INDOOR THERMAL COMFORT REVIEW PROCEDURE

Policy Hierarchy link	**Occupational Health and Safety Policy**
Responsible Officer	Director, Facilities Management
Contact Officer	Energy Manager , Ray Filetti X54276, r.filetti@unsw.edu.au
Superseded Documents	Thermal Comfort Policy for UNSW Buildings (v1.0, 13 August 2007) Thermal Comfort: Evaluation and Review Procedure (v3.1 13/06/2007)
File Number	2005/2982
Associated Documents	OHS Indoor Thermal Comfort Guidelines for Managers

Version	Authorised by	Approval Date	Effective Date
1.1	Administrative Update Head Governance Support	16 June 2011	16 June 2011

1. Purpose and Scope

This procedure provides a systematic and consistent method for evaluating and determining acceptable thermal comfort levels for existing and new buildings, and to manage issues relating to evaluation outcomes.

This Procedure applies to all University buildings and is supported by the Indoor Thermal Comfort Guidelines for Managers.

2. Definitions

There are no definitions.

3. Procedure

3.1 Building Engineering Modifications

Where thermal comfort issues are raised relating to a building or space within it, an assessment of the building or space may be undertaken by Facilities Management (FM) to determine the modifications needed to achieve an acceptable level of thermal comfort.

3.1.1 Existing buildings with no air condition/heating systems

For buildings that are not mechanically ventilated or air conditioned, the following measures may be undertaken to ensure an acceptable thermal comfort level is achieved:

a. Apply appropriate measures to reduce the effects of solar radiation through windows, by window shading, internal blinds, window tinting, or replacement of windows with radiation reducing glass.
b. Provide thermal insulation in roofs and walls, or ensuring that the thermal insulation minimizes the radiation effects on occupants.
c. Re-colour building surfaces to reduce radiation conduction into the building.
d. Install openings in the building such as windows or louvers, to promote natural air flow.
e. Reduction of lighting and equipment load.
f. A list of all existing buildings that do not have heating/cooling systems will be created and maintained by FM. Buildings will be prioritised on this list according to pre-determined criteria.

3.1.2 Existing buildings with mechanical ventilation systems

For buildings that have ventilation-only systems, the following measures may be undertaken to ensure an acceptable thermal comfort level is achieved:

a. Ensure the ventilation systems provide fresh air in accordance with statutory requirements and Australian Standards.
b. Provide heating within the ventilation system, where practical, to maintain the temperature to acceptable levels during very cold conditions.
c. Apply appropriate measures to reduce the effects of solar radiation through windows, by window shading, internal blinds, window tinting, or replacement of windows with radiation reducing glass.
d. Provide thermal insulation in roofs and walls, or ensuring that the thermal insulation minimizes the radiation effects on occupants,
e. Re-colour building surfaces to reduce radiation conduction into the building
g. Install openings in the building, such as windows or louvers, to promote natural air flow.
h. Reduction of lighting and equipment load.

It should be noted that it is rarely practical to retro-fit cooling systems into existing ventilation systems due to the extent of modifications typically required.

3.1.3 Existing buildings with air conditioning/heating systems

For buildings that have existing air conditioning (heating and cooling) or heating-only systems, the following measures may be undertaken to ensure an acceptable thermal comfort level is achieved:

a. Ensure that modifications to the air conditioning systems will achieve temperatures within an appropriate comfort range, in accordance with UNSW Design and Construction Requirements and Guidelines and also depending on the ambient conditions and on activity.
b. Ensure the ventilation systems provide fresh air in accordance with statutory requirements and Australian Standards.
c. Apply appropriate measures to reduce the effects of solar radiation through windows, by window shading, internal blinds, window tinting, or replacement of windows with radiation reducing glass.
d. Provide thermal insulation in roofs and walls, or ensuring that the thermal insulation minimizes the radiation effects on occupants.
e. Re-colour building surfaces to reduce radiation conduction into the building.
f. Reduction of lighting and equipment load.

The aim of air conditioning systems installed at UNSW, whether they operate automatically or on the basis of occupants calling for HVAC when they are in the workspace (e.g. via timer buttons), is to keep temperatures within an appropriate comfort range for all but the few hottest or coldest days of a year. The Australian Standard AS 1837 Code of Practice for Application of Ergonomics to Factory and Office Work recommends a temperature range of 21 – 24 degrees Celsius.

3.1.4 New buildings

Thermal comfort in all new buildings will be considered in accordance with the UNSW Design and Construction Requirements and Guidelines.

3.2 Thermal Comfort Space Evaluation

3.2.1 Thermal Comfort Evaluation

A thermal comfort evaluation of an occupied indoor space may be requested by any head of department by addressing the issues in writing to the Senior Manager, Asset Management, Facilities Management. The Manager will, in consultation with the head of department, determine the appropriate action and, where required, will arrange for a thermal comfort evaluation to be carried out by the relevant staff and/or an authorised consultant.

An evaluation will consist of the following activities:

I. site visit to assess the physical and thermal characteristics of the space;
II. consultation with space occupiers;
III. development of a solution to meet the requirements of the policy;
IV. an indicative timeframe for applying the proposed solution;
V. a written report including recommendations to meet the requirements of the policy.

3.2.2 At conclusion of evaluation

At the conclusion of the evaluation, a copy of the written report will be provided to the head of department for discussion with the Energy Manager with a view to establishing an appropriate program of works.

3.2.3 Assess passive and active measures

The assessment will investigate the effectiveness of passive measures to achieve an appropriate comfort level and active measures such as air conditioning. Active measures will be implemented where passive measures are not effective.

3.2.4 Consensus

Where consensus cannot be reached in relation to the proposed program of works, the matter will be referred to the Director, Facilities Management for further consideration.

3.3 Removal of non-compliant air conditioning and heating systems

Non-compliant air conditioning and heating devices are identified as any air conditioning and/or heating devices that do not meet the requirements of the UNSW Engineering Design and Construction Requirements.

In the event that such air-conditioning or heating is identified, Facilities Management, in consultation with the relevant head of department, may remove air-conditioning and/or heating appliance and, where appropriate, repair the area to a standard in accordance with the UNSW Energy Management Design and Construction Requirements.

Removal works will be carried out in a manner and at a time that causes the least disruption to the space occupier.

3.4 Exemptions

Areas will be exempted from this procedure on the grounds of a need for strict control of the environment within a defined space, such as animal houses, research laboratories, computer server rooms.

4. Review & History

The history of modifications to this Procedure are listed in the table in Appendix A: History

5. Acknowledgements

5.1 References

Australian Standards:
AS 1837 Code of Practice for Application of Ergonomics to Factory and Office Work

UNSW Design and Construction Requirements and Guidelines:
http://www.facilities.unsw.edu.au/forms/design-and-construction-guidelines/

Appendix A: History

Version	Authorised by	Approval Date	Effective Date	Sections modified
1.0	Executive Director, Finance and Operations	13 April 2011	13 April 2011	Thermal Comfort: Evaluation and Review Procedure (v3.1 13/06/2007) reworked, information reviewed and reformatted to UNSW template.
1.1	Administrative update, Head Governance Support	16 June 2011	16 June 2011	3.2.1