



The University of Newcastle

Infrastructure and Facilities
Services

Project Briefing Document

Major Projects Handover Standards

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Revision Summary	
Revision	Change summary

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1 PURPOSE

The handover of a project to the client at the end of construction is a critical stage of the project delivery process and facility operational success. A well organised, efficient, and effective transfer of information from project works to the University of Newcastle (the University) is essential.

The transfer of ownership of the project from contractor to client can influence health and safety, reliability, standards of operation, maintenance, and operational cost efficiencies to the University. The commissioning and fine-tuning operations during handover can impact heavily on core business of the University if not managed in a structured manner.

This document identifies the required documentation and actions to be undertaken for major projects to satisfactorily undertake the project handover to the University's Infrastructure and Facilities Services (IFS) team.

The handover program shall be organised by the Project Manager in conjunction with the Principal Contractor and Subcontractors and key representatives from the University IFS Campus Services Team.

2 GLOSSARY OF TERMS

AS	Australian Standard
AQIS	Australian Quarantine and Inspection Service
BCA	Building Code of Australia
BEP	Best Environmental Practice
BMS	Building Management System
CCTV	Security Surveillance System
GIS	Geographic Information System
IFS	Infrastructure & Facilities Services
ISO	International Organisation for Standardisation
NCC	National Construction Code
NOD	Notice of Disruption
O&Ms	Operations & Maintenance Manuals
OGTR	Office of the Gene Technology Regulator
CST	Campus Services Team
PCP	Post-Completion Period
UON	University of Newcastle
WHS	Work Health & Safety

3 PROJECT HANDOVER PLANNING MEETING

The Project Manager is to organise a dedicated project meeting to discuss the project handover process and to agree on requirements and outcomes. The meeting should be held no less than **four months prior** to the proposed project completion date and should be detailed and agreed upon as part of the Commissioning Plan.

A pro-forma agenda for the meeting would include at minimum:

- Introduction and purpose of the meeting

- Drawing information
- Asset data collection
- Operations and Maintenance Manuals (O&Ms)
- Connection and commissioning
- Systems operational training planning (includes building operations such as evacuations)
- Licences and certificates
- Warranties
- Security systems
- Space use information verification
- Defects management

The Project Manager shall invite to the meeting all stakeholders including design team, Principal Contractor, major subcontractors, and relevant IFS representatives. IFS representatives and key University stakeholder representatives may be nominated to attend various elements of staged project handover, meetings, and operational training sessions.

4 REQUIREMENTS OVERVIEW

The University's Authorised Person will not issue Completion for the project until the following have been undertaken or fulfilled:

1. Connection and commissioning of all systems, plant, and equipment is complete, and all testing data and reports have been submitted in good time that has enabled a full and final review completed by University Representatives.
2. Training sessions have been successfully held, attended, and completed by IFS representatives and any other nominated representative.
3. Licences, certifications, and registrations required by SafeWork NSW, the BCA or any other statutory authority, have been submitted, are compliant and have been accepted by the University's representatives.
4. Final O&M's, Works-as-Executed-Drawings and As-Built Drawings and required asset capture data have been submitted.
5. Post-Completion Period (PCP) defect management processes are in place and confirmed by the IFS Project Team.

4.1 CONNECTION AND COMMISSIONING

Specific testing and commissioning requirements and programs for the project will be those that are agreed at a pre-commissioning meeting attended by the Principal Contractor, project management team, and IFS representatives; and detailed in the Commissioning Plan. Connection testing and commissioning of all systems, plant and equipment shall be complete to the satisfaction of the Design Team and/or the University.

4.1.1 Requirement

- Provide testing and commissioning information at least one week in advance of the event that the University representatives will witness.

- Provide relevant authorities inspections, manufacturers and consultant's witness/acceptance test reports and commissioning data as part of the as-built documentation.
- Label all equipment, switches, and controls legibly in accordance with the University's requirements.
- Affix University provided asset stickers to all assets and update associated asset capture datasheet.
- The contractor must submit reports to the Project Manager certifying that all engineering infrastructure has been designed, installed, and commissioned in accordance with legislated requirements and the University design requirements and that they are in full operational modes, before the installations are deemed to be completed.
- Where there are specialised or restricted systems such as CCTV, door access control systems, alarm monitoring systems or building management systems etc, the University may invite the respective maintenance provider for that service to attend commissioning and testing.
- Connection of specialised and restricted systems to the University's existing platforms, shall be a collaborative activity between the subcontractor and the University's contracted representative to maintain data configuration integrity, operational administration, and ongoing maintenance accountabilities.

4.2 TRAINING SESSIONS

Successful operational, familiarisation and maintenance training sessions are to be held with the respective nominated University representatives. End user occupants and representatives from the respective University maintenance providers may also be included in training sessions. The training sessions are to target those areas of the project that shall require specific ongoing maintenance, client, and operational functionality expertise, and where systems are new to site and have not been implemented elsewhere.

4.2.1 Requirement

- The contractor shall submit a draft training program and training documentation to the Project Manager for each system or specialised item of plant for approval based on the commissioning program. Both the program and documentation should allow sufficient time for review and coordination to ensure IFS representative availability.
- Training information documentation shall be submitted with the proposed program. Ensure adequate and appropriate training materials inclusive of as-built drawings and operation and maintenance manuals as the basis for training.
- Final dates for training sessions shall be scheduled and agreed with the Project Manager to ensure IFS representation and other key stakeholder inclusions.
- The University expects the training and documentation to be provided by qualified, competent representatives of the Manufacturer, Subcontractor or Principal Contractor.
- Where there may be early, partial, or staged handovers of equipment or systems, the expectations outlined above are to be maintained. Final training and documentation are to include any early, partial, or staged components of the Works.

4.3 LICENCES, CERTIFICATES AND REGISTRATIONS

All licences, certifications and registrations pertaining to the project works shall be provided to the University prior to taking occupancy or accepting the project as being completed.

Additional information in relation to product information where chemical or hazardous materials are included as part of the project, need to be included in the as-built documentation. Ensure all chemical or hazardous substance purchases are referred to the UON Health & Safety Unit; MSDSs are provided; substances are appropriately labelled, and chemical lists provided for inclusion on the University manifest.

4.3.1 Requirement

All licences, certificates and registrations must be submitted under the conditions set out by the following organisational bodies:

- SafeWork NSW
- Building Code of Australia
- AQIS
- OGTR
- Local Government Authorities
- Statutory Authorities
- University Committees and Regulatory Units

4.4 AS-BUILT DOCUMENTATION AND MANUALS

As-Built documentation is required by the University to allow a smooth transition from project to occupation and operational continuity. As-Built documentation includes asset schedules, technical data and manufacturer's technical literature including performance information on individual plant and equipment and any associated drawing information; original software programmes and all passwords; copies of certifications and warranties; all test results; maintenance schedules; and complete as-built drawings in CAD format; list of Suppliers; list of programmed operational time periods, thermostatic settings, etc.

Refer to Appendices A and B for detailed lists of information required.

4.4.1 Requirement

For Completion to be achieved the Principal Contractor is responsible for supplying Final O&M's, As-Built Drawings and Works as Executed Drawings, and Asset Capture Data. To ensure a smooth transition it is required that the University have sufficient time to review all draft and final documents while allowing the Principal Contractor sufficient time to ensure necessary changes and review updates be completed prior to anticipated Completion.

OPERATION AND MAINTENANCE MANUALS

- Draft O&Ms are to be completed 40 Business days in advance of Completion or in accordance with the Commissioning and Handover Plan, whichever is the earlier date, for review by the IFS Campus Services Team.
- All information shall be provided in electronic format.

- The Contractor is to supply final O&M documentation before Completion is confirmed by the University's Authorised Person.
- Manuals must not contain superfluous information such as product catalogues that 'add bulk' and make it look a healthy presentation. Only useful information shall be provided such as instructions, schedules, and maintenance plans etc.
- For works that have been undertaken in existing buildings, existing O&M's documentation should be updated as required with details such as system schematics and schedules.

WORK-AS-EXECUTED DRAWINGS

- Progressive work-as-executed drawings shall be provided in electronic format for subcontract and supplier packages showing the completed works as constructed for that stage or portion of the works.
- Work-as executed drawings shall be equivalent in content, accuracy, and level of detail to those in the detail design drawings used for construction and shall be sufficient to describe and to ensure the efficient operation of the assets created under the contract.
- Where services and infrastructure are concealed or underground, as-installed drawings shall be submitted prior to backfilling of excavation or concreting of floor slab or installation of non-removable ceiling, ensuring critical dimensions and access points are documented.

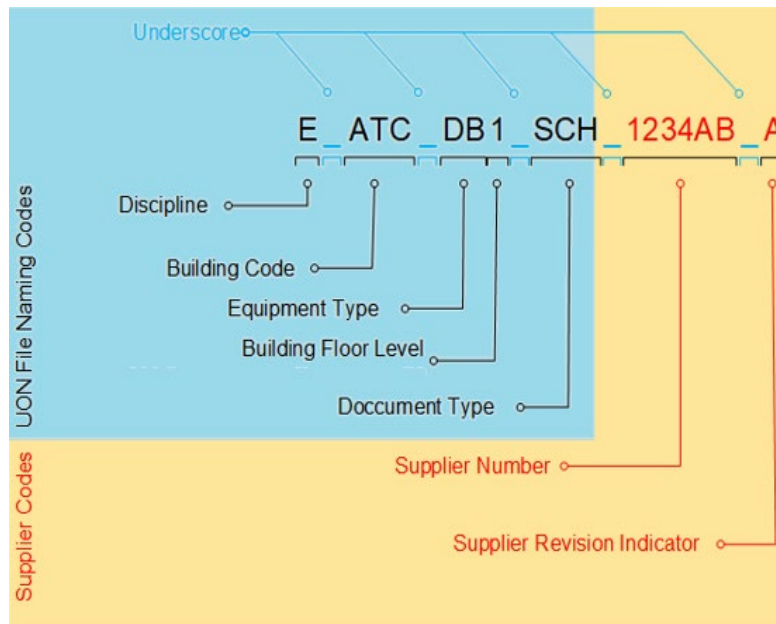
AS-BUILT DRAWINGS, SMALL SCALE PLANS, EVACUATION MAPS and SURVEY DATA

- All As-Built drawings must:
 - o Be submitted in PDF and DWG and adhere to the naming conventions adopted by the University.
 - o Be drawn at 1:1 in model space and scaled into paper space as required.
 - o Be based on vector CAD elements
 - o Include the final room number as approved by the University.
 - o Be drawn to a relevant discipline Australian standard AS1100 (ie: architectural drawings are drawn to AS1100.3) or follow the principles outlined in the Natspec National BIM Guide.
 - o Include layer structure with logical and clear structure.
 - o Be a stand-alone file with no references or attachments.
- Where 3D or BIM drawings applications have been used to create drawings, the native 3D or BIM file (or federation of model files) is included in handover package.
- For all new builds and for any refurbishment works involving changes to building fabric small scale plans must be supplied in both dwg and pdf format adhering to the University Specification. Refer to [Appendix C](#) which specifies the University requirements for completion of small-scale plans.
- Fire evacuation maps shall be provided for all new builds and for any refurbishment works involving changes to building structure and/or egress routes.
- Certified survey drawings shall be provided for all new in-ground services, and changes to existing inground services and development locations. The survey data

shall be provided to upload to the University's GIS system in suitable format to comply with the University's survey standard.

DRAWING NAMING CONVENTION

Drawing / Document naming will conform to the Drawing / Document Naming Convention detailed in the Drafting and Documents Standards Document. File and drawing naming convention is as per the below. For further detail please refer to the full document.



ASSET COLLECTION DATA

- Assets for the University will be all fixed plant or equipment that has an asset classification defined within the Maximo System. There are over 240 Classifications currently on the list, but the list can be expanded upon where new assets come online that do not currently have a classification. All classifications for the respective trades are included in the Asset Data Capture Spreadsheets.
- Asset collection data must be completed for both assets removed from the project and for all new assets installed as part of the project.
- The University requires all details for every asset provided within the project for all trade specific and specialty services.
- The asset data collected ensures the University can plan and support both preventative and statutory requirements for all maintainable assets.

DOCUMENTATION STRUCTURE

All Project documentation is to be submitted using the following format:

Project Name

1. Trade Activity (Building, Electrical, Fire, Hydraulic, Mechanical, Grounds, Specialist, etc)
 - 1.1 Directory
 - 1.2 Equipment and Product Information
 - 1.3 Testing, Commissioning and Training Data
 - 1.4 Licences, Certificates, and Registrations
 - 1.5 Operation & Maintenance Manuals and Warranties
 - 1.6 Drawings
 - 1.7 Asset Data Capture & Decommissioning

4.5 POST-COMPLETION PERIOD

The Principal Contractor is responsible for all defects and warranty issues that may arise during the period nominated for Post Completion. Defects may be identified by the University's IFS team, the University's maintenance contractors or operational users of the project completed space. Management of defect rectification requires detailed planning and coordination as the once work site will now be an operational facility.

4.5.1 Requirement

- Prior to Completion, the University's Authorised Person will organise a dedicated meeting with the Principal Contractor to discuss and agree requirements for the management of defects during the PCP. Information in this meeting will include but is not limited to:
 - o Acknowledgement of any previously identified defect that will continue into the PCP.
 - o Responsiveness to defects during the PCP.
 - o Contractor requirements for defect rectification including Inductions, Permit to Works, and Notices of Disruptions during the PCP.
 - o Emergency response to defects and alternative actions for rectification.
 - o Creation and Maintenance of the Defects Register.
- All defects identified and requiring rectification will be the responsibility of the Principal Contractor. The determination of the defect will be made using the following categories:
 - o Premature failure of a component.
 - o Patent defects identified by reasonable inspection.
 - o Latent defects which may have been concealed during inspection and only becoming apparent after a period in which the asset has been put into use.
- Defects will need to be actioned diligently and promptly in a manner which causes as little inconvenience to the users as possible.
- Rectification of the cause of the defect and all damage caused by the defect will be the responsibility and at the cost of the Principal Contractor.
- Where defect work is deemed urgent, a safety issue, or outside of normal hours with the impact considered to be as financially or operationally significant, the University will

endeavour to contact the Principal Contractor in the first instance to provide an urgent response. If contact cannot be established in good time, or the Principal Contractor is not able to provide a response within the required timeframe, the University Maintenance Contractor will make safe and make good. It will then be determined whether further works to complete repairs will be undertaken by the University Maintenance Contractor or the Principal Contractor. Any reasonable costs incurred for urgent responses and subsequent works are to be reimbursed by the Principal Contractor.

5 FINAL COMPLETION

Final Completion will be awarded only when the following outcomes have been reached and completed:

- The Post Completion Period has expired.
- All defects have been rectified and agreed upon as being completed.
- A Building System Tuning Report (if required) has been submitted (at least one month prior) identifying:
 - how the various engineering systems/installations/works performed as compared to the design criteria.
 - achievement of environmental targets including energy and water consumptions, and quality of the indoor environment.
 - any problems and adjustments made, including final seasoning tunings undertaken to ensure proper operation of all systems.

When Final Completion is awarded, any remaining retention will be returned or paid as per the conditions of the contract.

6 APPENDICES

Appendix A – Items That Need to be Reviewed in Draft

Appendix B – Final Documents

Appendix C – Small Scale Plans Standards

APPENDIX A – ITEMS THAT NEED TO BE REVIEWED IN DRAFT

Items identified below **must be provided in draft format** prior to the Project Completion. These documents should be submitted at such a time that there is sufficient time for the University's Campus Services Team to review and return to the Principal Contractor for any required changes.

RECEIVED	GENERAL ITEMS
	As-built drawings including services. These are to be a measured full set at completion of the building works supplied as DWG and PDF
	Maximo asset data collection forms and Maximo asset data decommission forms for fixed plant and equipment
	Asbestos material assessments and removal/treatment detail forms
	Environment and Hazardous Material reports
	Small Scale plans in accordance with Appendix C requirements
	Licences, Certificates, and Registrations (specialised facilities, equipment and environmental)
	Roof fall restraint details with design and use methodology
RECEIVED	MECHANICAL SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Commissioning test results
	Single line diagrams (schematics) to the University standards
	Stair pressurisation and zone smoke control systems
RECEIVED	ELECTRICAL SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Single line wiring diagrams to the University standards
	Schematic diagrams for any control circuitry
	All Distribution Board and Main Switchboard circuit schedules to the University standards, both in cabinet and electronic copy provided
	Emergency lighting and Exit Sign schematics to the University standards
	Commissioning information sheet for monitored Exit and Emergency fittings
	Pre-energisation test results
	Completed Photometric drawings for lighting designs

RECEIVED	FIRE SERVICES
	Operation manual including a full step-by-step description (functional specification) of how the system works and interacts with other services (photographs encouraged)
	Single line wiring diagrams (schematics) to the University standards
	FIP As-built drawings to the University standards and copies in FIP cabinet
	Commissioning test results
	Passive Fire Register
	Fire Engineering and Performance assessment details
	Fire Evacuation drawings supplied as DWG and PDF
	Fire Matrix
RECEIVED	HYDRAULIC SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Single line installation schematics (including irrigation systems) to the University standards
	Commissioning test results
RECEIVED	TRANSPORTATION SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Commissioning test results
RECEIVED	COMMUNICATIONS AND DATA SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Single line wiring diagrams (schematics) to the University standards
	Commissioning test results.
RECEIVED	SECURITY SYSTEMS
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Single line wiring diagrams (schematics) to the University standards
	Commissioning test results

APPENDIX B – FINAL DOCUMENTS

The table below includes but is not limited to documentation required by the University to accept Project Completion. These documents should meet the specified requirements outlined in this Standard and should be reviewed by the Principal Contractor before submission to ensure completeness.

The submission of these documents should follow the requirements as set out in the Documentation Structure.

RECEIVED	GENERAL ITEMS
	As-built drawings including services. These are to be a measured full set at completion of the building works supplied as DWG and PDF
	Maximo Asset Data collection forms and Maximo Asset Data decommission forms for fixed plant and equipment
	Asbestos Material Assessments and removal/treatment detail forms
	Environment and Hazardous Material reports
	Small Scale plans in accordance with Appendix H requirements
	Licences, Certificates, and Registrations (specialised facilities, equipment and environmental)
	Roof fall restraint details with design and use methodology
	Energy and Environmental design and efficiency details
	Surveyed information for external in-ground services and development locations
RECEIVED	MECHANICAL SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Maintenance strategies, recommendations, and service schedules
	Commissioning test results
	Single line diagrams (schematics) to the University standards
	Stair pressurisation and zone smoke control systems
	Smoke Vents
	Fire Dampers
	Compliance and Registration Certificates
	Installers Certificate of Compliance

RECEIVED	ELECTRICAL SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Maintenance strategies, recommendations, and service schedules
	Single line wiring diagrams to the University standards
	Schematic diagrams for any control circuitry
	All Distribution Board and Main Switchboard circuit schedules to the University standards, both in cabinet and electronic copy provided
	Emergency Lighting and Exit sign schematics to the University standards
	Commissioning information sheet for monitored Exit and Emergency fittings
	Pre-energisation test results
	Completed photometric drawings for lighting designs
	Installers Certificate of Compliance (AusGrid CCEW Certificate)
	Thermographic scan results of Switchboards
RECEIVED	FIRE SERVICES
	Operation manual including a full step-by-step description (functional specification) of how the system works and interacts with other services (photographs encouraged)
	Maintenance strategies, recommendations, and service schedules
	Single line wiring diagrams (schematics) to the University standards
	FIP As-built drawings to the University standards and copies in FIP cabinet
	FIP Hard Copy Program
	Commissioning test results
	Fire Matrix
	Passive Fire Register inclusive of Fire Compartment drawings
	Fire Damper Register
	Fire containment elements operational certification
	Fire engineering and performance assessment details
	Fire evacuation drawings supplied as DWG and PDF
	Fire Door Register
	Fire Door Certification
	Installers Certificate of Compliance

RECEIVED	HYDRAULIC SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Maintenance strategies, recommendations, and service schedules
	Single line installation schematics (including irrigation systems) to the University standards
	Commissioning test results
	Compliance and Registration Certificates
	Backflow Prevention Device and Valve details
	TMV test results
	Trade Waste approvals and discharge permits
RECEIVED	BUILDING STRUCTURE
	Certification of Compliance for structural elements including pre-stressed or post-tension slabs, coring, and drilling locations
	Finishes Schedule
	Products Schedule
	Hardware Schedule including Master Keying
	Acoustic test results
	Cleaning or Maintenance recommendations for various “out of ordinary” building elements fabrics and finishes
RECEIVED	TRANSPORTATION SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Maintenance strategies, recommendations, and service schedules
	Commissioning test results
	Lift Compliance and Registration Certificates
RECEIVED	COMMUNICATIONS AND DATA SERVICES
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Single line wiring diagrams (schematics) to the University standards
	Commissioning test results.
	Certification of installation

RECEIVED	SECURITY SYSTEMS
	Operation manual including a full step-by-step description of how the system works and interacts with other services (photographs encouraged)
	Maintenance strategies, recommendations, and service schedules
	Single line wiring diagrams (schematics) to the University standards
	Commissioning test results
RECEIVED	WARRANTIES
	All Plant and Equipment
	All Building Elements including Water Proofing
	All Finishes and Products

APPENDIX C – SMALL SCALE PLANS STANDARDS

1 INTRODUCTION TO SMALL SCALE PLANS

Small scale plans are A4-sized building plans, by level, showing the general arrangement of spaces.

Small scale plans have three distinct purposes:

- they provide generic general arrangement floor plans suitable for use by University customers and stakeholders, IFS staff and IFS contractors.
- they provide the basis for capturing and managing spatial data at the levels of campus, building, building level (storey) and room.
- they show a simplified furniture layout to allow University customers to manage occupation of space allocated to their College, Division, School, or organisational unit.

Small scale plans are created in AutoCAD and provide a direct interface to the University's Archibus space management system. PDF prints of small-scale plans are managed centrally within the IFS SharePoint and are available to all IFS staff.

Small scale plans are regularly updated as the University adapts and improves buildings. Updates are also undertaken as new building information becomes available, as a result of a building audit or customer feedback.

2 EFFECTIVE SMALL SCALE PLANS

Effective small-scale plans are user friendly and suitable for both general University customers (layperson audience) and for IFS (technical audience). Effective drawings include the following:

- accurate spatial layout and room configuration
- accurate and consistent underlying CAD structure – see Section 3 CAD Structure
- indicative door positions, including door swings where applicable
- indicative window positions, both internal and external
- indicative furniture layout, with a focus on workpoints in workplace settings, lab benches in teaching and research laboratories, and significant furniture in teaching spaces
- indicative joinery layout
- a mix of parametric CAD elements directly interfacing with Archibus, and general non- parametric CAD elements to guide the effective occupation of space
- suitable drawing scale to allow the plan to comfortably fill the A4 sheet while maintaining readability.

Exemplar small scale in DWG and PDF format are included with this standard.

3 CAD STRUCTURE

3.1 TEMPLATE FILE

The current IFS small scale plans template file is used for new buildings. If works are undertaken in an existing building, the appropriate existing plan is adapted and modified, including making any adjustments to obsolete layering.

Adaptions and modifications to existing plans should incorporate the principles of the current template where possible. This includes removing extraneous layers and obsolete data artifacts such as fire safety information.

3.2 LAYER STRUCTURE

The CAD structure of small-scale plans is restricted to the following layers; no other layers are permitted within the small-scale plans.

Layer name	Purpose and comments	Content generated by Archibus?	Content visible in Archibus space viewer?	Content visible when printed to pdf?
0	AutoCAD master layer	N	Y	Y
DEFPOINTS	AutoCAD system layer. Do not place any small scale plan information on this layer as it can impact the stability of the CAD file.	N	N	N
DOORS	Indicative representation of all doors, including door actions (door swings and door slider direction)	N	Y	Y
EQ	Archibus layer to future proof workpoints and bench points parametrics.			
FURNITURE	Indicative representation of significant items of furniture. Must include all workplace workpoints, laboratory bench points. Information in this layer futureproofs the University improving occupancy and associated analytics at the level of the individual workpoint or bench point.	N	Y	Y
GROS	Working layer for gross polyline. Polyline must be closed. Only one polyline is permitted on this layer. Polyline follows TEFMA Space Management Guideline rules for calculating GFA. In summary: - polyline follows inside face of external walls, similar to calculating GFA using the Property Council of Australia Method of Measurement - polyline must include <i>all</i> room polylines, including those located externally. Archibus transfers content from this layer to GROS\$ layer	N	N	N
GROS\$	Archibus layer for gross polyline.	Y	N	N
JOINERY	Indicative representation of significant items of joinery. Inclusion of this information assists use of plans, particularly those from a layperson audience.	N	Y	Y

Layer name	Purpose and comments	Content generated by Archibus?	Content visible in Archibus space viewer?	Content visible when printed to PDF?
RM	Working layer for room polylines. Polylines must be closed, and capture all individual rooms, spaces, voids, stairwells, ramps, risers, and corridors. Polyline follows inside face of each space. Some physical rooms contain more than one RM polyline to delineate areas of function. Some external functional spaces have RM polylines. Archibus transfers content from this layer to RM\$ layer	N		
RM\$	Archibus layer for room polylines.	Y	N	N
RM\$TXT	Archibus layer for room numbers.	Y	N	N
RMTC	Archibus layer associated with revisions to small scale plans.	Y	N	N
RMTC\$	Archibus layer associated with revisions to small scale plans.	Y	N	N
RMTC\$TXT	Archibus layer associated with revisions to small scale plans.	Y	N	N
STAIRS	Indicative representations of stairs included in this layer.	N	Y	Y
TEXT	All text included on this layer, including room numbers.	N	Y	Y
TITLEBLOCK	Paperspace drawing title block	N	Y	Y
VIEW	AutoCAD viewport layer. Viewport is locked to a suitable scale.	N	N	N
WALLS	Wall information suitable for a general arrangement floor plan.	N	Y	Y
WALLS BACKGROUND	Additional information for wall and other architectural features to improve the readability of general arrangement floor plan. This might include changes in floor finish, particularly where two or more room polylines occupy a single physical space.	N	Y	Y
WINDOWS	Indicative representation of all windows and glazing, both internal and external.	N	Y	Y

3.3 CAD TIPS AND TRICKS

- Use AutoCAD or other Autodesk CAD application to create and amend small scale plans; non-Autodesk CAD and BIM applications, including ArchiCAD, cannot be used by the University without significant manipulation and cost.
- Flatten CAD information to Elevation 0.
- Do not introduce any new or extraneous CAD layers.

- Remove all XREF or referenced raster and vector files prior to submitting the small-scale plan to the University.
- Each room in the University estate must have a unique identifier in the form of room number; coordinate room numbering with IFS prior to commencing work on small scale plans.
- Always close polylines; open polylines do not interface with Archibus.
- Include non-parametric drawing information to enable a user-friendly plan.

4 ARCHIBUS, SPACE MANAGEMENT AND SMALL SCALE PLANS

The University's approach to space management within Archibus includes the following principles and hierarchies. Small scale plans also reflect these principles and hierarchies.

Space type	Numbering standard	Comments
Level	Floor code, commencing with G as the ground.	Level G Level 1 Level 2 Level G, room 01 = G02
Room	Floor code and room number	Level 2, room 02 = 202 Level 3, room 22 = 322
Stair	ST number	Numbering of stairs ordinarily used by occupants of the building. Each vertical core of stairs is given an ST number. The individual ST number is carried up and down each level of the building so that each stair core or system has single number, regardless of its vertical position in the building. Level G stair 01 = GST01 Level G stair 02 = GST02 Level 2 stair 01 = 2ST01 Level 6 stair 02 = 6ST02

Space type	Numbering standard	Comments
Fire stair	FS number	Numbering of fire isolated stairs used primarily for emergency purposes. Numbering of fire stairs follows some logic as Stairs Level G fire stair 01 = GFS01 Level G fire stair 02 = GFS02 Level 2 fire stair 01 = 2FS01 Level 6 fire stair 02 = 6FS02
Lift	L number	Numbering of individual lift shafts. The individual L number is carried up and down each level of the building so that each lift shaft has a single number, regardless of its vertical position in the building. Level G, Lift 01 = GL01 Level G, Lift 02 = GL02 Level 4, Lift 01 = 4L01
Void	VD number	Numbering of voids, including service risers. VD01, VD02, VD03 etc.

5 EXEMPLAR SMALL SCALE PLANS

Exemplar small scale plans are provided to demonstrate compliance with this standard and the minimum level of quality required by the University. The exemplar plan is based on NUSpace (X Building) Level 5.

The first exemplar plan demonstrates the finished output of a small-scale plan. Several layers of information are hidden or frozen, consistent with the Layer Structure table included in Section 3.2

The second exemplar plan uses the same base information as the first plan, but with all hidden and frozen layers made visible. The second plan demonstrates the approach to CAD structure, including those layers hidden in the finished output, but used by Archibus to inform and calculate space management data.

**EXEMPLAR PLAN
DEMONSTRATING FINISHED OUTPUT**



0m 10m 20m

Exemplar small scale plan 01/03/24
Revision Date



FLOOR LAYOUT:
NUSpace
Level 5

Date: 01/03/24
Scale: 1:500
INFRASTRUCTURE &
FACILITIES SERVICES
T: 02 49216500

X

**EXEMPLAR PLAN
DEMONSTRATING CAD STRUCTURE
AT HANDOVER TO UNIVERSITY**



FLOOR LAYOUT:
NUSpace
Level 5

Exemplar small scale plan
Revision

21/05/24
Date

Date: 21/05/24
Scale: 1:350
(A1)

X