ERGONOMIC DESIGN STANDARD

SCOPE

This standard relates to all activities under the management and control of Monash University in Australia and applies to affected workers; including staff, students, contractors and visitors.

Specifically, this applies to workers that have input into the ergonomic design of existing space, refurbishment works or new building projects.

This standard sets out the ergonomic design requirements for general and open plan office space, reception areas and flat floor teaching spaces. Whilst each project will bring together a different range of design challenges, the information contained in this standard should be taken into account, when new building or refurbishment works are undertaken.

In addition, Project Managers are responsible for ensuring that plans comply with all other relevant requirements, e.g. the National Construction Code, Disability Discrimination Act (DDA), OHS legislation, Australian Standards and the latest edition of the Monash Design and Construction Standards.

1. Abbreviations

ABW	Activity Based Work
AFRDI	Australasian Furnishing and Research Development Institute
DDA	Disability Discrimination Act
HS&W	Monash Health, Safety & Wellbeing team, led by the Director, Health Safety & Wellbeing
HSW	Health, Safety and Wellbeing
HSWMS	Health and Safety Management System

2. Work Area Analysis

2.1 Space

2.1.1 When planning new offices, space provisions as outlined in AS1668.2: 2012 and *Officewise - A Guide to Health and Safety in the Office* should be used as guidance. In addition, a risk assessment of the specific activities should be conducted to determine the appropriate amount of space required.

- The recommended space per workstation is 6m^2 plus additional space for storage amenities, corridors etc.
- For enclosed offices, AS/NZS 1668.2:2012, Table A1 specifies an allocation of 10m^2 per person, based on ventilation requirements. In addition, functional needs such as technology, visitors, meeting chairs, etc. should be considered.

2.2 Circulation spaces

2.2.1 Corridor widths are dictated by:

- The National Construction Code based on emergency escape requirements. Wider unobstructed corridors are required closest to emergency exits;
- AS1428.1:2009 which stipulates minimum widths based on disabled access needs;

- DDA: Guideline on the Application of the Premises Standard 2013.
- The minimum recommended for access ways is an unobstructed width of 1000mm.

2.2.2 Current ergonomic practice recommends:

- Entrance to workstations or offices: 900mm - 1000mm;
- Corridors with frequent use in open plan area: 1200mm;
- Corridors with storage units along one side: 1500mm.

2.3 **Storage spaces**

2.3.1 Ergonomic principles specify storage allocations as:

- Primary- Items of personal nature or frequently accessed at workstation;
- Secondary- Items shared by team or requiring occasional access;

  Can be stored in corridor or nearby storage area, however stored items must not impede clear access and egress as defined in 3.2.2.

- Tertiary- Infrequently accessed items;

  Stored in compactus, storeroom, archives, or amenities areas.

Note: The layout of equipment and resources on a workstation should be arranged, so that they are within comfortable reach, according to their use.

2.3.2 Shelving

- Only light items (easily lifted with one hand) are to be stored above shoulder height.
- Heavier items must be stored between shoulder height and mid-thigh height.
- Bookcases should generally be no higher than 1800mm. However, if they are up to 2400mm in height, they must be fixed to the wall securely in accordance with AS/NZS 4442:2018.
- Appropriate steps/ladders that comply with relevant Australian Standards, must be provided to access high shelves.

2.4 **Head to head distances**

- This is the distance between the heads of adjacent workstation users. The distance relates to the perception of 'personal space', as well as the functional interference due to noise and the space needed to move around a work area.
- Ideally, 1500mm or more should be provided from head to head of adjacent workstation occupants.

3. Desk Design

3.1 **Shape of desks**

3.1.1 Rectangular desks

The standard supplied desks are rectangular

- Require PC across centre of desk to provide symmetrical posture;
- Desk returns can only be provided with prior BPD Planning approval.

3.2 **Strength of desk**

- AS/NZS 4442:2018 requires that the design of the desk is sufficiently strong to withstand a minimum 90 kg of load
- Where practical, the manufacturer should provide certification relating to the design of desks through an independent agency, e.g. Australasian Furnishing and Research Development Institute (AFRDI).

3.3 **Edges, corners and desk thickness**

- Edges or corners must be rounded to avoid contact injuries.
- The recommended thickness for the desk surface is 25 - 35mm

3.4 **Desk length**

- For desks used only for computer-based tasks, 1500mm is the minimum length.
- For mixed function tasks, a length of 1800mm - 2100mm is recommended

3.5 **Desk depth and monitor type**

- The depth of the standard supplied desk is 800mm in accordance with AS/NZS 4442:2018. This is adequate for one or more flat LCD monitors of standard size.
- The use of monitors (single or dual) greater than standard size must be risk assessed to ensure the desk dimensions are appropriate.
- If more than one monitor is required, the primary, frequently accessed monitor must be positioned in alignment with the user's body centre and the secondary monitor to one side.
- If both monitors are equally used they must be placed side by side at the same height in a horseshoe configuration.
- If more than two monitors are used, the primary monitor must be positioned in front of the keyboard and the others on either side. Double stacking of monitors increases the risk of neck discomfort when looking up to the top row, thus should be avoided. If multiple monitors are used, then a specialist workstation design is required based on a task analysis and technology utilisation study.

3.6 Static Desk height

- The standard height for static desks is 730mm in accordance with AS/NZS 4442: 2018 and DDA requirements.
- A footrest may be required, together with a height-adjustable chair, to ensure that a fully supported seated position is achieved.

3.7 Leg space

- Clear leg space should be provided under all desks where operators sit.
- The minimum clear leg space width should be 800mm

3.8 Cable management

- Secure loose cables away from the leg space of the seated user. Use cable trays or electrical conduit for cable management.
- The cables must be accessible to computer technicians with minimal manual handling risks.
- Desks that have shared users should have access to the power and data from an accessible point on the desk surface.

3.9 Sit/stand desks

- Sit/stand desks allow the user to alternate between sitting and standing which can minimise the problems caused by static posture.
- Sit/stand desks also allow the desk height to be lowered to less than standard height to accommodate all users.
- The minimum range of height adjustability is 620mm – 1200mm
- Sit/stand desks are suitable for "hot-desking" environments.
- Further information on Sit/stand desks can be found in the Sit/stand desks Information sheet.

4. Reception Desks

4.1 Desk/hob height

- Fixed height standing workstations should be 900mm.
- For seated workstations, the height of the work surface must meet the requirements outlined in 4.6.
- Reception counters designed specifically for disability access must comply with AS1428.2:1992.

4.2 Desk depth

4.2.1 Reach distances:

- If required to sit at the desk and reach to the hob, a reach distance of less than 700 mm is recommended;
- Hence, the reception desk work surface depth should be less than 700mm and, preferably 500mm - 600 mm to the hob, where the reaching occurs. This can be most easily achieved by placing the computer into the apex of the counter and reducing the reach distance to the customer hob.
- If a security risk is identified with the customers then increase the depth of the hob. This requires the customer to be further away from the staff without increasing the reach distance for the staff.
- Apart from a depth of 500mm - 600 mm where reaching occurs, the remaining desk surface must be 800mm deep. Monitors should be positioned to suit the workflow, whilst maintaining visual sightlines.

4.2.2 Recessing monitors into the desk surface and covering with glass is not recommended, due to reflections on the glass from lighting and excessive downward neck angles for the operator.

4.3 Monitor type

- If the customer needs to view the monitor, determine how the monitor will swivel to enable this.

4.4 Foot rest

- If a static workstation is used, provide a footrest across the entire width of the serving area.

4.5 Document Storage

- Frequently accessed forms, etc. should be within the secondary reach zone (up to 700mm) from the seated position.
- Forms may also be positioned under the desk surface, but away from the leg space and within reach between the seated height and the desk.
- Although users can spin on their swivel seat to retrieve documents, they should not twist or over-reach.

4.6 Security

4.6.1 If the desk is in a public interface area, consider if:

- A duress alarm is required;
- Physical barriers to prevent persons reaching across or jumping the counter are required.

5. Flat Floor Teaching Spaces

5.1 Workstation height

- The recommended static desk height for PC use is 730mm high.
- The recommended height for static standing height tables is 900mm and no higher than 1000mm.

5.2 Desk arrangement

- The orientation of the technology must enable the user a clear sightline to the lecturer and teaching displays.

5.3 Work Space

- The actual desk surface width is dependent on the layout and shape of the desk.
- A minimum width of 800mm is required for the keyboard, mouse and personal space.

6. Chairs

- The University recommends a range of task chairs, which meet the requirements of AS/NZS 4438:1997 – Height adjustable swivel chairs and are certified to AFRDI Level 6 and include the traditional square back chairs and a range of mesh chairs.
- For further information on the mesh task chairs refer to the HSW Information on Mesh Chairs.
- Meeting room chairs are not suitable for use at desks and must only be used in meeting rooms or as visitors' chairs in an office area.
- 'Exercise balls' (Swiss/Fit balls) are not recommended due to safety risks. Further details are provided at the Worksafe Victoria website.
- To assist with the selection of suitable chairs, it is recommended that project managers contact the approved suppliers and request a range of trial chairs, as part of the consultation process.
- Chairs will wear and require maintenance and repairs. These costs should be included in the budget.
- Glides or soft-tyre castors should be fitted for chairs to be used on hard smooth floor surfaces due to the risk of the chair slipping out from under the user.
- Hard-tyre castors are suitable for chairs to be used on soft floor surfaces, e.g. carpet.

7. Purchasing Furniture

Furniture must meet the standard requirements outlined in sections 4 - 7 of this document and be purchased through Monash University approved suppliers.

8. Work Environment

8.1 Lighting quality

- The overall level of illumination required for computer work is generally less than for clerical duties.
- Glare and reflections may develop in higher luminance areas.

8.2 Natural light

- It is desirable from a psychological perspective to retain an external view and to maintain natural light.
- At times of direct sun glare, blinds may be used to control sunlight.

8.3 **Task lighting**

- A desk lamp or similar may be used to supplement light levels in certain circumstances.
- Orientation or globes should avoid a source of direct or reflected glare to the user.
- Note: All electrical appliances used on campus must be tested and tagged in accordance with the Electrical Safety Standard.

8.4 **Noise in open plan areas**

- Conversational noise may result in distraction in open plan office areas.
- Each work area should develop protocols relating to use of meeting rooms, breakout areas and control of excessive background noise in the open plan area.
- Noisy equipment items, e.g. photocopiers should be located in utility rooms or similar, away from the workstation areas.

8.5 **Partition height in open plan areas**

- Partitions between workstations do little to control noise but do provide some visual privacy.
- Heights between 1100mm – 1350mm are recommended between members of work teams.
- High partitions, e.g. 1500mm can be used where partition shelving is required. Higher partitions are generally not recommended for open plan work areas.
- Partitions should be perpendicular to windows where possible to enable occupants in open plan areas to retain a view of windows over the 1100mm – 1350mm high partitions.

8.6 **Thermal comfort**

- There are considerable individual differences between people regarding thermal comfort and it is unlikely that a single temperature or level of humidity will suit everyone.
- Locating workstations directly in front of or below air conditioning outlets should be avoided.
- Further information is available in the Indoor thermal comfort Information .

9. Responsibility for Implementation

9.1 A comprehensive list of HSW responsibilities is provided in the document HSW Roles, Responsibilities Standard. A summary of the specific responsibilities relevant to this standard is provided below.

9.1.1 **Heads of Units:** Heads of Units are responsible for ensuring that staff are aware of the HSW Consultation Standard and that these are implemented to ensure that input is sought from all staff and Health and Safety Representatives (where elected), when there are changes to the workplace, e.g. office space re-design.

9.1.2 **Monash Occupational Health & Safety (OH&S):** The responsibilities of OH&S include:

- Providing information and advice on ergonomic design to stakeholders;
- Providing advice on the functionality of office furniture to stakeholders and project managers;
- Participating in review meetings in accordance with the HSW Consultation Standard.

9.1.3 **Project managers:** The responsibilities of project managers include:

- Providing information regarding the workplace changes to the Health & Safety Representative;
- Providing information regarding the workplace changes to OH&S;
- Issuing the latest edition of the Monash Design and Construction Standards to relevant parties;
- Ensuring that the correct data collection/information gathering process has been undertaken at the commencement of each project. This shall determine the correct configuration of furniture components that are suited to the defined work tasks for each distinct identified user groups.
- Organising safety review and sign off meetings in conjunction with the academic/administrative unit and the local Safety Officers, safety personnel and the areas' Health and Safety Representative(s);
- Attending safety review and sign off meetings; and
- Incorporating issues into building plans as agreed at safety review meetings.

10. Records

10.1 For HSW Records document retention please refer to the University's: Information Governance and Recordkeeping Procedure

DEFINITIONS

Key word	Definition
Activity Based Work (ABW)	ABW does not provide a specific space allocation per person. It is calculated on the overall needs of the activities to be conducted in the work area and the number of people who will use this space. Notionally there will be sufficient work points to provide one point for every 1.1 to 1.2 people who will use this area.
Head to Head Distance	Head to head distance is the distance between the heads of adjacent workstation users.
Project Manager	The project manager is the individual responsible for the day-to-day management of the project, usually from the Buildings and Property or the contracted company.
Sit/Stand Desk	Desks designed to be adjusted frequently to allow users to alternate between the seated and standing position.

GOVERNANCE

Parent policy	HS&W Policy
Supporting documents	**Monash University HSW documents** • Electrical Safety Standard • Indoor Thermal comfort Information • Mesh Chairs Information • HSW Consultation Standard • HSW Records Management Standard • HSW Roles, Responsibilities Standard • Sit/Stand Desks Information **Monash University documents** • Monash Design and Construction Standards
Supporting schedules	N/A
Associated documents	**Australian and International Standards** ISO 45001:2018 Occupational Health and Safety Management Systems AS/NZS 4438:1997(R2016) Height adjustable swivel chairs AS1428.1:2009 Design for access and mobility – Part 1: General requirements for access – New building work AS*1428.2:1992*(R2015) Design for access and mobility - Enhanced and additional requirements - Buildings and facilities AS/NZS 4442:2018 Office desks, office workstations and tables intended to be used as office desks - Mechanical, dimensional and general requirements and test methods *AS 1668.2-2012* The use of ventilation and air-conditioning in buildings - Mechanical ventilation in buildings **Worksafe Victoria documents**

	Officewise – A guide to Health and Safety in the Office (January, 2006) Fitness balls – Guidance note (January, 2020) This document is based on the Ergonomic design guidelines prepared for Monash University by David Caple, Director, David Caple & Associates Pty Ltd
Related legislation	Occupational Health and Safety Act 2004 (Vic) Occupational Health and Safety Regulations 2017 (Vic) DDA (Disability Discrimination Act) Guideline on the Application of Premises Standards 2013 National Construction Code
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1.0	2026	Administrative changes due to: ● Conversion of Procedure to a HSW Standard ● Transition Procedure out of University Policy Bank on to HSW website