

The European Measurement Code for the Floor Area of Buildings

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SUMMARY

If the definition of the physical notion of the meter and square meter is not a problem in our modern society, it is not the same when we ask the question "how to measure buildings"?

Indeed, for a building measured, for example from UK standards or some continental standards, the differences of area can reach up to 30%.

For example, in France or Belgium, several measurement codes for the floor area coexist.

To compensate this lack of homogeneity, the drafting of the European code was provided by a French-Belgian working group who is representative of the OGE, the OBGE vzw, the Belgian cadastre and Experts of the European commission. This code has been welcomed by the Council of European Geodetics Surveyors (CLGE) which brings together 36 countries including 27 members of the European Union. The code is very simple but not simplistic, it is twenty pages based on the measure of three key areas :

- External Area (SEM) including walls,
- Internal Area (SIM),
- The Constructed Area (SDC) which is the difference between the SEM and the SIM.

The watchword of this code is to fit everyone, for all buildings and all types of mission property, including of course, the co-ownership management.

The objectives of the code are organized around the concepts of transparency, legal certainty and meeting the economic requirements of our society.

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1. INTRODUCTION

The ideal Code of Measuring Practice will give the public a clearer idea of how the area of buildings is calculated, while at the same time meeting the economic requirements of our society, providing professionals with a common language, guaranteeing the legal certainty of acts of law, facilitating an objective comparison between properties and allowing a standardised graphical representation of property.

Together with the European Commission, our French-Belgian working group of surveyors has undertaken a wide-ranging review aimed at establishing the most broad-based measuring code possible that would be applicable to all purpose-built premises, including housing, businesses, offices, industry, agriculture, plant and infrastructure. Our aim is to draw up standard definitions and rules common to all buildings, irrespective of their use.

We have adopted an approach based on clarity, accessibility and user-friendliness in keeping with our desire for transparency and intelligibility. The working group's objective is to propose a simple, fair, yet strict code.

The rules of this code apply to all existing buildings, as well as to all phases of the construction process, from the design on to the completion of the works.

When a measurement has been prepared in accordance with this Code, it will be followed by the reference "euREAL".

In the general interest, we are happy for the CMS area measure to coexist with other current market measures for a transitional period.

2. AIMS – OUR AIM IS TO MET THE REQUIREMENTS OF CIVIL SOCIETY IN TERMS OF:

2.1 Transparency

A single measuring code is necessary not just for the protection of European consumers, but as a safeguard for professionals too. A single code would enable better understanding of property areas and values. The rules and definitions laid down in the Code are designed with a view to simplification and standardisation of the terminology. Their aim is to provide a uniform and coherent way for measuring buildings. The public will have greater confidence in a more transparent property market.

2.2 Legal Certainty

The security of transactions requires full information to define the legal boundaries of a property. The use of a single measuring code by all professionals will provide the consumer with better protection by guaranteeing a surface area within these boundaries.

2.3 Planimetric Representation

The Code's measuring rules allow a planimetric representation of the external perimeters of buildings on all types of plan, including cadastral plans.

2.4 Economic Requirements

In a context of European free trade, it is essential to be able to compare properties and economic markets. For the consumer, business or investor, use of the single code will help to establish a standardised product to assist in the valuation (market values, rental values, etc.) and management of buildings, and the preparation of reliable statistics. This will strengthen both market transparency and economic guarantees.

3. GENERAL PRINCIPLES APPLICABLE TO BUILDINGS

3.1 Reference Areas

Definition of the three reference areas covered by this measuring code:

- EXTERNAL AREA (or SEM) relates to the outer perimeter boundary of a building, including any external cladding, measured at floor level.
- INTERNAL AREA (or SIM) relates to the interior perimeter of all construction features or fixed partitions, measured above skirting-board level.
- Construction features are all the elements making up the shell of the building, e.g.: walls, pillars, supporting walls, breast walls, alcoves and recesses, window and door reveals and the chimney flues.
- The 'interior perimeter' of construction features is the directly visible, accessible and measurable perimeter.
- CONSTRUCTED AREA (or SDC) is the difference between the external area and the internal area.

3.2 Use of Reference Areas

- External area

This is mainly used for town planning purposes or for the planimetric representation of the building.

It is also a unit of measure of the building rights attached to the plot.

- Internal area

This is mainly used as a reference unit of measure in valuation (price/m²), property transactions (sales agreements, deeds, etc.), renting (price/m²/yr) and building management.

- Constructed area

This is mainly used as technical data.

3.3 Rules on Measurement

3.3.1 General Principles:

SUBDIVISION OF THE BUILDING:

Buildings are divided into different levels or 'floors'.

UNIT OF MEASURE:

The unit of measure of floor area is the square metre, expressed to one decimal place in accordance with the mathematical rules for rounding.

ACCURACY OF MEASUREMENT:

All dimensions must be measured to the nearest cm.

MEASUREMENT:

Floor area is always measured horizontally, even in the case of a non-vertical facade or sloping roof.

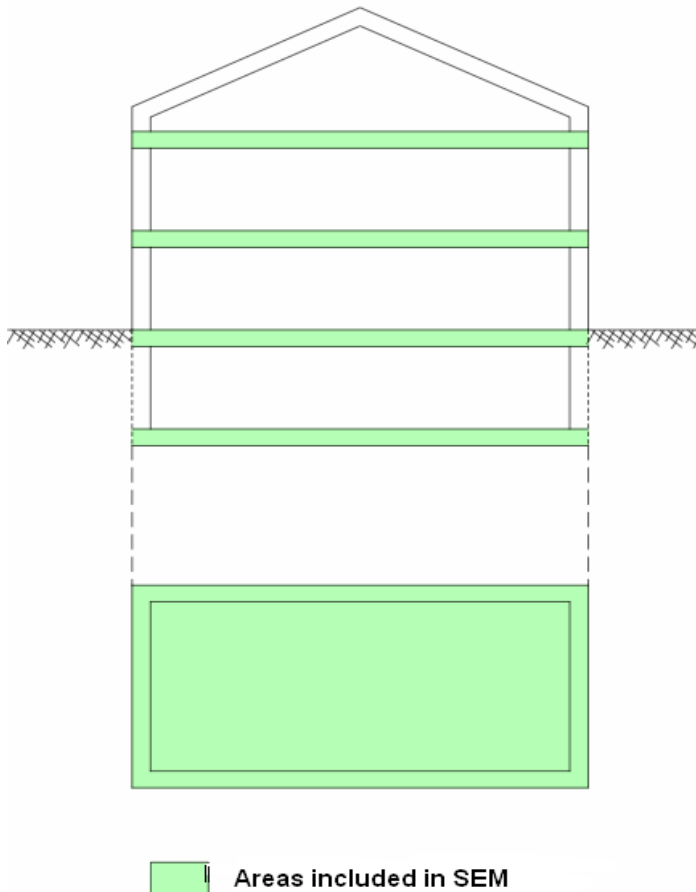
Measurable void areas, in particular accessible vertical passageways, are quantified and assessed according to function.

3.3.2 Measuring Reference Areas

EXTERNAL AREA (SEM):

- The total external area of a building is the sum of the external areas of each floor.
- The external area of a floor is the area of the closed polygon surrounding the floor the sides of which are formed by:
 - the exterior faces of facade features delimiting the closed perimeter of spaces on the level concerned :
 - the centre line of party walls between different buildings
 - the centre line of construction features separating different users or uses.
- In basements, where it is not possible to measure the actual thickness of underground walls, the agreed view is that the external area is calculated by extending the exterior plane of the facade at ground-floor level downwards.

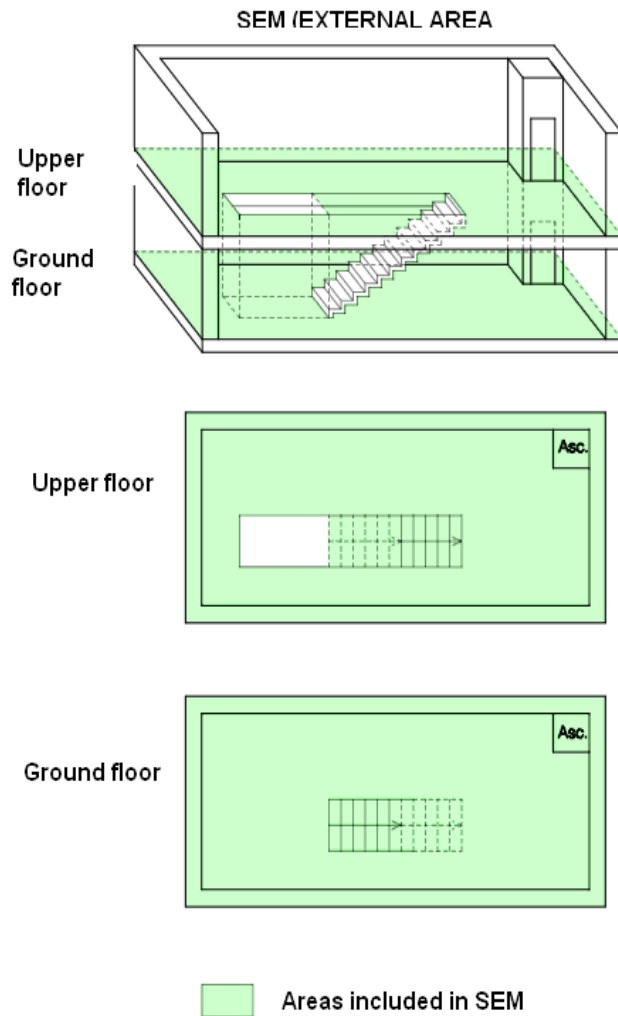
SEM (External area)



SEM nº 1

The external area includes the area of :

- technical areas serving the building that are directly attached to it or located on the roof
- usable roof space (easy access, floor present and not obstructed by beams)
- vertical openings within the limit of the projection of the staircase at the accessible level
- voids created by chimney and service shafts
- balconies, upper floor terraces and loggias
- accessible walkways or passages between two parts of a building.



SEM nº 2

- At ground-floor level, any area open to the side and covered, other than by a roof overhang or decorative projection, is also included in the external area and measured on the basis of the vertical projection of the covering part.
- At ground-floor level certain areas outside the building boundary may be subject to a specific measurement, not covered by this Code, if the areas concerned are intended for private use.

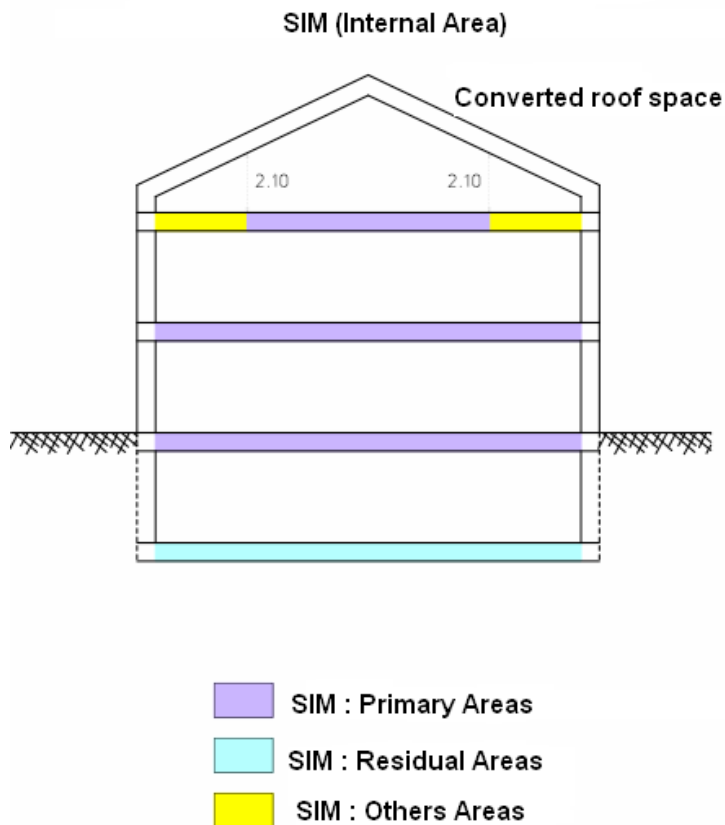
The external area does not include the area of :

- unusable roof space
- decorative voids, air shafts and atria
- decorative facade elements, whether recessed or projecting
- open outside emergency stairways
- walkways intended solely for servicing and maintenance
- inaccessible roofs (except for maintenance)
- access routes
- gardens.

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INTERNAL AREA (SIM):

- The total internal area of a building consists of all internal areas available for the direct or indirect use of occupants, excluding all fixed construction features and partitions.
- The internal area is divided into four subcategories : primary areas, residual areas, other areas and service areas
(see paragraph 3.4).
- Changes in the construction or form of occupation may result in changes to the above four areas. Any record of the areas should always therefore be dated.
- The internal floor area of a building or the internal area of part of a floor is the sum of the areas of all possible closed polygons whose sides are formed by the visible internal faces of construction features such as facade walls, party walls, internal walls and screens, columns and fixed partitions.
- The measurement of primary areas is confined to floor areas with headroom of ≥ 2.10 m.



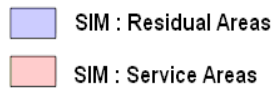
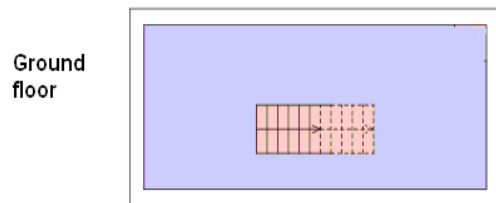
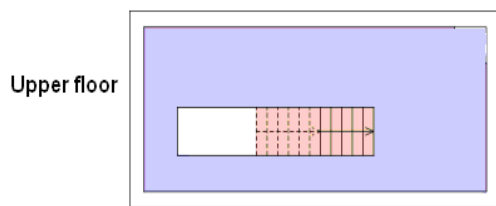
- The internal area of an upper floor terrace or balcony is calculated up to the internal vertical projection of the balustrade.
- At ground-floor level, any covered area open to the side, other than a roof overhang or decorative projection, is also included in the internal area and measured on the basis of the vertical projection of the covering part.

The internal area includes the area :

- of maintenance areas and technical areas serving the building
- of cupboards
- under technical units with a removable housing
- under movable partitions
- of usable roof space, whether or not converted

- of stairwells within the limit of the projection of the staircase at the accessible level
- of lift shafts, counted at the lower level served only
- covered passages closed along the side
- alleys and walkways between two parts of a building
- balconies, upper floor terraces and loggias.

SIM (Internal Area)

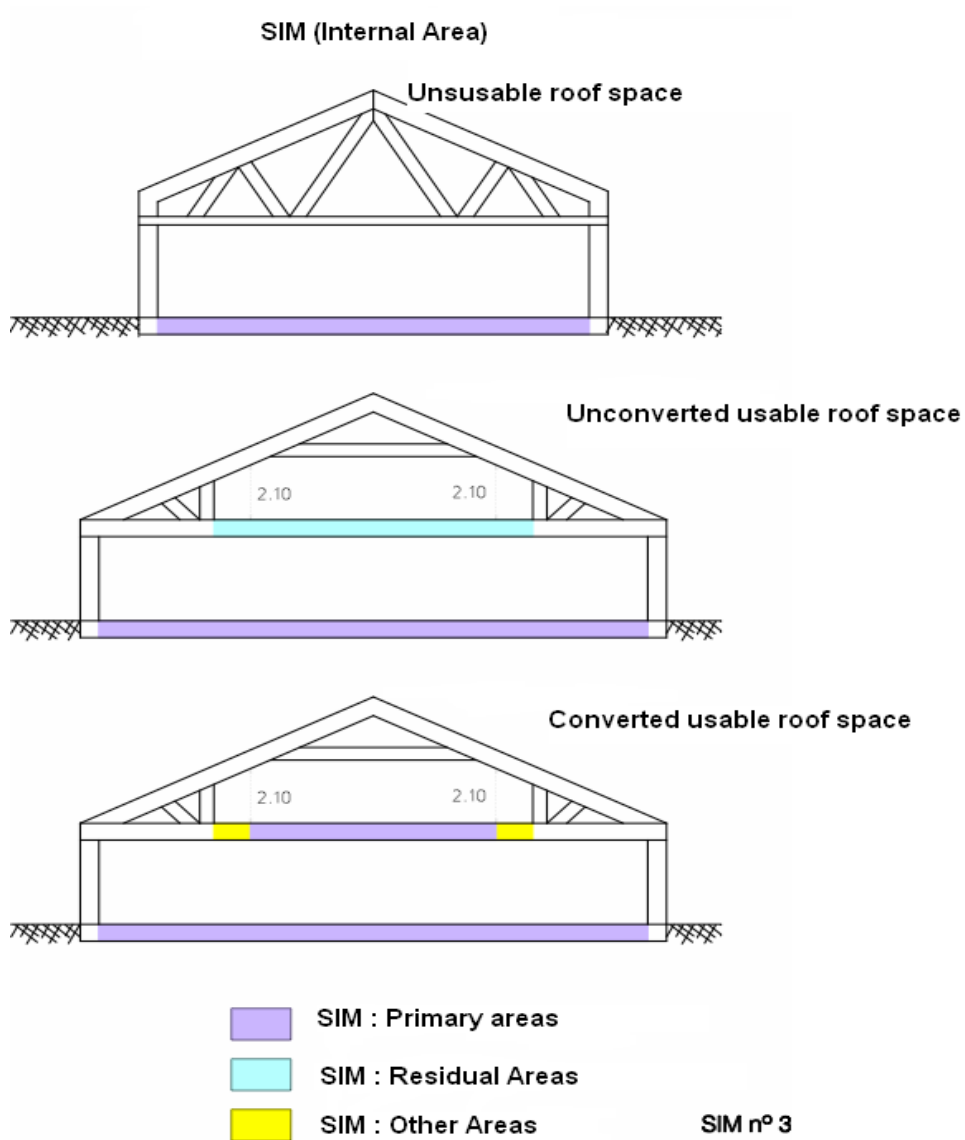


SIM n° 2

The internal area does not include the area of :

- construction features and fixed partitions

- window and door reveals
- decorative internal voids and air shafts
- vertical service shafts or openings
- chimney flues



3.3.3 Distinction Between Private and Common Areas

Private areas are spaces reserved for the use of a single occupant.

Common areas are spaces reserved for the use of different occupants. Several common areas may be defined according to their use.

For the SEM, the boundaries of common areas are defined as follows :

- along the line of the wall contiguous with the private occupation
- along the plane of the outside wall in all other cases.

3.3.4 Distinction Between above Ground and Below Ground

- A building is generally composed of spaces above and below ground.
- Thus there are floors above ground and floors below ground.
- For measuring purposes, this distinction may be important in determining the conditions under which the premises may be used in the light of labour legislation and rules on fitness for habitation or taxation.
- In Europe there is currently no standard that lays down the conditions to be met for a floor, or part of a floor, to be described as above or below ground.
- For most buildings this distinction does not raise any questions of interpretation. However, in some exceptional cases, the layout of the building and the lie of the land require a distinction to be made for part of a floor using the following method :

DEFINITION :

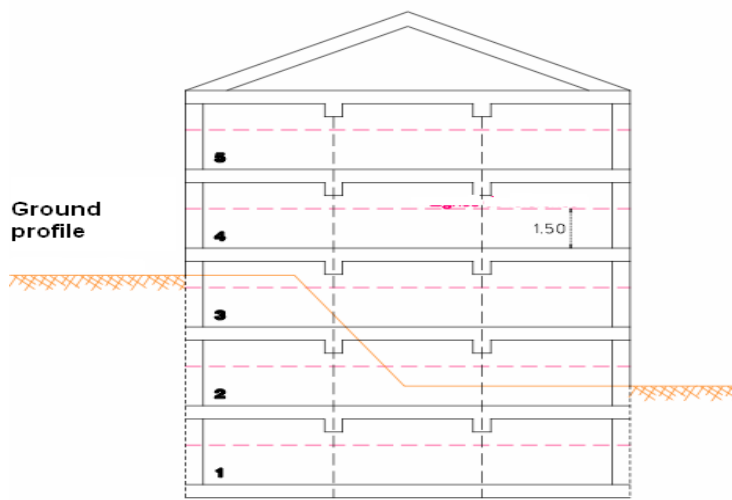
A 'room' is defined as the smallest enclosed floor area subdividing a space between construction features.

The space is thus said to consist of different rooms.

METHOD FOR DETERMINING WHETHER A SPACE IS ABOVE GROUND OR BELOW GROUND

1. Plot the **outside ground profile** on the elevation plan of each enlightened facade.
2. Plot each floor on these plans
3. Plot a **reference line 150 cm** above the finished floor level of each floor.
4. Note the location of the **construction features** on the reference line perpendicular to the facade concerned. This divides the reference line into several sections.

Distinction Above ground/Below ground



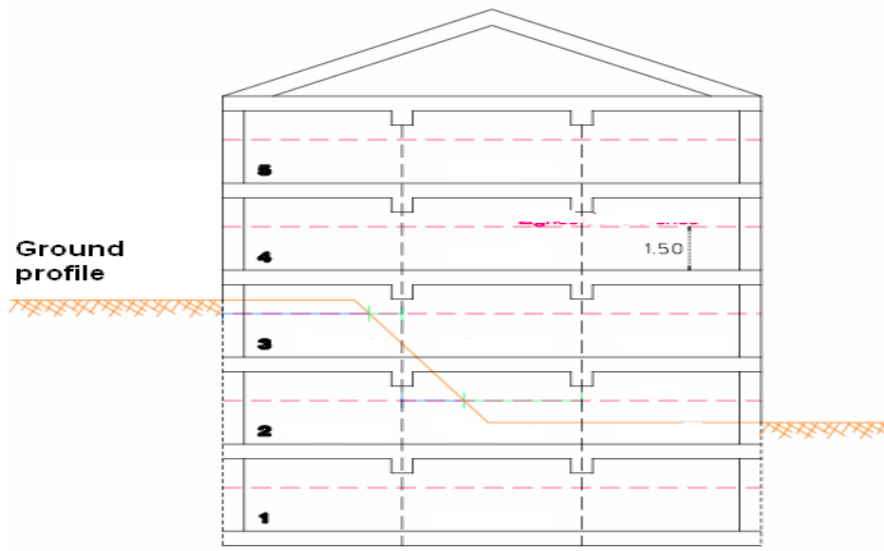
Ground n°1

RULE : Normal case

If the reference line does not intersect with the ground profile, the floor is above ground or below ground, depending on its position relative to the ground profile.

Floors or parts of floors, for which most of the length of the corresponding section lies below the ground profile, are considered to be below ground. All other floors or parts of floors are considered to be above ground.

Distinction Above ground/Below ground

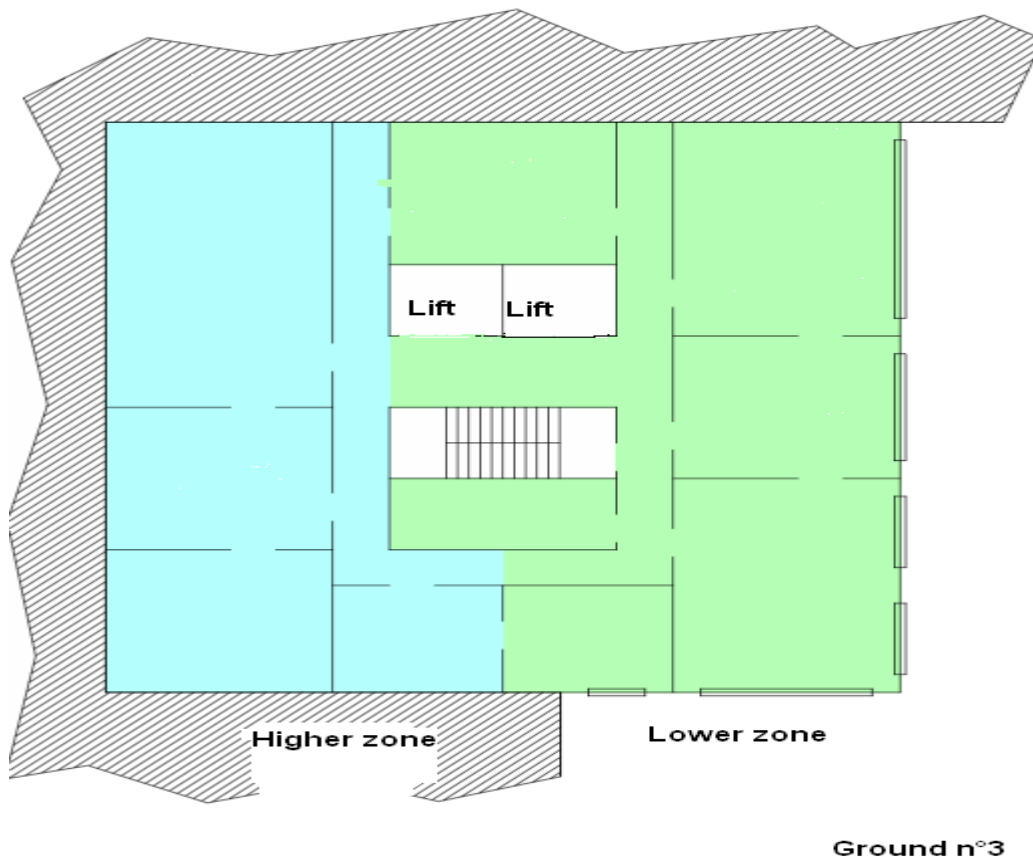


Ground n°2

RULE 2 : Contradiction between two adjacent façades

If a floor is shown through the application of rule 1 to be above ground and below ground at the same time depending on the façade concerned, the rooms making up that floor are regarded as being ground.

Distinction above ground/below ground



RULE 3 : Contradiction between two opposing enlightened facades

In the case of two opposing facades, if one floor is shown to be above ground and the other below ground according to rule 1, the agreed view is that the intervening space is regarded as above ground.

3.4 Divisions of internal area

PRIMARY AREAS

All floor areas with a headroom ≥ 2.10 m associated with the principal uses of the building. These include in particular:

- in housing : living areas (dining rooms, bedrooms), toilet areas (bathrooms, lavatories), interior spaces and passageways, storage areas, etc.
- in offices : work areas, meeting rooms, annexes, recreational areas, toilets, interior spaces and passageways, etc.

The primary areas may be subdivided in accordance with national legislation or under an agreement.

RESIDUAL AREAS

All floor areas with a headroom < 2.10 m associated with the principal uses of the building.

OTHER AREAS

All floor areas regardless of height which are not consistent with the main use of the building.

These include in particular:

- underground storage and archive rooms
- cellars
- parking garages
- unconverted usable roof space
- balconies, upper floor terraces, loggias, ...
- passageways and non-enclosed covered areas (canopies, car-ports,...).

SERVICE AREAS

All floor areas used for building services? irrespective of height or occupation.

These include in particular :

- lift shafts
- stairwells
- access ramps
- maintenance areas and technical areas serving the building
- (not included are technical areas for the use of an occupant which are regarded as annexes of the primary area).

The above breakdown relates both to private and common areas of the building.

NB : The measurement of common areas applies only where there are several occupants of the building.

3.5 Indicators

Ratios :

- Total SIM/Total SEM
- Sum of all common areas/total SIM area
- Sum of primary areas/total SIM area
- Sum of other areas/total SIM area
- Sum of other residual/total SIM area
- Sum of service areas/total SIM area
- Sum of other areas/primary SIM area

4. APPENDICES

4.1 Diagrams

4.2 Overview of areas

4.2.1 Preamble

The chart and detailed table of areas apply to all buildings with one or more occupants regardless of use.

The boxes under “common” do not need to be completed for cases of single occupation.

Any physical change in the construction, or form of occupation, may require the breakdown of areas to be updated. All documents must therefore be dated.

4.2.2 Detailed area chart

4.2.3 Table of areas

4.2.4 Plan of areas

To facilitate comprehension of the breakdown, plans by level can be used to illustrate what defines the different areas of the building.

5. GLOSSARY

Balcony

A balcony is a platform for the use of occupants located above ground-floor level, that can be accessed from inside the building and projects from the wall. It is enclosed on its open sides by a railing or balustrade.

Enlightened Facade

An enlightened facade of a building is a wall with openings allowing either access or natural lighting.

A light shaft or an inner court generates an enlightened facade if, per level, the distance which separates it from an opposite facade measures 1.50 m or more.

Fixed Partitions

Fixed partitions fulfil two criteria :

Utility of the room :

Fixed partitions are essential to the use of the room according to its function in the building (toilets) or security requirements (technical area). They cannot be removed without changing the use of the room.

Use of materials :

Fixed partitions use materials through the application of masonry techniques. They do not involve the erection or removal of prefabricated or modular materials.

Headroom

The shortest distance between the floor and ceiling or suspended ceiling.

Loggia

A loggia is a platform that can be accessed only from inside a building.

It is recessed into the wall and therefore usually covered. It is enclosed on the outer wall by a railing or balustrade.

Reveals

Opening in the thickness of a building element receiving a door or a window or having fixing elements of the latter (for example : hinges, rabbets,...).

Roof Spaces

UNUSABLE ROOF SPACES : these are spaces which cannot easily be accessed, have no floor, or are obstructed by beams.

USABLE ROOF SPACES : the roof spaces are usable subject to three conditions : ease of access, existence of a floor and no obstruction by beams.

CONVERTED USABLE ROOF SPACE : this is usable roof space, possessing equivalent technical features to those of the floor below.

UNCONVERTED USABLE ROOF SPACE : This is usable roof space, that does not possess technical features equivalent to those of the floor below.

Terrace (Upper Level)

A terrace is a paved structure on top of a building. It forms a roof for part of the floor below and is an open area that can be accessed from the inside.

BIOGRAPHICAL NOTES

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