University Of Oxford
Estates Services

CAD Standards

Version 1.0

Type of document	Standard
Topic	CAD Standards
Intended audience	External parties producing CAD drawings on behalf of Oxford University Estates Services
Security level (public, internal, confidential)	Public
Other relevant documentation	O&M Philosophy Document

Version	Date	Author	Comments
1.0	20/02/2018	DS / LH	First Issue
0.95	16/11/2017	DS / LH	Draft for Approval
0.9	11/07/2017	DS / LH	Draft for Comment

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1. Scope of this document

1.1. Introduction

This document provides guidelines for how CAD drawings should be created and/or modified for the University of Oxford.

The CAD standards outlined in this document apply to all CAD data and/or files, in ".dwg" format, which are either created or modified for the University of Oxford. All parties working for or on behalf of the University of Oxford must adhere to these CAD standards.

It is the responsibility of the Oxford University Estates Services (OUES) Capital Projects team, or the individuals appointed to represent that team, to ensure that all external contractors, consultants and any other third parties working on University of Oxford projects are aware of and adhere to these CAD standards.

1.2. Why do we have CAD Standards?

OUES has CAD standards to improve the accuracy and consistency of all of its drawings, to ensure compliance with our processes and to make our building records easier to manage.

If these standards are not adhered to, this creates additional work for OUES who will need to modify the files so that they comply with our CAD standards, resulting in a less efficient process flow. Having CAD standards for OUES Staff also makes collaborative work between teams / departments easier and more effective.

1.3. Support

In the first instance all enquiries should directed to the relevant Project Manager or the Capital Projects team.

Any technical queries can be sent to the Estates CAD Team cad@admin.ox.ac.uk

1.4. Version

Please ensure that you have the latest version of this document. The latest version can be downloaded from the following location

http://www.admin.ox.ac.uk/estates/ourservices/repairsandmaintenance/guidanceforcontractors/

2. Definitions / Glossary

|	
Block	A block is a collection of objects that are combined into a single named object.
CAD	Computer Aided Design. The software package we use is called AutoCAD. All files will be saved in AutoCAD 2010 format.
Extract drawing	A drawing containing multiple objects in multiple locations overlaid on an OS mapping background.
GIA	Gross Internal Area. The total area on each level / floor. Calculated using the area inside all external walls, excluding features such as voids.
GIS	Geographic Information System used to capture, store, manipulate, analyze, manage, and present spatial or geographic data.
Layers	A layer has a number of states and properties that define its display and behaviour in the drawing. A state is a condition of a layer that can have one of two values, for instance, On/Off or Freeze/Thaw.
M&E Service	Mechanical and Electrical building services, e.g. lighting, power, data, air conditioning, water supply, drainage, etc.
Model Space	The model space is a 3-dimenional drawing / modelling area in which you draw objects and entities in real world units, e.g. full size at a scale of 1:1.
NUA	Net Usable Area. The usable area of a room running along the internal face of all walls, excluding features such as columns.
OUES	Oxford University Estates Services
OS	Ordnance Survey
Paper Space	The paper space is a 2-dimensional drawing mode in which you can group various "views" of a 3-dimensional drawing in "holes" of the paper called "viewports" for plotting.
Polyline	A polyline is a connected sequence of line segments created as a single object. You can create straight line segments, arc segments, or a combination of the two.
Site Areas and Regions	Site areas and regions are geographical areas in and around Oxford that are used to group buildings and properties. These do not have any meaning or use outside of OUES.
XREF	External Reference. This is a file which is attached or overlaid in the current drawing and is not editable unless the original file is opened.

3. Administration

3.1. Requesting CAD Drawings

In the interest of security, all University building information, such as floor plans and other building construction information, whether electronic in AutoCAD (.dwg) or Portable Document Format (.pdf) format or paper hard copies, must be accessed through appropriate channels (as set out below).

Paper hard copies can also be provided to internal staff within the University.

Ordnance Survey mapping data is available in the aforementioned formats, however any parties not working for the University on a framework agreement should enquire for more information regarding licensing.

The following guidance applies to University staff and external companies requesting access to information.
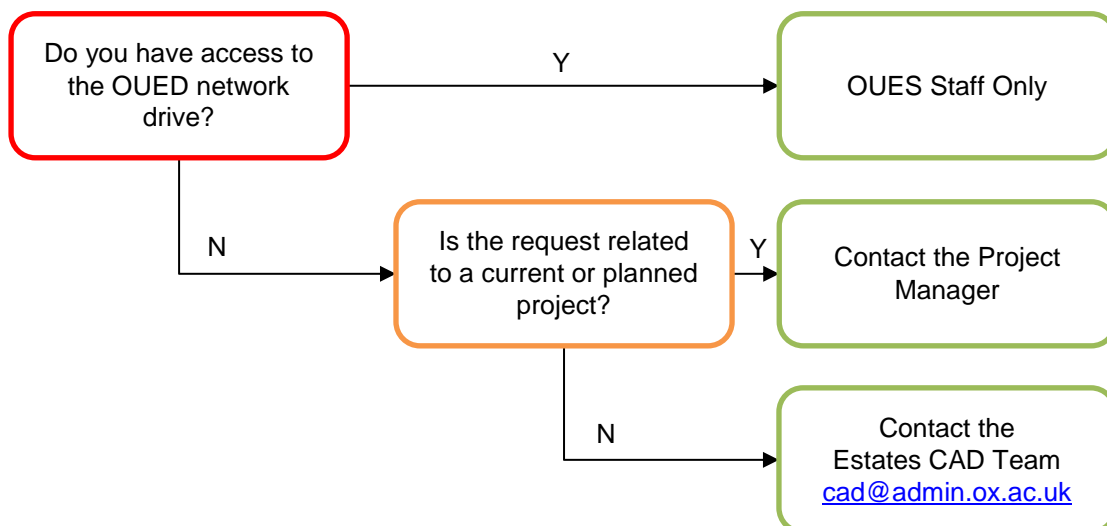
3.2. Drawing Requirements for Incoming CAD Data and Drawings

Architectural floor plans and cross sectional drawings shall be provided to the Estates CAD team at the following stages of the project: For both internally and externally managed projects,

• Developed Design Stage – once the design has reached such a stage that further major room layout changes are unlikely;

• Construction Stage – if there are any major changes to layout following the detailed design and tendering processes;

• "As Built" Stage – within 1 calendar month of project completion.

All post completion ("as built") project drawings shall be provided to OUES in native AutoCAD (.dwg) format in compliance with all requirements set out in the CAD Standards section of this document.

All CAD data and drawings should be sent to cad@admin.ox.ac.uk

4. Production and Modification of CAD Drawings

This section covers the two main types of drawings managed within OUES.

- General Arrangement floor plans (Section 4)
- Mechanical & Electrical (M&E) services layouts (Section 5)

4.1. Setting Up a New Drawing

Where possible, all drawings shall be produced in AutoCAD and be in 2D format. If the drawing is not produced in AutoCAD, then it should be exported to the native AutoCAD ".dwg" file format. It is the responsibility of the person exporting the data to ensure that all necessary data is present in the exported file and that it is not corrupted in any way.

All drawings should be produced using the latest version of AutoCAD available and shall be saved in AutoCAD 2010 format to ensure compatibility with other University of Oxford systems.

A separate drawing shall be provided for each level of a building, with the exception of split-level floors and mezzanine levels, which should be included on the same drawing as the level below it.

All buildings should be drawn so that they are orientated with North at the top of the drawing. All floors of a building shall be drawn in the same orientation.

All drawing objects must be on the correct standard layer (See table below listing all standard layers). If additional layers are needed, these must be agreed with the Estates CAD Team.

All drawings objects must be 'by layer' for all properties (colour, line type, line weight, etc.).

4.2. Scale and Units

All drawings should be drawn in Model Space at a scale of 1:1 where one drawing unit = 1mm. Angles should be shown in decimal degrees and measured anti-clockwise with 0 measured as a horizontal line drawn to the right. The preferred scales for use are: 1:1, 1:10, 1:20, 1:50, 1:100, 1:200, 1:250, 1:500. Larger scales can be used if required for exceptionally large buildings, and the scale should be clearly displayed on the title block of the drawing.

4.3. Layers

A list of standard layers to be used for all floor plan drawings can be found under Section 12, Appendix 1 of this document. Mechanical and electrical (M&E) services layers do not need to be included in any General Arrangement floor plan drawings.

4.4. Polylines

All drawings should have a room area polyline showing the net usable area (NUA) of all spaces. This should be drawn in an anti-clockwise direction around the internal boundary of all spaces, excluding features such as columns, voids and any areas that are less than 1.5 metres in height. Areas to be excluded should be drawn around in a clockwise direction. All drawings should also have a gross internal area (GIA) polyline drawn around the internal boundary of the external walls of the building, drawn in an anti-clockwise direction, excluding any voids or unusable space.

4.5. Space Numbering and Space Labelling

Using the ILB "lisp" macro which can be initiated by typing "ilb" into the command bar, follow the prompts to insert MText objects for Space Code, Space Area and Space Name of all room area polylines within the drawing ensure that the insertion point of all MText objects are within the polyline boundary that they refer to. To allow successful uploading of the drawing to the Planon database, ensure that if there any voids or columns within the space, the insertion point of the MText objects should not be inserted into these areas.

4.6. Text Styles

Text should be standardised to STANDARD Arial. All drawings will have standard text heights of 2.5mm, 3.5mm, 5.0mm or 7.0mm and a width no greater than 1 at a scale of 1:1. For example a drawing drawn at 1:100 would have a text height (in Model Space) of 250mm, and the height of the text in Paper Space would be 2.5mm.

Blocks and Title blocks should be left in the text style they were made in and not changed to Standard Arial.

The standard text style in all drawings should be labelled as "OUES Standard".

4.7. Blocks

Blocks should be avoided. If they must be included, they should be drawn on layer 0 and then inserted to the appropriate layer.

4.8. Stairs

Stairs should be drawn 'looking upwards', for example, any under stairs cupboards etc., should appear in full on the lowest level drawing and the stairs over appear on the drawing for the floor above. Up arrows should only be used on staircases and ramps.

Staircase plans on general arrangement drawings must have break lines that coincide when stairs are split between the drawings for different floors.

5. Building Services Drawings

In addition to the points set out in section 4 of this document, the following points should be adhered to when producing or modifying a Mechanical, Electrical or other Building Services drawing:

5.1. External References

All floor plan drawings showing Building Services information of any type should display the General Arrangement floor plan for the relevant building and level as an externally referenced (XREF) ".dwg" file.

This is necessary to ensure that, when the General Arrangement floor plan file is updated, the layout is automatically updated on the Building Services drawing, thereby removing the need for manual updates.

It is recommended that all the XREF layers are set to "Colour 8" when attached to Building Services drawings so as to bring emphasis to the Building Services objects.

5.2. Symbols and Blocks

The University has a standard set of Mechanical & Electrical symbols (see Section 12, Appendix 2), which should be used when producing and modifying system layouts and schematics.

The latest version of OUES Standard Symbols can be downloaded from the Estates CAD team:

cad@admin.ox.ac.uk

6. Finalising a Drawing

6.1. Commands

Once the drawing is complete, the drawing should be checked for additional unnecessary data, which can be removed using the following commands:

"Overkill" – this command is used to remove any overlapping or duplicate objects that are on the same layer. Please ensure that the "OUES-S-Room Area Polyline (NUA)" and "OUES-S-Gross Internal Area" layers are locked before performing this command.

"Layer Walk" – this command is used to temporarily isolate and display each layer in the drawing on its own. This is useful for making sure that objects are on the correct layer and that there are no objects left on non OUES Standard Layers.

"Purge" – this command is used to remove all unused layers and data from the drawing. The sister command "_pu" can also be used to remove any registered applications that are embedded within the drawing file.

"Audit" – this command is used to remove any objects that are likely to cause errors or corruption of the drawing file. Please remove any errors and all that the program finds.

Checking polylines – before finishing the drawing, a manual check should be carried out to ensure that there are the same number of room area polylines on the layer "OUES-S-Room Area Polyline (NUA)" as there are MText objects on the layers "OUES-S-Space Area" "OUES-S-Space Code" and "OUES-S-Space Name". If there are any discrepancies, this must be resolved before the drawing is completed.

7. Building Numbering

University Building numbers are assigned by the Information Team in the Asset & Space Management department of OUES.

If you need to know the University building number of any building, please request this information from the Information Team.

Likewise, all requests for a new University building numbers should be sent to the Information Team estates.info@admin.ox.ac.uk

8. Floors Numbering

University buildings come in a variety of shapes and sizes; this necessitates a standardised approach to labelling different levels within buildings.

All new build and major refurbishments to University buildings should adhere to the following guidelines:

- The ground floor level of the building, which is where the main entrance to the building is located, should be labelled as level "00";
- All floors above ground floor level should be labelled sequentially in increments of 10, for example, the first floor of a property is labelled as level "10" and the second floor of a property is labelled as level "20" and so on;
- Split level floors and mezzanine levels should be labelled with a "5" at the end of the code instead of a "0". For example, a level which falls between the ground and first floors of a building is labelled as "05", and a level which falls between the first and second floors of a building is labelled as "15" and so on;
- All floors below ground floor should be labelled incrementally using a "B" prefix, for basement, for example, the first level below ground floor level is labelled as "B1", and the second level below ground floor level is labelled as "B2", and so on.

All requests for new floor numbering, or modifications to existing numbering, should be sent to the Information Team estates.info@admin.ox.ac.uk

9. Space Numbering

All university buildings require OUES space numbering allocations. These are provided by the Information team in the Asset & Space Management department of OUES.

All requests for a new OUES space numbering or modifications to existing numbering should be sent to the Information Team estates.info@admin.ox.ac.uk

See Section 12, Appendix 3 for guidance on the OUES Space Numbering Procedure.

10. Appendices

Appendix 1 – OUES Standard Layers List

Appendix 2 – OUES Standard Symbols

Appendix 3 – OUES Space Numbering Procedure v1.1

Appendix 4 – Responsibility Matrix

Appendix 1 – OUES Standard Layers List
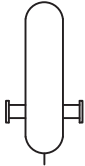
Layer Name	Color	Linetype	Lineweight	Plot
0	White	Continuous	Default	TRUE
OUES-A-BUILDING SERVICES	Yellow	Continuous	Default	TRUE
OUES-A-CANOPY	Magenta	Continuous	Default	TRUE
OUES-A-COLUMN	Yellow	Continuous	Default	TRUE
OUES-A-DIMENSIONS	White	Continuous	Default	TRUE
OUES-A-DOORS	Red	Continuous	Default	TRUE
OUES-A-EXTERNAL WALLS	Red	Continuous	Default	TRUE
OUES-A-FENCES AND GATES	Colour 32	Continuous	Default	TRUE
OUES-A-FURNITURE	Colour 40	Continuous	Default	TRUE
OUES-A-INTERNAL WALLS	Green	Continuous	Default	TRUE
OUES-A-LANDSCAPING AND TREES	Green	Continuous	Default	TRUE
OUES-A-LIFTS AND SHAFTS	Cyan	Continuous	Default	TRUE
OUES-A-OUT BUILDINGS	Red	Continuous	Default	TRUE
OUES-A-PAVING AND ROADS	Red	Continuous	Default	TRUE
OUES-A-RAMPS	Cyan	Continuous	Default	TRUE
OUES-A-ROOF	Magenta	Continuous	Default	TRUE
OUES-A-ROOF LIGHTS	Magenta	Continuous	Default	TRUE
OUES-A-SANITARYWARE	Cyan	Continuous	Default	TRUE
OUES-A-STAIRS AND RAILINGS	Cyan	Continuous	Default	TRUE
OUES-A-STRUCTURAL ELEMENTS	Blue	Dashed	Default	TRUE
OUES-A-TEMPORARY LAYER	Colour 251	Continuous	Default	FALSE
OUES-A-TEXT	White	Continuous	Default	TRUE
OUES-A-WINDOWS	Blue	Continuous	Default	TRUE
OUES-E-DISTRIBUTION BOARD	White	Continuous	Default	TRUE
OUES-E-DISTRIBUTION BOARD-TEXT	White	Continuous	Default	TRUE
OUES-E-ELECTRICAL DISTRIBUTION	White	Continuous	Default	TRUE
OUES-E-EMERGENCY LIGHTING	Green	Continuous	Default	TRUE
OUES-E-EMERGENCY LIGHTING-TEXT	Green	Continuous	Default	TRUE
OUES-E-SCHEMATIC	Red	Continuous	Default	TRUE
OUES-E-SCHEMATIC TEXT	White	Continuous	Default	TRUE
OUES-ELEC-EXTERNAL REFERENCES	Colour 8	Continuous	Default	TRUE
OUES-M-BOILER	White	Continuous	Default	TRUE
OUES-M-CHILLED WATER	Blue	Continuous	Default	TRUE
OUES-M-COLD WATER PIPEWORK	Red	Continuous	Default	TRUE
OUES-M-DIRT SEPERATOR	White	Continuous	Default	TRUE
OUES-M-DOMESTIC WATER	Colour 161	Continuous	Default	TRUE
OUES-M-EARTH BONDING	White	Continuous	Default	TRUE
OUES-M-EXTERNAL REFERENCE	Colour 8	Continuous	Default	TRUE
OUES-M-FILTER	White	Continuous	Default	TRUE
OUES-M-FIRE DAMPER	Red	Continuous	Default	TRUE
OUES-M-FIRE DETECTOR	Red	Continuous	Default	TRUE
OUES-M-FLUE	White	Continuous	Default	TRUE
OUES-M-GAS	Green	Continuous	Default	TRUE
OUES-M-HEATING	Red	Continuous	Default	TRUE
OUES-M-HOT WATER PIPEWORK	Red	Continuous	Default	TRUE
OUES-M-MECHANICAL PIPEWORK	White	Continuous	Default	TRUE
OUES-M-METER	White	Continuous	Default	TRUE
OUES-M-PRESSURE TEST POINT	White	Continuous	Default	TRUE
OUES-M-PUMP	White	Continuous	Default	TRUE
OUES-M-RADIATOR	Red	Continuous	Default	TRUE
OUES-M-SCHEMATIC	White	Continuous	Default	TRUE
OUES-M-SHUT OFF VALVE	White	Continuous	Default	TRUE
OUES-M-SMOKE DETECTOR	White	Continuous	Default	TRUE
OUES-M-SOLENID VALVE	White	Continuous	Default	TRUE
OUES-M-TEMP SENSOR	White	Continuous	Default	TRUE

OUES-M-TEXT	White	Continuous	Default	TRUE
OUES-M-THERMOMETER	White	Continuous	Default	TRUE
OUES-M-VALVE	White	Continuous	Default	TRUE
OUES-M-VENTILATION	White	Continuous	Default	TRUE
OUES-P-LAYOUT	White	Continuous	Default	TRUE
OUES-P-LAYOUT-REVISION	White	Continuous	Default	TRUE
OUES-P-LAYOUT-TEXT	White	Continuous	Default	TRUE
OUES-P-REVISION CLOUD	Cyan	Continuous	Default	TRUE
OUES-P-VIEWPORT	Cyan	Continuous	Default	FALSE
OUES-S-ALLOCATION HATCH	White	Continuous	Default	TRUE
OUES-S-GROSS EXTERNAL AREA	Magenta	Continuous	Default	FALSE
OUES-S-GROSS INTERNAL AREA	Magenta	Continuous	Default	FALSE
OUES-S-ROOM AREA POLYLINE (NUA)	Yellow	Continuous	Default	FALSE
OUES-S-SPACE AREA	White	Continuous	Default	TRUE
OUES-S-SPACE CODE	White	Continuous	Default	TRUE
OUES-S-SPACE NAME	Cyan	Continuous	Default	TRUE
OUES-S-TEXT	White	Continuous	Default	TRUE
OUES-S-VIRTUAL BOUNDARY LINES	White	Dashed	Default	TRUE

Appendix 2 – OUES Standard Symbols

Column 1

	Symbol Description
NP	1 GANG SOCKET OUTLET / N RATING (IF NOT 13A) / P No. OF POLES / SUITABLY ANNOTATED
	NOTE: ALL SOCKET OUTLETS TO BE SWITCHED UNLESS SHOWN OTHERWISE
	13A 1 GANG SWITCHED SOCKET OUTLET
2	13A 2 GANG SWITCHED SOCKET OUTLET
2 EL	ELECTRAK SOCKET OUTLET
	RCD SOCKET OUTLET
LV	EXTRA LOW VOLTAGE SOCKET OUTLET
	13A SWITCHED FUSED CONNECTION UNIT (FCU)
	13A UNSWITCHED FCU
	13A SWITCHED FCU WITH FLEX OUTLET
	13A UNSWITCHED FCU WITH FLEX OUTLET
	FLEX OUTLET
	16A SWITCHED INTERLOCKED SOCKET OUTLET
30	SWITCH RATED AS INDICATED AND GIVING No OF POLES. eg 3 POLE 30A SWITCH.
30 SF	AS ABOVE BUT SF INDICATES SWITCH FUSE. eg 4 POLE 60A SWITCH FUSE.
30 FS	AS ABOVE BUT FS INDICATES FUSE SWITCH
30 MCCB	AS ABOVE BUT MCCB INDICATES MOULDED CASE CIRCUIT BREAKER COMPLETE WITH ENCLOSURE
30 MCB	AS ABOVE BUT MCB INDICATES MINITURE CIRCUIT BREAKER COMPLETE WITH ENCLOSURE
N	CONTACTOR N = No OF POLES
	DISTRIBUTION BOARD
	MAIN DISTRIBUTION BOARD
	DBs TO BE LOCKABLE WITH INTEGRAL ISOLATOR ON ALL POLES LABELLED WITH DESIGNATION AND SOURCE COMPLETE WITH SCHEDULE
	EMERGENCY LOCK OFF STOP BUTTON
C	COOKER CONTROL UNIT WITH COOKER CONNECTION UNIT AT LOW LEVEL.
WH	WATER HEATER.
F/C	FAN CONTROLLER.
RCD	RESIDUAL CURRENT DEVICE.
M	MAIN EARTH BONDING POSITION. INDICATING SIZE
S	SUPPLEMENTARY EARTH BONDING POSITION.
ET	EARTH BAR OR TERMINAL.
TC	TIME CLOCK.
	POWER CIRCUITRY LINES WITH CIRCUIT No.s REFER TO Drg No. 400005
R	RELAY
	3 COMPARTMENT POWER/DATA/TELECOMS DADO TRUNKING. SIZE INDICATED IN SPECIFICATION.

Column 2

	Symbol Description
	S.P. 1 WAY CEILING PULL CORD SWITCH.
	S.P. 2 WAY CEILING PULL CORD SWITCH.
	DIMMER LIGHT SWITCH.
N	S.P. 1 WAY LIGHT SWITCH (N = No GANGS).
	S.P. 2 WAY LIGHT SWITCH.
	S.P. INTERMEDIATE LIGHT SWITCH.
D.P.	D.P. 1 WAY LIGHT SWITCH.
K	KEY OPERATED LIGHT SWITCH.
TD	TIME DELAYED LIGHT SWITCH.
A	LIGHTING POINT (A = SCHEDULE REFERENCE).
A	LIGHTING POINT WALL MOUNTED (A = SCHEDULE REFERENCE).
E / A	MAINS/BATTERY SELF CONTAINED EMERGENCY LUMINAIRE (A = SCHEDULE REFERENCE).
PC	PHOTO ELECTRIC CELL.
A	FLUORESCENT TUBE LUMINAIRE (A = SCHEDULE REFERENCE).
A	FLUORESCENT TWIN TUBE LUMINAIRE (A = SCHEDULE REFERENCE).
A	FLUORESCENT THREE TUBE LUMINAIRE (A = SCHEDULE REFERENCE).
E / A	FLUORESCENT TUBE LUMINAIRE MAINS/BATTERY SELF CONTAINED EMERGENCY (A = SCHEDULE REFERENCE).
	LIGHTING SWITCH LINES
	LIGHTING CIRCUITRY LINES WITH CIRCUIT No.s REFER TO Drg No. 400005
PP / E	POWER PACK E. EMERGENCY LIGHTING REMOTE
	CONDUIT ABOVE FLOOR.
	CONDUIT BELOW FLOOR OR IN TRENCH.
	CONDUIT RISE.
	CONDUIT DROP.
A B C D	CABLE TRAY / A = No OF CABLES / B = CORE SIZE FOR EACH CABLE / C = TOTAL NET CABLE WIDTH (1 LAYER) mm. / D = TRAY WIDTH mm.
A B C D	CONDUIT / A = No OF CABLES / B = CORE SIZE FOR EACH CABLE / C = CONDUIT DIAMETER mm. / D = TYPE REFERENCE :- / L = LIGHTING / P = POWER / R = RADIO / T = TELEPHONE
A B C D E F	CABLE TRUNKING / A = No OF CABLES / B = CORE SIZE FOR EACH CABLE / C = TOTAL CABLE CSA mm. / D = No OF COMPARTMENTS / E x F = TRUNKING WIDTH x DEPTH mm, POWER ONLY

Column 3

	Symbol Description
AA	AUTOMATIC FIRE ALARM CONTROL PANEL.
AA F	AUTOMATIC FIRE ALARM CONTROL AND INDICATION PANEL CONNECTED TO A CENTRAL STATION
	FIRE ALARM BELL
	FIRE ALARM INDICATOR LIGHT
D/H F	HEAT DETECTOR / F = FIXED / R = RATE OF RISE
D/S P	SMOKE DETECTOR / I = IONISATION / P = PHOTO-ELECTRIC / C = COMBINATION I/P / B = BEAMS
OSI	REMOTE INDICATION
	SPECIAL FIRE ALARM SOUNDER FOR USE IN ANIMAL HOUSES.
	FIRE ALARM BREAK GLASS UNIT
	FIRE ALARM DOOR HOLDER
	VISUAL WARNING DEVICE
FD / OS	FIRE DAMPER OPERATED BY SMOKE DETECTOR
PP H	POWER PACK H. DOOR HOLDER L. DOOR LOCK
	PIR DETECTOR (SECURITY)
	PUSH BUTTON
	BELL
	BUZZER
	PUSH BUTTON
	TRANSFORMER
	TELEPHONE CONNECTION SOCKET
	DATA CONNECTION SOCKET
E	DATA CONNECTION SOCKET – ETHERNET
G	DATA CONNECTION SOCKET – GANDALF
LS	LOUDSPEAKER POINT
M	MICROPHONE
	AERIAL ANNOTATED AS NECESSARY eg F.M.
	TV MONITOR
DL	DOOR LOCK
DP N	TELEPHONE CTI CONNECTION BLOCK N = NUMBER OF WAYS
I	DOOR INTERCOM UNIT

Column 4

	Symbol Description
	FAN OR MOTOR (DESCRIPTION TO BE NOTED).
DO	DETECTOR OUTSIDE
DW	DETECTOR WATER
DR	DETECTOR ROOM
T	THERMOSTAT.
	MOTOR STARTER
V	VALVE
MCP	MECHANICAL SERVICES CONTROL PANEL WITH INTEGRAL DOOR INTERLOCKED SWITCH ON ALL POLES

Panel Filter	4 PORT MOTORIZED MIXING VALVE
Temperature Gauge	3 PORT MOTORIZED MIXING VALVE
Pressure Gauge	2 PORT MOTORISED VALVE
Test Point	AIR VENT
SILENCER	DRAIN COCK
	REGULATING VALVE
	TEMPERATURE SENSOR
	HUMIDITY SENSOR
STRAINER	LIGHT SENSOR
SAFETY VALVE	VALVE SET
	EXTRACT FAN
GOVERNOR	ISOLATION VALVE
DRV	GAS COCK
PUMP	DOUBLE REGULATING VALVE
PUMPS TWIN	NON RETURN VALVE
METER	AUTOMATIC AIR VENT
	3 WAY VALVE
DE-AERATOR	4 WAY VALVE
	SAFETY VALVE

Appendix 3 – OUES Space Numbering Procedure v1.1

University of Oxford

Estates Services
Space, Options and Information Team

PROCEDURE NOTE

Space Numbering

The University has a standardised space numbering system which is used to identify all spaces within a building. This includes all rooms whether occupied or not, riser spaces, lifts, circulation and so on.

The purpose of space numbering are numerous, but include:

- Consistent numbering protocols, which are standard across the Functional Estate;
- Allows the location of any faults/repairs issued to be readily identified;
- Ensures that spaces within buildings are individually and uniquely recorded on the University's property database allowing for proper calculation of space charging, reporting on the estate to funding bodies and so on;
- Consistent labelling in line with M&E requirements;
- Appropriate address allocation for fire alarm systems, electrical services, asbestos records, etc.

There is an agreed convention for labelling room numbers. This is in the form 'xxx.yy.zz', where 'xxx' is the building number, 'yy' the floor reference and 'zz' the space number. Building numbers are unique to each building and are available on request from the Space, Options and Information team (SOI). The ground floor of the building is usually designated as level '00', with the next floor up level '10' etc. Intermediate numbers are used for mezzanine or intermediate floor levels. Basement levels are usually designated as level 'B1', 'B2', etc.

A specific logic has been established for the sequence of numbering spaces on each floor. The aim is to assist those looking for a space within the building. This can cause confusion for those trying to label spaces, so it is for this reason any space numbering must be discussed with and approved by SOI.

The early identification of space numbers is to be encouraged. By scheme/feasibility design stage it is assumed that layouts will be sufficiently developed/finalised to allow for the allocation of space numbers. At this stage contact must be made with SOI to arrange for the latest floor plans to be sent; allowing sufficient time for the allocation/alteration of space numbering to be completed by SOI.

Departments often wish to impose their own room and floor numbering systems. Whilst this is not actively encouraged, such systems may be adopted in parallel with the University's own system. However, the University's system cannot be replaced by the Departmental system and the University's space numbers will be expected to be used in all communications. If a separate numbering system is adopted, SOI must be informed to allow recording against the University space numbers.

It is expected that University room numbers will be marked on doors leading to the numbered space. Where Departments do not wish to carry the number on room signage, it is expected that the number will be signified elsewhere on the door in a permanent way, e.g. it is suggested that a metal disc bearing the room number is provided at the top corner of the door on the opening edge. The costs of providing door number tags are to be borne by the project in the case of new build and major refurbishment projects.

For further information on Building or Space Numbering contact:

Space, Options and Information Team
01865 (2)8080   cad@admin.ox.ac.uk

Appendix 4 – Responsibility Matrix

R= Responsible, A= Accountable, S= Support, C=Consulted, I=Informed

Task	Building Services Team	Capital Projects / Project Manager	Conservation & Buildings	Estates CAD Team	External Contractor / Consultant	Information Team
Compliance with OUES CAD Standards when producing and/or modifying drawings for University of Oxford projects.		A	A		R	
Provision of drawings in AutoCAD format at Design, Construction and As Built stages of a project.		A	A		R	
Storage of drawings in appropriate locations on Oxford University Estate Services network drive.				R		A
Provision of drawings to External Contractors and Consultants as requested for project work.	I	I	I	R	C	A
Review and updating process of this document as required.	C	C	C	R	I	A
Review and updating of M&E symbols library as required.	R / A	I	I	C	I	I
Review and updating of other supporting files and appendices as required.	C	C	C	R	I	A
Checking accuracy of project records including measured building surveys and scans.	C	C	C	R	I	A
Review and updating of OS MasterMap Topography data for use by Oxford University Estate Services staff.	I	I	I	R		A