



# University of Wollongong

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Joinery Elements Design and Space Allocation Standards  
Version 3 – February 2015

## VERSION CONTROL SYSTEM

Section Modified	Description of Modification	Version	Organisation	Representative	Date
Throughout	Version 1	1	Asset Technologies Pacific	Michael Lee	29/06/07
Throughout	Changed footer to reflect 1.01 version	1.01	University of Wollongong	Bob Slater	13/07/07
13.3.2	Deleted word 'partitions'	1.01	University of Wollongong	Bob Slater	13/07/07
13.3.3	Deleted "built-in furniture such as cupboards and laboratory benches shall be provided"	1.01	University of Wollongong	Bob Slater	13/07/07
Page 29: A.16	Tables labelled "rectangular" instead of "round"	1.01	University of Wollongong	Bob Slater	13/07/07
Throughout		1.02	University of Wollongong	Bobs Slater	21/1/09
Throughout	More Australian Standards specified in OH&S References. Computer location for desk types – S2L and S2R modified. Straight desk width changed to min 800 mm. Drawings updated: FS01-FS05, FS07, FS08, FS15, Typical Postgraduate Desk Layout, Postgraduate Furniture Option for Typical 12m <sup>2</sup> Office.	1.03	University of Wollongong	Bob Slater	20/05/09
1.4 1.5 1.6, 1.8 A-11 A-15	Standards – BCA document number updated OH&S References updated Construction notes modified. Drawings updated to reflect current designs. Notes re: fixed and adjustable shelving and shelf section revised Table base revised	1.04	University of Wollongong	Bob Slater	15/06/11
Throughout	Document updated to reflect name change from Buildings & Grounds (B&G) to Facilities Management Division (FMD) and rebranding logo	2	University of Wollongong	Yvonne Butcher	8/3/2012
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## JOINERY ELEMENTS

The joinery elements consist of office furniture and their allocations and arrangements. These elements comprise the following:

- Furniture Allocations.
- Workstation Arrangements.
- Filing Cabinets.
- Bookshelves.
- Storage Cupboards.
- Credenzas.
- Meeting Tables.
- Computer Desks.
- Accessible Reception Counter.

### 1.1 OVERVIEW

This design standard outlines the design and construction requirements for joinery elements at UOW.

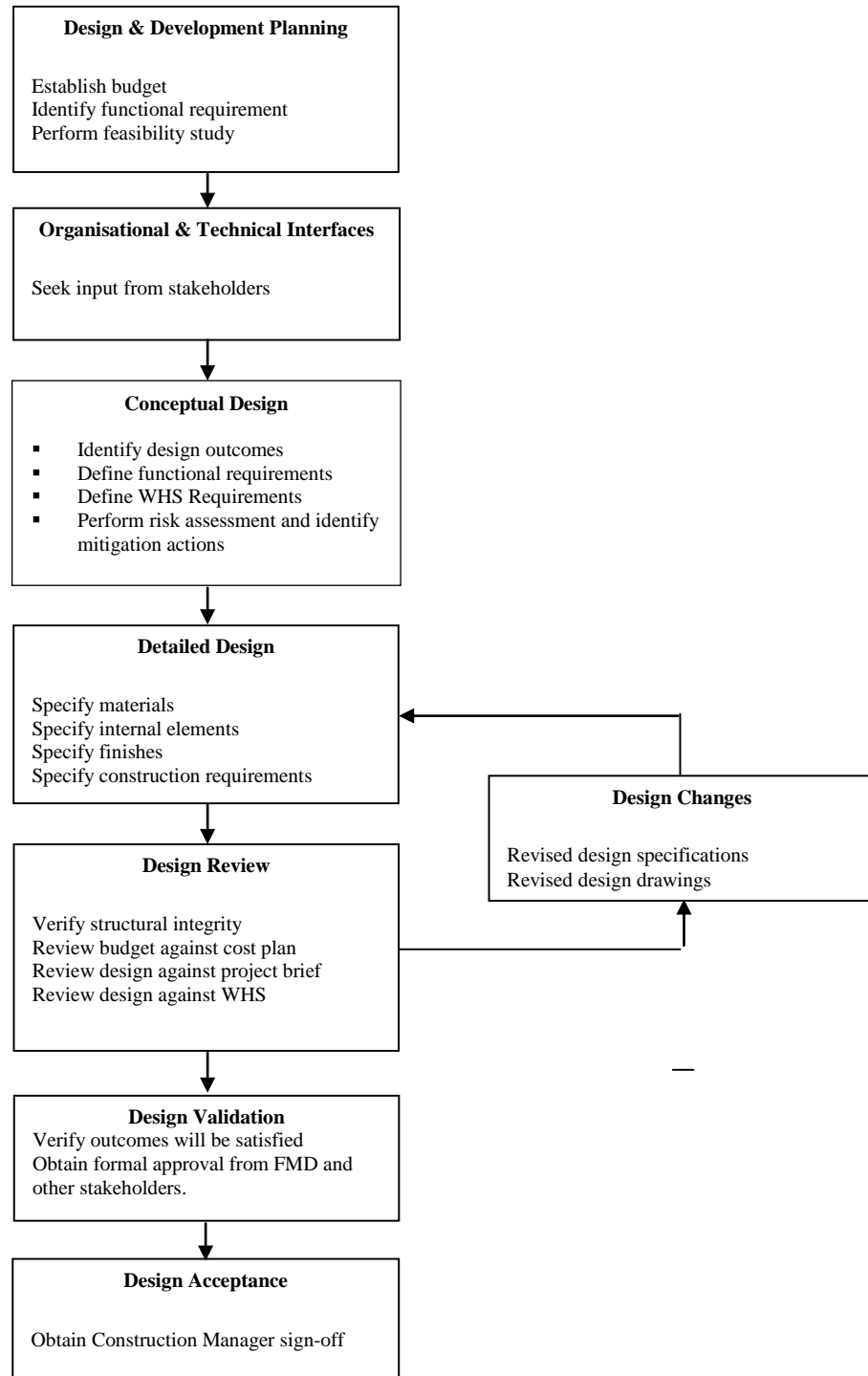
The design objective shall be to construct ergonomically appropriate furniture or joinery elements that are functional, fit for purpose and aesthetically acceptable.

The designer shall use these standards as the basis for the conceptual and detailed design. However, it is incumbent upon the designer to ensure that the type and construction of the joinery elements are suitable for the facility, are cost efficient and are capable of meeting the UOW's requirements.

Where the designer considers that an alternate design approach is more appropriate than that specified in the design standard, the designer will advise the principal of the functional, performance or cost benefit that will be achieved through the implementation of the alternate design approach. The designer will formally inform UOW that design complies with the UOW WHS standards.

## 1.2 DESIGN PROCESS

This section provides an overview of the design process. The process shall be followed to achieve UOW's desired outcomes.



## 1.3 DESIGN AND CONSTRUCTION GUIDELINES

### 1.3.1 General

The building design shall be undertaken in accordance with the relevant codes and standards. The design approach shall produce quality furniture and be consistent across each campus.

Samples of proposed joinery finishes shall be submitted to UOW for approval during the conceptual design stage.

The materials selected for each joinery element shall:

- a. Be durable and resistant to environmental conditions.
- b. Not negatively impact on the environment.
- c. Minimise maintenance.

UOW has a policy of standardising items of furniture and fittings. Design Consultants shall take into account the existing policy in the selection and specification of all items of furniture and fittings.

Consultants shall ensure that any chairs and other furniture specifics comply with NSW Work Cover requirements and recommendations. Documentation by the supplier to this effect must be provided with supply.

### 1.3.2 Workstation Furniture

The appropriate design of workstation furniture depends on the functions to be performed at the workstation. Screen-based tasks vary in aspects such as input rates, emphasis on use of documents and screen, need for writing space, and control over work space.

Selection of appropriate furniture should be made on the following basis:

- Tasks performed at the workstation:
  - Data processing.
  - Work processing.
  - Typing.
  - Typesetting.
  - Counter operations, e.g. travel reservations, banking.
  - Programming.
- Duration and intensity of the tasks.
- Equipment to be located at the workstation.
- Environment in which workstation is located.
- Whether workstation is single or multiple user.

A major aim in selecting workstation furniture is to promote safe working posture. The fundamental principles of safe working posture are outlined in the Ergonomic Workstation Setup guidelines on UOW WHS website.

Desks are free standing and when used in open office arrangements are required to have return ends or other independent means of support.

Power and data/comms services are available from internal wall based or ducted skirtings on external walls. Desk construction takes into account access to service outlets. Some desks are soft wired with interconnected leads to power under the desks.

### 1.3.3 Other Furniture

Furniture shall generally be free standing to provide maximum flexibility. The use of built-in furniture must therefore be approved by UOW during the detailed design stage.

Where abutting walls, provide an integral splash back not less than 150mm high caulked to the wall. All cupboards and drawer units where required must be lockable. All built-in furniture, other than in laboratories, must have an approved finish.

Laboratory furniture shall comply with the relevant Australian Standard for the type of laboratory usage.

Schedules listing types, finishes and quantities required shall be produced at an early stage of the detailed design to enable UOW to purchase the required items.

All electrical or electronic equipment housed inside joinery units shall be adequately ventilated.

## 1.4 STANDARDS

The design shall comply with the latest versions of all relevant codes and standards in force at the time of specification. Table below contains a list of the relevant codes and standards.

Issuing Body	Document Number	Title
National Construction Code	NCC 2014	National Construction Code Series
Australian Building Codes Board	BCA 2011	Building Code of Australia
Standards Australia	AS 1428.1 and 1428.2	Design for access and mobility
Standards Australia	AS 2466	Guide to the design of microform workstations
Standards Australia	AS 2358	Adhesives



Issuing Body	Document Number	Title
Standards Australia	AS 3958.1	Guide to the installation of ceramic tiles
Standards Australia	AS 3553	Adhesives for floor and wall applications
UOW	WHS037.7	WHS Ergonomic Equipment Guidelines ( <a href="https://intranet.uow.edu.au/content/groups/public/@web/@ohs/documents/doc/uow017063.pdf">https://intranet.uow.edu.au/content/groups/public/@web/@ohs/documents/doc/uow017063.pdf</a> )
UOW	WHS064.7	WHS Design and modification guidelines ( <a href="https://intranet.uow.edu.au/content/groups/public/@web/@ohs/documents/doc/uow017017.pdf">https://intranet.uow.edu.au/content/groups/public/@web/@ohs/documents/doc/uow017017.pdf</a> )

## 1.5 WHS REFERENCES

- Australian Standard AS 3590.1 – 1990 Screen-based workstations, Part 1, visual display units.
- Australian Standard AS3590.2 – 1990 Screen-based workstations, Part 2, workstation furniture.
- Australian Standard AS 1680.2.2 – 2008 Interior lighting Part 2.2, office and screen-based tasks.
- Australian/New Zealand Standard AS/NZS 4443:1997 and AS/NZS 4443:1997/Amendment 1:1999, Office panel systems workstation.
- Australian / New Zealand Standard AS/NZS4438: 1997 and AS/NZS4438: 1997/Amendment 1:1999, Height-adjustable swivel chairs.
- Australian/ New Zealand Standard AS/NZS 4442:1997, Office desks.
- Australian/ New Zealand Standard AS/NZS 1680.2.4:1997 and AS/NZS 1680.2.4:1997/Amendment 1:1998, Interior lighting Part 1: General Principles and Recommendations.
- Australian/ New Zealand Standard AS/NZS 3813:1998 – Plastic monobloc chairs.
- Australian/ New Zealand Standard AS/NZS 4688.2:2000 - Furniture - Fixed height chairs - Determination of strength and durability
- Australian/ New Zealand Standard AS/NZS 4688.3:2000 Furniture - Fixed height chairs - Determination of stability - Upright chairs
- Australian/ New Zealand Standard AS/NZS 2243.3:2010 - Safety in laboratories - Microbiological aspects and containment facilities
- AS/NZS 3100:2009 Approval and test specification - General requirements for electrical equipment.(Paragraph 6, Page 9) and AS/NZS 3100:2009/Amendment1:2010
- AS/NZS 3000:2007 and AS/NZS 3000:2007/Amendment 1:2009 Electrical installations. (Page 10)
- BS 5459-2:2000 and A2:2008 Specification for performance requirements and tests for office furniture. (Part 1, Paragraph 6.4.6, Page 12)
- Ergonomics The Human Factor, SAA HB59 - 1994, Standards Australia.
- Kroemer, K Fitting the Human. A Textbook of Occupational Ergonomics 6th edition, 2008.





- Worksafe Australia National Occupational Health and Safety Commission, Ergonomic Principles and Checklists for the Selection of Office Furniture and Equipment November 1991.
- Work Health Safety Act 2011.
- Work Health Safety Regulation 2011.

## 1.6 CONSTRUCTION

- All furniture to be manufactured out of 18mm custom board MDF melamine. All desk tops of 18mm to have stiffener bar, allow 25mm tops with no bar.
- All exposed edges to be covered with 2mm ABS edge in a matching colour.
- All desks to be fitted with a 35 x 35mm metal box section support rail, secured at both ends if 18mm tops are used.
- Meeting tables (MT1 and MT2) are to be manufactured from the following components:
  - MT1/MT2/MT6 Legs: Supplier: Artia Product Number: 720.44522.340
  - Tops: 18mm MDF with 2mm ABS edge with fully laminated edge and top.
- Meeting tables (MT3, MT4 and MT5) are to be manufactured from:
  - Legs: 33mm MDF
  - Tops: 18mm for top with 2mm ABS edges. Provide moulded round edges with laminated top. Edges sprayed to match.
- Drawer units are to be fitted with heavy duty steel self closing draw runners, with castors underneath. All filing drawers to be fitted with heavy duty fully extended drawer runners.
- All adjustable shelving to be fitted with 8mm brass socket inserts with solid brass support pins.
- All bookshelves to have a 50x18mm MDF stiffening rail rebated at the back of each shelf.
- All backing material to be concealed in a rebate and to match laminate colour.
- All handles to be Satin Chrome D Handles 128mm CC.
- Locks to be provided if specified.

## 1.7 LIFE CYCLE COSTING

The designer shall prepare life cycle costing as part of the conceptual design process.

These costs will include:

- a. Materials.
- b. Initial construction.
- c. Regular and reactive maintenance.

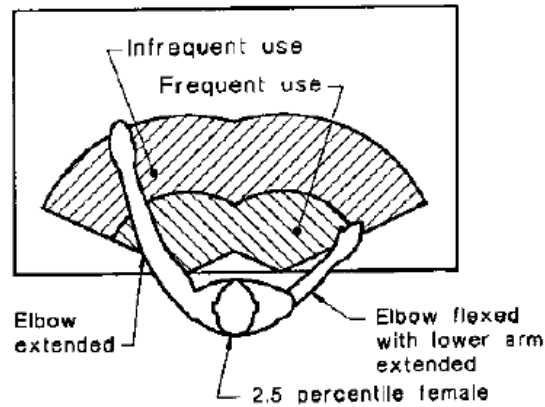
## 1.8 DRAWINGS

Standard Joinery furniture provisions are indicated on the attached drawings. Refer Appendix A.

- 01 Standard Furniture Allocation for Director/Head of Department/Dean Office 20m<sup>2</sup> to 24m<sup>2</sup>
- 02 Standard Furniture Allocation for Office up to 12 m<sup>2</sup>
- 03 Standard Furniture Allocation for Post Grads in Offices up to and over 15 m<sup>2</sup>
- 04 Standard Workstation Arrangements for Director/Dean/Executive Manager Desk Type DA and DB
- 05 Standard Workstation Arrangements Desk Type DDR & DDL, Under bench Furniture M1 & M2
- 06 Standard Office Furniture Cupboards C1, C2, C3 & C4
- 07 Standard Office Furniture Bookshelves B1, B2 & B3
- 08 Standard Office Furniture Storage Cupboards SC1, SC2, SC3 & SC4
- 09 Standard Office Furniture Meeting Tables MT1, MT2, MT3 & MT4
- 10 Standard Office Furniture Meeting Tables MT5, MT6 & MT7
- 11 Standard Computer Desks CD1 & CD2
- 12 Standard Office Furniture Typical Cable Management Tray Details
- 13 Typical Reception Counter

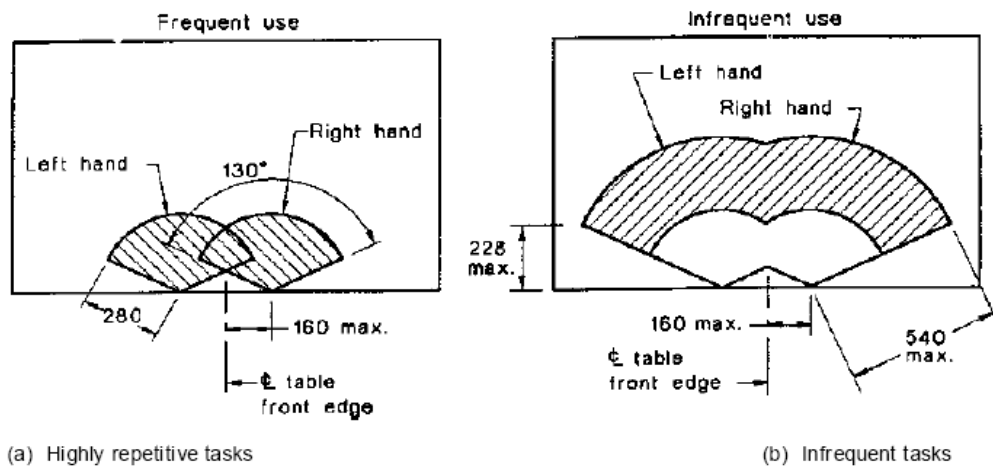


Extracted from Australian Standard: AS3590.2 – 1990



NOTE: Use of reach limits of the 2.5 percentile female ensures that work surface layouts will suit the majority of the population of users.

FIGURE 1 LIMITS OF REACH

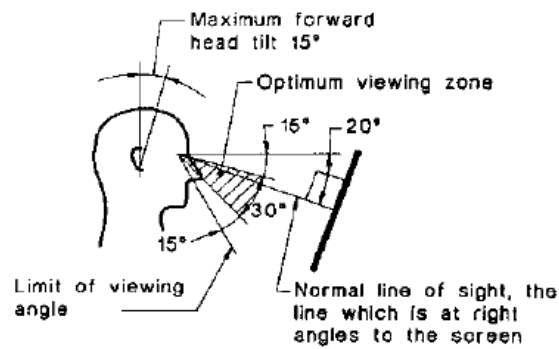


(a) Highly repetitive tasks

(b) Infrequent tasks

DIMENSIONS IN MILLIMETRES

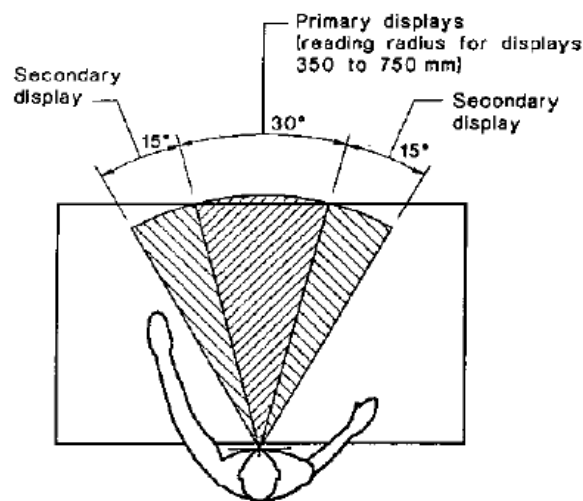
FIGURE 2 OPTIMUM REACH AREAS ON WORK SURFACE



NOTES:

1. Excessive forward head tilt is fatiguing after long periods and should be limited to a maximum of 15°.
2. The most comfortable viewing zone (neck muscles relatively relaxed) at a desk is the area 32° to 45° below the horizontal.

(a) Limits of vertical visions



(b) Limits of horizontal vision

FIGURE 3 LIMITS OF VISION

### 1.9 Computers Monitor Height.

Generally the top of the monitor should not be above the horizontal eye height of the operator, and the centre of the monitor screen should not be higher than 400 mm above the work surface.

The most suitable position for the monitor at each workstation will depend on factors such as:

- a. Task requirements (see Clause 4);
- b. Position of the screen in relation to natural and artificial light sources;
- c. Whether the operator wears bifocal glasses; and
- d. Size of the screen.

## 2 WORKSTATIONS

### 2.1 Safety

Electrically operated workstations shall comply with AS 3000. Motors should be shielded to prevent interference or damage to equipment memory. Workstations, particularly the underside of the work surface, should not have any sharp edges, corners, protrusions, or rough surfaces likely to cause injury to users or damage to their clothing.

Moving parts within the workstation should not create hazards such as pinch points or shear points.

NOTES:

1. Fixed wiring is covered by AS 3000 and compliance is mandatory in all Australian States.
2. Cabling is covered by AS 3260. Compliance with AS 3260 is mandatory.

### 2.2 Cable Management.

Facilities should be incorporated within the workstation design to accommodate the cables required for power, data transmission, and telephone demands of the workstation, and to stow any excess cables. Switches which are used regularly should be readily accessible.

Provision should be incorporated for cable maintenance.

### 2.3 Storage Facilities.

Storage facilities for frequently used items should be provided at each workstation. Storage facilities should:

- a. Be stable and not present a hazard when fully loaded;
- b. Be constructed so that they can be opened, closed, and locked from the normal operating position; and
- c. Have at the least one lockable section in which the operator can store personal effects.

Where located under an adjustable work surface, storage facilities should be mobile, and should be not more than 550 mm in height so that full work surface adjustment is not impeded.

## 2.4 Seated Workstations

### 2.4.1 Work Surface Area

The work surface area should be adequate for the tasks to be performed at the workstation. It should be large enough to accommodate the screen, keyboard, and associated equipment, and still have enough room for writing and for the resting of hands and arms. The workstation should also be large enough to permit items used regularly to be within easy reach of the operator from the normal operating position. (refer Figure 5)

For the sole tasks (e.g. keyboard work), the work surface should have minimum dimensions of 1800 mm x 800 mm.

For mixed tasks (e.g. keyboard and clerical work), the work surface should have minimum dimensions of 1800 mm x 800 mm.

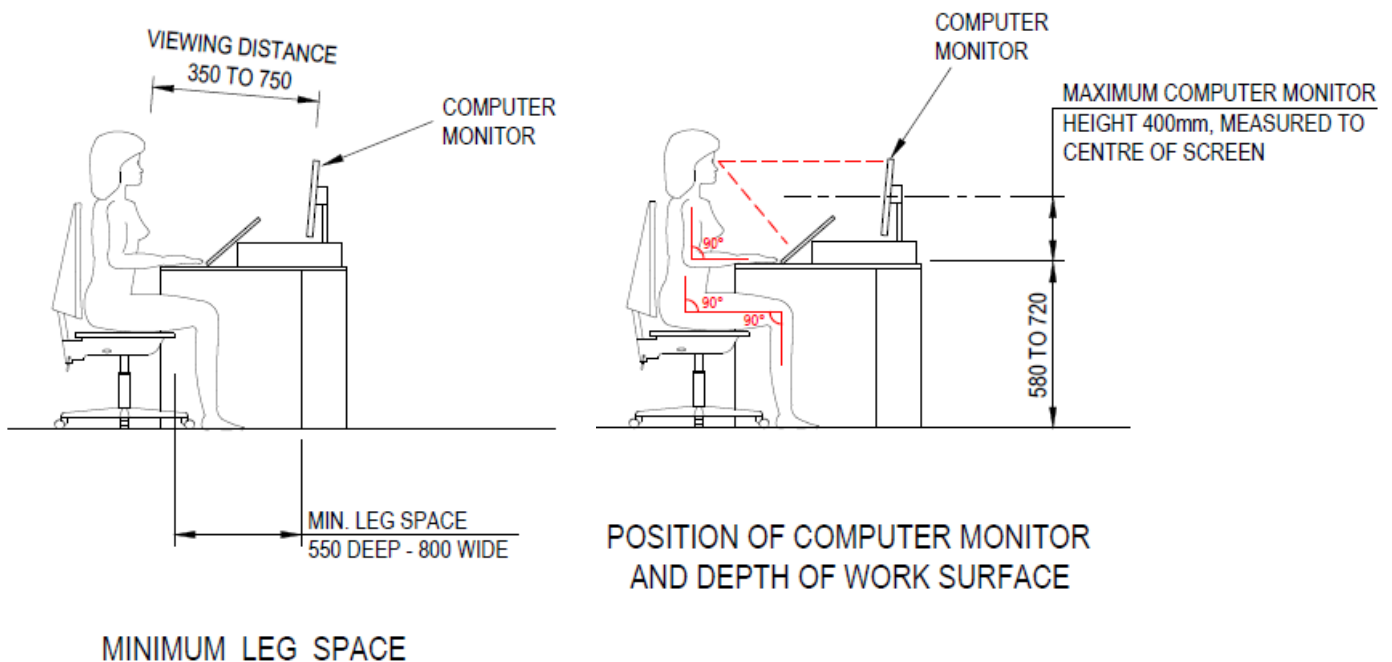


Figure 5

### 2.4.2 Work Surface Height Adjustment

Adjustment mechanisms should be reliable, designed to encourage use, and not prone to accidental operation.

Controls for adjustment mechanisms shall be labelled to indicate clearly the control for upwards movement and the control for downwards movement. Mechanical and electrical controls should comply with the conventions for directions of movement set out in IEC 447.

Indicators should also be provided so that the operator can readily see the position of the work surface within the adjustment range.

### **2.4.3 Fixed Height Work Surfaces**

Fixed height work stations are acceptable with the use of adjustable ergonomic chair, monitor and a footstool. The height of the work surface should be not less than 680 mm and not greater than 720 mm.

### **2.4.4 Work Surface Thickness**

The maximum thickness of the work surface over the leg space specified in Clause 6.4.7 shall be 25 mm.

### **2.4.5 Work Surface Finish**

The work surface should be a neutral colour such as grey and have a satin or matt finish. When measured in accordance with AS 3590. 1, the reflectance of the work surface shall be not less than 0.20 and not greater than 0.50.

The work surface should also be easy to clean, and finished so that it is possible to write on a single sheet of paper with no backing.

### **2.4.6 Construction**

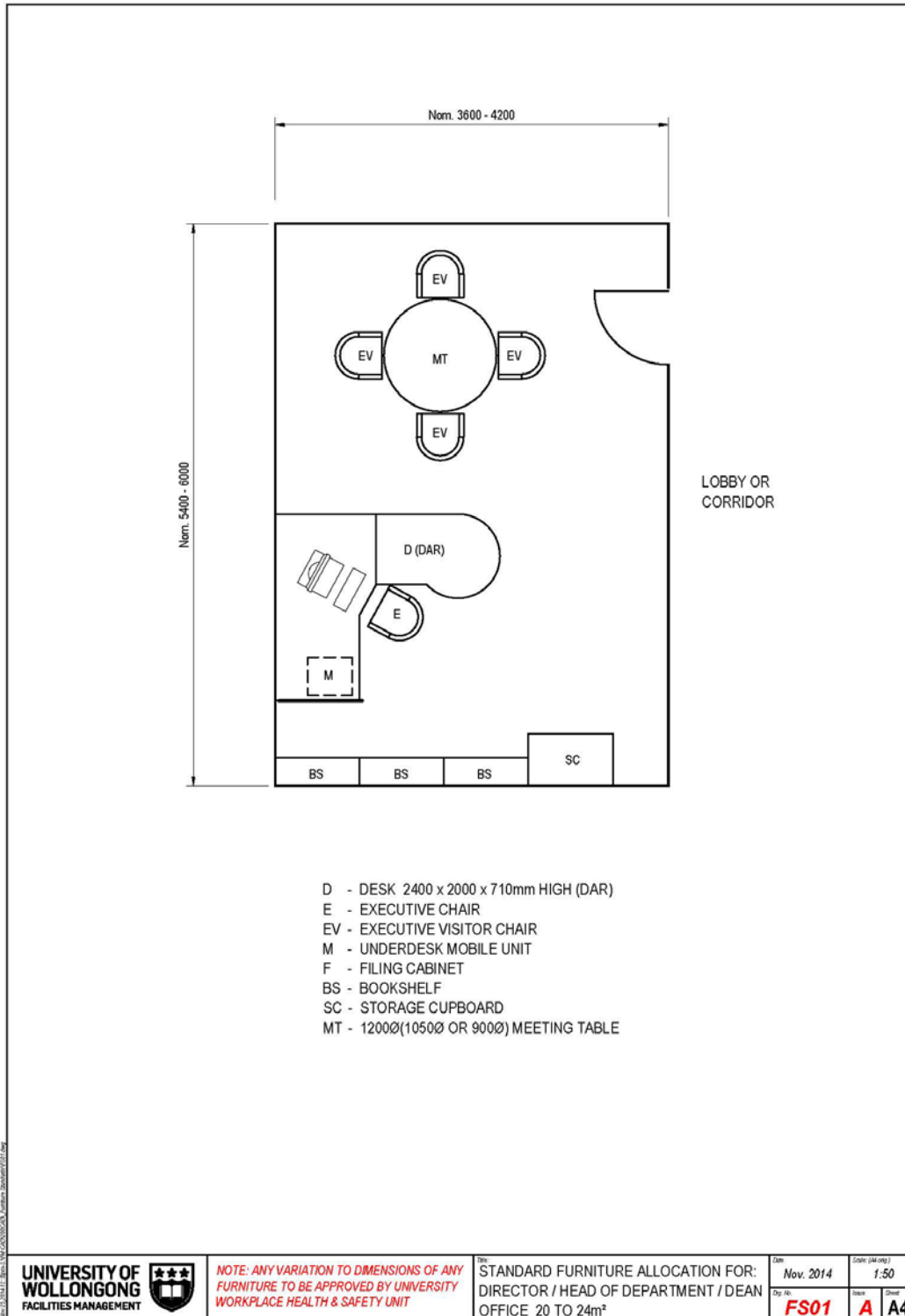
The workstation shall comply with the rigidity and stability requirements of BS 5459, Part 1.



APPENDIX A

1 Drawing 1: Standard Furniture Allocation for Director/Head of Department/Dean Office 20m<sup>2</sup> to 24m<sup>2</sup>

Attachment 1

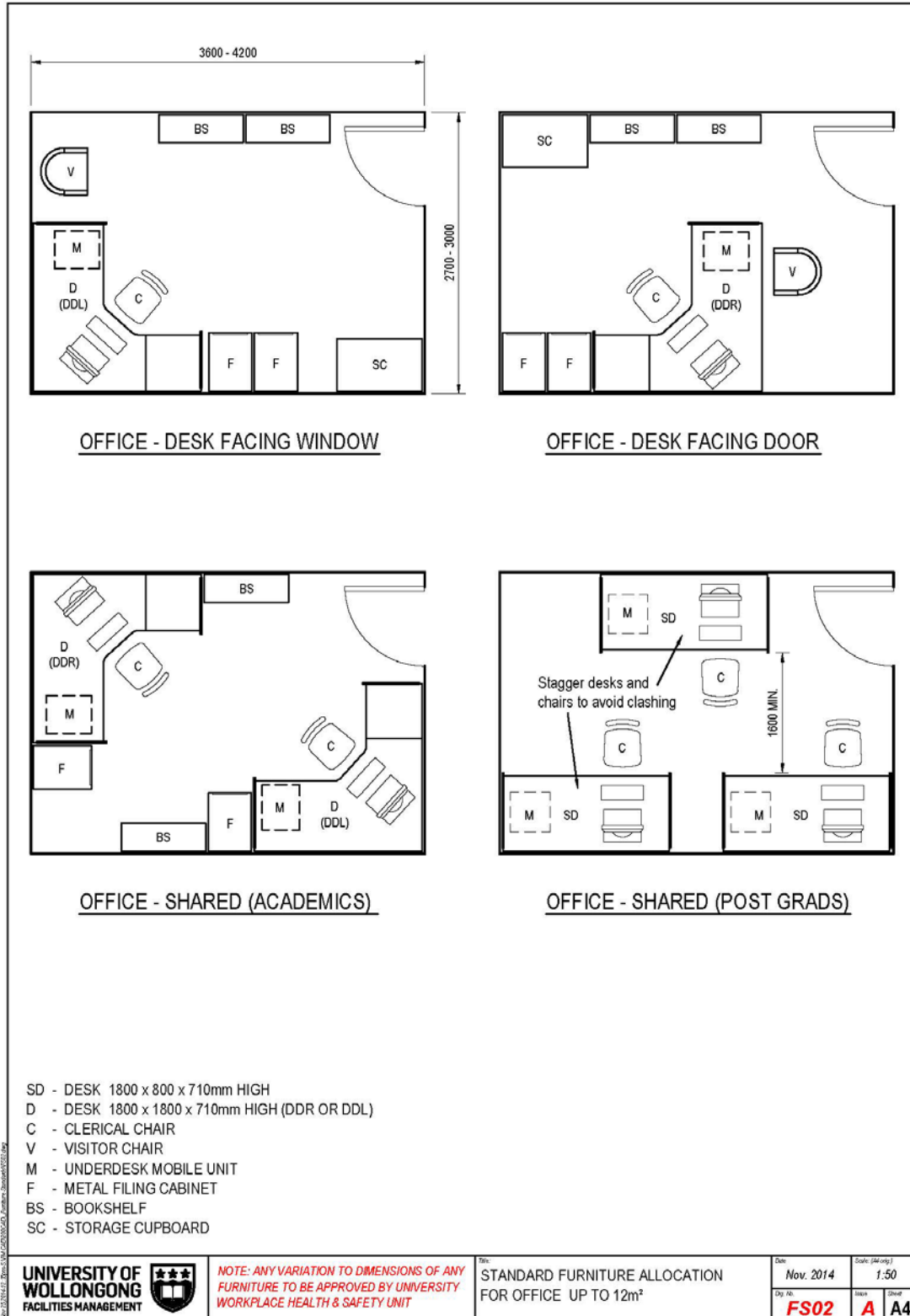






2 Drawing 2: Standard Furniture Allocation for Office up to 12 m<sup>2</sup>

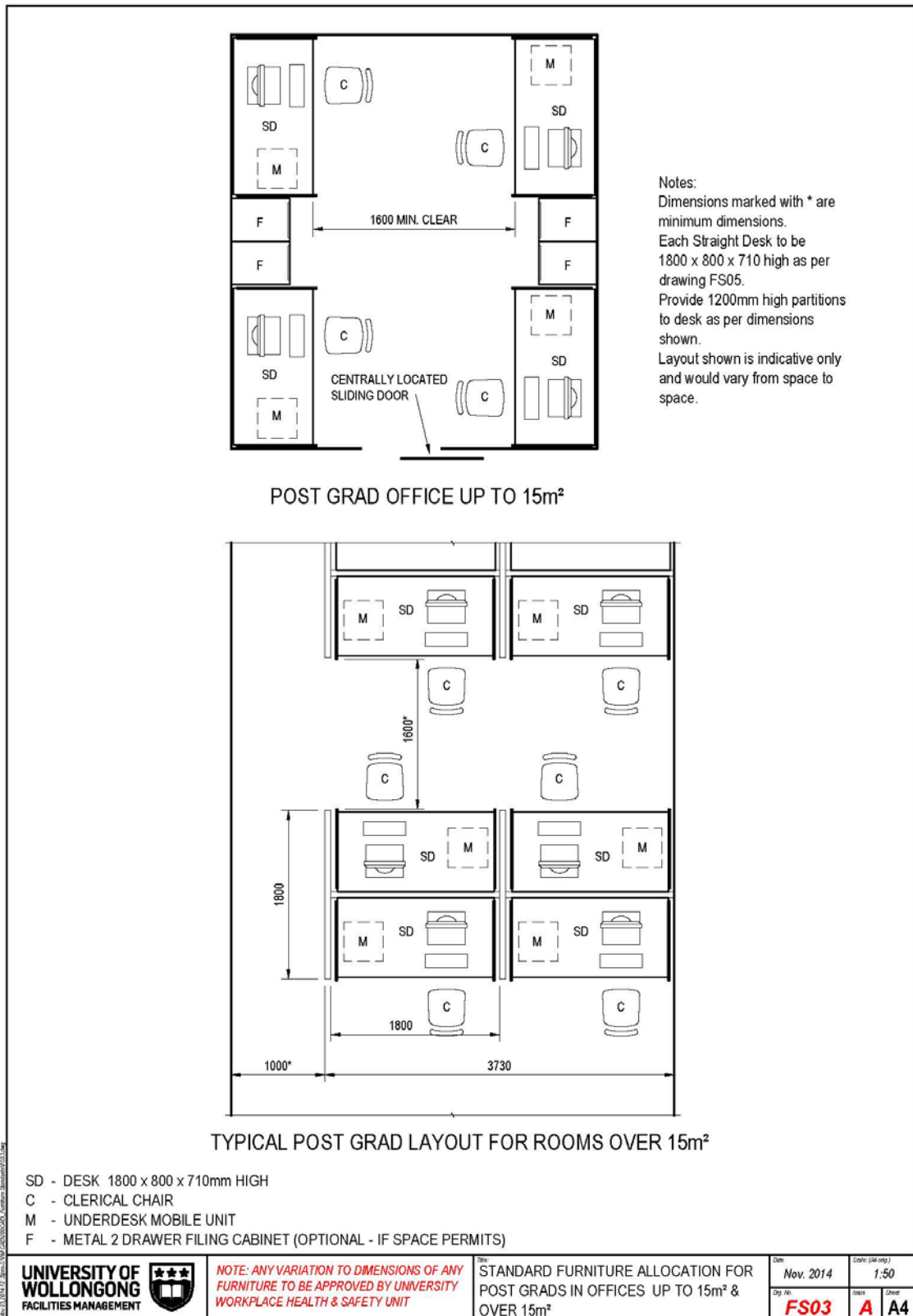
Attachment 2





3 Drawing 3: Standard Furniture Allocation for Post Grads in Offices up to and over 15 m<sup>2</sup>

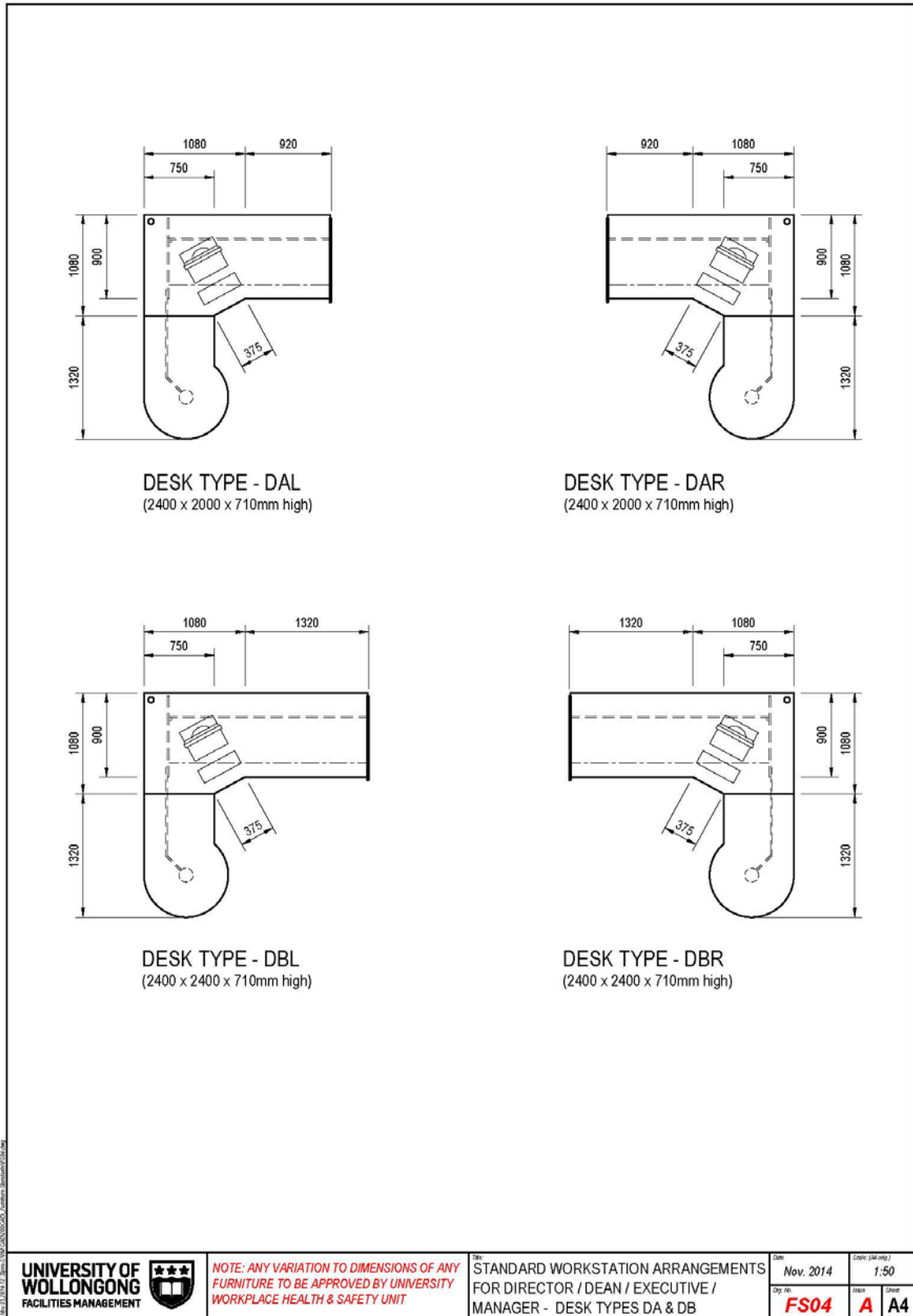
Attachment 3





**4 Drawing 4: Standard Workstation Arrangements for Director/Dean/Executive Manager Desk Type DA and DB**

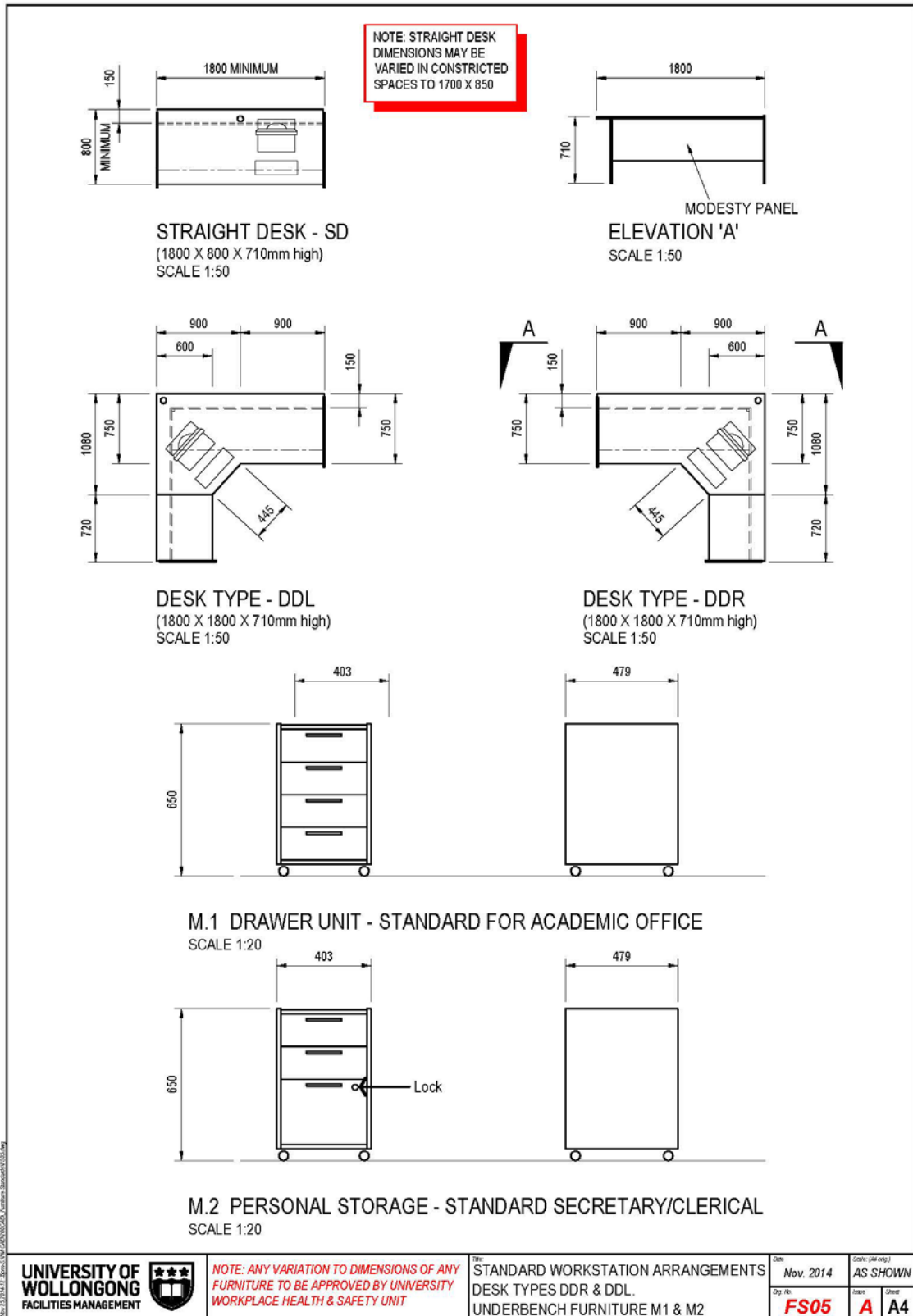
Attachment 4





5 Drawing 5: Standard Workstation Arrangements Desk Type DDR & DDL, Under bench Furniture M1 & M2

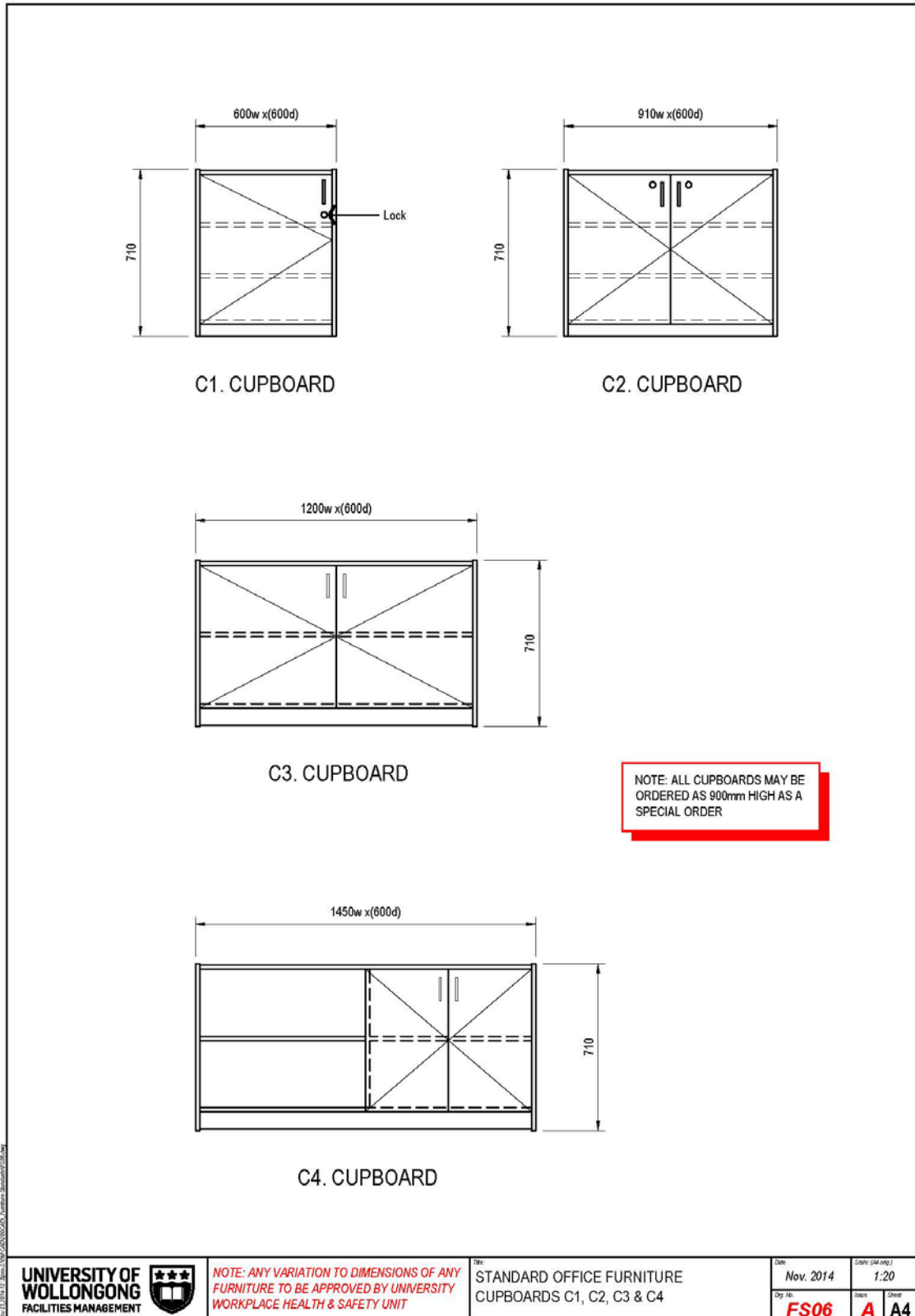
Attachment 5





6 Drawing 6: Standard Office Furniture Cupboards C1, C2, C3 & C4

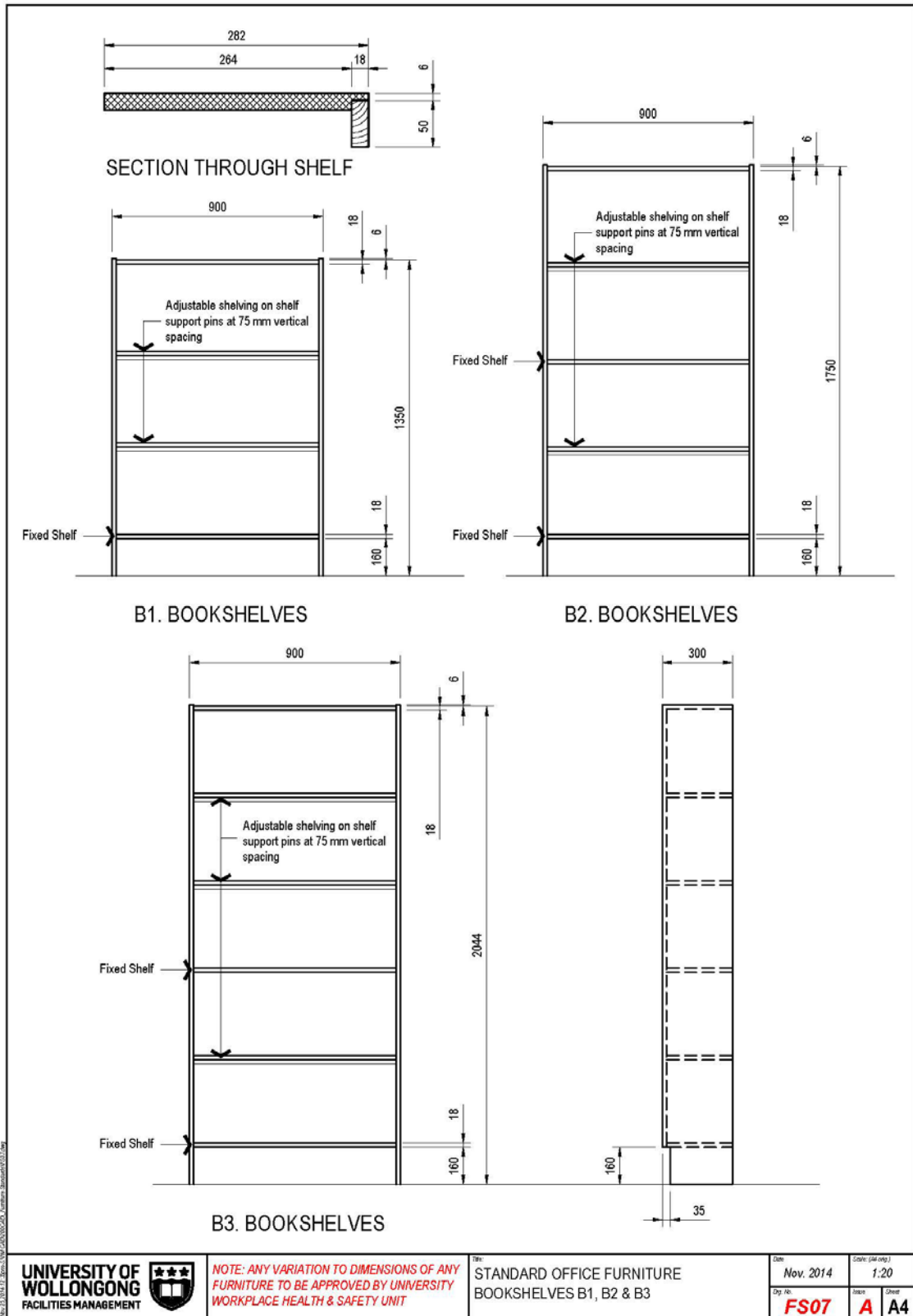
Attachment 6





7 Drawing 7: Standard Office Furniture Bookshelves B1, B2 & B3

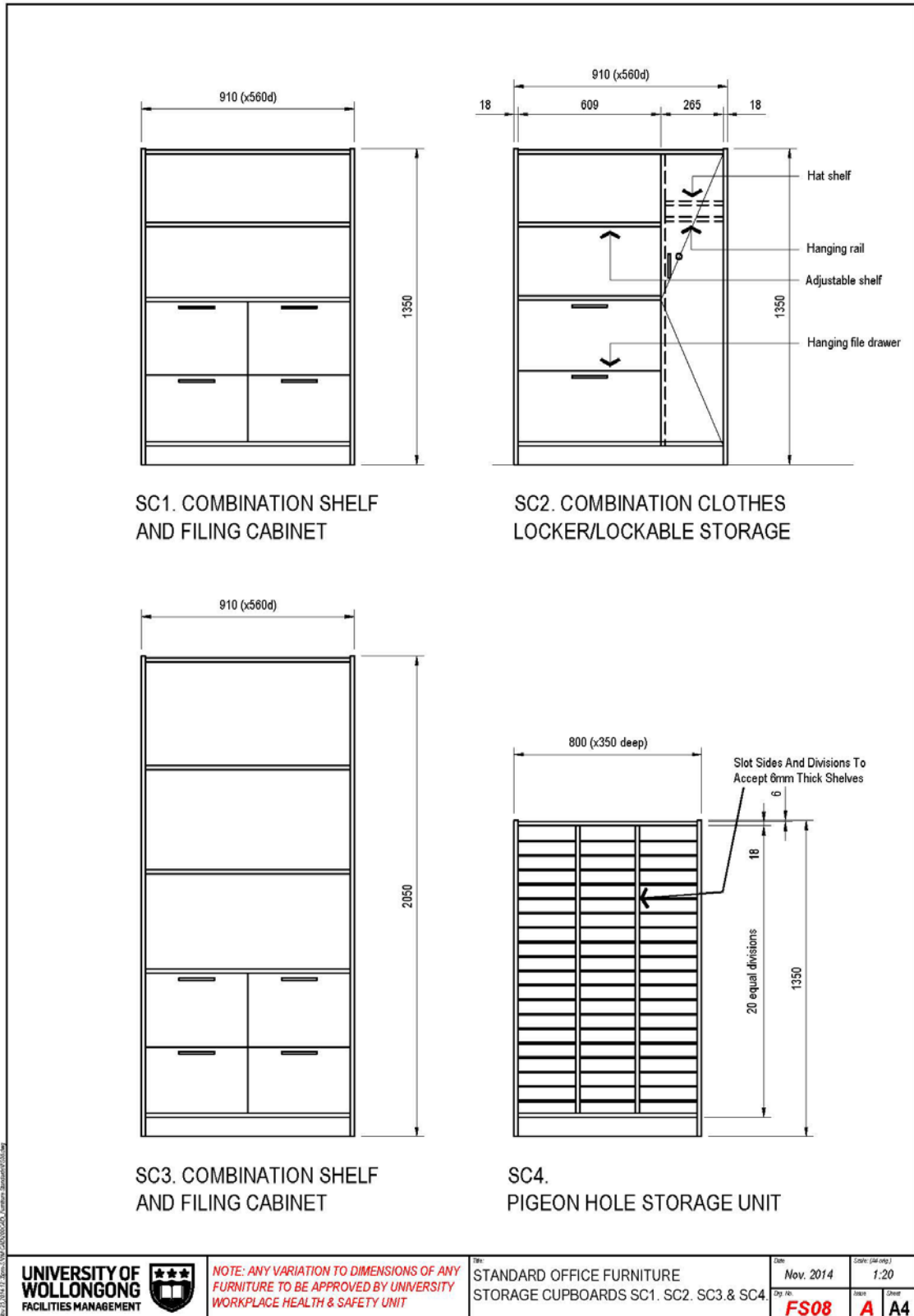
Attachment 7





8 Drawing 8: Standard Office Furniture Storage Cupboards SC1, SC2, SC3 & SC4

Attachment 8





9 Drawing 9: Standard Office Furniture Meeting Tables MT1, MT2, MT3 & MT4

Attachment 9

Disk base may be used as alternative .

Prefabricated steel base and legs, refer to Section 1.6 Construction for more details

MT1 ROUND TABLE(900Ø) - SEATING 3

MT2 ROUND TABLE(1050Ø) - SEATING 4

MT3 ROUND TABLE(1200Ø) - SEATING 4 - 5

MT4 ROUND TABLE(1200Ø) - SEATING 6

UNIVERSITY OF WOLLONGONG FACILITIES MANAGEMENT

NOTE: ANY VARIATION TO DIMENSIONS OF ANY FURNITURE TO BE APPROVED BY UNIVERSITY WORKPLACE HEALTH & SAFETY UNIT

STANDARD OFFICE FURNITURE MEETING TABLES MT1, MT2, MT3 & MT4

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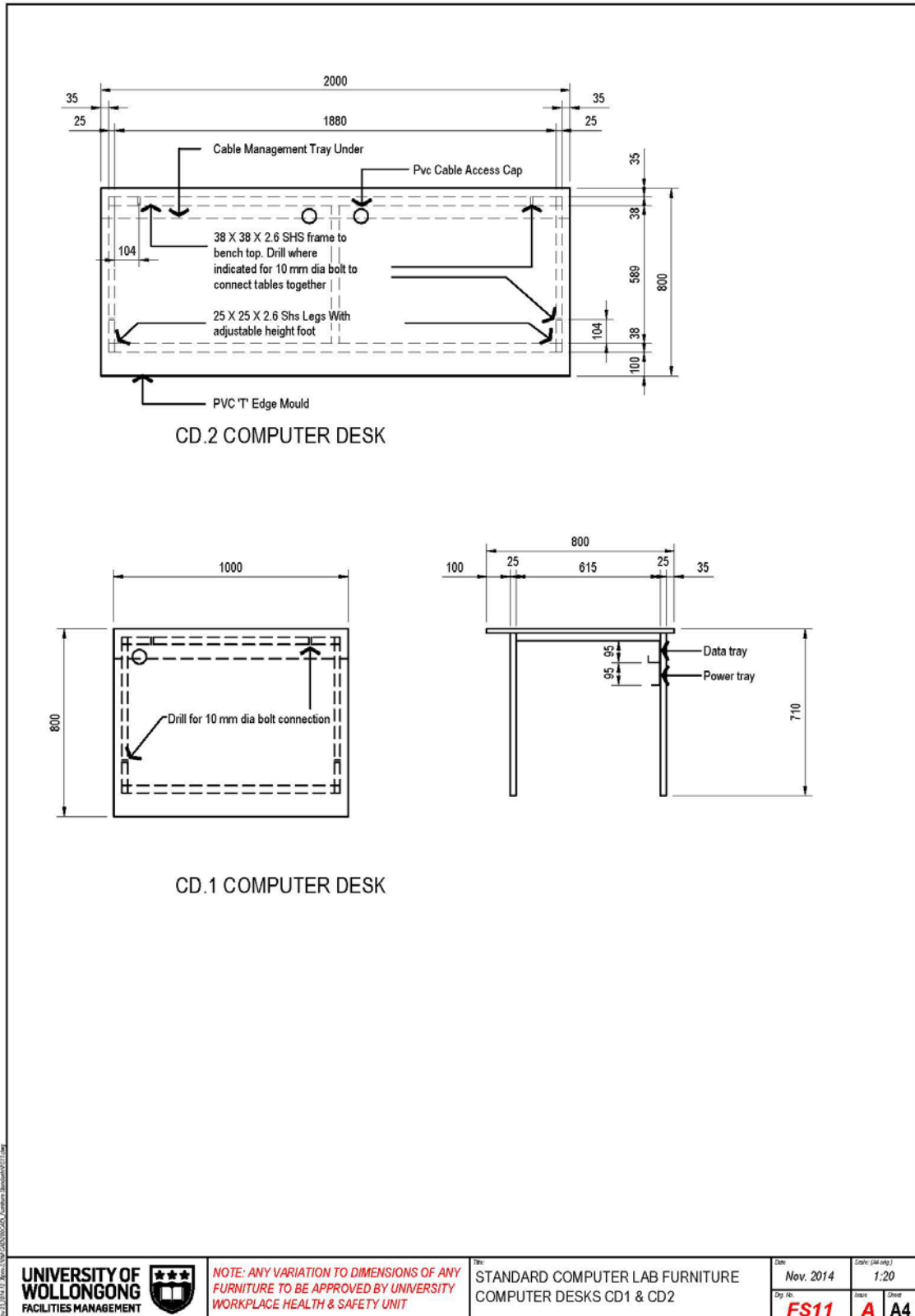






11 Drawing 11: Standard Computer Desks CD1 & CD2

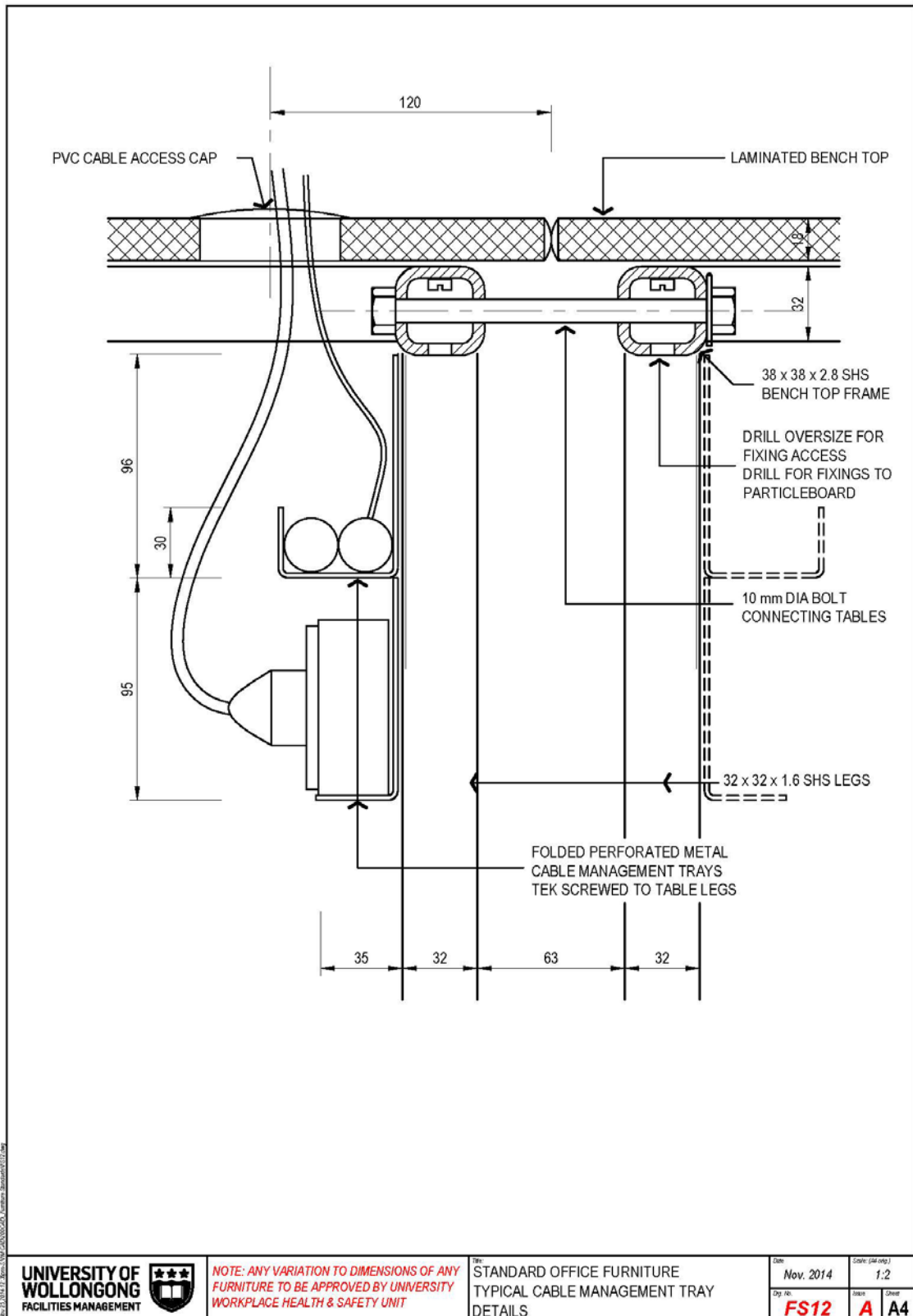
Attachment 11





12 Drawing 12: Standard Office Furniture Typical Cable Management Tray Details

Attachment 12





13 Drawing 13: Typical Reception Counter

Attachment 13

