

SkyCool on large warehouse-type structures

The following model was produced by Queensland University of Technology (QUT), Faculty of Built Environment & Engineering who have specialist knowledge of the unique performance characteristics of SkyCool. QUT joined with the University of Technology, Sydney in the initial analysis of SkyCool.

QUT modelled the effect of applying the recommended coating of SkyCool to the 36,000m² non-air conditioned supermarket Distribution Centre to be located near Perth Airport.

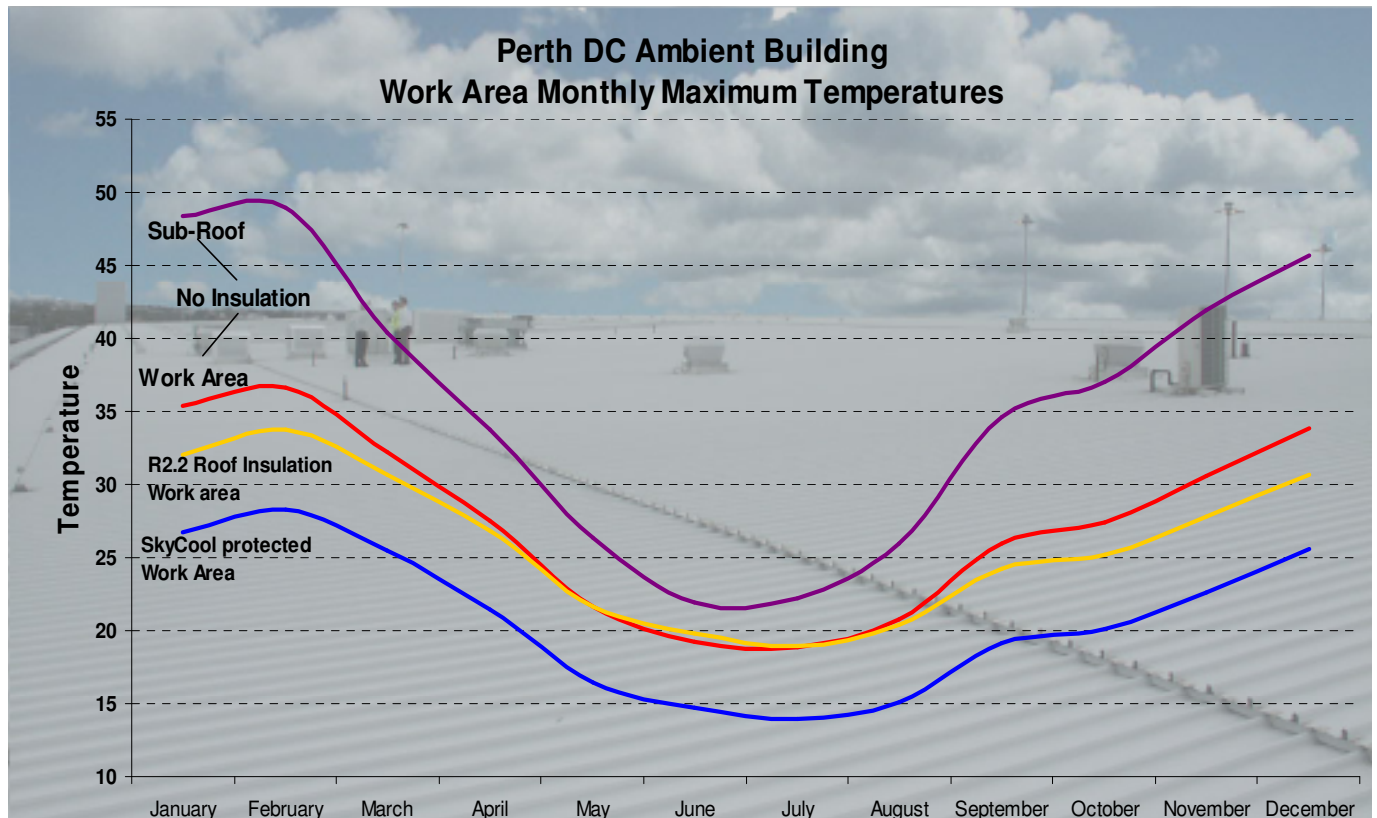


Figure 1: Average monthly maximum temperatures near floor level & directly under the roof (mauve line).

The model clearly shows that SkyCool is capable of maintaining the work area (1 to 3 metres above floor) ambient temperatures comfortably below 27°C for 90% of the year without any mechanical assistance. The annual average maximum working region temperature maintained by SkyCool is 21°C, compared to 26°C for an R2.2 insulated building.

Even under R2.2 insulation, without SkyCool, the work space will experience 160 days of temperatures in excess of 27°C, peaking up to 39°C. Whereas, SkyCool without insulation will reduce this uncomfortable period by more than 2/3, and will reduce the near forty degree temperatures to the low thirties, with only 13 days of the year reaching into that range. This occurs when very hot air blows in from the deserts and encroaches into the building through the open loading doors, which the model assumes to remain open through the working day. If these doors remain predominately closed during extremely hot days, then the interior of the warehouse will obtain additional benefit from SkyCool.