

Fletcher Insulation Place Artists Centre Stage

When completed, the Hedberg will be a landmark contemporary performing arts and creative industries precinct in the heart of Hobart's historic Theatre Royal district. In partnership with the University of Tasmania and the Tasmanian Government, the \$96 million project represents a major refurbishment and new build creating a world class performance, research and teaching facility in the Hobart CBD.

In the music and performing arts space, ensuring that the artists take centre stage, not the HVAC systems, was true science. Fletcher Insulation offered a product range that provided a superior acoustic and thermal insulation performance solution to the Hedberg, to ensure audiences will feel and hear the performance, and not the air conditioning.



The Hedberg

The Hedberg is a new creative industry and performing arts project, incorporating Hobart's Theatre Royal and the University of Tasmania's Conservatorium of Music. The project includes a contemporary building integrated with one of Hobart's historic landmarks, the Theatre Royal.

Delivering an energy efficient solution within the rigorous acoustic, thermal and energy performance specifications required a different way of thinking and Fletcher Insulation's product range was the ideal solution for such a challenging requirement.

The Contractor's Challenge

Degree C is one of Tasmania's leading contractors with more than 25 years' experience delivering quality HVAC solutions for a wide range of projects. As the mechanical contractor on the project, Degree C faced a number of technical challenges with acoustic performance and thermal efficiency rated as the first and second most important aspects in the HVAC design.

Performing arts spaces are complex environments to heat and cool for a number of reasons. The spaces are often utilised at less than full capacity for rehearsal and preparation, whilst capacity (and hence loads) increase enormously during performances under lights with a full audience. During all these circumstances the equipment must operate across a wide load profile, all the while maintaining whisper quiet operation. In the recital hall for example, the air handling units designed to supply comfortable conditions for the audience, were required to undergo rigorous factory testing by an independent acoustic consultant to ensure that the units could maintain the tight operating parameters required. The air handling units were prefabricated with Fletcher Insulation FI32 Semi Rigid insulation faced with Vapastop® 883 and passed all quality and acceptance testing prior to delivery on site. Fletcher Insulation worked closely with the Degree C team to ensure the product range selected and delivered met the required design performance specifications.

Designed as one of Tasmania's first integrated BIM projects, the Hedberg Building meets Green Star design requirements, and the stringent documentation this entails. During design, every element needs to be considered for the BIM model, prior to fabrication including the insulation on the HVAC equipment and ductwork. Fletcher Insulation's extensive product documentation including detailed performance data, supported by independent



Testimonial

"Richard and his team at Fletcher Insulation have always been very helpful when selecting the right product for an application. Whether it is duct lining, PIR panel, or insulation duct wrap, Fletcher Insulation have the product and the expert advice for any insulation application".

Mr Chris Fontana, Divisional Manager Degree C.

and in-house test data, and personalised technical support, enabled Degree C to deliver on the GreenStar documentation requirements.

Given their longstanding relationship with Degree C, Fletcher Insulation's range of acoustic and thermal insulation products made sense. As Chris Fontana, Divisional Manager with Degree C stated "the quality of Fletcher Insulation's documentation made the approval process easy when submitting to the consulting engineers for the project."

The Fletcher Insulation Product Solution

The key to Fletcher Insulation's approach is ensuring the right solution for our client's projects, whether it's thermal performance, acoustic control, condensation prevention, indoor environment performance, or fire resistance.

For the Hedberg project, Fletcher Insulation's local team worked in closely with Degree C's designers to understand the specific project performance requirements and selected the best products to meet these requirements.

As part of the design solution Fletcher recommended and supplied the following products :

Fletcher Insulation Product	Location	Application
FI32 Semi Rigid 25mm and 100mm faced with Vapastop® 883	Air Handling Plant	Acoustic Control, Thermal Performance, Condensation Prevention
FI32 Semi Rigid 25mm and 50mm faced with Vapastop® 883	HVAC Ductwork	Acoustic Control, Thermal Performance, Condensation Prevention



Product Specification

The FI32 Semi Rigid Glasswool Insulation range is the ideal choice as an internal liner for fabricated air conditioning ductwork where acoustic, water vapour and air quality management are required.

The use of Vapastop® 883 Facing Foil adhered to FI32 Semi Rigid Glasswool Insulation is ideally suited to applications where high tear strength and puncture resistance are required in addition to a high degree of flexibility without delamination of the aluminium foil.

The aluminium foil facing has a very low permeance to water vapour and other gases, which makes Vapastop® 883 ideal for

air handling ductwork. The strong and durable vapour barrier helps prevent fibre erosion of the glasswool insulation lining, which otherwise can lead to fibres entering the air-stream of the HVAC system.

Vapastop® facing provides excellent acoustic absorption without the need for perforation when applied to glass wool insulation blanket and boards. The sealed, nonperforated surface of Vapastop® 883 provides a superior alternative to the combined facing option of HDP (heavy duty perforated foil) and Mylar/Melinax film, while still offering exceptional sound absorption performance.

Product Attributes	Features	Benefits
Puncture Resistant	Will not tear easily when pinned to the metal duct component or when subjected to extreme air velocities	Prevents facing material being damaged during cleaning and in high velocity environments (compared to Mylar/Melinex which can tear easily)
Continuous acoustic membrane / Unperforated surface finish	Helps prevent fibre erosion of internally lined ductwork insulation, which otherwise might lead to fibres entering the air stream that can harbour airborne contamination and bacteria	Provides increased indoor air quality with superior acoustic properties, making it ideal for Health projects eg hospitals, aged care and medical rooms. Can also offer cost savings by negating the need for the alternative facing solution that combines expensive films with a perforated foil.
High performing Acoustic Sound Absorption (NRC)*	Minimises impact on excessive noise created by overall HVAC ducting systems	To create more pleasant living, working and leisure environments
Class 2 Vapour Barrier	Superior resistance to moisture	Eliminate potential breeding ground for bacteria and mould growth
Lightweight	Premium adhesion to glasswool insulation. Providing low frequency transparency, enhancing the acoustic properties of the Glasswool component.	Less likely to separate from the glasswool insulation once installed into duct.
Surface Cleanability	Ability to withstand machinery and solvents associated with mechanical cleaning	Addresses future maintenance concerns for building owners
Fire Performance	Meets the requirements of AS/NZS 1530.3:1999 (R2016) and UL181.11 burn test as required by AS4254.2:2012 and the NCC 2016 and NCC 2019.	Provides specifier and contractor peace of mind that product complies with BCA requirements

FI32 Semi Rigid Glasswool Insulation faced with Vapastop® 883

Nominal Thickness mm	Sound Absorption Coefficients at frequencies (Hz) of:									NRC	α _w
	100	125	250	500	1000	2000	3150	4000	5000		
25	0.08	0.11	0.42	0.81	1.06	0.87	0.59	0.46	0.40	0.80	0.65 (M)
38	0.09	0.19	0.77	1.02	1.09	0.78	0.57	0.51	0.41	0.90	0.70 (LM)
50	0.15	0.30	0.90	1.06	1.03	0.77	0.60	0.52	0.37	0.95	0.70 (LM)
75	0.28	0.59	1.17	0.97	0.94	0.83	0.64	0.54	0.41	1.00	0.75 (LM)
100	0.44	0.85	1.15	1.03	0.91	0.78	0.56	0.47	0.36	0.95	0.65 (LM)

*NRC - Noise Reduction Coefficient.

Notes: The higher the NRC, the better the product is at absorbing sound. The thickness and density of a product are two factors in calculating a Noise Reduction Coefficient. An acoustic product with a 0.95 NRC rating means that 95% of sound in the space is absorbed, while the other 5% is reflected.

Heating, Ventilation, Air Conditioning (HVAC) Insulation Solutions

Fletcher Insulation has been at the forefront of insulation technology since the 1930's. With a national distribution footprint, we pride ourselves on providing excellent service to our customers.

Whether you are designing or selecting materials for a residential, commercial or industrial project, you can trust Fletcher Insulation to deliver the best insulation solution for your HVAC applications.






Built in Australia, the Fletcher Insulation range has been tested to Australian Standards and Australian conditions. Designed to meet the strict requirements of the latest National Construction Code (NCC), our products meet and exceed the NCC's deemed-to-satisfy requirements anywhere in Australia. Our specialist range of fire rated, thermal, acoustic, condensation control and indoor air quality solutions ensure your project is covered, with the full backing of our experienced sales and support team.

Sustainability is at the heart of what we do. Our strong focus on well-being, comfort and improving quality of life inspires us to design, manufacture and deliver world class insulation solutions for the built environment.

Insulation plays an integral role in the design of high-performance buildings. Factors such as the climatic conditions, building design and usage can have a significant impact on the comfort and well-being of occupants.

Fletcher Insulation has an extensive range of HVAC and industrial insulation products to suit your project and application.

Speak to a representative today to see how our clients and Fletcher Insulation are building better, together.

	Thermal Performance Fletcher Insulation products comply with thermal performance (AS/NZS 4859.1:2002 include Amendment 1).
	Acoustic Control For projects requiring high levels of acoustic control such as concert halls, studios and auditoriums, Fletcher Insulation has a range of facing options with superior noise reduction properties.
	Condensation Control Fletcher Insulation has a range of facing options which provide superior water and vapour transmission prevention providing long term durability against condensation.
	Indoor Air Quality Fletcher Insulation Vapastop® 883 is a continuous acoustic membrane (CAM) engineered to minimise the risk of fibres in the air stream.
	Fire Resistance Fletcher Insulation products are fire rated according to Combustibility (AS/NZS 1530.1:1994), Ignitability, Flame Propagation, Heat Release and Smoke Release (AS/NZS 1530.3) and UL181.11 Burning Test (AS 4254:2002).



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