



## Building insulation solution designed for Darwin climate in the expansion of Royal Darwin hospital

Located at Royal Darwin Hospital, the Alan Walker Care Centre provides oncology outpatients with a range of specialist services including radiation therapy, chemotherapy and more.

Recently the Centre embarked on a much-needed upgrade, intended to improve its diagnostic and treatment capabilities; and also provide patients and staff with a comfortable environment, away from Darwin's heat, humidity and heavy rain.

Given that energy efficiency was also a priority, it was important that the project's first stage, which included a building expansion, involved careful consideration in selection of materials for the built environment to provide the foundation for a building design that presented patients and staff with a comfortable environment. The climatic consideration in the design for the Darwin region include protection from harsh temperatures with insulation that has high thermal performance, condensation control with the region's levels of humidity and comfort in optimising the building climate control through a well-insulated envelope.

The architects specified products from Fletcher Insulation, a provider of energy efficient and acoustic solutions to the commercial, HVAC and industrial markets. For the roof design, the product selected and installed included 75mm Permastop® Building Blanket and Sisalation® Metal Roof Sarking, a heavy-duty paper base foil, on the roof; as well as more Sisalation Metal Roof Heavy Duty® on the walls commonly used in the region.





Both products are designed and suited for Darwin's tropical climate.

Pink in colour and manufactured from up to 80% recycled glass, Permastop® Building Blanket not only delivers excellent thermal and acoustic benefits, but also condensation protection.

The blanket absorbs less than 0.2% moisture by volume when exposed to environmental conditions of 50°C and 95% relative humidity for four days; and, with foil facing applied to the substrate, it is able to perform with a surface temperature of up to 70°C.

In addition, the Sisalation® reflective foil component of the Permastop® Building Blanket minimises the risk of condensation forming in the building's metal clad roof. The paper based laminate in the Sisalation ensures the product is not prone to shrinkage caused by heat and therefore better maintains its performance in managing condensation.

Used together, the two products more than meet the requirements of Darwin, where the temperature remains consistently around 30°C during the warmest months. They shield the building from water-related weather damage, such as mould, and rot and minimise the effects of heat and dust draughts.

Palmerston-based roofing services provider, Roof Power, was responsible for the installation of the roofing, as well as the insulation and wall cladding.

Roof Power Director Jason Power said that, for him, the biggest hurdle was having to handle a late decision by the architects to make a change in the selection of product. He said that, despite the short time-frame, Fletcher Insulation was able to deliver everything he needed to do the job almost immediately. As a result, Roof Power finished comfortably on time.

"I've worked with Ashley before and I deal with him directly. I know from experience that he will bend over backwards to help me."

According to Jason, another aspect of the project worth noting was that the Sisalation® Facing Foil Heavy Duty Perforated was actually attached to the underside of the blanket, with Sisalation® Metal Roof Heavy Duty 453 laid on top of the blanket, directly below the roofing for the water barrier. While this is still quite an unusual technique, it is one that is being used more frequently, particularly on Northern Territory Government projects. According to Jason, it is a clever way to increase acoustic and condensation protection.

He explained that, in his experience, the foil-paper composition of Sisalation® Metal Roof Sarking reduces the risk of "noisy roof syndrome", a problem that often affects metal roofs.

Combined, the Permastop® and the Sisalation® maximise the acoustic protection and ensure patients are not bothered by the heavy rain that the Top End's wet season inevitably delivers.

With Stage 1 now complete, the second stage of the Alan Walker Care Centre upgrade is now ready to begin. Having successfully installed products in the first stage of the redevelopment, Fletcher Insulation is now set to provide technical information to energy assessors, regarding the best use of insulation to meet energy efficiency requirements for Stage 2.

The Alan Walker Care Centre upgrade has ensured that the Northern Territory now has a first-class oncology unit. Fletcher Insulation is proud to have played a role in this much-needed development.



## Testimonial

*"Ashley Armstrong Fletcher Insulation's Darwin Branch Manager handled the product change really well. As soon as we knew about the change, he was quick to get things moving and quick to get the product here."*

*Jason Power - Roof Power Director*