THE UNIVERSITY of ADELAIDE

CADM OPERATORS MANUAL

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SERVICE PROVISION

This document forms part of the Consultancy Service Agreement (CSA) between the University and Statewide Facility Records recorded against TRIM number 2005/2838

Statewide Facilities Records are to provide the following services:

Trained and experienced Caddsman/AutoCAD drafting personnel whose responsibilities include the following:

- Collect, assess and compile digital data/documents identified as required for maintenance in to the CADM system. This includes:
    - The necessary review of hardcopy and softcopy documents using software tools such as Caddsman, AutoCAD, Acrobat, MS Word, Excel, Powerpoint and Access
    - The contacting of contractors and consultants to acquire missing or incomplete documents or electronic documents
    - Liaising with The University of Adelaide staff and external commercial consultants to determine relevant information relating to record requirements.

- Indexing all relevant documents to the DvTDM system and ensuring the record details are updated.

- Liaise with Scan Conversion Service staff to ensure all CADM sourced documents are correctly linked and indexed in the DvTDM system.

- Ensure this document, CADM Operators Manual is developed and maintained to reflect changes in the procedures and standards being employed for the maintenance of the CADM records and any changes in hardware systems being employed by Adelaide University.

- Provide first line support to users of the information systems with on-site staff. This includes:
    - users of the DvTDM (Dataviewer) system
    - Supply digital data to internal and external consultants in response to official requests. These may be by email or verbal (either telephone or face to face discussion)
    - System technical documentation is maintained and technical issues are identified and elevated to support staff as required.

Statewide Facilities Records will additionally provide on request:

- Additional support staff as requested by Adelaide University from time to time. This is limited to staff with the ability to support the functions above with tasks such as document preparation and basic data capture.
- Off-site data manipulation not able to be programmed for action at The University of Adelaide work location.
- Other record and data maintenance tasks / projects as agreed between Facilities Records and Statewide Facilities Records and quoted accordingly.

Statewide Facilities Records contact details:

- PH 8341 7888, FAX 8341 7999. Address:17 Magarey Street, Largs North SA 5016

FORWARD

The University of Adelaide land and built asset management systems are for the recording of information for the purpose of maintaining the integrity of these assets.

Processes in place have been developed and implemented for the ease of data and information transfer between users at all levels.

These processes are continuously developing and evolving with changing business applications and technological developments, locally and worldwide.

The current documented processes are a result of products, information and services provided to and by The University of Adelaide.

Users of the information are required to ensure that the level of information provided remains at a high level of accuracy and reliability by using developed procedures.

INTRODUCTION

The purpose of this manual is to provide procedural and instruction information pertaining to all the CADM related activities, technical record retrieval and viewing performed and provided by Facilities Records group for The University of Adelaide.

REVISION CONTROL

This section is to record the major revisions to the document.

DATE	REVISION DETAILS	AUTHOR	CHECKED

SYSTEM

CADM DIRECTIONS – HARDWARE

SERVER

The CADM data storage location is S:\Services_Resources\Property_Services\Shared\FacRecords\CAD. This is the University server 'farm' disk array

We have three networked CADM workstations, and a Dataviewer server with the above directory mapped as K:\

Backups are automated on the 'farm' every night but we also make weekly copies on to local machines. ADMCDV001, ADMCDV023 and ADMCDV010. These are run manually using a bat file to run XCOPY with various switches set.

SOFTWARE

CADM

Caddsman
Produced by: Spatial, PO Box 622, Ringwood VIC 3134, Phone: (03) 9870 9877
Email: mailto:support@caddsman.com.au

SPINV (Space ID)
Produced by: Facilities Records. *Maintained by:* Bill Buchanan, Phone: 0412535068, Email mailto:billby@internode.on.net

SPACE

Spatial Asset Management (SAM)
Owned and developed by: University of Adelaide
Maintained by: GH Technologies Aust Pty Ltd., 22 Nile Street, Port Adelaide SA 5015, Ph 8447 2088
Email mailto:mail@ght.com.au

DOCUMENTS

DATAVIEWER
Produced by: Practical Programs Pty Ltd, 7 Tucker St, Adelaide, SA 5000 , Ph 8227 0877
Email mailto:support@practicalprograms.com.au

CADM DATABASE MAINTENANCE

BACKING UP

☞ **Back Up & Recovery**

The university servers are backed up each night within the IT systems. Caddsman Recovery of files are to be first attempted by using the DBK files created when Caddsman opens a file. If this fails there are weekly backups made to ADMCDV001, ADMCDV023 and ADMCDV010. The latter is occasionally backed up to an external drive

Only as a last resort call IT for a file recovery as this can take 48 hrs or more.

HOUSEKEEPING - WITHIN CADDSMAN

☞ **New Buildings**

If there is a need to add a new building to the CADM system a request has to be made to the Manager Facilities Records to add this building to SAM before CADM modelling is started.

☞ **Renaming Databases**

Can be done at the system level using the normal Windows file rename features.

Checking that all the drawings and links still work is essential as the links may break.

☞ **Entity-Pack**

This should be **run regularly** on each file opened.

It checks a file for integrity and cleans out unconnected elements

Select File/Utilities/Entity-Pack

Type in the file name for the data to be written to i.e. check file and select the file to be checked.

☞ Dab-Purge

This should be run regularly on each DAB to consolidate and reduce their size as stored on disk.

DRAWING PRACTICE

☞ Save regularly

When using CAD databases, save your work regularly, e.g. every 5 to 15 minutes, and close the CAD programme down every hour and restart, to reduce/minimise the incidence of data loss.

Only run one instance of CAD concurrently.

CADM SYSTEM DATA STORAGE STRUCTURE

SERVER	LOCAL PCs
Server – remote to working location (NETWORK cable route would be approx. 1km) NOVELL NETWARE v 5…… A folder is mapped as K:and holds all CADM DAB's within directories indexed in Caddsman Modeller as libraries	Local - Windows 2000 & NT4 Caddsman installed C:\Modeller 2004 is the + system library C:\Modeller 2004\User as the start-up dir.
Directories as follows: Accommodation Commercial F1-Martindale farm F2-Mundunney Farm F3-Morelana Farm F4-Charlick Farm F5-Glenthorne Farm field_stations FireBlockPlans Hospitals Land miscellaneous National_Wine_Centre projects Roseworthy spacecad sports-grounds StateMap Surveys thebarton waite	DABs kept in each users system folder: Acc-cont architect archland cleaning comm_sfgs crests drgsheets elec-schm ESP fire_sfgs irrigation LiqLic light_sfgs mechanical mech_sfgs power_sfgs Reg-Fac sewer sign-sfgs site-light survey trees ugs-lines

A master set of symbols is stored on *K:drive* but is never called from the Caddsman program. It is the master store of the in case the local or users set is damaged or lost.

All users have a set of SETTINGS.DEF files to enable allow the users to work locally on large DAB's to speed up work and minimise the risk of damaging the DAB's during the saving process

These 'local' set of 'settings' and folders are to facilitate fast, efficient and convenient working on databases locally on their PC.

To use this copy the DAB/s across the network to these folders (a copy of the structure on the server) and run the 'local' mapped settings file. Once work is finished, copy the DAB back to the server in to its original location, over writing the original.

Plotmanager *(Refer to the detailed section for complete information)*

This tool manages the production of drawings for indexing in to Dataviewer. *Refer to the Dataviewer section for more specific details.*

CADM (Caddsman) SYSTEM SETTINGS

☞ Installation

Install to C:\< Modeller xxx >, NOT 'Program Files' folder. Use the master settings file stored in K:\FR\CADD\CMAN-setup-for-each-machine\ to start with and build on that to suit the way you work. Master will need editing to match '+System" library

☞ Settings Folders

User   C:\Modeller SJ\User\   Settings   C:\Modeller SJ\Settings\   Symbols   C:\Modeller SJ\

☞ System Setup

Many of these settings are a personal preference though many assist in maintaining an environment that speeds the work and aids consistency, across all operators, with production.

CAMPUS AND BUILDING NAMES: CHANGING OR ADDING

Why: to align Facilities Records indexes and central systems for the listing of assets and thus reporting for assets and insurance.

E.G. Possible new campus, commercial or city for the recording of buildings in the CBD. Easy in SAM, difficult elsewhere.

Split buildings out of groups CADM and record individually. This to aid all auditing and reporting.

Issues within:

CADM

- Rename databases to new campus or building name
- Split buildings out of groups to individuals
- Build drawings as necessary
- Check existing drawings still work
- Edit building and drawing titles as necessary to reflect altered (new) names, etc
- NO REVISIONS to drawings

Significant time and effort. Need to determine process and package for offsite work

Dataviewer

- Rebuild Master lookup lists
- Re-index documents back to new list entries
- Edit any information relevant
- Extract drawing lists for importing to SAM – occupancy only

Time and some difficulty

SAM

- Rename campus
- Rename building
- Import drawings from Dataviewer lists
- Inter-relationship management

Managing priorities for the changes and FR requirements

POLICY: DRAWING REVISION AND DRAWING RETIREMENT

Why: to control the version accessed and referenced for legal purposes, and after 26 revisions (the complete alphabet.

E.G. Possible new campus, demolished building replaced with new facility. Etc.

When drawing revisions commence at 'A' and reach 'Z' then the drawing number is retired. A new, next available drawing number will be issued at revision 0 noting the superseded drawing number

Superseded drawing information shall be located in the first row of the amendment section

E. G.	-	SUPERSCEDED No X-X-X-XX	MTH/YR
	ISSUE	AMENDMENT	DATE

DATAVIEWER – WATCHFOLDER

ALL OPERATORS

In the interest of keeping the status of drawings in the *:\dataviewer\WatchFolder\ and K:\Digital_Data_Received clear to DV operators please make sure that folders are clearly labelled. If you are not going to index drawings yourself please move them into a folder in the root of *:\WatchFolder labelled with a short description of the job followed by "TO_BE_INDEXED".

Please create a TXT file within the folder with any relevant information about the drawings ie, date, name of operator, which job, if revisions of existing drawings in DV etc.

This also applies to any other files put into \WatchFolder and \Digital_Data_Received. As we have multiple people accessing these folders at different times it is important to leave notes in a TXT file so that others are aware of the status of files.

All drawings in \WatchFolder in folders under an operators name are considered working files and not yet ready to be indexed by DV operators.

DIGITAL DATA RECEIVED – K:\DIGITAL DATA RECEIVED\

ALL OPERATORS

This area is dedicated to the storage of digital information for indexing in to Dataviewer.

CADM operators are NOT to directly work with files stored here and should not access these files until the Dataviewer staff have moved them to k:\CAD_Input. This is so the knowledge is kept as it was sent to FR and does not get corrupted with FR's handling processes.

DIGITAL DATA ARCHIVED – K:\DIGITAL DATA ARCHIVED\

ALL OPERATORS

This area is dedicated to the storage of digital information after the Dataviewer operations are completed for new information.

CADM operators are NOT to work with files stored here and should not access these files unless there is a problem with files bey drawn from the K:\ CAD_input directory or there is a request for information that cannot be sourced else ware due to another problem.

DIGITAL DATA FOR CADM INPUT – K:\CAD_INPUT\

This directory is the area where all files relevant for inputting in to the University CADM system are to be stored for initial access and during the work process of importing.

Copying the files to a local directory is acceptable to speed initial processing, BUT, the original files MUST be deleted at the completion of the data transfer process and the master drawing issued within the Dataviewer system.

DRAWING

CADM DATABASE – CREATION

NEW BUILDINGS

If a new building is required in the CADM system a request has to be made to the Manager Facilities Records to add this building to SAM **before** CADM modelling is started. This is to establish the correct building name and number for the generation of the campus library reference files for use within CADM.

☞ DIRECTIONS FOR THE INPUT OF FLOOR LAYOUTS

Note: North is to the top of the screen.
             All building layouts are drawn 1:1 (full size)

1. Always check the layer and colour prior to starting work, reset as necessary Select the icons and settings lower left corner of Caddsman.
2. LAYER 999 is reserved for the largest projected plan outline of the building. The ORIGIN shall be (0,0,0) (North Terrace Campus only) and shall coincide with a point on the SITE SURVEY DRAWING S-119 and cross-referenced with drawings S-118, S-120 and S121.
3. If, because the floor plan is taken at 1200 above finished floor level, the corner of the building is slightly different to the coordinates on drawing S-119 then this difference shall be noted on the CADM site plan, recorded on drawing S-119 print and on the LAYER 999 outline.
4. COPY this outline to LAYER 0 for the production of the LOWEST LEVEL of the building. Add the internal features in accordance with the directions in BUILDING FLOOR/LEVEL LAYER OVERVIEW and the CADM STRUCTURE OF BUILDING FLOORS/LEVELS. Text – mil-std, height 350 width 275
5. Where buildings adjoin the common coordinates and wall dimensions shall be checked with the adjoining model outline on layer 999. This can be done in several ways **a)** check against the drawings in Dataviewer, and measure accordingly **b)** merge the two relevant models using either a common datum i.e. 000 or to a point you designate. Follow the directions in Caddsman.
6. RL's shall be in CYAN (4) text on the layer of the building outline it represents. e.g. RL 40 140. Text height 500 width 400 Weight 0.25
7. Stair arrows and associated text shall be on the same layer as the building outline to which it relates.
8. Title each level by placing the LEVEL NUMBER in RED, UPPER CASE and 500 x 400 in size where it will be plotted and easily read. Usually lower LHS of floor layout.
9. Place all the text in the correct orientation for reproduction; this is usually - 90º or 0º. This allows the text is read from the left of the screen or normally. The requirement for this is historic and related to the general shape of the building and the 'normal' landscape orientation of drawings.
10. Construct the drawing, save as a MODEL or SYMBOL. (create symbol) in the appropriate DATABASE file (Write symbol) i.e. !M8, 1
11. Place a BOUNDARY (PLOT/BOUNDARY) around that the model or figure. To do this have the model or symbol on the screen then select PLOT, then BOUNDARY then select a start point and drag a visual box to neatly surround the entities required.
12. You may at this stage type in a PLOT SCALE for final PLOT though it can be changed during the PLACE phase later on and the effect can be viewed almost instantly as you place the VIEW on the screen's drawing sheet.
13. Select FILE/SAVE or SAVE AS - This will save the MODEL or SYMBOL complete with the boundary. Using SAVE AS requires further user input as to location and name to be applied
14. It is now safe to close Caddsman or close the current file and open another or start a new one.

SPECIAL DETAIL NOTES:

All surface planes added for walls, ducts, lifts, etc., identification shall be tagged with the IGNORE label within the SP Macros menu. *Refer to the SPINV section for details on space occupancy plane TAGing.*

Data Recovery Notes:

If there is a lost symbol (floor of building, etc) this may be recovered from the *.dbk file created when the database was last saved. If this fails the next step is to use the weekly backup on PSBCASUAL. Remember this is only a copy of status on the LAST Friday prior to the current day. As such it could be 6 days old. Read in the dab/symbol required and save AS to the correct DAB.

ROOM NUMBERING

The schema for the University is NOT the same for all buildings. The following will have to be adapted to suit the building being renumbered.

The standard is to number space in all buildings from the lowest level up through the building. The space (room) number format reflects the level it is on and the sequence on the level.

History often dictates the first character, e.g. B, LG G or 1 where B = Basement, LG = Lower Ground, G = Ground and 1 = Level One

The first space number is the primary entry to the building or level. I.e. B00, LG00, G00 or 100. Corridors from this space are sub space numbers of this i.e. B00a, LG00a, G00a or 100a. Service risers off corridors also take a sub number off that corridor B00g, LG00g, G00g or 100g or of the room from which they are accessed eg 345a (level 3 space 45 a) Once the building level/floor has a designation of 10 then a space is inserted into the number to differentiate the level and space number i.e. 10 33a.

If numbering is found to be illogical or not matching this 'standard', discussion with the users and Property Services management is required for resolution and door re-labelling costs etc.

TITLE BLOCKS

These are required to match the layer structure of the building and text layers in the building databases, described in DIRECTIONS FOR THE INPUT OF FLOOR PLANS and CADM STRUCTURE OF BUILDING FLOORS/LEVELS

The STANDARD title block is maintained in the +SYSTEM library with in the drngsheets.DAB

Read this model in to Caddsman and save AS a model called TITLE in to the related building database and as all text is pre formatted little alteration is required.

As drawings have revisions recorded on them there may be a requirement move the revision list to an alternative location.

There are 2 standard positions: Directly above the title block and immediately to the left of the title block.

Revision Notes text size and weight should match the following if none is available to copy

FONT	HEIGHT	WIDTH	WEIGHT	COLOUR
TITLE - FILLED	5	3.5	0.15	250
DRAW NO. - FILLED	7	5.5	0.25	250

REPAIR MISSING LINK ERRORS

NOTE: This is the process of fixing Caddsman data files if the original AutoCAD files have NOT been fully 'exploded' before importing to Caddsman

METHOD

1. Open the Caddsman File which is reporting missing link errors.
2. Take note of the EXACT file names which are missing, with attention to the difference between the number zero (0) and the letter O. The file name is case sensitive.

    Note – If the Caddsman file was created in an older version, long file names will not be able to be created. See addendum for instructions in this instance.

3. Ignore all to clear this error window, and close the file.
4. Create a new Model, in the Database with the missing files. It's not necessary to be in same Database, but makes managing the files easier.
5. In the new Model, draw a Circle of diameter 20,000 (20m) in colour 2 with line weight set to 2. Insert to coordinate 0, 0, 0. This creates an easily recognisable entity to delete from the drawing later on.
6. Add a text entry colour 2, weight 2, size 3000 Height, 2000 Wide to coordinate 0, 0, 0. Edit this text entity to a unique description of one of the missing link file names, e.g. *U00000000000017b7 may be identified with '17b7'. This allows you to identify which entities you are deleting from the drawing later on.
7. Save the Model with the 'Save As' command in the affected Database as one of the missing files, e.g. *U00000000000017b7.
8. Switch back to the new Model and change the text entry to another missing file name. e.g. '4C1F'.
9. Save as the next file name, e.g. *U0000000000004C1F.
10. Repeat Steps 6 & 7 until you have created a new Model for each file missing from the Database.
11. Reopen the affected Symbol/Model file.
12. This time, select each missing file as listed in turn, and click on change to redirect the file to Database containing the new one you have just created.
13. Repeat for each file which is missing, and continue. If a file doesn't change, you have not correctly entered the file name of the new file. You will need to reopen this file and use 'Save As' to create the correct file name.
14. Change the view from TOP to BOTTOM or PAR. Don't delete the Plot Boundary for Top as this may affect the Pen Settings in all the drawings.
15. Turn on all Layers.
16. Select "Make Visible in Current View" command, and select "Select All".
17. Select "Zoom Fit".

18. You should now be able to easily identify the location of the 'missing' links as large circles, with large text entities within. The size of the circles may vary, depending upon the scale with which they had originally been inserted into the drawing.

19. Delete these entities, taking note of each of the file name extensions you embedded as you go. This allows you to identify which files you have found and deleted.

20. Run Application 'Cha-pnt.ape' to remove extraneous points from the drawing.

21. Run Utility 'Entity Pack' to delete extraneous lines from the drawing.

22. Run Utility 'Check' to check for extraneous entities.

23. Save and Exit drawing.

24. In the Caddsman file menu, select the 'Delete' command, and delete the models you created, marking off from the list of files you deleted from the Drawing. You should have deleted every new Model you created. If not, repeat Steps 11 to 23 to identify and locate every unwanted entity.

25. The Database should now not have any unwanted files. Reopen the original file. If all goes well, you shouldn't have any error window reporting missing files.

26. Turn off all layers excepting the Walls and Text (0 & 1 or equivalent).

27. Change view to top and 'Zoom Fit'.

28. Save & Exit.

☞ Addendum: Long File Names

The schema for the University is NOT the same for all buildings. The following will have to be adapted to suit the building being renumbered

In the situation where the missing link file name is very long, some DABs which were created in an older version of Caddsman will not allow you to create the full file name. In this instance, you will need to create a block with the full name in AutoCAD, insert this block into an AutoCAD drawing, and then read this AutoCAD drawing into Caddsman. Essentially, the process for this is the same as above. The main difference is that the 20m circle is created within AutoCAD rather than Caddsman

a) Open a new drawing in AutoCAD.

b) Draw a 20m diameter circle fixed to position 0,0 as in step 5 above.

c) 'Zoom All' to see the full circle.

d) Type command 'wblock' to create a block (link is the Caddsman term).

e) Make base point 0 0 0.

f) Click on select objects, and then select the circle edge. Right click to enter.

g) Make sure 'Convert to block' option is selected.

h) In Destination option, save the file name as the EXACT duplicate of the missing link file name.

i) Click 'OK'. You should see a preview window pop up briefly showing you a thumbnail image of the block you just created.

j) Repeat steps d to h until you have created a block (link) for every file name that you need.

k) Start a new drawing in AutoCAD.

l) Type 'Insert' to insert the blocks you have just created.

m) Use the browse option in the Insert Dialog Box to locate your first block.

n) Leave Insertion Point, Scale and Rotation unchecked.

o) Insert to 0 0 0, scale 1 1 1, and click OK.

p) Zoom All to view the inserted block.

q) Repeat Steps l to o until you have inserted at least one copy of each file name that you need.

r) Save the drawing as a 2000 version and exit.

s) Read the new AutoCAD file into Caddsman.

t) Save and exit. This creates a DAB for you to link the missing file to as in step 12 above.

STANDARD LAYERS & COLOURS

BUILDING FLOOR/LEVEL - LAYER OVERVIEW

LAYER*	CONTENT
0	Level ONE of the building, basement or the lowest level or floor
50	" TWO " " "
100	" THREE of the building
150	" FOUR " " "
200	" FIVE " " "
250	" SIX " " "
300	" SEVEN " " "
350	" EIGHT " " "
400	" NINE " " "
998	For insertion of Building grid lines
999	Reserved for the largest projected plan outline of the building.

STANDARD COLOUR NUMBERS - CADDSMAN

Note: These colours are reserved for base building drawing information and not to be used for occupancy planes.

0 Red	1 Green	2 Dark Blue	3 Yellow	4 Light Blue
5 Purple	6 Brown	7 Light Green	8 Salmon	9 White
10	11	12	13 Light Yellow	14

Caddsman has 255 colours and each can be adjusted at will. This is NOT to be done with out discussion of the CADM group. *Refer CADM Standard Colour Map two pages further on in this manual.*

STANDARD LIBRARIES – CADDSMAN

SYM	LABEL	FOLDER	SYM	LABEL	FOLDER
!	North Terrace	K:\north_terrace	?	F1-Martindale	K:\F1-Martindale
@	Waite	K:\waite	_	F2-Mundunney	K:\F2-Mundunney
#	Roseworthy	K:\roseworthy	(	F3-Moralana	K:\F3-Moralana
'	Thebarton	K:\thebarton	}	F4-Charlick	K:\F4-Charlick
%	Nth Adel	K:\north_adelaide	)	F5-Glenthorn	K:\F5-Glenthorn
^	Field Stns	K:\field_stations	*	NWC	K:\NWC
&	Misc	K:\miscellaneous	{	Non_Collegiate_Housing	K:\Non_Collegiate_Housing
+	System	C:\ Modeller 2004	>	Projects	K:\projects
-	Spare	K:\spare	|	Hospitals	K:\hospitals
<	Sports Gnds	K:\sports-grounds	=	Services	K:\north_terrace\services.dab

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* i.e. there will be 50 layers per floor

CADM BUILDING LEVEL – LAYER DETAILS

CADM STRUCTURE OF BUILDING FLOORS/LEVELS

Layer	CONTENTS	COLOUR	Col. No.	Style No.
0	External Walls	Red	(0)	
	Internal walls, solid & structural	Red	(0)	
	Internal partitions, doors, stairs, windows & projected lines (*arches dashed style 1*)	Green	(1)	
	Fixed fittings, and furniture, etc, (except lecture seating)	Light Blue	(4)	
	Adjoining building walls (only put in the exterior wall)	Light Yellow	(22)	
	Weight of ALL lines 0.1 - Direction arrows on stairs shall have a GREEN shaft with a 45° head in RED 500mm long.			
1	Text: room names, & functions, etc	Light Yellow	(13)	
	Room numbers, size & weight mil-std font, height 350, width 275, hor. space 0.05, weight 0.15	White	(9)	
	Reduced Levels (RL), height 500, width 400, hor. space 0.05, weight 0.25	Cyan	(4)	
2	Movable furniture, desks, seating, etc.	Light Green	(7)	
3	Floor finishes (text)	White	(9)	
4	Power outlets (GPO's DB's etc.) IP Nos. Text mil-std font, 250 height x 175 width, weight 0.25	Brown/Yellow	(6)/(3)	
	" " Cable Ducts - weight 0.7	Light Green	(7)	(14)
5	Light layout and switching IP Nos. Text mil-std font, 250 height x 175 width, weight 0.25	Purple	(5)/(3)	
	Lighting circuit wiring	Dark Blue	(2)	
6	Communications - Voice/Data Points, weight 0.25	Light Green	(7)	
	IP Nos. Text mil-std font, 250 height x 175 width, weight 0.15	Mid Blue	(17)	
7	HVAC (Heating, Ventilating & Air Conditioning)	D. Blue	(2)	
8	Water	Purple	(5)	
9	Gas	Green	(1)	
10	Sewer	Salmon	(8)	
11	Storm Water	D. Blue	(2)	
12	Extra gasses etc	Select Colour TBA		
13	Fire hydrant & hose reels. Wet (water) fire systems	Salmon	(8)	
	Sprinklers Col 7, Pipe work Col 2 & weight 0.25, Text 250 x 225 Col 2.	Light Green	(7)	
14	Thermal detectors	Salmon	(8)	
15	Computer Cabling - weight 0.7	Light Green	(7)	(14)
16	Security Systems – Access Controls	Light Green	(7)	
17	Ceiling	Cyan	(10)	
18	Building Construction notes & revisions	White	(9)	
19	Teaching Space Audit Planes	Various	66, 68, 71, 77, 85	
20	Usable Floor Area (UFA) planes – applied to each room Inside of wall surface (Ade Org Unit ID - AOU) Including vending machine lease areas - allow 500mm area in front of machines.	Purple-lines Buff	(5) (22) intensity 0.50	
21	Gross Floor Area plane & Gross Building Area plane & Nett Lettable	Blue (Tic)	(4)	
	Gross Floor & Building Area Perimeter lines	Purple	(5)	
22	Room Type Planes (intensity 0.4)	Various	21, 25, 26, 28, 29	
23	CTA's controller text (Occupants names used to be here)	White	(9)	
24	Exit & Emergency Lighting (Egress) & Lifts	Purple	(5)	
25	Compartmentation (Smoke/fire doors etc.) Fire Ratings (Pattern – Fire wall 100 or 300 USER scaled)	Orange	(21)	
26	WIPS, FIPS, MECP, Speakers etc. symbols	Brown	(6)	
27	Smoke Detectors	Salmon	(8)	
28	Thermal & Smoke detector. Circuiting, MCP, etc	Salmon	(8)	
29	Fire Dampers/Smoke Spill, duct heaters and fans	Orange	(21)	
30	Site Measured Spaces (is this still required?)	Yellow	(3)	
31	Extinguishers	Orange	(21)	
32	Maintenance Access, hatches, etc. (weight 0.5)	D. Blue	(2)	
34	Fume Cupboards (Text 350 x 275)	D. Blue	(2)	
35	External door numbers	Orange	(21)	
36	Hazardous Areas - Radiation Source, Chemical, Laser, Biological, etc. Text – 250h x 175w, wt 0.15	Yellow	(3)	
37	Cleaning Floor Area planes. Colour to suit cleaning standards	To suit	NA	
	Text mil-std font, 800 height x 600 width, weight 0.35	White	34	
38	Maintenance			
39	Lease identification	TBA	TBA	
40	Wall fill surface planes	Green	(1)	
42	Liquor Licensing – Areas covered by the Licences			
49	Registered Facilities – Incl.- Quarantine, Radiation & PC3 Areas – Colour Intensity 0.75 The Legend is in the +System library – Reg-Fac.dab – model Legend	Quar – 27, Rad – 25, PC3 - 23	Intensity 0.75	
998	Operator generated grid lines	White	(9)	
999	Largest projected outline plan	Red	(0)	

CADM STANDARD COLOUR MAP

■ 0	■ 17	☐ 34	■ 51
■ 1	■ 18	■ 35	■ 52
■ 2	■ 19	■ 36	■ 53
■ 3	■ 20	■ 37	■ 54
■ 4	■ 21	■ 38	■ 55
■ 5	■ 22	■ 39	■ 56
■ 6	■ 23	■ 40	■ 57
■ 7	■ 24	■ 41	■ 58
■ 8	■ 25	■ 42	☐ 59
☐ 9	■ 26	■ 43	■ 60
■ 10	■ 27	■ 44	■ 61
■ 11	■ 28	■ 45	■ 62
■ 12	■ 29	■ 46	■ 63
■ 13	■ 30	■ 47	
■ 14	■ 31	■ 48	
■ 15	■ 32	■ 49	
■ 16	■ 33	■ 50	☐ 214

CADM STRUCTURE OF SITE – SYMBOLS

Note: this is to be changed as we move to models for sites. This is a long-term exercise.
This page does NOT apply to NORTH TERRACE or THEBARTON CAMPUS sites. See later section
Note: North is to the TOP of the screen
              Scales are 1:1000 or 1:1m

LAYER	CONTENTS	COLOUR	NO
SITE-SUB			
30	Roads, Curbs, Major Paths	Yellow	35
	Adjoining Roads, Curbs, Major Paths	White	57
	Adjoining Buildings	Lilac	56
	Minor Paths Around Buildings	Mauve	43
31	Road Text	White	41
32	Buildings, Structures	Red	32
33	Building Text	White	41
34	Fences, Gates	Light Blue	36
35	Gardens, Dams, Sloping Banks, Retaining Walls	Green	33
36	Trees, FT	Light Green	39
		Text	40
37	Site Division Boundary	Blue	2
99	Building Plans	Grey	15
100	Building Zones	Blue	34

CADM STRUCTURE OF SERVICES – MODELS

Sub-note: Layer numbers in the form '1 12' indicate that North Terrace Campus Site layer is 112 and other campuses are 12.

LAYER	CONTENTS	COLOUR	NO
UGS			
0	Symbol (SITE-SUB)		
1 17	Underground Services Grid Reference	White	9
1 18	Stormwater	Dark Blue	2
1 19	Mains Water, Tanks	Magenta	5
1 20	Sewer	Salmon	8
1 21	Gas	Green	1
1 22	ETSA	Brown	6
1 23	Telecom, Computer	Green	1
1 25	Fire Services (Water)	Salmon	8
1 26	Sewer Neutraliser Pits	Salmon	8
1 27	Irrigation	Green	1
	Irrigation (Electrical & Communication cabling)	White	9
SEC-LIGHT			
0	Symbol (SITE-SUB)		
1 15	Security Lighting	Light Blue	4
FIRE			
0	Symbol (SITE-SUB)		
1 24	Fire Services (Block Plan)	Salmon	8

CADM STRUCTURE OF MAPPING GRID MODELS

LAYER	CONTENTS	COLOUR	NO
0	Boundary	Mid Blue	13
1	Leader	Olive	29
2	Text	White	9

Site models and symbols are currently documented using AMG coordinates. It is anticipated to migrate to the newer Australian mapping coordinates. GDA 94 (Geocentric Datum of Australia) and the MGA 94 (The Mapping grid of Australia) some time in the future.

CADM STRUCTURE OF SITE – MODELS

Sub-note: Layer numbers in the form '1 12' indicate that North Terrace Campus Site layer is 112 and other campuses are 12.

LAYER	CONTENTS	COLOUR	NO
BOUNDARIES			
0	Symbol (SITE-SUB)		
0	Roads and Division Boundaries	Yellow	3
1	Gross Planes for Owned Land	Light Blue	4
2	Lot Area Planes for Owned Land	Salmon	8
3	Property Boundary Lines	Green	1
4	Lot Numbers Owned and Leased Other	White	9
		Purple	5
5	Lot Area Planes Leased Areas	Light Green	7
6	Hundred Nos.	Salmon	8
7	Easements	Salmon	8
10	Fences - Main Property Boundary	Red	0
11	Fences – Internal	Light Blue	4
15	Paddock Numbers	Light Yellow	13
16	Paddock Rotation No.	Light Yellow	13
17	Neighbour Name & Contact Nos.	Light Brown	14
20	Water Mains	Magenta	5
21	Water Troughs & Valves	Blue	2
30	Soil Types	T.B.A.	
40	Vegetation – Native	Light Green	7
41	Vegetation - Introduced	Light Green	7
42	Vegetation - Noxious	Light Green	7
CARPARK			
0	Symbol (SITE-SUB)		
1 11	Car parking Lines	Magenta	5
	Car parking Numbers	White	9
1 12	Traffic Flow Arrows	Salmon	8
1 13	Handicapped Access	Light Green	7
1 14	Road Signs and Text	Light Green	7
1 15	Car parking Permit Layout		
1 16	Road Surfaces	Salmon	8
	Off Road Surfaces - paving, grass etc	Misc	
BLDG-INDEX			
1	North Terrace Building Names for SITE PLAN	Red	0
MISC			
0	Symbols (SITE-SUB)		
40	Building Reference Grid	Red, White, Green	0,1,9
41	Waste Management	Blue	50
42	Land Area Planes	Orange	54
43	Contours, Spot Heights, Stations	White	58
44	Building Area Planes	Blue, Grey	50,51
45	Main Entrances to Buildings	Mustard, Cream	53,54
46	Monuments & Art Work	Dark Blue	2

CADM STRUCTURE OF NORTH TERRACE SITE MODEL – TO BE APPLIED TO ALL SITES

Note: This model is 3D, i.e. a survey with elevation. North is to the TOP of the screen.
Scales are 1:1000 or 1:1m. Colour indicates general layers for site. These are to be left ON when saving the site

LAYER	LAYER NAME	COLOUR NAME	COLOUR No.	COMMENTS
0	Vacant			
1	AMG grid points	l-green	7	
2	Pm	red	32	
3	Pegs	brown	6	
4	Property boundaries (lines/Easements)	green (NWC) BLUE/WHITE	1/ (NWC) 49/75	
5	Ct/folio nos. and lot nos.	white	9	
6	Contours minor	dk-yellow	53	
7	Contours major	magenta	5	
8	Contour text	magenta	5	
9	**Neighbouring sites**			
	buildings	mauve	56	
	building text	mauve	56	
	levels (buildings)	white	57	
	pavers (text/levels)	white	58	
	overhangs	white (Style 1)	55	
	fences	white	54	
	text (undetermined)	white	53	
	features	l-red	52	
	contoured surfaces	grey	51	
	text	white	59	
	trees		64	
	plaques		65	
10	**Natural surface (lines)**	green	1	
11	Natural surface (points & text)	green	1	
12	**Natural** surface triangulation			
13	NTH.TCE. ROAD LINES, MARKINGS, LEVELS	WHITE	56/57/58/59/65	
14	**Water (lines)**	dk-blue	2	
15	Water (pts & text)			
16	**Trees (pts & text)**	green	1	
17	Spare			
18	Road (wt pts & text)	yellow/white	3/9	
19	**Road (lines)**	dk-yellow	28	
	road markings (lines)	white	59	
	road levels	white	62	
	road kerb levels	white	61	
	road kerb levels	white	60	
20	Road (text)			
21	**Concrete (lines)**	l-grey	15	
22	concrete (pts & text)	l-grey	15	
23	**pavers (lines)**	dk-yellow	35	
24	pavers (Pts & text)	yellow	3	
25	**fences (rails & gates)**	l-blue	36	
26	fences (pts & text)	white	9	
27	**wall (lines)**	red	0	
28	wall (points & text)	white	9	
29	spare			
30	**features (lines)**	dk-blue	27	
31	features (points & text)	dk-blue	79	
32	spare			
33	**bld. (lines) and shade sails**	red	32	
34	Bld (points, text, FFL.)	red/white	32/9	
	(Levels, sills, doors, etc)	mauve	56	
35	**bld names**	white	41	
36	bld surface	red	32	
37	stormwater (lines)	dk-blue	2	
38	stormwater (points & text)	dk-blue	2	
39	mains water (lines)	green	1	
40	mains water (points & text)	orange		
41	fire main (lines)	pink	11	
42	fire main (pts & text)	pink	11	
43	sewer (lines)	pink	11	

44	sewer (pts & text)	pink	11	
45	electrical (Lines)	salmon	8	
46	electrical (points & text)	salmon	8	
47	sec lighting (lines)	l-blue	4	
48	sec lighting (pts & text)	l-blue	4	
49	gas (lines)	green	1	
50	gas (pts & text)	green	1	
51	communication (lines)	green	1	
52	communication (pts & text)	green	1	
53	signage	l-green	7	
54	signage (pts & text)	l-green/white	7/9	
55	waste management			
56	waste management (pts & text)	l-blue	4	
57	spare			
58	unknown services	l-grey	15	
59	Gen. purpose (lines)	white	9	
60	Gen. purpose (pts & text)	white	9	
61	furniture	dk-blue	2	
62	furniture	dk-blue/white	2/9	
63	Vines & Surrounds (Nwc)	LIGHT GREEN	39	
64	Creek (Nwc)	LIGHT BLUE / white	50/60	
65				
66				
67				
68				
69				
70	tree legend and grid–OLD INFO (THEBARTON)		8,40	
71	Carparking Lines (THEBARTON)	magenta	5	
	Carparking numbers (THEBARTON)	WHITE	9	
72	traffic flow arrows	salmon	8	
73	handicapped access	light green	7	
74	road signs and text	light green	7	
75	Carparking permit layout			
76	road surfaces	BLUE	18	
	off road surfaces – paving grass etc	misc	VARIOUS	
77				
78				
79				
80				
81	Security Cameras	Light Green	7	
82	Security Camera text	White	9	
83				
84				
85				
86				
87				
88				
89				
90	temporary frontage-Mitchell to Bonython			
91				
92				
93				
94				
95				
96				
97				
98				
99	pattern layer	light grey	15	
100	site grid (50m x 50m)	white/yellow	9/3	
101				
102				
103				
104				
105				
106				
107				
108				
109				
110				
111	Carparking Lines/Numbers	VARIOUS	2/5/9/20/27	

112	Carparking Traffic Arrows/Handicapped Access	SALMON	8	
113	Carparking Permit Layout	VARIOUS	3/4/5/7/9/16	
114	Bicycle parking			
115	security lighting	l-blue	4	
116	**Tree Maintenance Numbers And Boundaries**	MID-BLUE / WHITE	59 / 49	
117	underground services grid reference underground services grid TEXT	White, AQUA	9 42	
118	**stormwater**	dk-blue	2	
119	**mains water, tanks**	magenta	5	
120	**sewer**	salmon	8	
121	**gas**	green	1	
122	**etsa**	brown	6	
123	**telecom, computer**	green	1	
124	**fire services SITE – (ESP)**	salmon	8	
125	**fire services (water)**	salmon	8	
126	**sewer neutraliser pits**	salmon	8	
127	**irrigation**	green	1	
	irrigation (electrical & communication cabling)	white	9	
128	**Information Common To 118-127**	LIGHT GREEN	7	
129	**Oil**	LIGHT GREEN	7	
130	**Compressed Air**	BROWN	6	
131				
132				
133				
134				
135				
136	asset identifiers - stormwater		21	
137	street catchment	lilac	24	
138	unknown services	sand	22	
139				
140	site grid (33.33m x 33.33m)	white/green/red	9/1/0	
141				
142				
143				
144				
145				
146				
147				
148				
149				
150	**"Boundaries" Model Layer Structure**			
151	Property Boundary Points		-	
152	Property Boundary Points - Text		-	
153	Property Boundaries - External		46	
154	Property Boundaries – External – Text (Boundary Lengths, Angles)		71	
155	Property Boundaries - Internal		70	
156	Property Boundaries – Internal – Text (Boundary Lengths, Angles)		63	
157	Property Boundaries – Internal – Dashed		70	
158	Easements		65	
159	Easements – Text (Lengths, Angles)		63	
160	Certificate Of Title V & F (Adel Uni Allotments)		63	
161	Vacant		-	
162	Dp & Df Numbers		63	
163	Hundreds Numbers		64,63	
164	Allotment Numbers		63	
165	Section And Portion Numbers		-	
166	Title Surface - 1		84	
167	Title Surface – 2 – Non Commercial		39,46,84	
168	Title Surface – 3 – Individual Allotments		58	
169	Street Names		68	
170	Street Property Numbers		83	
171	Vacant		-	
172	Property Boundaries - Adjoining Owners		70	
173	Property Boundaries - Adjoining Owners – Text (Boundary Lengths, Angles)		-	
174	Property Boundaries - Adjoining Owners – Certificate Of Title		37	

	Vol. & Folio Nos.			
175	Property Boundaries - Adjoining Owners – Ownership Details		-	
176	Property Boundaries - Fences		-	
177	Area Numbers		-	
178	Riverbank & Centreline		71,63	
179	Centreline Of Streets		37	
180	Vacant			
181	Vacant			
182	Vacant			
183				
184				
185				
186				
187				
188				
189				
190	Site Grid			
191				
192				
193				
194				
195				
196				
197				
198				
199				
200	**SURFACES**	OLIVE, BR, L/GREEN, MAGENTA	3, 5, 6, 7	
201	LLSD hoarding			
202	Brick paving surfaces			
203				
204				
205				
206				
207				
208				
209				
210				
211				
212				
213				
214				
215				
216				
217				
218	**stormwater (site)**	dk-blue	2	
219	Water (SITE)	purple/white	5/9	
220				
221	**gas (site)**	green	1	
222	ETSA (site)	brown	6	
223				
224	**fire services (site) - ESP**	salmon	8	
225				
226				
227	**irrigation**	green	1	
	irrigation (electrical & communication cabling)	white	9	
228				
229				
230				
231				
232				
233				
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236				
237				
238				
239				

240				
241				
242				
243				
244				
245				
246				
247				
248				
249				
250				
251	Communication (site)	Green	1	
252				
253	Signage	Green	7	
254				
255				
256				
257				
258				
259				
260				
261				
262				
263				
264				
265				
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293				
294				
295				
296				
297				
298				
299				
300	Buildings (verandahs etc)	brown	56	building lines
301	points and text	white	9	
302	Survey Grid	white, green, red	9,1,0	survey set-out grid
303	points and text	white	9	
304	AMG Grid Points	light green	7	
305	Pegs	brown	6	
306	Site Grid (50mx50m)	white, yellow	9,3	services grid
307	points and text	white	9	
308	Site Grid (33.33mx33.33m)	white, green, red	9,1,0	building grid
309	points and text	white	9	

310	Barrier	blue	52	
311	points and text	white	59	
312	Fences	light pink	36	
313	points and text	white	9	
314	RRWall	red	0	retaining walls
315	points and text	white	9	
316				
317				
318	Stormwater UG	blue	2	
319	Mains_Water UG	pink	5	
320	Sewer UG	salmon	8	
321	Gas UG	green	1	
322	Electrical UG	brown	6	
323	Communications (Intercom etc) UG	green	1	
324	Fire_Services UG	salmon	8	
325	Fuel UG	light green	7	This covers all types of fuel (oil, petrol, Diesel)
326	Irrigation UG	green	1	
327	Unknown Services UG	yellow	3	services not identified
328	Cable Marker UG	cyan	4	
329				
330	Drain	light pink	24	
331	points and text	white	9	
332	Waterways / wells	blue	2	
333	points and text	white	9	
334	Waste	cyan	4	
335	points and text	white	9	
336	SEP	blue	27	side entry pits
337	points and text	white	9	
338				
339				
340	Concrete	light grey	15	
341	points and text	light grey	15	
342	Roads/Driveway	dark grey	19	
343	points and text	white	9	
344	Line marking	yellow, white	53, 59	All linemarking
345	points and text	white	9	
346	Paving/Footpath	light cyan	10	
347	points and text	yellow	3	
348	Kerb/Water Table	blue	2	
349	points and text	white	9	
350	Nat_Surf	brown	6	
351	points and text	white	9	
352	Grass	light green	7	
353	points and text	white	9	
354	Vegetation	green	1	
355	points and text	wh	9	
356	Building Surface	light green	32	
357	points and text	white	9	
358	Carpark/Arrows	salmon	8	carparking lines, traffic direction arrows, disabled access
359	Permit Layout	various	3, 4, 5, 7, 9, 16	all permit information
360	Features	blue	27	physical features not classified elsewhere, e.g. statues, fountains, furniture
361	points and text	white	9	
362	Signage	light green	7	
363	points and text	light green	7	
364	Doors	light cyan	10	
365	points and text	white	9	
366	Windows	light pink	11	
367	points and text	white	9	
368	Lifts - Site	dark pink	16	
369	points and text	white	9	
370	Security_Cam	red	0	
371	points and text	red	0	

372	Lighting	cyan	4	
373	points and text	white	9	
374				
375				
376				
377				
378				
379				
380	Postal Service	salmon	8	
381	points and text	salmon	8	
382	Railway	light grey	15	
383	points and text	light grey	15	
384	Rubbish Bins	light green	7	
385	points and text	white	9	
386	TS Audit Route Surfaces	orange, light yellow, light green, light blue, pink	66, 68, 71, 77, 85	
387	points and text	white	9	
388				
389				
390	Undefined	light brown	22	Points/items requiring definition
391	points and text	light brown	22	
392				
393				
394				
395				
396				
397				
398				
399				
400	Contour - Major	pink	5	
401	points and text	pink	5	
402	Contour - Minor	yellow	53	
403	points and text	yellow	53	
404	Easement	orange	21	
405	points and text	orange	21	
406	Stairs	light green	57	
407	points and text	light green	57	
408	Spot_Heights 2D	blue	2	
409	points and text	blue	2	
410	Survey	light green	32	
411	points and text	light green	32	
412	Spot Heights 3D	green	1	
413	points and text	green	1	
414				
415	Surfaces – Maintenance Profiles	Olive,Br,L/Grn,Mag	3,5,6,7	Areas required for of cleaning and responsibility of sites
416				
417				
418				
419	Mains_Water AG	pink	5	
420	Sewer AG	salmon	8	
421	Gas AG	green	1	
422	Electrical AG	brown	6	
423	Communications (Intercom etc) AG	green	1	
424	Fire_Services AG	salmon	8	
425	Fuel AG	light green	7	
426	Irrigation AG	green	1	
427	Unknown Services AG	yellow	3	
428	Cable Marker AG	cyan	4	
429				
430	Neighbouring Sites	brown	56	buildings
		brown	56	building text

		light green	57	levels (buildings)
		salmon	58	pavers (text/levels)
		pink	55	overhangs
		cyan	54	fences
		yellow	53	text (undetermined)
		blue	52	features
		green	51	contoured surfaces
		white	59	text
		light green	51	trees
		yellow	53	plaques
431	Patterns	light grey / to suit	15	
432				
433				
434				
435				
436				
437				
438				
439				
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442				
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444				
445				
446				
447				
448				
449				
450	Boundaries' Model Layer Structure			
451	Property Boundary Points			
452	Property Boundary Points - Text			
453	Property Boundaries - External		46	
454	Property Boundaries - External - Text (Boundary Lengths, Angles)		71	
455	Property Boundaries - Internal		70	
456	Property Boundaries - Internal - Text (Boundary Lengths, Angles)		63	
457	Property Boundaries - Internal - Dashed		70	
458	Easements		65	
459	Easements - Text (Lengths, Angles)		63	
460	Certivicate Of Title V & F (Adel Uni Allotments)		63	
461				
462	Dp & Df Numbers		63	
463	Hundreds Numbers		64,63	
464	Allotment Numbers		63	
465	Section & Portion Numbers			
466	Title Surface - 1		84	
467	Title Surface - 2 - Non Commercial		39,46,84	
468	Title Surface - 3 - Individual Allotments		58	
469	Street Names		68	
470	Street Property Numbers		83	
471				
472	Property Boundaries - Adjoining Owners		70	
473	Property Boundaries - Adjoining Owners - Text (Boundary Lengths, Angles)			

474	Property Boundaries - Adjoining Owners - Certificate Of Title Vol. & Folio Nos.		37	
475	Property Boundaries - Adjoining Owners - Ownership Details			
476	Property Boundaries - Fences			
477	Area Numbers			
478	Riverbank Centreline		71,63	
479	Centerline Of Streets		37	
480				
481				
482				
483				
484				
485				
486				
487				
488				
489				
490	Site Grid			
491				
492				
493				
494				
495				
496				
497				
498				
499				

DRAWING IDENTIFICATION NOMENCLATURE

☞ Drawing Number convention

Campus	-	Service	-	Bld#	-	No (in series)	-	Revision
N	-	A	-	D15	-	118	-	A

☞ Campus Identifiers

SYM	LABEL	SYM	LABEL
N	North Terrace	F1	F1-Martindale
W	Waite	F2	F2-Mundunney
R	Roseworthy	F3	F3-Moralana
T	Thebarton	F4	F4-Charlick
NA	Nth Adel	F5	F5-Glenthorn
FS	Field Stns	NWC	National Wine Centre
MISC	Misc	NCH	Non_Collegiate_Housing
SG	Sports Gnds	HOSP	Hospitals

☞ Abbreviations for defined services, or disciplines, used for document numbers

Abbrv.	Service or Discipline	Abbrv.	Service or Discipline
AC	ACCESS CONTROL	L	LIFTS
A	ARCHITECTURAL	LT	LAND TITLE
C	COMMUNICATIONS	M	MECHANICAL
CVL	CIVIL SITEWORKS	O	OCCUPANCY
E	ELECTRICAL	P	PLUMBING
ESP	ESSENTIAL SAFETY PROVISIONS	RT	ROOM TYPE
F	FIRE	S	STRUCTURAL
FC	FUME CUPBOARDS	TS	TEACHING SPACE AUDIT
IRR	IRRIGATION	UGS	UNDERGROUND SERVICES

☞ DRAWING REVISION MAINTENANCE

This is part of the Title Block and the Drawing Number specifically and works in conjunction with Dataviewer. Read and understand the application and control of revision identification for drawings in conjunction with the process of Dataviewer and revision indexing.

CADM DRAWING INDEX GUIDE

Refer to – Dataviewer section for full detail on this facility

Purpose

To manage the revisions to drawings and provide WEB access to the images for ALL CADM maintained documents listed below and other one off unique issues:

- Access Control
- Architectural
- Cleaning
- Communications
- Electrical
- Essential Safety Provisions (ESP) & Fire
- Fire Block Plans
- Fume Cupboards

- Irrigation
- Land Titles
- Mechanical
- Occupancy
- Plumbing
- Underground Services (UGS)
- Other

On creation of new drawings these are to be plotted to file and placed in the watch folders on the Dataviewer server. These will then be imported in to Dataviewer and indexed.

Check that the drawing has gone in and indexed correctly with all relevant meta-data attached for searching and retrieval.

Note: Dataviewer is also used to manage all scanned hardcopy and consultant provided digital documents in addition to the CADM documents listed above.

For information on access *to Dataviewer please contact*

The University of Adelaide, Space Planning, UniSpace :-
Ph 8313 0352   or   Email unispace@adelaide.edu.au

ONE OFF DIGITAL DRAWINGS

Procedure for their Issue

Hand annotate on the printed output OR electronically on the PDF that this information is produced as a unique representation and that an exact replica is NOT always possible.

Write the following information, 'what has been produced', the date, by whom, the DAB name, symbol and layers used, on the product sent to the user so if another request is received for the same product it is possible to closely replicate the original.

NOTE: One off drawings are NOT recorded on the systems and are therefore NOT maintained.

FR is looking at a methodology to allow some form of retention for future reference, possibly using Dataviewer to hold a copy of the document produced.

CHECK LIST FOR DRAWING CHANGES

Instructions

1. Update **architectural** modifications i.e. walls, doors, windows, fixed furniture etc
2. Update textural changes, i.e. room usage, room numbering etc
3. Update floor and occupancy plans
4. Update gross floor area (GFA) and gross building area GBA) planes
5. Update title block
6. Print to file (PLT and PDF) all documents required to Dataviewer watch folder and request them to be indexed.
7. All prints are to be identified for electronic distribution from Dataviewer as required.
8. Update Site plan / Building name databases and drawings where necessary
9. Notify Manager Facilities Records of Site plan changes. i.e. new buildings, demolished buildings, site work, change of building names etc.

Repeat this process for all other drawing types as required.

Policy Note: ESP & FBP Drawings When updating Architectural information within and around buildings the FB Plans need to be reviewed in relationship to those building changes.

Any possible discrepancies are required to be brought to the attention of FR Management and an appropriate response directed back to the provider of the amended information.

A response time frame should be issued to complete the task and update all FBP information as required for that building and for the adjoining site.

Refer to the detailed sections for more complete details and explanation per service type.

CHECKLIST – DEMOLISHED/SOLD BUILDING

CADM System

1. On advice that ALL corrections to Architectural, Services & Site data bases are done, e.g. services isolation - *Double check that the real situation is recorded.*
2. Remove the *.DBK file for the building or create a new one if only partially demolished.
3. Advise ALL hardcopy plan holders of the building removal.

Note: Refer to Checklist – Demolished Building. This is only part of the process; refer to INVENTORY and SAM section later in this manual for the complete process description.

CONTACTS FOR INFORMATION TO DRAWINGS – (ALL TYPES)

All contacts are listed here to assist in chasing relevant information for the maintenance of drawings and documents related to Facilities Records requirements. It is the responsibility of the contact to maintain any local hardcopy of the plans they require via Dataviewer & local printing facilities.

☞ **CONTACTS FOR INFORMATION AND AMENDMENTS**

POSITION	ADDRESS	CONTACT	PHONE
Supervisor Maintenance Service Centre	Oliphant, G17	(Kinghorne A)	34008
ITS Network Specialist	9 Gawler Place, Level 9	(Muller H)	35590
ITS Co-ordinator	9 Gawler Place, Level 9	(O'Daly I)	35984
Locksmith	Security, Hughes Plaza Office	(Botterill P)	35878
Manager Security	Hughes Plaza Office	(Joseph M)	34034
Manager OH & S	115 Grenfell St., 13th Flr	(TBA)	
COMMERCIAL			
Building Managers – Colliers	Direct service call 1300 550 106	(Vella, David)	83038004
ROSEWORTHY			
Site Co-ordinator	Main Building (D1)	(Beck J)	37848
Campus Manager	Main Building (D1)	(Forwood D)	37816
THEBARTON			
Facilities Manager	Building 29 – Gaskell (Evans & Ayers)	(Cossich, Eric)	0407008961
WAITE			
Campus Manager	Hartley House (10b)	(Brokenshire A)	37217
NATIONAL WINE CENTRE			
Events Sales Coordinator	George Murray	(Strong-law S)	33077
FARMING			
Discipline Manager - Ag&Wine	Waite Building (Charlick Exper Stn)	(Harris D)	
Martindale Holdings P/L	Mortlock (Martindale) - Manager (Moralana Station) (Lake Torrens) (Munduney Station) (Glenthorne Farm)	(Bidstrup I)	0407979797
FIELD STATIONS			
School Manager	Physics & Maths – Physics Bldg	(Maelzer C)	35113
Administrator Officer	Environmental Biology-Benham	(Brown C)	34695
HOSPITALS			
Exec Officer Health Sciences	Level 1 Medical school North	(Mathews S)	33859
SPORTS GROUNDS			
Manager	Parks & Grounds – Oliphant Bldg	(Mylius S)	35879
Executive Office	Sports Association – Lady Symon Bldg	(Chester G)	33015
THEATRE SEATING PLAN RECIPIENTS			
MSC Supervisor	Oliphant, (G17)	(Kinghorne A)	34008
Security Manager	Security- Hughes Plaza Office	(Joseph M)	34034
Facilities Bookings	Union House-George Murray	(Maddigan S)	35151
Timetable Co-ordinator	Wills (L8), Rm 640	(Rochler F)	35814
SCOTT & UNION HALLS ONLY			
Theatre Co-ordinator	Union Hall/Scott Theatre	(Dennie J)	33620
ESSENTIAL SAFETY PROVISIONS			
MSC Supervisor			
Tyco Inc/Wormalds – W,T & R	abattifuco@tyciinc.com	(A Battifuco)	0402838976
Tyco Inc/Wormalds – Nth Tce	abattifuco@tyciinc.com	(D O'Donnell) (K Mills)	0421054041
TEACHING SPACES			
Timetable Co-ordinator	Wills (L8), Rm 640	(Rochler F)	35814
Facilities Bookings	Union House-George Murray	(Maddigan S)	35151

PROCEDURE FOR UPDATING

ELECTRICAL CADM DRAWINGS

☞ LIGHT, POWER AND COMMUNICATION

Alterations to drawings are provided by the electrical maintenance contractor via the MSC, Information Technology Service (ITS) in the form of marked up drawings or via 'completed' project files, forwarded to the FR Manager. In some cases the Electrical and Communication drawings have been updated before the project files arrive, this is rare. This is not the case generally when the work has been done by outside contractors. It may be necessary to request the Project Officer obtain the record drawing "as installed", showing locations complete with Circuit No's etc. for altered areas, from the contractor. For the appropriate layering refer to the "CADM Structure of Building Floors/Levels" table. Update the relevant floor/level layout, and drawing title. Advise of the updated drawing availability needs to be sent to the Information Technology and Electrical maintenance area respectively.

☞ HARD COPY DRAWINGS

These are NOT maintained as all issue is via Dataviewer.

The Electrical (Lighting and Power) and Communication drawings are accessed via Dataviewer and any hardcopy is produced on their local printing facilities.

Electrical update advice is sent to:
- Spotless PF Pty Ltd via Dataviewer, AND
- The Maintenance Service Centre
- Paul Jenkins – Electrical Contract Management, and
- Attn. Craig Ridley, Team Leader, Spotless PF Pty Ltd.

Communication updates advise is sent to:
- Client Liaison Co-ordinator, Information Technology, Level 7, 10 Pulteney Street
- Attn. TBA

☞ FIRE BLOCK DRAWINGS

POLICY

When updating Architectural information within and around buildings the FB Plans need to be reviewed in relationship to those building changes.

Any possible discrepancies are required to be brought to the attention of FR Management and an appropriate response directed back to the provider of the amended information.

A response time frame should be issued to complete the task and update all FBP information as required for that building and for the adjoining site.

These usually consist of detector layouts or early warning intercom systems (EWIS) layouts. The Fire Brigade and Fire contractors use the drawings themselves for reference. Generally these drawings are kept in the Fire Indicator Panel (FIP) in the buildings and maintenance of them is the responsibility of the contracted service provider.

To produce a block plan from scratch it is necessary to:
- Show locations of detectors etc.
- Show relevant circuiting.

The contracted service provider should supply the above information. It shouldn't be necessary to chase information yourself.

It is also necessary to compile:
- A Detector Schedule - stating number and type of circuit, where it is located and the reference to the drawing it's shown on - See Front Office staff for typing
- A legend of symbols - stored as MODEL:FBP-LEGEND in system "+fire_sfgs"
- A site plan indicating position of the Fire Indicator Panel (FIP) and the Fire Alarm Bell (FAB).
- A cover sheet stating that the drawings are for Brigade use only.

All the above drawings are to be produced at A3 size.

NOTE: For detailed instructions refer to; S:\Services_Resources\Property_Services\Shared\FacRecords\CADM Manual\Fireblockdrawings\FIRE BLOCK PLANS-070904.doc.

Creating FBP Drawings

+ systems/drngsheets.dab

Models   FBP-cover
                    FBP-Legend
                    FBP-Title
Drawings

Open the each model and save as same model name in the database name of the building.

FBP-cover

set up as a view which can be inserted into a drawing at 0,0.
Layer 0
Colour assignment

FBP-Legend

set up as a view which can be inserted into a drawing at 0,0
Layer 0
Text will need to be edited relating to the floors and the building as required.

FBP-Title

set up as a view which can be inserted into a drawing at 0,0
Layer 0   drawing sheet
Layer 1   Sheet 1 Information – (coversheet description)
Layer 2   Sheet 2 Information – (legend /Zone description)
Layer 3   Building Name identification – (to be edited per each building)

FBP-Drawing

Open drawing in+ systems/drngsheets.dab
FBP-XX-01
FBP-XX-02
Save as drawing in Building Model as
FBP-(building Number)-01 & 02
Insert - Cover, legend, title from Building model with new updated details.

Site View

K: North Terrace/site Model FBP-site
Insert site view at 200 100 SCALE 1.1
View layers group set – SITE-FBP-BLDGS

Refer to existing Block Plan sets for confirmation. The necessary plotting details are contained within the Essential Safety Provisions Drawings settings.

To contact Wormald, via Maintenance Service Centre (MSC) – 34008

Send A3 copies to Wormald. E. g. 4 copies, 2 coloured.

Place *the original in the A3 Fire Space Plan Folder* held by Facilities Records.

☞ IRRIGATION DRAWINGS

Drawings provide information on irrigation systems, cabling details for such and fibre optic cabling.

All alterations on site will be recorded by Parks & Grounds (P&G) and forwarded to FR for digital documentation within the CADM system.

Return signed off mark-ups with updated drawing via MCS to P&G for work closure.

To contact North Terrace P&G Contract Manager (Steve Mylius) - Ext. 35879

Please Note: The information on the drawings is maintained by the contracted service provider and the relevant Property Services contract manager.

☞ CLEANING DRAWINGS

Drawings provide information on the areas to be cleaned in the service providers contract and the type of surface to be cleaned.

All alterations will be advised by the Property Services Cleaning Contract Manager and forwarded to FR for digital documentation within the CADM system.

Return signed off mark-ups with updated drawing via MCS to Cleaning for work closure

Cleaning Contract Manager - Facility Assist – Patricia Vaitierus 35332

Please Note: The accuracy information on the drawings is maintained by the contracted service provider and the relevant Property Services contract manager.

STANDARD CLEANING DRAWING LEGEND

CLEANING FLOOR SURFACES

COL	INT		
None			EXCLUSIONS
26	0.3		CARPET
28	0.3		CONCRETE
27	0.3		TILES
30	0.3		VINYL
137	0.3		RUBBER
29	0.1		WOODEN

☞ INSTRUCTIONS

Floor plan/symbol manipulation :

- To achieve this insert new surface planes by point on the Floor Finishes Layer (37). Keep it neat but simple. Use constrain to snap 90 degrees at a time.
- Area m2 text : Font – Mil Std, colour 34, height 800, width 600 weight 0.35
- Run file/pack and check prior to returning the files to FR
- TAG the planes IGNORE using the SPINV program.
- Check for untagged planes
- EXPORT the building
- Check report for errors
- Correct as necessary

Drawing manipulation :

- Set layer 20 off, 37 on, Pen 13 to 10
- Insert the standard legend from +system Cleaning.dab onto the drawing
- Ready to print

☞ LIQUOR LICENSING DRAWINGS

Drawings provide information on the areas to be covered by the Liquor Licence Act
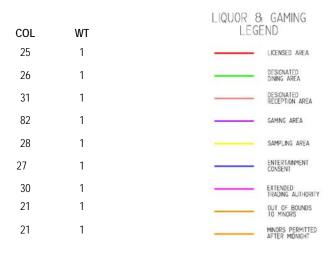
All alterations will be advised by the Property Services and forwarded to FR for digital documentation within the CADM system.

Return signed off mark-ups with updated drawing to the Manager Space Planning for work closure

Manager Space Planning – Harald Baulis on Phone 37589

Please Note: The accuracy information on the drawings is maintained by the contracted service provider and the relevant Property Services contract manager.

STANDARD LIQUOR LICENSING DRAWING LEGEND

LIQUOR & GAMING
LEGEND

COL	WT		
25	1	——	LICENSED AREA
26	1	——	DESIGNATED DINING AREA
31	1	——	DESIGNATED RECEPTION AREA
82	1	——	GAMING AREA
28	1	——	SAMPLING AREA
27	1	——	ENTERTAINMENT CONSENT
30	1	——	EXTENDED TRADING AUTHORITY
21	1	——	OUT OF BOUNDS TO MINORS
21	1	——	MINORS PERMITTED AFTER MIDNIGHT

"THIS PLAN MUST BE KEPT ON THE PREMISES
AT ALL TIMES AND BE PRODUCED TO AN
AUTHORISED OFFICER UPON REQUEST

(NEED NOT BE DISPLAYED)

☞ **INSTRUCTIONS**

Areas & Site plan/symbol manipulation:

- To achieve this insert new surface planes by point on the Liquor License Layer (42). Keep it neat but simple. Use constrain to snap 90 degrees at a time.
- Text : Font – Mil Std, colour 9, height 350, width 275 weight 0.25
- Run file/pack and check prior to returning the files to FR

Drawing manipulation :

- Set layer 20 off, 42 on, Pen 13 to 10
- Insert the standard legend from +system LiqLic.dab onto the drawing and Scaled to 200
- Ready to print

☞ **SECURITY LIGHTING DRAWINGS**

Advise of alterations to drawings usually provided via the MSC. Updates are done in the database !SERVICES.DAB model:SEC-LIGHT. (Refer to the CADM Structure of Services – Models section for layering and colour details.

When the details have been altered the title model has to be updated. Plot the drawings to file for indexing in to Dataviewer. Advice is to be sent to the MSC.

☞ **CHECKLIST**

- Input information in the MODEL for North Terrace.
- Amend TITLE Model.
- Plot off drawing hard copy AND electronic file for Dataviewer.
- Send A4 copy to MSC (Attn. Electrical Maintenance Contractor) with original mark-up for work closure

Update advice is sent to:

Spotless PF Pty Ltd via Dataviewer AND the Maintenance Service Centre.

SECURITY ACCESS PLANS

1. Plans with old data
    Within access control plan delete all existing access control sub figures and related text

    Access control plan layer = 16

2. Insert new symbols table from +system /Acc-Cont.dab /AC-CON-LEG
    a. Unpack AC-CON-LEG legend and distribute symbols as per supplied PDF drawings
    b. The supplied PDF drawings use 9 symbols these need to be converted into 15 symbols

PDF symbols	
	This symbol can contain Temp/alm, Duress/alm, ExFan, Vent Fan ,Fire Alarm ,EWIS Alarm, Reed, Disabled Toilet DURESS, Disable Toilet Assist
	DURESS
	This symbol can contain OP
	This symbol can contain CR,OP,DF,DH, Mag
	P/B
	B/G
	camera
	PIR Room Intruder Alarm
	P/R
Caddsman symbols	
	P = Processor
	= Code pad
	CR = Card reader
	Reed = Input
	OP = output
	P/R = Proxy
	Temp/alm = Alarm Duress/alm = Alarm Fire Alarm = Alarm EWIS Alarm = Alarm

DRAWING—PROCEDURE FOR UPDATING

	DF = Door frame
	Duress/alm = Duress alarm DURESS = Duress alarm
	Disable toilet assist = Disable Toilet Assist Disable toilet assist = Disabled Toilet DURESS
	PIR = Pir detector Room Intruder Alarm = Pir detector
	B/G = Break glass
	P/B = Push button DH = door handle
	ExFan = Fan Vent Fan = Fan
	Camera

Caddsman Font Text Change

	Layer	Colour	Style	Weight
	166	128	0	0.100

Font	MIL-STD	Haloed	No
Height	350.0000	Width	275.0000
Angle	-90.0000	Slant	0.0000
Horizontal spacing	0.0500	Vertical spacing	0.1500
Horizontal justification	Left	Vertical justification	Bottom
Boxed	Box	Underline	No
Overline	No	Plot size	Scaled
Drawing	No	Fixed circle diameter	0.0000
Change case	No-Change	Change CPL	No-Change
Plotting	Yes		

Copy   True Type Font   OK

c. Use text settings from table above. note text and leader to be colour 128 and weight 0.100
d. Insert text from PDF drawing use cut and paste and place text with text box as close as possible to symbol with a leader. If the area is congested with other information place text external to building with a leader to the symbol.
e. The imported text needs the building name removed so remaining text has IP number, room name or location and symbol abbreviation.
f. External to the building, symbols contain information relating to plant machinery this text needs to be placed near the associated plant room with a leader. Some of this information relates to other levels and requires checking.

3. Access control (AC) drawings will need to be modified
   a. old legend to be removed
   b. current legend inserted single column (AC-CON-LEG) or double column (AC-CON-LEG2) can be used depending on layout required
   c. pen setting for
       floor plan reset all first

           Layers 2,3,4,10 = off

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layers 0,1,9,13 = 10

legend and scale reset all first

layers 2,3,4,10,13 = off

layers 0,1,9 = 10

drawing sheet & drawing sheet title block reset all first

layers 5,6,7,8,10 = off

layers 0,1,2,3,4,9 = 10

4. Plot to PDF using the following settings plot TO (I:\WatchFolder\NJ\Access_Control_Drawings)
    a. Plotter type = postscript
    b. Plot file Name = drawing file name
    c. Rotate the plot = yes
    d. Plot Colour = Colour
    e. Transformation = Security Access

5. Check output with Acrobat
6. copy file to watch folder for DV input/
7. close off job in job register

UNDERGROUND SERVICES DRAWINGS (UGS)

Change(s) to services by way of new work or alterations to existing are made to digital records and drawings re-issued.

These occur by notification of changes from contractors via Project Officers, Maintenance or from site observations. If the information is supplied i.e. a marked up or "As Installed" drawing then our master drawings are updated using this information. It is still necessary to site measure to confirm information received. This also allows for checking of other services in the area to confirm the other information held on UGS drawings. It is imperative that if the area is being Site Measured by the Drawing Office that great care is taken in this process. All measurements will be triangulated from buildings NOT from curbs or other non-permanent structures.

For the appropriate layering refer to the drawing section. Update the relevant site symbol or model and the model title. Then plot new drawings for indexing in to Dataviewer. **Advise of updates as listed in the section** ADVISE OF AMENDMENTS TO DRAWINGS **– (ALL TYPES)**

To contact North Terrace Plumbing Contract Manager (John Edge) - Ext. 35147.

Update advice is sent to:

Spotless PF Pty Ltd via Dataviewer AND the Maintenance Service Centre with original mark-up for work closure.

ISOLATING VALVES IN BUILDINGS FOR MAINTENANCE

This is a " special " produced to aid Maintenance track Isolation points throughout buildings.

Cold and Hot Water Isolation valves are on layer 8 and Gas on layer 9.

When plotting a drawing, the base architectural drawing is used. Layers 8 and 9 are turned on and colours 5 and 6 are turned on (i.e. set to 1).

The drawing is printed and then cleared. Do not save.

The A3 print is then sent to Maintenance where they will file into their labelled folder.

Distribute copies as listed below.

ISOLATING VALVES FOR PLAN RECIPIENTS (NORTH TERRACE CAMPUS)

Campus Services

Maintenance Service Centre - Plumbing	EDGE, John.	Ext. 35147	- 1 Copy A3

Figure 1: ISOLATION VALVE LEGEND

Ⓗ   HOT WATER ISOLATION VALVE

Ⓒ   COLD WATER ISOLATION VALVE

Ⓖ   GAS ISOLATION VALVE

▥   HOT WATER SERVICE

DRAWING — DESIGN – MODELLING FOR NEW WORK

DESIGN – MODELLING FOR NEW WORK

To use the CADM system for design and documentation follow this procedure:

1. Read up the floor plan of the area and save it to the Projects Folder under the Project No. The projects folder is a LIBRARY, its path is K:\Projects and the library prefix is ">".

2. Strip the model or symbols data down to the bare essential needed for the project design.

3. All work is to comply with our conventions where they exist. If there is a need to do something different, for presentation purposes etc., then this shall be recorded in the project file.

PLOTMANAGER

A tool for the managing and producing all, NON colour, drawing 'images' whilst maintaining their intended look and visual presentation for web access (via Dataviewer) and user local printing facilities

All CADM operators have had this application hot keyed, usually F12. Note It is to be used ONLY for B&W drawing output and the default printer in Caddsman MUST be set to the HP T1100ps.

Plotmanager is used to 'plot' to a file each drawing to which changes have been made.

Use:

*   Within Caddsman select the hot key and start Plotmanager.
*   The dialogue box allows the selection of the database within which the required drawing is held.
*   Drill down and select the drawing and select ADD
*   If there are more drawings that have been edited then theses should also be ADDed to the list.
*   Once all the drawings have been added you can save the list for a later time or select OK and all the drawings will be read in and processed with the resultant files be stored in you default location set within Plotmanager. This is usually a watch folder of Dataviewer (For Dataviewer information refer to next section).

TRANSFORMATION – How to and when to use

This is used when creating a **PDF** and where **LINE WEIGHT** is required.

Note: Is currently used for Site ESP's, Fire Block Plans (FBP), Site-LT's and Access control drawings

CAD

*   With Drawing OPEN in CADD – Select Plot
*   In Plotter window – Select Plotter Type – Postscript
*   In Plotter File Name – Path and name for output file. ie. I:/ Dataviewer/ Watchfolder / Robw/File Name?
*   Go To Transformation (Bottom/Right Corner of window)
*   Pick Site-ESP (for ESP Drawings)
*   Then Rotate Plot
*   Leave Colour Plot – Black unless colour is required
*   Then press OK if satisfied that all settings are correct

Windows Explorer

*   Go to where file has been saved ie. I;/DataViewer / Watchfolder / Robw (Own Folder) / File (Named File?)
*   Start - Adobe Distiller
*   Drag & Drop the .PLT File over to Distiller and Convert to .PDF
*   Delete the .PLT File - as this file is no longer required
*   Then process as usual to DataViewer - Update or Overwrite as required

ESSENTIAL SAFETY PROVISIONS (ESP)

DATA MAINTENANCE

K:\spacecad\SFIG-search-2001

This CADM application was written specifically for the University to count icons (ESP symbols) and produce reports of these by building and summed by level and building.

These reports are run towards the end of the Service Contract with generally little lead-time.

Output reports are stored in a folder at the MSC, with dividers for each campus, North Terrace, Roseworthy, Thebarton and Waite. Each Campus has buildings without any recorded ESP components and these reports are separated out and placed behind a green covering sheet stating this as a sub section in each campus section in the folder, (sfg-reports-no esp components separator.doc).

WARNING

Before running any tests ensure there is a zipped file containing ALL the last reports run in EACH campus to be reported. Output is written to the K:\'campus folder'\report\sf\

☞ SITE ESP REPORTS

The Site reports are manually generated.

Copy the existing file and edit it to reflect the correct date and manually count the relevant symbols and update. This is the FIRST report for each campus in the folder.

REFER TO SFCOUNT

K:\spacecad\SFIG-search-2001\sfcount\ for the process to extract the statistics for each campus site.

☞ APPLICATION (APPL PROGRAM) MAINTENANCE AND ALTERATIONS

- All the files in this folder have to exist in a library folder.
- The current standard is the K:\spacecad\SFIG-search-2001\ folder.
- If this is carried out then all should work successfully using the SFIG SEARCH facility.
- Maintain the files in this folder as masters and make a backup copy once changes are made.
- Establish procedures to ensure the original program and reference files are NEVER over written.
- If a change is to be made, create another folder and copy the files to the new folder. Use the existing naming convention.
- Only once the above is complete start work on the files in the new folder.
- All files changed will then need to be copied to the relevant library folder for testing taking care NOT to over write any existing files.

☞ ESP DRAWINGS

- These are detailed in the Drawings section.
- Ach drawing 'service' has a particular Ministers Specification to be placed on it.
- Refer to S:\Services_Resources\Property_Services\Shared\FacRecords\CADM Manual for details
- Refer to another building e.g. Napier for samples of these types of drawing to replicate.
- Ministers Specifications are currently edited to suite each drawing set to reflect the services requiring regular audit.
- Collectives, North, South and West cover several buildings each
    - o Collective North – Barr Smith, Plaza & Horrace Lamb
    - o Collect South – Hughes, Wills & Mitchell
    - o Collective West – Schulz, Hartley, Madley & Scott Theatre

Maintenance of these drawings is the responsibility of the contracted company, currently Tyco Inc (Sub company Wormald). The contractor is advised via the MSC and the contract manager of all new works. The contractor inspects and marks up the existing drawings with the required changes, and forwards to FR. Note: LEGENDS are unique for each building and each type of service set is on a LAYERED structure even the + System library

FR updates the drawings in the CADM system and then
- 'issues' the drawings via Dataviewer,
- sends the marked up drawings back to the contractor and
- emails them to advise of corrections availability via Dataviewer.

For drawing setup refer to ESSENTIAL SAFETY PROVISIONS (ESP) DRAWINGS

SYMBOLS

SYMBOL LIBRARY

HOW TO OPERATE & MAINTAIN SYMBOL LIBRARY

This section is for reference of standard University of Adelaide SYMBOLS for use in CADM databases.

To view which SYMBOLS have been established read the appropriate following pages.

Each digital SYMBOL is stored in a database, as noted on each INDEX.

<div align="center">

For insertion in to a CADM database, symbols are to be accessed
ONLY via the LIBRARY   ' <u>+ SYSTEM</u> '

</div>

If you create, amend, or delete any symbol/s from a database please ensure that MASTER SET is updated, any alteration is recorded in this section of the CADM manual, in the appropriate sub-section, and ensure that each CADM user is advised of the updated database for inclusion into their local Caddsman system folder.

The indexes and legends of symbols are stored in the SYMBOLS databases as models called INDEX.

Master sets of the symbols are stored in K:\FR\CADD\2004 setup\system\CADD-Symbols. USER sets are stored in the USER folder for the current version of Caddsman being used. This is mapped as the "+" SYSTEM library.

The symbols in this section are based on Australian Standards AS1100 though some in-house variations exist.

Architectural symbols should be inserted at weight 0.1 and other symbols weight set to ORIGINAL.

Symbols should be drawn at the weight required for reproduction.

Note: The SYMBOL INDEX pages in this manual are JPG images. Plotted to postscript and converted to JPG and inserted on a page.
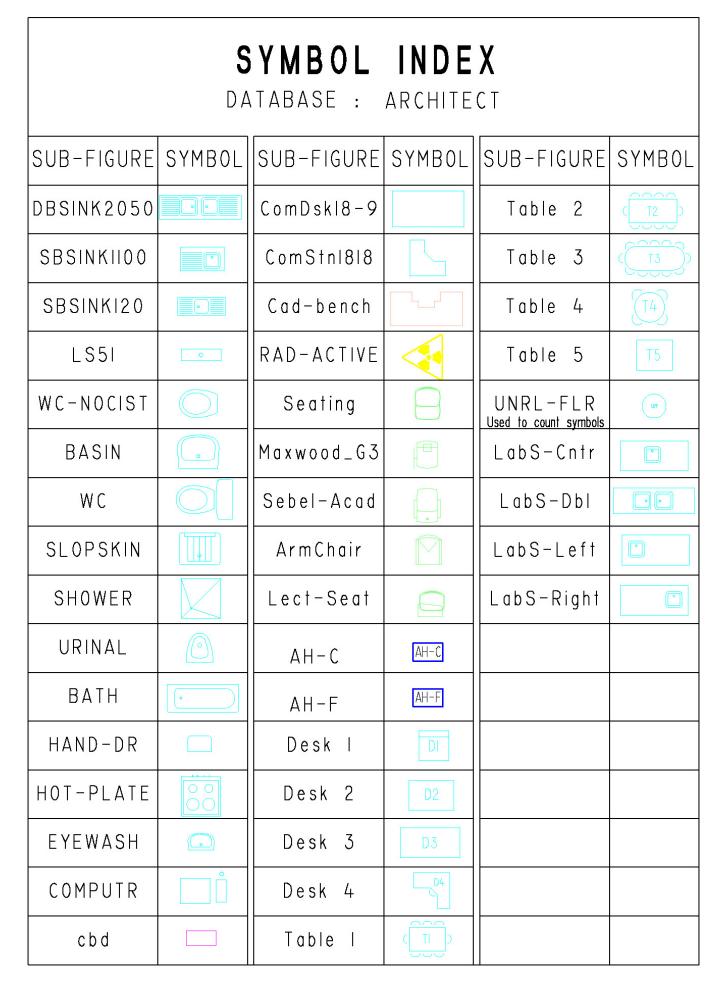
SYMBOLS - Creating detailed for a service

Draw SYMBOL required to represent the service item. Reverence to Australian Standards is recommended to match if there is one available.
Note: Only redrawn AutoCAD or other systems blocks or symbols are used as there are problems reusing unpacked / broken blocks.

Use CPL as the origin as it will become the insertion point.
Set the Colour, Weight and Layers match, the symbols for the selected service. i.e. Power.dab is layer 4, colour 6 & weight 0.25.

1 Once the symbol is created save as :-	2 Test the symbol works correctly.
- File - Save as – Check the preview box is ticked - Select '+System' - <select service>.dab, e.g. esp.dab - Type the symbol name (e.g. PUSHISOSW) Use 9 characters or less. - Enter.	- Select a floor layout from the system and read it in - Insert - Model / Symbol - Point - +System - select the symbol created and insert. - Place on screen at 0,0 - it should fill the screen.
This saves the Symbol to C:\Modeller (system directory)\ on you local drive.	If drawn from scratch, it will work correctly, if so then it will be OK to use across the system.
3. Once tested and approved the SYMBOL has to be placed in the relevant INDEX and LEGEND/S, in the '+System under Models. Some Scaling maybe required to match the space allocated. i.e. 0.02 in the case of PUSHISOSW. In Change Link - X – 0.02 - Y – 0.02 - Z – 1.00 - OK	4. The 'updated' *.dab on the local machine must now be copied to the master set "K:\FR\CADD\2004 setup\system\CADD-Symbols Once updated email all CADM Operators to copy the updated dabs to their local system directory. Copying the updated file will overwrite the existing file updating the system.

SYMBOL INDEX
DATABASE : ARCHITECT

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
DBSINK2050		ComDsk18-9		Table 2	
SBSINK1100		ComStn1818		Table 3	
SBSINK120		Cad-bench		Table 4	
LS51		RAD-ACTIVE		Table 5	
WC-NOCIST		Seating		UNRL-FLR Used to count symbols	
BASIN		Maxwood_G3		LabS-Cntr	
WC		Sebel-Acad		LabS-Dbl	
SLOPSKIN		ArmChair		LabS-Left	
SHOWER		Lect-Seat		LabS-Right	
URINAL		AH-C	AH-C		
BATH		AH-F	AH-F		
HAND-DR		Desk 1	D1		
HOT-PLATE		Desk 2	D2		
EYEWASH		Desk 3	D3		
COMPUTR		Desk 4	D4		
cbd		Table 1	T1		

SYMBOL INDEX

DATABASE : CLEANING (WASTE COLLECTION)

AUG '07

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
ASHTRAY	△				
BIN-240L-P	◇				
BIN-BUTTOUT	□				
BIN-CARD	◻				
BIN-GEN	▽				
BIN-GEN-1.5	□				
BIN-GEN-3	▭				
BIN-GEN-4.5	□				
BIN-MEDWASTE	□				
BIN-MGB	○				
BIN-MGB-COL	○				
BIN-MGB-WP	○				
BIN-CONFLOK	○				
BIN-PICKUP	◇				
BIN-QUADRANT	△				
SHARPS-CONT	△				

WASTE MANAGEMENT BIN LEGEND

ASHTRAY

BIN - 250 LITRE - PAPER

BIN - BUTT OUT

BIN - CARDBOARD RECYCLING

BIN - CONFIDENTIAL LOCKABLE

BIN - GENERAL WASTE

BIN - 1.5 METRE CUBE CAPACITY

BIN - 3 METRE CUBE CAPACITY

BIN - 4.5 METRE CUBE CAPACITY

BIN - MEDICAL WASTE

MOBILE GARBAGE BIN - GENERAL

MOBILE GARBAGE BIN - COLOURED PAPER

MOBILE GARBAGE BIN - WHITE PAPER

BIN COLLECTION (PICKUP) LOCATION

QUARANTINE WASTE

SHARPS CONTAINER

SYMBOL INDEX
DATABASE : COMM-SFGS

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
DATAOUTLET	⊣	SPEAKCEILG	(LS)		
VOICE/DATA	▽⊣	SPEAKWALL	▽		
V/D-DELETD	▽⊣	HORN	◁HORN		
UNEQ-PHONE	▽	Dish Ant	)		
EQ-PHONE	▼	Yagi Ant	┼┼┼		
EQFL-PHON	▼				
UNEQF-PHON	▽				
DWALL-PHON	▽				
DFL-PHONE	▽				
DATA-DELET	⊣				
COAX-POINT	Ⓒ				
MDF	V MDF				
T.V.SYM	⊣TV				
BELL	⌂				

COMMUNICATIONS LEGEND

⊓	SOCKET OUTLET FOR TELECOMMUNICATIONS (EXCEPT TELEPHONE) FOR OUTLET IDENTIFICATIONS REFER AS 1102.8
D ⊓	DATA OUTLET
VD ▽⊓	VOICE/DATA OUTLET
2V1D ▽⊓	2 VOICE/ 1 DATA OUTLET
⊓TV	TELEVISION OUTLET
(LS)	LOUD SPEAKER IN CEILING
◁	WALL MOUNTED SPEAKER
⌓	BELL
◁ HORN	HORN
▽⊓ VD	VOICE/DATA OUTLET DELETED
▽	UNEQUIPPED WALL TELEPHONE (VOICE) OUTLET
▼	EQUIPPED WALL TELEPHONE OUTLET (WITH STANDARD SERVICE. REFER AS 1102.8 FOR VARIATIONS)
▽	UNEQUIPPED FLOOR TELEPHONE (VOICE) OUTLET
▼	EQUIPPED FLOOR TELEPHONE OUTLET (WITH STANDARD SERVICE. REFER AS 1102.8 FOR VARIATIONS)
▽	WALL TELEPHONE OUTLET DELETED
▽	FLOOR TELEPHONE OUTLET DELETED
⊓	DATA OUTLET DELETED
V	MDF OR IDF – MAIN/INTERMEDIATE DISTRIBUTION FRAME
(C)	COAX-POINT
⌄	CLOSED CIRCUIT TV
⫐	DISH ANTENNA
┼┼┼	YAGI ANTENNA

SYMBOL INDEX
DATABASE : elec-schm

MAY '06

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
CFS-UNIT		TERM@UNITS		CLOSCONT	
CCT-BRAKR		TERM@MPAN		MUTE	
FUSE		TEST-TERM		PRESS/SW	
SWITCH		TERMMP&PLS			
COIL		SUBMAIN			
s/board		BRACKET			
square	□"	WITHPL&S			
CFS-SPARE		NOPENCONT			
CONTACTOR		OP-COIL			
SWCH-SHUT		MECH-FLAG			
P-BUTTON		RELAY			
JOINT		FUSE-SMALL			
FUSE-SWTCH		SELSWCONOP			
arrow		SUBSELSW	S7		
CURRENT		CCTBREAKER			
END		CCTBRKELP			

ELECTRICAL SCHEMATIC LEGEND

- S8 — UNIT NO.1 SUBMAIN SELECTOR SWITCH NO.1
- S7 — UNIT NO.1 SUBMAIN SELECTOR SWITCH NO.2
- S6 — BLUE PHASE AMMETER SELECTOR SWITCH
- S5 — WHITE PHASE AMMETER SELECTOR SWITCH
- S4 — RED PHASE AMMETER SELECTOR SWITCH
- S3 — VOLTMETER PHASE SELECTOR SWITCH
- S2 — VOLTMETER PHASE SELECTOR SWITCH
- S1 — POTENTIAL ISOLATING SWITCH

SELECTOR SWITCH CONTACT OPERATION

CONTACT 18.17 CLOSES ON POSITION 3 & CONTACT 22.21 OPENS ON POSITION 3 ONLY

ALL AMMETER SWITCHES WITH OVERLAPPING CONTACT ARRANGEMENT.

- S12 — UNIT NO.3 SUBMAIN SELECTOR SWITCH NO.1
- S11 — UNIT NO.3 SUBMAIN SELECTOR SWITCH NO.2
- S10 — UNIT NO.2 SUBMAIN SELECTOR SWITCH NO.1
- S9 — UNIT NO.2 SUBMAIN SELECTOR SWITCH NO.2
- CURRENT TRANSFORMER
- MECHANICAL FLAG INDICATOR HAND RESET
- OPERATING COIL
- INSTRUMENT COIL (A-AMMETER & V-VOLTMETER)
- NORMALLY OPEN CONTACT
- SWITCH
- FUSE
- FUSE SWITCH
- TEST TERMINAL AT METER PANEL
- TERMINAL AT METER PANEL WITH PLUG SOCKET
- TERMINAL AT METER PANEL
- TERMINAL AT MAIN SWITCHBOARD UNITS

ELECTRICAL SCHEMATIC LEGEND   (cont)

- REMOVABLE LINK
- WITHDRAWABLE RELAY PLUG & SOCKET NO.3
- WITHDRAWABLE PLUG & SOCKET
- 6 — SELECTOR SWITCH TERMINAL NO.6
- CIRCUIT BREAKER
- AIR BREAK CIRCUIT BREAKER EARTH LEAKAGE PROTECTED

SYMBOL INDEX

DATABASE :   ESP

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
EMERGLUM					
EMERGCEN					
EXITLUM	EXIT				
EXITLUML	◁ EXIT				
EXITLUMR	EXIT ▷				
EXITLUMU	EXIT				
EXITLUMD	EXIT				
EXITLUMH	◁ EXIT ▷				
EXITLUMV	EXIT				
AirCon-ESP	A/C				
EGRESSDOOR	ED				
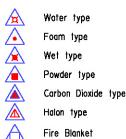
LEGEND

Compartmentation

- fire walls
- smoke walls
- fire rated shafts
- fire rated access panels
- fire rated control joints
- penetrations in fire rated structures
- smoke windows

FD — Fire Door

FW — Fire Window

LEGEND

Portable Fire Extinguishers

- Water type
- Foam type
- Wet type
- Powder type
- Carbon Dioxide type
- Halon type
- Fire Blanket

LEGEND

Egress

- Means of Egress
- ED — Egress Door (to FIP)
- L — Lift signs
- EXIT — Illuminated exit sign
- Emergency lighting
- Exit or Emergency lights on central bank
- Lift Location

LEGEND

Fire Sprinklers, Hosereels & Hydrants

- Fire Hydrant
- NM Fire Hydrant (Not Mains)
- Fire Hose Reel
- Sprinkler
- Concealed Sprinkler
- Sprinkler on Riser
- Sprinkler on Ceiling
- Sprinkler on Wall
- Heat Activated Device

- Stop Valve
- PS Pressure Switch
- Control Valve
- C02 System
- Pump
- FM FM 200

LEGEND

Automatic Fire Detection & Alarm System

- FIP Fire Indicator Panel
- MP Mimic Panel
- ELD End of Line Device
- PS Pressure Switch
- TS Sprinkler Tamper Switch
- FS Flow Switch
- Magnetic Door Holder
- S Smoke Detector with Sampling Device
- S Smoke detector

- VESDA - Samp. Point
- V Vesda System Indicator
- Y Manual Call Point
- Thermal Detector
- Concealed Thermal
- Fire Alarm Bell
- Main Switch Board
- FM FM200 refer Speci 5
- Remote Indicator

Emergency Warning and Intercommunication Systems

- Loud Speaker
- LS
- Warden Intercom Point

- Evacuation Light
- MECP Master Evacuation Control Panel

LEGEND

Smoke Spill Fans & Fire Dampers

- S Smoke Detectors (not part of ASI670)
- S Smoke Detectors in Duct
- Fire Damper at Slab over
- Fire Dampers (thermal)
- Smoke Spill Fans
- EDH Electric Duct Heater
- GF Grease Filter
- CT Cooling Tower
- EC Evaporative Cooler
- SF Stair Fan
- VESDA - SP
- V VESDA System Indicator
- A/C Air Conditioner (to FIP)
- F/C Fume Cupboard (to FIP)
- SAF Supply Air Fan
- RAF Return Air Fan

SYMBOL INDEX

DATABASE : fire_sfgs

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
THERMDETEC		ELD	ELD	BOOSTER	BOOSTER
CONSPDETEC		FS	FS	HYDRANT	
SMOKDETCIL		PS	PS	HOSEREEL	
CONSMOKDET		BAT	BAT	SPRINKLER	
CONSPDETAP		TS	TS	SPRINKCEIL	
SMOKDETSAM		FAB		SPNK/RISER	
HEATDETLIN		MCP		SPNK/CONLD	
DETBEAMTRA		BRK-GLASS		SPNK/SIDWL	
DETBEAMREC		WIPH		BLANKET	
SMOKPRBDET		ELECMAGDH		EXT-CARBON	
THER/PROBE		FIP	FIP	EXT-FOAM	
DUCT-THERM		RP	RP	EXT-HALON	
DUCT-SMOKE		MP	MP	EXT-POWDER	
FLAMEDET		SIP	SIP	EXT-WATER	
STROBE		JUNKBOX	JB	EXT-WET	
AUDIOVISUAL	A/V	MECP	MECP	EXT-SYS	FM
LED		REDUCER		EXT-CO2SYS	
VESDA-SP		FIREDOOR	FD	HAD	
VESDA	V	FIREWINDOW	FW	DEVICE-ADD	04-002 P
FUME-CUPBD	F/C	MNTD-VLV	MV	ZONECIRCT	

FIRE LEGEND

HEAT DETECTOR (THERMAL DETECTOR)	
HEAT DETECTOR (IN CONCEALED SPACE)	
CONCEALED SPACE THERMAL PROBE DETECTOR	
HEAT DETECTOR IN DUCT	
SMOKE DETECTOR	
SMOKE DETECTOR (IN CONCEALED SPACE)	
SMOKE DETECTOR IN DUCT	
SMOKE DETECTOR WITH SAMPLING DEVICE	
SMOKE DETECTOR WITH SAMPLING POINTS (X)	
HEAT DETECTOR - LINE TYPE	
SMOKE DETECTOR - BEAM TYPE TRANSMITTER	
SMOKE DETECTOR - BEAM TYPE RECIEVER	
FLAME DETECTOR	
CONCEALED SPACE SMOKE DETECTOR ACCESS PANEL	
GAS SUPRESSION SYSTEM (FM 200 EXTINGUISHANT)	
DEVICE ADDRESS	
VESDA SAMPLING POINT	
VESDA INDICATOR BOX	
STROBE	
AUDIO VISUAL	
MANUAL CALL POINT	
BREAK GLASS ALARM	
MASTER EVACUATION CONTROL PANEL	
FIRE INDICATOR PANEL	
REPEATER PANEL	
MIMIC PANEL	
SUBINDICATOR PANEL	
END OF LINE DEVICE	
FLOW SWITCH	
PRESSURE SWITCH	
BATTERIES	
ELECTROMAGNETIC DOOR HOLDER	
FIRE ALARM BELL	
ALARM ZONE CIRCUIT DESIGNATION	
FIRE HYDRANT	
FIRE HOSE REEL	

BOOSTER	BOOSTER VALVE UNIT
FSW	FIRE SERVICES WATER
	PIPE DROPPER
	PIPE RISER
FP	FIRE PUMP
B	BOOSTER
V	MAIN VALVES
T	TANK
FD	FIRE DOOR
FW	FIRE WINDOW
	FIRE BARRIER OR WALL
SD	SMOKE DOOR
GWS	GREEN AND WHITE STRIPED DOOR AND/OR PANELS
GD	GAS DETECTOR
WIP	WARDEN INTERCOM POINT
*	LED (LIGHT EMITTING DIODE)
TS	SPRINKLER TAMPER SWITCH
	SPRINKLER
	SPRINKLER ON CEILING
	SPRINKLER ON RISER
	CONCEALED SPRINKLER
	SPRINKLER ON SIDE WALL
	HEAT ACTIVATED DEVICE
	REDUCER
JB	JUNCTION BOX
	PORTABLE FIRE EXTINGUISHER-WATER TYPE
	PORTABLE FIRE EXTINGUISHER-FOAM TYPE
	PORTABLE FIRE EXTINGUISHER-WET TYPE
	PORTABLE FIRE EXTINGUISHER-POWDER TYPE
	PORTABLE FIRE EXTINGUISHER-CARBON DIOXIDE (CO2)
	PORTABLE FIRE EXTINGUISHER-HALON TYPE
	CARBON DIOXIDE (CO2) SYSTEM
	FIRE BLANKET
F/C	FUME CUPBOARD (ESP)
MV	MONITORED VALVE

FIRE BLOCK PLAN LEGEND

LEGEND

SYMBOL	DESCRIPTION
	THERMAL DETECTOR
	CONCEALED SPACE THERMAL DETECTOR
	SMOKE DETECTOR
	CONCEALED SPACE SMOKE DETECTOR
	SMOKE DETECTOR WITH SAMPLING DEVICE
	THERMAL DETECTOR IN DUCT
	SMOKE DETECTOR IN DUCT
	MANUAL CALL POINT
FIP	FIRE INDICATOR PANEL
SIP	SECONDARY FIRE INDICATOR PANEL
ELD	END OF LINE DETECTOR
MP	MIMIC PANEL
MV	MONITORED VALVE
	FIRE ALARM BELL
PS	PRESSURE SWITCH
TS	SPRINKLER TAMPER SWITCH
*	REMOTE LED
	VESDA SAMPLING POINT
4	ALARM ZONE CIRCUIT DESIGNATION

SYMBOL INDEX
DATABASE : light_sfgs

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
LITIX20W		P/BSW-LAMP		TIMESWITCH	
LITIX40W		SPOT		2WTIMESWCH	
LIT2X20W		FLOOD		ELEC-FAN	
LIT2X40W		BULK-FIT		CEILFAN	
LIT3x20W		PECELL		WALLFAN	
LIT3X40W		SENSOR		EX-FAN	
LIT4x40W		ALARM		FAN-CONT	
REC-Ix40W		EXIT-NO			
600x200		LITCHAND5			
300X1200		EVAC-LIGHT			
LITREC20W		SWTCHIPOLE			
LITREC40W		SWT2WAY			
LITINCANDS		SWITCH-INT			
LITINCAWAL		SWT&DIMMER			
CNR-SECUR		SWTPULCORD			
PILOT		PULSW2WAY			
PHOTO		PUSHBUTSW			

LIGHTING LEGEND

⊢⊣	SURFACE MOUNTED IX20W FLUORESCENT LUMINAIRE
⊟	SURFACE MOUNTED 2X20W FLUORESCENT LUMINAIRE
⊢—⊣	SURFACE MOUNTED IX40W FLUORESCENT LUMINAIRE
⊟	SURFACE MOUNTED 2X40W FLUORESCENT LUMINAIRE
⊟	SURFACE MOUNTED 3X40W FLUORESCENT LUMINAIRE
⊿	RECESSED IX40W FLUORESCENT LUMINAIRE
▨	RECESSED 600X600 FLUORESCENT LUMINAIRE
▨	RECESSED I200X600 FLUORESCENT LUMINAIRE
○	INCANDESCENT LUMINAIRE
♀	WALL MOUNTED INCANDESCENT LUMINAIRE
EXIT	EXIT LUMINAIRE
EXIT▷	DIRECTIONAL EXIT LUMINAIRE
⊖	EMERGENCY LUMINAIRE
⊞	EMERGENCY LUMINAIRE WIRED TO CENTRAL SYSTEM
⋈	PILOT LIGHT
⦶	CORNER SECURITY LUMINAIRE
⟋°	SINGLE POLE SWITCH
⟋°	TWO-WAY SWITCH
⟋°	TIME SWITCH
⟋°	TWO-WAY TIME SWITCH
⟋°	CEILING PULL SWITCH
⟋°	SWITCH WITH DIMMER CONTROL
◎	PUSH BUTTON SWITCH
EF∞	WALL MOUNTED EXHAUST FAN
(EF∞)	CEILING MOUNTED EXHAUST FAN

LIGHTING LEGEND (con't)
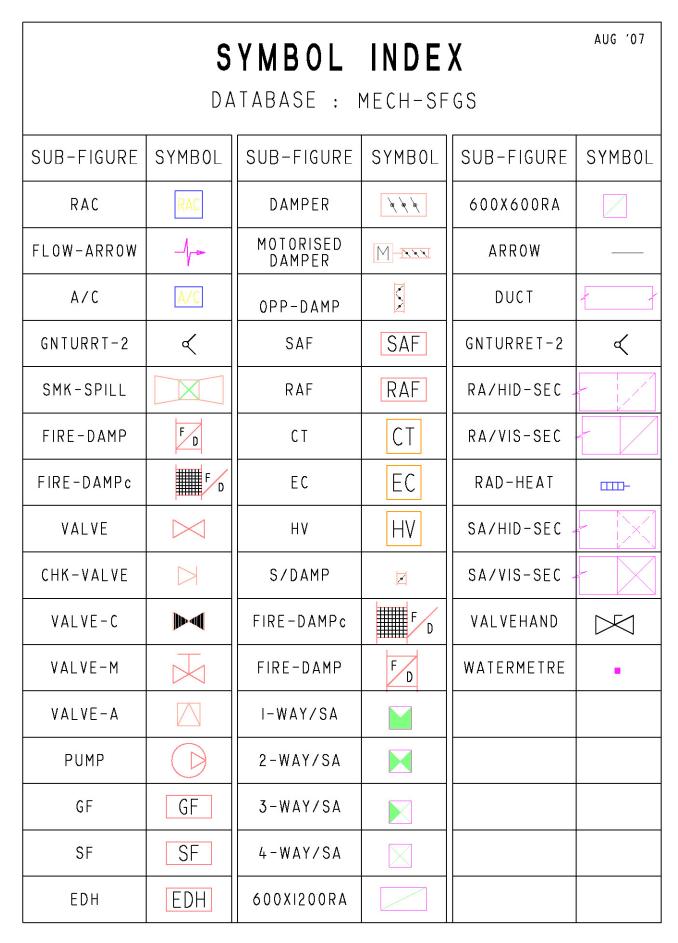
CP	CONTROL PANEL EG. FANS
⊕	CEILING SWEEP FAN
∞	ELECTRIC FAN
⊕	PUSH BUTTON SWITCH WITH INTEGRAL INDICATOR LAMP
⊗	WARNING LUMINAIRE EG. ALARM
⊗⇥	SPOT LUMINAIRE
⊗↗	FLOOD LUMINAIRE
⟋↑	2-WAY PULL CHORD SWITCH
⊟	SURFACE MOUNTED 3X20W FLUORESCENT LUMINAIRE
≡	SURFACE MOUNTED 4X40W FLUORESCENT LUMINAIRE
⊙	SENSOR
⋈	INTERMEDIATE SWITCH
⊿	RECESSED 300x1200 FLUORESCENT LUMINAIRE
⊿	RECESSED 600x200 FLUORESCENT LUMINAIRE
▭	PHOTOGRAPHIC SAFE LUMINAIRE
⊠	PHOTO ELECTRIC CELL
▭	BULKHEAD FITTING
⊞	EMERGENCY LUMINAIRE WIRED TO CENTRAL SYSTEM
NO EXIT	NO EXIT SIGN
⊛	5 LIGHT CHANDELIER
¶	EVACUATION LIGHT

SYMBOL INDEX
DATABASE : IRRIGATION

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
SPRINK-90	◔				
SPRINK-180	◑				
SPRINK-270	◕				
SPRINK-360	●				
SHRUBSPRAY	○				
SOLENOID	⊕				
ISOL-VALVE	⋈				
RPZ	RPZ				
PR-VAC	PV				
DC	DC				

LEGEND - IRRIGATION

UTILITY	SYMBOL	SERVICE
I	———I———	IRRIGATION WATER
IE	———E———	IRRIGATION ELECTRICAL
IC	———C———	IRRIGATION COMMS

SPRINKLERS

SHRUB SPRAY

SOLENOID VALVE

ISOLATION VALVE

BACKFLOW PREVENTION

RPZ   REDUCED PRESSURE ZONE

PV   PRESSURE VACUUM

DC   DOUBLE CHECK

SYMBOL INDEX

DATABASE : MECH-SFGS

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
RAC	RAC	DAMPER		600X600RA	
FLOW-ARROW		MOTORISED DAMPER	M	ARROW	
A/C	A/C	OPP-DAMP		DUCT	
GNTURRT-2		SAF	SAF	GNTURRET-2	
SMK-SPILL		RAF	RAF	RA/HID-SEC	
FIRE-DAMP	F D	CT	CT	RA/VIS-SEC	
FIRE-DAMPc	F D	EC	EC	RAD-HEAT	
VALVE		HV	HV	SA/HID-SEC	
CHK-VALVE		S/DAMP		SA/VIS-SEC	
VALVE-C		FIRE-DAMPc	F D	VALVEHAND	
VALVE-M		FIRE-DAMP	F D	WATERMETRE	
VALVE-A		1-WAY/SA			
PUMP		2-WAY/SA			
GF	GF	3-WAY/SA			
SF	SF	4-WAY/SA			
EDH	EDH	600X1200RA			

AIR HANDLING LEGEND

RAC	ROOM AIR CONDITIONER (WALL OR WINDOW MOUNTED)
	AIRFLOW ARROW
	4-WAY BLOW 600X600 CEILING MOUNTED SUPPLY AIR DIFFUSER
	3-WAY BLOW 600X600 CEILING MOUNTED SUPPLY AIR DIFFUSER
	2-WAY BLOW 600X600 CEILING MOUNTED SUPPLY AIR DIFFUSER
	1-WAY BLOW 600X600 CEILING MOUNTED SUPPLY AIR DIFFUSER
	600X600 CEILING MOUNTED RETURN AIR GRILLE
	600X1200 CEILING MOUNTED RETURN AIR GRILLE
	DENOTES SIDE WALL OR SIDE OF DUCT SUPPLY AIR DIFFUSER
	DENOTES SIDE WALL OR SIDE OF DUCT RETURN AIR GRILLE
	DENOTES UNINSULATED DUCTWORK
	DENOTES 25mm THERMALLY INSULATED DUCTWORK
	DENOTES 50mm THERMALLY INSULATED DUCTWORK
	DENOTES 25mm ACOUSTICALLY INSULATED DUCTWORK
	DENOTES 50mm ACOUSTICALLY INSULATED DUCTWORK
	DENOTES FLEXIBLE DUCTWORK
	SINGLE BLADE DAMPER
	MULTIBLADE PARALLEL DAMPER
	MULTIBLADE OPPOSED DAMPER
M	MOTORISED MULTIBLADE DAMPER
F D	FIRE DAMPER THROUGH WALL
F D	FIRE DAMPER THROUGH SLAB
	SUPPLY AIR DUCTWORK VISIBLE SECTION
	SUPPLY AIR DUCTWORK HIDDEN SECTION
	RETURN AIR DUCTWORK VISIBLE SECTION
	RETURN AIR DUCTWORK HIDDEN SECTION
	INDICATES DIRECTION OF AIRFLOW

ESP AIR HANDLING LEGEND

A/C	AIR CONDITIONING UNIT
	SMOKE SPILL FAN
CT	COOLING TOWER
EC	EVAPORATIVE COOLER
EDH	ELECTRIC DUCT HEATER
GF	GENERAL FAN
HV	XXXXXX
RAF	RETURN AIR FAN
SAF	SUPPLY AIR FAN
SF	STAIR FAN

MECHANICAL SERVICES LEGEND

	PUMP

STANDARD SYMBOLS - PIPED SERVICES

Cold Hard or Mains Water	——WM——
Treated Water	——WT——
Distilled Water	——WD——
Demineralized Water	——WDM——
Flushometer Water	——WF——
Fire Service	——WFS——
Chilled Water - cooling	——WR——
Chilled Water - drinking	——WRD——
Bore Water	——WB——
Cooling Water (Condenser)	——WC——
Chilled Water/Hot Water	——WRH——
Hot Water - Ablution	——HA——
Hot Water - Heating	——HH——
Boiler Feed Water	——HB——
High Temperature Water	——HT——
Steam	——S——
Steam (690 K Pa etc.) - use only where pressure needs to be shown	—S690—
Condensate	——C——
Fuel Oil - Heavy	——FB——
Fuel Oil - Diesel	——FD——
Fuel Oil Heating	——FH——
Medical Gases (grouped pipes)	——MG——
Oxygen	——O——
Nitrous Oxide	——NO——
Compressed Air	——A——
Medical Air	——AM——
Suction	——AS——
Nitrogen	——N——
Town Gas	——GT——
Liquefied Petroleum Gas	——GB——
Natural Gas	——GN——
Drain	——D——
Vent	——V——
Chemical Dosing	——CD——
Brine	——B——
Chlorine	——CL——
Refrigerant	——R——

STANDARD SYMBOLS - VALVES AND PIPE FITTINGS

Isolating Valve

Throttling Valave

Normally open Valve } show only
Normally closed Valve } if necessary

Angle Valve

Check Valve

Controllable lift check Valve

3-way Valve

Safety or Relief Valve

Pressure reducing Valve (and gas regulator)

Self acting Thermostatic Valve

Motorised Valve

Motorised 3-way Valve

Solenoid Valve

Air release Valve

Strainer

Sight glass

Steam trap

Steam trap assembly

Thermometer pocket

Pressure tapping

Orifice plate

Flanged point

Terminating point

Reducer: Concentric

          Excentric

Pipe anchor

Pipe guide

Expansion Loop

Expansion Unit

Pipe perpendicular to section

Pipe cut by section

STANDARD SYMBOLS – INDICATORS, CONTROLLERS, SWITCHES, CONTROL MOTORS
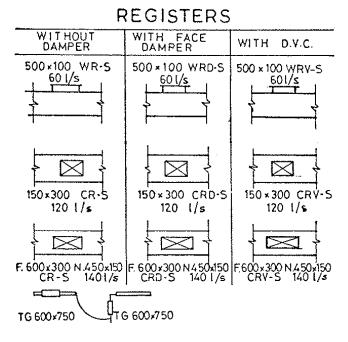
Gauges and Indicators.
Pressure, temperature, level flow

Controllers

Pressure, level, humidity, flow

Temperature, temperature heating,
    temperature cooling

Two stage (temperature, pressure,
    level)

Differential Controller

Step Controller

Indicator Controllers

As above for Controllers but add I

    e.g. Pressure Ind.–Controller

Temperature, Cooling, Ind.–Controller

Recorder – Controller

As above for Controllers but add R.

    e.g. Pressure Recorder–Controller

Control Motors

Motor with three auxiliary switches

Damper Motor with auxiliary switch

Room Controllers

Room thermostat

Room humidistat

Equipment

Pump

Fans:
        Centrifugal

        Axial or propeller

STANDARD SYMBOLS – DUCTWORK AND FITTINGS
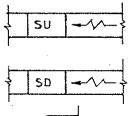
DUCTWORK, REGISTERS, GRILLES

S = Supply Air
FA = Fresh Air
RA = Return Air
E = Exhaust

Registers:-

Wall supply register
500 x 100 face, 60 1/sec

Ceiling supply register
300 x 300 face; 150 x 150
neck; 120 1/sec

Ceiling supply register
600 x 300 face, 450 x 150
neck; 140 1/sec

Transfer grille 600 x 750
high

Inlet or outlet louvres
1200 m.m. x 900 m.m.

Duct set up in direction
of flow

Duct set down in direction
of flow

Square to round duct
transition

Flexible connection

Turning Vanes

Opposed blade

Parallel blade

Butterfly

Fire

Splitter

REGISTERS

WITHOUT DAMPER	WITH FACE DAMPER	WITH D.V.C.
500×100 WR-S 60l/s	500×100 WRD-S 60l/s	500×100 WRV-S 60l/s
150×300 CR-S 120 l/s	150×300 CRD-S 120 l/s	150×300 CRV-S 120 l/s
F.600×300 N.450×150 CR-S 140l/s	F.600×300 N450×150 CRD-S 140 l/s	F.600×300 N.450×150 CRV-S 140 l/s

TG 600×750   TG 600×750

L.1200mm × H.900mm

SU

SD

FD   OR   FD

SYMBOL INDEX
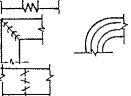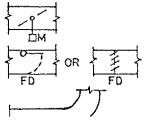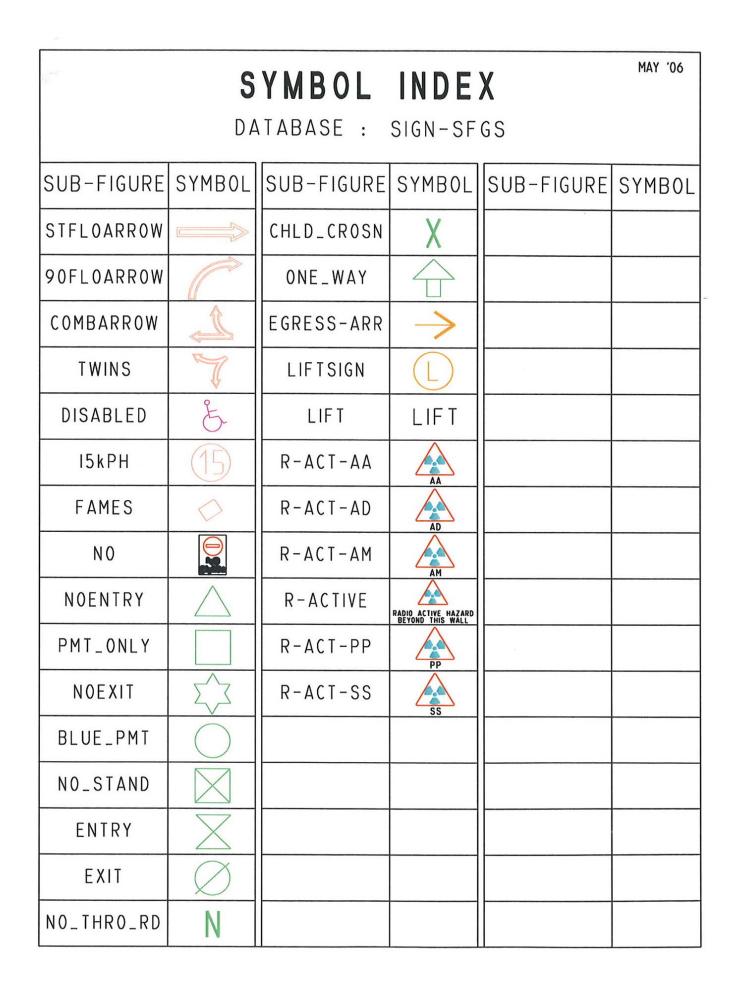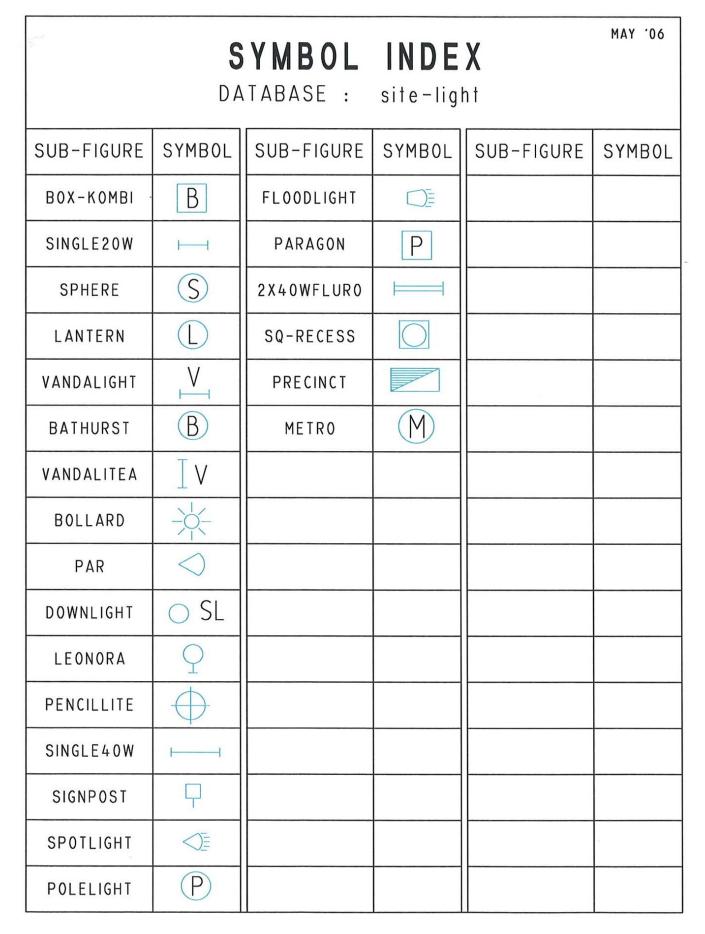
DATABASE : power_sfgs

MAY '06

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
GPOSINGLE		ISOSWT		PIRDETECT	
GPODOUBLE		ISOSWT2PH		ES	ES
OUT-BLANK		ISOSWT3ph		EL	EL
OUTLET-NV	NV	ELEV-I		EM	EM
GPOSUSPEND		DISTBOARD		REQU-EXIT	MHo
GPOSUSP2		ELEC-HEAT	H	ALARMPANEL	
GPO3PH		FAN-HEAT	FH	THERMOSTAT	
3PHGPOSUSP		HWS		REQU-EXIT	
GPO3PH2		CLOCK		DURESS	
GPOIEALEK		VIDEO			
GPO2EALEK		PROJECTOR			
3PHEALEK		HAND-DRYER	HD		
GPOSUSEALK		CARDREADER			
GPOSUSEL2		CODEPAD			
GPODELETEI		PROCESSOR			
GPODELETE2		REEDSWITCH			

POWER LEGEND

	DISTRIBUTION BOARD
	SINGLE GENERAL PURPOSE OUTLET
	DOUBLE GENERAL PURPOSE OUTLET
	MULTIPLE SOCKET GENERAL PURPOSE OUTLET EG. FOR n PLUGS
	SUSPENDED SINGLE GENERAL PURPOSE OUTLET
	SUSPENDED DOUBLE GENERAL PURPOSE OUTLET
	DELETED SINGLE GENERAL PURPOSE OUTLET
	DELETED DOUBLE GENERAL PURPOSE OUTLET
	SINGLE G.P.O. WITH RESIDUAL CURRENT DEVICE
	DOUBLE G.P.O. WITH RESIDUAL CURRENT DEVICE
	SUSPENDED SINGLE G.P.O. WITH RESIDUAL CURRENT DEVICE
	SUSPENDED DOUBLE G.P.O. WITH RESIDUAL CURRENT DEVICE
	3 PHASE OUTLET
	DOUBLE 3 PHASE OUTLET
	SUSPENDED 3 PHASE OUTLET
	3 PHASE OUTLET WITH RESIDUAL CURRENT DEVICE
	NO VOLT OUTLET
	POWER OUTLET WITH BLANK PLATE
	ISOLATION SWITCH
	2 PHASE ISOLATION SWITCH
	3 PHASE ISOLATION SWITCH
	CLOCK
	HOT WATER SERVICE
	WALL MOUNTED ELECTRIC HEATER
	FAN HEATER
	VIDEO
	PROJECTOR
	HAND DRYER
	ELEVATION OF SINGLE GENERAL PURPOSE OUTLET

> - Relay inside GPO so it can be Reset at GPO

SYMBOL INDEX

DATABASE : SIGN-SFGS

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
STFLOARROW		CHLD_CROSN			
90FLOARROW		ONE_WAY			
COMBARROW		EGRESS-ARR			
TWINS		LIFTSIGN			
DISABLED		LIFT	LIFT		
15kPH		R-ACT-AA	AA		
FAMES		R-ACT-AD	AD		
NO		R-ACT-AM	AM		
NOENTRY		R-ACTIVE	RADIO ACTIVE HAZARD BEYOND THIS WALL		
PMT_ONLY		R-ACT-PP	PP		
NOEXIT		R-ACT-SS	SS		
BLUE_PMT					
NO_STAND					
ENTRY					
EXIT					
NO_THRO_RD	N				

SYMBOL INDEX

DATABASE : site-light

SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL	SUB-FIGURE	SYMBOL
BOX-KOMBI	B	FLOODLIGHT			
SINGLE20W		PARAGON	P		
SPHERE	S	2X40WFLURO			
LANTERN	L	SQ-RECESS			
VANDALIGHT	V	PRECINCT			
BATHURST	B	METRO	M		
VANDALITEA	I V				
BOLLARD					
PAR					
DOWNLIGHT	○ SL				
LEONORA					
PENCILLITE					
SINGLE40W					
SIGNPOST					
SPOTLIGHT					
POLELIGHT	P				

LEGEND – UGS

SERVICE IDENTIFICATION CODE

UTILITY PIPE SIZE MATERIAL COVER FILL
e.g. SW 125 P.V.C. 400 A

UTILITY	SYMBOL	SERVICE
G	———+———	GAS
T/C	———++———	TELECOM/COMPUTER
E	———+++———	POWER
S	———·———	SEWER
W	———··———	WATER
SW	———···———	STORM WATER
WFS	———·/·———	WATER FIRE SERVICE

PIPE SIZE

mm O.D.

MATERIAL	SYMBOL
COPPER	Cu
CAST IRON	C.I.
GALVANISED IRON	G.I.
POLY VINYL CHLORIDE	P.V.C.
PVC (BLUE BRUTE)	P.V.C.B.B.
POLY ETHALENE	P.E.
TELECOM	200, 100 PR etc.
CONCRETE	C
VITREOUS CLAY	C.V.
ASBESTOS	ASB
DUCTILE IRON CONCRETE LINED	D.I.C.L.

COVER

mm TO SURFACE

FILL	SYMBOL
SOIL (EARTH)	E
SAND	S
AGGREGATE	A

LEGEND – IRRIGATION

UTILITY	SYMBOL	SERVICE
I	———I———	IRRIGATION WATER
IE	———E———	IRRIGATION ELECTRICAL
IC	———C———	IRRIGATION COMMS

SYMBOL	
◖ ◕ ● ◑	SPRINKLERS
○	SHRUB SPRAY
⊕	SOLENOID VALVE
⋈	ISOLATION VALVE

BACKFLOW PREVENTION

RPZ	REDUCED PRESSURE ZONE
PV	PRESSURE VACUUM
DC	DOUBLE CHECK

PLOTTING, PRINTING & STORING

PLOTTING & PRINTING

DRAWING PRODUCTION – GENERAL

As a rule Facilities Records does not actually print any drawings. All production is in soft copy and indexed in to Dataviewer for all users access and local reproduction as the user requires.

Mixed case, may be different to the file system. – This method will ensure that all file names are matched, regardless of how they have been indexed in the database. If you think your files may have been renamed, or either if of the previous methods failed to locate them correctly, this method is the one to choose. This method is the most resource intensive, and will take the longest time to complete.

1. All monochrome (black and white) drawings are to be drawn with weight and are to be produced via postscript and PDF (Adobe Acrobat).
2. ALL drawings with any COLOUR content are to be drawn with weight and are to be produced via postscript and PDF (Adobe Acrobat).
3. Dataviewer is the favoured method of document delivery, actual hard copy printing is to be resisted unless otherwise advised by the Manager or the request is for A1 or A2 size production.

SEQUENCE FOR PLOTTING

1. Select the NEW icon and select the DRAWING radio button.
2. Select PAPER SIZE or DRAWING. All The University of Adelaide standard drawing sheets are stored as drawings within the 'drngsheets' database under '+'SYSTEM. It is easiest to use the 'standard' drawing to suit the size sheet desired. The formats stored are A1, A2, A3, A4V, 2xA2 or A1, 2xA4 or A3, 4xA3 or A1. These have the pen weights preset. If you notice ANY of these missing copy the latest from the master set on k: drive.
3. Select the INSERT VIEWPORT icon select the ICON (button) that suits the insertion mode required.
4. Select BOUNDARY or other function for automatic alignment as needed.
5. Select the LIBRARY and then the DATABASE i.e.: !H8 (*Note: Always ensure that selections are made from a library.*)
6. Select the MODEL or SYMBOL requiring plotting
7. Select the view desired from the list in the dialogue box - usually TOP.

    Then set the SCALE of the view Preset to 1:100 change to suit the ANGLE of the view usually 0 and whether hidden lines removal is required, usually NO, select OK.
8. The next step is to position the views desired in the location desired on the "drawing sheet". This is the COMPOSE phase and is described in detail in COMPOSING a drawing for a plot (see next page). The principal of the process is simple though there are many variations to achieve the desired results.
9. Select Pens & Colour and layers as per original database. Refer to the Standard Drawing Layout pages for detail pen settings. A few pages forward in this manual.
10. There is no defined arrangement on the "paper". Normal drawing structure applies to present the correct message as quickly as possible to the reader. Once the arrangement is completed write MODEL to a DRAWING FILE. i.e. : SAVE the drawing. Select a name the matches the University drawing numbering convention i.e.: N-A-M8-102.
11. Select print icon. Select the output device required. Select OK
12. The DRAWING will then be plotted to the SCREEN and sent to the selected output device.

COMPOSING A DRAWING FOR A PLOT.

1. To compose a drawing you need to have placed a BOUNDARY around the view needed.

2. Follow the directions of the notice SEQUENCE FOR PLOTTING, until you reach POINT 8. The basic process is fairly obvious for the placement of the view but there are further refinements available.

3. Select VIEW asks you to select the viewing direction of the model, usually the TOP for measured drawings, so click on that with the middle button.

4. Set SCALE requests input of the output scale desired, generally 100, and the change will be made to the BOUNDARY and visually determine if it will fit on the 'paper' by dragging the cursor across the screen.

5. Positioning of the BOUNDARY can be done by eye or by co-ordinates: e.g. the dotted out line of the drawing sheet is to scale and the BOTTOM LEFT CORNER of the VIEW's BOUNDARY can be typed in via coordinates read from the BOTTOM LEFT CORNER of the "drawing sheet". This process enables multiple views to be accurately aligned, during this process the status line is further help to visualise the space available. Place all of the views but don't worry if some are in the incorrect position as these can be moved at will.

6. To MOVE a BOUNDARY select MOVE and click on the BOTTOM LEFT corner of the BOUNDARY. The status line will show the coordinates you are at and you need to add or deduct, in millimetres the desired movement on the "drawing sheet". Repeat as necessary to align the views.

7. Now to turn on the various layers of the MODEL/SYMBOL in each BOUNDARY, select the VIEW LAY icon and click on the dotted BOUNDARY line of the view desired. This brings up the layer table, select OFF ALL, and then toggle the layer tabs you want ON in that VIEW – OK. Repeat the process for all of the VIEWS on the "drawing sheet" and when complete hit the RIGHT button to exit. Select REPAINT and the masterpiece will be revealed on the screen as laid out.

8. Select VIEW PEN icon to set the colours to a pen thickness. This operates similar to layer tab though you need to type in the requirements once you have clicked on the toggle switch with the middle button.

   The LEFT column is the COLOUR of the line on the screen.

   The RIGHT column is the PEN number of colour in the Printer palette.

   If you want only four (4) line widths on the drawing and there are ten (10) colours used, it will be necessary to allocate several colours to each 'pen'. Thus the operator is required to determine which lines are to be heaviest etc. to enable the drawing to look "real".

   Refer to the earlier sections for the list of standard COLOURS and their NUMBER as it is the number that has to be entered in to the RIGHT column. When complete select the OK button and exit to the PLOT MENU.

9. Select FILE and SAVE and type in answers to the machine prompts if a new or unique drawing is being created. If a new drawing within an existing building and it is a standard drawing type then select the CAMPUS and BUILDING and use the correct University nomenclature.

10. Select PLOT from the menu. Click on 'Plot file name' and choose plotter from menu. Adjust the defaults for the plotter i.e. no. of pens, weight, start, text conversion, speed, then click on OK. When you are done you can return to the main menu by quitting from PLOT COMPOSE

NOTE:

Very few new drawings will need to built from scratch.

Always use the masters stored as drawings within the 'drngsheets' database under '+'SYSTEM as the start point

Sheet Size	Width	Height	Offset HPT1100ps	Offset HP 5100	Canon 3200	Acrobat PDF
A1	841	594	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00
A2	594	420	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00
A3	420	298	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00
A4	298	210	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00
			X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00
			X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00
			X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00	X 0.00: Y 0.00

A1 COLOUR PLOTTER *(Was for HP 750C)*

Pen number & associated weight (thickness) Note: @ 22/12/2008 – the HPT1100ps plotter has NOT been set up like this

The numbers that represent drawing line thickness and the actual thickness of the lines to be drawn are as follows.

Drawing Line №.	Actual Thickness of Line to be Drawn		Shading
1	0.13mm	(1 dot width)	100%
2	0.25mm	(2 dot width)	100%
3	0.35mm	(3 dot width)	100%
4	0.5mm	(4 dot width)	100%
5	0.65mm	(5 dot width)	100%
6	0.7mm	(6 dot width)	100%
7	0.875mm	(7 dot width)	100%
8	1.0mm	(8 dot width)	100%
9	0.13mm		50%
10	0.13mm		70%
11	0.25mm		50%
12	0.35mm		50%
13	0.5mm		50%
14	0.65mm		50%
15	0.70mm		50%

STANDARD DRAWING LAYOUTS

☞ SET UP FOR PLOTTING A1 DRAWINGS REDUCED TO A3 OR AN A1 SHEET

PEN WEIGHTS

(A3 based on using A1 settings. For A3 output all pen weights should be at least halved).

DRAWING SHEETS			
A3		A1	
Colour	Pen	Colour	Pen
0	251	0	251
1	251	1	251
2	251	2	251
3	251	3	251
4	251	4	251
5	OFF	5	OFF
6	OFF	6	OFF
7	OFF	7	OFF
8	OFF	8	OFF
9	251	9	251
10	OFF	10	OFF

ARCHITECTURAL DATABASE			
A3		A1	
Colour	Pen	Colour	Pen
0	251	0	251
1	251	1	251
2	OFF	2	OFF
3	251	3	251
4	251	4	251
5	OFF	5	OFF
6	OFF	6	OFF
7	OFF	7	OFF
8	OFF	8	OFF
9	251	9	251
10	OFF	10	OFF
13	251	13	251

TITLE BLOCKS			
A3		A1	
Colour	Pen	Colour	Pen
0	251	0	251
1	251	1	251
2	251	2	251
3	251	3	251
4	251	4	251
5	OFF	5	OFF
6	OFF	6	OFF
7	OFF	7	OFF
8	OFF	8	OFF
9	251	9	251
10	OFF	10	OFF
118	OFF	118	251
119	251	119	OFF
120	OFF	120	OFF

OCCUPANCY (coloured)					
TITLE BLOCK		DRAWING SHEET		ARCH.DATABASE	
Colour	Pen	Colour	Pen	Colour	Pen
0	251	0	251	0	251
1	251	1	251	1	251
2	251	2	251	2	10
3	251	3	251	3	251
4	251	4	251	4	251
5	OFF	5	OFF	5	OFF
6	OFF	6	OFF	6	OFF
7	OFF	7	OFF	7	OFF
8	OFF	8	OFF	8	OFF
9	251	9	251	9	251
10	OFF	10	OFF	10	OFF
118	OFF			13	251
119	OFF			{reset all pens and turn 5 off}	
120	251				

☞ ACCESS CONTROL DRAWINGS

PEN WEIGHTS

TITLE BLOCKS		DRAWING SHEETS		DATABASES		LEGEND	
A3		A3		A3		A3	
Colour	Pen	Colour	Pen	Colour	Pen	Colour	Pen
0	251	0	251	0	253	0	All
1	251	1	251	1	253	1	reset
2	251	2	251	2	OFF	2	
3	251	3	251	3	253	3	
4	251	4	251	4	253	4	
5	OFF	5	OFF	5	251	5	
6	OFF	6	OFF	6	251	6	
7	OFF	7	OFF	7	251	7	
8	OFF	8	OFF	8	OFF	8	
9	251	9	251	9	253	9	
10	OFF	10	OFF	10	OFF	10	
118	OFF			13	253		
119	251						
120	OFF						

☞ CLEANING (FLOOR SURFACE) DRAWINGS

PEN WEIGHTS

TITLE BLOCKS		DRAWING SHEETS		DATABASES		LEGEND	
A3		A3		A3		A3	
Colour	Pen	Colour	Pen	Colour	Pen	Colour	Pen
0	251	0	251	0	251	0	All
1	251	1	251	1	251	1	reset
2	251	2	251	2	OFF	2	
3	251	3	251	3	251	3	
4	251	4	251	4	251	4	
5	OFF	5	OFF	5	OFF	5	
6	OFF	6	OFF	6	OFF	6	
7	OFF	7	OFF	7	OFF	7	
8	OFF	8	OFF	8	OFF	8	
9	251	9	251	9	251	9	
10	OFF	10	OFF	10	OFF	10	
118	OFF	11	OFF	13	251		
119	OFF	12	OFF	{reset pens and turn 5 off}			
120	251	13	OFF				

☞ REGISTERED FACILITIES DRAWINGS

Produced as PDFs the same as for Cleaning (Floor Surface) and Occupancy drawings.

☞ LIQUOR LICENSING DRAWINGS

Produced as PDFs the same as for Cleaning (Floor Surface) and Occupancy drawings.

OCCUPANCY & CLEANING DRAWINGS – NOTES

- Use the Canon 3220 Colour Printer for hardcopy and the driver to produce occupancy drawings as colour PDFs.
- CADM drawings are stored in each building DAB and Dataviewer as PDFs for general access.
- Ensure that the drawing is setup correctly before plotting.
- If this is NOT the case then correct the drawing to match and update for future.

Note: For general PEN WEIGHTS refer to the Standard Drawing Layouts page earlier in this manual.

Occupancy notes: TEACHING SPACES, used in Syllabus Plus, are to be coloured to match the controller organisational unit. For all CENTRAL and ACADEMIC teaching space the text is to be 500H x 400 W with slant of 15 and the CENTRAL surface plane is to have intensity of 1.0 all the rest 0.5.

☞ TITLE BLOCKS

Note: In the TITLE model set colour 9 to weight 0.1 not 0.25

To scale an A3 drawing down to an A4: (not generally needed with the use of Dataviewer now)

- SHEET & TITLE BLOCK MOVE with scale 2.89 & position at x 4;y 1.5
- FLOOR PLANS (DATA BASE) move with scale 289
- Delete ALL scaling information. Note: This is NOT necessary if printing to PDF format.

☞ TO CONVERT DRAWINGS TO A PDF (portable document format) FILE. (This requires Acrobat Professional)

OPEN the drawing in Plot Compose & Repaint

Select PLOT / PRINT and in Plot Default

- Select Plotter Type to WINDOWS
- Number of Pens to 256
- Set Rotate the plot to Yes and Colour plot to Yes – If COLOUR is required.
- Transformation to Type of Drawing Required eg. Occupancy, Architectural etc.
- Select OK
- In Printer Name Select ADOBE PDF
- Select OK
- In "Save PDF File As"
- In File Name Type in Drawing Number
- Select Save
- Drawing will be Saved in Your WatchFolder eg. I:\WatchFolder\Robw
- Using "Windows Explorer" Find the file that you have Created In "I" Drive (DataViewer – WatchFolder – Your Folder
- Check and Drag & Drop from your Folder to the WatchFolder
- To import newly created PDF's into Dataviewer copy all the new PDF files into Dataviewer WATCH folder
- Advise the Dataviewer manager of the additions requiring importation and indexing into Dataviewer.

☞ SURFACE MAINTENANCE PROFILE DRAWINGS

PEN WEIGHTS

TITLE BLOCKS		DRAWING SHEETS		DATABASES		LEGEND	
A3		A3		A3		A3	
Colour	Pen	Colour	Pen	Colour	Pen	Colour	Pen
0	251	0	251	0	251	0	All
1	251	1	251	1	251	1	reset
2	251	2	251	2	OFF	2	
3	251	3	251	3	251	3	
4	251	4	251	4	251	4	
5	OFF	5	OFF	5	OFF	5	
6	OFF	6	OFF	6	OFF	6	
7	OFF	7	OFF	7	OFF	7	
8	OFF	8	OFF	8	OFF	8	
9	251	9	251	9	251	9	
10	OFF	10	OFF	10	OFF	10	
118	OFF	11	12	12	OFF		
119	251	12	13	13	251		
120	OFF	13	14	14	OFF		
32-999	RESET				RESET		

Layers 30-35, 200, 202, Place legend from system *(NOTE – these will need changing when sites are migrated*)

ELECTRICAL DRAWINGS

PEN WEIGHTS

TITLE BLOCKS		
	A1	A3
Colour	Pen	
0	251	251
1	251	251
2	251	251
3	251	251
4	251	251
5	OFF	OFF
6	OFF	OFF
7	OFF	OFF
8	OFF	OFF
9	251	251
10	OFF	OFF
118	251	251
119	OFF	OFF
120	OFF	OFF

DRAWING SHEETS		
	A1	A3
Colour	Pen	
0	251	251
1	251	251
2	251	251
3	251	251
4	251	251
5	OFF	OFF
6	OFF	OFF
7	OFF	OFF
8	OFF	OFF
9	251	251
10	OFF	OFF

DATABASES		
	A1	A3
Colour	Pen	
0	253	253
1	253	253
2	3	3
3	253	253
4	253	253
5	6	6
6	7	7
7	OFF	OFF
8	9	9
9	253	253
10	OFF	OFF
13	OFF	OFF
20	21	21
21	22	22

LEGEND		
	A1	A3
Colour	Pen	

ELECTRICAL SCHEMATIC DRAWINGS

(!elec-schm.DAB)

PEN WEIGHTS

TITLE BLOCKS			
A3		A1	
Colour	Pen	Colour	Pen
0	251	0	251
1	251	1	251
2	251	2	251
3	251	3	251
4	251	4	251
5	OFF	5	OFF
6	OFF	6	OFF
7	OFF	7	OFF
8	OFF	8	OFF
9	251	9	251
10	OFF	10	OFF
118	OFF	118	251
119	251	119	OFF
120	OFF	120	OFF

DRAWING SHEETS			
A3		A1	
Colour	Pen	Colour	Pen
0	251	0	251
1	251	1	251
2	251	2	251
3	251	3	251
4	251	4	251
5	OFF	5	OFF
6	OFF	6	OFF
7	OFF	7	OFF
8	OFF	8	OFF
9	251	9	251
10	OFF	10	OFF

DATABASES			
A3		A1	
Colour	Pen	Colour	Pen*
0	251	0	251
1	251	1	251
2	OFF	2	OFF
3	251	3	251
4	251	4	251
5	OFF	5	OFF
6	OFF	6	OFF
7	OFF	7	OFF
8	OFF	8	OFF
9	251	9	251
10	OFF	10	OFF

*These pen weights may need to be changed depending on colours used in drawings

Note: When using the HP T1100ps (A1) ensure you set the WEIGHT to INITIALISE within the Caddsman print dialogue window.

ESSENTIAL SAFETY PROVISIONS (ESP) DRAWINGS

TITLE BLOCKS						
A3				**A1**		
Colour	Pen	FBP Pen		Colour	Pen	FBP Pen
0	251	251		0	251	N/A
1	251	251		1	251	N/A
2	251	251		2	251	N/A
3	251	251		3	251	N/A
4	251	251		4	251	N/A
5	OFF	OFF		5	OFF	N/A
6	OFF	OFF		6	OFF	N/A
7	OFF	OFF		7	OFF	N/A
8	OFF	OFF		8	OFF	N/A
9	251	251		9	251	N/A
10	OFF	OFF		10	OFF	N/A
18	OFF	OFF		18	251	N/A
19	251	OFF		19	OFF	N/A
20	OFF	251		20	OFF	N/A

DRAWING SHEETS						
A3				**A1**		
Colour	Pen	FBP Pen		Colour	Pen	FBP Pen
0	251	251		0	251	N/A
1	251	251		1	251	N/A
2	251	251		2	251	N/A
3	251	251		3	251	N/A
4	251	251		4	251	N/A
5	OFF	OFF		5	OFF	N/A
6	OFF	OFF		6	OFF	N/A
7	OFF	OFF		7	OFF	N/A
8	OFF	OFF		8	OFF	N/A
9	251	251		9	251	N/A
10	OFF	OFF		10	OFF	N/A

NOTE:

ORDER OF ESP DRAWINGS			LAYERS			SPEC
		TITLE	MODEL	LEGEND		
ESP/com	Fire Doors & Compartmentation	0, 25	0, 1, 25	25		1
ESP/egress	Egress, Lift & Exit Signs, Emergency Lighting	0, 24	0, 1, 24	24		2-4
ESP/sprink	Fire Sprinklers, FHR & Hydrants	0, 13	0, 1, 13	13		5a - g
ESP/exting	Portable Fire Extinguishers	0, 31	0, 1, 31	31		5e
ESP/fire	Fire Detectors, Alarm & EWIS Systems	0, 14	0, 1, 14, 26, 27, 28	14		7 - 8
ESP/air	Smoke Spill Fans & Fire Dampers	0, 29	0, 1, 27, 29	29		6

COMBINED SMALL BUILDING ESP DRAWINGS	
ESP/com & egress	Fire Doors, Compartmentation, Egress, Lift & Exit Signs, Emergency Lighting
ESP/sprink & exting	Fire Sprinklers, FHR & Hydrants, Portable Fire Extinguishers
ESP/fire & air	Fire Detectors, Alarm & EWIS Systems, Smoke Spill Fans & Fire Dampers

COLLECTIVE DRAWINGS

Layer 24 SYMBOLS – copied to layer 44. Symbol scale change to X2, Y2, Z1, so as to enlarge for easier viewing.

Note: Always set your defaults (Layer/Colour) prior to inserting symbols.

PEN WEIGHTS

TITLE BLOCKS	
A3	
Colour	Pen
0	251
1	251
2	251
3	251
4	251
5	OFF
6	OFF
7	OFF
8	OFF
9	251
10	OFF
118	OFF
119	251
120	OFF

DRAWING SHEETS	
A3	
Colour	Pen
0	251
1	251
2	251
3	251
4	251
5	OFF
6	OFF
7	OFF
8	OFF
9	251
10	OFF

ESP – DRAWING					
A3		**A3**		**A3**	
Model		*Legend*		*SPEC*	
Colour	Pen	Colour	Pen	Colour	Pen
0	253	0		0	
1	253	1	All	1	All
2	OFF	2		2	
3	OFF	3	Reset	3	Reset
4	OFF	4		4	
5	6	5		5	
6	251	6		6	
7	251	7		7	
8	251	8		8	
9	251	9		9	
10	OFF	10		10	
13	253	13		13	
21	22	21		21	

UNIQUE DRAWING DETAILS

Fire Doors & Compartmentation	Line Style — user (original) Pattern Style — Firewall, Weight 0.25, SCALED Pattern Name — fire - 200 Colour — 21 Fire Door — Copy to Layer 25, Colour 21
Egress, Lifts & Exit Signs	Lift Hatching — Angle 45 Crosshatch 90 Spacing 400 Tag name "ignore"

LECTURE THEATRE SEATING LAYOUT DRAWINGS

PEN WEIGHTS

TITLE BLOCKS		DRAWING SHEETS		DATABASES	
A1		**A3**		**A3**	
Colour	**Pen**	**Colour**	**Pen**	**Colour**	**Pen**
0	251	0	251	0	253
1	251	1	251	1	253
2	251	2	251	2	251
3	251	3	251	3	253
4	251	4	251	4	253
5	OFF	5	OFF	5	251
6	OFF	6	OFF	6	OFF
7	OFF	7	OFF	7	251
8	OFF	8	OFF	8	OFF
9	251	9	251	9	253
10	OFF	10	OFF	10	11
118	OFF				(reset)
119	OFF				⇓
120	251				

TEXT DEFAULTS for 1:100	LAYER	COLOUR
SEATING	2	4
TEXT	2	2
TITLE	2 only	
NUMBER OF SEATS	2	2

TEXT DEFAULTS for 1:100	HEIGHT	WIDTH
NUMBERING	200	150
TITLE	400	350

SECURITY LIGHTING DRAWINGS

PEN WEIGHTS

TITLE BLOCKS		DRAWING SHEETS		DATABASES	
A4		**A4**		**A4**	
Colour	**Pen**	**Colour**	**Pen**	**Colour**	**Pen***
0	251	0	251	0	253
1	251	1	251	1	253
2	251	2	251	2	251
3	251	3	251	3	253
4	251	4	251	4	253
5	OFF	5	OFF	5	251
6	OFF	6	OFF	6	251
7	OFF	7	OFF	7	251
8	OFF	8	OFF	8	251
9	251	9	251	9	253
10	OFF	10	OFF	10	OFF
118	OFF			32-57	251
119	OFF				
120	OFF				

* The DATABASE view pen weights may need to be changed depending on colours used in drawings.

UNDERGROUND SERVICES DRAWINGS

PEN WEIGHTS

TITLE BLOCKS						
A3			**A1**			
Colour	Pen		Colour	Pen		
0	251		0	251		
1	251		1	251		
2	251		2	251		
3	251		3	251		
4	251		4	251		
5	OFF		5	OFF		
6	OFF		6	OFF		
7	OFF		7	OFF		
8	OFF		8	OFF		
9	251		9	251		
10	OFF		10	OFF		
118	OFF		118	251		
119	251		119	OFF		
120	OFF		120	OFF		

DRAWING SHEETS				
A3			**A1**	
Colour	Pen		Colour	Pen
0	251		0	251
1	251		1	251
2	251		2	251
3	251		3	251
4	251		4	251
5	OFF		5	OFF
6	OFF		6	OFF
7	OFF		7	OFF
8	OFF		8	OFF
9	251		9	251
10	OFF		10	OFF

DATABASES				
A3			**A1**	
Colour	Pen		Colour	Pen
0	OFF		0	OFF
1	253		1	251
2	251		2	251
3	253		3	251
4	253		4	251
5	251		5	251
6	251		6	251
7	251		7	251
8	251		8	251
9	253		9	251
10	OFF		10	OFF

LEGEND				
A3			**A1**	
Colour	Pen		Colour	Pen
0			0	
1	All		1	All
2			2	
3	Reset		3	Reset
4			4	
5			5	
6			6	
7			7	
8			8	
9			9	
10			10	

Note: When plotting A3 Drawings, Magnification Scale to be set to "2".

To Plot in Colour VIA HP-T1100ps

NOTE: This device is NOT used a lot and will probably need new ink and much work to get it going

Check the plotter is set to "Software" under Pen settings. If only a black, monochrome, plot is required set the palette to "Palette A".

In Caddsman, "reset" pen table, i.e. colour 0 = pen 1, colour 1 = pen 2, colour 2 = pen 3, etc.

Any light colours such as white or yellow text, which you wish to be readable on white paper need to be assigned a dark colour. Best to use the existing colour 19, which is a dark grey. E.g. colour 3, 9 or 13 should be set to pen 20.

All other colours should plot to match what is on your screen. The number of pens will remain the same as per a black and white plot.

From Plot command, set colour plot, initialise pen colours and weights to "yes".

PLOTTING TO A NON-STANDARD SHEET SIZE
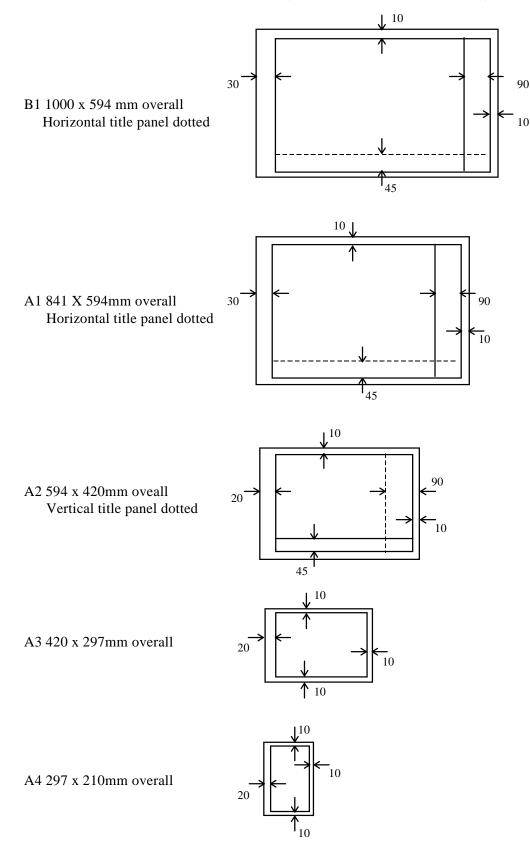
This feature needs a rewrite due to software changes

This process allows for the creation of plots larger than A1 in size i.e. 3000 x 3000.

- Select PAPER SIZE.
- Select NON STD or NON STDV.
- Type in the dimensions for the piece of paper needed to allow the scale desired to be used - you need to guess to start with.
- Read in the model/symbol desired and set layers & pens as desired in the view needed.
- Same as a temporary drawing.
- Select PLOT-MULTI.
- Select the plotter to be used & adjust any of the defaults needed.

- Select OK.
- Select the sheet size. The maximum individual sheet is A1 & set the border from edge of sheet wanted usually 40mm is enough. Leave the TICKS at 6.
- Select OK. A Plot file will be sent to the plotter but you will need to manually send all the other plots. They are in your Caddsman default plot file folder. Refer to the first page in this (PLOTTING) section for details.
- When the process is complete icon Caddsman. Use Windows Explorer to find your plot files. These are usually in the USER folder. Sort by date. The newest should be at the top

AUSTRALIAN STANDARDS SHEET OFFSETS (EXTRACT OF SAA H2 – 1975)

B1 1000 x 594 mm overall
    Horizontal title panel dotted

A1 841 X 594mm overall
    Horizontal title panel dotted

A2 594 x 420mm oveall
    Vertical title panel dotted

A3 420 x 297mm overall

A4 297 x 210mm overall

DATAVIEWER

DATAVIEWER

A tool for the indexing and retrieval of digital documents, in this case specifically drawings, over the Internet

- Drawing metadata revision (editing)
- Using the CLIENT on the SERVER search for the image and select the RECORD tab.
- Select EDIT in the DV program window and select EDIT DATA.
- Select the field to be edited and type in the corrections.
- SAVE the corrections
- Select EDIT in the DV program window and select EDIT DATA to exit the EDIT mode.

☞ IMPORTING NEW DOCUMENTS

ONLY use the server and the CLIENT version to perform IMPORTING and CHANGE LOCATION

Insert optical media in to the drive.

Using windows Explores navigate to the optical drive and view the files F drive (DVD drive).

Check that the files at least look correct and match the required naming nomenclature

Check the index table. It will be a MS Access table. Double click to open. A quick check that the information again matches the naming nomenclature.

☞ IMPORT DATA

- Imports information into the existing database.

METHOD
- Open the Tools menu
- Open the Import sub-menu
- Click on Import Data
- Select "Import data into currently open database"
- Specify the type of source database. Usually MS Access from SCS
- Click Next
- Locate the source database. Usually F: drive
- Click Next
- The system is "preparing the database"
- Any fields in the source database that have the same name as a Dv TDM™ protected field name will be automatically renamed to a non-protected field name. These can be changed at this point
- A list of fields and their types will be displayed after this page of the wizard
- Click Next
- Fields in the source database are next mapped to fields in the destination database. Source database fields may also be ignored or a new destination field created to receive them
- Operator is required to check that all fields are aligned and match, except for the Index Number
- Click Next when the fields map is complete
- Click Next to perform the data import, this is Indexing all information for the images imported earlier

☞ COPY DOCUMENT FILES TO DATAVIEWER SERVER

To copy images from the CD/DVD to the server first create a new folder in the format 'Images-12-06-2006' within the folder D:\Documents\Drawings\scanned\

☞ LINKS INDEX TO DOCUMENTS (CHANGE LOCATION)

From time to time the folder, drive letters or network configurations may change. Instead of having to change the path in the database to the Documents manually, you are able to use Dataviewer to change locations. Dataviewer records in its database the file name, file size and the date and time. From this it is able to differentiate two files of the same name.

Method
- Open the Tools menu
- Click on Change Location
- Click on the Folder icon and choose the directory you believe the files to be in.
- e.g. D:\Documents\Drawings\scanned\Images-12-06-2006
- You may choose to search the subdirectories by clicking the Include Subdirectories check box.

Options

You need to choose one of three methods to be used to match the filenames indexed in the database with the filenames, as they exist on the file system:

For FR select – Mixed case may be different to file system'

Mixed case, exactly as they appear in the file system. – This is the fastest method but will only match files if the current name of the file on disk is exactly as it was entered into the database. This is the preferred option and will work well in most cases.

Upper case, regardless of the file system. – This method will only work if the filenames have been consistently indexed in the database as upper case.

Mixed case, may be different to the file system. – This method will ensure that all file names are matched, regardless of how they have been indexed in the database. If you think your files may have been renamed, or either if of the previous methods failed to locate them correctly, this method is the one to choose. This method is the most resource intensive, and will take the longest time to complete.

If you believe the files may have been modified outside of Dataviewer and therefore Dataviewer has incorrect file size information you can choose Ignore file sizes in database.

You can also choose to allow Duplicate filenames in different folders to exist.

- Click Start

    A dialogue box will appear if Dataviewer found documents in the location that are not in the database

- Click Yes if you want to view the report
- Assess results of file
- Click Close
- Perform import again using different parameters if required

    This can be an iterative process as Dataviewer may stop the operation with no discernable reason. Run the import process until the 'completed' dialogue box appears

☞ **HELPFUL HINTS TO ASSIST IN TRACKING WHAT IS BEING DONE**

Checking Data

Before running the 'Importing' function run a few checks on the data received. Navigate to the database table on the media provided, open the table and select one record to search for to determine location. Select one file and copy and paste the name to File Location in the CLIENT and select SEARCH. This will find the record and provide the location STRING.

This can assist in the following processes and for checking accuracy

Note: These hints need refinement as to what is the best and easiest procedure.

Log Files

Prior to doing and importing it is best set Log only errors in the log dialogue box.

Logs are generated for each Import and are stored in C:\PracticalPrograms\Dv TDM\ and will be called Change Locations Images.log. Once the importing is finished rename the log file to match the other formats that exist by adding the current date.

☞ DRAWING UPDATES FROM WATCH FOLDER WITH MACRO

At the server terminal run the CLIENT and scroll to the lower right hand corner. The macro button when selected will read in each drawing in the Watchfolder and compare it to existing documents of the same name. It then moves the updated document to the indexed location and moves the superseded document in to the superseded folder and indexes the revision field by one letter.

This process is fully automated and any errors to these drawings will NOT be checked by the system. ALL CHECKING is the done BEFORE the importing is carried out as back tracking causes problems with the revision tracking and corrective action is difficult and time consuming. Again the process may not empty the Watchfolder and the process me need to be run several times to clear the folder.

OPERATING AND MAINTENANCE MANUALS

Guidelines for content of and Filing procedure

Contents for manuals are detailed in the 'as build' record documentation on the web at
http://www.adelaide.edu.au/infrastructure/projects/info/   "Reference Guides"

As copies are delivered, they are to be entered in to the spreadsheet, Digital information copied to
Maintenance Services Centre (MSC) will place their two copies in the relevant storage facility, Schulz basement room B6 & B7 as their process dictates.

The master listing, K:\FR\Reference Library\Maintenance Manuals\Maintenance Manuals_All sets.xls, is maintained by Facilities Records and is available at the following web link:

http://www.adelaide.edu.au/infrastructure/projects/info/   "Reference Guides"

SPACE INVENTORY MANAGEMENT & PLANNING

INVENTORY
(CADM SPINV)

CADM - SPACE INVENTORY SYSTEM (SPINV)

MODELLER SPACE MENU (Space ID)

Macro Name	Macro String
Select Campus	!applrun K:\spacecad\sp_sel.ape
Tag Plane	!applrun K:\spacecad\sp_newtag.ape
Check Tags	!applrun K:\spacecad\sp_duplicate.ape
Export Data	!applrun K:\spacecad\exporter.ape
Process old Tags	!applrun K:\spacecad\process_tags.ape
New Menu	!applrun K:\spacecad\sp_menu.ape

INSERTING ROOM PLANES

Each space or room, corridor, cleaners store, stair, lift sheet, services riser etc. shall have a plane & space number 'tag'.

1. Read up the building level or floor symbol.

2. Set layer to 20 ABOVE the building lines layer.

   i.e.   Building lines   Layer 50

          Room planes   Layer 70

3. Set colour to 5 (Purple)

4. Check the surface plane global defaults and reset if necessary to:

   FILL - SOLID, INTENSITY - 0.5000 & select OK. 0.5 is the default as a rule but each colour needs to be tested so there are no two colours close together in colour and intensity.

5. Check PLOT SCALE (Bottom of screen) is 1:100, if not change to 100.

6. Select the CONSTRAINT icon and select 90. Using the MIDDLE mouse button snap to a corner of a room and trace around the internal surface of the space's walls, trace around columns if attached to walls. When finished move to the next room.

Note: If a room has columns in the space of the room then these need to be traced around and used to punch a HOLE in the surface plane once inserted - (more later).

☞ AREAS TO BE SURFACED

- All spaces are to be surfaced. Specific attention to service risers, STAIRS, CORRIDORS, LIFTS (& ESP L.24), CLEANERS & RECEPTION AREAS is required so as to correctly report space.

- Small reception areas (public side of counter) always fall with in corridor area allocations, if more than standing space then all space is allocated to the academic unit. The academic group side of counter, INCLUDING the counter is part of that group's holding.

- Corridors should be broken up into logical areas i.e. at doors on change of direction; otherwise they can be very expansive and not representative of usage.

- Unenclosed Covered Areas (UCA) are identified separately with an additional TAG – UCA. Use colour 16, layer 20. UCA's are those areas that have cover but are NOT fully enclosed. I.e. three (3) or less walls.

- For building leased by the University only those areas included in the lease are to be surfaced. Ignore service risers, lifts and plant rooms, etc.

1. Gross floor plane (GFA) insertion. When all the room plane tracing is completed change the layer to 21 above the building lines layer, i.e.

Building lines	50	Colour	4
Gross Floor & Building Planes	71	Colour	15

   Turn off the room planes layer and trace around the interior of the exterior wall, exclude column projections etc., basically the GFA floor plan should be as few straight lines to enclose a space as possible. Do this again on the outside of the outside wall for the GBA floor plane. Refer to the attached addendum for standard method of measuring areas.

2. Once finished in-putting the gross plane outlines you need to insert planes on these outlines. TURN OFF ALL layers except gross level, select icon for insert on boundary. Now pick the loop near the TOP RIGHT corner of the building and if all is well the loop should close, hit the right hand button once and then the left button and a surface will be inserted. WARNING if the viewed scale is greater than 99 NO Surface will be visible. Use ZOOM to get closer to top right corner to view plane. Next change the surface plane to colour 4 (light blue). Select PAT-STYLE until NONE appears, then hit right hand button, select plane to change. This changes the plane to a BLUE TICK (colour 4). The actual colours are not important as they are never plotted but there may be a future visual use for these planes so it best to keep the colours consistent

3. Repeat this process for the GROSS BUILDING AREA (GBA) but use another pair of colours.

4.   Change layer to room PLANES layer, turn off all other layers and ZOOM/FIT. ZOOM to below scale 1:100 over a corner of the building. You will see the purple room shapes that need to have the planes INSERTED on them. To do this select icon for insert on boundary, now select a loop to be surfaced. If there are no columns to be deducted hit the middle button and the plane will be inserted.

If there are columns that need to be deducted from the area then they should have been traced before and thus be visible. After selecting the outer loop (room walls) answer YES to the prompt "ADD ANOTHER LOOP" (hit left button) and select column - keep selecting columns until completed then after the last one answer NO (middle button) and the plane will be inserted. Repeat the process for all rooms on the level then SAVE the file - SAVEing should up-date every 15 minutes or there about.

5.   Set layer to Building lines with text layer on and turn off the plane layers and SAVE.

6.   Read in the next level and repeat the process for the entire building.

TO TAG ROOM PLANES

Each room will have four (4) or if UCA's are present five (5) fields associated with it. These are:

Building / Level No.	}	obtained from database name and model	
Room No.	}	entered as tags	} Maintain
Area Centroid	}	Calculated by 'formbld' application	

7.   Read in the desired building level (SYMBOL) and set the correct layer.

8.   Select SP Macros and Tag Plane label.

9.   Select plane and answer the prompt - Room No. - copy off this off the screen text Need to not before selection otherwise is blanked out on selecting the plane.

10. Proceed to next plane and repeat, BE CAREFUL not to tag a plane with the incorrect tags.

11. Once the entire level is tagged change the colour of the planes to match as close as possible with standard colours above colour 13 except foK:

All circulation spaces, corridors, reception areas, etc. shall be colour 8 - (SALMON).
All building support spaces will be RED (0) i.e. plant rooms, cleaners rooms, toilets, etc.

12. The next step is to reduce the circulation and support space surface plans to pattern style NONE. Select the all plans to be changed hit the L.H. Button once and all surfaces selected will be reduced to a tick. SAVE the file.

13. Next run the Check Tags application on the SP Macros menu to check for any untagged planes or duplicate tags. The system will HIGHLIGHT untagged planes and/or report in the output window centroid coordinates of duplicate numbered planes. Correct as necessary and re-check till no errors are reported.

GROSS FLOOR AREA (GFA) and GROSS BUILDING AREA (GBA)

GFA

Each level must contain a plane bounded by the inside of the outer wall.

With the floor plan on screen and the gross floor plane BLUE (4) TICK VISIBLE select SP Macros/Tag Plane and select GFA This should be done IMMEDIATELY after tagging the room planes.

GBA

Each level must contain a plane bounded by the outside of the outer wall inclusive of unenclosed covered areas (UCA).

With the floor plan on screen and the gross building plane PURPLE (5) TICK VISIBLE select SP Macros/Tag Plane and select GBA This should be done IMMEDIATELY after tagging the GFA plane.

Exit the macro menu and SAVE the file.

TO CHANGE TAGS

If you wish to change a tag this can be done using the normal EDIT/tag function.

Entity	Tag File Name
Room numbers	ROOM.ATT
GFA	GFA.ATT
GBA	GBA.ATT
UCA	UCA.ATT

Alternative: Delete all tags on the plane with EDIT/TAG/DELETE/ALL and then SP macro/Tag Plane as described in to TAG ROOM PLANES.

TO CHANGE MULTIPLE TAGS

If you wish to change multiple tags, e.g. all tags in a drawing from 'G' to 'B', this can be done as follows;

1. In the file that needs changing, turn on the planes which need tags changed.

2. Select "Edit – **Tag – Save**".

3. **Select the planes to change**.

4. Save to a file "NAME.TAG".

5. Open file "NAME.TAG" in notepad.

6. Use "Replace" command (Ctrl + H) to make the changes required.

7. Save & Exit Notepad.

8. In Modeller, select "Edit – Tag – Open".

9. Check that the tags have changed.

10. Save file.

SELECT CAMPUS

Select: SP Macro then Select Campus.

Brings up a menu of campuses, select the one desired.

This procedure is most important to ensure that you are working in the correct campus folder.

EXPORT DATA FILE GENERATION

Once all rooms have been tagged the building must be 'EXPORTED'. This is done using the SP Macro/Export application. If all buildings need to be dumped use the 'ALL' option, answer yes to prompt *(if you really want to dump all)* for the larger campus this function takes some time. After this initial formatting only those data bases that have been changed need to be exported. This can be achieved by selecting the 'SINGLE' option followed by selecting the building from the building menu.

To Run in Modeller 2004	SPINV – Use with Caddsman 2004	
Select SP Macro and select Function required. All applications are stored in <u>K:\spacecad</u>	Sp_Chapla.APE	Change Plane
	Sp_Check.APE	Checks that all planes are tagged
	Exporter.APE	Exports to a data file for SAM
	Sp_Menu.APE	Run New Menu
	Sp_NoTag.APE	No Tag Check
	Sp_duplicate.APE	Check for duplicate tags
	Sp_Sel.APE	Campus Select
	Sp_newtag.APE	Tag
	Process_tags.APE	Once only to remove old tags

After all buildings have been exported data needs to be imported in to the SAM Database. The exporting of data needs to be done as changes are made.

TAGGING MENU SYSTEM

The SAM database is the master for generating the Building.txt and shno.txt files.

To work the space inventory suite of programmes requires the following files:

building.txt; shno.txt; menu.txt

sp_check.APE; sp_notag.APE; sp_sel.APE; sp_menu.APE; sp_tag.APE

Master copies of all of the above application files are stored in K:\spacecad folder. Each campus has its own list of buildings in files with the .txt suffix in each campus folder. SAM creates these files directly. As buildings are added or deleted to SAM these files need to be re-generated. Thus each campus folder will have files called <u>shno.txt</u> & <u>building.txt</u> with different contents to the other campuses. If a change is made Dataviewer needs to be changed to match the official name and building number.

<u>shno.txt</u> is a file of abbreviated building numbers and names of 10 characters width. This file is generated at the same time as the Building.txt files. The Manager Facilities Records should be notified as soon as there are changes to be made to the building listings, i.e. deletions or additions.

👉 CREATION OF MENU.TXT

The menu must start with the line NEWMENU and ends with END in the following format:

Columns	1	10	12	14
	NEW MENU		0	0
	END		0	0

👉 CHANGES TO MENU.TXT FILE

Alterations can be made so long as the above format is maintained.

👉 VITAL

Once written or changed the 'menu.txt' file must be formatted by selecting SP macro/New Menu. EACH USER of the SPINV software will have to select NEW-MENU to compile the new menu created by editing these application programs and files. It is suggested that each user run this function periodically to maintain the systems alignment, possibly quarterly.

STANDARD METHOD OF MEASURING BUILDING AREAS

1.   Gross Building Area (GBA)

The total enclosed and unenclosed area of the building at all building floor levels measured between the normal OUTSIDE face of any enclosing walls, balustrades and supports.

Unit of Measurement: Square Metres (m^2).

2.   GROSS FLOOR AREAS

The sum of the 'Fully Enclosed Covered Area' and 'Unenclosed Covered Area' as defined.

Unit of Measurement: Square Metre (m2).

2a. Fully Enclosed Covered Area (GFA)

The sum of all such areas at all building floor levels, including basements (except unexcavated portions), floored roof spaces and attics, garages, penthouses, enclosed porches and attached enclosed covered ways alongside buildings, equipment rooms, lift shafts, vertical ducts, staircases and any other fully enclosed spaces and usable areas of the building, computed by measuring from the normal INSIDE face of exterior walls but ignoring any projections such as plinths, columns, piers and the like which project from the normal inside face of exterior walls. It shall not include open courts, light wells, connecting or isolated covered ways and net open areas of upper portions of rooms, lobbies, halls, Interstitial spaces and the like which extend through the storey being computed.

Unit of Measurement: Square Metres (m^2)

2b. Unenclosed Covered Area (UCA)

The sum of all such areas at all building floor levels, including roofed balconies, open verandahs, porches and porticos, attached open covered ways alongside buildings, under-crofts and usable space under buildings, unenclosed access galleries (including ground floor) and any other trafficable covered areas of the building which are not totally enclosed by full height walls, computed by measuring the area between the enclosing walls or balustrade (i.e. from the inside face of the U.C.A. excluding the wall or balustrade thickness). When the covering element (i.e. roof or upper floor) is supported by columns, is cantilevered or is suspended, or any combination of these, the measurements shall be taken to the edge of the paving or to the edge of the cover, whichever is the lesser. UCA. shall not include eaves overhangs, sun shading, awnings and the like where these do not relate to clearly defined trafficable covered areas, nor shall it include connecting or isolated covered ways.

Unit of Measurement: Square Metres (m^2).

USABLE FLOOR AREA (UFA)

This is often the same as GFA

The sum of the floor areas measured at floor level from the general inside face of walls of all interior spaces related to the primary function of the building. This will normally be computed by calculating the 'Fully Enclosed Covered Area' (FECA) or (GFA) and deducting all of the following areas supplementary to the primary function of the building.

DEDUCTIONS

Common Use Areas

All floored areas in the building for circulation and standard facilities provided for the common use of occupiers, tenants and/or the public such as lobbies and fire escapes, verandas and balconies, corridors and passages, toilet and rest rooms areas, cloak and locker areas, cleaner's rooms including stores and cupboards, tea making and similar amenities areas.

Service Areas

All areas set aside for building plant supplying services and facilities common to the building for the use of occupants, tenants and/or public, such as mechanical plant and equipment rooms, electrical equipment and switch-rooms, tank rooms, lift motor rooms, meter cupboards, telecommunication switch-rooms, refuse collection areas, loading bays and all car parks including access ways thereto.

However, some ancillary areas should be included such as plant rooms housing equipment directly used in the occupying organisation unitst and workshops.

Non-Habitable Areas

All non-habitable building space such as that occupied by internal columns and other structural supports, internal walls and permanent partitions, lift shafts, service ducts and the like.

Unit of Measurement: Square Metres (m^2).

These are extracts of NPWC standard method of measurement of building areas with modifications from Australian Universities Commission.

CHECKLIST - DEMOLISHED BUILDING

These are the complete directions referred to in the Architectural Changes section.

CADM System

1. On advise that **ALL** corrections to Architectural, Services & Site databases are done - *double check that this is completed.*
2. Move the DAB's to the Demolished or Sold folder in the relevant campus folder
3. Correct ALL the drawings that are to be indexed in to Dataviewer.

Dataviewer

1. Advise the Records Co-ordinator of the deletions
2. Check the building is identified in Dataviewer as sold or demolished
3. Correct as necessary.
4. Advise all relevant 'users' of changes (refer to the advise lists for all drawing changes including occupancy)

    For full details refer to the Dataviewer section of this manual.

SAM database *(Refer to the SAM manual for full details)*

1. Advise the Manager Facilities Records of ALL deletions.
2. In SAM drill down to the building to be deleted
3. Switch to EDIT mode, in the LH window, right click the building and select Archive. This moves all the data to Archive.
4. Run the 'Create new CADM Indexes'. These are written directly to the CADM directories

☞ Required report updates from SAM *(Refer to the SAM manual for full details)*

1. Create a Campus AREA report for the campus with the.
2. Create an All_Campuses_Area_Summary report file.
3. Create occupier reports for the Faculties, Schools and Disciplines that used to occupy the demolished/disposed space.
4. Check all reports for correctness; have changed against the previous reports by the correct amount and FTP all reports to the correct folder on the Property Services WEB server. (Doral)
5. Check all reports that used the previous data, on the web, are updated accordingly.
6.

☞ History Maintenance

Web server

Move all reports containing references to the demolished/sold building to the folder titled **Disposed Space** for that campus. This includes occupier reports and the building reports. (*Use FTP*)

1. Make sure the **last** reports on the web, both Occupier and Building prior to demolition/ disposal, are printed. These are to be held for historical reference in the **Disposed Space** file. (*Yet to be created*)
2. Take a deep breath

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SPATIAL ASSET MANAGEMENT (SAM)

SAM

Is the master recording and reporting system for all land, buildings and space owned or occupied by The University of Adelaide organisation.

This information is a simplified instruction on how to export information from CADM and importing to SAM. Use of the SAM system needs training to speed the data entry and to fully utilise the features available. Refer to the SAM Manual for detail on this and the online context sensitive help function (F1) in SAM

Process

Following checking that all architectural and occupancy mapping changes have been completed and saved the altered buildings require exporting from CADM and importing in to SAM.

Refer back several pages to section EXPORT DATA FILE GENERATION for how to export the data from CADM.

☞ SAM

Importing updated information from CADM

Start the program and login.

If the updated information has been exported from CADM then SAM will provide a selectable list of file for direct importing. If a previous import has occurred then follow the prompts below.

Select

Tools

Import/Export

Select　　- Campus

- Building

Import Space Information

- Check Deletes & Delete them if the listing is correct

- Check New Rooms, etc.

Once this process is complete the operator is required to complete the data against all the NEW rooms.

In the Physical Asset window (upper left)

Open Campus i.e. – Field Stations, North Terrace, etc.

(By clicking on the PLUS in the box)

Open the building, the level and finally the room.

Only those 'new' rooms are listed by level of each building imported. Only one building at a time can be imported with new rooms to be edited.

Once the room is 'opened' then on the

Physical tab in the upper right hand window edit the fields required and

Use tab do the same.

When all room and data has been entered, select the 'Control' button, middle left and then select the current DEST year (usually already selected) and then select the 'View Details' button. This will return the campus listing to the full list.

Once this is all complete MOVE the files that were imported from 'K:\spacecad\exportdata\' to 'K:\spacecad\exportdata\Imported' and the relevant campus directory.

NOTE: For more information see SAM Manual, S:\Services_Resources\Property_Services\Shared\SAM-DB\Manual.

DATA EXCHANGE STANDARDS

DATA EXCHANGE STANDARDS

DOCUMENTATION

The following is an abbreviated version of that in "[The University of Adelaide Building Standards](#)"

☞ CADM

All matters relating to the generation, retrieval and transfer of electronic data shall be discussed with Facilities Records, Property Services. The Property Services CADM system is Caddsman.

☞ COMPUTER GENERATED MODELS AND DRAWINGS

Models and drawings created for CADM of projects, both new works and alterations to existing, shall match The University of Adelaide structure described below.

DATA BASES

Each building shall be a database in its own right and each level/floor shall be a SYMBOL (block) within that database. No models are to be used except for the assembling of SYMBOLS to form a 3D model in the database. The database name shall represent the actual building name, or number, eg. Mitchell or M8.

SYMBOLS (BLOCKS)

These shall not be nested. Names for SYMBOLS shall be no longer than 9 (nine) characters, and not be connected to database names etc.

POLYLINES (STRING CURVES)

These shall not be present in databases delivered to The University of Adelaide. They shall be reduced to line or circle entitles before delivery.

LAYER NAMES

Databases shall only have numeric labels for each layer and the data on each layer shall match the attached lists.

EXCHANGE MEDIA

Databases shall be in the form of AutoCAD DWG version 2000 format on either CDROM or emailed to Facilities Records facilities.records@adelaide.edu.au.

CADDSMAN 2004

CREATING DXF'S, DWG'S & ISSUE TO EXTERNAL ORGANISATIONS

☞ **WRITING A DXF/DWG FILE**

1. Select FILE/WRITE/ DWG/DXF
2. Then in the dialogue box select DXF
3. Under DXF File Output Defaults
4. Nominate Yes for All Entities
5. Nominate Yes Unpack all Symbols
6. Under Select the DXF output file – give your Caddsman created DXF file, a name.
7. When completed CADDSMAN will state: DXF conversion complete.

Note: You must select YES for Entities & SYMBOLS unpack. Currently there is an issue with text exporting in DXF files.

☞ **READING A DXF OR DWG FILE**

1. Select FILE/READ/DWG/DXF/
2. Then in the dialogue select DXF or DWG
3. File Inputs Defaults window appears
4. Press enter if defaults are desired, if not make appropriate changes for the input.
5. Caddsman will ask Enter file name to store blocks, where would like the Blocks to go.
6. AutoCAD - Blocks / Caddsman – Symbol

☞ **WRITING DWG'S**

1. Read in model or symbol required
2. Set all the layers required to be exported
3. Select FILE WRITE DWG/DXF
4. Select DWG in the dialogue box list
5. Set check boxes Visible Entities Only & Unpack Links & select OK
6. Type in name of new file to be created & select OK
7. Select YES to create

☞ **FILE NAMING, STORAGE & ISSUE**

Name

1. The initial file is stored on the operator's default working folder unless other wise specified.
2. Exported DWG files are to be named to describe the Building Number and level and Campus. E.g. N-G6-4

Storage And Attachments

1. All files are to be stored in K:\projects\DataTransferOut\Dwg-FilesIssued\
2. All files issued are to be zipped together with the READ1ST.txt
3. The resultant zip file is to be labelled with Consultant and date and placed in K:\projects\DataTransferOut\Dwg-FilesIssued\

Issue

1. Read instructions in K:\projects\DataTransferOut\
2. Cut and paste the text from within the "email dwg note.txt" file to the body of the email being sent.
3. Use ONLY the facilities.records@adelaide.edu.au email account for sending digital data to external organisation and U of A org units other than Property Services

INSTRUCTION NOTES FOR AUTO CAD

AutoCAD2000i

☞ WRITING A DXF FILE

Since AutoCAD's drawing database is (.dwg) it must be changed to a .dxf file format. So other CADM programmes can use the drawing data.

Saving a drawing in AutoCAD 2000, to a DXF format. If you work with consultants who use a CADM program that accepts DXF files, you can share a drawing by saving it in DXF format.

To create a .dxf for the existing *.dwg drawing file:

- FILE/SAVE AS - Window titled Save Drawing As will appear
- Under Files as type: select AutoCAD 2000 DXF (*.dxf)
- Default name for the output name is the same for the same for the current drawing name but with a file type of .dxf

☞ OPENING A DXF FILE

- FILE/OPEN
- Window titled Select File will appear
- Under Files as type: select AutoCAD 2000 DXF (*.dxf)
- Select the File you would like to open

AutoCAD Block Definition: You can group objects to create block definitions in the current drawing, or you can save the block as a separate drawing file. When you define a block, you specify the block name, the base point, the objects to group, and whether to retain or delete the objects or convert them to a block in the current drawing.

EXTERNAL REFERENCES- AutoCAD

External References link another drawing to the current drawing. Inserting a drawing as an Xref it is updated when the original file is changed.

In Caddsman, the University uses Models for their Title Blocks. While the Model itself has been edited and updated. Model representing the title block, in the Plot Compose Drawing, will be updated to. This is a similar situation. However in AutoCAD2000i the XRef file and the current drawing file must be moved on a separate basis. Eg To Email a drawing that has an intended XRef inside the Xref file must be emailed as well. The advantage with External References is reducing file sizes; parts of the drawing have their own file. **When inserting a drawing as a block, all definitions of that drawing are included; it will not be updated if current drawing changes.**

XREF MANAGER

☞ LIST OF EXTERNAL REFERENCES

Displays the xrefs in the drawing in a tree view or a list view. You can use the F3 and F4 keys to switch between list view and tree view. Selecting any field selects the xref.

☞ INSERTING AN XREF FILE

- Insert menu, choose External Reference.
- Reference File dialog box, select a drawing, and then choose Open.
- After you select a file to attach, the External Reference dialog box is displayed.
- In the External Reference dialog box under Reference Type, select Attachment.
- Specify the insertion point, scale, and rotation angle. Choose Specify On-screen to use the pointing device & click OK

CREATING PATHS FOR XREF FILES

When you turn on demand loading with copy, the XLOADPATH system variable can be used to indicate the path where copies of externally referenced files are to be placed. The path you specify remains in effect for all drawing sessions until you indicate a different path. If no value for XLOADPATH is specified, the temporary file copies are placed in the standard AutoCAD folder for temporary files. If you find that referencing drawings over a network is slow, it is recommended that you set XLOADPATH to reference a local folder, and set XLOADCTL to 2 so that the externally referenced files are demand loaded from your local machine. Conversely, to minimize the number of temporary files created by multiple users referencing the same drawing, those users can set XLOADPATH to point to a common folder. In this manner, multiple sessions of AutoCAD can share the same temporary copies of reference drawings.

You can set XLOADPATH in the Options dialog box and indicate the path where copies of externally referenced files are to be placed.

1. Keyboard Command XLOADPATH

▪ Type in the Specific path.

CHANGING THE PATHS OF XREFS

1. From the Insert menu, choose Xref Manager

   ▪ In the Xref Manager, select the xref whose path you want to edit
   ▪ Click Browse
   ▪ In the Select New Path dialog box, enter a new path and then choose Open
   ▪ Choose OK
   ▪ The new path is displayed in the Xref Manager in the Saved Path field of the list view and in the 6. Found At box

☞ CHARACTERISTICS OF OVERLAY XREFS:

Used for temporarily referencing geometry from another drawing (attached xrefs are overlaid onto the parent drawing until detached).

▪ Fast and easy way to share data and to see how one drawing relates to another
▪ Reduces the possibility of having a circular reference where a drawing references itself
▪ The parent drawing always reflects the latest changes made to the xref
▪ No limit to the number of xrefs that can be overlaid
▪ Xrefs can be placed in any location, and can be scaled or rotated
▪ Nested xrefs are ignored and not displayed
▪ Non-graphical information from the xref is not added to the parent drawing, except for xref layer information. (Xref layers are designated by the drawing's name followed by a | (pipe symbol) that precede the layer name.) Dependent named dimension styles, text styles, and blocks are not added to the current drawing's non-graphical information

☞ CHARACTERISTICS OF ATTACHED XREFS:

Xrefs are read into the parent drawing.

The latest changes made to the Xrefs are visible when the parent drawing is opened

▪ No limit to the number of Xrefs that can be attached
▪ Xrefs can be placed in any location, and can be scaled or rotated
▪ Dependent layers and line type properties can be modified. (Refer to the AutoCAD User's Guide for information about the VISRETAIN system variable and the REFEDIT command)
▪ All the xrefs dependent named objects, such as layers, line types, dimension styles, blocks, and text styles are added to the parent drawing's non-graphical object information
▪ Xref layers are designated by the drawing's name followed by a | (pipe symbol) that precede the layer name
▪ When the Xref Manager is open, you can choose List View to display an alphabetical list of the xref definitions in the current drawing. Each xref is defined by the following:

☞ BINDING XREF'S

From the Insert menu, choose Xref Manager.

▪ In the Xref Manager, select an xref and then choose Bind.
▪ Inside the Bind Xrefs dialog box click Bind.
▪ Choose OK to exit each dialog box.

☞ RELOADING XREF

To reload an Xref:

Insert menu/External Reference.

External Reference dialog box select the Xref

Click OK

☞ APPLYING DRAWING TO PAPER:

Once you have drawn to your satisfaction, in Tiled Model space. Drawing must be brought into Paper Space. Create a couple of New Layers for the Paper Space Environment.

i.e.	Layer Name:	Layer ColouK:	Plot: (refer to below)
	Viewport	Red	No Plot
	Sheet Border (Title Block)	White	Plot

▪ Managing which layers you like not to Plot is a done under Layers command.
▪ Select layer icon or type in on the command line
▪ Select layer & under the heading Plot select this – the layer is turned of in regards to plotting
▪ Make the Viewport Layer Current – Default Layer.

☞ SWITCHING TO PAPER SPACE

(at the bottom of your graphics there are 3 Tabs)

MODEL: Drafting Environment, physical amendments to drawing (Model Space Tab)

LAYOUT 1:   Full Size Representation of Drawing, core Sheet Layout (Paper Space Sheet Layout No.1)

LAYOUT 2:   to Affinity – Additional Drawing sheets, same use as above

☞ TO MAKE A VIEWPORT, CONFIGURE AND SCALE IS AS FOLLOWS.

1.   Click on the Layout 1 Tab Bar, bottom of the screen.
- AutoCAD layout should now appear different. (white box clearly represents paper & it's boundary)
- You will notice there are 2 boxes inside this. One dashed the other continuous.
- Dashed – represents the physical boundary of plotting.
- Continuous – represents the "Viewport"

Note: If you are not presented with this when you click on a layout Tab. Click on Page Set-up under the File Drop Down Menu.

☞ PAGE SETUP

Page Set-up Window holds 2 Tabs; Plot Device: HPCLJ8500 or the HP T1100PS for example; Layout Settings

Paper Size- Capabilities of printer

Orientation- Drawing Sheet direction- way drawing will be applied to roll of paper

1.   Select VIEW/VIEWPORTS/1 VIEWPORT
- Cross hairs will appear, with the left hand mouse button draw in your Viewport.
- Viewports cut a desired square size on the layout.
- What you had drawn in 'Model' space will now appear 'Zoom Fit' in the Viewport.
- You can have as many 'Viewports' as you desire.
2.   Click on that Viewport again and a blue square will appear in each corner.
- The Blue squares are called Grips with these you can manipulate the Viewport.
3.   Scaling a Drawing in your Viewport.
- At the centre bottom of the screen there is an icon 'Paper', click on this.
- The selected Viewport will appear Bold; this now allows you to manipulate the drawing.
- On the command line type in Z (Zoom)
- [All/Centre/Dynamic/Extents/Previous/Scale/Window] <real time>:
- Type in s (scale)
- Enter a scale factor (nX or nXP):
- E.g. for a scale factor of 1:50, you now type in 1/50xp
- That particular view has been set at 1/50 scale

RemembeK:DO NOT ZOOM WHILE INSIDE MODEL SPACE. YOUR SCALE FACTOR WILL BE LOST. ZOOM IN PAPER SPACE!

☞ CUSTOM SHAPE VIEWPORTS

Viewports don't just have to be 4 sided

Select VIEW/VIEWPORTS/POLYGONAL VIEWPORT

You're able to draw desired shape i.e.- around a Title Block, so to accommodate the entire page.

☞ ORGANISED LAYOUTS

Select VIEW/VIEWPORTS/NEW VIEWPORTS- there is a list of different configurations, with preview.

☞ TITLE BLOCKS (DRAWING SHEETS)

There are several ways to apply a Title Block.

Physically to the Paper Space Environment – applying Sheet Borders, Drawing Information & Text.

Inserting A Block Recommended

Inserting a Title Block using the Block method AuotCAD2000i

(The same way Caddsman inserts a Model representing a Title Block)

- Set current the layer default to Sheet Border.
- Insert Block command is on the Insert menu.

- Window will appear, check that scale is not ticked
- Click on browse to obtain the file you require
- Click Insert
- Click OK
- Move cursor until the whole of the image is inside the dashed lines & click to insert.

In AutoCAD2000i there are a selection of Title Blocks, however if you prefer to create your own draw the Title Block at a 1:1 scale. Save as a common drawing file. This can be now inserted to drawing sheet.

☞ LOCKING THE VIEWPORTS

Viewports can be locked. Making sure the Paper Space is current.

1. Click on the Viewport Boundary, it will be dashed.

   - Now click on Properties (Cnrtl+1) Properties is displayed
   - Click on the box alongside Display Locked. Change from No to YES.
   - Close by clicking close on it's Title Bar

☞ LINETYPES & PAPER SPACE

Line types can be set to use the Paper Space View port Scale Factor.

1. Format Pull down menu / Line type.

   - Click on details
   - Click on Paper Space Scaling

Note: When using Paper Space Line type scale: Set Global Line type Scale initially to 1, adjust later if required.

☞ Aligning Objects that are in Separate Viewports

Objects in separate Viewports may be required to align with one another either Horizontally or Vertically.

- * Ensure you are in the Paper space environment.
- Zoom in on two of the Viewports to be aligned.
- Keyboard command: misstep
- Select A for Align
- Select H or V for Horizontal or Vertical
- The Align function will automatically change Paper Space to a Floating Model Space.
- Click in reference to one that is correct.
- Using the OSNAP tab bar, hook on to the Endpoint that is to be aligned with other Viewport contents.
- Click in the other Viewport to make it active, once again use the Endpoint tool to align.

☞ Working with the Layouts – Multiple Drawings Sheets

RENAMING

When 1st drawing has been set out satisfactorily, complete following procedures.

1. Rename Layout 1- Right click on Layout Tab and select rename change to eg 'Floor Plan'

MOVING OR COPYING

You may wish to have similar drawings however with slight amendments.

1. Right click on Layout Tab bar and select Move or Copy

USER TIPS

These are likely to be out of date as the software advances. They need checking and revision.

SYMBOLS

When inserting SYMBOLS and the symbol is in the incorrect orientation change the Z - rotation within SYMBOL\CHANGE e.g. 90°.

The scale defaults can be changed in the same manner.

Warning: To avoid loss of symbols, if you create a temporary or permanent SYMBOL, it is important that you save it in the same DATA BASE as the MODEL it is used in. If the SYMBOL is to be temporary then all of the SYMBOLS inserted should be UNPACKED and the SYMBOL DELETED from the system. This will help in keeping the system "clean" and not have redundant data that the creator has forgotten about.

There are many standard SYMBOLS of a WC's, HB's, etc. These are saved in the ARCHITECT data base and other developed in-house standards. Refer to the SYMBOLS section.

GRIDS

For buildings with a regular grid pattern then it may be advantageous to turn on the machine's grid. This is found under MAIN MENU/CPL and then you will see GRID ON, GRID OFF and GRID SET.

Select SET GRID and follow the directions for setting the X and Y coordinates. For the GRID REFERENCE spacing select 10, as this is the spacing for highlighted grid points, you can change this at any time to suit your needs.

This grid has an unusual feature when SNAP-ON is set all inputs of lines, circles etc. will snap to the nearest point. This includes text, rectangles in fact every thing. Circles CENTRE on to the point as do arcs etc., all other entities START at the point.
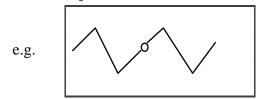
With the use of the toggle switches SNAP-ON and SNAP-OFF the speed and accuracy of inputting large numbers of columns is possible.

NEW LINE STYLES

- Create the desired line style (Best having a common start/finish paid point)

e.g.

- Surface/Plane/PATT-CRE
- Nominate 'System' file
     e.g. "SYSTEM:FIRE STANDARDS" or create new.
- Type in new line style name
     e.g. FIRE/BARRIER
- Locate Corners/origin

e.g.

- Use existing default settings for starting and finishing lengths prompts.
- Locate entities of line.
- Then: change default styles to newly created line style
   e.g. DEFAULT/STYLE/USER/PATTERNFILE/SYSTEM:FIRE/"FIRE" BARRIER
- Then insert line.

NOTE: Save to K:\FR\CADD\CMAN-setup-for-each-machine\system\CADD-Patterns copy to Modeller SJ
       All users should then be notified to update CADD-PATTERN from K:\FR\CADD\CMAN-setup-for-each-machine\system\CADD-Patterns copy to Modeller SJ.