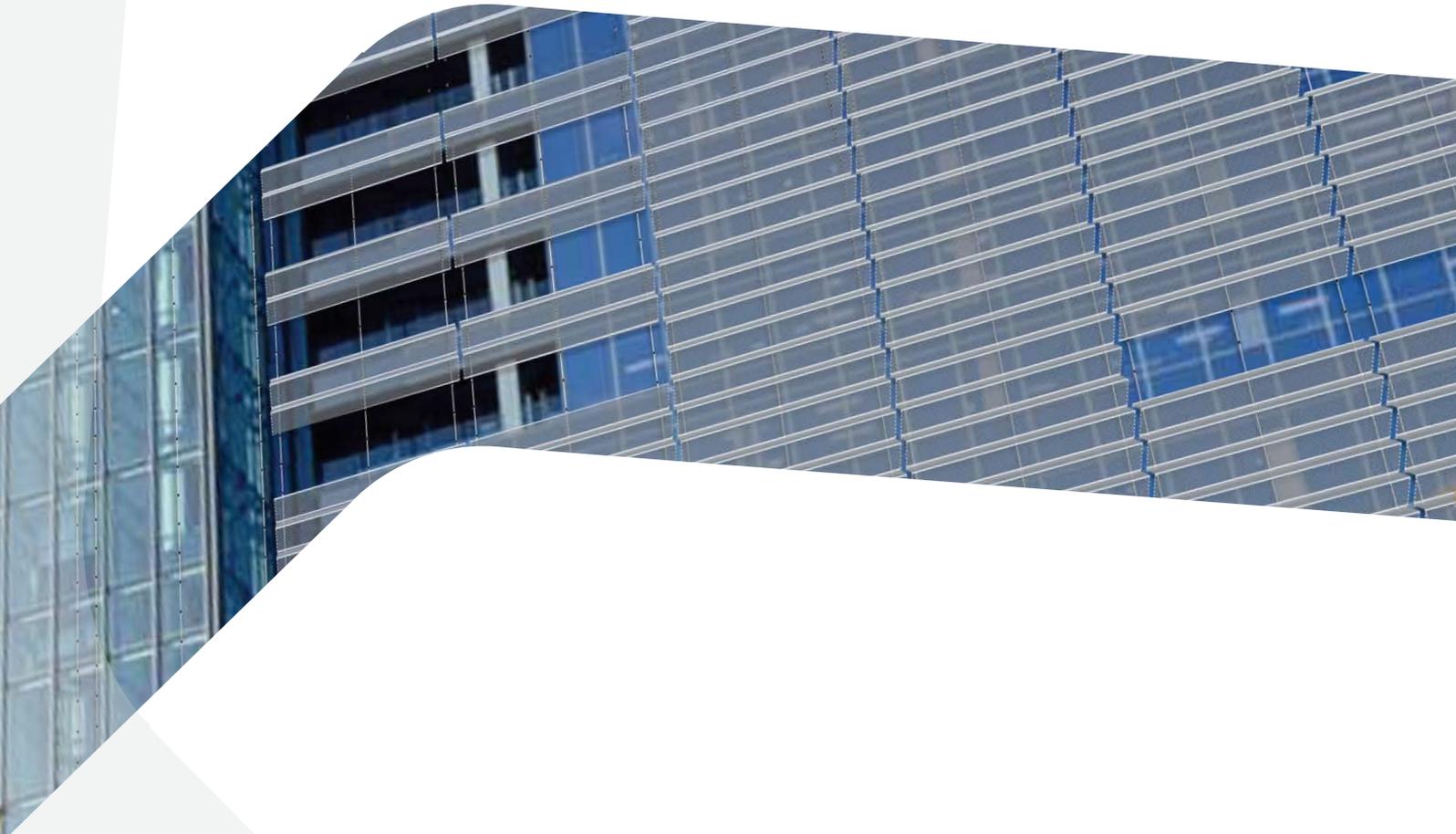




ATMOSPHERE™



Infinite variability combined with functional sustainability



Architectural Systems



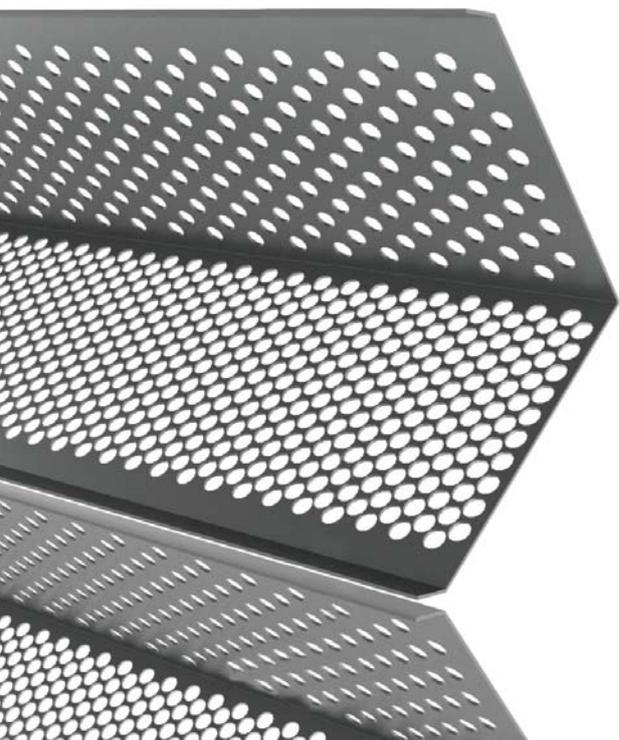
***Infinite variability combined with
functional sustainability***

Atmosphere brings a new perspective to sustainable façade systems. Ideally suited to both new construction and retrofit applications, Atmosphere reduces the impact of solar energy entering the building by up to 78%*, hence reducing the energy consumed by HVAC equipment for comfort control. The visual impact Atmosphere can offer the external face of the building, is unrivalled. Created using a series of perforated elements, each floating beyond the external envelope of the building, Atmosphere offers a light textural element. Design isn't constrained, with a myriad of element profiles available in a kaleidoscope of colours.

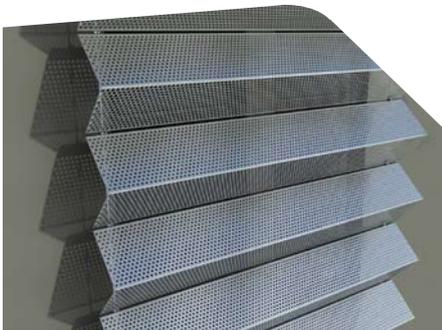
The unique cable fixing system means Atmosphere can be tailored and varied within the one façade, changing element profiles, colours and even leaving sections uncovered if the design requires. In addition, the profiles can be tailored to match the requirements of each orientation; North, South, East or West.

Equally suited to retrofit or new construction, Atmosphere is light and easy to install. Heavy RHS frames, supported at intervals down the buildings height are now only a memory; Atmosphere simply floats. Utilising a tensioned cable system, cables are dropped down the facade, tensioned, then the elements are fixed with the patented fixing system.

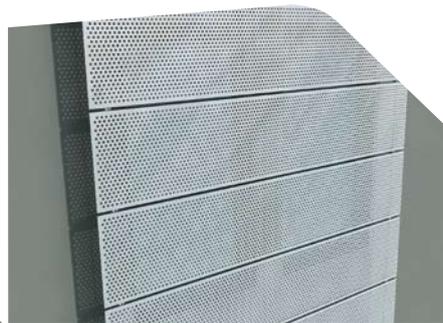
* Based on the analysis of the E₁ profile for a northern facade of a typical office arrangement with a curtain wall system in Melbourne, Australia. As studied by GHD.



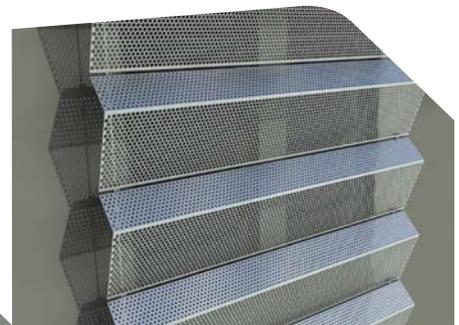
Profile Options:



E₁ > symmetric elements, maximizing energy reduction & visibility



A₁ > providing a continuous external face



W₁ > fluid elements with priority given to the inhabitant's vision, where glare is less of a concern

ATMOSPHERE™

Infinite Variability

- Several Atmosphere elements are available for immediate specification to maximise airflow, energy reduction or visibility
- Elements can be custom designed to give your project a unique aesthetic. Include Pic-Perf™ panels to brand or add artistic impression.
- Atmosphere's unique cable structure & patented fixing system allows the designer to play; drop different colours into the facade, remove panels to add texture and variation
- Depending on the project brief, maximise the daylight or energy reduction on the building envelope
- Atmosphere E₂ profile maximises energy reduction while still allowing enough daylight into the building
- Atmosphere floats off the building, without a heavy, unsightly support structure

Retrofit

- Give an outdated facade a fresh face, while providing its occupants with enhanced conditions
- Atmosphere reduces solar energy entering the building and hence the requirements for air conditioning, without major structural changes
- Prepare for commercial building disclosure requirements, by improving energy efficiency ratings.
- Atmosphere can be retrofitted to existing building stock while the tenants are still in occupancy
- No heavy support structure is required
- Easy and fast to install

ESD

- Atmosphere reduces the impact of solar energy entering the building by up to 78%, as studied by GHD*
- Installing Atmosphere E₂ on a typical building in Melbourne has shown energy cost savings of 45%pa. covering heating, cooling & ventilation. Savings are expected to be higher in warmer climates with less reliance on heating during winter.**
- Carbon emission savings have been measured at 44% pa for the same installation.**
- The ability to custom design an Atmosphere element profile means you can achieve the savings of your choice
- Minimise the glazing costs, install standard single glazing, and still maximise energy efficiency

Fast & Easy Installation

- Minimal installation costs compared to traditional facade based on the tensioned cables & patented fixing clips
- One contact point. Locker will manage the customisation, manufacturing and installation of the system
- Atmosphere cables clips & elements can be installed quickly without the requirements for a heavy support structure, and without disturbing internal occupants.

* Based on the analysis of the E₁ profile for a northern facade of a typical office arrangement with a curtain wall system in Melbourne, Australia. As studied by GHD.

** Based on Electricity costs of 19c/kWh & natural gas cost of 0.033c/kwh. Electricity emissions factor of 1.25kg CO₂-e/kWh. Natural gas emissions factor of 0.9 tonnes CO₂-e/TJ.



Technical endorsement:

The following data is based on analysis of the E₁ panel, as performed by GHD, based on a typical curtain wall application for a typical office in Melbourne, Australia

Annual Irradiation Levels			Estimated Reduction
North	No shading device	1,350,242 Wh/m ²	77.9%
	with Atmosphere	297,796 Wh/m²	
South	No shading device	546,876 Wh/m ²	65.6%
	with Atmosphere	188,322 Wh/m²	
East	No shading device	951,412 Wh/m ²	74.4%
	with Atmosphere	243,509 Wh/m²	
West	No shading device	946,673 Wh/m ²	73.0%
	with Atmosphere	255,468 Wh/m²	

Average Insolation levels at the façade – reduction in energy hitting the building over a year

Peak Irradiance Level			Estimated Reduction
North	No shading device	432.55 W/m ²	58.8%
	with Atmosphere	178.17 W/m²	

Peak Insolation levels at façade, measured at the height of summer.

The following savings are based on analysis of the E₂ panel, as performed by GHD, based on a typical curtain wall application, for a 'typical building' in Melbourne, Australia. Savings include heating, cooling & ventilation.

Potential Savings

	Natural Gas	Electricity	Total Energy
No Atmosphere	\$1,1017.07	\$12,295.45	\$13,312.53
With Atmosphere	\$1,762.69	\$4,493.70	\$7,256.39
	+745.61	- \$6,810.75	- \$6,056.14
	+73.31%	- 55.32%	- 45.49%

Potential Cost Savings - based on electricity cost of 19c/kWh & natural gas cost of 0.033c/kWh

Potential CO₂-e Savings

	Natural Gas	Electricity	Total Energy
No Atmosphere	7.71 t	80.89 t	88.59 t
With Atmosphere	13.35 t	36.14 t	49.50 t
	5.65 t	- 44.75 t	- 39.10 t
	+ 73.31%	- 55.32%	- 44.13%

Based on electricity emissions factor of 1.25kg CO₂-e/kWh and natural gas emissions factor of 0.9 tonnes CO₂-e/TJ

Definitions

Illuminance (Lux)	- the quantity of light arriving on a unit area of a surface
Luminance (cd/m²)	- the intensity of light per unit area reflected or transmitted from a surface, measured in candels/m ²
Daylight factor (%)	- Indicates the ratio between the internal and external illuminance for an unobstructed sky condition for a nominated internal height
Irradiance (Watts/m²)	- indicates the amount of solar energy arriving per m ² in a single instant. It indicates the instantaneous flux or energy flow density
Irradiation (Watt hours/m²)	- The amount of solar energy arriving per m ² over a specific period of time (annually)



Case Study: Multi Storey Car Park Installation

Atmosphere offers a myriad of aesthetic and sustainability benefits; yet the comparison of installation process and costs to traditional cladding is where it truly shines. This comparison details estimated installations costs only.

Car Park credentials

Façade Size:	9m x 4.5m (40.5m ²)
Offset:	600mm
Traditional Solution:	Steel Frame

Installation costs *(not including perforated panels)*

Costs	Traditional	Atmosphere
Materials	\$7,100	\$5,200
Installation	\$9,100	\$2,850
Total*	\$16,200	\$8,050

A traditional RHS support structure weighs approx 22kg/m², hence the integrity of the building must have the strength to support not only the façade, but also the support structure frame. Comparatively, Atmosphere is light and requires only minimal structural strength down the façade.

The lack of heavy support structure means the façade appears light and meets both visual and design criteria, internally & externally.

Support structure for the façade will be designed for the specific properties of the project, depending on offset dimensions, site peculiarities and building structures.

In the majority of installations, Atmosphere only applies load to the top and bottom of the façade.

* Costs represent a 'typical' installation. Each project will be designed & quoted accordingly.





Speed of installation

Once the top & bottom fixing plates are installed, Atmosphere requires no on site welding or drilling, ensuring a fast and cost efficient installation.



Sustainability benefits

In comparison to traditional façade systems, Atmosphere offers sustainability benefits in the form of reduced energy absorption by the building, and hence a reduced requirement for artificial heating and cooling. Depending on the design brief, maximize the daylight and airflow or minimize energy absorption by choosing between the existing design profiles, or create a customized profile for your project. Element height and shape, plus the perforation size and shape can all be designed to meet your requirements.

Ventilation requirements of car park screening are still easily met, with airflow maximized through the elements.



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AUSTRALIA

1800 635 947
www.locker.com.au

NEW ZEALAND

0800 285 837
www.lockernz.co.nz

