Pilgrim
Uniting Church

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CC19014

We are called by God to be a prophetic witness in the city of Adelaide so that new life and vitality will be generated in our city and its people. We celebrate in our unity and diversity, our shared beliefs and past experiences, and value worship, teaching, creativity and justice.

PROP-02

AIR CONDITIONING POLICY

1. Introduction

All areas of Pilgrim (12-14 Flinders Street) now have reverse cycle air conditioning systems installed or, like the Vestry, are passively impacted by adjacent air conditioners. There are different conditions in each area and different types of air conditioners to meet the requirements of each area. In addition, some areas of Pilgrim Centre also have fans.

We installed air conditioning in the Church because, under Work Health and Safety (WHS) regulations, we have a duty to provide as far as is possible an environment that is safe and without risks to health. This meant we needed to do something about the sometimes overbearing heat in summer and bitter cold in winter for regular users of the building. We also wanted to make the building more attractive to outside groups so that the building is used more often by these groups. This has two advantages: firstly, we gain income from this external use (except when we offer our facilities free of charge as part of our social justice initiatives) and secondly, more people in the community are exposed to Pilgrim's facilities.

Set Points indicated in the Procedures of this document are based on information related to standards for office situations which are designed to maximise productivity while meeting WHS requirements, experience of different groups using the different areas, number of people in an area and cost efficiencies related to the use of the various air conditioners in their specific environments. Details of how set points were arrived at for different areas at Pilgrim are contained in Appendix I.

It is accepted that individuals will differ in how comfortable they feel in different conditions. According to research in the Netherlands on building efficiency, there may also be a gender difference with most females feeling more comfortable when the temperature is about 3°C warmer than males. This means that whatever set point is used, not everyone will be equally comfortable.

2. Purpose

This policy and its procedures has been developed to provide guidelines for the use and maintenance of Pilgrim's different air conditioners. The information in this policy is of both a general and a specific nature, designed to achieve cost effective maximum benefit in terms of comfort for most people in each of the different environments.

3. Policy

3.1 Areas with fans as well as air conditioners

Where practicable, fans should be used to supplement the cooling by the air conditioner(s). This means the set points for the air conditioners do not need to be as low (for cooling) because the air movement increases the effectiveness of the cooling by the air conditioners. It is also more cost-effective to use the two together because the fans use much less power than the air conditioners and the closer the set point for the air conditioners is to the outside air temperature, the less energy is consumed. See Appendix I for details.

3.2 Areas with air conditioners only

The set points of the air conditioners should be as close to the external air temperature as is comfortable for the majority of people. This will vary from area to area so the specific guidelines in the procedures should be adhered to. Only when there are complaints of people feeling uncomfortable should the set points be temporarily changed.

3.3 Areas with fans only

These should be used as required.

3.4 Areas with neither fans nor air conditioners

Wherever feasible, doors to adjacent air conditioned spaces should be left open when the space is being used to enable some sharing of the benefit of heating or cooling (e.g. the Vestry).

3.5 Targeted use of both air conditioners and fans

The aim is to achieve maximum heating and cooling benefit from the air conditioners and fans at minimum energy cost. This can be achieved by following the procedures associated with this policy, both the general ones and those relating to air conditioners and fans in specific areas.

Authorisation

Church Council Chair:

Date of approval: 13 February 2019

Review Date: February 2021

AIR CONDITIONING PROCEDURES

1. **Responsibilities**
   - 1.1 Church Council has the ultimate authority and responsibility for the use and maintenance of the air conditioning and associated fans.
   - 1.2 The responsibility for the management of this resource has been delegated to the Operations Committee.
   - 1.3 The Office Administrator is responsible for organising maintenance of air conditioners and fans, and monitoring the use of these in the Lounge.
   - 1.4 The Caretaker, or the person undertaking these responsibilities at the time, is the main person responsible for the day-to-day management of the use of the air conditioners and fans.
   - 1.5 When there is no Caretaker on duty, the person in charge of a particular group using a facility at Pilgrim is the person responsible for the day-to-day management of the use of air conditioners and fans.

2. **General Procedures**
   - Neither air conditioners nor fans should be on when facilities are not in use.
   - Except under extreme conditions, neither air conditioners nor fans should be turned on until people arrive to use the facilities or staff/volunteers are setting up the room.
   - If, under extreme conditions, it is deemed necessary to put air conditioners on before people arrive, this should be done for the minimum amount of time necessary for the temperature in the facility to stabilise.
   - All air conditioners and fans should be turned off as soon as an event has finished and the area cleaned up.
   - **As a TRIAL, use the following set points:**

NO FAN support:

PILGRIM	Turn air conditioning on when internal air temperature is:	A/C Settings
Summer (Light clothing)	27°C or more	26°C
Winter (Warm clothing)	17°C or less	19°C

WITH FAN support:

PILGRIM	Turn air conditioning on when internal air temperature is:	A/C Settings:	Turn fans on:
Summer (Light clothing)	27°C or more	26°C	Lowest setting

NOTE: It is undesirable to turn the air conditioners on and off unnecessarily as this uses more electricity.

3. **Specific Procedures**

3.1 **Church**

- Use the temperature set point guidelines in the general procedures in #2 above, checking the air temperature with the available thermometers.
- The new air conditioners cool the space very quickly so they do not need to be turned on long **before most people arrive, 15 minutes at most.**
- After a run of hot weather, even when the temperature outside is comfortable, the walls continue to radiate heat into the church. Therefore it may be necessary to use the air conditioner(s) even when it is cooler outside. They automatically turn off at midnight if accidentally left on.
- Sometimes it may be sufficient to use the air conditioners **for short periods of time** (e.g. between services).
- **The East Chapel**:
    - **After a run of hot weather**, this area takes longer to cool down because it is a space with relatively little natural air movement and a large window which gets all the morning sun.
    - Therefore, even when air conditioning is not required in the rest of the church, it may be required when the chapel is in use.
    - If this is the case, only turn on the **eastern air conditioner**.
- **The body of the Church**:
    - Use air conditioning as required according to the general guidelines, preferably using it intermittently rather than continuously.
    - In summer, when the **temperature outside is hotter than inside, close the hopper windows and** the east porch and southern **doors**. This will reduce the influx of hot air.
    - In summer, **when it is cooler outside than inside**, especially when there is a breeze, **open the hopper windows and leave** the east porch and southern **doors open**. This will reduce the need for cooling using the air conditioning.
    - Use the **pedestal fans** to boost the cooling for the **back rows of the choir**.

3.2 **Lounge** and Administration Offices

- The Office Administrator (during the week) or the Caretaker (Sundays and events) is the person responsible for monitoring the use of the air conditioner.
- Due to the unusual shape of the area they may adjust the set point of the air conditioner to ensure that all parts of the area are adequately heated (set point 19°C or cooled (set point 23-26°C). Sometimes it may be sufficient to simply open the top windows and fix the sliding door open, and/or use only the air conditioner fans to circulate the air.

3.3 The **Vestry**

- The Vestry has neither an air conditioner nor a ceiling fan.

- To facilitate cooling, leave the **door(s) open** so the room can benefit from the air conditioning in the Lounge. Also, turn on the **exhaust fan** as this will draw hot air out and facilitate the inflow of cooler air.

3.4 Pilgrim Centre – **Hall**

- Use the temperature set point guidelines in the general procedures in #2 above.
- If the room is just stuffy, the fans may be sufficient (e.g. Sunday Night Tea when it is not really hot outside and sometimes when it is quite cool).
- The **fans** are old so should only be used on **lower speeds**.
- If fans alone are insufficient, turn on the air conditioners, checking that they are set to 26°C in summer, and turn the fans on the lowest setting.
- Use only the air conditioners and fans in areas that are being used.
- The air conditioners take a while to cool the air so they can be turned on 15 minutes before most people arrive. It may only be necessary to turn on the central one to start with, depending on how hot the air is or how stuffy the room is.

3.5 Pilgrim Centre – **Draper Room**

- If the room is simply stuffy and there is plenty of natural light, try using only the fans.
- Otherwise, **for cooling in natural light**, use the **air conditioner set at 26°C and the fans** at the lowest setting.
- **If lights are required, turn off the fans** and adjust the **air conditioner set point to 24°C** for cooling.
- **Do not use lights and fans together** because, due to their relative positions, the fans cause a strobe effect which many people find very uncomfortable, particularly migraine sufferers.

3.4 Pilgrim Centre – **Colton Room**

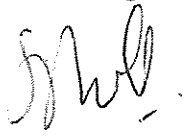
- Use the temperature set point guidelines in the general procedures in #2 above.

3.6 Pilgrim Centre – **Ministers' Offices**

- Open windows as appropriate (but ensure to lock them when leaving).
- Use the temperature set point guidelines in the general procedures in #2 above for heating and cooling as required (but with the windows closed).

3.7 Pilgrim Centre – **Leased Offices**

- Open windows as appropriate (but ensure to lock them when leaving).
- Use the temperature set point guidelines in the general procedures in #2 above for heating and cooling as required (but with the windows closed).



Authorisation

Chair of Operations Committee:

Date of approval: 5 February 2019

Review date: As required during the trial period.

APPENDIX I Background Information relating to Set Points for Air Conditioners

Standard 55 was introduced in 1966, by the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) as a set of guidelines for how to regulate indoor temperature and humidity. This standard took into consideration environmental factors like temperature and humidity, and some human factors like the clothing worn inside.

However, the guidelines were designed for office situations and to maximise productivity. This temperature was confirmed in Australia by a report commissioned by the Federal Government and carried out in the mid to late 1980s by Comcare. All modern air conditioning systems are set up to follow this famous Standard 55 with a temperature set point of 22°C.

These guidelines do not directly apply to all areas of Pilgrim, particularly as the ASHRAE based their recommendations on a 40-year-old man weighing 70kg and dressed in a full 1960s business suit.

In neither of the earlier reports was any consideration given to energy utilisation and costs related to running air conditioning units. According to Richard de Dear, a professor of architectural and design science at the University of Sydney, just resetting the thermostat from 22°C to 25°C could cut a cooling bill by 25%.

During a recent heat wave the NSW Government asked people, where they could, to turn their air conditioners up to 26°C to save energy, both personally and for the state's electricity grid. The Victorian Government recommends heating in winter up to 20°C and cooling in summer down to 26°C.

Raising the set point in summer and lowering it in winter is good energy saving practice, but we need to remember that there is built in control variance of around 2°C. This means that for a set point of 25°C, heating starts at 23°C and cooling starts at 27°C.

Temperature/Humidity Ranges for Comfort

Conditions	Relative humidity	Acceptable Operating Temperature
Summer (Light clothing)	If 30% then	24.5°C - 28°C
	If 60% then	23°C - 25.5°C
Winter (Warm clothing)	If 30% then	20.5°C - 25.5°C
	If 60% then	20°C - 24°C

. *Source: Canadian Centre for Occupational Health and Safety - Adapted from ASHRAE 55-2010.*

From experience we know that Adelaide does not experience many very humid days and that the humidity of Pilgrim's facilities is relatively unaffected by the humidity outside.

Therefore, Operations Committee has agreed to trial the following set points for all air conditioners in our facilities.

Temperature ranges for comfort in Pilgrim's facilities – NO FANS

PILGRIM	Turn air conditioning on when internal air temperature is:	A/C Settings
Summer (Light clothing)	27°C or more	25°C
Winter (Warm clothing)	17°C or less	19°C

Summer temperature ranges for comfort in Pilgrim's facilities – WITH FANS

PILGRIM	Turn air conditioning on when internal air temperature is:	A/C Settings:	Turn fans on:
Summer (Light clothing)	27°C or more	26°C	Lowest setting