equates somewhat to the former GIA (gross internal area).
- IPMS 3C – Residential, which equates somewhat to the former EFA (effective floor area).

2.2 Application of IPMS

The following table, which is not exhaustive, summarises the uses for each of the IPMS areas in this PS.

Definition	Application	Reference
IPMS 1 [formerly GEA]	Planning – basis of measurement for planning applications and approvals, site coverage, etc. [together with IPMS 3 – Office].	Section 3.1
IPMS 2 – Office [formerly GIA]	Costings – a method of measurement for a basis of calculating building costs and reinstatement costs.	Section 3.2
IPMS 2 – Residential [formerly GIA]	Costings – a method of measurement for a basis of calculating building costs and reinstatement costs.	Section 4.2
IPMS 3 – Office [formerly NIA]	Agency and valuation – a basis of measurement for valuation, market analysis and marketing of offices for rental and capital valuation. Taxation – a basis of measurement for local taxation purposes, where applicable. Property and facilities management – a basis of measurement for calculating, together with component areas within IPMS 2 – Office, service charges in mixed-use buildings for the apportionment of occupiers' liability.	Section 3.3 Sections 3.2 and 3.3
IPMS 3A – Residential	Agency and valuation – a basis of measurement for valuation, market analysis and marketing of residential properties for rental and capital valuation. Taxation – a basis of measurement for local taxation purposes, where applicable. Property and facilities management – a basis of measurement for calculating, together with component areas within IPMS 2 – Residential, service charges in mixed-use buildings for the apportionment of occupiers' liability.	Section 4.3.3
IPMS 3B – Residential	Agency and valuation – a basis of measurement for valuation, market analysis and marketing of residential properties for rental and capital valuation. Taxation – a basis of measurement for local taxation purposes, where applicable. Property and facilities management – a basis of measurement for calculating, together with component areas within IPMS 2 – Residential, service charges in mixed-use buildings for the apportionment of occupiers' liability.	Section 4.3.4
IPMS 3C – Residential	Agency and valuation – a basis of measurement for valuation, market analysis and marketing of residential properties for rental and capital valuation. Taxation – a basis of measurement for local taxation purposes, where applicable. Property and facilities management – a basis of measurement for calculating, together with component areas within IPMS 2 – Residential, service charges in mixed-use buildings for the apportionment of occupiers' liability.	Section 4.3.5

2.3 Limited use areas

'Service providers need to be aware that in certain markets there may be areas in buildings that are incapable of legal or effective occupation due to local or national legislation. Such areas and their limitations are to be identified, measured and stated separately within IPMS reported areas. For example, if areas are subject to a height restriction the height should be stated in the reporting document and in any component area spreadsheet.

Users and third parties need to be aware that the inclusion of measured areas in IPMS does not necessarily mean that the areas are available for legal occupation or use.

IPMS does not specify what a limited use area is, as that differs from market to market. For example, one market may classify an area as limited use but in another it is not regarded as limited use. In all cases the area is included but where appropriate identified as limited use.'

IPMS: Residential Buildings, 2.3

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Limited use areas allow members and users to quantify separately those areas in the relevant IPMS total, such as areas with limited height, where special consideration may need to be applied for valuation, leasing or other purposes.

In some jurisdictions it is common practice to exclude, or treat differently, areas below 1.5m (5ft) in height. Limited use areas also enable a comparison to be made between IPMS areas and *Code of measuring practice* areas, and assist conversion from one to the other.

Examples of potential limited use areas include:

Example 1 - Area difference from internal dominant face

There may be a need to show the difference, if any, in floor area between measurements taken to the internal dominant face and measurements taken to the wall-floor junction.

Example 2 - Areas with limited height

In various markets, areas with limited height are identified separately and this height can vary between jurisdictions. When parts of a building with restricted height need to be separately identified, the clearance height is to be stated.

Example 3 - Areas with limited natural light

In various jurisdictions, areas with limited natural light in a building may need to be identified separately. [...]

Example 4 - Above and below ground

A building is generally composed of floors [on the ground,] above ground and possibly floors below ground. For measuring purposes, this distinction may be important in determining the conditions under which the premises may be used in compliance with local or national [labour] legislation, rules on fitness for habitation or taxation.

Example 5 - Area difference from covered area

Where a sheltered area is not functional for the primary use, this part of the covered area may be classified as a limited use area.'

IPMS: Residential Buildings, 2.3

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Examples of potential additional limited use areas include: Internal structural walls, columns: there may be a need to take account of the area taken up by the thickness of internal walls and/or columns when making a comparison between IPMS and the *Code of measuring practice*, 6th edition.

The examples above (with the exception of internal structural walls, columns) are drawn directly from *IPMS: Office Buildings* and *IPMS: Residential Buildings*. The list is not exhaustive and members may wish to add other areas in particular buildings, such as steps, ramps, disabled access, etc. as considered appropriate. The adoption of limited use areas will vary according to circumstances but the IPMS figure will remain constant.

2.4 Internal dominant face

Internal dominant face (IDF), a new concept to RICS members in many markets, was introduced in *IPMS: Office Buildings*. Its nomenclature and definition has been refined for added clarity in *IPMS: Residential Buildings*, though the underlying meaning of the definition is identical. It is recommended that the revised definitions for IDF and IDF wall section (previously called vertical section) are used for both office and residential buildings.

'The internal dominant face (IDF) is the inside finished surface comprising more than 50% of the floor to ceiling height for each IDF wall section. If such does not occur, then the finished surface is deemed to be the IDF.'

An IDF wall section refers to each internal finish of a section of an external wall, ignoring the existence of any columns, that is either recessed from or protrudes from its adjacent section. (See Diagram [1].)

If there is no internal dominant face, because no face in an IDF wall section exceeds 50%, or if the internal dominant face is not vertical, the measurement should be to the finished surface.'

IPMS: Residential Buildings, 4.3

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In practical terms, members will need to study the internal finished surface of the wall and, where any IDF wall section includes glazing or a wall surface that extends vertically to more than 50%, these areas will be measured to the internal face of that glazing or wall surface. For an illustration see Diagram 1: Internal dominant face.

Where there are sections of the wall that include glazing, the heights of which are no more than 50% of the floor to ceiling height, then these areas will be measured to the wall-floor junction, ignoring skirting boards, cable trunking, heating and cooling units, and pipework.

Where secondary or tertiary glazing has been fitted, members will need to decide on the permanence or otherwise of the installation. If the retro-fit glazing has a high degree of permanence, measurement should be taken to its internal face. In other cases, measurement should be taken to the original permanent glazing. In either case members should record the nature of the fitment and the reasons for their decision, stating clearly the internal face to which measurements were taken.

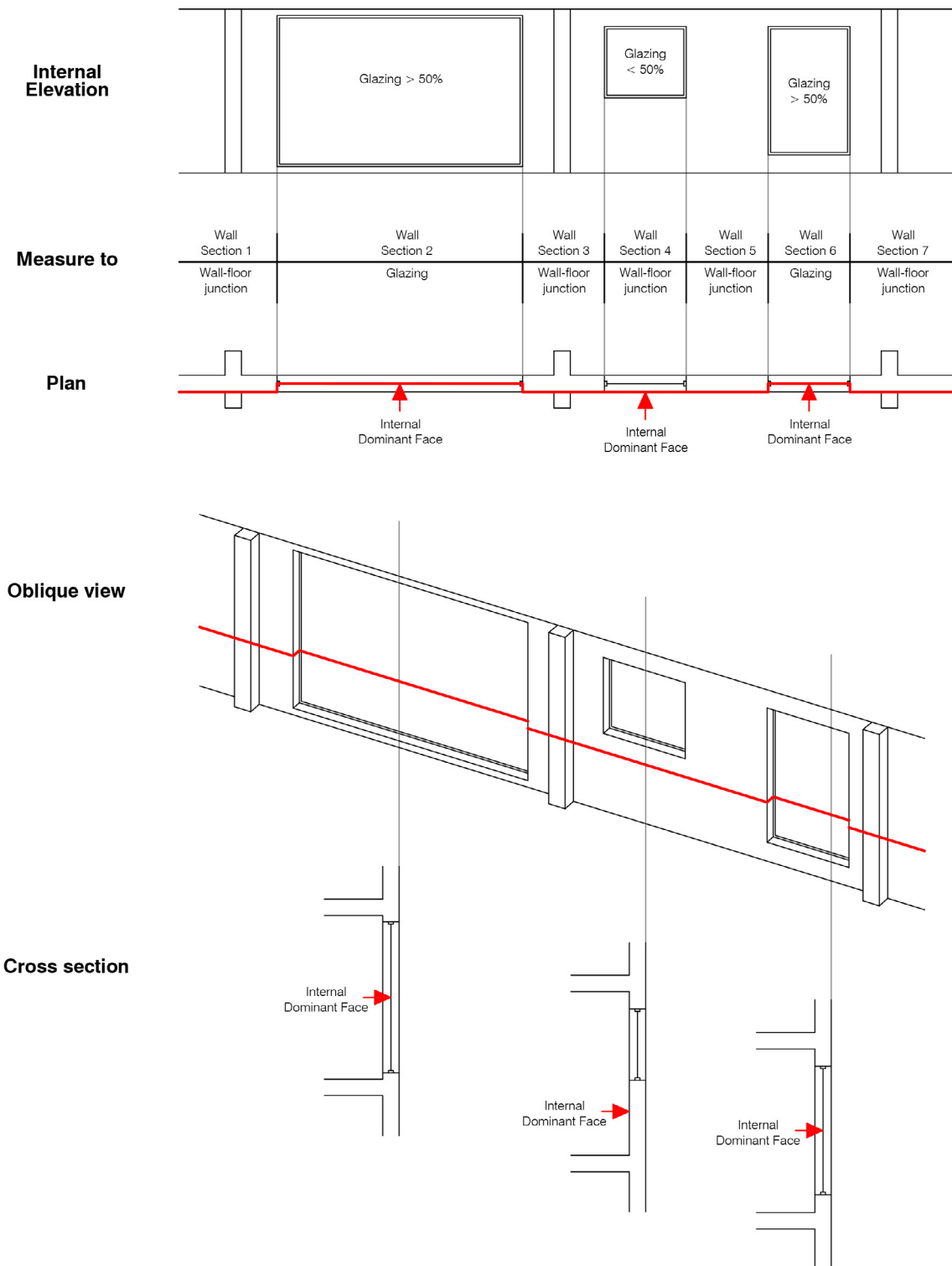


Diagram 1: Internal dominant face

IPMS: Residential Buildings, 4.3

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2.5 Component areas

A component area is:

'one of the main elements into which the floor area of a building can be divided'

IPMS: Office Buildings, 1.1

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2.5.1 IPMS component areas

Below are suggested residential component areas that may be used when areas need to be separately allocated for cost or other purposes under IPMS 1 or IPMS 2.

Component area A	Vertical penetrations Examples of vertical penetrations include stairs, lift/elevator shafts and ducts but any penetration of less than 0.25m ² [approximately 2.7 sq. ft] is to be disregarded.
Component area B1	External wall The external enclosure of a building, which comprises the area between the internal dominant face and the outside face of the building.
Component area B2	Internal structural elements This comprises all internal structural walls and columns.
Component area B3	Internal non-structural elements This comprises all internal, full-height, permanent walls other than those included in component areas B1 and B2.
Component area C	Technical services Examples of technical and building services include mechanical/electrical plant rooms, lift/elevator motor rooms and maintenance rooms.
Component area D	Hygiene areas Examples of hygiene areas include toilet facilities, cleaners' cupboards, bath/shower rooms and changing rooms.
Component area E	Circulation areas This comprises all circulation areas, measured horizontally.
Component area F	Amenities Examples of amenities include internal facilities such as cafeterias, day-care facilities, sport, leisure and fitness areas, and prayer rooms. They are normally but not necessarily common facilities.
Component area G	Living space The area available for use by residential occupiers. Some of the component areas in this table can be further used for IPMS 3 if required.
Component area H	Other areas Examples of other areas include balconies, covered galleries, internal car parking and storage rooms.

'If a component area is in multifunctional use, it is to be stated according to its principal use. Sections of the component areas may be classified as private, being reserved exclusively for one occupier, or shared, being available for the use of several occupiers.

Floor levels are to be recorded in accordance with local market practice, with the main entrance stated and other floor levels scheduled accordingly.

Areas within component area H not available for direct residential-related use may be described as ancillary. They are to be measured, but may also be stated in an alternative way. For example, basement car parking may also be reported by the number of spaces.'

IPMS: Residential Buildings, 4.1

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IPMS 2 – Office component areas are set out in Diagram 2.

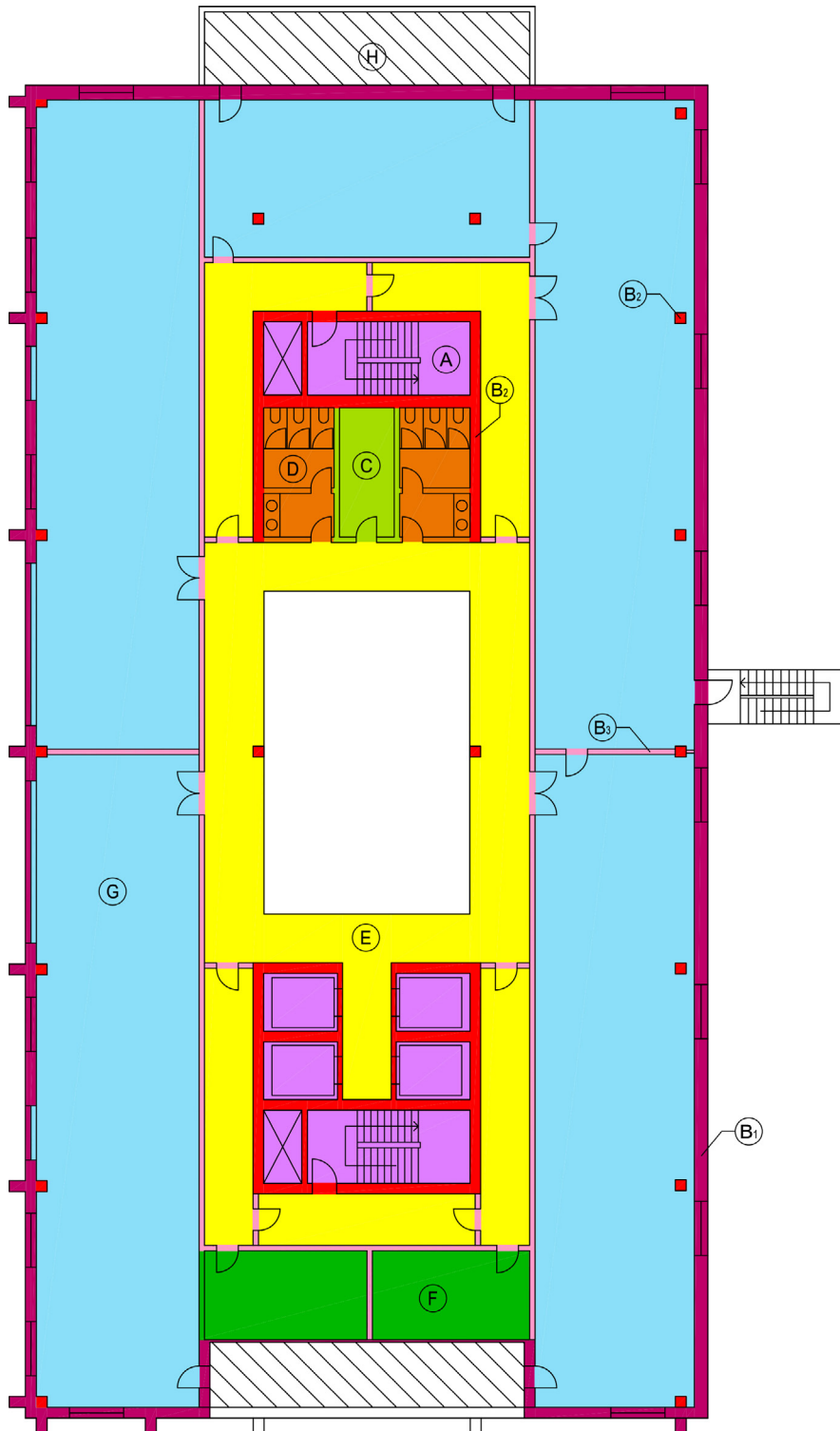


Diagram 2: Office component areas

Residential component areas are set out in Diagram 3.

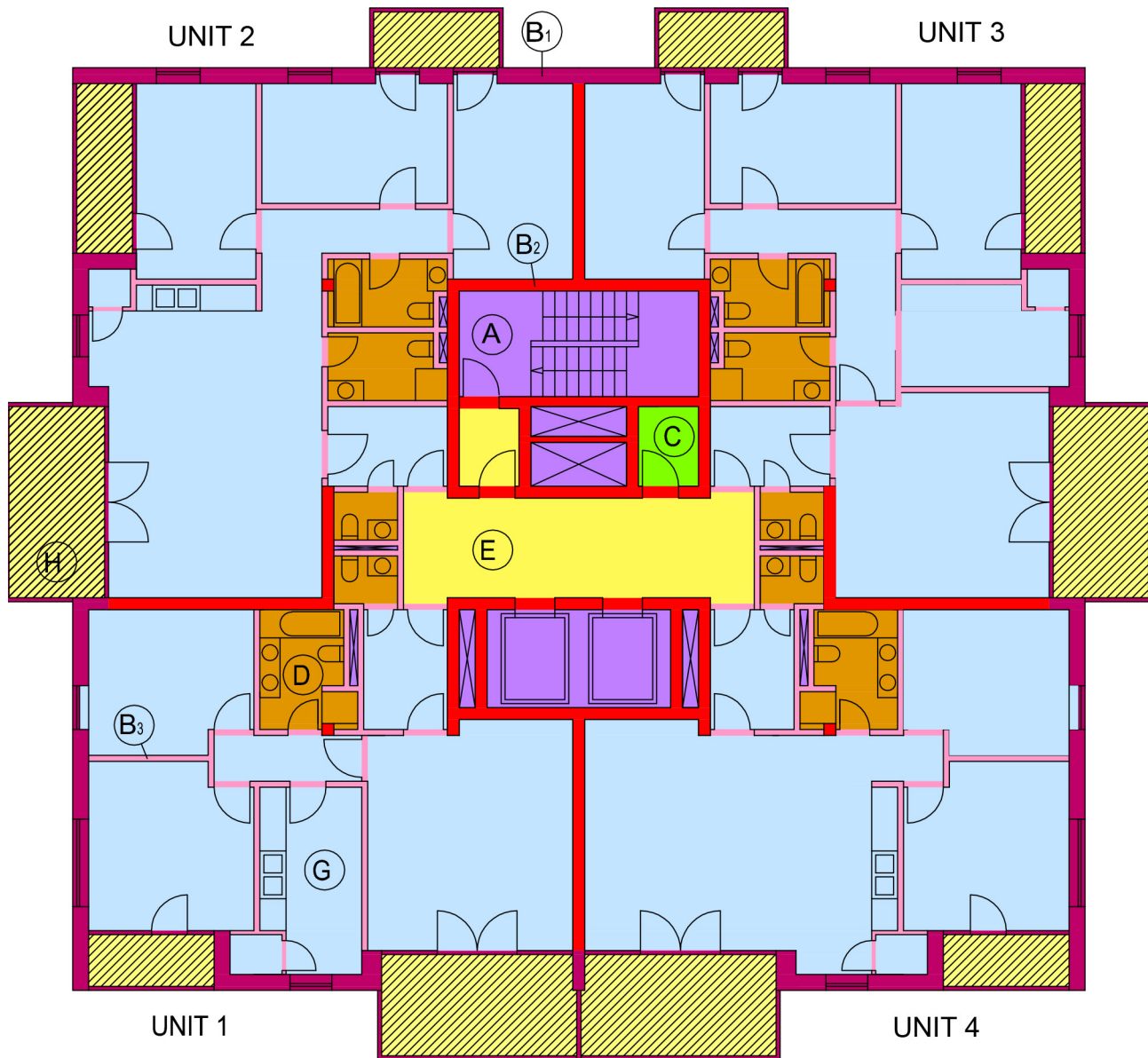


Diagram 3: Residential apartment block component areas

IPMS: Residential Buildings, 4.1

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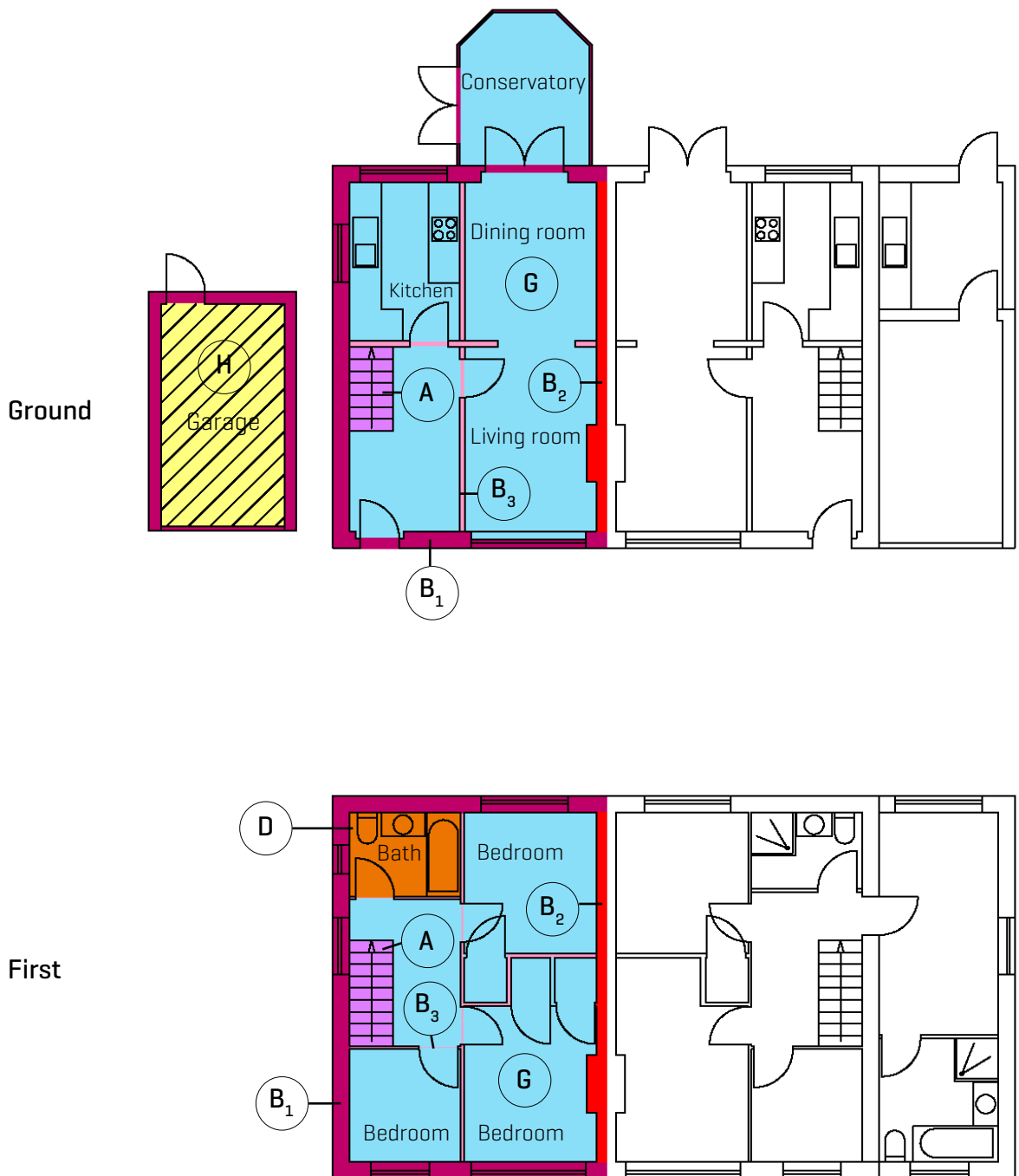


Diagram 4: Residential dwelling component areas

Sample spreadsheet for IPMS 2 – Office with component area

Floor	-2	-1	0	1	2	3	4	Total
Component Area A - Vertical Penetrations								
Example – stairs, lift/elevator shafts and ducts	0	0	0	0	0	0	0	0
Component Area B - Structural Elements								
Example – structural walls, columns	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
IPMS total	0	0	0	0	0	0	0	0
Component Area C - Technical Services								
Example – plant rooms, lift/elevator motor rooms and maintenance rooms	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
IPMS total	0	0	0	0	0	0	0	0
Component Area D - Hygiene Areas								
Example – toilet facilities, cleaners' cupboards, shower rooms and changing rooms	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
IPMS total	0	0	0	0	0	0	0	0
Component Area E - Circulation Areas								
Example – all horizontal circulation areas	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
IPMS total	0	0	0	0	0	0	0	0
Component Area F - Amenities								
Example – cafeterias, day-care facilities, fitness areas and prayer rooms	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
IPMS total	0	0	0	0	0	0	0	0

Floor	-2	-1	0	1	2	3	4	Total
Component Area G - Workspace								
Workspace	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
IPMS total	0	0	0	0	0	0	0	0
Component Area H - Other Areas								
Example – balconies, covered galleries, internal car parking and storage rooms **	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
IPMS total	0	0	0	0	0	0	0	0

TOTAL IPMS 2 – Office								
Aggregate non-limited use Component Areas	0	0	0	0	0	0	0	0
* Limited use areas	0	0	0	0	0	0	0	0
Total IPMS 2 – Office	0	0	0	0	0	0	0	0

Additional areas outside IPMS 2 – Office	
External car parking	0
Decks, patios not forming part of the building structure	0
Any other areas (Example – equipment yards, cooling equipment, refuse areas)	0

* Each limitation, if any, is to be stated separately

** The extent of each use within Component Area H is to be stated separately

IPMS: Offices Buildings, 3.2.3

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2.6 Interface adjustment

'Where dual reporting is adopted, a reconciliation between IPMS and the standard referred to must be appropriately explained. [See 3.3 Internal dominant face.]'

IPMS: Residential Buildings, 2.4

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The IPMS standard must be used, but if the client requires another standard, members must adopt a dual-reporting basis including IPMS, unless specifically instructed to the contrary. Dual reporting will facilitate comparative analysis both locally and internationally.

Diagram 5 shows an example of the interface adjustment between the IPMS measurement extents and the Code of measuring practice measurement extents. This may be different under other measurement standards where the measurement extents differ to that of IPMS.

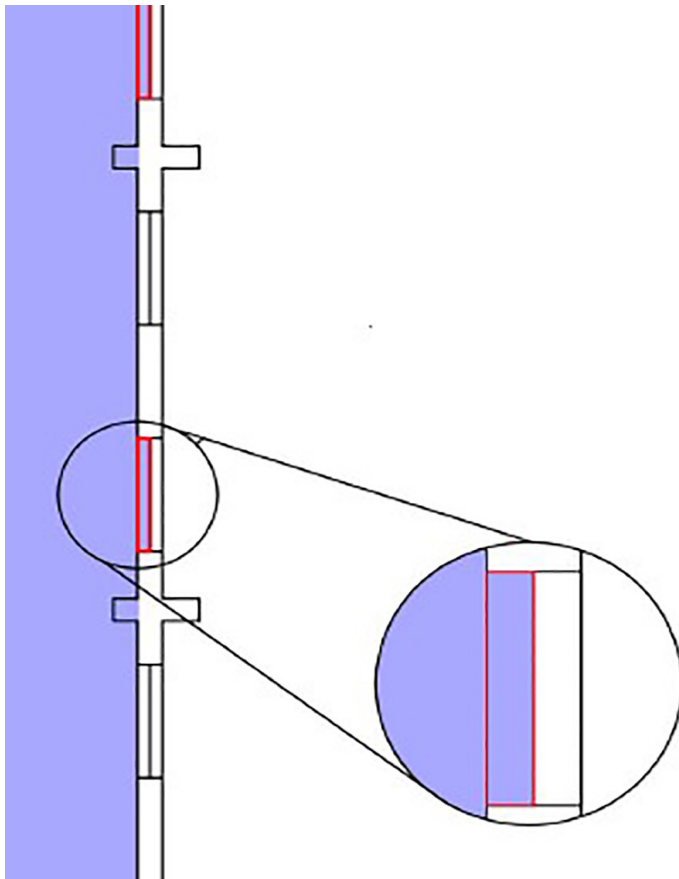


Diagram 5: Example of the interface adjustment

3 IPMS: Office Buildings as applied in the RICS professional statement

3.1 IPMS 1

IPMS 1 is a universal standard that applies to all building classes.

3.1.1 Use

'IPMS 1 is used for measuring the area of a building including external walls. In some markets it can be used by parties for planning purposes or the summary costing of development proposals.'

IPMS: Office Buildings, 3.1.1

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3.1.2 Definition

'IPMS 1: The sum of the areas of each floor level of a building measured to the outer perimeter of external construction features, and reported on a floor-by-floor basis.'

[...]

Inclusions:

The external area of basement levels is calculated by extending the exterior plane of the perimeter walls at ground floor level downwards, or by estimation of the wall thickness if the extent of the basement differs from the footprint of the building.'

IPMS: Office Buildings, 3.1.2

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The sum of the component areas will add up to IPMS 1.

Measurements included but stated separately are:

- covered galleries
- balconies (being external to the main structure of the building) and
- generally accessible rooftop terraces.

These are to be measured to their outer face.

Diagram 6 shows the areas for measurement of IPMS 1 and Diagram 8 shows the plan and section for illustrative purposes.

Exclusions

'Measurement for IPMS 1 is not to include the areas of:

- Open light wells or the upper level voids of an atrium
- Open external stairways that are not an integral part of the structure, for example, an open framework fire escape
- Patios and decks at ground level, external car parking, equipment yards, cooling equipment and refuse areas, and other ground level areas that are not fully enclosed are not to be included within IPMS 1, but may be measured and stated separately.'

IPMS: Office Buildings, 3.1.2

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3.1.3 Comparing IPMS 1 with Code of measuring practice measurements

IPMS 1 compares closely to the gross external area (GEA) measurement under the *Code of measuring practice*.

In order to make a direct comparison/conversion between/ from IPMS 1 and GEA, members should refer to Diagram 6, which shows IPMS 1, and Diagram 7 that shows GEA under the Code of measuring practice. Start with the areas calculated to arrive at IPMS 1, being the floor space coloured on Diagram 6, then deduct the areas of:

- external open sided balcony labelled b and
- generally accessible rooftop terraces – these areas should be treated with caution as rooftop terraces would not normally be included in GEA, but it is possible that in some jurisdictions they are included.

To convert the GEA calculated under the *Code of measuring practice* to arrive at IPMS 1 the steps are reversed.

Diagram/ref	Item	IPMS 1	GEA [COMP]	Comments
6, 7 and 8, item a.	Covered galleries – being internal and often referred to as internal balconies.	Included but stated separately.	Included.	Stated separately for IPMS 1. While covered galleries, referred to as internal balconies, are stated as included in the <i>Code of measuring practice</i> [COMP] different interpretations may have been applied regarding their inclusion.
6, 7, and 8, item b.	Balconies, often referred to as external open-sided balconies.	Included but stated separately.	Excluded.	Stated separately for IPMS 1. While normally excluded in GEA [COMP], they may be included in some jurisdictions.
8, item f.	Accessible rooftop terraces.	Included but may be stated separately.	Normally excluded.	While normally excluded for GEA [COMP] they may be included in some jurisdictions.
6, 7 and 8, item c.	Open light wells, upper level voids of an atrium.	Excluded.	Excluded.	
6, 7 and 8, item d.	Open external stairways not being part of the structure, e.g. an open framework fire escape.	Excluded.	Excluded.	
Not shown.	Patios, decks at ground level.	Excluded.	Excluded.	May be stated separately for both IPMS 1 and GEA.
Not shown.	External car parking, equipment yards, cooling equipment and refuse areas.	Excluded.	Excluded.	May be stated separately for both IPMS 1 and GEA.
Not shown.	Other ground level areas that are not fully enclosed.	Excluded.	Excluded.	These areas are not to be measured within IPMS 1 but may be measured and stated separately.

Table 1: Comparison chart – IPMS 1 and GEA (COMP)

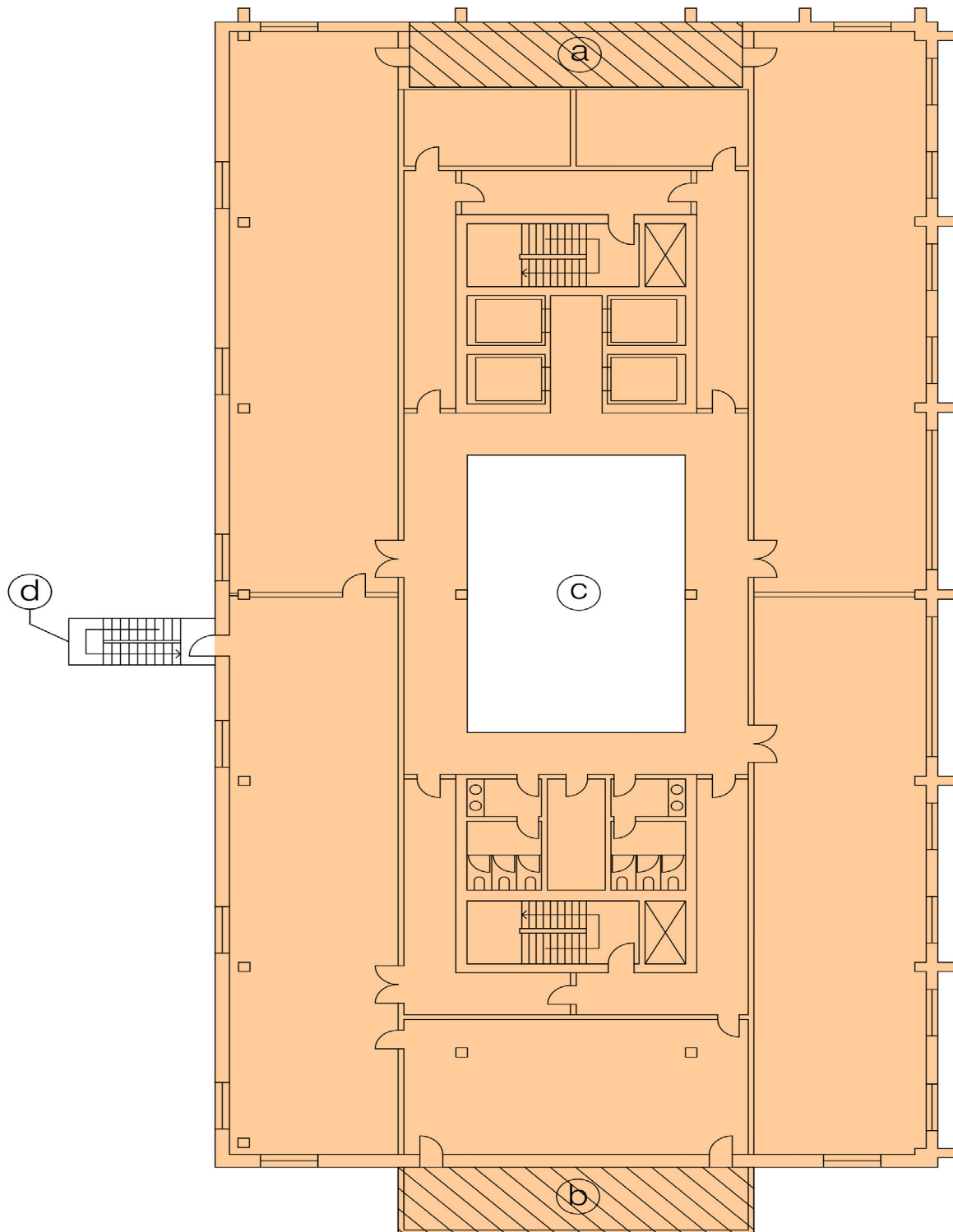


Diagram 6: IPMS 1 – upper floor level

- | | |
|--------------------|---|
| a) Covered gallery | c) Open light well/upper level void of atrium |
| b) Balcony | d) Open external stairway (not an integral part of the structure) |

Hatched areas are to be stated separately.

IPMS: Office Buildings, 3.1.2

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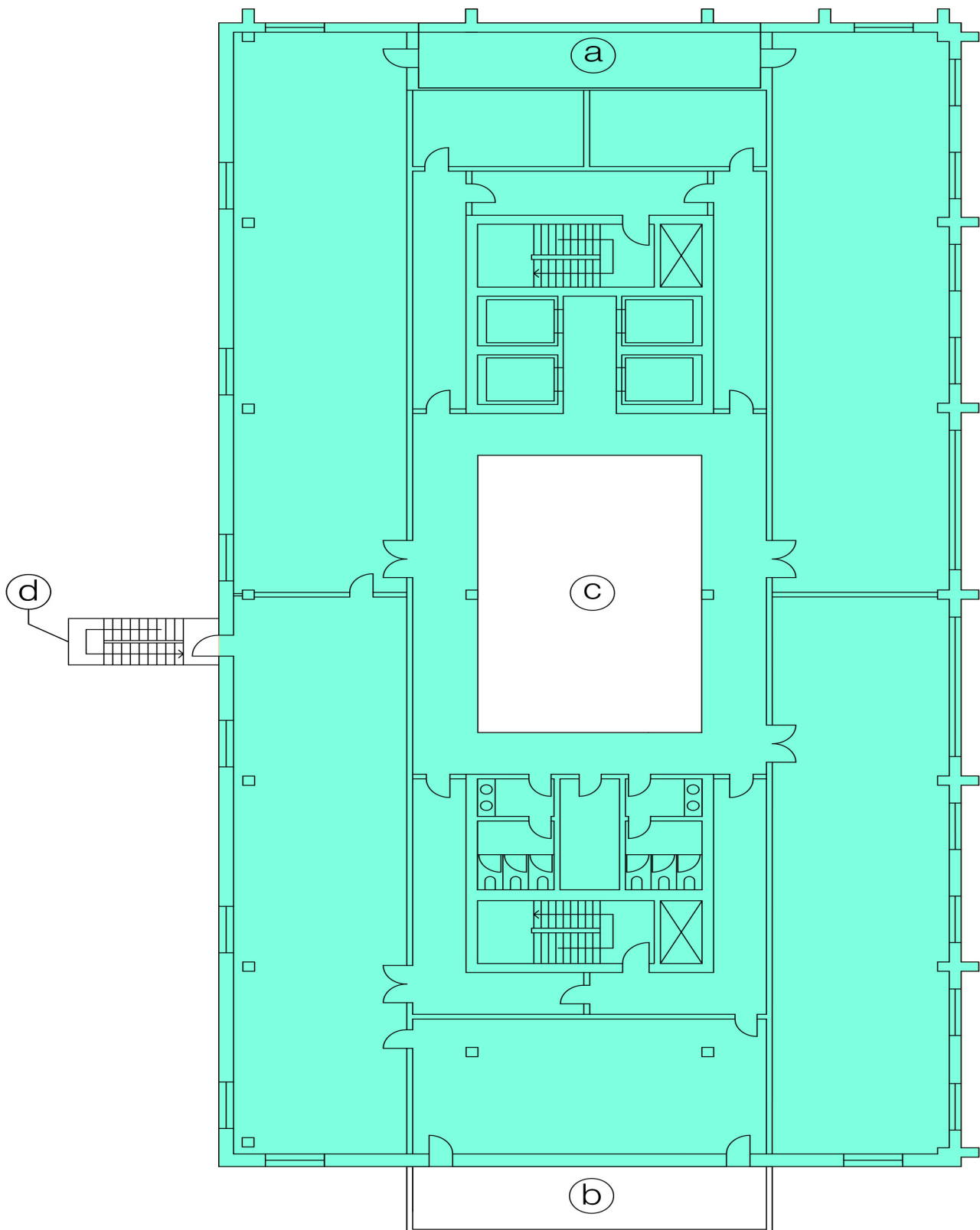


Diagram 7: RICS gross external area (GEA)

- a) Covered gallery
- b) Balcony
- c) Open light well/upper level void of atrium
- d) Open external stairway (not an integral part of the structure)

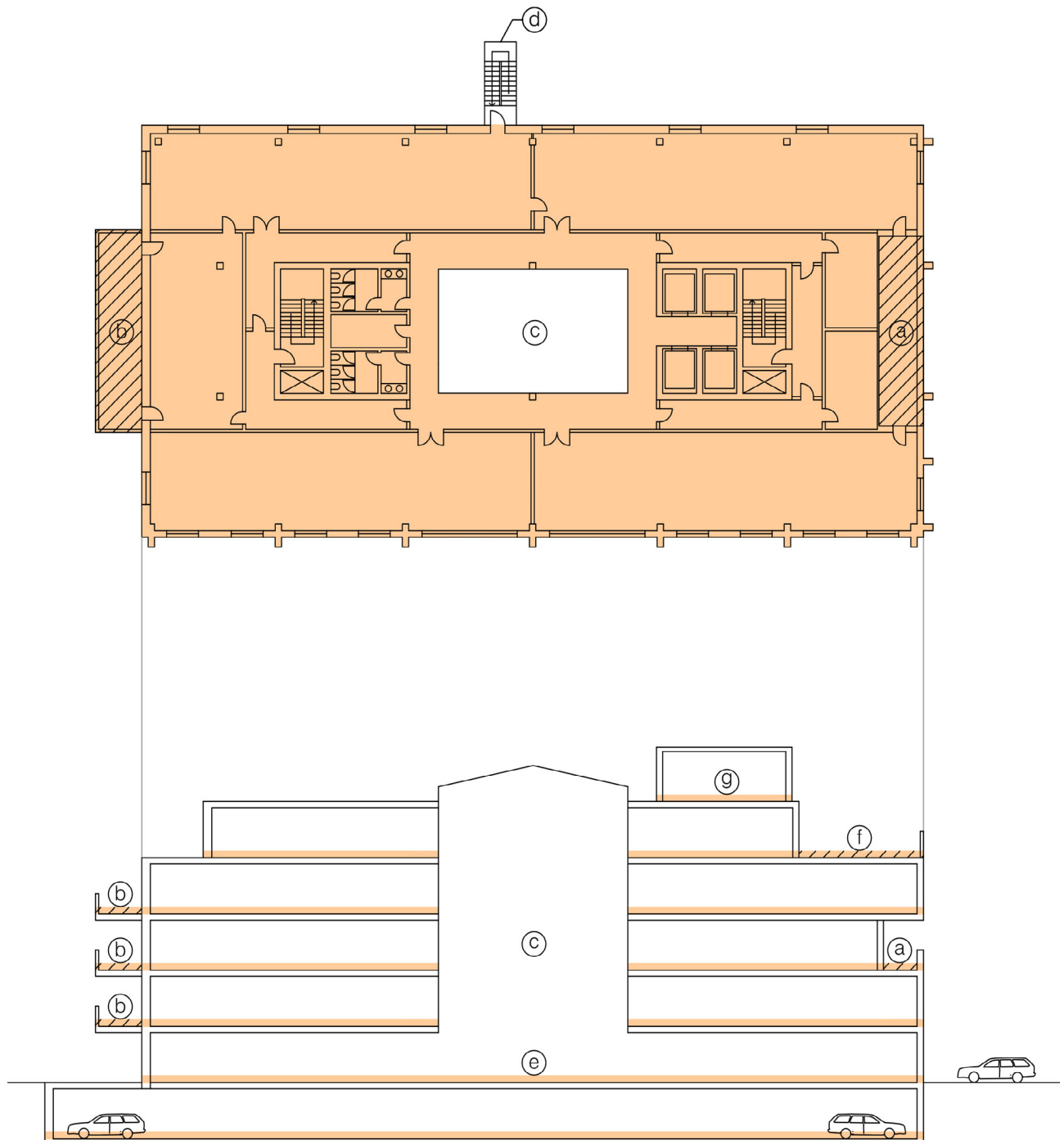


Diagram 8: IPMS 1 – plan and section

- | | |
|---|-----------------------------|
| a) Covered gallery | e) Atrium ground level |
| b) Balcony | f) Roof terrace |
| c) Open light well/upper level void of atrium | g) Lift/elevator motor room |
| d) Open external stairway (not an integral part of the structure) | |

Hatched areas are to be stated separately.

IPMS: Office Buildings, 3.1.2

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3.2 IPMS 2 – Office

3.2.1 Use

'IPMS 2 – Office is for measuring the interior area and categorising the use of space in an office building. It can be used by parties such as asset managers, brokers, cost consultants, facility managers, occupiers, owners, property managers, researchers and valuers to provide data on the efficient use of space and for benchmarking.'

IPMS: Office Buildings, 3.2.1

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This area is the foundation for further calculations in IPMS and this PS.

'The component areas in IPMS 2 – Office enable users and service providers to make direct floor space comparisons between data from different market practices.'

IPMS: Office Buildings, 3.2.1

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3.2.2 Definition

'IPMS 2 – Office: the sum of the areas of each floor level of an office building measured to the internal dominant face (see [3.2.3]) and reported on a component-by-component basis for each floor of a building.'

In many markets, but not universally, this is known as [and equates closely to] gross internal area [GIA].

Inclusions:

IPMS 2 – Office includes all areas, including internal walls, columns and enclosed walkways or passages between separate buildings, available for direct or indirect use. Covered void areas such as atria are only included at their lowest floor level.'

IPMS: Office Buildings, 3.2.2

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Measurements included but stated separately are:

- covered galleries
- balconies (being external to the main structure of the building) and
- generally accessible rooftop terraces.

These are to be measured to their inner face and their areas stated separately (see section 2.4.1, component area H).

Exclusions:

- open light wells
- upper level voids of an atrium
- patios and decks at ground-floor level not forming part of the building structure

- external car parking and
- equipment yards, cooling equipment and refuse areas.

These and other ground-level areas that are not fully enclosed are not to be included within IPMS 2 – Office but may be stated separately.

3.2.3 Comparing IPMS 2 – Office with GIA measurements

IPMS 2 – Office compares closely, but not exactly, to the gross internal area (GIA) measurement under the *Code of measuring practice*.

In order to make a direct comparison between IPMS 2 – Office and GIA, refer to Diagrams 2 and 10. Diagram 2 shows IPMS 2 – Office with the coloured parts relating to the component areas (see section 2.5.1). Diagram 10 shows GIA under the *Code of measuring practice*.

The following steps need to be taken:

Start with the areas calculated to arrive at IPMS 2 – Office, which will include all the component areas in 2.5.1 shown coloured in Diagram 2, then deduct:

- in respect of internal open-sided balconies or galleries, in some jurisdictions and within jurisdictions, different interpretations of the Code of measuring practice may have been adopted regarding their inclusion within GIA. They are labelled 'H' at the top of Diagram 2 and 'a' in Diagram 10. Members should be aware of the interpretation adopted when making comparisons between IPMS and the Code of measuring practice and should consider whether a deduction for this area should be made to avoid double counting and for consistency
- balconies (often referred to as external open-sided balconies), labelled 'H' at the bottom of Diagram 2 and 'b' in Diagram 10. These should be treated with caution as external balconies would not normally be included in GIA, but it is possible that in some jurisdictions they are included
- in respect of the internal dominant face, the areas within window reveal(s) where the internal dominant face is taken to the glazing and
- generally accessible rooftop terraces. These areas should be treated with caution as rooftop terraces would not normally be included in GIA, but it is possible that in some jurisdictions they are included.

To convert the GIA calculated under the *Code of measuring practice* to arrive at IPMS 2 – Office the steps are reversed.

Diagram ref.	Item	IPMS 2 – Office	GIA (COMP)	Comments
2 and 10.	All internal walls, columns and enclosed walkways or passages between separate buildings.	Included.	Included.	
1, 2 and 10.	Area occupied by the reveals of windows when measured and assessed as the internal dominant face.	Included.	Excluded.	
2 item H (top), 10 item a.	Covered galleries – being internal and often referred to as internal balconies.	Included but stated separately.	Included/excluded. Different interpretations of the <i>Code of measuring practice</i> (COMP) may apply (see 3.2.3) and members should check local practice.	Stated separately for IPMS 2. While covered galleries, referred to as internal open-sided balconies, are stated as included in the COMP, different interpretations may have been applied regarding their inclusion.
2 item H (bottom), 10 item b.	Balconies, often referred to as external open-sided balconies.	Included but stated separately.	Excluded.	Stated separately for IPMS 2. While normally excluded in GIA (COMP), they may be included in some jurisdictions.
Not shown.	Accessible rooftop terraces.	Included but may be stated separately.	Normally excluded.	While normally excluded in GIA (COMP), they may be included in some jurisdictions.
2 uncoloured area, 10 item c.	Open light wells, upper level voids of an atrium.	Excluded.	Excluded.	
2 and 10, item d shown on external flank of wall on both diagrams.	Open external stairways not being part of the structure, e.g. an open framework fire escape.	Excluded.	Excluded.	
Not shown.	Patios, decks at ground level not forming part of the structure.	Excluded.	Excluded.	May be stated separately for both IPMS 2 – Office and GIA.
Not shown.	External car parking, equipment yards, cooling equipment and refuse areas.	Excluded.	Excluded.	May be stated separately for both IPMS 2 – Office and GIA.
Not shown.	Other ground level areas that are not fully enclosed.	Excluded.	Excluded.	These areas are not to be measured within IPMS 2 – Office but may be measured and stated separately.

Table 2: Comparison chart – IPMS 2 – Office and GIA (COMP)

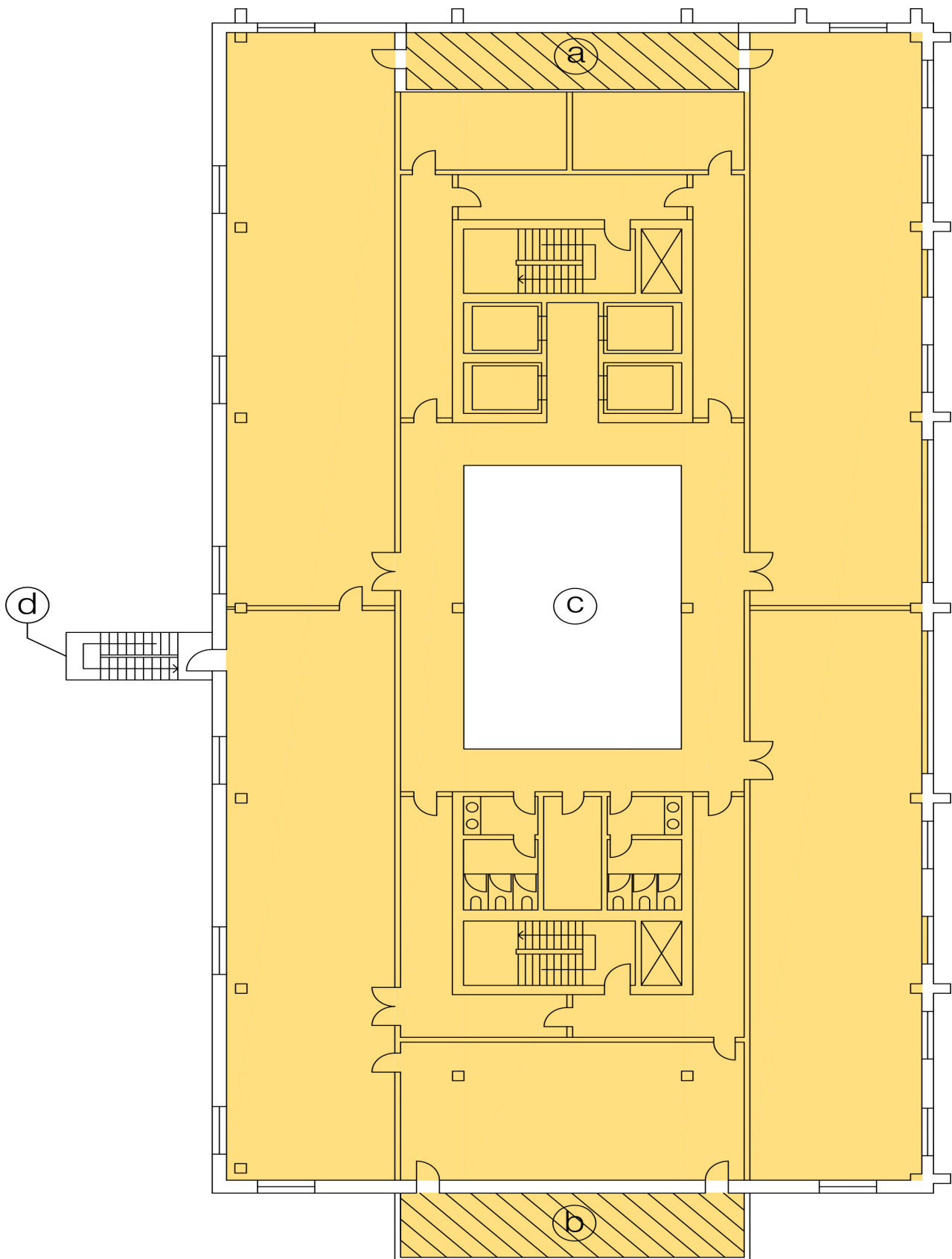


Diagram 9: IPMS 2 – office

IPMS: Office Buildings, 3.1.2

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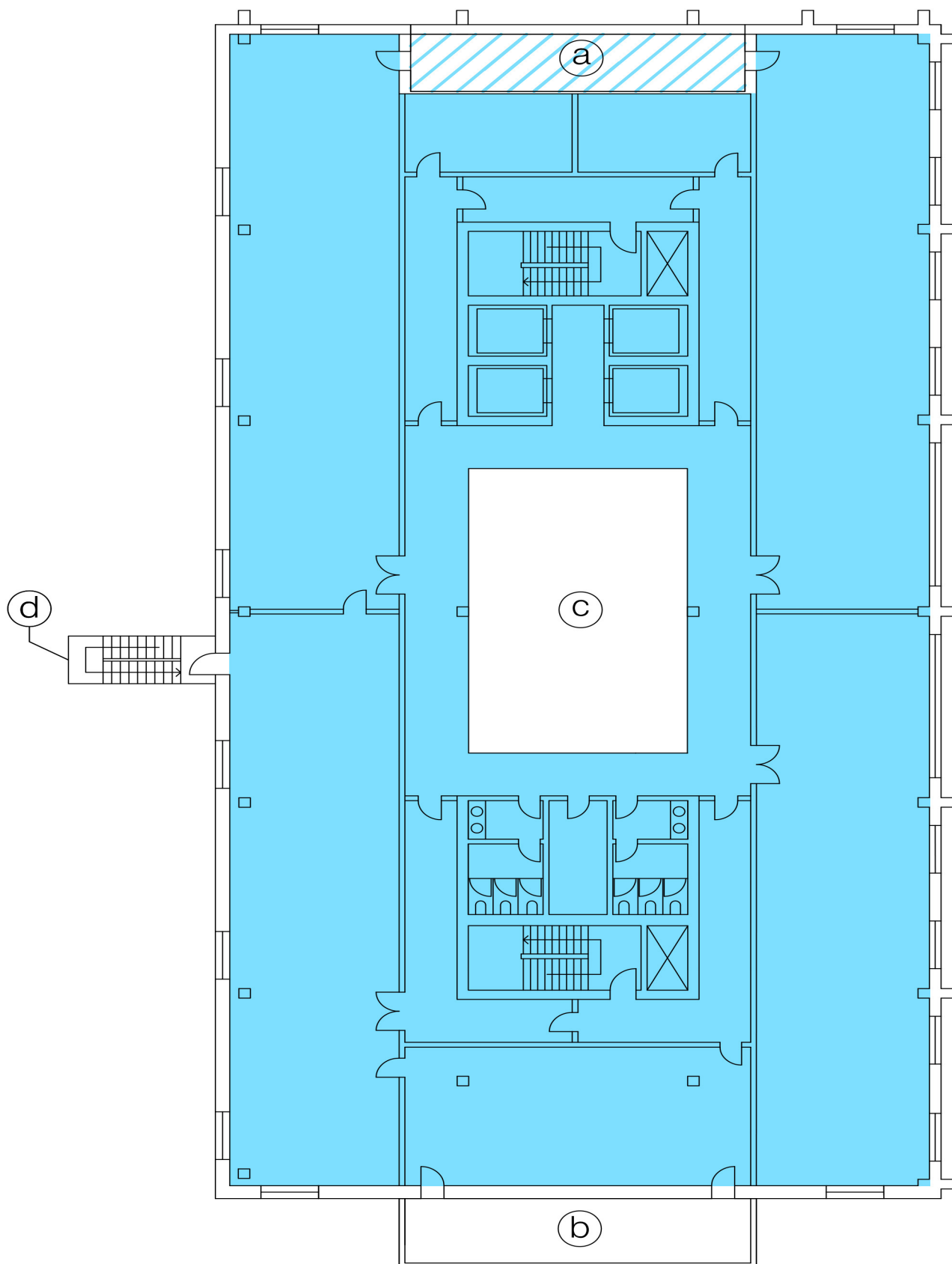


Diagram 10: RICS gross internal area (GIA) Code of measuring practice

3.3 IPMS 3 – Office

3.3.1 Use

'IPMS 3 – Office is for measuring the occupation of floor areas in exclusive use. It can be used by parties such as agents and occupiers, asset managers, facility managers, property managers, researchers and valuers.

IPMS 3 – Office is not directly linked to IPMS 1 or IPMS 2 – Office, neither is it a component area within IPMS 2 – Office. Within an office building there could be a single IPMS 3 – Office area for the entire building or there could be numerous separate IPMS 3 – Office areas.'

IPMS: Office Buildings, 3.3.1

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3.3.2 Definition

'IPMS 3 – Office: The floor area available on an exclusive basis to an occupier, but excluding standard facilities and shared circulation areas, and calculated on an occupier-by-occupier or floor-by-floor basis for each building.

Standard facilities are those parts of a building providing shared or common facilities that typically do not change over time, including, for example, stairs, escalators, lifts/elevators and motor rooms, toilets, cleaners' cupboards, plant rooms, fire refuge areas and maintenance rooms.

Inclusions:

All internal walls and columns within an occupant's exclusive area are included within IPMS 3 – Office. The floor area is taken to the internal dominant face and, where there is a common wall with an adjacent tenant, to the centre-line of the common wall.

Measurements included but stated separately:

Balconies, covered galleries, and roof top terraces in exclusive use are to be measured to their inner face and their areas stated separately.

Exclusions:

Standard facilities, as defined above.

Standard facilities may vary from floor to floor and will also vary according to how the building is occupied. In the case of a building in single occupation it has to be assumed, hypothetically, that the building is in multiple occupation, floor by floor, in order to determine the extent of the standard facilities. If a floor has two or more occupiers, each is to be measured separately and any shared circulation areas are also excluded.'

IPMS: Office Buildings, 3.3.2

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3.3.3 Comparing IPMS 3 – Office with NIA

IPMS 3 – Office equates somewhat to the net internal area (NIA) measurement defined in the *Code of measuring practice*.

In order to make a direct comparison between IPMS 3 – Office and NIA, members should refer to Diagram 11, which shows IPMS 3 – Office in multi-tenancy occupation, and Diagram 12, which shows NIA in multi-tenancy occupation under the *Code of measuring practice*. Similarly, Diagrams 13 and 14 show IPMS 3 – Office and NIA with a floor in single occupation.

Start with IPMS 3 – Office as defined and shown on Diagrams 11 and 13, which comprises:

- the floor area available on an exclusive basis to an occupier, measured and stated separately, but excluding standard facilities and shared circulation areas.

The area of IPMS 3 – Office includes all internal walls and columns within an occupant's exclusive area. The floor area is taken to the internal dominant face and, in respect of a common wall with an adjacent tenant, to the centre-line of the common wall. The area of IPMS 3 – Office also includes covered galleries, balconies and rooftop terraces in exclusive use, measured to their inner face, but these areas are also to be stated separately.

Then, to convert to NIA, deduct the following from the IPMS 3 – Office area:

- in respect of the internal dominant face, the areas within window reveals where the internal dominant face is taken to the glazing
- the area of internal structural walls, columns and piers within an occupant's exclusive area, but not non-structural walls merely subdividing accommodation in single occupancy
- half the area of a wall with an adjacent tenant
- areas with a headroom of less than 1.5m (5ft)
- the area of balconies, often referred to as any external open-sided balcony, shown as 'b' in Diagrams 11 and 12 (multi-occupied buildings). These should be treated with caution as external balconies would not normally be included in NIA, but it is possible that in some jurisdictions they are included
- the internal balconies or galleries depicted as 'a' in Diagrams 11 and 12 are not in exclusive occupation and are therefore excluded in both IPMS and the *Code of measuring practice*
- the area of internal open-sided balconies or galleries in the single occupied floors, depicted as 'a' in Diagrams 13 and 14 should be treated with caution as different interpretations may have been adopted in and within jurisdictions across the world of the *Code of measuring practice* in respect of their inclusion in NIA. Members should be aware of the interpretation adopted locally when making comparisons between IPMS and the *Code of measuring practice* and whether a deduction

for this area should be made, to avoid double counting and for consistency and

- the area of rooftop terraces. These areas should be treated with caution as rooftop terraces would not normally be included in NIA, but it is possible that in some jurisdictions they are included.

To convert the NIA calculated under the *Code of measuring practice* to arrive at IPMS 3 – Office the steps are reversed.

IPMS 3 – Office is a constant measurement and must always be reported as such. The number and extent of areas described as limited use may vary according to circumstances or instructions and must always be identified separately within the IPMS 3 – Office total.

Diagram/ref	Item	IPMS 3 – Office	NIA [COMP]	Comments
11, 12, 13 and 14.	All internal walls and columns.	Included.	Excluded except for non-structural lightweight partitions, which should be included.	NIA [COMP] also excludes areas having a dimension between opposite faces of less than 0.25m.
11 and 12.	A common wall with an adjacent occupier.	The floor area is taken to the centre-line of the common wall, so the area includes half the width of the common wall.	The area excludes half the width of the common wall.	Under NIA [COMP] the measurements are taken to the surface of the common wall with an adjoining occupier.
Not shown.	Enclosed walkways or passages between separate buildings in exclusive occupation.	Included.	Normally excluded where used solely as access.	For NIA [COMP] these areas, or parts of these areas, will be included if capable of some other beneficial use other than purely access.
1, 11, 12, 13 and 14.	Area occupied by the reveals of windows when measured and assessed as the internal dominant face.	Included.	Excluded.	
Not shown.	Areas less than 1.5m (5ft) in height.	Included but may be stated separately as a limited use area.	Excluded.	While excluded under NIA [COMP], some jurisdictions may take a different view.
2.	Standard facilities and shared circulation areas.	Excluded.	Excluded.	
11, 12, 13 and 14, item a in each diagram.	Covered galleries, sometimes referred to as internal balconies, used exclusively.	Included but stated separately.	Included/excluded. Varying interpretations of the <i>Code of measuring practice</i> [COMP] may apply.	Stated separately for IPMS 3 – Office. Members should be aware that different interpretations may have been applied to the inclusion of internal balconies under the COMP, which is silent on this aspect under NIA. Members should check local practice.
11, 12, 13 and 14, item b in each diagram.	External open-sided balconies used exclusively.	Included but stated separately.	Excluded.	Stated separately for IPMS 3 – Office. While normally excluded in NIA [COMP], they may be included in some jurisdictions.
Not shown.	Accessible rooftop terraces.	Included but may be stated separately.	Normally excluded.	While normally excluded for NIA [COMP], they may be included in some jurisdictions.
11, 12, 13 and 14 uncoloured central areas.	Open light wells, upper level voids of an atrium.	Excluded.	Excluded.	

Diagram/ref	Item	IPMS 3 – Office	NIA (COMP)	Comments
11, 12, 13 and 14 shown on external flank of wall on both diagrams.	Open external stairways not being part of the structure, e.g. an open framework fire escape.	Excluded.	Excluded.	
Not shown.	Patios, decks at ground level not forming part of the structure.	Excluded.	Excluded.	May be stated separately for both IPMS 3 – Office and NIA.
Not shown.	External car parking, equipment yards, cooling equipment and refuse areas.	Excluded.	Excluded.	May be stated separately for both IPMS 3 – Office and NIA.
Not shown.	Other ground level areas that are not fully enclosed.	Excluded.	Excluded.	These areas are not included within IPMS 3 – Office but may be stated separately.

Table 3: Comparison chart – IPMS 3 – Office and NIA (COMP)

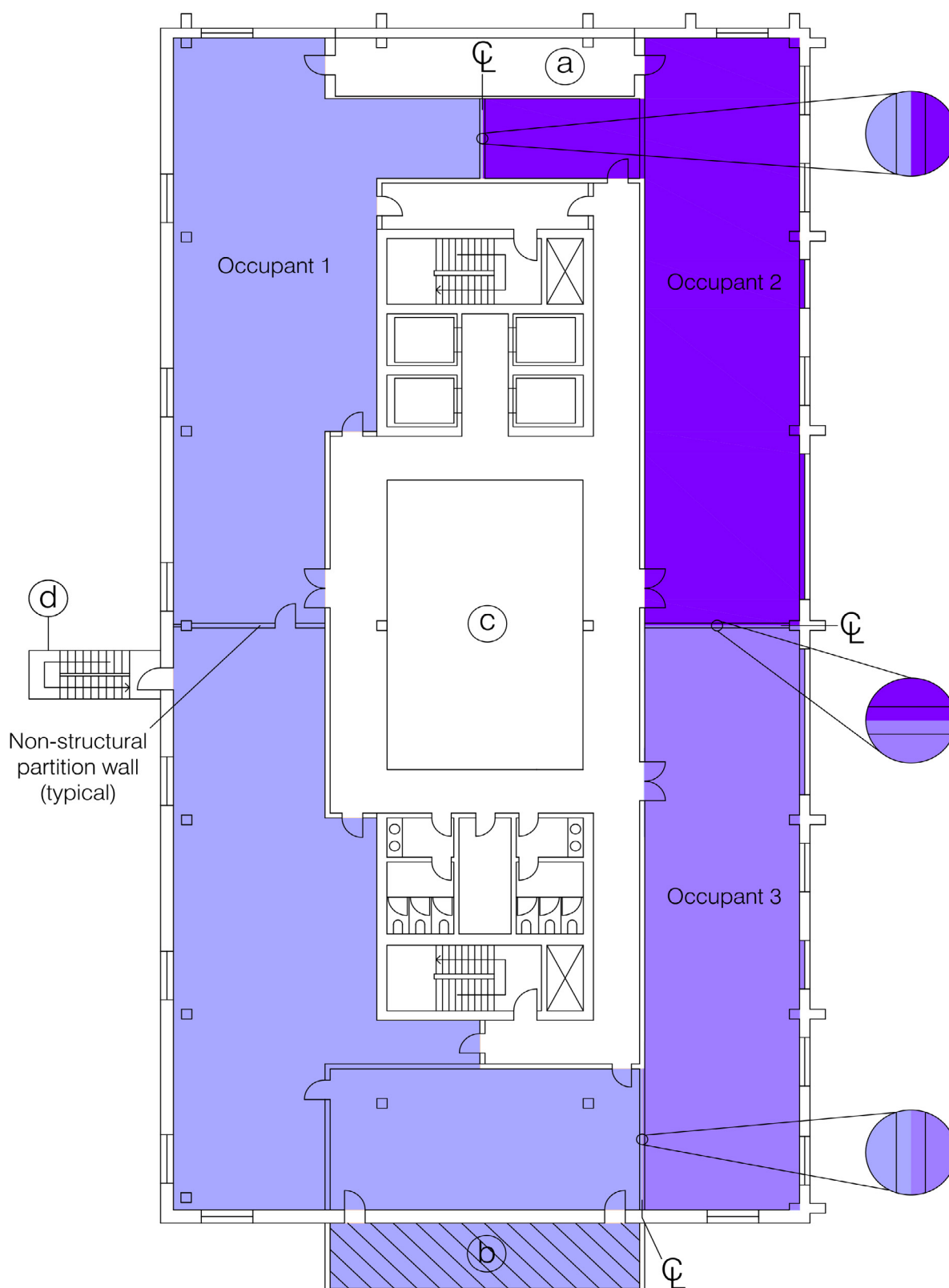


Diagram 11: IPMS 3 – Office – upper floor, multiple occupancy

Hatched areas are to be stated separately.

IPMS: Office Buildings, 3.3.2

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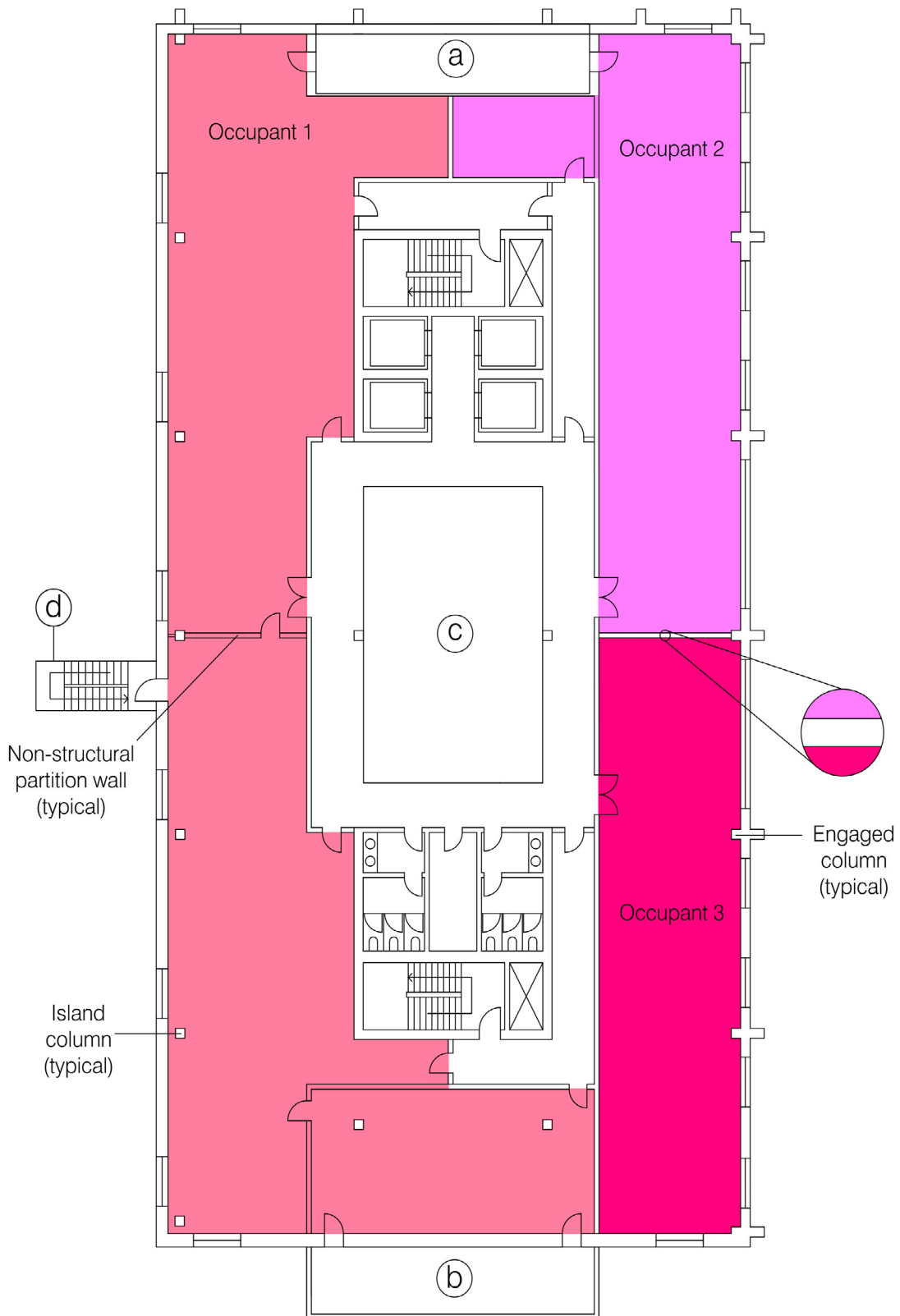


Diagram 12: RICS net internal area (NIA) Code of measuring practice upper floor, multi-occupancy

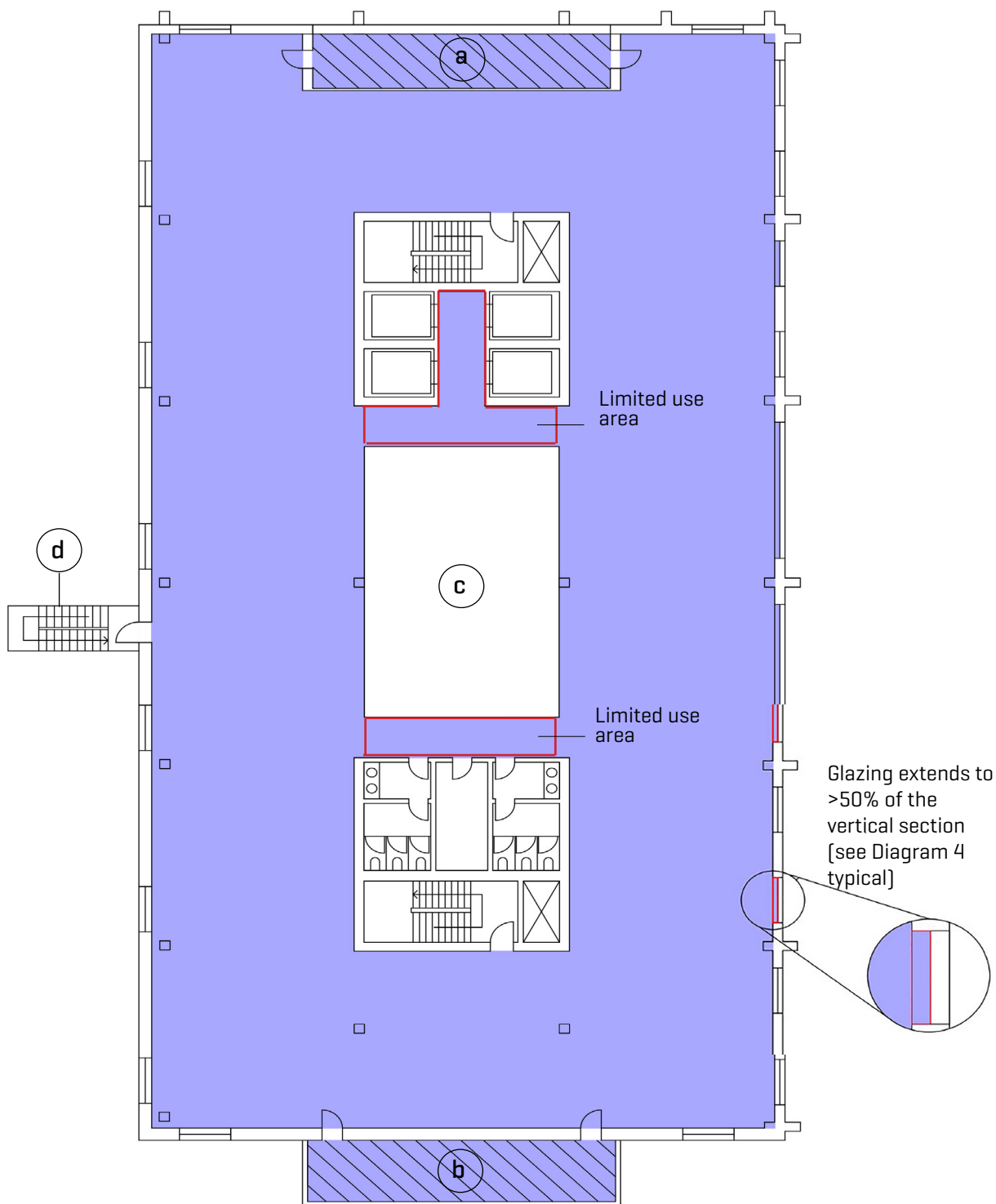


Diagram 13: IPMS 3 – Office – upper floor, single occupancy

Hatched areas are to be stated separately.

IPMS: Office Buildings, 3.3.2

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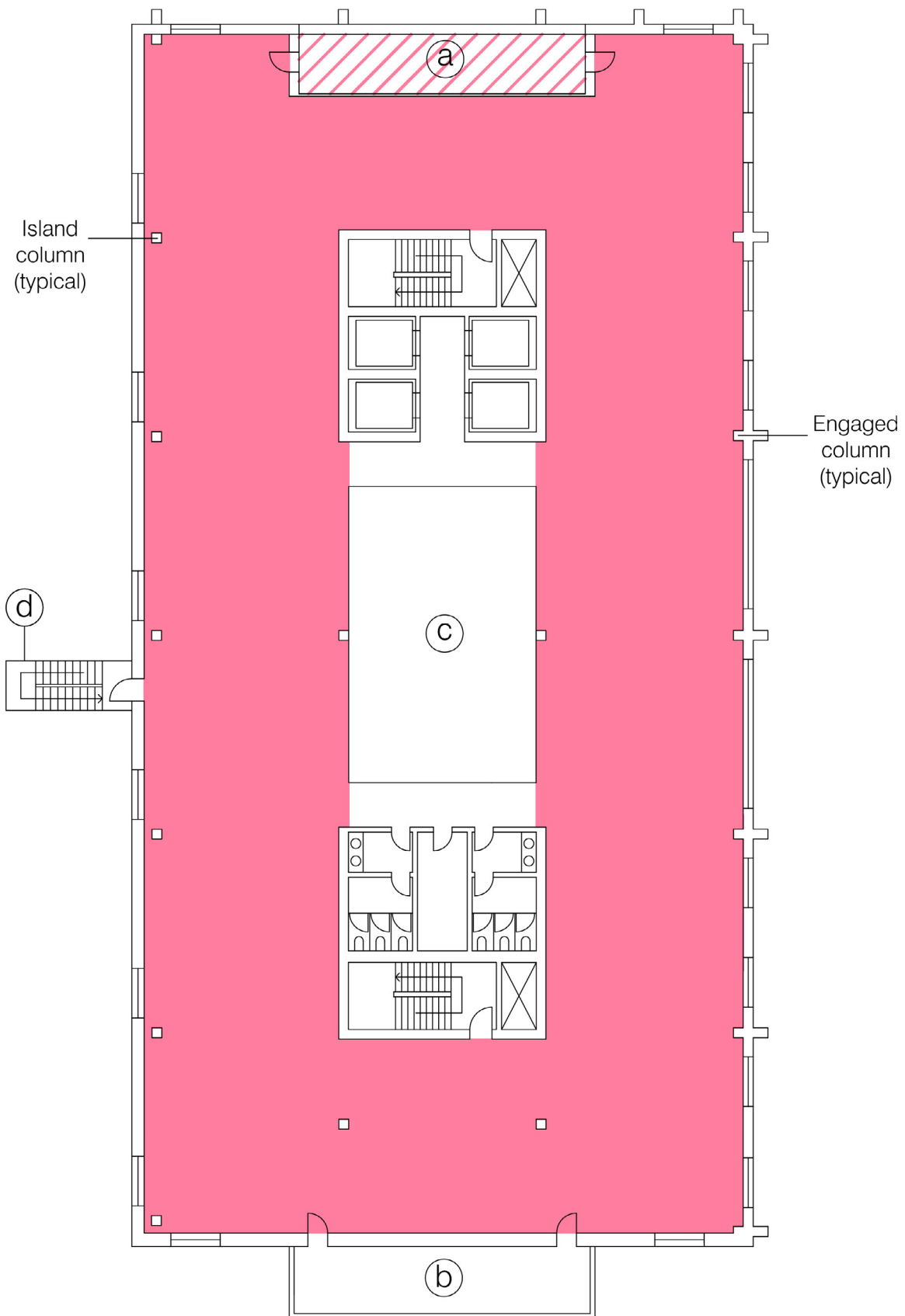


Diagram 14: RICS net internal area (NIA) Code of measuring practice upper floor, single occupancy

3.3.4 Comparing NIA measurements with IPMS 3 – Office

It is recognised that RICS members may wish to compare existing net internal area (NIA) measurements under the *Code of measuring practice* with IPMS 3 – Office. It is also likely that members will want to convert NIA measurements to measurements for IPMS 3 – Office for dual reporting or for analysing market transactions on a like-for-like basis.

In order to make a direct comparison between NIA under the *Code of measuring practice* and IPMS 3 – Office, members should refer to Diagrams 15 and 16.

Diagram 15, showing NIA in a single tenancy floor of a building, depicts:

- measurements taken to the glazing, indicated on the plan as full-height glazing
- measurements taken to the internal face of the perimeter walls for the remainder of the measurements
- island and engaged columns are excluded, together with 'unusable space'
- standard building facilities are excluded and
- kitchen facilities and a cupboard are included as these are part of the single occupation.

Diagram 16 shows the same occupation measured to IPMS 3 – Office.

The full-height glazing measurements are taken to the glazing, being the internal dominant face as with the NIA measurements.

Additional areas included in IPMS 3 – Office compared to NIA under the *Code of measuring practice* are:

- the window reveals where the vertical sections of these glazed areas amount to >50% of the vertical section
- columns and any associated 'unusable space' and
- recessed lobby.

IPMS 3 – Office is a constant measurement and **must** always be reported as such. The number and extent of areas described as limited use may vary according to circumstances or instructions and **must** always be identified separately within the IPMS 3 – Office total.

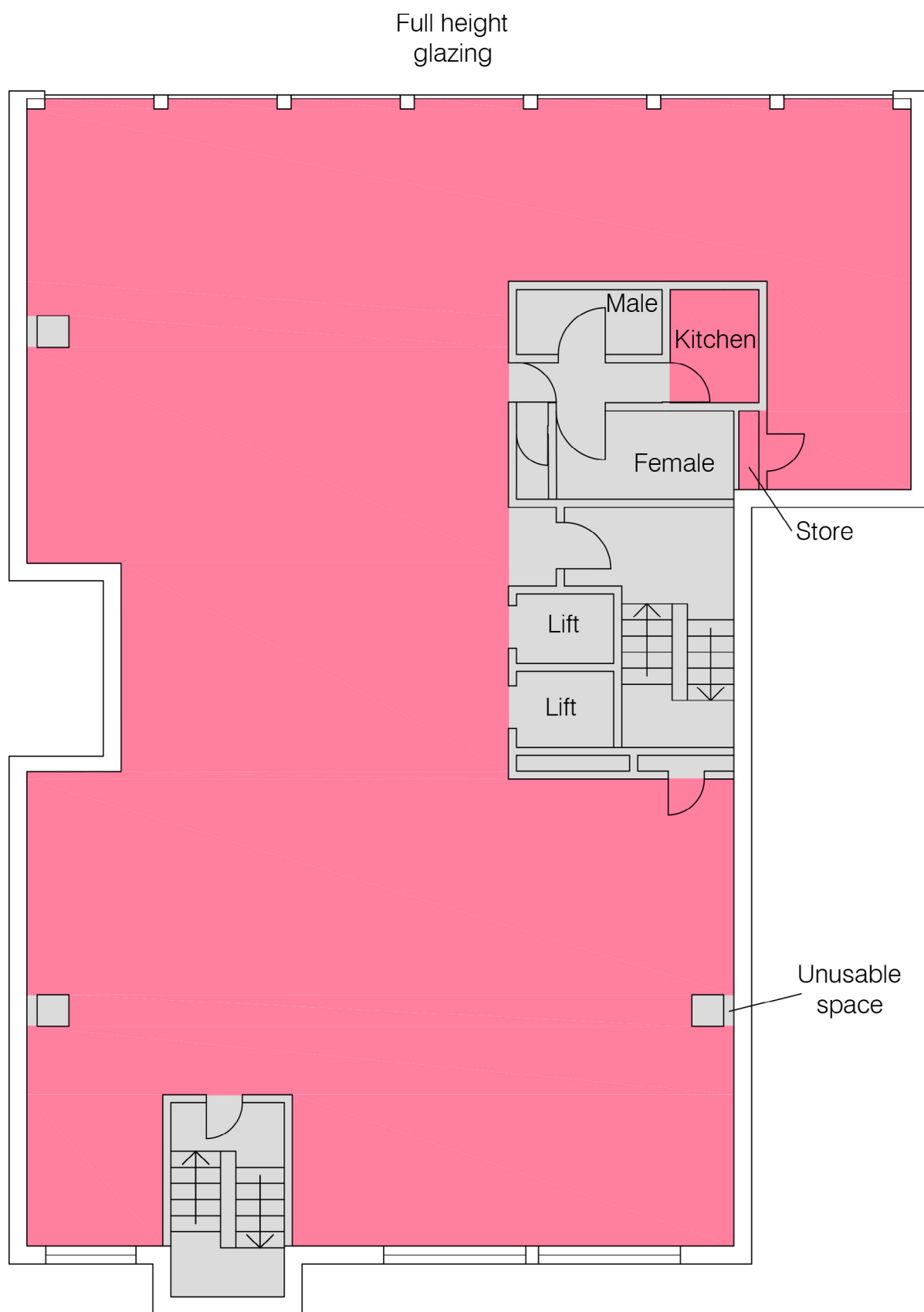


Diagram 15: RICS NIA Code of measuring practice – upper floor, single occupancy

Full Height glazing extends to > 50%
of vertical section
(see Diagram 4)

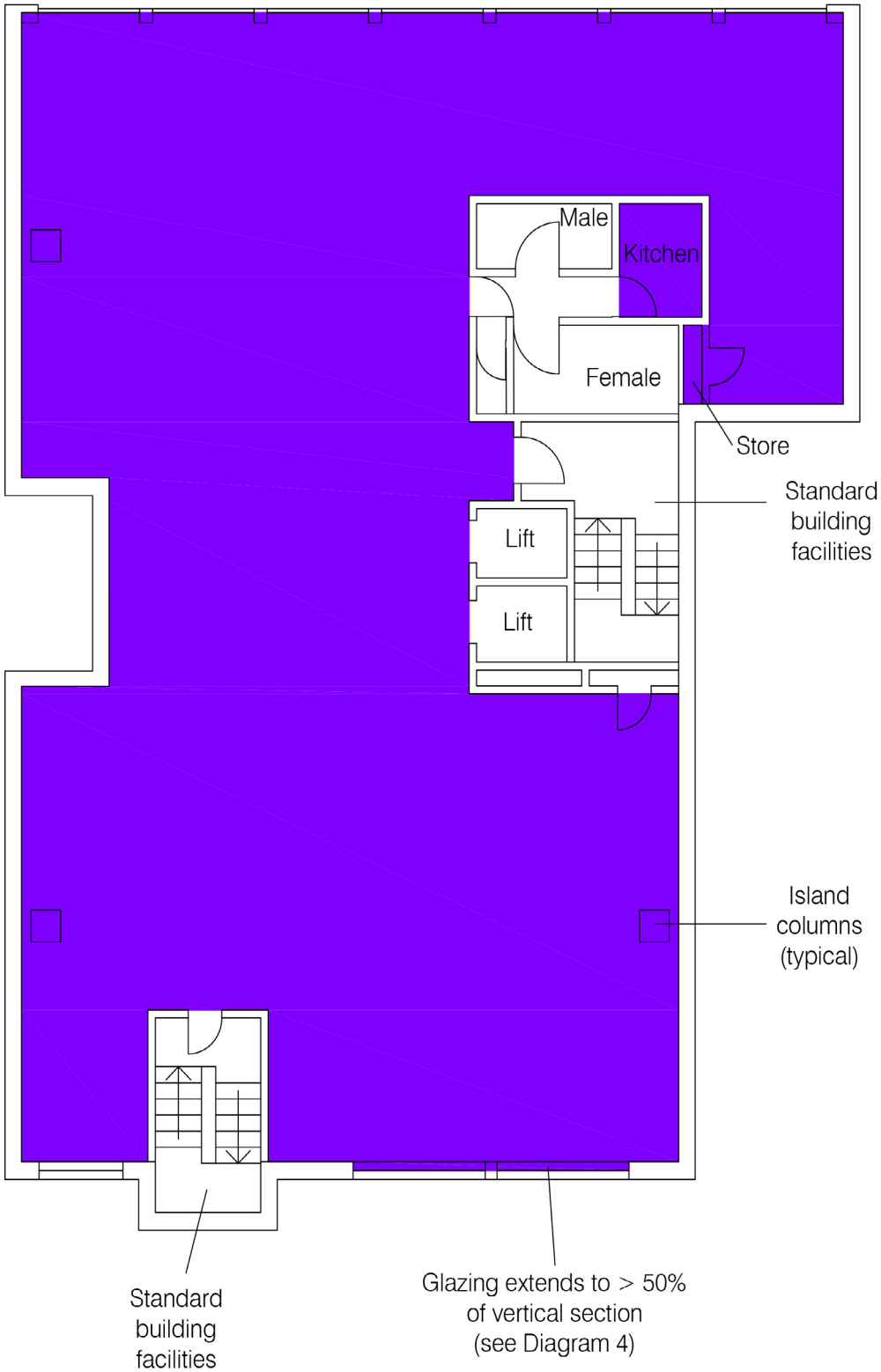


Diagram 16: IPMS 3 - Office - upper floor, single occupancy

3.3.5 Comparing NIA measurements with IPMS 3 – Office in period/historic buildings converted to office use

Previous examples have centred on modern office buildings. However, in some markets conversions of period/historic buildings into offices make up a large proportion of office space.

For a period of time it is recognised that RICS members may wish to compare existing net internal area (NIA) measurements under the *Code of measuring practice* with IPMS 3 – Office in these older buildings, where there is likely to be a higher proportion of internal structural walls due to the nature of the original construction. It is also likely that members will want to convert NIA measurements under the *Code of measuring practice* to measurements for IPMS 3 – Office for dual reporting or for analysing market transactions on a like-for-like basis.

In order to make a direct comparison between NIA under the *Code of measuring practice* and IPMS 3 – Office, members should refer to Diagrams 17 and 18.

Diagram 17 shows NIA in a single-tenancy floor of a building and depicts:

- measurements taken to the internal face of the perimeter walls; all structural walls are excluded
- standard building facilities are excluded, that is the toilet areas, corridors and stairwells and
- the space taken up by non-structural walls subdividing the accommodation is included.

Diagram 18 shows the same occupation depicted in Diagram 17 but measured to IPMS 3 – Office.

With regard to the windows in the two offices (two in each office), at the top of Diagram 18 the glazing in each of the vertical sections amounts to <50% of the vertical section and so the measurements are taken to the wall-floor junction, being the internal dominant face, ignoring skirting boards, cable trunking, heating and cooling units, and pipework.

Additional inclusions in IPMS 3 – Office compared to NIA under the *Code of measuring practice* are:

- the area taken up by the window reveals in the bay windows in the two offices at the bottom of Diagram 18, regarded as limited use areas as the glazed areas in each of these vertical sections amounts to >50% of the vertical section
- the limited use area on the right-hand side of the corridor, although this area will be stated separately
- the office in the centre of the floor, with no natural light, will also be included, as with the NIA measurements, but stated separately as a limited use area and
- all internal structural walls, although these may be stated separately as limited use areas when making comparisons with NIA under the *Code of measuring practice*.

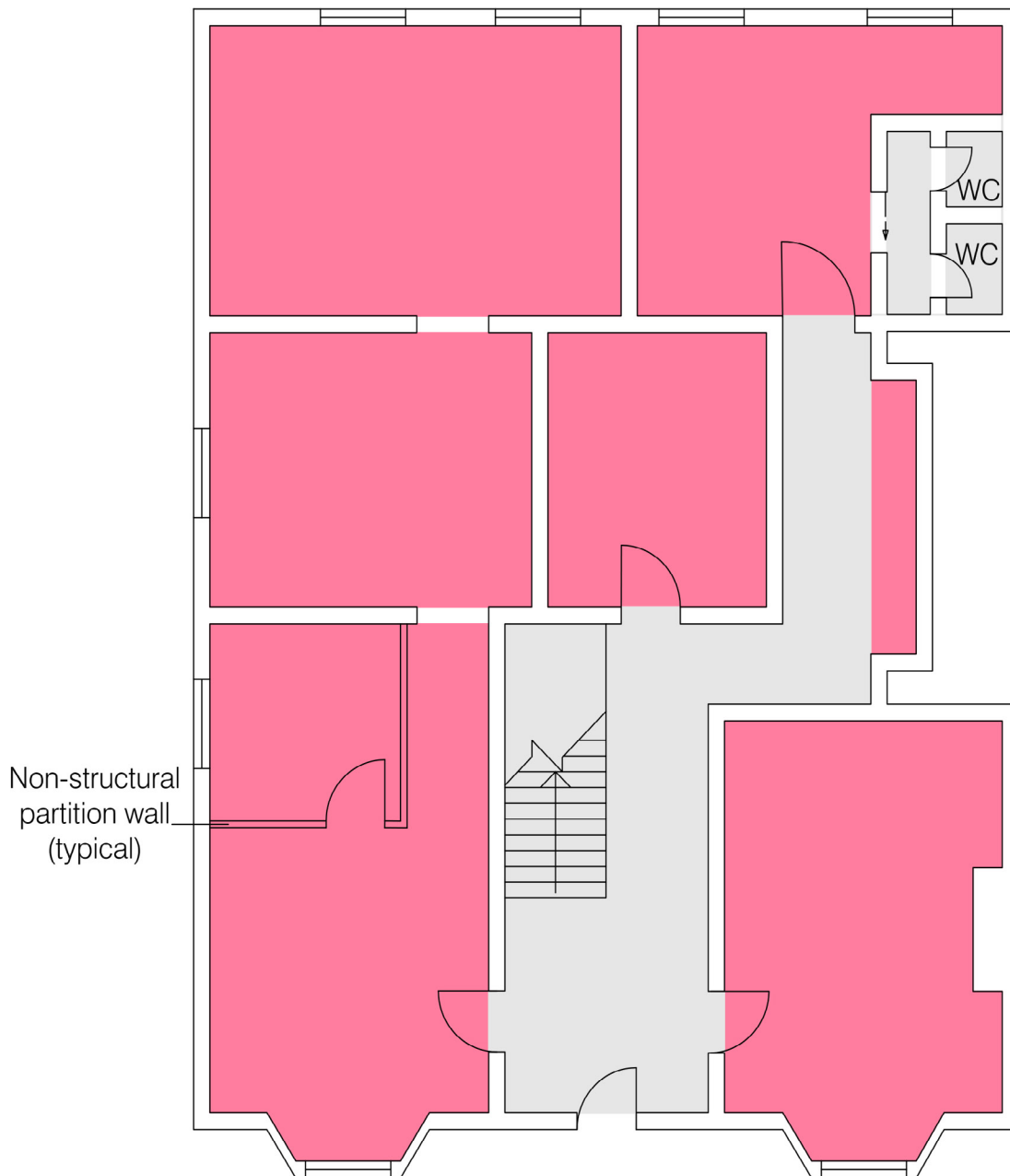


Diagram 17: NIA Code of measuring practice – period building

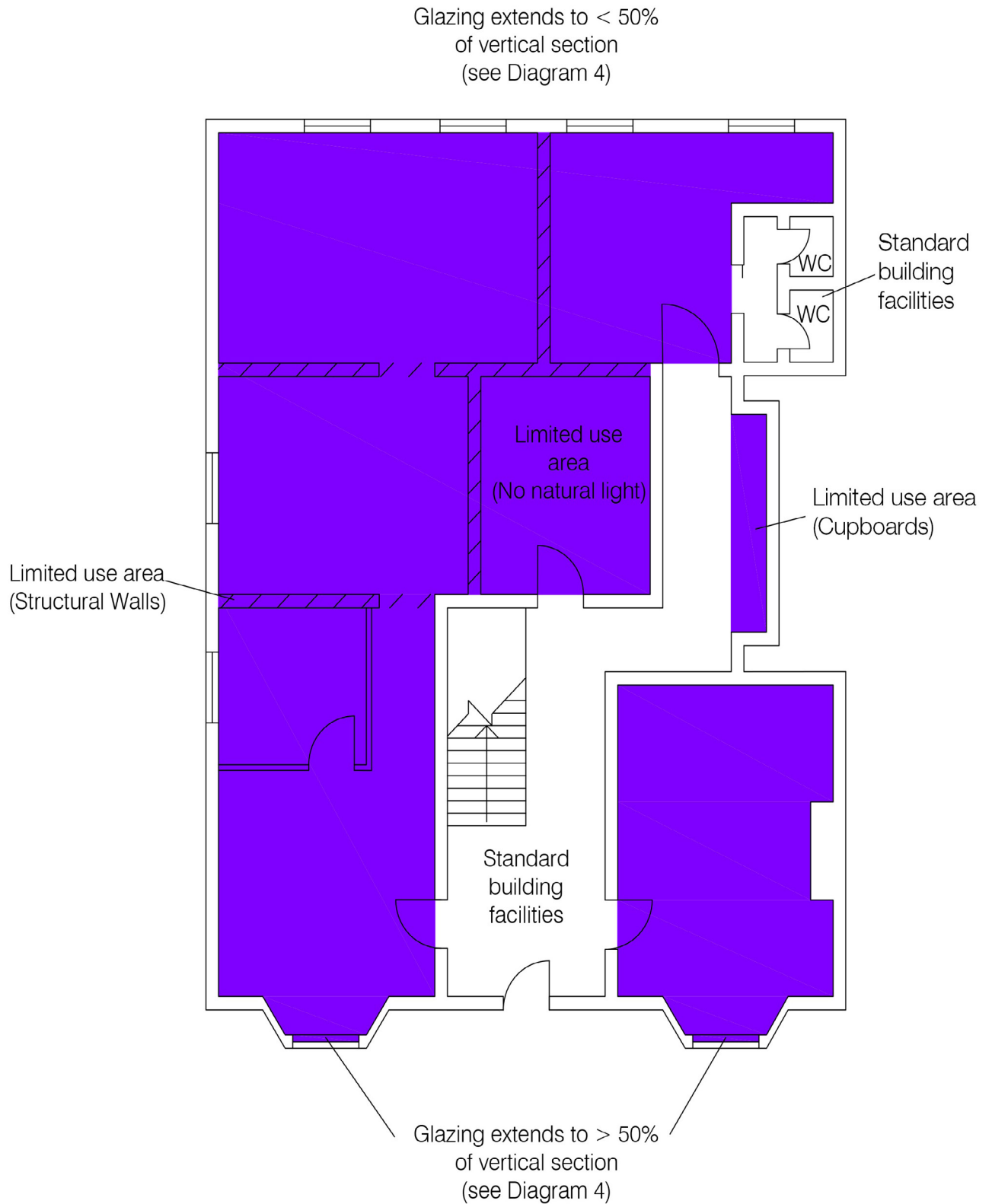


Diagram 18: IPMS 3 - Office – period building

3.4 Vehicle parking and ancillary areas within an office site boundary

The area taken up by car parking may be measured and the number and type of spaces within that area recorded. The type of spaces, and their size and layout, will largely be determined by the occupiers' requirements, which may differ from other potential occupiers.

Occupiers may have security or other buildings on site. These should be measured in accordance with the principles in chapter 4 and, if measuring to IPMS 2 – Office, recorded under ancillaries on a spreadsheet such as that set out under section 3.2 and in *IPMS: Office Buildings*.

4 IPMS: Residential Buildings as applied in the RICS professional statement

4.1 IPMS 1

IPMS 1 is a universal standard that applies to all building classes.

4.1.1 Use

'IPMS 1 is used for measuring the area of a building including external walls. It can be used by parties for planning purposes or the summary costing of development proposals.'

IPMS: Residential Buildings, 3.1.1

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4.1.2 Definition

'IPMS 1: The sum of the areas of each floor level of a building measured to the outer perimeter of external construction features, which may be reported on a component basis for each floor of a building.'

IPMS: Residential Buildings, 3.1.2

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Measurement practice:

'If there are no available plans for a basement, the area must include an estimation of the exterior wall thickness. [...] In the absence of external construction features, for example an open-sided building or a free-standing canopy, IPMS 1 is to be measured to the covered area.'

[In attached or semi-detached housing, if IPMS 1 measurement is required of an individual dwelling, the reported area should extend to the centre-line of the party wall.]'

IPMS: Residential Buildings, 3.1.2

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The sum of the component areas will add up to IPMS 1.

Inclusions:

- walls
- columns
- enclosed walkways and
- passages between separate buildings.

Covered void areas such as atria are only included at their lowest floor level.

Measurements included but stated separately are:

- covered galleries
- balconies (being external to the main structure of the building)
- verandas
- internal catwalks
- sheltered areas
- internal permanent mezzanines and
- generally accessible rooftop terraces. These are to be measured to their outer face.

Diagrams 19 and 21 show the areas for measurement of IPMS 1 for a residential apartment building and a residential dwelling.

Exclusions

'Measurement for IPMS 1 is not to include the following:

- Temporary mezzanines
- Open light wells or the upper level voids of an atrium
- Open external stairways that are not an integral part of the structure, for example, an open framework fire escape
- External areas such as external vehicle parking, external catwalks, vehicle circulation and other areas or structures (such as equipment yards, cooling equipment, refuse areas), and patios and decks at ground level (level 0).

Measurement for IPMS 1 excludes any other ground level areas or structures beyond the covered area. Such areas may be measured and stated separately.'

IPMS: Residential Buildings, 3.1.2

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4.1.3 Comparing IPMS 1 with Code of measuring practice measurements

IPMS 1 equates closely to the gross external area (GEA) measurement under the *Code of measuring practice*.

In order to make a direct comparison/conversion between/ from IPMS 1 and GEA, members should refer to:

- Diagram 19, which shows IPMS 1 for a residential apartment
- Diagram 21, which shows IPMS 1 for a residential dwelling
- Diagram 20, which shows GEA under the *Code of measuring practice* and
- Diagram 22 for the GEA of a residential dwelling.

Start with the areas calculated to arrive at IPMS 1, being the floor space coloured on Diagrams 19 and 21 (a residential apartment and residential dwelling respectively) then deduct the areas of:

- external open or recessed balcony and
- generally accessible rooftop terraces – these areas should be treated with caution as rooftop terraces would not normally be included in GEA, but it is possible that in some jurisdictions they are included.

To convert the GEA calculated under the *Code of measuring practice* to arrive at IPMS 1 the steps are reversed.

Diagram/ref.	Item	IPMS 1	GEA (COMP)	Comments
6, 7 and 8, item a.	Covered galleries – being internal and often referred to as internal balconies.	Included but stated separately.	Included.	Stated separately for IPMS 1. While covered galleries, referred to as internal balconies, are stated as included in the <i>Code of measuring practice</i> [COMP] different interpretations may have been applied regarding their inclusion.
6, 7, and 8, item b.	Balconies, often referred to as external open-sided balconies.	Included but stated separately.	Excluded.	Stated separately for IPMS 1. While normally excluded in GEA [COMP], they may be included in some jurisdictions.
8, item f.	Accessible rooftop terraces.	Included but may be stated separately.	Normally excluded.	While normally excluded for GEA [COMP] they may be included in some jurisdictions.
6, 7 and 8, item c.	Open light wells, upper level voids of an atrium.	Excluded.	Excluded.	
6, 7 and 8, item d.	Open external stairways not being part of the structure, e.g. an open framework fire escape.	Excluded.	Excluded.	
Not shown.	Temporary mezzanines.	Excluded.	Excluded.	May be stated separately for both IPMS 1 and GEA.
Not shown.	Patios, decks at ground level.	Excluded.	Excluded.	May be stated separately for both IPMS 1 and GEA.
Not shown.	External areas such as car parking, external catwalks, equipment yards, cooling equipment and refuse areas.	Excluded.	Excluded.	May be stated separately for both IPMS 1 and GEA.
Not shown.	Other ground level areas that are not fully enclosed such as patios and decks at ground level [level 0].	Excluded.	Excluded.	These areas are not to be measured within IPMS 1 but may be measured and stated separately.

Table 4: Comparison chart – IPMS 1 and GEA (COMP)

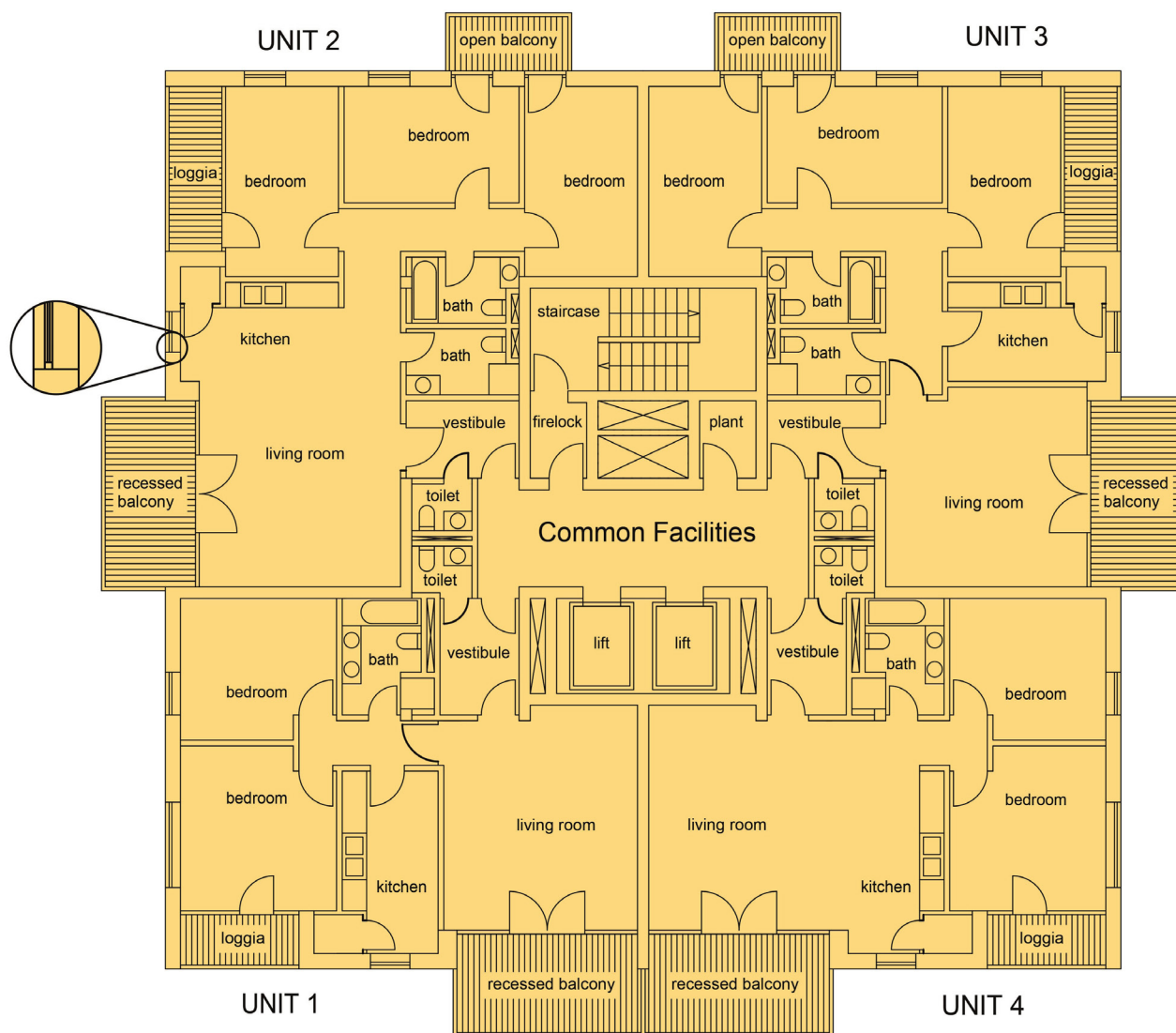


Diagram 19: IPMS 1 – residential apartment

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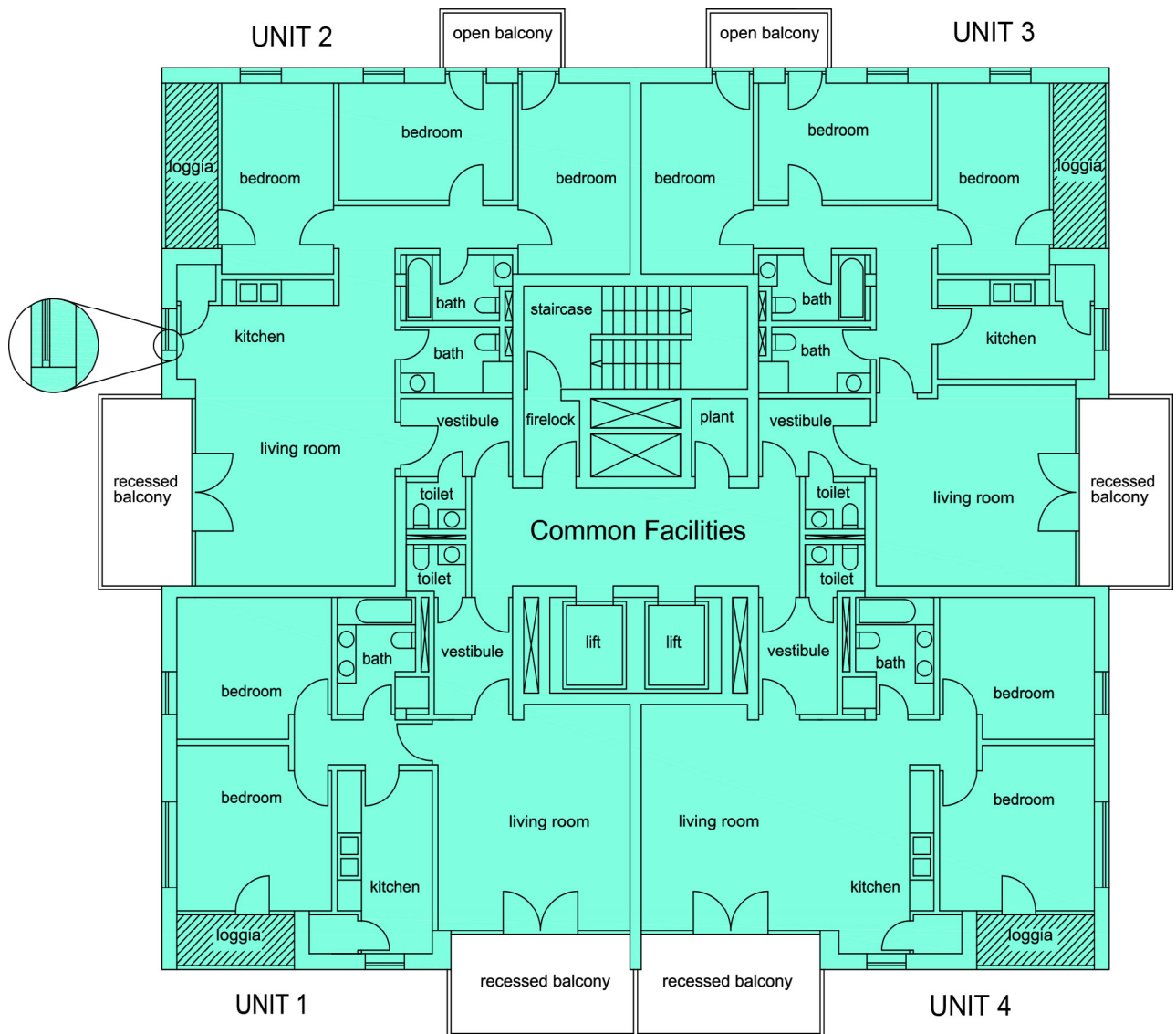


Diagram 20: RICS gross external area (GEA) – residential apartment



Diagram 21: IPMS 1 – residential dwelling

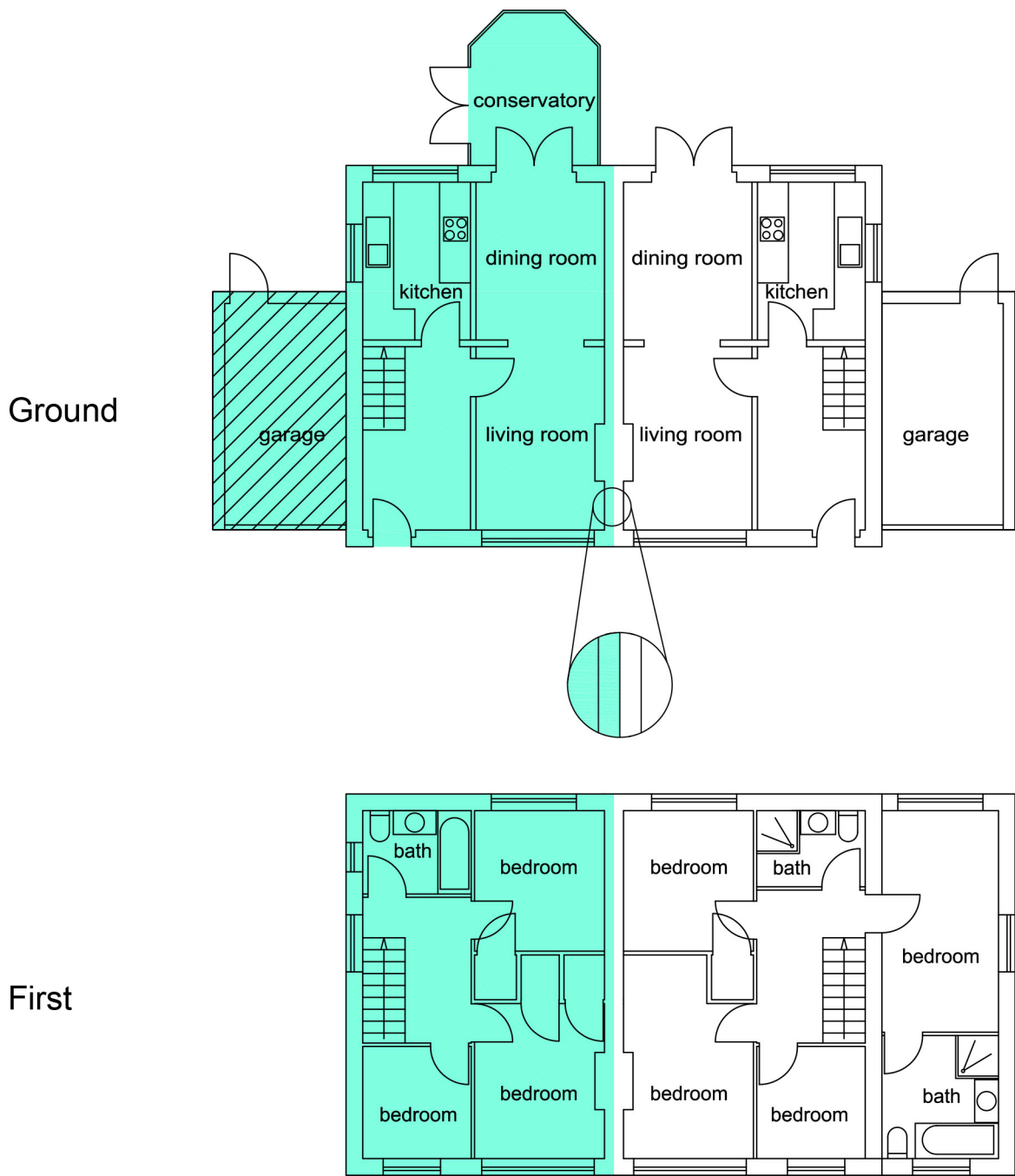


Diagram 22: RICS GEA – residential dwelling

4.2 IPMS 2 – Residential

4.2.1 Use

'IPMS 2 – Residential is for measuring the interior area of a residential building. It can be used to provide data on the use of space, for benchmarking and marketing. In some instances it may be the same as IPMS 3B – Residential.

IPMS 2 – Residential enables users or third parties and service providers to make direct floor space comparisons between buildings using data derived from different market practices.'

IPMS: Residential Buildings, 3.2.1

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The component areas in IPMS 1 and IPMS 2 – Residential:

'may be used when areas need to be separately allocated for cost or other purposes under IPMS 1 and IPMS 2.'

IPMS: Residential Buildings, 4.1

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4.2.2 Definition

'IPMS 2 – Residential: The sum of the areas of each floor level of a residential building measured to the internal dominant face, which may be reported on a component-by-component basis for each floor of a building.

In many markets, but not universally, this is similar to gross internal area [GIA].'

IPMS: Residential Buildings, 3.2.2

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4.2.3 Measurement practice

'Measurements for IPMS 2 – Residential are to be taken to the internal dominant face for external construction features and otherwise to the finished surface.'

If required, IPMS 2 – Residential can be reported on a component-by-component basis for each floor of a building. The aggregate of the component areas minus component area B1 (external wall) must equal IPMS 2 – Residential. For multi-unit buildings, areas in exclusive use and common facilities can be stated separately.

Inclusions:

IPMS 2 – Residential includes all areas within the IDF including internal walls, columns and enclosed walkways or passages between separate buildings, available for direct or indirect use. Covered void areas such as atria are only included at their lowest floor level.'

IPMS: Residential Buildings, 3.2.2

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Measurements included but stated separately:

- covered galleries
- balconies (being external to the main structure of the building)
- internal catwalks
- internal permanent mezzanines
- internal loading bays
- verandas and
- generally accessible rooftop terraces.

These are to be measured to their finished surface and their areas are to be stated separately (*IPMS: Residential Buildings, 4.2, component area H*).

Exclusions:

- open light wells
- upper level voids of an atrium
- any ground level areas or structures beyond the external wall such as sheltered areas
- external car parking
- external catwalks and
- external loading bays.

These and other ground level areas that are not fully enclosed are not to be included within IPMS 2 – Residential but may be stated separately.

4.2.4 Comparing IPMS 2 – Residential with Code of measuring practice

IPMS 2 – Residential equates closely to the gross internal area (GIA) measurement and net sales area (NSA) under the *Code of measuring practice*.

In order to make a direct comparison between IPMS 2 – Residential and GIA, refer to Diagrams 23 to 26.

Diagrams 23 and 25 show the IPMS 2 – Residential for residential apartments and dwellings respectively; those areas coloured on the plans show the elements included in the measurement.

Diagrams 24 and 26 show the corresponding GIA measurements again with the areas coloured that form part of the measurement.

The following steps need to be taken:

Start with the areas calculated to arrive at IPMS 2 – Residential, which will include all the component areas in 3.4.1 shown coloured in Diagram 3, then deduct:

- in respect of internal open-sided balconies or galleries, in some jurisdictions and within jurisdictions, different interpretations of the *Code of measuring practice* may have been adopted regarding their inclusion within GIA. They are labelled 'H' at the top of Diagram 3 and in Diagram 4. Members should be aware of the interpretation adopted when making comparisons between IPMS and the *Code of measuring practice* and should consider whether a deduction for this area

should be made to avoid double counting and for consistency

- balconies (often referred to as external open-sided balconies), labelled 'H' at the bottom of Diagram 3 and in Diagram 4. These should be treated with caution as external balconies would not normally be included in GIA, but it is possible that in some jurisdictions they are included
- verandas should be treated with caution as verandas would not normally be included in GIA, but it is possible that in some jurisdictions they are included
- in respect of the internal dominant face, the areas within window reveals where the internal dominant face is taken to the glazing (an example of an interface adjustment) and
 - generally accessible rooftop terraces. These areas should be treated with caution as rooftop terraces would not normally be included in GIA, but it is possible that in some jurisdictions they are included.

To convert the GIA calculated under the Code of measuring practice to arrive at IPMS 2 – Residential the steps are reversed.

Diagram/ref.	Item	IPMS 2 – Residential	GIA [COMP]	Comments
23, 24, 25 and 26.	All internal walls, columns and enclosed walkways or passages between separate buildings.	Included.	Included.	
23, 24, 25 and 26.	Area occupied by the reveals of windows when measured and assessed as the internal dominant face.	Included.	Excluded.	
3 item H (top).	Covered galleries – being internal and often referred to as internal balconies.	Included but stated separately.	Included/excluded. Different interpretations of the <i>Code of measuring practice</i> [COMP] may apply [see 4.2.4 above] and members should check local practice.	Stated separately for IPMS 2 – Residential. While covered galleries, referred to as internal open-sided balconies, are stated as included in the COMP, different interpretations may have been applied regarding their inclusion.
3 item H (bottom).	Balconies, often referred to as external open-sided balconies.	Included but stated separately.	Excluded.	Stated separately for IPMS 2 – Residential. While normally excluded in GIA [COMP], they may be included in some jurisdictions.
Not shown.	Accessible rooftop terraces.	Included but may be stated separately.	Normally excluded.	While normally excluded for GIA [COMP], they may be included in some jurisdictions.
Not shown.	Mezzanines.	Included but may be stated separately.	Included.	Stated separately for IPMS 2 – Residential. While normally included in GIA [COMP], they may be excluded in some jurisdictions.

Diagram/ref.	Item	IPMS 2 – Residential	GIA (COMP)	Comments
Not shown.	Verandas.	Included but may be stated separately.	Excluded.	Stated separately for IPMS 2 – Residential. While normally excluded in GIA (COMP), they may be included in some jurisdictions.
3 and 4.	Open light wells, upper level voids of an atrium.	Excluded.	Excluded.	
3.	Open external stairways not being part of the structure, e.g. an open framework fire escape.	Excluded.	Excluded.	
Not shown.	Patios, decks at ground level not forming part of the structure.	Excluded.	Excluded.	
Not shown.	External car parking	Excluded.	Excluded.	May be stated separately for both IPMS 2 – Residential and GIA.
Not shown.	Other ground level areas or structures beyond the external wall that are not fully enclosed such as sheltered areas	Excluded.	Excluded.	These areas are not to be measured within IPMS 2 – Residential but may be measured and stated separately.

Table 5: Comparison chart – IPMS 2 – Residential and GIA (COMP)

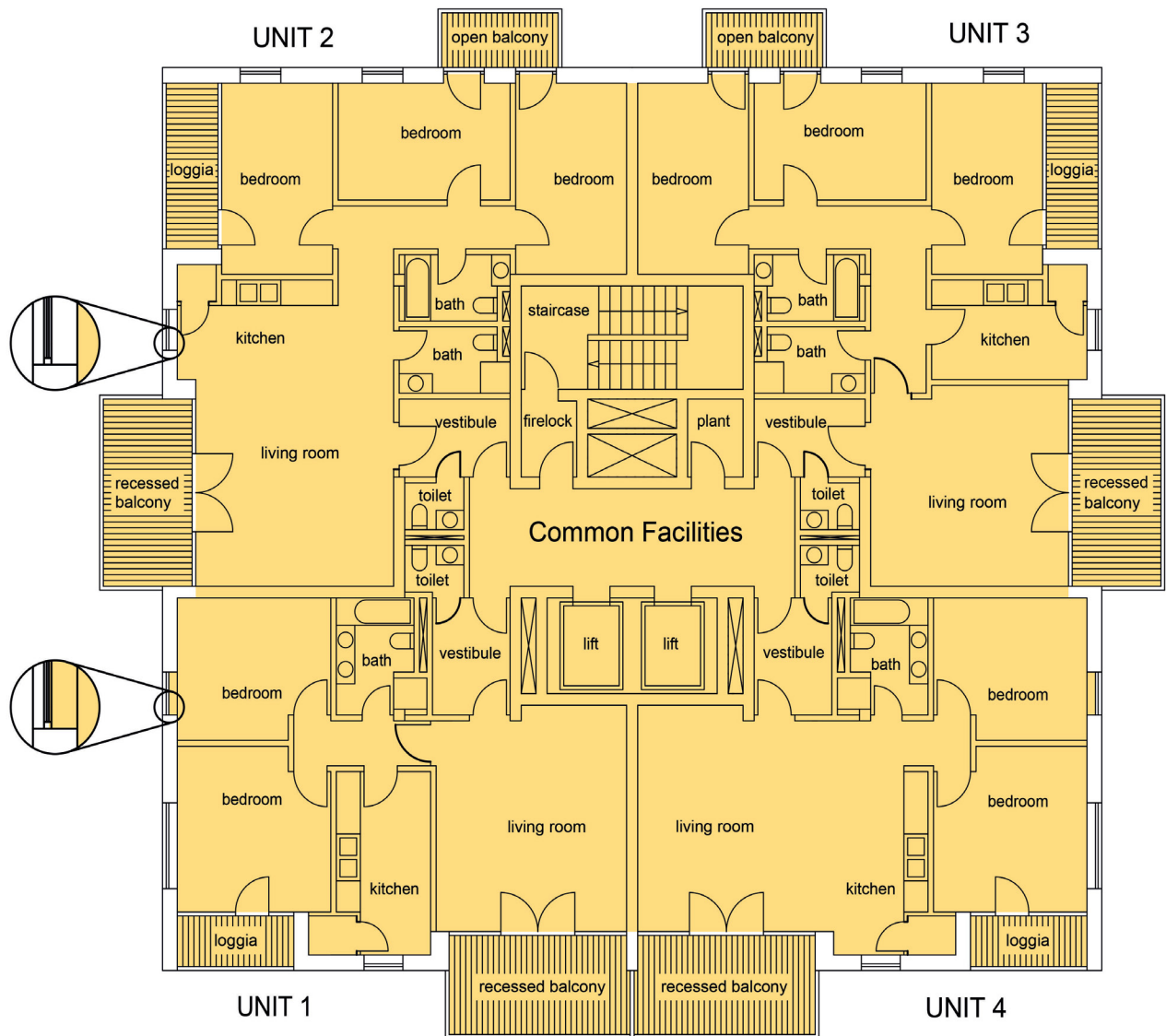


Diagram 23: IPMS 2 – residential apartment

IPMS: Residential Buildings, 5.2.1

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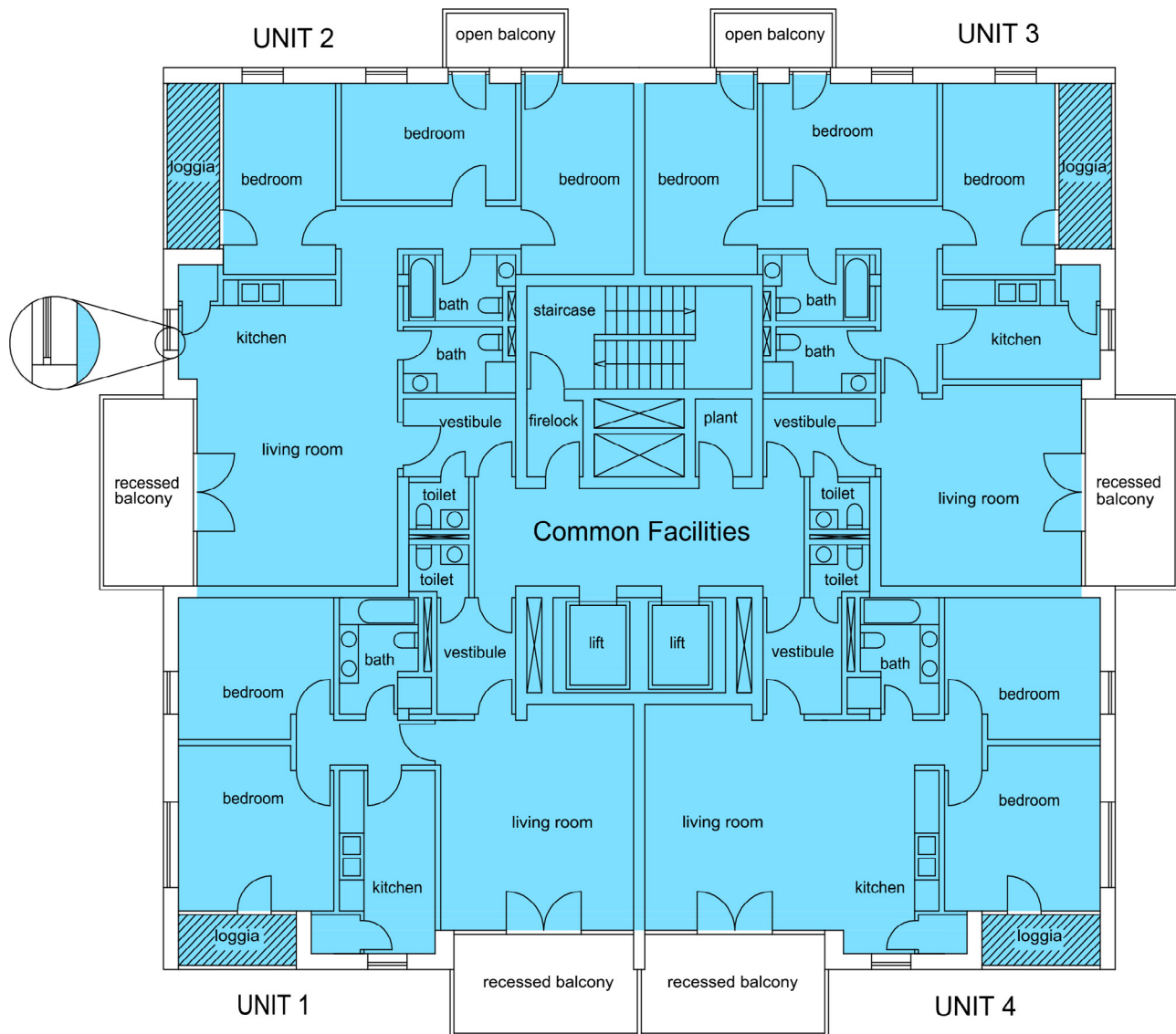


Diagram 24: RICS gross internal area (GIA) – residential apartment

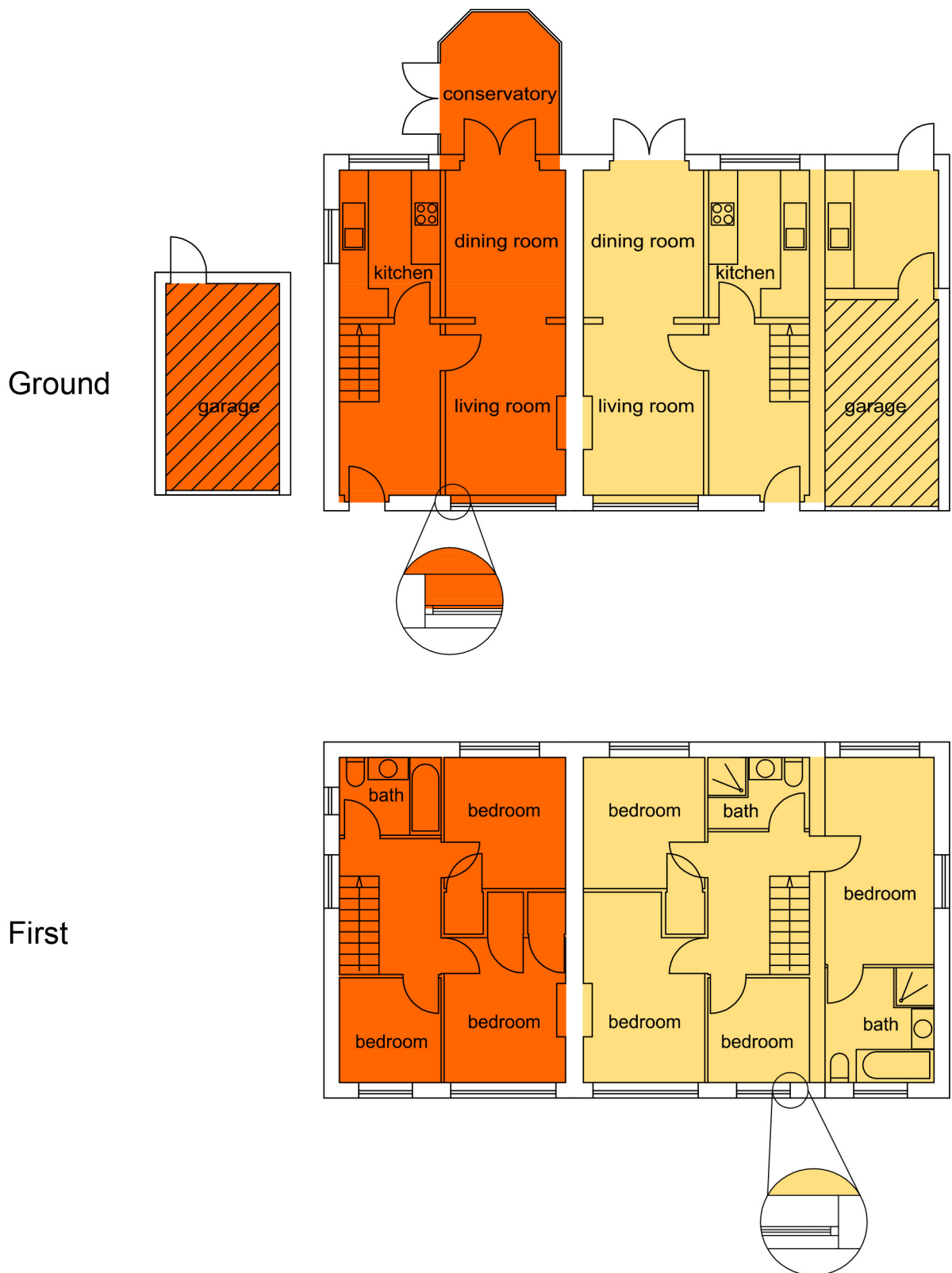


Diagram 25: IPMS 2 – residential dwelling



Diagram 26: RICS GIA – residential dwelling

4.3 IPMS 3 – Residential

4.3.1 Use

'IPMS 3 – Residential is for measuring the occupation of floor areas in exclusive use.

The SSC has researched international property markets and identified different measurement bases that need to be accommodated. Some markets require only one of these measurement bases, but others may use two or more for different purposes.

It is not appropriate for a service provider to simply state that the measurement is in accordance with IPMS 3 – Residential. The reference must include whether the measurement is IPMS 3A – Residential, IPMS 3B – Residential or IPMS 3C – Residential.'

IPMS: Residential Buildings, 3.3.1

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IPMS 1 - Residential is mainly for measuring whole residential buildings externally. IPMS 2 - Residential is mainly for measuring whole residential buildings internally. However, IPMS 1 and IPMS 2 can also be applied to entire building floors or individual dwellings, if required. IPMS 3 - Residential deals with the more precise situation where it is necessary to measure a part (or indeed whole) of a floor or building in exclusive use and consequently is not restricted solely to internal space reporting. There are three alternative bases:

- IPMS 3A: an external measurement of the area in exclusive occupation – equates somewhat to GEA (gross external area)
- IPMS 3B: an internal measurement including internal walls, etc. – equates somewhat to GIA (gross internal area) and
- IPMS 3C: an internal measurement excluding internal walls, etc. – equates somewhat to EFA.

4.3.2 Definition

'IPMS 3 – Residential: The floor area available on an exclusive basis to an occupier.

[Inclusions:]

IPMS 3 – Residential is not directly related to IPMS 1 or IPMS 2 – Residential, nor is it a component area.

In a multi-occupied building each unit would have its own IPMS 3 measurement. Service providers must always specify to users and third parties which IPMS 3 – Residential basis is reported.

Depending on the variation used (IPMS 3A, 3B or 3C – Residential), the measurements for IPMS 3 – Residential may need to be taken to the outer face or the internal dominant face of the external wall, while other walls would be measured to the finished surface or the centre-line, as more fully described below.

Note that the areas occupied by internal walls or columns are included in IPMS 3A – Residential and IPMS 3B – Residential. The floor area occupied by stairs is only to be included at the lowest level. All vertical penetrations or voids that are greater than 0.25m² [2.7ft²], including the enclosing wall, are to be excluded from the floor area measurement.

In some cases, in addition to the IPMS 3 measurements stated below, service providers and users may also wish to state individual room dimensions. Dimensions are to be to the internal dominant face or finished surface, as appropriate.'

IPMS: Residential Buildings, 3.3.2

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4.3.3 IPMS 3A – Residential

'IPMS 3A - Residential: The area in exclusive occupation is measured as follows:

Detached dwellings

- to the outer face of the external wall.

Attached dwellings

- to the outer face of the external wall and
- to the centre-line of shared walls between occupants.

Multi-unit dwellings

- to the outer face of the external wall and
- to the centre-line of shared walls between occupants and
- to the finished surface of walls shared with common facilities.

In the case of detached dwellings level 0 of IPMS 3A – Residential may be the same as IPMS 1.

Measurements included but stated separately and individually:

- Attics, basements/cellars
- Balconies and verandas in exclusive use
- Garages
- Limited use areas.

Measurements excluded but which may be stated separately and individually:

- Patios
- Unenclosed parking areas, which may be measured or defined by number of spaces
- Staircase openings [above Level 0]
- Voids where the area, including the enclosing wall (if there is one), is greater than 0.25m² [2.7ft²]
- Vertical penetrations that form part of common facilities.'

IPMS: Residential Buildings, 3.3.3

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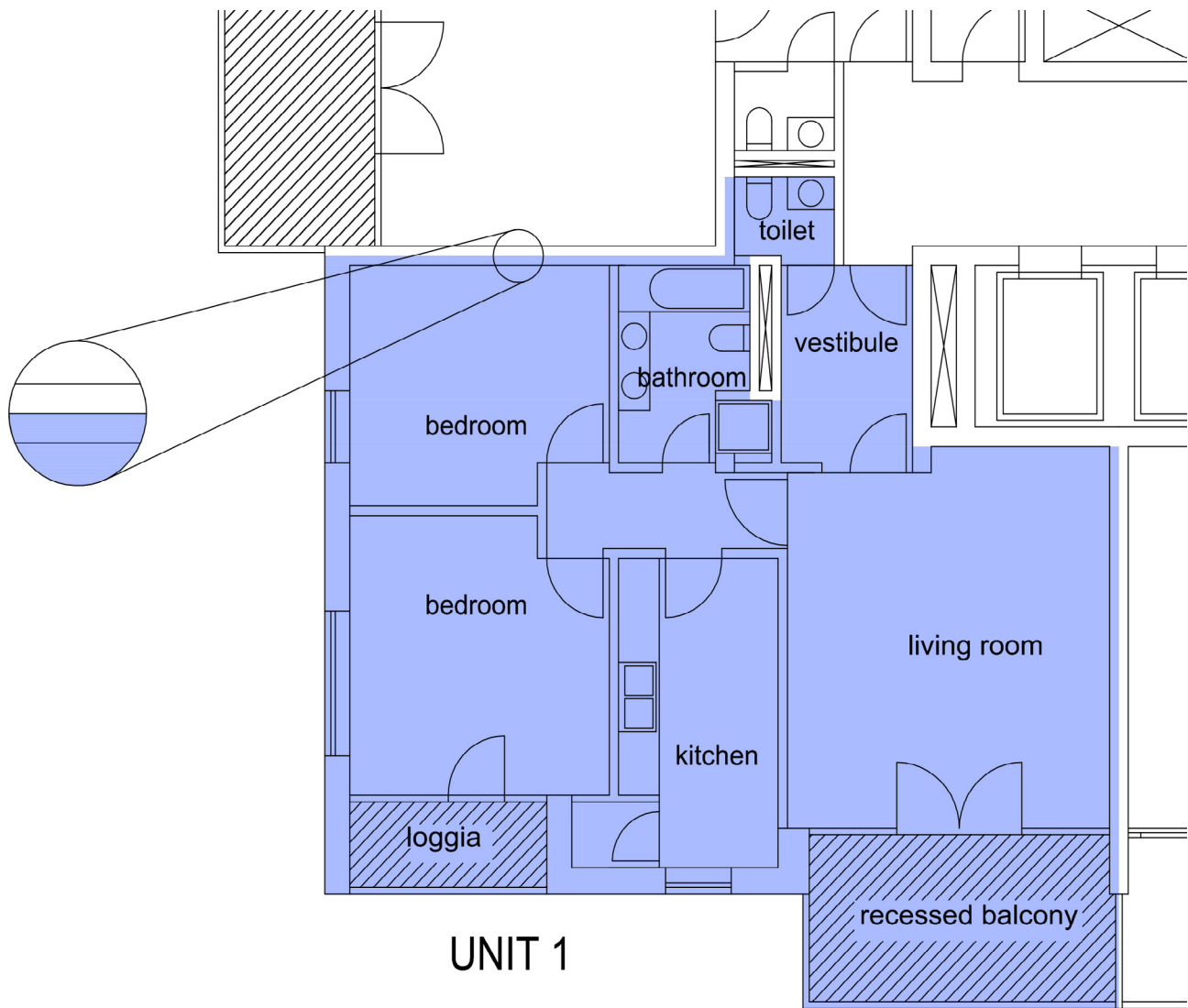


Diagram 27: IPMS 3A – extract of single apartment unit



Diagram 28: IPMS 3A – residential dwelling

4.3.4 IPMS 3B – Residential

'IPMS 3B: The area in exclusive occupation, including the floor area occupied by internal walls and columns, measured to:

- the internal dominant face and
- the finished surface of shared walls.

In the case of detached dwellings level 0 of IPMS 3B – Residential may be the same as IPMS 2 – Residential.

Measurements included but stated separately and individually:

- Attics, basements/cellars
- Balconies and verandas in exclusive use
- Garages
- Limited use areas.

Measurements excluded but which may be stated separately and individually:

- Patios
- Unenclosed parking areas, which may be measured or defined by number of spaces
- Staircase openings
- Voids where the area, including the enclosing wall (if there is one), is greater than 0.25m² [2.7ft²]
- Vertical penetrations that form part of common facilities.'

IPMS: Residential Buildings, 3.3.4

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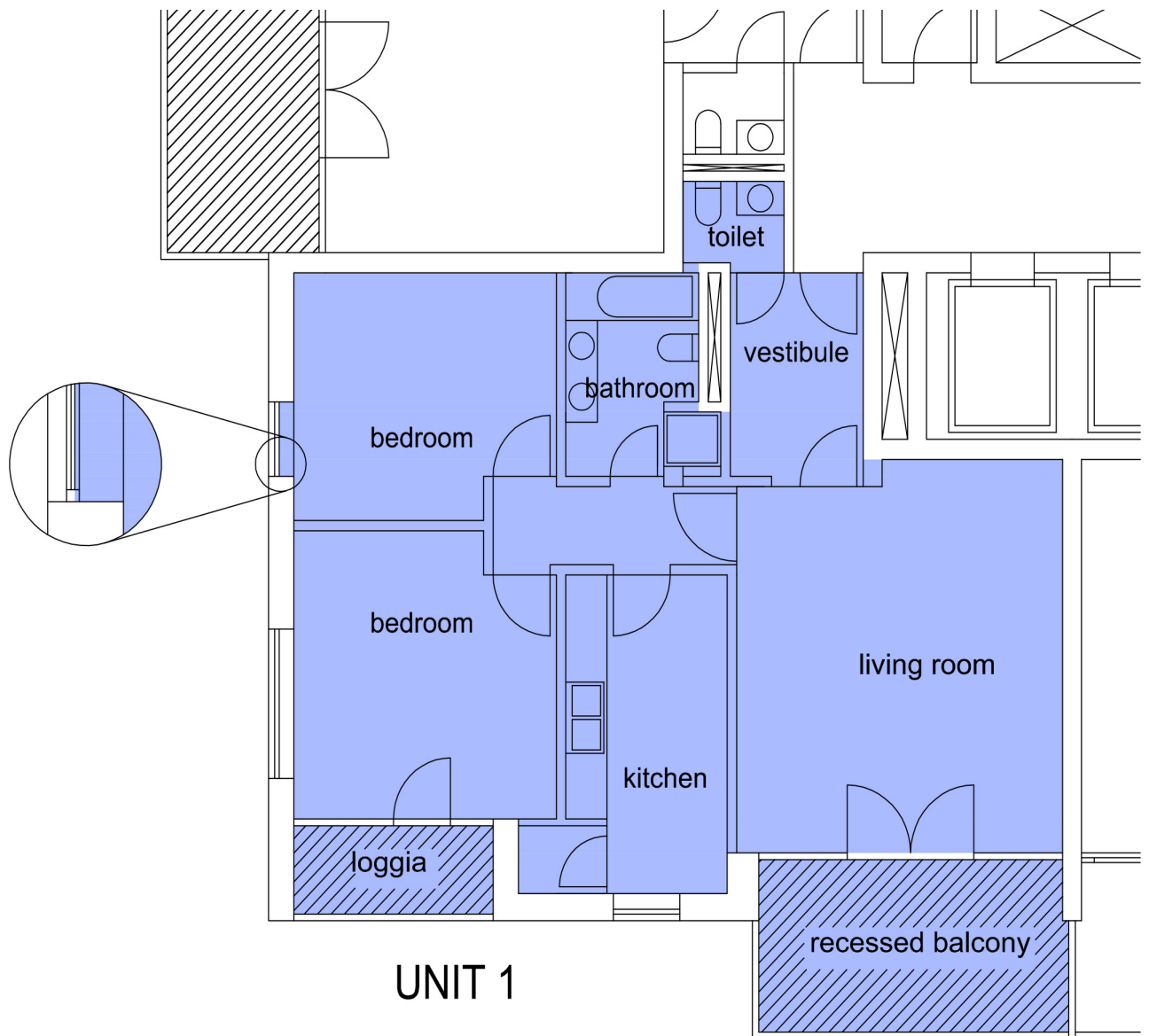


Diagram 29: IPMS 3B – extract of single apartment unit

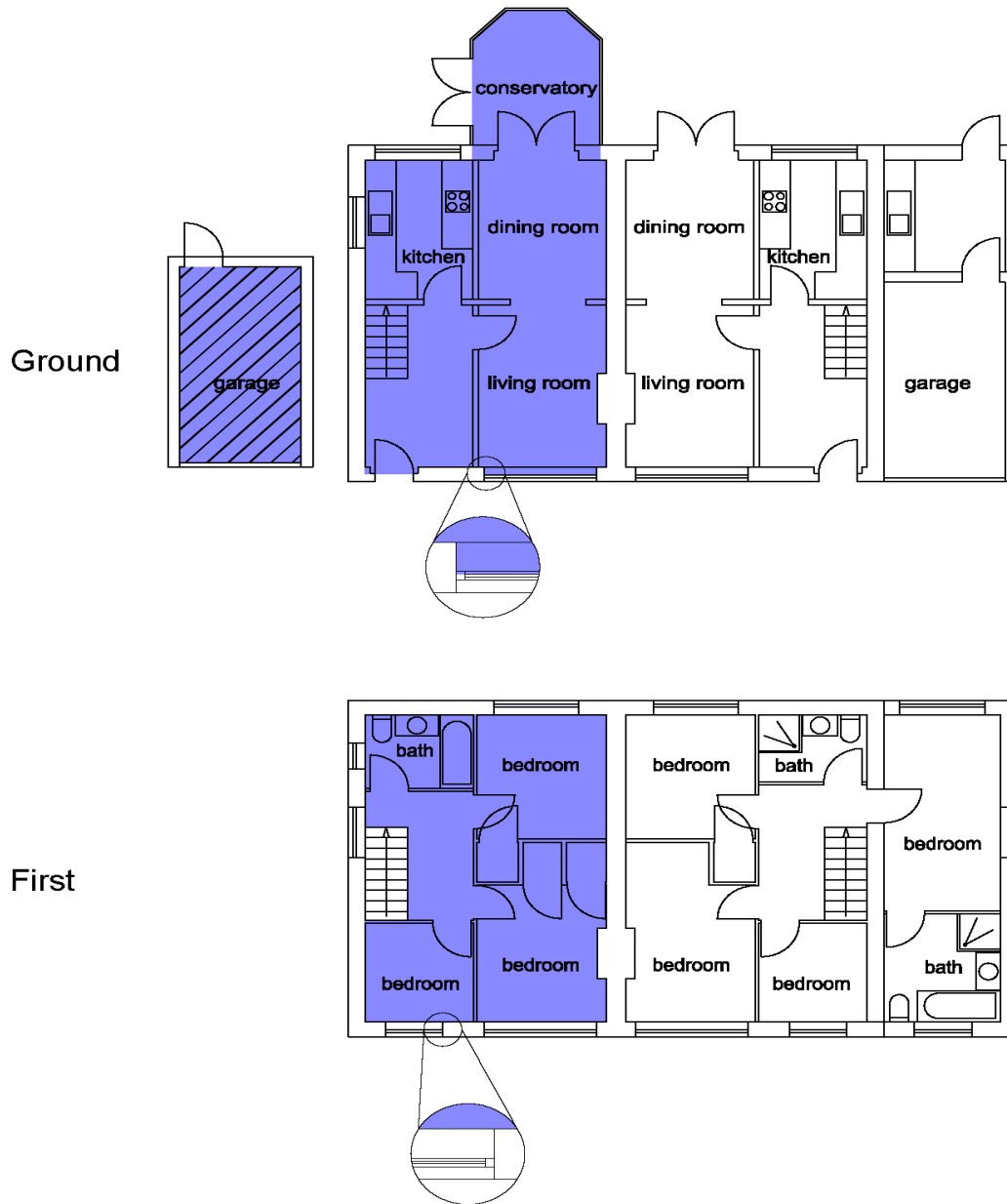


Diagram 30: IPMS 3B – residential dwelling

4.3.5 IPMS 3C – Residential

IPMS 3C can be used for measuring the area on a room by room basis and is defined as:

'The area in exclusive occupation, excluding the floor area occupied by full-height, permanent, internal walls and columns, measured to:

- the internal dominant face and
- the finished surface of all full-height internal walls.

Fully glazed partitions are not regarded as permanent internal walls.

Measurements included but stated separately and individually:

- Attics, basements/cellars
- Balconies and verandas in exclusive use
- Enclosed garages
- Limited use areas.

Measurements excluded but which may be stated separately and individually:

- Patios
- Unenclosed parking areas, which may be measured or defined by number of spaces
- Staircase openings
- Voids where the area, including the enclosing wall (if there is one), is greater than 0.25m² [2.7 ft²].'

IPMS: Residential Buildings, 3.3.5

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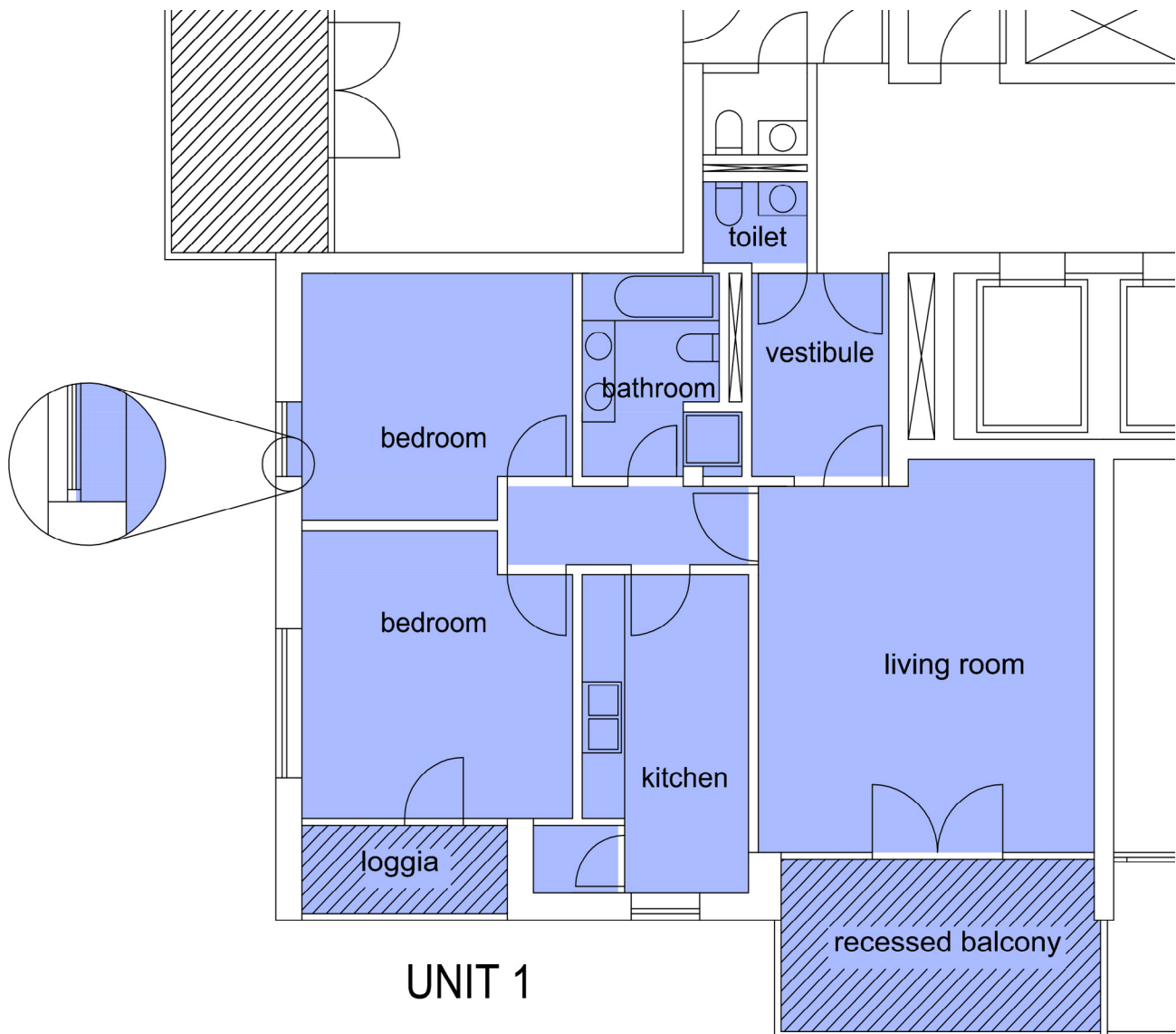


Diagram 31: IPMS 3C – extract of single apartment unit

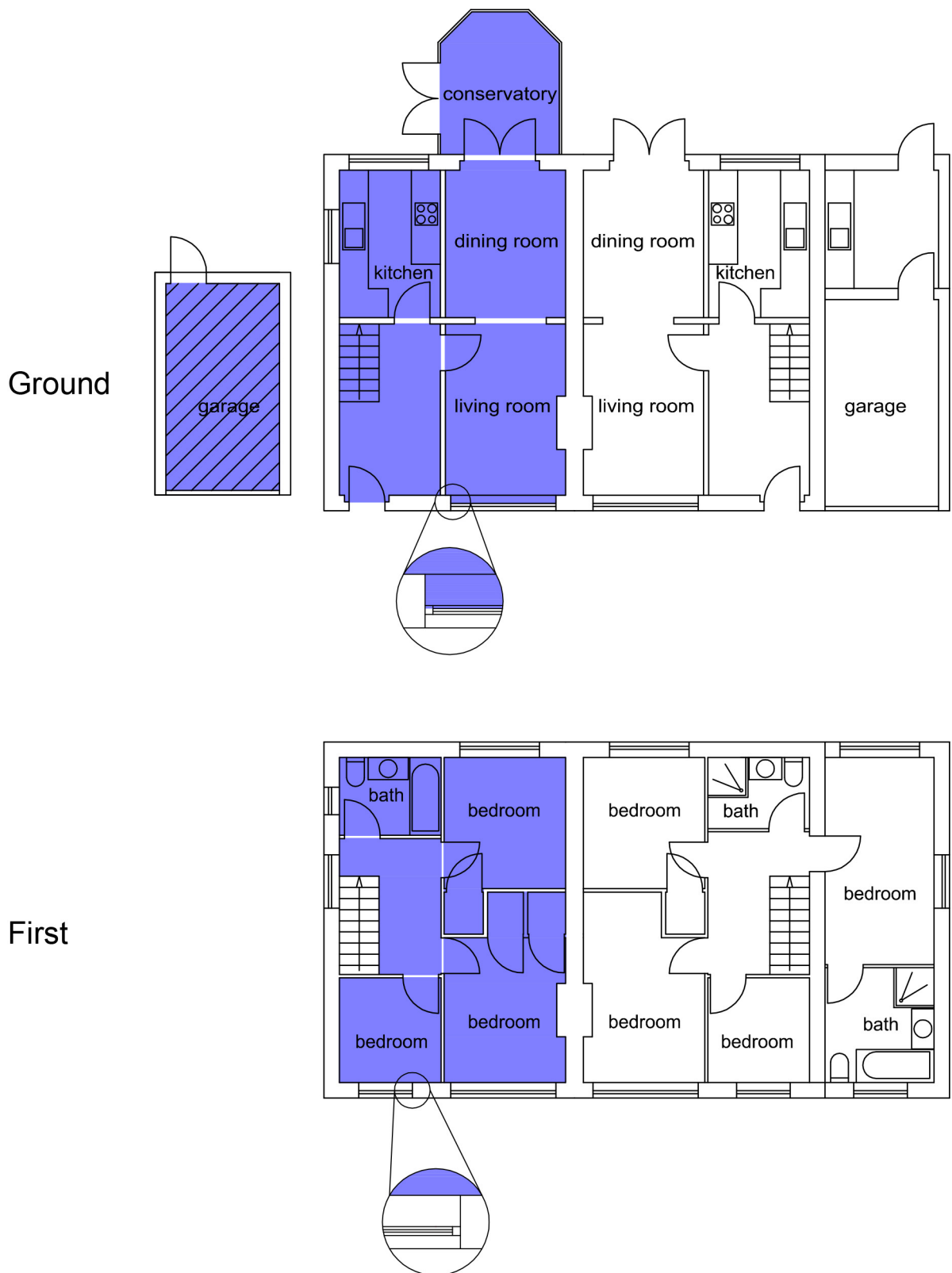


Diagram 32: IPMS 3C – residential dwelling

Diagram/ref.	Item	IPMS 3A – Residential	IPMS 3B – Residential	IPMS 3C – Residential
27, 28, 29, 30, 31 and 32.	All internal walls, columns and enclosed walkways or passages between separate buildings.	IPMS 3A – Residential is the same as IPMS1 in measurement extents.	IPMS 3B – Residential is the same as IPMS 2 – Residential in measurement extents.	IPMS 3C – Residential is the measurement of a dwelling on a room-by-room basis.
27, 28, 29, 30, 31 and 32.	External walls.	Included. For attached dwellings measurement is taken to centre-line of shared walls between occupants.	Excluded. For attached dwellings measurements are taken to the finished surface of the shared walls between occupants	Excluded. For attached dwellings measurements are taken to the finished surface of the shared walls between occupants.
27, 28, 29, 30, 31 and 32.	All internal walls and columns.	Included.	Included.	Excluded. Internal walls should be full-height and measurements are taken to the finished surface.
27, 28, 29, 30, 31 and 32.	Area occupied by the reveals of windows when measured and assessed as the internal dominant face.	Included.	Included.	Included.
3 and 4.	Areas of stairwells at upper levels [staircase openings].	Excluded.	Excluded.	Excluded.
3 and 4.	Vertical penetrations that form part of common facilities.	Excluded.	Excluded.	Excluded.
3 and 4.	Voids, where the area, including the enclosing wall [if there is one] is greater than 0.25m ² [2.7ft ²].	Excluded.	Excluded.	Excluded.
Not shown.	Areas less than 1.5m [5ft] in height.	Included.	Included.	Included.
Not shown.	Standard facilities and shared circulation areas.	Excluded.	Excluded.	Excluded.
Not shown.	Attics and loft spaces.	Included but stated separately. Permanence of access and suitable flooring should be noted.	Not shown. Permanence of access and suitable flooring should be noted.	Attics and loft spaces. Permanence of access and suitable flooring should be noted.
Not shown.	Basements/cellars.	Included.	Included.	Included.
Not shown.	Garages.	Included.	Included but stated separately.	Included but stated separately.
Not shown.	Enclosed walkways or passages between separate buildings in exclusive occupation.	Included.	Included.	Included.
Not shown.	Verandas.	Included but stated separately.	Included but stated separately.	Included but stated separately.

Diagram/ref.	Item	IPMS 3A – Residential	IPMS 3B – Residential	IPMS 3C – Residential
3.	Covered galleries, sometimes referred to as internal balconies, used exclusively.	Included but stated separately.	Included but stated separately.	Included but stated separately.
3.	External open-sided balconies used exclusively.	Included but stated separately.	Included but stated separately.	Included but stated separately.
Not shown.	Accessible rooftop terraces.	Included but stated separately.	Included but may be stated separately.	Included but may be stated separately.
3.	Open light wells, upper level voids of an atrium.	Excluded.	Excluded.	Excluded.
3.	Open external stairways not being part of the structure, e.g. an open framework fire escape.	Excluded.	Excluded.	Excluded.
Not shown.	Patios, decks at ground level not forming part of the structure.	Excluded.	Excluded.	Excluded.
Not shown.	External car parking and other ground floor areas that are not fully enclosed.	Excluded.	Excluded.	Excluded.

Table 6: Comparison chart – IPMS 3A – Residential, IPMS 3B – Residential and IPMS 3C – Residential

4.4 Comparing IPMS 3C – Residential with effective floor area (EFA) as defined in the Code of measuring practice, 6th edition

Effective floor area is a measurement basis historically used by the UK Valuation Office Agency for measuring flats (but not houses) for council tax, originally domestic rates. It is similar to NIA but has variations. It is very much a 'usable area' or 'carpet area'. As millions of flats are measured for council tax on this basis it is helpful for RICS members in the UK to include a comparison within these standards. RICS members would be expected to report on an EFA basis when undertaking council tax work for flats.

The differences between IPMS 3C and EFA relate to:

- all hallways, landings and passages are excluded (regardless of whether they are enclosed by structural or non-structural partitions)
- cupboards opening off excluded areas such as hallways and
- areas covered by non-structural stud walls and partitions.

In order to make a direct comparison between IPMS 3C – Residential as defined in Section 4.3.5 and shown in Diagrams 31 and 32 and EFA, start with IPMS 3C – Residential and deduct the following:

- the interface adjustment as defined in Section 3.5
- areas with a headroom of less than 1.5m (5ft)
- bathrooms, showers and toilets
- permanent circulation areas, corridors and thresholds/ recesses associated with access, passages (regardless of whether enclosed by structural or non-structural partitions)
- the space occupied by permanent air-conditioning, heating or cooling apparatus and ducting
- cupboards opening off excluded areas such as hallways
- the area of rooftop terraces and
- the area of balconies.

To convert the EFA to arrive at IPMS 3C – Residential the steps are reversed.

4.5 Vehicle parking and ancillary areas within a residential site boundary

The area taken up by car parking **must** be measured and the number and type of spaces within that area recorded. The type of spaces, and their size and layout, will largely be determined by the occupiers' requirements, which may differ from other potential occupiers.

Occupiers may have security or other buildings on site. These should be measured in accordance with the principles in this chapter 4 and, if measuring to IPMS 2 – Residential, recorded under ancillaries on a spreadsheet such as that set out under section 3.2 and in *IPMS: Residential Buildings*.

Appendix A: Tolerances

Survey scale	Accuracy [X,Y]	Minimum size of feature to be shown to scale without generalisation	Example of survey	Typical use
1:20	+/- 5mm	10mm	Engineering surveying and setting out, high accuracy measured	High accuracy engineering output, structural steel and complex refurbishment, high value commercial property.
1:50	+/- 10mm	20mm	Engineering surveying and setting out, measured building surveys, high accuracy topographic surveys, determined boundaries, area registration.	Building surveys, refurbishment and space planning, demolition and structural engineering, commercial area registration.
1:100	+/- 25mm	50mm	Measured building surveys, low accuracy setting out, net area surveys, valuation surveys.	General arrangement drawings for space planning, estate agency, residential valuation, low accuracy commercial development and valuation.
1:200	+/- 50mm	100mm	Low accuracy measured building surveys.	Planning, building footprint or detail design.

Table 7: Survey accuracy

Notes

Table 7 above is derived from the RICS guidance note *Measured surveys of land, buildings and utilities*, 3rd edition (November 2014), section 2.3 Survey accuracy band table.

The survey accuracies shown are industry standard. It is recommended that surveyors and service providers use a form of measured survey specification on agreed output scale and related acceptable detail accuracy. A simplified form of 'quick specification for measured surveys' is available as Appendix B in *Measured surveys of land, buildings and utilities*, 3rd edition (November 2014).

Appendix B: Further information

For *RICS Rules of Conduct*, see www.rics.org/uk/regulation1/rules-of-conduct1

IPMS: Office Buildings and *IPMS: Residential Buildings* can be downloaded from www.ipmsc.org

Code of measuring practice, 6th edition, can be downloaded from the RICS website.

Other technical measurement guidance of a specialist nature is available, for example:

- *Measured surveys of land, buildings and utilities*, 3rd edition (2014), an RICS guidance note forming part of a series of specifications and guidelines to assist those connected with the requesting, purchasing and production of surveys and mapping material.
- *NRM 1: Order of cost estimating and cost planning for capital building works*, 2nd edition (2012); *NRM 2: Detailed measurement for building works*, 1st edition (2012); and *NRM 3: Order of cost estimating and cost planning for building maintenance works*, 1st edition (2014). RICS QS and Construction Professional Group provides guidance for the detailed measurement of building works for obtaining tender prices.

Part 2 – RICS IPMS data standard

In order to provide consistency for software developers and applications RICS has developed a data standard to encapsulate the attributes and elements of an IPMS measurement. This data standard is an XML schema and is available with further documentation at www.rics.org/propertymeasurement

Software developers and those requiring the use of structured data are advised to follow the schemas as defined and those wishing to pursue RICS software certification must demonstrate compliance with this data standard.

5 RICS IPMS data standard

The following diagram is a visualisation of the data standard. For full details see www.rics.org/propertymeasurement

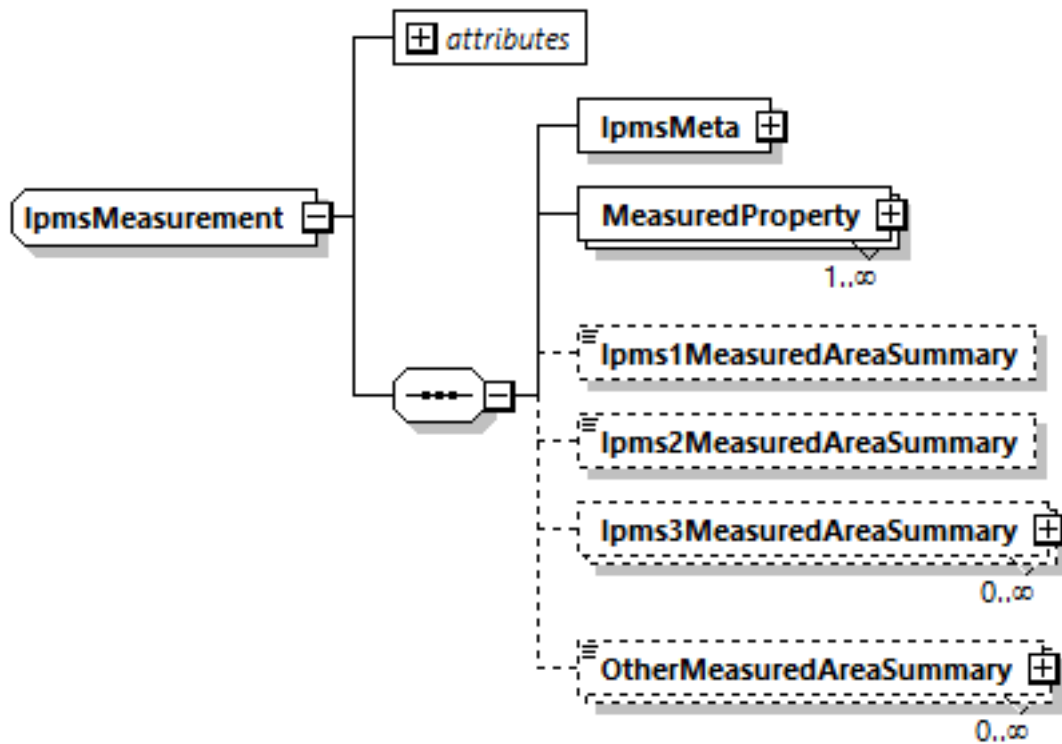


Figure 33: RICS IPMS Data Standard - Top Level

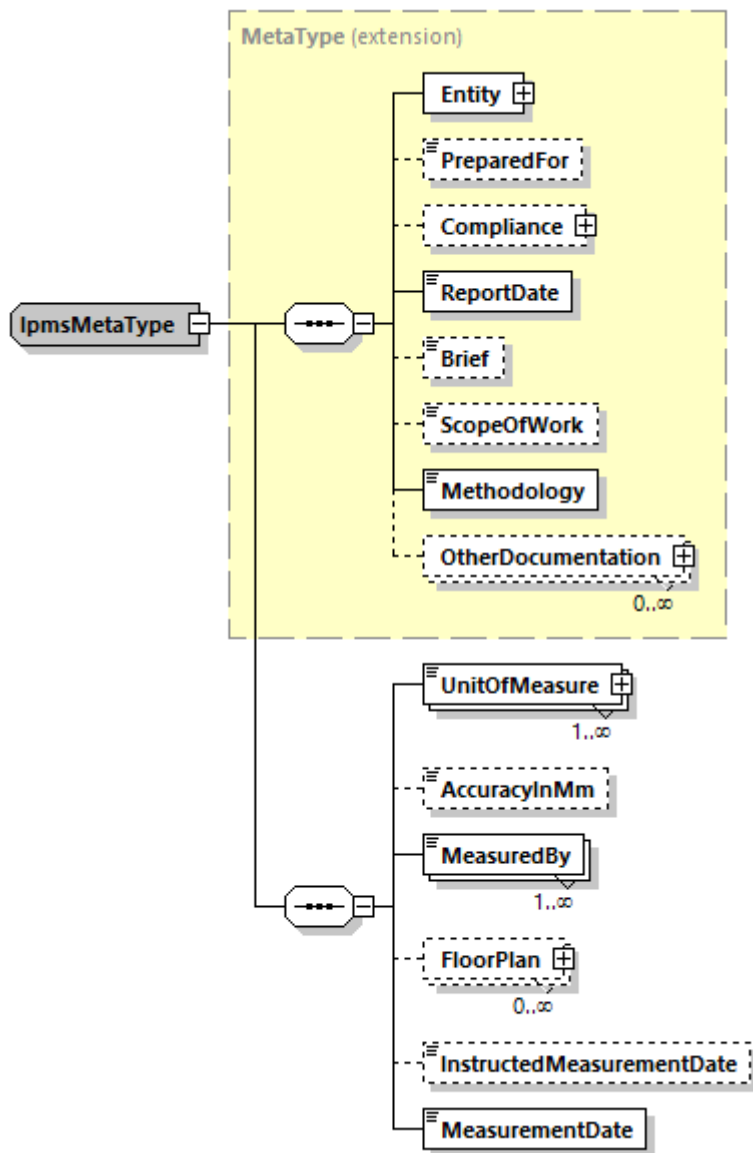


Figure 34: RICS IPMS Data Standard - MetaType

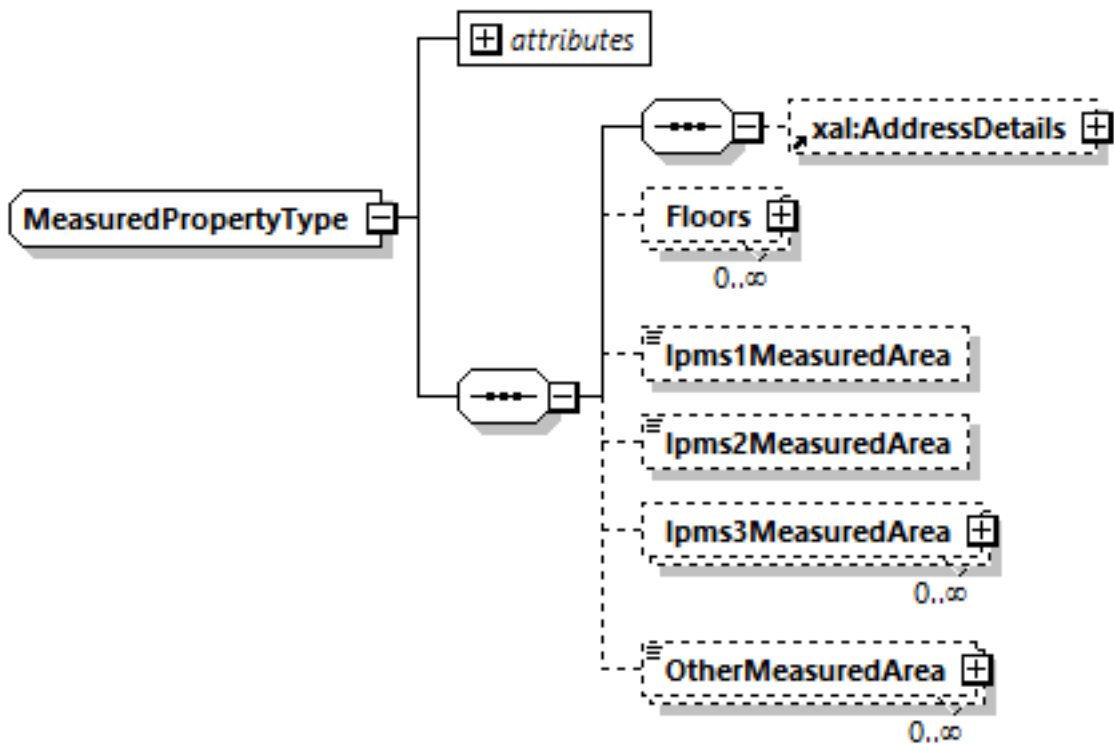


Figure 35: RICS IPMS Data Standard - Measured Property

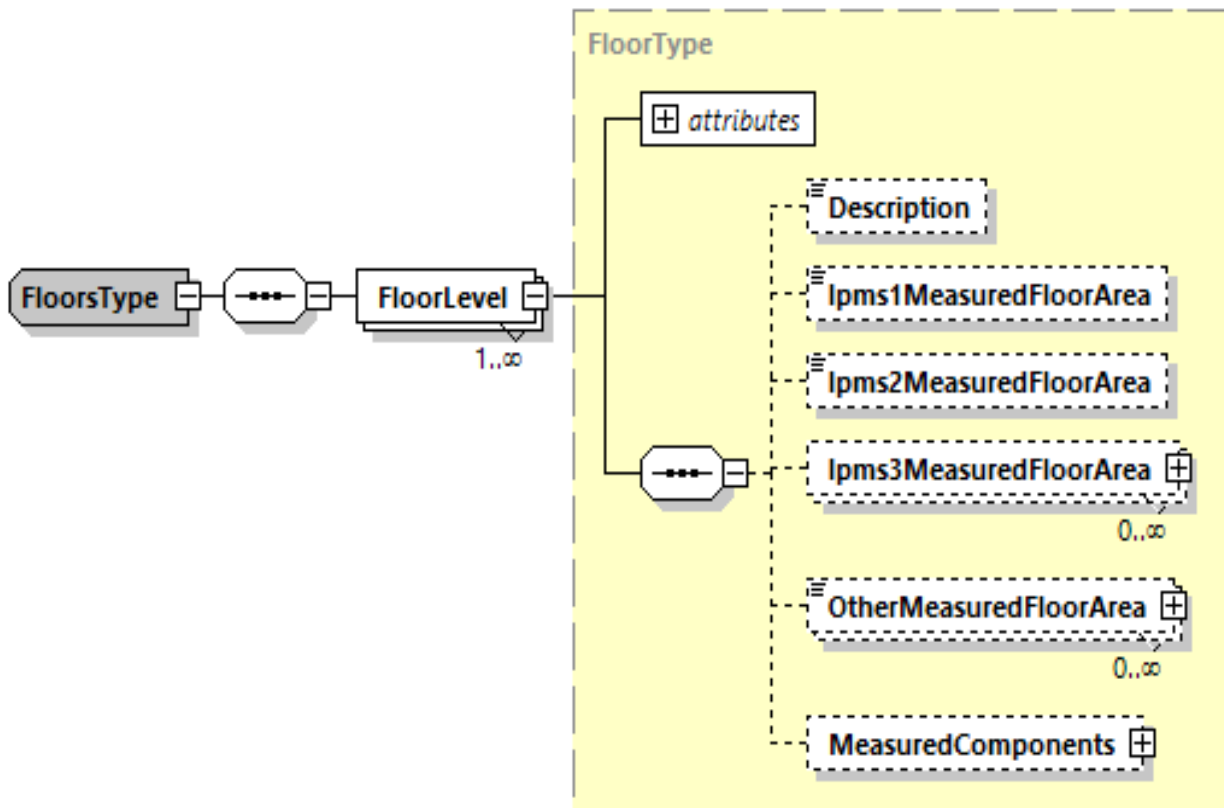


Figure 36: RICS IPMS Data Standard - Floors

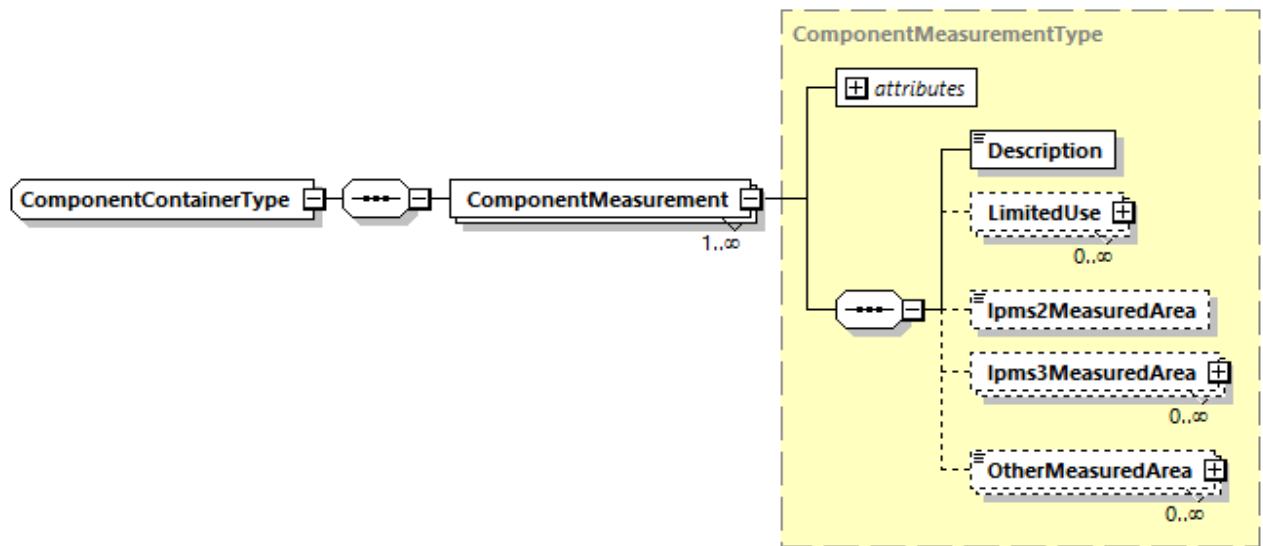


Figure 37: RICS IPMS Data Standard - Component



Confidence through professional standards

RICS promotes and enforces the highest professional qualifications and standards in the development and management of land, real estate, construction and infrastructure. Our name promises the consistent delivery of standards – bringing confidence to the markets we serve.

We accredit 125,000 professionals and any individual or firm registered with RICS is subject to our quality assurance. Their expertise covers property, asset valuation and real estate management; the costing and leadership of construction projects; the development of infrastructure; and the management of natural resources, such as mining, farms and woodland. From environmental assessments and building controls to negotiating land rights in an emerging economy; if our professionals are involved the same standards and ethics apply.

We believe that standards underpin effective markets. With up to seventy per cent of the world's wealth bound up in land and real estate, our sector is vital to economic development, helping to support stable, sustainable investment and growth around the globe.

With offices covering the major political and financial centres of the world, our market presence means we are ideally placed to influence policy and embed professional standards. We work at a cross-governmental level, delivering international standards that will support a safe and vibrant marketplace in land, real estate, construction and infrastructure, for the benefit of all.

We are proud of our reputation and we guard it fiercely, so clients who work with an RICS professional can have confidence in the quality and ethics of the services they receive.

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