



ATMOSPHERE™



Variability combined with functional sustainability

LOCKER group

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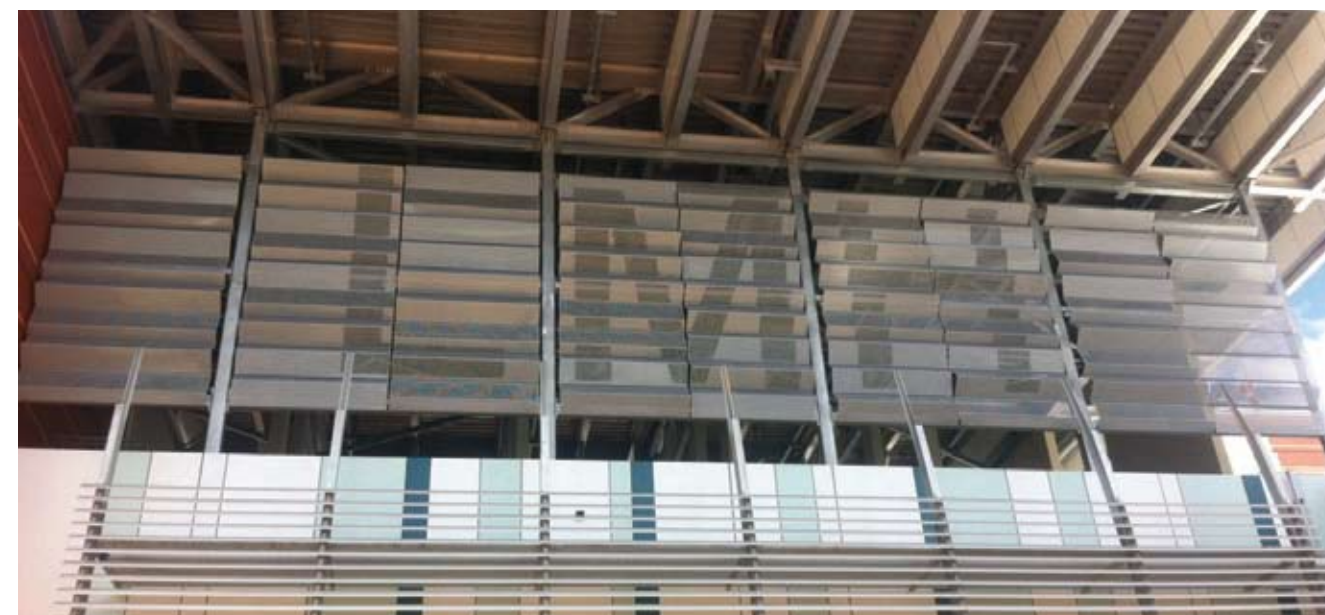
Atmosphere brings a new perspective to sustainable façade systems. Ideally suited to both new construction and retrofit applications, Atmosphere E₁ reduces the impact of solar energy entering the building by up to 78%*, hence reducing the energy consumed by HVAC equipment for comfort control. The visual 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.

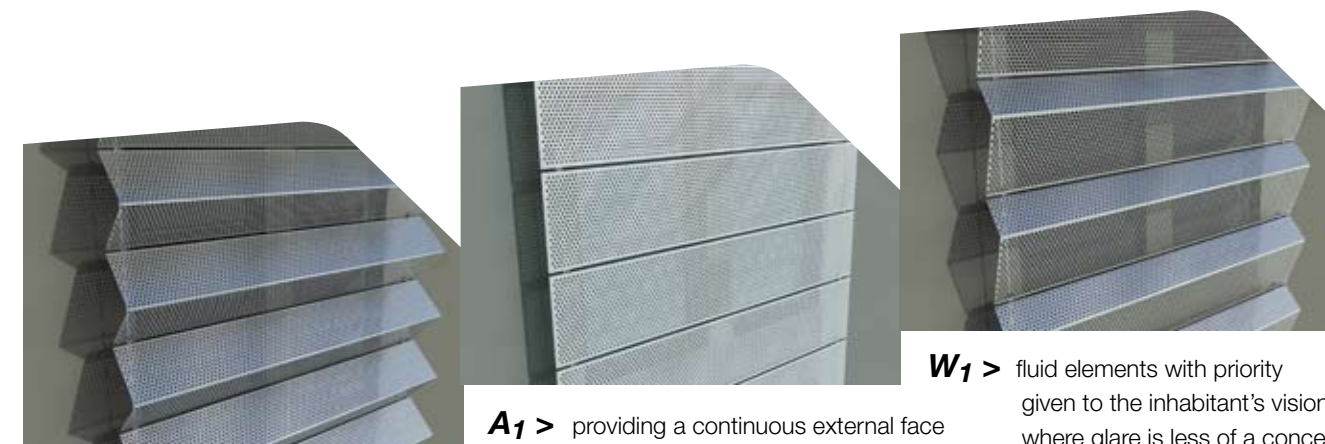
Equally suited to retrofit or new construction, Atmosphere is light and easy to install. Heavy RHS frames, supported at intervals down the buildings height are now only a memory; Atmosphere simply floats. Utilising a tensioned cable system, cables are dropped down the façade under tension with the elements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



Lyell McEwan Hospital, SA - Cheeseman Architects

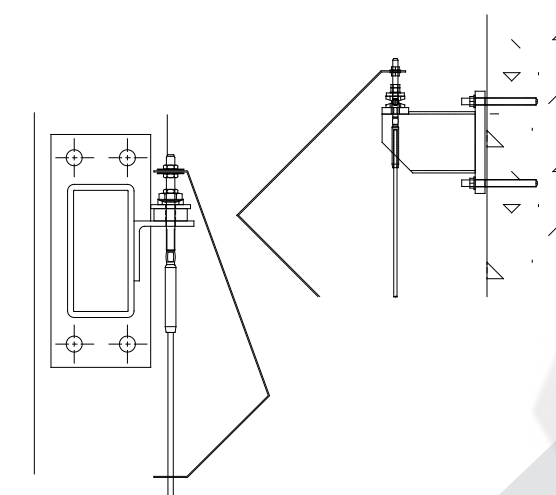


E₁ > symmetric elements, maximizing energy reduction & visibility

A₁ > providing a continuous external face

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

The engineering and design for each Atmosphere system is specific to the requirements of the site and project. While the modular system can easily be interchanged, the outriggers and connection to the building depend on a number of factors, including the engineering of the base building, wind and climatic features and distance between the facade and the building face.



These drawings are examples of connection options for steel or concrete.



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 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

Environmentally Sustainable Design

- Atmosphere E₁ 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 a traditional facade based on 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.

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/m ²	
South	No shading device	546,876 Wh/m ²	65.6%
	with Atmosphere	188,322 Wh/m ²	
East	No shading device	951,412 Wh/m ²	74.4%
	with Atmosphere	243,509 Wh/m ²	
West	No shading device	946,673 Wh/m ²	73.0%
	with Atmosphere	255,468 Wh/m ²	

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/m ²	

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	Potential CO ₂ -e 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 CO ₂ -e Savings	Potential CO ₂ -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%

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

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)**

Luminance (cd/m²)

Daylight factor (%)
- the quantity of light arriving on a unit area of a surface

- the intensity of light per unit area reflected or transmitted from a surface, measured in candelas/m²

- 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 m² in a single instant.

It indicates the instantaneous flux or energy flow density
- Irradiation (Watt hours/m²)**
- The amount of solar energy arriving per m² over a specific period of time (annually)



Atmosphere & Pic Perf • Endeavour Hills Leisure Centre, Vic - City of Casey



Constructability

The design of the tensioned cable support structure provides for superior constructability.

The Atmosphere system is installed in less than half the time of an equivalent facade canvas. Atmosphere elements can be fitted to the cables, utilising the patent protected fixing system, while still on the ground, and then lifted 'in stacks' and attached to the facade. Watch the time lapse video of an installation on YouTube.

Communication

Incorporate an image that portrays the message or vision of your project. Atmosphere can be designed to incorporate Locker Group's popular Pic Perf offering.

Protection from the elements

Atmosphere provides a wind break to either the building envelope or work area due to the unique design of the perforated panels.

Locker Group has installed an Atmosphere 'wall' at its Dandenong head office to protect the team in the despatch area. Even during days of high wind conditions, the Atmosphere wind wall provides protection, absorbing the wind load, as the perforations diffuse the velocity.

Locker Group use and recommend Ronstan tensile cables and fittings for use with Atmosphere and our lightweight façade range.



Bio 21, University of Melbourne - Clarke, Hopkins, Clarke

WALGA, WA, Hassell Group - Atmosphere & Pic Perf



Box Hill Medical Centre - Dzine Construction Group

Photography: Rob Burnett Images



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Locker Group reserves the right to make technical changes without notice. May 2014

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