



“ By understanding our building better, we have been able to locate exhibitions in the best environments and avoid the hot spots entirely. ”

Image courtesy of Tweed Regional Museum

Creating the perfect environment

Did you know?

Air conditioning consumes the largest proportion of energy for many museums and galleries at between 40% and 60%.

Creating the right environment for your collection is an important part of being a custodian. Every institution will have a differing set of requirements when it comes to creating the right environmental conditions for their collections and exhibitions. The best idea is to keep environmental conditions as stable as possible, but regular seasonal changes in climate can be taken into consideration.

At some museums and galleries, heating, ventilation and air conditioning (HVAC) systems are used to control the environment for both object conservation and for visitors' comfort. Maintaining an environment in this way can result in a very high consumption of energy. This is particularly true when it is operated 24 hours a day and where temperature and humidity levels are maintained within a strict range. Often buildings are not well designed for energy efficiency; HVAC systems are often needed to compensate for the lack of proper sun shading or insulation in an old building, or to remove the heat load due to large glass facades in newer buildings.

We have many different climates here in Australia with a wide range of temperatures and humidity (please refer to the Clever Custodians website). HVAC systems have to work extra hard to remove water (humidity) from the air, so in a more humid climate HVACs consume a lot more energy than they do in a drier climate. Different prevailing conditions require different approaches.



The current thinking around relative humidity (RH) parameters is that most of our collections are more robust than previously thought, and provided the RH doesn't change rapidly or frequently, a band as wide as 40-65%RH is fine for most items. Relaxing relative humidity parameters may permit greater flexibility in temperature and humidity fluctuations over time, however these standards have not been adopted in Australia as yet.

Some institutions are now looking at other ways of providing appropriate environments for collection care and visitor comfort. Getting to know how your building operates from an environmental perspective is crucial to devising the most appropriate environmental control system. Where does it stay cool naturally, and which walls heat up quickly? Work with the areas that have more stable environments for collection display, and find other uses for those difficult environments in the building.

Visitors (as well as staff and volunteers) are able to cope with changing environmental conditions better than sensitive collection items. Consider creating well-sealed environments for display and allow the space around them to change with the weather. Buildings can be poorly insulated and leaky, which leads to a loss of heating / cooling and higher energy consumption. Some lighting systems will add heat as well as light to an environment, so cooling is then required; therefore a Light-Emitting Diode (LED) lighting upgrade could deliver a double positive.

The rising cost of energy has caused many custodians to reconsider how they control the environment in storage and display areas. Consider some of the other tips for clever custodians on the Built Fabric and Lighting Fact Sheets. Find out more about this topic by referring to our digital resource.

Quick wins

- Plug gaps and stop draughts
- Choose the right space for display
- Keep wet coats and umbrellas outside
- Create micro-environments
- Keep heat-generating equipment separate from areas which you are trying to keep cool

Long term wins

- Overhaul existing HVAC delivery system
- Service and tune HVAC plant to maintain high efficiency
- Build an air lock entry to minimise air exchange
- Procure energy efficient plant
- Review the need for HVAC

More information

For further information on the Energy Efficiency Information Resources for Public Museums and Gallery sector project visit our website at www.clevercustodians.com.au or load the resource provided on the USB Drive.