



Spencer Outlet Centre

Fabric Dispersion Design & Supply

-fabricAir

ACS
Air Conditioning Systems

ACS.projects.2469.03

The trusted Australian supplier of innovative HVAC solutions

airconsystems.com.au



Located in the heart of Melbourne’s CBD, this Direct Factory Outlets hub hosts over 100 retail spaces, including prominent brands such as TK Maxx, Harris Scarfe, Cotton On MEGA, Coles, Chemist Warehouse, and a variety of specialty stores.

At Spencer Street Outlets in Melbourne’s CBD, ACS were engaged to resolve ongoing comfort issues caused by ineffective air distribution from high-level sheet metal ductwork.

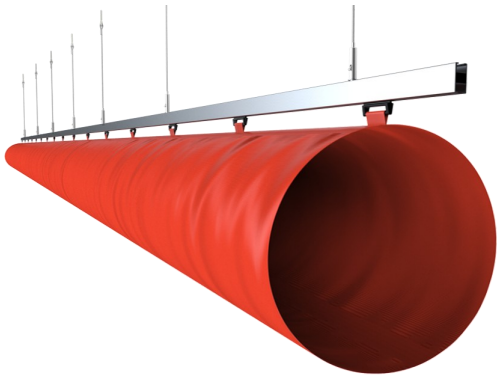
Retailers and shoppers regularly experienced uneven cooling during summer and inadequate heating during winter, highlighting the need for a solution focused on comfort outcomes rather than simply air delivery.

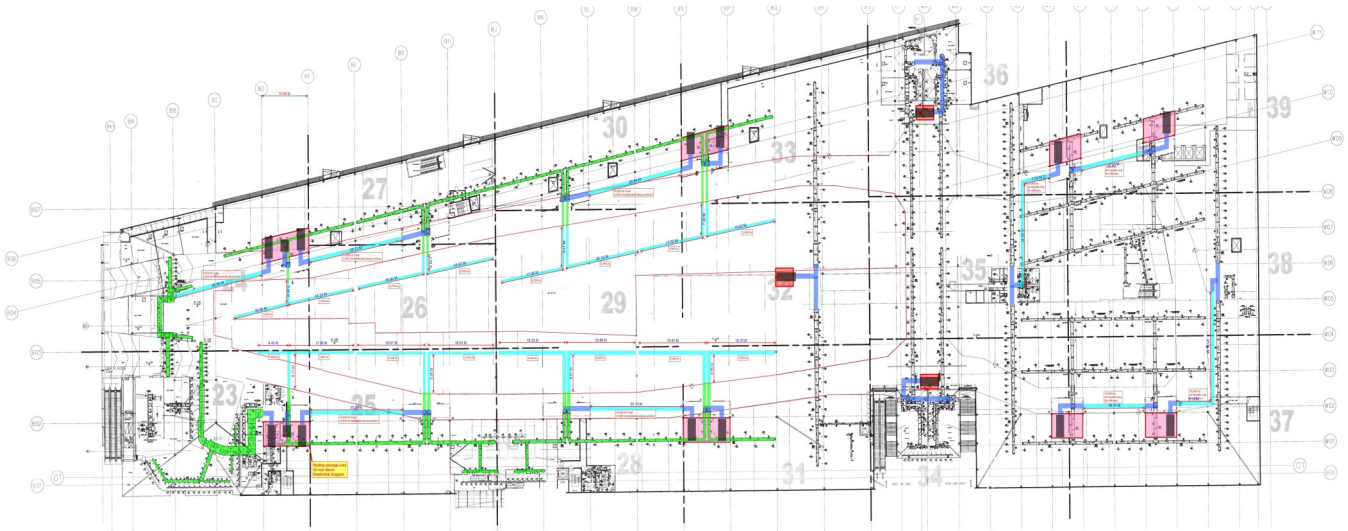
ACS designed and supplied more than 540 meters of FabricAir ducting, engineered specifically for the varying demands of retail tenancies, circulation areas and the food court.

Tailored perforation patterns were developed to deliver the appropriate volume, velocity and distribution of air to each space, whilst ensuring conditions matched the occupancy and thermal loads within the occupied zone.

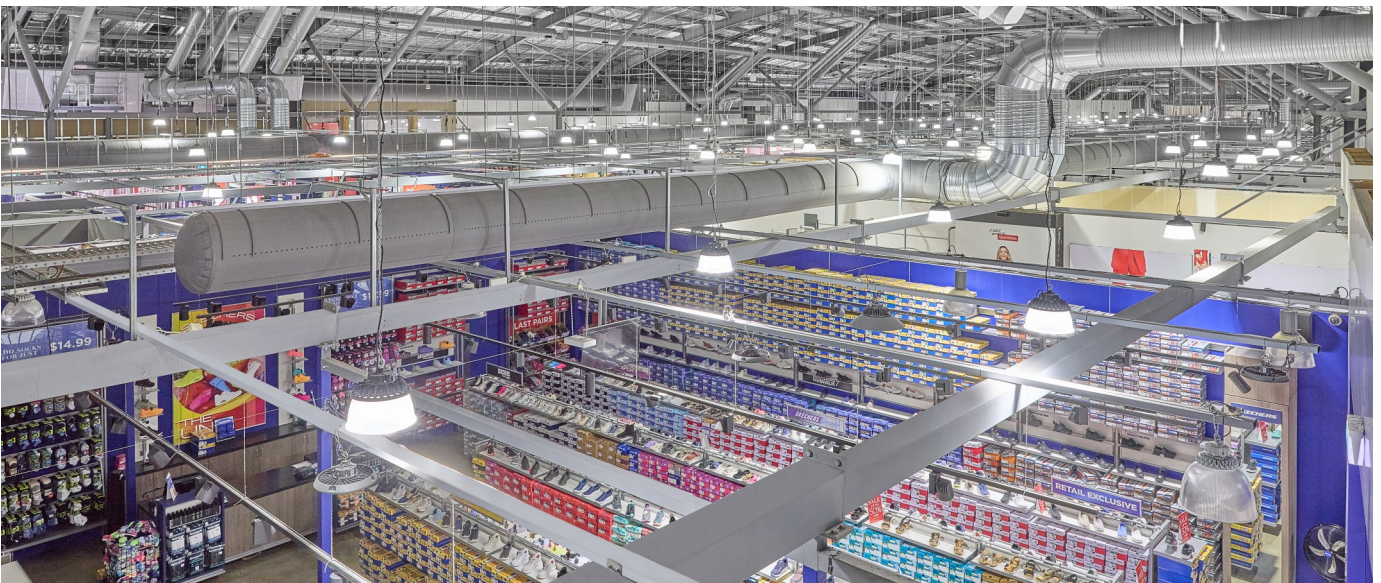
The result is an air distribution solution that demonstrates how thoughtful engineering can improve comfort, air quality, hygiene and operational efficiency simultaneously.

Location	Melbourne, Victoria
Product	Fabric Duct
Scale	540 linear metres
Client	Spencer Outlet Centre
Mechanical Engineer	Quantum Engineering Group
Completion	2024





Fabric Duct Layout

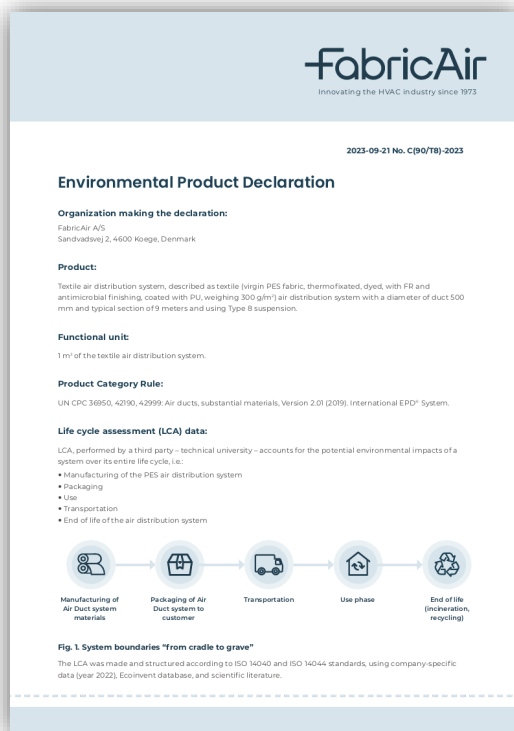


Effective air distribution requires more than delivering conditioned air into a space—it requires understanding how that air will interact with occupants and adapting the system accordingly. By directing air precisely where it was needed via tailored nozzle arrangements, the FabricAir system provided more consistent temperatures, improved air quality and a significantly better experience for shoppers and staff.

The system also provides long-term maintenance benefits. Individual fabric sections can be easily removed, replaced and cleaned in an industrial washing machine, allowing the air distribution system to be maintained in a hygienic condition throughout its 30-year design life. Combined with the elimination of condensation, this delivers a mould-free solution that supports both occupant comfort and indoor air quality.



Suspension Type: 8 AiO & COMBI 60 Fabric



Environmental Product Declaration (EPD)

An Environmental Product Declaration (EPD) is a standardised document that transparently communicates the environmental impact of a product throughout its lifecycle, based on a life-cycle assessment (LCA).

These declarations enable informed comparisons between products, supporting decisions aimed at reducing environmental footprints.

The full EPD document is available in the image linked opposite.

Flow Analysis											
Installation height	4.2	m	Occupied	1.8m		Simulator	1				
									Cooling	Heating	
Room temp.	22.5	°C		Pos.	X	Flow model	Diameter	Distance	x (m/s)	x (m/s)	x1 (m)
Supply temp.	12	°C		12:00							
				12:30							
Airflow	10,800	m ³ /h		01:00							
Duct diameter	700	mm		01:30							
Velocity in duct	7.5	m/s		02:00							
				02:30							
Static pressure	200	Pa	OK	03:00	x	Sonic & Ori	10	5.2	0.22	0.16	
Dynamic pressure	36	Pa	OK	03:30							
Max Pd	80	Pa		04:00							
				04:30	x	Sonic & Ori	6		0.31	0.09	2.2
Capacity	52.7	kW		05:00							
				05:30	x	Sonic & Ori	3		0.26	0.02	0.6
				06:00							

