THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

The University of Newcastle

Infrastructure and Facilities Services

Project Briefing Document

Project Handover Guidline

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CONTENTS

1 BACKGROUND

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

The transfer of ownership of the project from contractor to client can have an effect on health and safety, reliability, standards of operation, maintenance and operational cost efficiencies to the University. The transfer/handover period can be a very stressful time for contractors' staff, and building owners and occupants alike as spaces become occupied and operation of the facility starts. 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 during any project handover to UON Infrastructure Services.

The handover program shall be organised by the project manager in conjunction with the head contractor and subcontractors a high-level summary of IFS Ops team involvement is shown below this is to be used as a guide and needs to be tailored to the individual project.

2 PRE PROJECT HANDOVER SITE 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 weeks prior** to the proposed project completion date; and for larger projects should be detailed and agreed as part of the Commissioning Plan.

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

- Introduction and reason for 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 and guarantees
- Security systems
- Space use information verification
- Defects management and after-hours callouts (Refer to UON Defects Management Guide)
- Maintenance during the Post-Completion Period (PCP) - Understanding and process development

The project manager will arrange this meeting with all stakeholders (architects, engineers, head contractor, major subcontractors and relevant University of Newcastle Infrastructure & Facilities Services (UON IFS) representatives).

UON IFS representatives and UON representatives will be nominated to attend various elements of project handovers, meetings and operational training sessions.

3 REQUIREMENT OVERVIEW

A 'certificate of practical completion' shall not be issued and the project will not be handed over (for occupation and use) until the following five important 'contracted' activities have been undertaken or fulfilled:

1. Connection and commissioning of all systems, plant and equipment shall be complete and all testing data and reports made available.
2. Licences, certifications and registrations required by WorkSafe NSW, the BCA or any other legislation shall be provided prior to taking occupancy or accepting the project as being handed over.
3. Post-Completion Period (PCP) maintenance management processes shall be in place and confirmed by UON IFS – refer to Defects Management Requirement.
4. Training sessions shall have been successfully held to the satisfaction of UON representatives in each field of expertise.
5. As-constructed and/or as-removed information must be supplied, at a minimum in draft prior to the project handover meeting.

The above task details and requirements are expanded in the subsequent pages and support information is offered in appendices:

Appendix A - Data and Information Requirements from Projects

Appendix B - Operation & Maintenance Manuals

Appendix C - Spatial Data Collection / Verification

Appendix D - Asset Identification - Maintainable Assets

Appendix E - UON Maximo Asset Classifications / Hierarchy

Appendix F - Maximo Asset Data Collection Template

Appendix G - Maximo Asset Data Decommission Collection Template

Appendix H - Small Scale Plans Auto-CAD Drawing Template

3.1 CONNECTION AND COMMISSIONING

Specific testing and commissioning requirements and programs for individual projects will be those that are agreed at a pre-commissioning meeting attended by the contractor, project management, and UON 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 Consulting Engineer(s) and/or UON.

3.1.1 REQUIREMENT

- Provide testing and commissioning procedures at least a 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-constructed information documentation.
- Label all equipment, switches and controls legibly in accordance with UON requirements,
- Fix UON-provided asset stickers to all assets

3.1.2 SPECIALISED OR RESTRICTED SYSTEMS

Specialised and restricted systems include:

- Master keying systems
- Security surveillance systems (CCTV)
- Door access control systems
- Alarm monitoring systems
- Building management systems

Connection and commissioning of specialised and restricted systems shall be completed by joint actions of the contractor and nominated UON representatives. In most cases these connections will be extensions to existing operational systems.

Existing contracts for management and operation of these systems may already exist. These contracts specify responsibility for the operation, data configuration integrity and the ongoing maintenance of the system data by the contracted company.

3.2 LICENCES, CERTIFICATES AND REGISTRATIONS

All licences, certifications, registrations and documentation required by WorkSafe NSW, the Building Code of Australia, AQIS, OGTR or any other specialised legislation, or other certifying agency shall be provided prior to taking occupancy or accepting the project as being handed over.

3.2.1 REQUIREMENT

The following are items that could have been installed or constructed during the project which fall under this category:

- Hazardous areas, plant and equipment
- Registered equipment
- Equipment for inclusion on the UON test and tag register.
- Dangerous goods stores
- Chemical stores
- Specialised facilities e.g. QC2 / PC2 / PC3 / radiation / animal holding, or
- Fuel storage facilities.
- Electrical works - Completed Certificate of Compliance for Electrical Works (CCEW) provided to Ausgrid as required.

Follow all UON policy procedure and requirements for procuring or constructing these items/facilities. If any deviation from these requirements is proposed, the change must be agreed in writing by the Authorised Person prior to its implementation.

Provide relevant authorities inspection reports, certificates and registrations as part of the as-constructed information documentation.

Provide evidence of facility functionality compliant and consistent with the designed specification.

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.

Provide a completed Hazardous area classification report.

3.3 POST-COMPLETION PERIOD – MAINTENANCE AND CERTIFICATIONS

Maintenance does not include construction defect repairs. Defects are dealt with separately under the construction contract.

Maintenance, both statutory and non-statutory, planned and unplanned must be completed on all relevant assets during the Post-Completion period. Maintenance activities shall be completed as per statutory requirements and manufacturer's specifications.

The Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000, require UON (as the building owner) to provide the Fire & Rescue NSW Commissioner with a copy of an annual fire safety statement and its corresponding fire safety schedule. Annual and supplementary fire safety statements are records of maintenance of the fire safety measures installed in the building (schedule).

3.3.1 REQUIREMENT

- The contractor is responsible for ensuring the completion and availability of the annual fire safety statement at the applicable time during Post-Completion Period (PCP).
- 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 UON design requirements and that they are in full operational modes, before the installations are deem to be practically completed.
- All maintenance activities undertaken during the Post-Completion Period (PCP) shall be undertaken by the construction project contracted providers/installers; except where the UON general maintenance service provider will respond to failure of critical equipment, making safe. Following make safe, if the contractor is not able to respond in good time to failure of critical equipment and effect repairs, the UON general maintenance service provider will undertake works as required to ensure service is restored and the charges associated with these activities will be back-charged to the construction contractor.
- To ensure the required maintenance activities are actioned during the PCP, maintenance schedules for all assets shall be in place and confirmed by IFS representatives prior to a project being handed over. Maintenance schedules shall include all planned maintenance activities, both statutory and non-statutory, as required by statute or where no statute applies, by Manufacturer specifications.
- The maintenance program will be recorded in the UON asset management system (Maximo).
- The UON general maintenance service provider may assist the project management team by verifying all required maintenance and activities have been undertaken.
- Contractor's PCP maintenance service reports and test sheets must be uploaded to the UON asset management system (Maximo) by either the construction contractor or the project manager as agreed, as evidence of compliance.

- Maintenance activity will be monitored via the UON asset management system (Maximo) and compliance reports will be provided to the project manager. Noncompliance of maintenance tasks must be remedied by the construction/installation contractor immediately.
- A separate process for management of contract-related building defects shall be organised by the project manager – refer to the Defects Management Requirment.
- During the month prior to the end of the PCP, a report must be submitted to the project manager from the various engineering consultants identifying how the various engineering systems/installations/works actually performed as compared to the design criteria; achievement of environmental targets including energy and water consumptions; quality of the indoor environment; and outline any inadequacies and adjustments made.
- At the conclusion of the PCP, final inspections must be certified, including final seasonal adjustments undertaken to ensure proper operation of all systems.

3.4 TRAINING SESSIONS - OPERATIONAL AND FAMILIARISATION

Successful operational, familiarisation and maintenance training sessions will have been held to the satisfaction of occupants and UON managers in each field of expertise prior to handing over the works for occupation or use.

3.4.1 REQUIREMENT

- The contractor shall submit a draft training program to the project manager for each system or specialised item of plant for approval based on the commissioning program and where possible prior to the pre-project handover meeting held at least four weeks prior to the proposed handover date.
- Sample training information documentation shall be submitted with the above mentioned proposed program. Ensure adequate and appropriate training materials inclusive of as-installed 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 and other stakeholders to ensure adequate contractor and UON representatives' availability.
- Use only qualified and competent trainers. These shall be people like the manufacturer's representatives or others duly trained by the manufacturers who are knowledgeable about the installations/systems.
- Adequate and effective training must be arranged for early, partial or staged handovers. These early handovers must be reviewed and reinforced during final project handover training program development. This is of particular importance to building evacuation procedures and plant and equipment installations that serve more than the area of defined project works (i.e. new fire indicator panel installed as part of partial building refurbishment but services the building as a whole).

3.5 AS-CONSTRUCTED INFORMATION AND MANUALS

As-constructed information is required by the University to allow a smooth transition from project to actual use or occupation. As-constructed information includes asset schedules, technical data and manufacturer's technical literature including performance information on individual plant and equipment; 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.

3.5.1 REQUIREMENT

It is recognised that it is very difficult to gather all as-constructed information prior to project handover due to the busyness of completing projects in the final stages and also the process of commissioning plant during the same period. It is suggested that collection of required information is a managed process by site managers. Collecting information as tasks are complete or the equipment is installed can help avoid the rush at the end of the project.

- Appendix A shows items identified by **(☆).** These **MUST** be provided, at a minimum in draft format prior to the final project handover meeting.
- Where the works are to be completed and handed over to the Principal in stages or separable portions the as-constructed information and manuals are to be completed to sufficient detail and content to enable the Principal to assume its responsibilities for the ongoing operation and oversight of maintenance of the completed works.
- All other listed items (if included in the project) must be provided within four weeks after the date of issue of a Certificate of Practical Completion.
- Digital photographs of specific aspects of the works should be included where required to describe the works in work-as-executed drawings or operations and maintenance manuals.
- Refer to Appendix C and below for detailed spatial data collection requirements and drawing/document naming convention.

ASSET COLLECTION LISTS

- Asset collection lists must be completed for both all assets removed as part of the project; and for all new assets introduced by the project.
  - Appendix D and F provides the Asset Identification – Maintainable Assets and the UON Maximo Asset Classification / Hierarchy which must be implemented in identifying all assets.
  - Appendix F provides a copy of the UON Maximo asset data collection form. All asset data must be provided in excel format using the categories indicated. If the contractor has not been provided with the excel version of this document to complete, they should request this template from the project manager.
  - Appendix G provides a copy of the UON Maximo asset data decommissioning form. All asset data from assets removed during the project must be provided in excel format using the categories indicated. If the contractor has not been provided with the excel version of this document to complete, they should request this template from the project manager.

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.

- This is of particular importance for those concealed/ underground cable and piping routes, whereas-installed drawings shall be submitted prior to backfilling of excavation or concreting of floor slab or installation of non-removable ceiling. Provide critical dimensions and access points.
- Naming of drawings shall follow the guidance provided in Appendix C Spatial Data Collection / Verification.

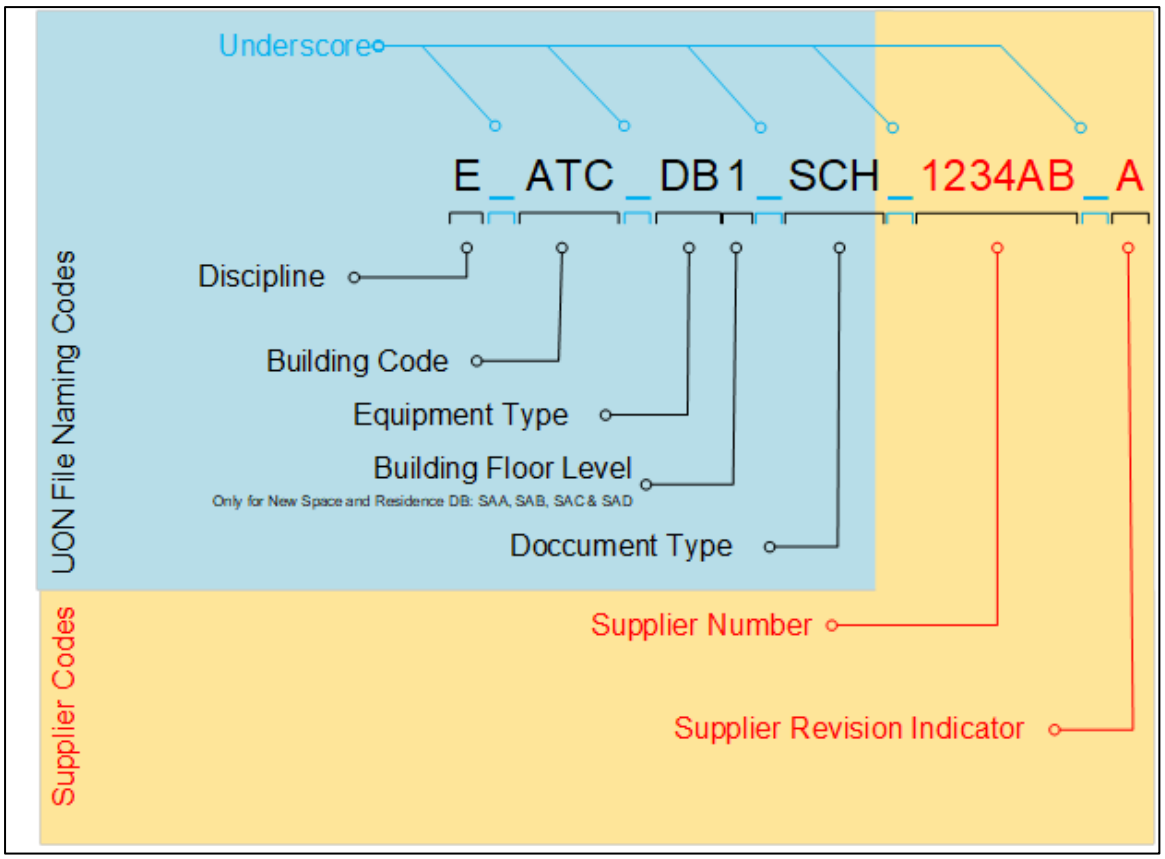
AS-BUILT DRAWINGS, SMALL SCALE PLANS, EVACUATION MAPS and SURVEY DATA

- All as built documentation must be submitted in PDF and DWG and adhere to the naming conventions below
- All As built documentation mush hold the final room number (design numbering may be used but allowance must be made for as built submission with the final room numbering inserted)
- .dwg small-scale plans to UON specification shall be provided for all new builds and for any refurbishment works involving changes to building structure. Refer to Appendix H which specifies UON 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, changes to existing in-ground services and development locations. The survey data shall be provided to upload to the University's GFIS 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.



OPERATION AND MAINTENANCE MANUALS

- Operation and Maintenance manuals (O&Ms) must be provided in accordance with the requirements identified in Appendix B. All information shall be provided in electronic format on an external drive or compact disk (3No. copies).
- Draft O&Ms are to be completed 28 days in advance of Handover of Works or parts thereof or in accordance with the Commissioning and Handover Plan, whichever is the earlier date.
- The Contractor is to advise the Principal and or the Authorised Person when the O&M data is complete and accurately reflects the works.
- 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. covering the information identified in Appendix A or B.
- For small projects, the UON project manager may approve an alternative format. As an example the information required for the installation of a split system air conditioner may take the form of operational instructions, schematic updates, warranties and appropriate asset detail forms, provided electronically.
- For works that have been undertaken in existing buildings, existing UON maintenance manuals information should be updated as required with details such as system schematics and schedules.

APPENDIX A - DATA AND INFORMATION REQUIREMENTS FROM PROJECTS

Items identified by (marked ☆) must be provided, at a minimum in draft format, prior to the final project handover meeting. All other items must be provided within four weeks after the date of issue of a Certificate of Practical Completion.

GENERAL ITEMS	
☆	As-built plans including services. These are to be a measured full set at completion of the building works supplied as DWG and PDF with the correct naming conventions
☆	Maximo asset data collection forms and Maximo asset data decommission forms for fixed plant and equipment maintainable assets
☆	Asbestos material assessments and removal/treatment detail forms
☆	Environment and hazardous material reports
☆	Fire engineering and performance assessment details
☆	Fire containment elements operational certification
☆	Fire evacuation drawings supplied as DWG and PDF
o	Small scale plans in accordance with Appendix H requirements
☆	Trade waste approvals and discharge permits
☆	Licences, Certificates, and Registrations (specialised facilities, equipment and environmental)
o	Acoustic test results
☆	Energy and Environmental design and efficiency details
o	Confirmation that penetrations through fire rated elements are correctly sealed/fire stopped
o	Surveyed information for external 'in ground' (or covered up) services and development locations
o	Fire door certification
☆	Fire dampers, fire doors and fire shutter compliance
☆	Advice of pre-stressed or post-tensioned slabs, including coring and drilling limitations
☆	Engineering design reports and recommendations
☆	Certificates of compliance for structural elements
o	Finishes schedule
o	Products schedule
o	Hardware schedule (installed) including master keying system and key allocations
☆	Roof fall restraint details with design and use methodology

o	Cleaning or maintenance recommendations for various 'out of the ordinary' building elements, fabrics and finishes.
WARRANTIES	
o	Plant and equipment
o	Glazing and frames
o	Membranes and waterproofing systems
o	Metal roof and wall cladding systems
o	Paint systems
o	Carpets
o	Suspended ceiling systems
o	Access ladders and platforms
o	Vehicle access control devices
o	Roller shutters and operating equipment
o	Landscape irrigation systems.

APPENDIX B - OPERATION & MAINTENANCE MANUALS

Operation & Maintenance manuals (O&Ms) are to be submitted in electronic format only **and must use the following headings and numbering to ensure consistency for all elements of all projects at UON. No alteration to the folder names or numbering can be made without approval from the IFS Operations team and not be accepted.**

The folder structure **must** correspond with the table below i.e. **each volume is in its own folder**, **with each content title a sub folder** and content sorted within that folder- A folder structure can be supplied if required. Where a section is not relevant to the project, the folder does not need to be submitted. If there is a duplication of information the duplicate location must be labelled "duplicate information" along with the duplicate location. i.e. if there is duplicate detail plan in building materials and in FFE.

Operation and maintenance manuals "Table of Contents" shall be organised but not restricted to, the following:

Table of Contents

Operation and maintenance manuals "Table of Contents" shall be organised but not restricted to, the following:

CONTENTS

1. VOLUME 01: BUILDING WORKS

1.1 Introduction.

1.2 Emergency Contacts.

1.3 Consultant Directory.

1.4 Subcontractor Directory.

1.5 Project Reports.

1.6 Consultant and Service Trade Certification.

1.7 Trade Work Certification – Architectural and Structural Works.

1.8 Warranties.

1.9 Statutory Approvals and Permits.

1.10 Finishes Schedules.

1.11 Defects Procedure.

1.12 Defects at Handover.

1.13 Occupation Certificate/BCA Certification.

1.14 Independent Fire Certification.

2. VOLUME 02: ARCHITECTURAL WORKS

2.1 Curtain Wall.

2.2 Waterproofing.

2.3 Carpet and Vinyl.

2.4 Dry Walls, Ceilings and Glazed Partitions.

2.5 Joinery.

2.6 Glass Balustrades.

2.7 Safe Access System & Cleaning Procedures.

2.8 External Cladding.

2.9 Painting.

2.10 Tiling.

2.11 Roofing.

2.12 Cement Render.

2.13 Metalwork.

2.14 Toilet Partitions.

2.15 Fire Doors and Frames.

2.16 Landscaping.

2.17 Bathroom Accessories.

2.18 Louvres.

2.19 Roller Shutters.

2.20 Signage.

2.21 Agreed Schedule of Departures from the current UON Design Standards.

3. VOLUME 03: STRUCTURAL WORKS

3.1 Piling.

3.2 Concrete.

3.3 Structural Steel.

3.4 Masonry.

3.5 Post Tension.

3.6 Agreed Schedule of Departures from the current UON Design Standards.

4. VOLUME 04: MECHANICAL SERVICES WORKS

4.1 Introduction.

4.2 Assets and Equipment Information (including BMS).

4.3 Installation, Maintenance & Operating Instructions.

4.4 Authority Tests and Approvals.

4.5 Commissioning tests.

4.6 Warranties.

4.7 Spare parts list.

4.8 Agreed Schedule of Departures from the current UON Design Standards.

5. VOLUME 05: ELECTRICAL SERVICES WORKS

5.1 Introduction.

5.2 Assets and Equipment Information.

5.3 Installation, Maintenance & Operating Instructions.

5.4 Authority Tests and Approvals.

5.5 Commissioning tests.

5.6 Warranties & Certificates.

5.7 Spare parts list.

5.8 Agreed Schedule of Departures from the current UON Design Standards.

6. VOLUME 06: HYDRAULIC SERVICES WORKS

6.1 Introduction.

6.2 Assets and Equipment Information including:

- Sewer Drainage.
- Water Services.
- Potable.
- Non Potable.
- Fire Services.
- Gas Services.
- Gas Suppression Systems.
- Recycled Water System.

6.3 Installation, Maintenance & Operating Instructions.

6.4 Authority Tests and Approvals.

6.5 Commissioning tests.

6.6 Warranties & Certificates.

6.7 Spare parts list.

6.8 Agreed Schedule of Departures from the current UON Design Standards.

7. VOLUME 07: FIRE SERVICES WORKS

7.1 Introduction.

7.2 Assets and Equipment Information (Sprinkler, Fire Alarm & BOWS Systems):

- Sprinkler.
- Fire Alarm.
- BOWS.

7.3 Installation, Maintenance & Operating Instructions.

7.4 Hydraulic Calculations for the Installation.

7.5 Authority Tests and Approvals.

7.6 Commissioning tests.

7.7 Warranties & Certificates.

7.8 Spare parts list.

7.9 Block Plan.

7.10 Agreed Schedule of Departures from the current UON Design Standards.

8. VOLUME 08: VERTICAL TRANSPORT WORKS

8.1 Introduction.

8.2 Declaration of Conformity, Technical Description, Logbook.

8.3 Installation, Maintenance & Operating Instructions.

8.4 Authority Tests and Approvals.

8.5 Commissioning tests.

8.6 List of Safety Components, Warranties & Certificates.

8.7 Spare parts list.

8.8 Safety Instructions & Rescue of Passengers.

8.9 Agreed Schedule of Departures from the current UON Design Standards.

9. VOLUME 09: SECURITY SERIVCE WORKS

9.1 Introduction.

9.2 Assets and Equipment Information.

9.3 Installation, Maintenance & Operating Instructions.

9.4 Authority Tests and Approvals.

9.5 Commissioning tests.

9.6 Warranties & Certificates.

9.7 Spare parts list.

9.8 Agreed Schedule of Departures from the current UON Design Standards.

10. VOLUME 10: COMMUNICATION SERIVCE WORKS

10.1 Introduction.

10.2 Assets and Equipment Information.

10.3 Installation, Maintenance & Operating Instructions.

10.4 Authority Tests and Approvals.

10.5 Commissioning tests.

10.6 Warranties & Certificates.

10.7 Spare parts list.

10.8 Agreed Schedule of Departures from the current UON Design Standards.

11. VOLUME 11: CIVIL AND LANDSCAPING WORKS

11.1 Introduction.

11.2 Assets and Equipment Information.

11.3 Installation, Maintenance & Operating Instructions.

11.4 Authority Tests and Approvals.

11.5 Commissioning tests.

11.6 Warranties & Certificates.

11.7 Spare parts list.

11.8 Agreed Schedule of Departures from the current UON Design Standards.

12. VOLUME 12: DOCUMENT REGISTER

Specifications

12.1 Architectural – Specification.

12.2 Structural – Specification.

12.3 Mechanical Services – Specification.

12.4 Electrical Service – Specification .

12.5 Hydraulic Services – Specification.

12.6 Fire Services – Specification.

12.7 Lift Services – Specification.

12.8 Security – Specification

12.9 Communications - Specification

12.10 Civil and Landscaping – Specification

As-Built and Survey Drawings

(different types of drawings are to be stored in different folders as per drafting and document standards Document)

- As built
- Precursor versions
- SLD
- Detail

12.11 Architectural – As-Built Drawings.

12.12 Mechanical Services – As-Built Drawings.

12.13 Electrical/Security/Communication Services – As-Built Drawing.

12.14 Hydraulic Services – As-Built Drawings.

12.15 Wet Fire Services – As-Built Drawings.

12.16 Dry Fire Services – As-Built Drawings.

12.17 Lift Services – As-Built Drawings.

12.18 Security – As-Built Drawings

12.19 Communications – As-Built Drawings

12.20 Civil and Landscaping Drawings

12.21 Fitout – As-Built Drawings.

12.22 Curtain Wall – As-Built Drawings.

12.23 Structural Steel – As-Built Drawings.

12.24 Work-As-Executed Survey Drawings – Survey Drawings.

Requirement

Items identified by (marked ☆) must be provided, at a minimum in draft format, prior to the final project handover meeting. All other items must be provided within four weeks after the date of issue of a Certificate of Practical Completion.

MECHANICAL HVAC
☆ 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
o Commissioning test results
o Single line diagrams (schematics) to UON standards
o Stair pressurisation and zone smoke control systems
o Smoke vents
o Fire dampers
☆ Compliance and registration certificates
ELECTRICAL
☆ 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
o Single line wiring diagrams (schematics) to UON standards
☆ Completed circuit identification cards (for cabinets) to UON standards
o Emergency lighting and exit sign schematics to UON standards
☆ Installers certificate of compliance
o Thermographic scan results of switchboards
FIRE 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
o Single line wiring diagrams (schematics) to UON standards
☆ FIP as constructed drawings (walkabouts) to UON standards and copies in FIP cabinet
☆ Installers certificate of compliance
☆ Compliance and registration certificates
o Commissioning test results
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
o Single line installation schematics (including irrigation systems) to UON standards
☆ Compliance and registration certificates
o Commissioning test results
o Backflow prevention device and all valve details
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
☆ Lift compliance and registration certificates
o Commissioning test results
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)
☆ Maintenance strategies, recommendations and service schedules
o Single line wiring diagrams (schematics) to UON standards
☆ Certification of installation
o Commissioning test results.
SECURITY SYSTEMS (CONFIDENTIAL – SEPARATE MANUAL REQUIRED)
☆ 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
o Single line wiring diagrams (schematics) to UON standards

- Commissioning test results

APPENDIX C - SPATIAL DATA COLLECTION/VERIFICATION

Spatial information is very important to the University for strategic planning purposes.

Space 'type' information is agreed at the project initiation phase by the UON Systems Coordinator and the client.

REQUIREMENT

- Project managers will confirm the space information provided on the as-built plans to ensure that it matches which was actually built.
- Prior to project handover, the contractor/designer may be required to assist the project manager in confirming the originally agreed space allocations.
- Space 'type' information used on plans should match that used in the UON Archibus space management database.
- Refurbishment works involving changes to building structure will need small scale plans (DWG) to be provided – refer to Appendix H.
- GFIS/GIS site survey data for all new in-ground services, changes to existing in-ground services and development locations.

APPENDIX D - ASSET IDENTIFICATION, MAINTAINABLE ASSETS

The 'UON Maximo Asset Classifications / Hierarchy' - Appendix E lists the fixed plant and equipment types and descriptions for assets that will be required to be maintained/serviced.

UON requires all asset maintenance activity to be reportable by building at a minimum. In the most cases it shall be reported at individual asset level. The asset level data rolls up for reporting at buildings.

REQUIREMENT

- Each piece of plant or equipment is to be identified on the asset collection lists based on the requirements as described in the hierarchy.
- Assets such as fire extinguishers only require the one asset be identified for each building and not for each individual extinguisher. The individual extinguishers make up components (listed and grouped by like items e.g. 3.5 kg Dry Powder – Qty 14) of that one asset and they are to be identified on a components form which will be attached to the fire extinguishers asset.
- Assistance on how to complete the asset and component detail forms can be obtained from UON IFS as required.
- Specific requirements exist for audio visual equipment and hazardous plant (e.g. autoclave) assets. Contact the UON IFS unit before completing asset and component forms for these types of assets.
- Examples of asset lists are included in this document as Appendices G and H.

Asset descriptions include three distinct kinds based on the ability to best use the data once it is in the asset management system. Assets are listed by kinds, which are determined by reference below and to the UON Maximo Classification listing. They include:

1. Three Kinds of Assets

System/s (S) - Grouping together of small like items or components within a building that together function as a system. (Example - all fire extinguishers within a building are to be collectively called an asset)

Unit/Assembly (U) - The collective name for the arrangement of plant and equipment that is manufactured and most likely preassembled into a single operating item. (Examples - an air compressor that has motor, compressor and air receiver all in one would be called a unit and listed as one asset, or an assembly of pipe work, valves and gauges for backflow prevention would be listed as one asset.)

Individual (I) - Items of plant and equipment that is required by legislation or for 'common sense ' or 'commercial practice ' maintenance schedule development, should be listed as individual assets. This also applies to items of plant or equipment that requires individual reporting by or to the University. This may be for items of plant that is of a critical nature to the operations of the facility.

2. Asset Components

The majority of Assets contain **components** that require servicing during their life cycle. Components are linked to the asset in the asset register system and may be identified by component lists and/or layout drawings which are to be attached to the asset in the UON asset management system Maximo.

Examples of components are:

If the asset is '**Fire Extinguishers**', then the components might be:

- Qty 35 - CO2, or
- Qty 14 - 3.5kg Dry Powder

Component list and layout drawings to be attached to the asset.

or

If the asset is '**Emergency Lights**', then the components might be:

- Qty 16 – Light fitting type 1 (to be specified)
- Qty 2 – Light fitting type 2 (to be specified)

Component list to be attached to the asset.

or

If the asset is **'Fire Systems**', then the components will be identified by:

- Fire Panel layout drawings to be attached to the asset
- Hydraulic sprinkler system layout drawings to be attached to the asset.

APPENDIX E - UON MAXIMO ASSET CLASSIFICATIONS / HIERARCHY

Classification	Description	Parent Classification
ACCESSCC	Access Control - Controllers	SPECIALIST SERVICES
ACCESSCPSU	Access Control - Power Supply Units	SPECIALIST SERVICES
ACEVAP	Evaporative Air Conditioner	HVAC
ACOMPR	Air Compressors	SPECIALIST SERVICES
ACPORT	Portable Air Conditioning Units	HVAC
ACURTAIN	Air Curtain	SPECIALIST SERVICES
ADD	Desiccant Compressed Air Dryers	SPECIALIST SERVICES
ADR	Refrigerated Compressed Air Dryers	SPECIALIST SERVICES
AHOAP	Air Handling Outside Air Plenum	HVAC
AHU	Air Handling Units	HVAC
AUTOCLVE	Autoclaves	SPECIALIST SERVICES
AUTODOOR	Automatic Doors and Gates	SPECIALIST SERVICES
AUTOSKYLIGHT	Automatic Skylight Systems	SPECIALIST SERVICES
AUTOWINDOW	Automatic Windows and Louvres	SPECIALIST SERVICES
BACKFLOW	Backflow Prevention Device	PLUMBING
BCUEL	Battery Bank Charger Unit Emergency Lighting	ELECTRICAL
BCUHV	Battery Bank Charger Unit HV Control	ELECTRICAL
BELEMENT	Building Elements	
BIKEPARK	Bicycle Parking Facilities	GROUNDS
BLDGS	Building Attributes	
BLRSTHP	Boiler high pressure steam	SPECIALIST SERVICES
BMSDELTA	Delta BMS Controls	HVAC
BMSSIEM	Siemens BMS Controls	HVAC
CAMPUS	Campus Location	
CARPARK	Car Park	GROUNDS
CCW	Condenser Cooling Water	HVAC
CHILLAIR	Chillers-Air Cooled	HVAC
CHILLWTR	Chillers-Water Cooled	HVAC
CHW	Chilled Water Systems	HVAC
CHWPW	Chilled Water Pipework	HVAC
CMSNGS	Condition Monitoring System - Natural Gas Supply	SPECIALIST SERVICES
CMSOS	Condition Monitoring System - Oxygen Sensor	SPECIALIST SERVICES
CMSPH	Condition Monitoring System - PH	SPECIALIST SERVICES
CT	Cooling Towers	HVAC
CTDOSE	Biocide & TDS Control Equipment	HVAC
CWCR	Condenser water cooler	HVAC
CWPW	Condenser Water Pipework	HVAC
DHWTMV	Domestic Hot Water Thermostatic Mixing Valve	PLUMBING
DHWTV	Domestic Hot Water Tempering Valve	PLUMBING
DHWUEI	Domestic hot water unit-Electric instantaneous	PLUMBING
DHWUES	Domestic hot water unit-Electric storage	PLUMBING
DHWUGI	Domestic hot water unit-Gas instantaneous	PLUMBING
DHWUGS	Domestic hot water unit-Gas storage	PLUMBING
DHWUR	Domestic hot water unit-Refrigerative	PLUMBING
DHWURS	Domestic hot water unit-Refrigerative storage	PLUMBING
DHWUSES	Domestic hot water unit-Solar electric boost storage	PLUMBING
DHWUSGS	Domestic hot water unit-Solar Gas boost storage	PLUMBING
DHWUSS	Domestic hot water unit-Solar Storage (Pre Heat)	PLUMBING

Classification	Description	Parent Classification
DISH	Dishwasher	PLUMBING
DWUB	Drinking Water Unit - Boiling	PLUMBING
DWUBC	Drinking Water Unit - Boiling & Chilled	PLUMBING
DWUC	Drinking Water Unit - Chilled	PLUMBING
ELECDB	Electrical Distribution Boards	ELECTRICAL
ELECHVBD	Electrical High Voltage Switchboard	ELECTRICAL
ELECHVC	Electrical High Voltage Cable	ELECTRICAL
ELECHVSW	Electrical High Voltage Switchgear	ELECTRICAL
ELECHVTX	Electrical High Voltage Transformer	ELECTRICAL
ELECLCS	Electrical Local Control Stations	ELECTRICAL
ELECLVBD	Electrical Low Voltage MSB	ELECTRICAL
ELECMSB	Electrical Main Switchboard	ELECTRICAL
ELECPFCU	Electrical Power Factor Correction Unit	ELECTRICAL
ELECTRICAL	Electrical Services	
EMGEN	Emergency Generator	ELECTRICAL
EMLIGHTS	Emergency Lighting Systems	ELECTRICAL
EMPHONE	Emergency Phone	SPECIALIST SERVICES
CCTV	CCTV - Closed circuit television	ELECTRICAL
EMSHWR	Emergency Shower & Eyewash station	PLUMBING
EXTERNAL FAB & FINISH	External Fabric and Finishes	
FAB	Building Fabric	EXTERNAL FAB & FINISH
FANBAGH	Fan Bag House Exhaust	HVAC
FANEXH	Fans-Exhaust	HVAC
FANFUME	FANS - Fume Hood Extraction Fans	SPECIALIST SERVICES
FANHEX	FANS - Heat Exchange Units	HVAC
FANRA	Fan Return Air	HVAC
FANS	Fans-General	HVAC
FANSA	Fans Supply Air	HVAC
FANTOIL	FANS - Toilet & Amenities Ventilation	HVAC
FCAB	Fume cabinets	SPECIALIST SERVICES
FCABFS	Fume Cabinet Fume Scrubber	SPECIALIST SERVICES
FCU	Fan Coil Units	HVAC
FDCR	Forced draft coolers-coolers/freezers	SPECIALIST SERVICES
FDCRRC	FD Cooler/Freezer remote condenser unit	SPECIALIST SERVICES
FIP	Fire indication panel	FIRE PROTECTION
FIPAFSS	Fire indication panel-fire suppression system	FIRE PROTECTION
FIPDAMPER	Fire Dampers	FIRE PROTECTION
FIPDOOR	Fire Doors	FIRE PROTECTION
FIPEWIS	Fire Panel Emergency Intercommunication Warning Syste m	FIRE PROTECTION
FIPPASSIVE	Building Passive Fire Protection & Penetrations Register	FIRE PROTECTION
FIPPMPD	Fire Pump Diesel	FIRE PROTECTION
FIPPMPE	Fire Pump Electric	FIRE PROTECTION
FIPPORT	Fire Portables / Hydrants / Hose Reels	FIRE PROTECTION
FIPSMOKED	Smoke Detection Systems - Battery Operation	FIRE PROTECTION
FIPSPR	Fire Sprinkler System	FIRE PROTECTION
FIPSV	Smoke Ventilation Damper System (Non Fan-Forced)	FIRE PROTECTION
FIPSVF	Smoke Ventilation System Fan	FIRE PROTECTION
FIRE PROTECTION	Fire Protection	
FMTOOLS	FM Tools and Equipment	SPECIALIST SERVICES
GROUNDS	Grounds	

Classification	Description	Parent Classification
HARDSCAPE	Paved areas, side walks	GROUNDS
HEX	Heat exchangers	HVAC
HOIST	Hoists, Canes and Lifting Devices	ELECTRICAL
HTRED	Heater-Electric duct	HVAC
HTRGD	Heater-Gas duct	HVAC
HTRHPR	Heater - Hydronic Panel Radiator	HVAC
HUFS	Hydraulic - Urinal Flushing System	PLUMBING
HVAC	Heating Ventilation and Air Conditioning	
HW	Heating Water Systems	HVAC
HWGENAC	Hot water generators-A/C	HVAC
HWGENDW	Hot water generators-Domestic water	PLUMBING
HWGENPOOL	Heating water generators-Pool	SPECIALIST SERVICES
HWPW	Heating water pipework	HVAC
ICE	Ice Machine	PLUMBING
KEY	KEY	
KEYSAFE	Key Safe	
LANDSCAPE	Landscape	GROUNDS
LEVEL	Level Location	
LIFT	Lifts & Elevators	TRANSPORT
MCC	Motor Control Centre Board	GROUNDS
MICRTURB	Microturbine	ELECTRICAL
MSSB	Mechanical Switchboards & Control Panels	HVAC
MTRE	Metering - Electrical	ELECTRICAL
MTRNG	Metering - Natural Gas	PLUMBING
MTRWM	Metering - Mains Water	PLUMBING
MTRWR	Metering - Rain Water	PLUMBING
MTRWW	Metering - Waste Water	PLUMBING
MUSP	Pressurised Make-up systems	HVAC
PAC	Package air conditioners	HVAC
PACA	Package air conditioners Air Cooled	HVAC
PACCR	Package air conditioner - computer room	HVAC
PACRCC	Package air conditioner Computer Room remote conden ser	HVAC
PACSPLTI	Package Air Conditioning Split Indoor Unit	HVAC
PACSPLTO	Package Air Conditioning Split Outdoor Unit	HVAC
PACW	Package air conditioners Water Cooled	HVAC
PCLAB1	Physical Containment 1 Laboratories	SPECIALIST SERVICES
PCLAB2	Physical Containment 2 Laboratories	SPECIALIST SERVICES
PCLAB3	Physical Containment 3 Laboratories	SPECIALIST SERVICES
PGCAB	Plant Growth Cabinet	SPECIALIST SERVICES
PGCABC	Plant Growth Cabinet Condenser Unit	SPECIALIST SERVICES
PLUMBING	Plumbing Services	
PMP	Pumps	HVAC
PMPPOOL	Pool Pumps	SPECIALIST SERVICES
PMPRETIC	Reticulation Pumps	GROUNDS
PMPSEWER	Sewer Pumps	PLUMBING
POOL	Pool	SPECIALIST SERVICES
POTBCHWU	Potable combined boiling & chilled water unit	PLUMBING
POTBWU	Potable boiling water unit	PLUMBING
POTCHWU	Potable chilled water unit	PLUMBING

Classification	Description	Parent Classification
PRECINCT	Precinct	
PTICKET	Parking Ticket Machine	SPECIALIST SERVICES
PV	Pressure Vessel	HVAC
PW	Pool Water Systems	SPECIALIST SERVICES
RAC	Room Air Conditioners	HVAC
RELEMENT	Room Elements	
ROAD	Roads, Streets and Lanes	GROUNDS
ROF	Building Roof	SUPERSTRUCTURE
ROFHSS	Roof Height Safety Systems	SUPERSTRUCTURE
ROOM	Room Specifications	
SERVICE	Service Location	
SERVICEGROUP	Service Group Location	
SPECIALIST SERVICES	Specialist Services	
SPLTACDI	Split Air Conditioner-Ducted Indoor Unit	HVAC
SPLTACDO	Split Air Conditioner-Ducted Outdoor Unit	HVAC
SPLTACI	Split Air Conditioner-Indoor Unit	HVAC
SPLTACIM	Split Air Conditioner-Indoor Unit Multi-head	HVAC
SPLTACO	Split Air Conditioner-Outdoor Unit	HVAC
SPLTACOM	Split Air Conditioner-Outdoor Unit Multi-head	HVAC
SPORTSFIELD	Fields, Grounds, Ovals	GROUNDS
STOVE	STOVE	PLUMBING
STR	Building Structure	SUBSTRUCTURE
SUBSTRUCTURE	Substructure	
SUPERSTRUCTURE	Superstructure	
TKAIR	Air Compressed tank	SPECIALIST SERVICES
TKAN	Tanks - Acid Neutralising	PLUMBING
TKEXP	Tanks-Expansion	HVAC
TKIRR	Tanks - Irrigation Storage Water	GROUNDS
TKSCHW	Tanks-Storage chilled water	HVAC
TKSCW	Tanks-Storage condenser water	HVAC
TKSDHW	Tanks-Storage domestic hot water	PLUMBING
TKSEWER	Sewer Tank	PLUMBING
TKSHW	Tanks-Storage heating water	HVAC
TKSPA	Tanks - Settling (Plaster Arrestor)	PLUMBING
TKSRAIN	Tanks - Storage Rainwater	PLUMBING
TKTRADE	Tanks - TRADE WASTE	PLUMBING
TRANSPORT	Transport	
UNIVERSITY	University	
UPS	Uninterrupted Power Supply	ELECTRICAL
VAVBX	Variable Air Volume boxes	HVAC
VRVACI	VRV Air Conditioner-Indoor Unit	HVAC
VRVACO	VRV Air Conditioner-Outdoor Unit	HVAC
VSD	Variable Speed Drives	HVAC
WFBLRST	Water Filtration - Steam Boilers	SPECIALIST SERVICES
WFFS	Water Filtration-Sand filters	SPECIALIST SERVICES
WFPOTW	Water Filtration-Potable water filters	SPECIALIST SERVICES
WFRAIN	Water Filtration - Rainwater	SPECIALIST SERVICES
WIN	Building Windows	EXTERNAL FAB & FINISH

APPENDIX F - UON MAXIMO ASSET DATA COLLECTION TEMPLATE

Note – an excel version of this template should be obtained from your Project Manager. The excel version provides separate worksheets for each discipline with the UON Asset Classification drop-down lists included; and a separate worksheet to capture the Assets existing in the location at the commencement of the project – Appendix G.

THE UNIVERSITY OF NEWCASTLE IFS
MAXIMO ASSET COLLECTION

CONDITION READING
C2
C3
C4
C5

UON ASSET NUMBER	UON CLASSIFICATION	DESCRIPTION	EXACT ROOM LOCATION	PARENT ASSET No	CONDITION READING	Estimated end of Life	REPLACEMENT $	WARRANTY End Date	MAKE	MODEL	SERIAL No	BOLLARD TYPE	KEY NUMBER	ADDITIONAL INFO

NOTES

1. UON to supply the Asset Sticker bar codes for each project
2. The contractor will have responsibility to ensure asset stickers are placed on each asset as identified below
3. Asset Stickers are to be placed on the outside of machinery or asset to be easily viewed where possible
4. Asset Number should be engraved on a tag for Backflow devices
5. UON will have one only sticker asset number for all emergency Lights in a building (full schedule in Operational Manuals)
6. UON will have one only sticker asset for portables and hose reels in a building (full schedule in Operational Manuals)
7. UON will have one only sticker asset for all fire and egress doors in a building (full schedule in Operational Manuals)
8. UON will have one only sticker for Roof Height Safety Systems on a building (full schedule in Operational Manuals)
9. UON will have one only sticker for all windows on the building
10. Seek further information IFS Operations staff where unsure of asset classification and sticker placement location
11. All locations shall be as per UON Archibus locations floor plan drawings including car parks
12. Where asset is located on the roof enter Roof in the location field
13. Where asset is located outside of the building i.e attached to the outside wall, please use EXTWALL in the location field
14. Add additional rows to the spreadsheet as required

APPENDIX G - MAXIMO ASSET DATA DECOMMISSION COLLECTION TEMPLATE

Note – an excel version of this template should be obtained from your Project Manager.

THE UNIVERSITY OF NEWCASTLE MAXIMO EXISTING ASSET DECOMMISSION COLLECTION TEMPLATE

UON ASSET NUMBER	UON CLASSIFICATION	DESCRIPTION	EXISTING MAXIMO LOCATION	DECOMMISS / DISPOSED / RE USE	DECOMMISS / DISPOSAL DATE	NEW LOCATION - BUILDING CODE	NEW LOCATION - ROOM No/ ELEMENT	TECHONE FINANCIAL ASSET NUMBER	ADDITIONAL INFO

APPENDIX H - SMALL SCALE PLANS AUTO-CAD DRAWING TEMPLATE

AutoCAD Layer Name	Layer Type	Colour	COMMENTS
0	Default	WHITE	This is the Master layer. It is default in the AutoCAD settings and does not need anything on it.
EQ	UON specific	YELLOW	We have added this layer with a vision to provide a disabled access layer for future use in Archibus.
BORD – 2	Layout	WHITE	Used in the Layout view.
BORD – 3	Layout	WHITE	Used in the Layout view.
BORDER	Layout	WHITE	Used in the Layout view.
DIM – 2	Layout	MAGENTA	Used in the Layout view.
DIM – 3	Layout	YELLOW	Used in the Layout view.
GROS	UON specific	MAGENTA	A closed polyline that captures the entire covered area of the external perimeter of the building.
RM	UON specific	CYAN	A closedpolyline that captures all individual internal spaces, including rooms, voids, stairwells, ramps, risers, & corridors.
STAIRS	UON specific	8	All stairs to be drawn on this layer.
TEXT	UON specific	WHITE	All drawing text including room numbers, north point and scale to be drawn on this layer.
TEXT – 5	Layout	WHITE	Used in Layout view.
VIEW	Layout	130	Used in Layout view.
WALLS	UON specific	WHITE	All full height walls are to be drawn on this layer.
WALLS BACKGROUND	UON specific	9	Any background drawing lines are to be added to this layer. i.e. joinery, roof lines, floor slabs etc.
WORKING - BORDER	Layout	WHITE	Used in Layout View.

A .dwg template for small scale plans should be obtained from your Project Manager.

The template should be used for new buildings, but if the works are undertaken in an existing building with an existing floor plan, then the appropriate existing small scale plan will need to be supplied for update.

REQUIREMENT

In order to allow a DWG file to be compatible with the Archibus Space Management system there are several steps that need to be followed to ensure that it can be linked correctly. **All Small Scale DWG drawing files need to be saved in AutoCAD 2010 drawing format**.

- The first step is to confirm that the UON standard layer template is followed to ensure that the individual drawing elements are on their correct layers. Refer to the table above for detailed information on what each layer is used for. It is important that the correct information is shown on each layer as the Archibus system is coded specifically to work with each of these layers.
- Once you have these layers setup you can then begin to draw the internal and external polylines.
- For internal polylines you must select the RM layer and draw closed polylines to the internal face of all individual spaces. Refer to attached DWG plan for example. (ATC level 2)
- All internal spaces* including rooms, corridors, stairs, ramps and voids must be polylined including any service risers or large internal wall cavities.
- In the example you can see that room 286 (ATC Level 2) is an isolated room within a larger room. When this occurs you must make sure that the polylines are separated so that there is not a double up in the calculations. You can also see an example of this in ST01.
- You must also ensure that each individual polylined space has been named accordingly to comply with UON standards. All spaces in the Archibus system must have a unique number. Refer to the table below for more information.
- For the external polyline you need to select the GROS layer. Only one polyline can be drawn on this layer and it must capture the entire area of all polylined internal areas. This must also be a closed polyline that is drawn around the perimeter of the external walls. This polyline allows for a GFA to be calculated.

* Note – Some room poly lines will not always have walls. This occurs if we have an open area with a change of room type. All polylined areas will have a unique room number assigned.

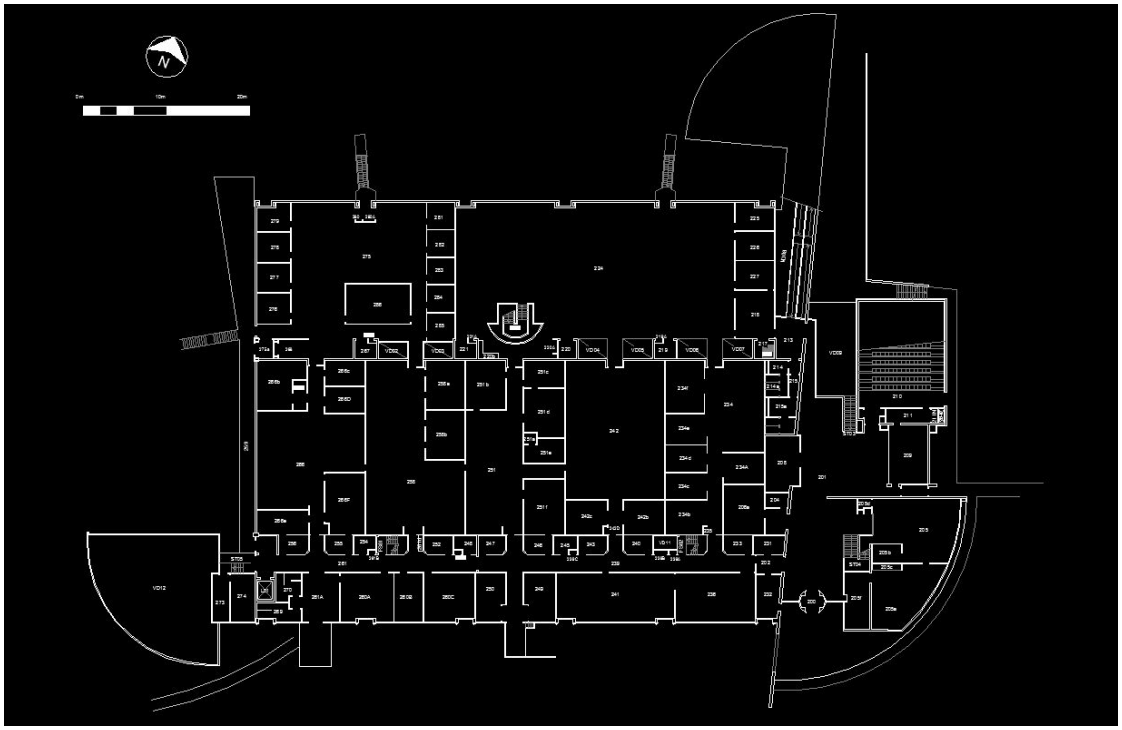


Figure 1: Sample drawing - unlinked small scale plan of ATC

Space Type	Numbering Standard	Comment
Room	Floor code/ Room #	Needs to capture the floor level prefix and the room number. i.e. • Level G, room 01 = G01 • Level 1, room 22 = 122 • Level 2, room 12 = 212
Stair	ST#	Each individual stair is numbered with the prefix ST followed by the number of the stair. The individual stair number is carried up through each floor i.e. • Level G, Stair 01 = ST01 • Level G, Stair 02 = ST02 etc.
Fire Stair	FS#	This is the same as for the individual stairs, the only difference is that this captures the Fire Stairs and labels them accordingly. The individual fire stair number is carried up through each floor i.e. • Level G, Fire Stair 01 = FS01 • Level G, Fire Stair 02 = FS02 etc.
Void	VD#	Any unusable space or void within a building needs to be polylined and labelled with the prefix VD followed by the respective number of the void. i.e. VD01, VD02, VD03 etc.
Lift	L#	Similar to the Stairs the Lift cores are numbered with the prefix L followed by the number. Individual Lift numbers are carried up through each floor i.e. • Level G, Lift 01 = L01 • Level G, Lift 02 = L02 etc.