

Specialised Data Specifications

Section 4 – Spaces Plan Dataset

Not GEMS Geo-enabled	
GEMS Geo-enablement Planned	
Content GEMS Geo-enabled	✓

4 SPACES PLANS

Summary of changes with the Introduction of GEMS:

2. Space numbering (of physical assets) is now referred to as Estate Business Identifier (EBI). The EBI is stored in SAP in the Sort Field.

4.1 Scope of Specification

- 4.1.1 The specification outlines the convention E&IG has adopted for the capture of data for the Spaces Plan Dataset. The Spaces Plan Dataset is created for all Defence Buildings and is distinct from an architectural floor plan in that it only shows the size, shape layout and identification number of spaces and rooms within Defence Buildings, door openings, staircases and fittings. The Spaces Plan Dataset is an E&IG Key or Foundation Dataset upon which other E&IG data is based.
- 4.1.2 Where an existing building has a numbering schema in place, that numbering should be adopted.
- 4.1.3 The data captured is used to assist building management through the allotment of rooms, management of information technology assets, cleaning services, and changes to buildings. A sample of data from a Spaces Plan Dataset is shown in Figure 4-1.

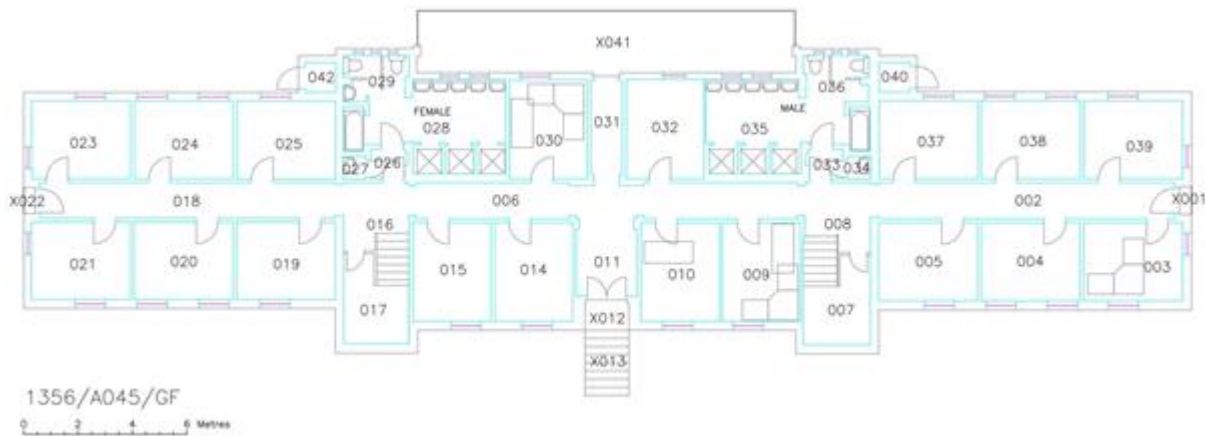


Figure 4-1 Spaces Plan Dataset - example data

- 4.1.4 The Spaces Plan Dataset is collated from as-constructed drawings, or through measurement survey, and is accurate to ± 0.05 m. This accuracy is required for this data to be used as a base for the design of new infrastructure or services on Defence Properties, and to provide data for future calculation to evaluate net return on assets. To maintain the integrity of the data source the Spaces Plan Dataset must be updated to remain current and must be collected to the nominated accuracy.
- 4.1.5 The Spaces Plan Dataset shall be updated, if any space or space number is changed, within the notice period of change occurring as specified in contracts.
- 4.1.6 Information stored within each Spaces Plan Dataset includes fixed or static elements such as external and internal wall outlines, doorways, voids, core areas, wet areas, corridors, foyers, open spaces and undercrofts. The plans include columns, glazing

and other openings (as a line or outline). Elements that shall be included within the Spaces Plan Datasets are listed in the Estate Register Information Model (ERIM) at Estate Class 2 where Estate Class 1 is “Space”.

4.2 Deliverables

- 4.2.1 A Spaces Plan shall be produced, and be distinct from architectural floor plans, for each building level. There shall be one Spaces plan per level.
- 4.2.2 A metadata record for each data file.
- 4.2.3 Transmittal documentation containing the following information:
 - Sender’s details;
 - Date of transmittal;
 - Media type; and
 - List of files including the filename and a summary of changes made to the file.

4.3 Deliverable Templates

- 4.3.1 A file template containing all file settings and layer structures, and a file containing sample data is available on the Defence Estate Quality Management System at the following location:

<http://www.defence.gov.au/estatemangement>

4.4 Required Inputs

- 4.4.1 Relevant space and level data for buildings shall be recorded in accordance with ERIM requirements in SAP via the GEMS Master Data Process as documented on the Defence Estate Quality Management System.
- 4.4.2 The Space Plan Dataset for new buildings will be created using the template that can be downloaded from the Defence Estate Quality Management System.
- 4.4.3 Changes to existing buildings must be updated into the existing Space Plan Dataset for that building. The dataset is stored within NSIMS and shall be supplied by the E&IG Project Manager.

4.5 Data Deliverable Specification

4.5.1 Data Format

- 4.5.1.1 Spaces plans shall be delivered as an AutoCAD drawing file (.dwg) compatible with Release 2013.

4.5.2 File Names

- 4.5.2.1 The following filename format shall reflect the Floor/Level as follows:

Format: [Level EBI].dwg

Example: 0253-A0012-L02.dwg

4.5.3 Units of Measurement

4.5.3.1 Data shall be captured in millimetres.

4.5.4 Spatial Accuracy

4.5.4.1 Data shall be produced to a horizontal accuracy of ± 0.05 m.

4.6 Specific Data Requirements

4.6.1 Space Numbering (Space EBI)

4.6.1.1 The consistency of Space numbering is relied upon by many discrete business areas in Defence including: building maintenance; voice and IT services; and asset management. The space numbering standards must be implemented within projects.

4.6.1.2 Building EBIs will be issued via the GEMS Master Data Process.

4.6.1.3 New Level and Space EBIs will be created by the Designer / Project according to the rules set out on DEQMS.

4.6.1.4 New or updated Space numbering must be approved by the Defence project point of contact prior to labelling.

4.6.1.5 The Space EBI format is described on DEQMS.

4.6.1.6 The Space and Level EBI shall be consistent with the EBI numbering format as published on DEQMS, subject to the following considerations:

1. Existing EBI may be maintained to ensure continuity, **Except in case of more than 50% building refurbishment:** or
2. Due to fire regulations (e.g. dispensations) and also to preserve building record history, building refurbishments greater than 50% will require new space identifier assignments (renumbering).

4.6.1.7 Space numbering shall commence from the first space encountered from the main entry point of the building and continue in a clockwise and inward direction. This convention shall apply to all levels of multi-level buildings with numbering restarting from 001 on subsequent floors.

4.6.1.8 It is important to recognise the impact of space numbering during the design process, the application of space identification, and the number for door and window schedules.

4.6.2 Renumbering Spaces Associated with New Works

4.6.2.1 Where an existing space is split into multiple spaces, those new spaces should be renamed using the existing space number plus consecutive letters of the alphabet.

EXAMPLE: Space 050 becomes spaces 050A and 050B.

4.6.3 Space Labelling

- 4.6.3.1 The requirements for space labelling are detailed within **Estate & Infrastructure Group Defence Signage And Labelling Standard (SLS)** – refer DEQMS.

4.6.4 Spaces Plan Data Capture

- 4.6.4.1 Spaces plans are to be expressed as simple, to-scale, diagrams with detail kept to a minimum.
- 4.6.4.2 Drawing elements shall include external and internal wall outlines, doorways, voids, core areas (including lifts and stairways), wet areas (simplistically identified), corridors, foyers, open spaces and undercroft areas. The Spaces plans shall include columns, glazing and other openings (as a line or outline).
- 4.6.4.3 External spaces include external stairs, ramps directly attached to the building areas, and areas containing air conditioning equipment adjacent to a building. Verandas and areas with a roof are also included within the specification, but patios without a roof are not considered spaces in this context.

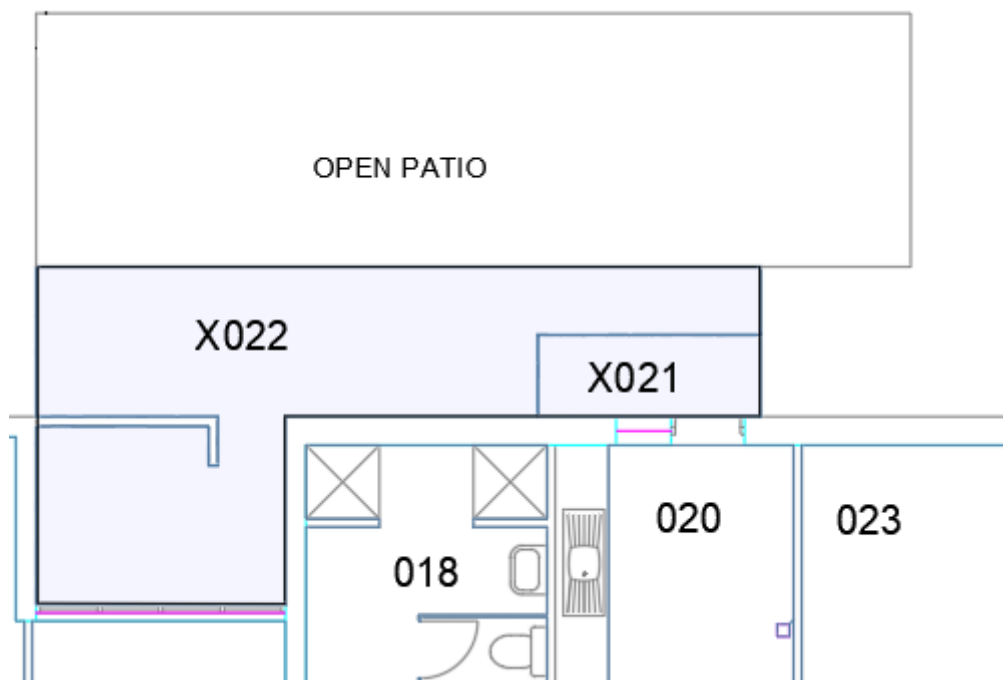


Figure 4-2 Example external space capture of a covered area

4.6.4.4 Wet areas and ablutions shall be considered one space unless a door creates a separate space.

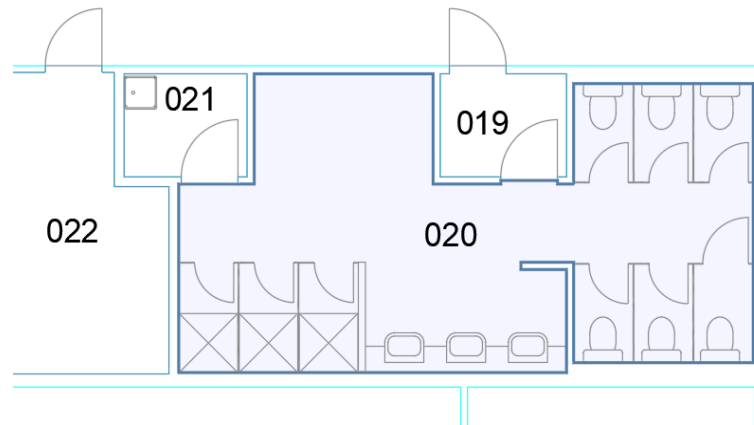


Figure 4-3 Example wet area and ablutions as a single space

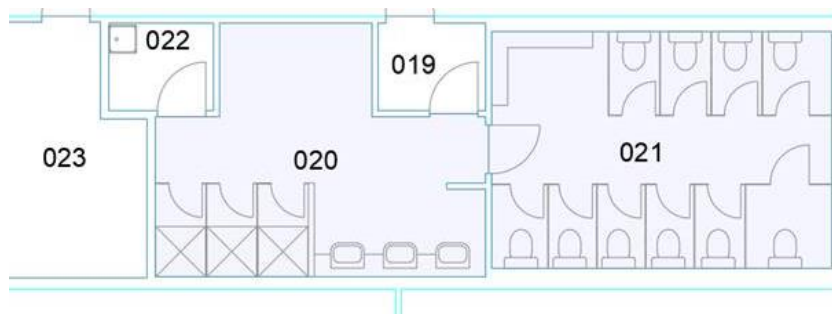


Figure 4-4 Example multiple wet area and ablutions space capture

4.6.4.5 Stairs and stairwells shall be considered a separate space except where they are part of a corridor or a low landing.

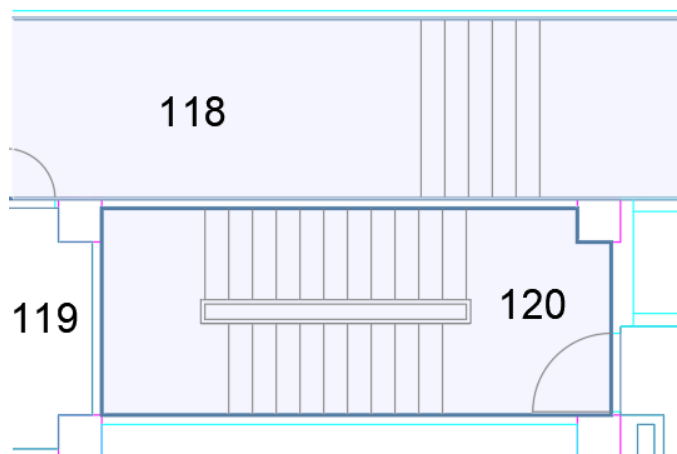


Figure 4-5 Example stairs in a corridor and stairwell space capture

- 4.6.4.7 Fire Hose reels shall be considered an individual space when contained within an alcove or cupboard.

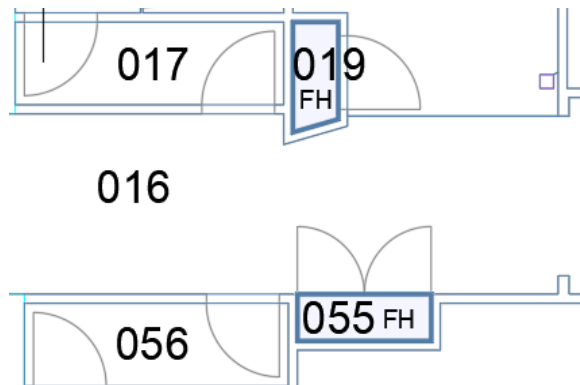


Figure 4-8 Example fire hose space capture

- 4.6.4.8 Electrical switch/substation and communications areas shall be considered an individual space when contained within an alcove or cupboard or room.

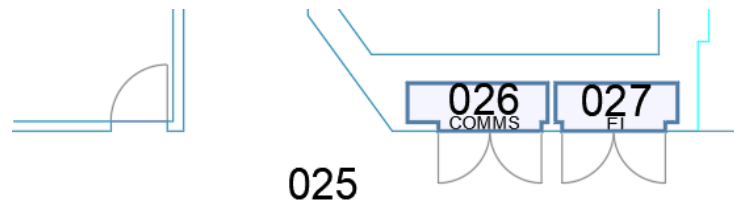


Figure 4-9 Example electrical switch/substation and communications areas space capture

- 4.6.4.9 All space plans must contain closed polygons for each space and a gross external area for each floor on the appropriate SP_AREA layer. Refer 4.6.6.4 for the correct layer to use.
- 4.6.4.10 Each Spaces plan will record the Level EBI, refer 4.6.6.7 below.
- 4.6.4.11 Each space on the Spaces plan shall record its Space EBI as per 4.6.8 below.
- 4.6.4.12 Space Plan Datasets for new buildings shall be compiled by survey or from as-constructed and architectural design plans.
- 4.6.4.13 Spaces plan data for existing buildings may be obtained from the following sources:

Field Capture – Field measurement using appropriate electronic measuring equipment and an audit of each Space. Field capture shall include the following requirements:

- Measurement of external/internal wall thickness, offset external wall, change layer to internal wall;

- Measurement of the hallway, main rooms, then all rooms off the hallways and main rooms;
- Doors shall be measured from the door jam and the correct opening direction shown. The hook point of the door shall be the corner of the wall (not the centre of the wall);
- Only features that are permanently part of the building shall be collected. No furniture such as tables, workstations or bookshelves shall be captured unless specified within the Statement of Works.

Electronic CAD files - Existing CAD files may be available from various sources. Care should be taken to consider their forms, quality, structure and version.

Hardcopy or Scanned Raster Images – If no other information is available hardcopy information can be used as a basis to assist in drafting plans that meet the Data Specification. These shall be used with caution as they may not be to scale. Note: Building footprints sourced from the relevant Master Site Plan (Section 3) shall be used as a reference for scaling.

- 4.6.4.14 Where existing Spaces plan information is to be used, data verification shall be undertaken of the area impacted by the project via a site inspection. The site inspection shall confirm that the Spaces plan is correct, to scale, and that attribute information including space IDs and areas are correct. Where the existing spaces layout differs greatly from the supplied plan within the footprint of the project, the supplied plan shall be updated to reflect spaces layout (within the footprint of the project). Minor incorrect measurements that fall within the required accuracy are acceptable for existing data. If the site inspection reveals differences in the Space Plan outside the project footprint these should be notified to the Defence project.

4.6.5 Area Calculations

- 4.6.5.1 Defence has not adopted an agreed method of measurement (such as BOMA) the following broad methods are outlined for this purpose.

- 4.6.5.2 It is preferred that Gross External Area and Actual Area (Usage Floor Space in SAP) shall be calculated according to the following definitions.

Gross External Area – (Applies to a level) Required for estate value and management calculations. The gross external area is the total external area of the structure. It is the “footprint” of the structure and the maximum area covered by it including the spaces.

Actual Area – (Applies to Spaces). This is equivalent to **Usage Floor Space** (in SAP). The actual area is the area of a space from the outline formed from the inside of each wall and not including the wall thickness.

4.6.6 Spaces Plan Presentation

- 4.6.6.1 Spaces Plans shall be drawn at 1:1 scale with coordinate 0,0 at the bottom left of the drawing.

- 4.6.6.2 Data shall be drawn square to the AutoCAD World UCS and displayed at ‘Drawing Extents’.
- 4.6.6.3 All Spaces plans for an individual structure shall be vertically registered with building outlines coincident between levels to allow spaces plans to be overlain with each other if required.
- 4.6.6.4 All spaces plan data shall be assigned to the correct layer structure listed in **Appendix H**. No other information shall be included in the Spaces plan. **Table 4-1** shows the layers Gross External and Actual Area will be captured on.

Table 4-1 Space Area Layers

Area Type	Applies to	Layer
Gross External Area	Level	SP_AREA_EXT
Actual Area	Space	SP_AREA_ACTUAL

- 4.6.6.5 Drawing borders shall be placed in Paperspace and on Layer “DRGSHT”.
- 4.6.6.6 A simple scale bar shall be placed with its left-hand end at coordinate 0,0 in Model Space.
- 4.6.6.7 The drawing title shall be placed within an AutoCAD Block at the bottom left hand corner of the drawing centred above the scale bar. The drawing block attributes are listed in **Table 4-2**. The only visible attribute shall be the floor name.

Table 4-2 Spaces Plan Block Attributes

Attribute	Example	Comments
FLOOR_NAME	0253/A0012/L02	The drawing title shall reflect the file name of the drawing. This shall be the only visible attribute.
AREA_AVAILABLE	100	Not required.

- 4.6.6.8 Annotation text style shall be Arial font and shall be a legible size when Spaces plans are printed at A3. All text shall be stored within the AR_TEXT Layer.
- 4.6.6.9 Space IDs shall be displayed on the plan centred on the Space and shall be stored in the layer SP_ATTRIBUTE. The use of the attribute block SP_ATTS is required. The Space ID should be centred within the space polygon and, for example, not “arrowed” in.
- 4.6.6.10 Fire Hose reels shall be labelled with the text FH in the AR_TEXT layer.

4.6.6.11 Descriptions of miscellaneous features including counters or display cabinets shall be placed in the AR_TEXT layer.

4.6.7 Defence Estate Information System Update

4.6.7.1 Relevant space and level data for buildings as specified in ERIM shall be stored in SAP via the GEMS Master Data Process.

4.6.8 Space Attributes

4.6.8.1 The attributes in **Table 4-3** shall be populated within the SP_ATTRIBUTE layer for each Space and shall be stored in an AutoCAD block.

4.6.8.2 Visibility of attributes on drawings should be discussed with the E&IG Project Manager prior to commencement.

Table 4-3 AutoCAD Block Space - Attributes

Attribute	Example	Comments
EBI ¹	0249/A0026/GF/001	The full Estate Business Identifier (EBI) for the Space also known as the Sort Field.
SPACE	001	Always visible
TYPE	Store	Refer ERIM Estate Class 2 (where Estate Class 1 is "Space").
AREA ACTUAL	10.6	Units = square metres.
FLOOR FINISH	Carpet	Refer to the ERIM value list 'Floor Finish'

Note 1: In existing Spaces data this attribute is called DEMS. Where such plans are updated any new or updated Space Block Attribute must reflect Table 4-3 Table 4-3 AutoCAD Block Space - Attributes. Unaffected Spaces Block Attributes are not required to be migrated to the attribute structure at Table 4-3.

4.6.9 Optional Data Capture – Fixtures and Fitting

4.6.9.1 Higher detailed fittings such as workstations, toilets, urinals, basins, sinks, showers and baths may be requested within the Statement of Works for illustrative purposes but shall be provided as an X-reference to the Space Plan on an appropriate layer, using a set of standardised blocks