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# CAD guidelines

## Description of CAD data quality and room data from the construction process

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### List of changes

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## Table of contents

<b>1</b>	<b>INTRODUCTION.....</b>	<b>4</b>
1.1	CONTENTS AND OBJECTIVES .....	4
1.2	SCOPE.....	4
1.3	OTHER APPLICABLE DOCUMENTS.....	4
1.4	RIGHT TO USE DATA.....	4
1.5	LANGUAGES.....	4
<b>2</b>	<b>GENERAL INFORMATION .....</b>	<b>5</b>
2.1	TERMINOLOGY .....	5
2.2	ROLES AND RESPONSIBILITIES.....	5
2.3	SUPPLY SCOPE/ORDERING .....	6
2.4	FILENAME/LIST OF PLANS.....	6
2.5	ROOM NUMBERING .....	7
2.6	FLOOR LOAD .....	8
<b>3</b>	<b>PLAN REVIEW .....</b>	<b>9</b>
3.1	NOTES ON PLAN REVIEW IN QUALITYGATE .....	10
<b>4</b>	<b>REQUIREMENTS FOR BUILDING PLANS FOR ALL TRADES .....</b>	<b>11</b>
4.1	PRINCIPLES .....	11
4.2	DRAWING SCALE .....	12
4.3	LAYER STRUCTURE.....	12
4.4	FLOOR PLAN/SUB-OBJECTS .....	12
4.5	FLOOR NUMBERING .....	12
4.6	ARCHITECTURAL FLOOR PLANS IN BUILDING SERVICES PLANS .....	12
4.7	REFERENCE TO OTHER DATA SOURCES .....	12
4.8	REFERENCE POINT .....	12
4.9	PLAN LAYOUTS.....	12
4.10	VIEW FRAME.....	12
4.11	TITLE BLOCK.....	13
<b>5</b>	<b>REQUIREMENTS FOR CAFM PLANS (SPACE MANAGEMENT).....</b>	<b>13</b>
5.1	GRAPHIC REQUIREMENTS .....	13
5.2	LAYER STRUCTURE FOR CAFM PLANS .....	14
5.3	PLAN LAYOUT.....	14
5.4	LINE TYPES AND COLOURS .....	14
5.5	TEXT ELEMENTS .....	15
5.6	DIMENSION ELEMENTS.....	15
5.7	HATCH ELEMENTS .....	15
5.8	NGF (NET FLOOR AREA) ROOM POLYGONS .....	15
5.9	GF (GROSS FLOOR AREA) FLOOR POLYGONS .....	15
5.10	ROOM STAMPS .....	15
5.11	BUILDING ROOM SCHEDULE .....	16
<b>6</b>	<b>OUTDOOR PARKING SPACES .....</b>	<b>16</b>
6.1	DRAWING SCALE .....	16
6.2	ROOM POLYGON BUF 10.1 .....	16
6.3	PARKING SPACE ROOM STAMP .....	17
6.4	LAYER STRUCTURE FOR OUTDOOR PARKING SPACES.....	17
<b>7</b>	<b>AREA DEFINITIONS .....</b>	<b>17</b>
7.1	WINDOW/GLASS SURFACES.....	17
7.2	SPECIAL OFFICE AREAS HNF 2.9/MULTISPACE .....	19

7.3 SANITARY ROOMS NNF 7.1 ..... 19

7.4 INDOOR PARKING SPACES NNF 7.4..... 19

7.5 VERTICAL/HORIZONTAL ACCESS AREAS VF 9.1/ZF 9.1..... 19

7.6 BALCONIES/TERRACES ..... 19

7.7 DEFINITION OF "OUTSIDE THE THERMAL BUILDING ENVELOPE" ..... 19

**8 ABBREVIATIONS AND GLOSSARY ..... 21**

**9 REFERENCED DOCUMENTS ..... 21**

**10 TABLES ..... 21**

**11 FIGURES..... 21**

## 1 Introduction

### 1.1 Contents and objectives

- The CAD guidelines set out the general quality requirements for CAD plans developed within the scope of a project.
- They also describe the specific quality requirements for CAD plans and room schedules.

### 1.2 Scope

- The CAD guidelines are an integral part of the fee agreement between the contracting authority and the contractors. They apply to new builds and renovations **in Switzerland and abroad**. Where there are differing rules for building projects abroad, these are indicated by the words **"Note on buildings abroad"**.
- Special cases and exceptions to the application of these guidelines must be arranged by the FOBL project manager in consultation with the relevant CAD office and recorded accordingly.
- 3D-related requirements (building information modelling, BIM) are set out in the document "BIM, Grundsätze und Wegleitung für Bauprojekte im BBL" (BIM – principles and guidelines for building projects in the FOBL) and are not part of these guidelines.
- In the case of partial and full renovations, the extent of any adaptation to existing CAD data and room schedules must be clarified and agreed with the contracting authority. See [section 2.2, Roles and responsibilities](#).

### 1.3 Other applicable documents

In addition to these guidelines, the following standards and annexes must be taken into account when creating CAD plans (in each case, the version applying at the time the fee agreement is concluded):

- SIA 400 Preparation of construction plans
- SIA 410, 410/1 and 410/2 Designation of building installations
- SIA 416 Building areas and volumes
- SIA 416/1 Building services engineering indicators
- SIA D 0165 Real estate management indicators
- CAD.A01 – Raumbtabelle (Room schedule)
- CAD.A02 – FOBL area tree
- CAD.A03 – Overview of area types
- CAD.A04 – Planverzeichnis (Plan index)
- CAD.A05 – Description of title block
- CAD.V01 – CAFM plan
- CAD.V02 – Aussenparkplätze (Outdoor parking spaces)

**Note on buildings abroad:** Local regulations must also be applied.

### 1.4 Right to use data

- By handing over the data, the contractor transfers to the contracting authority the full right of use, in particular any exploitation rights to the data contained therein. This also applies to data that has been acquired by the external planner/designer from third parties.
- The contractor may not use any plan symbols or information in the CAD data that may be subject to copyright or usage rights held by third parties.
- The contractor assumes all legal responsibilities.

### 1.5 Languages

The CAD guidelines are available in the following languages:

- German
- French
- Italian
- English

## 2 General information

### 2.1 Terminology

#### Building plans

The building plans (including metadata) are imported into the plan management tool at the FOBL and archived. The plans are available as a basis for further planning. They include revision plans for all trades.

The requirements for building plans are set out in [section 4, Requirements for building plans for all trades](#).

#### CAFM plan (space management)

The FOBL uses a dedicated space management system (FLM app/Fiori application).

The requirements for CAFM plans are set out in [section 5, Requirements for CAFM plans \(space management\)](#).

Import takes place in two steps:

Step 1: The architectural floor plans are transferred to the FLM app and synchronised on a specific date.

Step 2: The corresponding room schedule is imported and the equipment features added to the room data.

This core data forms the basis for:

- tenant occupancy;
- cleaning;
- ratings/indicators;
- the energy reference area for energy ratings.

For ease of understanding and to distinguish it from the building plan, the CAFM base plan/floor plan for import into the FLM app is referred to below as the "**CAFM plan**".

#### Plan review

To enable them to be successfully imported into the FLM app, the CAFM plans must be reviewed before being submitted to the FOBL. See [section 3, Plan review](#).

### 2.2 Roles and responsibilities

#### Contractor's role

- Is responsible for creating the data in accordance with these CAD guidelines and for the quality of the contractor's data.
- Is responsible for organising the plan review in accordance with [section 3, Plan review](#).

#### FOBL project manager's role

- Acts as the interface between the contracting authority (FOBL) and contractor(s). Is responsible for ensuring that the required data is available to the contracting authority once the supply deadline has passed, and that the data is complete and meets the quality requirements set out in these guidelines.
- In the case of full/partial renovations, is responsible for submitting existing documentation such as:
  - planning documents from the plan archive, including the list of plans;
  - CAFM plans including room schedule, if available.
- Is responsible for the technical and factual accuracy of the data so that subsequent users of this data can be confident that it is correct.
- Is responsible for the correct classification of documents and their appropriate handling.
- The role of FOBL project manager may be performed within the FOBL by the:

- project owner's project manager (project management);
- property manager (property management).

### Space manager's role

- Is responsible for ensuring that the data is archived.
- Is responsible for transferring the area data to the FLM app.

## 2.3 Supply scope/Ordering

Below is a list of the minimum requirements for the supply of plan data and the SIA phases to which they relate. The plans must be provided in both DWG and PDF format.

SIA phase	Supply	Description
Phase 51 – Execution project	CAFM plans including CAD.A01 – Raumbtabelle (room schedule)	Via QualityGate plan review At least six to nine months before commissioning
Phase 53 – Commissioning/completion	CAFM plans including CAD.A01 – Raumbtabelle (room schedule)	Via QualityGate plan review Revision status
End of phase 53 – Commissioning/completion	b) Revision plans including list of plans	Handover to FOBL project manager All building plans in accordance with <a href="#">section 4</a> including the <u>CAD.A04 Planverzeichnis</u> (Plan index)

Table 1 – Requirements for supply of plans by phase

## 2.4 Filename/List of plans

- The name of the CAD file matches the one indicated in the list of plans.
- The plan number matches the one indicated in the list of plans.
- For details on the filename and list of plans, see annex CAD.A04 – Planverzeichnis (Plan index).
- The following attributes must be included in the filename:
  - Economic unit (the economic unit and building number are determined by the FOBL and provided to the contractor)
  - Building number
  - Short plan name
  - Abbreviation for specialist unit
  - Year of plan date (at the end of the filename in the format "YYYY")
  - Example: 2011.DM.West facade.2025.pdf

7282.	VG.	West facade.	ARCH.	2025.
Economic unit	Building number	Short plan name	Creator	Year of plan date

Table 2 – Filename specifications

## Creator abbreviations and domains

ARCH	Architect	LAND	Landscape architect
BAUI	Civil engineer	LEIT	Pipes and cables register
BIM	BIM management	LICH	Lighting designer
BAUP	Building physics engineer	MÖBL	Furnishing designer
BLIT	Lightning protection	MODE	Models, miscellaneous
BRAN	Fire protection	MONH	Timber assembly construction
DENK	Monument preservation	MONS	Steel assembly construction
ELEK	Electrical designer	NATU	Natural + artificial stonework
ERSC	Access development	RAUM	Room
FACI	Facility manager	SANI	Plumbing designer
FASS	Facade designer	SICH	Safety
FENS	Windows + doors	SIGN	Signage designer
GEOL	Geologist	SPEZ	Specialists
HLK	HVAC designer	TRAN	Conveyor system
INNE	Interior designer	VERK	Traffic designer
KOOR	Coordination	VERM	Surveyor

## 2.5 Room numbering

The FOBL aims to standardise room numbering across its entire portfolio of civilian properties. Numbering is sequential and proceeds clockwise, spirally or in any other suitable manner.

A distinction is made between the physical number (room designation) and the system number AOID.

### 2.5.1 AOID – room ID

AOID is a unique system number. It stands for Architectural Object Identification Number.

The AOID serves to clearly identify a room within the system, across the contracting authority's entire portfolio. It is the most important element of a CAFM plan in conjunction with the room polygon and forms the link between the graphic and the alphanumeric data (room schedule). The AOID does not necessarily correspond to the physical room number (door plate). NB: In the case of full/partial renovations where area data is already available, the existing AOIDs **must** be retained.

AOID structure in buildings							AOID structure for outdoor parking spaces				
2011	.	DM	.	04	.	045	2011	.	1	.	001
Economic unit EU	Delimiter	Building number GE	Delimiter	Level	Delimiter	Room identification (3-digit sequential numbering)	Economic unit EU	Delimiter	Plot number GR	Delimiter	Room identification (3-digit sequential numbering)

Table 3 – AOID structure

## 2.5.2 Physical room number/Door plate number

The room number on site (labelling in the room) is referred to as the "physical room number/door plate number". These designations must be carried over into the room stamp or the room schedule. If the rooms do not have plates, the room number is indicated as "n/a".

### Door plate – spare numbers system

In new builds, it is important to ensure that room numbers are not allocated in a continuous sequence, but that some spare numbers are left unused. These spare numbers can then be used if a room is divided up at a later stage.

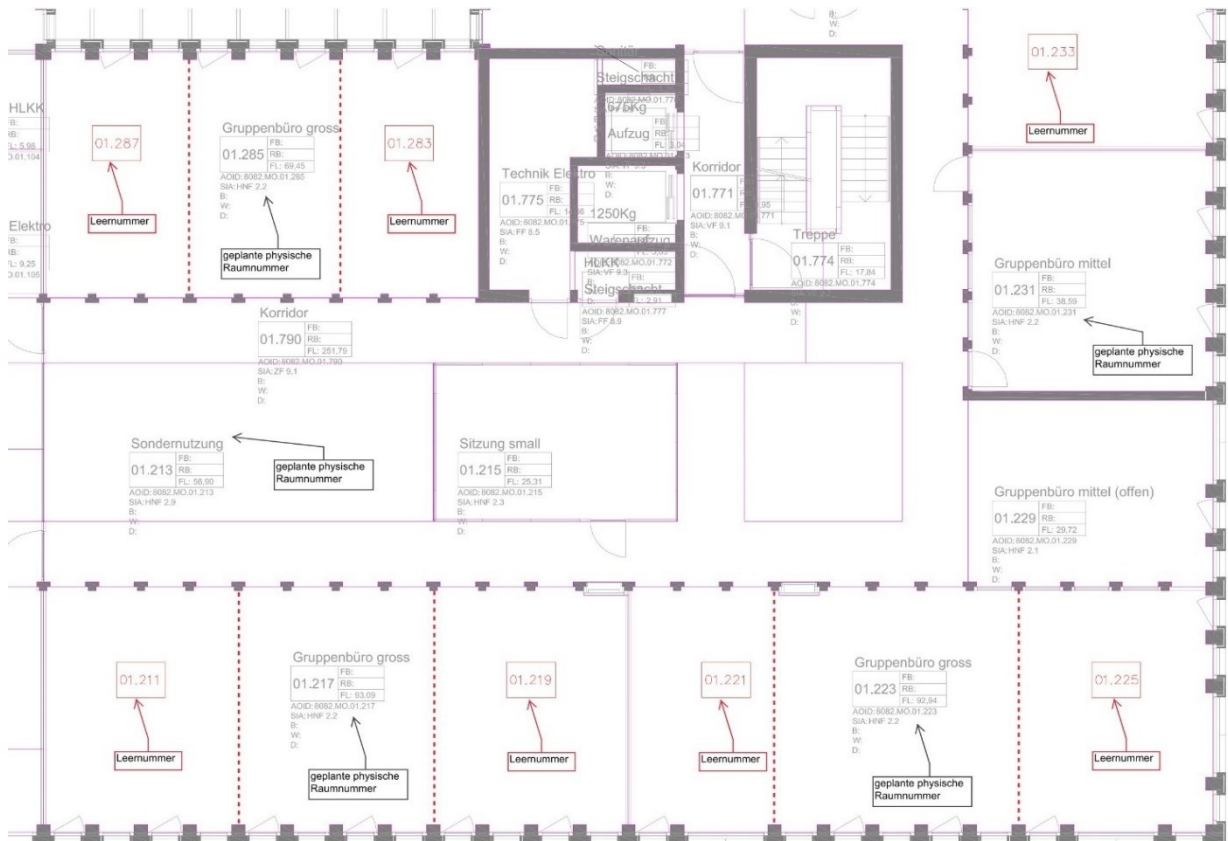


Figure 1 – Example of a floor plan with spare number allocation (spare numbers shown in red)

## 2.6 Floor load

Indication of **floor load**: permissible floor loads are recorded in a separate document (usage agreement in accordance with SIA 260, section 2.2).

### 3 Plan review

The FOBL uses Cadmec's QualityGate tool for reviewing CAFM plans (including room schedule). This is a self-service quality control tool that allows contractors to independently check the CAD quality of CAFM plans and the room schedule. The review is repeated as many times as necessary, until QualityGate approves the plans. In a further step, the floor plans are adapted to the specifications of the FOBL's space management system by means of mapping, and the room stamps are filled with the corresponding room attributes from the room schedules.

**Important:** To enable the review of room schedules to take place, it is essential that a separate room schedule (Excel file) is created for each floor/level.

#### FOBL project manager's task

The FOBL project manager ensures that the contractor receives the QualityGate login details in good time and that the project is fully recorded in the system.

#### Contractor's task

As soon as access to QualityGate is available, the contractor can perform the review independently. The contractor can ask Cadmec to rectify any defective plans. A fee of CHF 1,000 per plan is charged for this service. These costs are borne by the contractor.

#### Space manager's task

The space manager automatically receives a notification as soon as the plans from a project have been successfully reviewed. The space manager downloads the data directly from QualityGate for import into the space management system.

#### Number of plan reviews

With new builds and full renovations, the FOBL relies on the data being available at an early stage so that the subsequent processes can take place. In such cases, an initial review should be carried out six to nine months before commissioning (SIA phase 51) and the second, final review at the end of phase 53.

For building projects involving minor structural measures, the initial review in SIA phase 51 can generally be waived.

#### Plan review flow chart

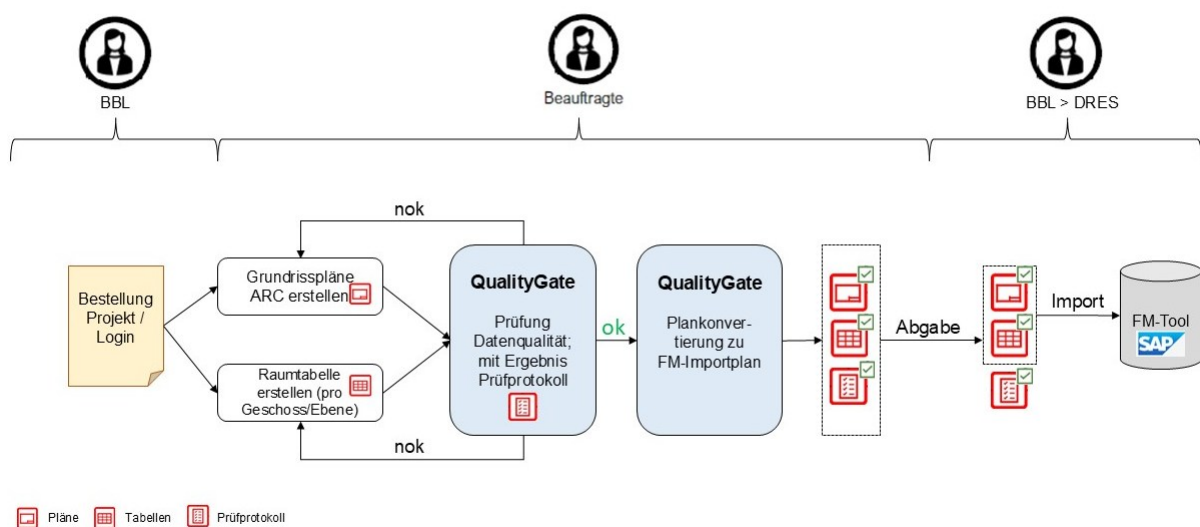


Figure 2 – Plan review flow chart

3.1 Notes on plan review in QualityGate

Raumtabelle (Room schedule)

Before uploading the room schedule (Raumtabelle) for verification in QualityGate, the first row containing the filled-out example must be deleted. In addition to that, no cells may be left blank in the main-tained data area. Please refer to the relevant notes in the help sheet of the Excel document.

Plan review

The plan verification will be terminated without further review if:

- The layer structure is not adhered to
- The drawing unit is not adhered to

After logging in and selecting the project, an overview of the floors that need to be verified is displayed, divided by floor into a room list and floor plan.

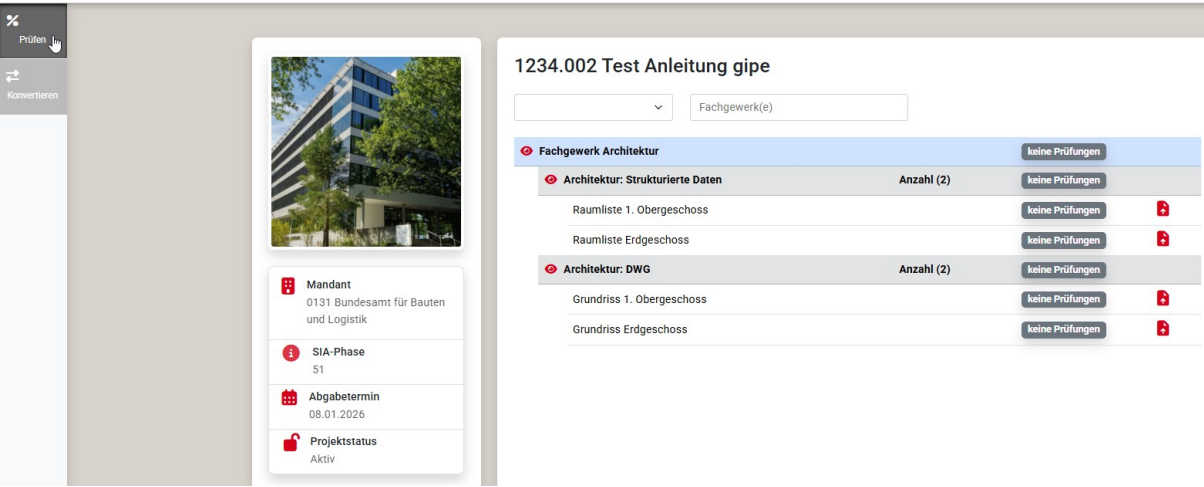


Figure 3 – Getting started

If the data contains errors, a log can be downloaded. The data will continue to upload until the verification shows 100%.

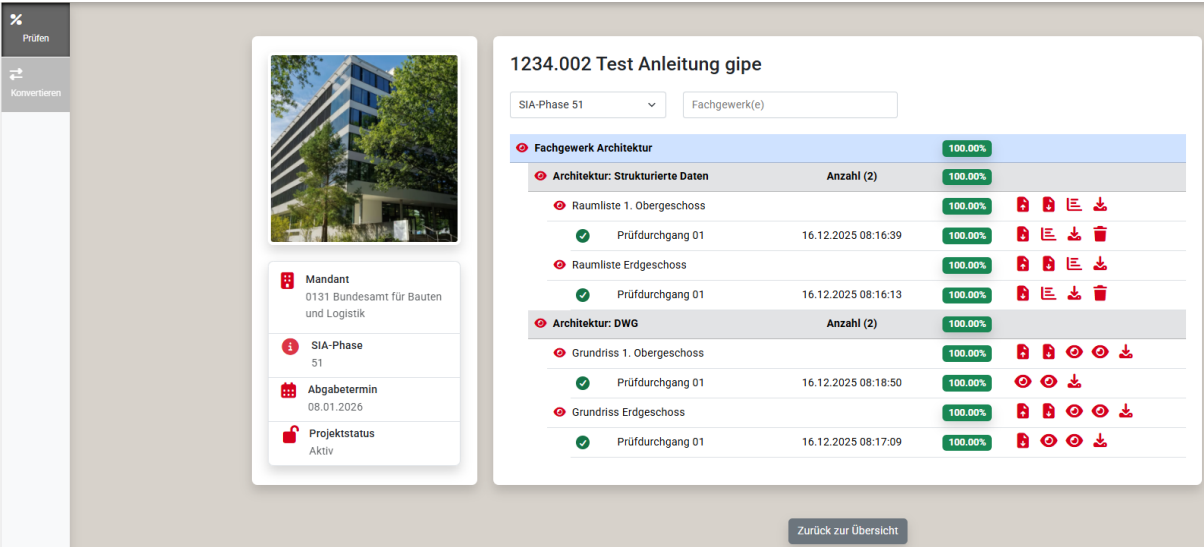


Figure 4 – Inspection

After a 100% successful verification of the entire building, the conversion must be initiated and carried out for each floor. In this step, the CAFM plan (with room stamp) is generated.

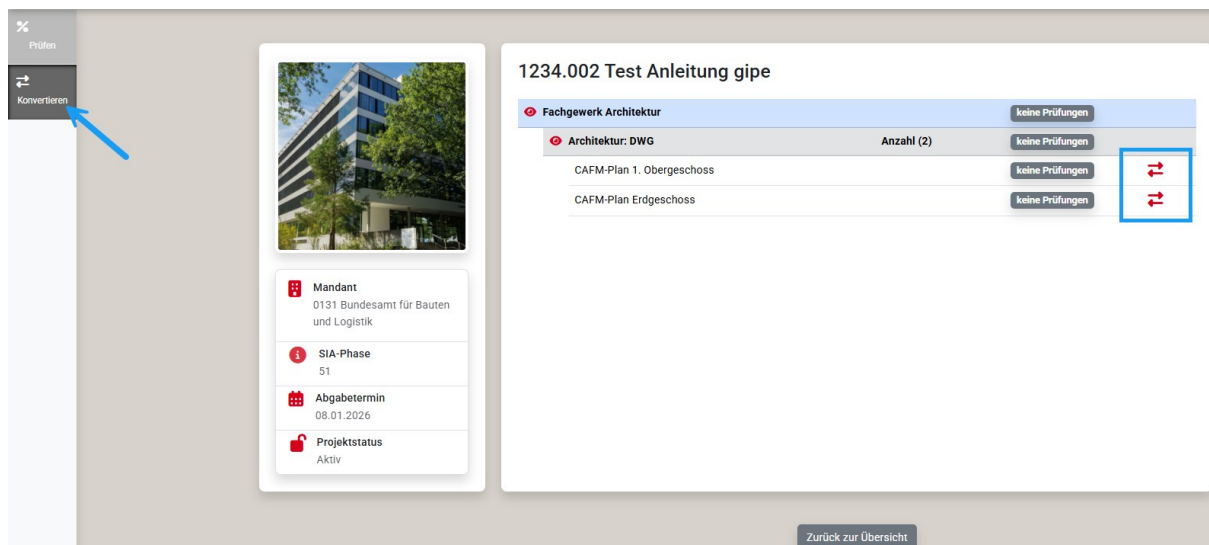


Figure 5 – Conversion

Here too, the result must be 100%:

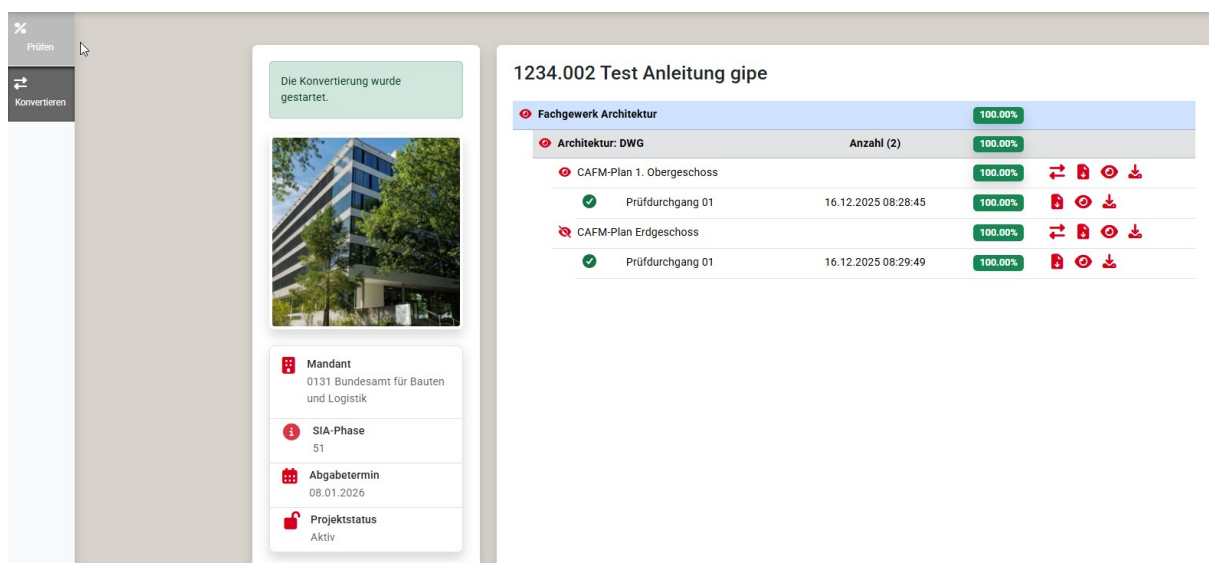


Figure 6 – Conversion completed

After successful conversion, a notification is automatically sent to Digital Real Estate und Support (DRES) that verified data is available. DRES downloads this data directly from QualityGate and then imports it into the FOBL area management system.

## 4 Requirements for building plans for all trades

This section sets out the minimum requirements for building plans. For CAFM plans, the definitions in [section 5, Requirements for CAFM plans \(space management\)](#) must also be taken into account.

### 4.1 Principles

- Construction lines must be deleted prior to data transfer.

- Only one display level (floor plan, section, facade, etc.) may be displayed per CAD file. This is important for importing into the FLM app.
- **Overdrawing objects** on the same layer is not permitted.
- The data must be supplied in a **cleaned state**. This means that all unused structural elements (blocks, layers, references to other files, etc.) must be removed when the data is delivered.

#### 4.2 Drawing scale

The drawing scale is **1:1 in millimetres**.

#### 4.3 Layer structure

The layer structure is not specified. The company's own structure can be used.

#### 4.4 Floor plan/Sub-objects

If the contractor has divided the floor plan (base plan for CAFM) into sub-objects, all floor plans for a given floor must be merged. As a general rule, there is one overall floor plan for each floor and building. The building is defined by the FOBL (SAP building).

#### 4.5 Floor numbering

In the space management system, floors are represented as levels with sequential numbering, e.g. -2, -1, 00, 01. In buildings with mezzanines (intermediate floors), there may therefore be discrepancies between the level designation and the floor designation, e.g. 1st mezzanine floor = level 02.

#### 4.6 Architectural floor plans in building services plans

The current architectural floor plan must be included in the building services plan. The date of this architectural floor plan must correspond to the phase completion indicated in the list of plans.

#### 4.7 Reference to other data sources

For technical reasons, plans must **not contain any references** to plans, images, databases or documents other than the plan.

#### 4.8 Reference point

- For each CAD file, two reference points must be placed within the view frame, together with a symbol and a unique designation. A reference point must lie **on the 0,0,0 coordinate**.
- The reference points must be **congruent across the entire building**.
- Once the reference points have been defined and placed on the plans, they **must not be moved** during the entire lifetime of a CAD plan.
- National map coordinates and sea level must also be given for the reference points. The national map coordinates can usually be found on the digital cadastral map.

#### 4.9 Plan layouts

If layouts are used, they may **only contain general plan information**, such as plan layout, legends, etc. All elements that describe the component to be represented must be placed in the model space.

#### 4.10 View frame

- All CAD plans must be drawn with a **view frame** that encloses all the other plan information. The view frame corresponds to the respective plan format. The bend lines must be drawn within the view frame in the A4 area of the title block.
- No other information may be placed outside the view frame.

#### 4.11 Title block

Each plan has a title block, which must contain the following information (for more details, see annex [CAD.A05 – Description of title block](#)):

- Key information about the plan content (title, number)
- Graphic scale for measuring the model
- North arrow for geographically orienting the model
- Overview graphic of the area for orienting the model
- Marking of the area shown in the plan in the overview graphic
- Legends for describing plan contents
- Classified plans (e.g. those classed as "confidential") must be designated as such in the title block.
- The FOBL title block must be used – see annex [CAD.V01 – CAFM plan](#).

### 5 Requirements for CAFM plans (space management)

This section sets out the requirements for CAFM plans. For such plans, the definitions in [section 4, Requirements for building plans for all trades](#), among others, must also be taken into account.

#### 5.1 Graphic requirements

- For each floor, the architect creates an architectural floor plan with a level of detail equivalent to a **building project plan at a scale of 1:100 in accordance with SIA 400**. The level of detail of plan elements must always correspond to that of the plan scale. Excessive detailing of window frames, lifts, etc. should be avoided.
- Only **standard basic graphic elements** (lines, circles, text, etc.) should be used. For example, the following elements may not be used: MULTILINE, ELLIPSE, SPLINE, OLE.
- All elements have a Z coordinate of 0,0.

## 5.2 Layer structure for CAFM plans

The plan consists exclusively of the following layers, with the elements located on the correct layers.

Layer name	Colour AutoCAD	RGB	Description
A_ARCHITECTURE	253	137,137,137	All architectural objects on the floor plan in accordance with SIA 400 for 1:100 plans (solid walls, partition walls, columns, doors, windows, stairs, fixtures, lifts, etc.)
A_ELECTRICAL	150	0,127,255	e.g. switch cabinets, devices that affect the furnishings
A_HEATING-COOLING	1	255,0,0	e.g. radiators, devices that affect the furnishings
A_VENTILATION	4	0,255,255	e.g. swirl diffusers, devices that affect the furnishings
A_PLUMBING	92	0,165,0	Toilets, washbasins, showers
A_HATCHING	8	128,128,128	Solid walls in accordance with SIA 400 for 1:100 plans (solid hatching)
V_AXES	251	45,45,45	All relevant building axes (axis lines and axis text)
V_DIMENSIONING	251	45,45,45	Main dimensions in accordance with SIA 400 for 1:100 plans
V_PLANLAYOUT	252	91,91,91	Title block and view frame in accordance with FOBL sample plan
V_REFERENCE POINT	30	255,127,0	Reference point symbol used
V_TEXT	253	137,137,137	Information to enhance the plan's readability, e.g. void, atrium, terrace
R_AOID	7	0,0,0	Text field containing the unique AOID as per the room schedule within the respective NGF (net floor area) polygon
R_ROOM POLYGON	210	255,0,255	Room polygon for each room in accordance with the FOBL area definition, excluding deduction areas
R_ROOM POLYGON - DEDUCTION	230	255,0,127	Polygons of all relevant deduction areas within an NGF polygon
R_FLOOR POLYGON	214	127,0,127	Floor polygon for each floor in accordance with the FOBL area definition, excluding deduction areas

Table 4 – Layer structure of CAFM plans

System layers (created by review body):		
R_ROOM STAMP	252	Room stamp for import into SAP

Table 5 – System layers (created by FOBL/review body)

## 5.3 Plan layout

Layouts are not allowed. The view frame and title block must be placed in the model space – see annex [CAD.V01 – CAFM plan](#).

## 5.4 Line types and colours

- The line thickness (polyline width) is 0mm.
- The colours of all elements correspond to the BYLAYER colour definition.

## 5.5 Text elements

- Apart from the texts in layers V\_PLANLAYOUT, V\_AXES, V\_TEXT and R\_AOID, no other text elements may be used.
- For all other texts, only the **ARIAL** font may be used.

## 5.6 Dimension elements

- Building length and width are measured using a dimension line.
- The dimension lines can be edited as dimension objects.
- The dimension values of the dimension objects are associative. This means that they change as the dimension objects change.

## 5.7 Hatch elements

- The hatch elements consist of hatch objects.
- Load-bearing and non-load-bearing solid walls and columns have a solid infill (SOLID).

## 5.8 NGF (net floor area) room polygons

- The room area of each room **with a room area > 0.25m<sup>2</sup>** must be measured using a room polygon in accordance with the area definition specified in SIA 416 / 416/1.
- Any deduction areas out of room polygons (columns, core zones, etc.) must be measured using a separate polygon for each deduction area.
- Rooms and areas outside the floor area (e.g. terraces, balconies) do not need to be measured.
- Room and deduction polygons are closed polylines.
- Arc segments in polylines are not allowed.
- Room polygons are located on the R\_ROOM POLYGON layer.
- Deduction polygons are located on the R\_ROOM POLYGON - DEDUCTION layer.
- Duplicate polygons must be deleted.

## 5.9 GF (gross floor area) floor polygons

- The gross floor area of each floor must be measured using a floor polygon in accordance with the area definition specified in SIA 416 / 416/1.
- Floor polygons are closed polylines. Any deduction areas out of floor polygons (stairwells > 5m<sup>2</sup>, voids) must be demarcated with a continuous polygon.
- Arc segments in polylines are not allowed.
- Floor polygons are located on the R\_FLOOR POLYGON layer.
- Duplicate polygons must be deleted.

## 5.10 Room stamps

- For each room (room polygon), a text element with the corresponding room ID (AOID) must be placed in a readable text height in the centre of the room on the R\_AOID layer. See also [CAD.V01 – CAFM plan](#).
- The base point/insertion point of the text element must be placed within the room polygon.
- All other room data must be documented in the room schedules.
- The AOID must be unique and match the room ID ("Ident. AO" column) from the room schedules. The AOID usually starts at 001 on each level. It is not necessarily identical to the room number on site.
- Existing room stamps and leader lines – e.g. in renovation projects – must be removed, otherwise errors may occur during the review. See [section 3, Plan review](#).

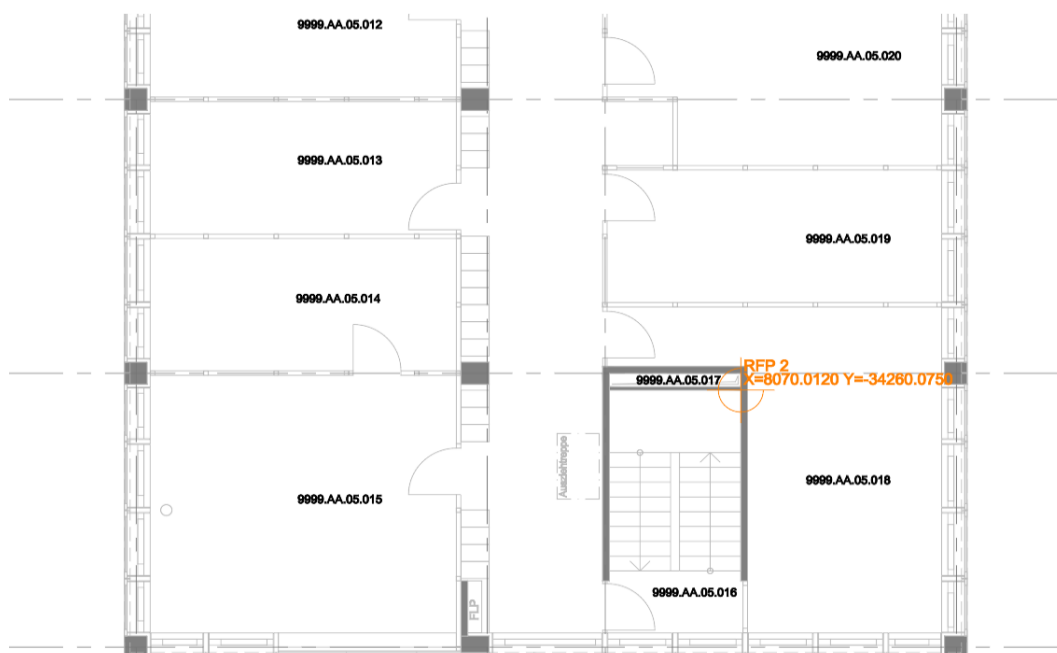


Figure 7 – Example of rooms with AOID numbers

### 5.11 Building room schedule

For building management purposes, the FOBL requires a fully completed room schedule for each floor/level, containing all relevant room information – see annex CAD.A01 – Raumtabelle (Room schedule).

- The respective room schedule includes all rooms on the floor/level which are measured in the CAD plan using a room polygon.
- The AOIDs (Ident. AO) in the room schedules match the AOIDs in the CAD plan.
- The room areas in the room schedules match the room areas of the created room polygons minus the deduction areas.
- The "Door tag" column must not be empty for the QualityGate review ([section 3, Plan review](#)).
- Further information on the data fields can be found in the CAD.A01 – Raumtabelle (Room schedule) template.

#### Note on buildings abroad

The room information for buildings abroad must be entered in the respective room schedule in the separate "RoomSchedule" worksheet.

## 6 Outdoor parking spaces

For buildings in the FOBL portfolio with outdoor parking spaces, the prepared site plan (e.g. simplified area plan) is imported into the space management system (as for buildings). To ensure successful import, the requirements set out below must be observed. See also the sample plan CAD.V02 – Aussenparkplätze (Outdoor parking spaces).

These plans are **not** subject to a QualityGate review.

### 6.1 Drawing scale

The drawing scale is 1:1 in millimetres.

### 6.2 Room polygon BUF 10.1

- The parking area of each parking space must be measured using a room polygon.
- Room polygons are closed polylines.

### 6.3 Parking space room stamp

For each parking space (room polygon), the specified room stamp is placed within the polygon in accordance with the sample plan CAD.V02 – Aussenparkplätze (Outdoor parking spaces) with the following content:

Designation	Example	Explanation
Parking space number	01	Parking space number on site, if available
Designation	Parking space	
AOID	9999.1.001	Unique system number: economic unit. SAP parcel number.sequential numbering (3-digit)
SIA	DEA 10.1	The area type for outdoor parking spaces is always BUF (developed surrounding area) 10.1
FL	11.90	Area of polygon in m <sup>2</sup>

### 6.4 Layer structure for outdoor parking spaces

See also sample plan CAD.V02 – Aussenparkplätze (Outdoor parking spaces).

Layer name	Colour AutoCAD	RGB	Description
A_HATCHING	9	192,192,192	Solid hatching for building
A1A0_AVDATEN	251	45,45,45	Representation of situation
A1R46_BODENMARKIERUNGEN	251	45,45,45	Ground markings for parking spaces, parking space number if available
A1T0_BUILDING	253	137,137,137	Building outlines
FMZ122_NGF-POLYGON	210	255,0,255	Parking space polygon
FMZ261_RAUMSTEMPEL	252	91,91,91	Parking space room stamp
V_PLANLAYOUT	252	91,91,91	Title block, view frame, north arrow

Table 6 – Layer structure of outdoor parking spaces

## 7 Area definitions

Annex CAD.A02 – FOBL area tree provides an overview of area definitions. Detailed information on the use of area types can be found in annex CAD.A03 – Overview of area types.

Below you will find additional information on area recording.

### 7.1 Window/glass surfaces

Window and glass partitions as well as other glass surfaces are measured to determine the cleaning areas. The areas are shown in the CAD.A01 – Raumtabelle (Room schedule).

#### Facade windows (exterior windows)

- The area of each window is calculated on one side only and assigned to the corresponding room.
- The area (clear dimension) is recorded with an accuracy of  $\pm 10\text{cm}^2$ .

#### Glass surfaces (interior glazing)

- The area is calculated on one side only. This category includes glass balustrades, glass partitions, meeting booths, etc.
- Partitions between two offices are assigned to one room only.

**Glass roofs/domes**

The area is entered in the room schedules for a room below, with a comment indicating "Glass roof".

## **7.2 Special office areas HNF 2.9/Multispace**

Special office areas are recorded if:

- the Multispace area standard is being implemented or
- ad hoc construction involving HNF (main usable area) 2.9 is being undertaken, irrespective of what the bulk of the building structure is used for.

Special office areas may include focus rooms, open areas for changing rooms, printer islands, local archives, etc. If the Multispace standard is not being implemented, the areas must be assigned to their respective uses, e.g. to HNF 2.8 or HNF 3.8.

## **7.3 Sanitary rooms NNF 7.1**

- General toilets/sanitary rooms are assigned to NNF (ancillary usable area) 7.1 "Sanitary rooms". These also include first-aid rooms and breastfeeding rooms.
- As a rule, a sanitary room is defined as one room. Where changing rooms are combined with showers or toilets, separate room polygons must be created, as changing rooms are assigned to NNF 7.2.

## **7.4 Indoor parking spaces NNF 7.4**

- The parking area of each parking space must be measured using a room polygon and is designated as NNF 7.4.
- Room polygons are closed polylines.

## **7.5 Vertical/horizontal access areas VF 9.1/ZF 9.1**

Vertical and horizontal access areas are generally assigned to VF (traffic area) 9.1. However, in the FOBL a distinction is made between residual area (RF) and additional area (ZF), as follows:

### **Vertical and general access areas**

form part of the RF (residual area) and are designated as VF 9.1.

These are:

entrance halls, vestibules, foyers, airlocks, forecourts as well as corridors that provide access exclusively to technical rooms.

### **Horizontal access areas**

form part of the ZF (additional area) and are designated as ZF 9.1.

These are:

halls and corridors including any steps.

## **7.6 Balconies/terraces**

Balconies, terraces, covered access balconies/walkways, roof gardens and roof areas are part of the net external floor area (ANGF). They are not counted as rooms and must be excluded from the gross floor area.

## **7.7 Definition of "outside the thermal building envelope"**

The FOBL keeps energy statistics that provide information about the energy consumption of selected heating systems and the properties connected to (and heated by) them. To calculate the energy rating (EKZ), the energy reference area (ERA) is required. The calculation is based on SIA 416/1. The ERA is calculated automatically when the area data (plan and room schedule) is imported into the space management system. The area type as specified in the FOBL area tree (e.g. HNF 2.1, NNF 7.1) determines whether the room forms part of the ERA.

### Room allocation according to location in the building envelope

The thermal building envelope consists of the components that completely enclose the heated and/or cooled rooms on all sides. Heated/cooled rooms are all rooms that are heated or cooled to a target temperature. The thermal building envelope must be thermally insulated and airtight.

### Check by contractors

If possible, the contractor should check the course of the thermal building envelope and enter the corresponding value for each room in the CAD.A01 – Raumtabelle (Room schedule) in the "Outside the thermal building envelope" column (see the "Description" tab).

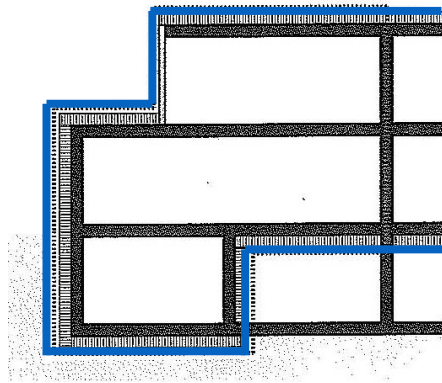


Figure 8 – Example of a thermal building envelope (blue) in cross section

## 8 Abbreviations and glossary

Abbreviation/specialist term	Explanation
AOID	Architectural Object Identification Number (unique system number)
FOBL	Federal Office for Buildings and Logistics
CAD	Computer-aided design. Technical drawings in DWG/DXF formats used in architecture, civil engineering, electrical engineering, etc.
CAFM	Computer-aided facility management refers to the computer-assisted planning, documentation and management of infrastructure resources such as surface areas, buildings, facilities, equipment and systems. A CAFM consists of a database and a user interface.
CAFM plan	Space management plan
GE	Building number
OM	Property management
PM	Project management
Room schedule	A room schedule stores detailed information about the rooms in a building. Room schedules show the equipment present in rooms and the components or technical elements associated with these rooms.
EU	Economic unit

Table 7 – Abbreviations and glossary

## 9 Referenced documents

No.	Document	Description
CAD.A01	Raumtabelle (Room schedule)	Room schedule showing rooms and their equipment features (DE, FR, IT, EN)
CAD.A02	FOBL area tree	
CAD.A03	Overview of area types	Details of the area tree
CAD.A04	Planverzeichnis (Plan index)	Excel template (metadata), with description
CAD.A05	Description of title block	
CAD.V01	CAFM plan	DWG sample plan with title block, CAFM plan layer structure
CAD.V02	Aussenparkplätze (Outdoor parking spaces)	DWG sample plan giving an overview of outdoor parking spaces

Table 8 – Referenced documents

## 10 Tables

Table 1 – Requirements for supply of plans by phase .....	6
Table 2 – Filename specifications .....	6
Table 3 – AOID structure .....	7
Table 4 – Layer structure of CAFM plans .....	14
Table 5 – System layers (created by FOBL/review body).....	14
Table 6 – Layer structure of outdoor parking spaces .....	17
Table 7 – Abbreviations and glossary .....	21
Table 8 – Referenced documents .....	21

## 11 Figures

Figure 1 – Example of a floor plan with spare number allocation (spare numbers shown in red) .....	8
Figure 2 – Plan review flow chart .....	9
Figure 3 – Getting started .....	10

Figure 4 – Inspection ..... 10

Figure 5 – Conversion ..... 11

Figure 6 – Conversion completed ..... 11

Figure 7 – Example of rooms with AOID numbers..... 16

Figure 8 – Example of a thermal building envelope (blue) in cross section..... 20