



UNIVERSITY OF  
CANBERRA

# DOCUMENTATION STANDARDS

ASSET INFORMATION REQUIREMENTS

Campus Estate

July 2022

## Document Authorisation

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## Document Revision Control

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# CAMPUS ESTATE DOCUMENTATION STANDARDS - Asset Information Requirements

## PURPOSE

The purpose of this document is to define the minimum standards for documentation and asset information to be prepared and submitted to the University of Canberra (UC) and Campus Estate under contractual obligations for capital works, minor works, tenancy agreements and services works.

Campus Estate manages the property, infrastructure and operation of UCs assets to align with the Universitys strategic vision and to provide a safe and appropriate physical environment for the University community.

When any asset is handed over to UC, it must be accompanied with accurate set of asset data and minimum documentation as defined within these guidelines, and in accordance with relevant Australian Standards, design standards and contractual agreements.

## SCOPE

These specifications apply to all staff, contractors, consultants and sub-ordinates providing documentation to Campus Estate or the Leasing team.

This documentation standard sets out the minimum asset information requirements that applies to all University projects and all project disciplines. Building Information Modelling (BIM) requirements as described in Section 8, may be required for specific projects at the discretion of the University.

The following document types that should be prepared, but not limited to for each project in accordance with this

## 1. Document Submission Process

All documentation must be delivered in electronic format unless hardcopy files are specifically requested by UC. Electronic files shall be issued to Campus Estate using the below methods in preferred order:

1. Lunr UC Content Management System – URL: <https://documents.lunr.app/> Team Name: uc
2. Cloud storage system, e.g. Aconex, Procore, RedHub

*Figure 1:Lunr User Login*

Under no circumstances are files to be provided on CD / DVD or USB, or within cloud storage systems not based in Austr.7 (o)5 (t)1 Td[(R)-8 (e)-6s4a11 Tc 0.0175 -16.67ses on.8 (4 ( o)-MCID 16 nu3.4 (s 38 (e1n.8 (4 ( o)-MCID 16 O

### 3. Campus Estate Built Records and Systems

It is important that all documentation and drawings integrate with UCs existing built records systems. These records assist with RFIs and future project developments.

#### 3.1 Asset or Operational Data

The University is required to record all asset information, including buildings, infrastructure, services, operations, maintenance for asset and facilities management purposes, this includes:

Traditional documentation, such as drawing renditions, specifications, operations and maintenance (O&M) manuals, service records and defects registers or forms. Noting that many of these records are scanned originals that are archived within SharePoint and may not meet current digital standards.

Digital documentation, such as CAD drawings, models, GIS geodatabases, laser scans, photogrammetry, asset registers and integrated asset information within systems as detailed in Table 1 below.

#### 3.2 Built Environment and Space Data

The University maintains all building records for various disciplines within its recordkeeping systems. In addition, UC uses GIS for space planning and estate management purposes to identify functionality, usability, occupancy and size of spaces, refer to UCs GIS Space Inventory

[https://canberra.maps.a1stC Et.02 0.q0 0 595.32 1.1 \(ps.\(7\(a\)-40.005 T.005 c\)5.1 \(1stC E\(713.1 d4p\)-3Tc4 \(a\)1425\(s:\)2.e37.2 \(8 c\)\)](https://canberra.maps.a1stC Et.02 0.q0 0 595.32 1.1 (ps.(7(a)-40.005 T.005 c)5.1 (1stC E(713.1 d4p)-3Tc4 (a)1425(s:)2.e37.2 (8 c)))

System

Related Software

Documentation

Gate	Project Stage	Document Status	Drawings	O&M Manuals, Registers, Reports	Certificates
	Construction & Delivery				
5	DLP & Closure	Final (As-Built or Work As Executed)	DWG, RVT & PDF	DOCX, XLSX, PDF	PDF

## 7. Asset Information and Design Requirements

### 7.1 Design Standards and Specifications



Location Description

Location  
Code

Building Description

## **8. Drawings**

### **8.1 Asset Identification**

This section describes the requirements for drawings prepared for submission to UC under contractual obligations using an approved Computer Aided Design (CAD) drafting package specified in Table 1: UC Business Information Systems.

### **8.2 Standard CAD Systems and File Formats**

UC requires all drawings to be submitted in any of the original CAD drawing

## Details

## 8.4 Survey Drawings

Survey drawings required for submission to Access Canberra or NSW Land Registry Services, including Deposited Plans or Lease Plans must meet the requirements of these authorities and the *Surveyors Act 2007*.

### 8.4.1 Deposited Plans and Lease / Sublease Plans

Deposited plans for the Bruce Campus and southern NSW facilities are registered with ACT and NSW Land Titles Offices. Deposited plans require a registered Surveyor to use survey controls to identify parcel(s) of land and locate existing survey marks or monument features to define site boundaries. The Deposited plan is lodged and registered with Access Canberra or NSW Land Registry Services.

Lease plans or sub lease plans require a registered Surveyor to determine the area of land within the Crown lease for survey of new and existing commercial properties and retail tenancies across the campus. The process involves reviewing against previous plans archived within the Lunr or UCs SharePoint document management system and registered with the ACT Land Title Office and delivering plans using 3D laser scanning and CAD. All sublease plans are measured to the Method of Measurement guidelines produced by the Property Council of Australia (PCA) for Lettable Area.

### 8.4.2 University Survey Requirements

UC may request survey identification and topographical plans and 360 degree spherical photography or

(11) 4.61 ~~University of Canberra (UC) is a public university in Canberra, Australia. It was established in 1968 and is one of the largest universities in Australia. The university is known for its research and teaching in a wide range of disciplines, including business, health, education, and the arts. UC is also known for its commitment to sustainability and social responsibility.~~











Revit project file (RVT)  
Text styles  
Object naming conventions  
Object attribute parameters

The asset register as detailed in Section 11.5 below is to be used as a basis for development of the COBie requirements.

#### 9.2.1 BIM Model Development Met005 Tc ( M)2.0(et)3.5 r (i)0.830 0 1 0 8 1 reW n2y1 5MDevelopbs d.217 0 Td[bes.5 (2 (c

- Section 3 – Maintenance Manual
  - Maintenance Plans / Schedules
  - Asset / Component Maintenance Plans
  - Recommended Spare Parts / Spare Parts Schedule
  - Work Method Statements (including JSA, JSEA, SWMS, Safety Procedures and/or Work Instructions where available)
- Section 4 – Commissioning
  - Witness Testing and Training
  - Commissioning / Asset Handover Forms
- Section 5 – Drawings
  - Drawing List (with links to drawings saved on UCs SharePoint)
- Appendices
  - Appendix A – Project Details
  - Appendix B – List of Suppliers
- Checklist

The O&M manuals must contain these separate sections as a minimum to ensure correct operating procedures of assets, ensure specific maintenance tasks are carried out and detailed technical information is provided for further development.

## 10.2 Document Numbering Convention

When submitting O&M manuals and associated documentation, all documents shall be accurately identified within the project.

Document number format: [Building Number/Name]-[Level]-[Discipline]-[Identifier]

Example: MC001-A-AR-O&M01

Where the identifier is the internal project/document number or name the consultant/contractor requires.

Table 9: Document Number Convention (BU-LVL-Disc-ID)

Building Number (BU)	Level (LVL)	Discipline (Disc)	Identifier (ID)
MC001	A	AR	O&M01

Refer to Appendix 1 for Drawing/Document Numbering Convention.

## 10.3 Document File Naming Convention

File names of all documents shall be named according to the title of the document with the revision/version included.

Document file naming format: [Building Number/Name] [Level] [Document Type] [Discipline]\_[Rev]

Example: **Building 1 Level A O&M Manual – Architectural\_Rev1.docx**

## 10.4 Operations and Maintenance Manual Submission Requirements

O&M manuals and associated documents shall be submitted in accordance with document submission process as outlined in Section 1. Table 12 below also defines hardcopy documentation requirements to be phased out by 2020.

## 10.5 Asset Register

UC has identified specific asset management requirements to assist with operations and maintenance in accordance with the ISO 55000 series. UC's definition of assets is detailed Table 10 Asset Hierarchy

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Table 10: Asset Hierarchy

Mechanical Services	Air Conditioning	Air Curtain	Hydraulic Services	Domestic Hot Water	Accumulator	Building Fittings & Furniture	Sanitaryware	Paper Towel Dispenser
		Air Handling Unit			Controller			Soap Dispenser
		Branch Box			Domestic Hot Water Unit			Toilet Paper Holder

Mechanical Services	Heating Hot Water System	Tank	Civil & Site	Car Parks	Multi-Storey	Building Fabric	Stairs & Ramps	Ladder
					Rooftop			
					Open-Air			











## GLOSSARY

AHD	Australian Height Datum
As-Built	Description of a document, drawing or model that records the details of construction work of built assets or structures following its completion. May be used in conjunction with <i>As-Constructed</i> or <i>Work As Executed</i> .
Asset Identifier	An identifier given to an asset that guarantees its uniqueness throughout its entire life. Also known as <i>GUID (Global Unique Identifier)</i> or <i>Asset Number</i> .
BIM	Building Information Modelling: Digital form of construction and asset operations. It brings together technology, process improvements and digital information to improve client and project outcomes and asset operations.
BMS (or IVELTS)	Building Management System (or Integrated Extra Low Voltage System). Building automation system used for efficient operation of building systems, plant, and occupant comfort.
CAD	Computer-Aided Design: A geometric / symbol-based computer drawing system that replicates hand drawing techniques.
CAFM	Computer-Aided Facilities Management: The use of software applications to support facilities management.
CDE	Common Data Environment: A single source of information for any given project, used to collect, manage and disseminate all relevant approved project documents for multi-disciplinary teams in a managed process. [Source: ISO 19650-1]
COBie	Construction Operations Building Information Exchange: An information exchange specification for lifecycle capture and asset information needed by facility managers. It identifies the content of the information that must be captured and exchanged at each phase of the project.
DITM	Digital Information Technology Management: ICT business unit
EWIS	Emergency Warning and Intercommunication System
GDA2020	Geocentric Datum of Australia 2020 coordinate system with the projection for the ACT as the Map Grid of Australia 2020 (Zone 55).
GIS	Geographic Information System: A system that integrates hardware, software and data for capturing, managing, analysing and displaying all forms of geographically referenced information.
Handover	Process for completing the design and construction of an asset, including asset information, and transferring responsibility or ownership of the information to another party or client. Key handover documents should be contractually identified or detailed in this standard.
HVAC	

Link or Hyperlink	On-screen hyperlink displayed as a designation, code, icon or similar that, when clicked on, takes the reader directly to the file's location, or opens it.
Lunr	Refers to UCs Common Data Environment (CDE), in which all contractors and consultants may request access to the drawings and document management system.
Metadata	Data describing the content (including indexing terms for retrieval), context and structure of electronic document-based information and its management over time. [Source: ISO/TR 18492:2005]
O&M	Operations and Maintenance
SAMP	Strategic Asset Management Plan: Documented information that specifies how the University's strategic or operational objectives are to be converted into asset management objectives, for the approach of developing asset management plans. [Source: ISO 55000:2014]
Structured Information	Information assembled from predefined concepts (vocabulary or code set) using an organisation scheme, or information model. [Source: ISO/TS 17251:2016]

## Appendix A– Drawing and Document Numbering Convention

Drawing/Document Number = MCBU-LVL-Disc-ID

Building Number (BU)		Level (LVL)		Discipline (Disc)		Project / Drawing Number (ID)
<b>MC</b>	<b>Main Campus</b>	A	Level A	AR	Architectural	
MC001	Building 1 (Chancellery)	B	Level B	CV	Civil	
MC002	Building 2	C	Level C	EL	Electrical	
MC003	Building 3	D	Level D	FP	Fire Protection	
MC004	Building 4 (Gym)	E	Level E	GA	Gas	
MC004a	Building 4a (Sports Amenities)	X	Multiple Areas	GN	General	
MC005	Building 5			HY	Hydraulic	
MC006	Building 6			LA	Landscaping	
MC007	Building 7			ME	Mechanical	
MC008	Building 8 (Library)			SC	Security	
MC009	Building 9			SU	Survey	
MC010	Building 10			ST	Structural	
MC011	Building 11			TF	Parking & Traffic	
MC012	Building 12					
MC013	Building 13					
MC013a	Building 13a					
MC013b	Building 13b					
MC013c	Building 13c					

Building Number (BU)		Level (LVL)	Discipline (Disc)	Project / Drawing Number (ID)
<b>RE</b>	<b>Residential</b>			
REBGA	Bega Student Accommodation			
REBIM	Bimbimbie (VC Residence)			

## Appendix B— Drafting Standards

### Colour Standards

The standard primary colours to be used in the preparation of layers within UCs CAD drawings:

#### *Primary Colour Standards*

Layer Colour	Number (AutoCAD)	Lineweight	Pen Colour	Pen Number
Red	1	0.35mm	Black	7
Yellow	2	1.00mm	Black	7
Green	3	0.50mm	Black	7
Cyan	4	0.70mm	Black	7
Blue	5	0.15mm	Black	7
Magenta	6	0.18mm	Black	7
White	7	0.25mm	Black	7
Dark Grey	8	0.13mm	Black	7
Light Grey	9	0.09mm	Black	7

### Laye



Layer Name	Colour	Linetype	Lineweight
Electricity (EL)			
Fuse Box		Continuous	
Line / Cabling		LV_Electrical_Line	
		HV_Electrical_Line	
Maintenance Hole		Continuous	
Meter		Continuous	
Mini Pillar		Continuous	
Pit		Continuous	
Pole		Continuous	
Streetlight		Continuous	
Substation		Continuous	
Transformer		Continuous	
Footpaths (FP)		Continuous	
Furniture (FUR)			
BBQ		Continuous	
Bicycle Rack		Continuous	
Piano		Continuous	
Seat		Continuous	
Gas (GAS)			
Marker		Continuous	
Meter		Continuous	
Pipe		Gas_Line	
Pit		Continuous	
Valve		Continuous	
Landscaping (LA)			

Layer Name	Colour	Linetype	Lineweight
Sewer (SEW)			
Grease Trap		Continuous	
Inspection Opening		Continuous	
Maintenance Hole		Continuous	
Pipe		Sewer_Line	
Pit		Continuous	
Vent		Continuous	
Stormwater (STW)			
Culvert		Continuous	
Grated Pit		Continuous	
Grease Trap		Continuous	
Headwall		Continuous	
Inspection Opening		Continuous	
Maintenance Hole		Continuous	
Pipe		Stormwater_Line	
Pit		Continuous	
Subsoil Drain		Subsoil_Drain	
Sump		Continuous	
Vent		Continuous	
Survey (SU)			
Borehole		Continuous	
Control		Continuous	
Grid		Continuous	
North Point		Continuous	
Text			
Primary		Continuous	
Secondary		Continuous	
Vegetation (VE)			
Shrubs		Continuous	3.52 6825911.90 0 0.96 111.90 Tw 2.928BDC qdy
Trees		Continuous	



## Appendix C – Survey Tolerances

Project Stage	Asset	AS 5488 Quality Level	X/Y Tolerance	Z Tolerance
Design	Proposed underground utilities (X/Y location, invert levels)	A	50mm	50mm
Design	Existing underground utilities (Pipe locator)	B/C	300mm	50mm
Design	Existing underground utilities (Hydrovac, Pothole)	A	50mm	50mm
Design	Pits (X/Y location, invert levels)	B	300mm	500mm
Design	Above ground assets (X/Y location, cover levels)	A	50mm	50mm
Construction	New underground utilities (X/Y location, invert levels)	A+	50mm	10mm
Construction	Existing underground utilities (Hydrovac, pothole)	A	50mm	50mm
Construction	Pits (X/Y location, invert levels)	A	50mm	50mm
Construction	Above ground assets (X/Y location, cover levels)	A+	50mm	10mm

## Appendix D– Survey Data Requirements

Attribute	Description	Metadata	Mandatory
AssetID	Used as an identifier to describe the asset (to be used to reference to the BMS/Works Management System)		

## Appendix E – GIS Data Requirements

Feature Class (Asset Name / Layer)	Description	Metadata	Mandatory	
Buildings	BuildingNumber	Building Number	Drop down list	Y
	BuildingName	Building	Drop down list	Y
	Levels	Number of Levels		Y
	ConstructionYear	Year Building Constructed		Y
	SpaceType	Space Type	Building	Y
	AreaType	Area Type (GBA, GFA or UFA)	Drop down list	Y
	Area	Area	Calculated	Y
ConstructionZone	ConstructionStartDate	Construction Start Date		Y
	ConstructionFinishDate	Construction Finish Date		
Parking	ParkingNumber	Parking Number, e.g. P1		
	ParkingName	Parking Name		
	ParkingType	Parking Type		
	ParkingSpaces	Number of Spaces		



Feature Class (Asset Name / Layer)

Description

