

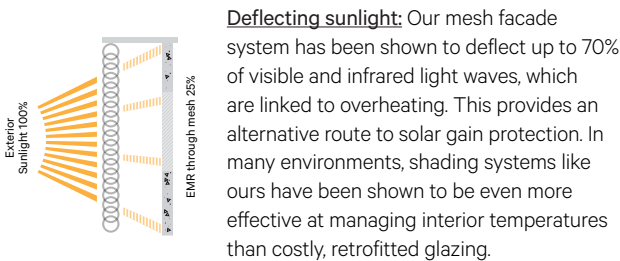


**Why does solar reduction matter?** The urban heat island effect, caused by the over-reliance on heat-absorbing construction materials, means that cities are often 1.8–5.4°F (1–3°C) warmer than their rural surroundings. This puts significant pressure on cooling systems, increasing electricity consumption. The effect is further amplified by the use of fully-glazed facades, where direct sunlight causes overheating. In hot and humid cities, almost half of the electricity used by high-rise office buildings goes towards cooling.

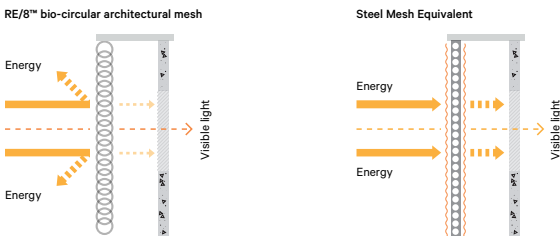
### How RE/8™ bio-circular architectural mesh by Kaynemaile works

Our mesh facade system provides a cost-effective method to significantly improve the thermal environment inside a building, by reducing radiant heat transfer from direct sunlight. Its unique design lets daylight in, but allows you to manage the passive solar gain within the building envelope - all while maintaining visual transparency.

There are 3 key factors at play:



**Insulative properties:** Steel mesh products are highly thermally conductive, so under direct sunlight, their temperature rises and they transfer radiant heat into the building. In contrast, RE/8 mesh is an insulator, which remains at a near ambient temperature, even at the height of summer, moderating the building's thermal environment, and reducing its running costs.



**Cooling properties:** In our three-dimensional mesh structure, a high proportion of the mesh surface area is always in shade, which helps to control temperatures. In addition, as air passes through the cross-sectional open area, it provides a cooling effect.

### PROJECT SPOTLIGHT

Ideal solar management applications are buildings that require a low energy design, or those that can't be cooled by traditional methods, like parking garages.



#### University Parking Garage Facade Case Study

Our mesh was used on a University parking garage facade in San Bernardino, California. The hot, dry climate meant sun protection and airflow were critical requirements for the facade. With a fast install time and simple fixing details, Kaynemaile mesh exceeded the project requirements - providing enhanced air flow through beautiful louver-like strips.

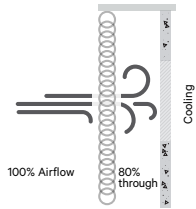
Our mesh facade system significantly reduced the surface temperature, from 104°F to 82°F (40°C to 28°C) in the mesh protected areas\*.

\* The specific benefits will vary from geographical location. The numbers included here are based on a combination of scientific tests, field readings, observations and weather conditions.

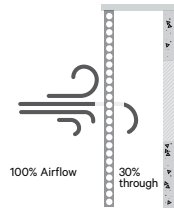


A typical two-dimensional steel mesh or perforated sheet offers much lower visible open area, significantly less airflow, and higher air temperatures, increasing a building's overall thermal load.

RE/8™ bio-circular architectural mesh



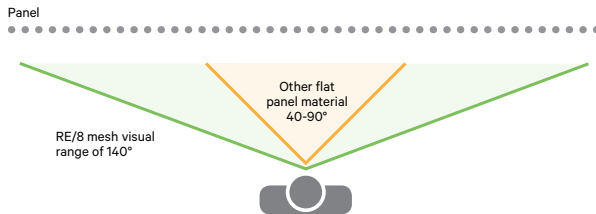
Steel Mesh Equivalent



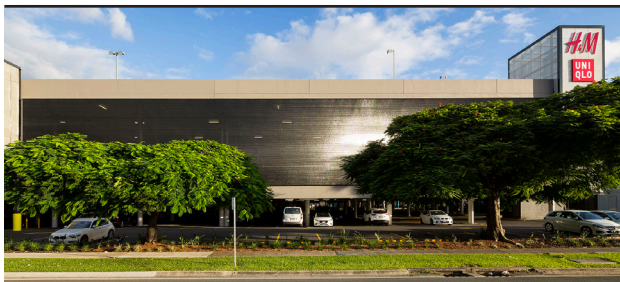
With RE/8 mesh you can reduce the total heat gain on the building envelope significantly. By protecting the building from harsh sunlight and not restricting the cooling effects of air movement, building engineers can reduce the air conditioning design and system costs, as well as reducing the total energy consumption costs in hot climates.

### Visual transparency means inside-out visibility

Unlike traditional two-dimensional perforated steel panels and meshes, our mesh's three-dimensional nature gives a consistent visual open area, providing great visual transparency and unobstructed views from the inside out. Other flat panel materials have an open aperture only when measured perpendicular to the panel face. RE/8 mesh gives a massive 140-degree panoramic view.



### KAYNEMAILE FACADE AT WESTFIELD'S PACIFIC FAIR SHOPPING CENTER



### FEATURE SPOTLIGHT

## Solar control and inside-out visibility

RE/8 bio-circular architectural mesh provides up to 70% sun filtering, and allows unobstructed views from the inside out.

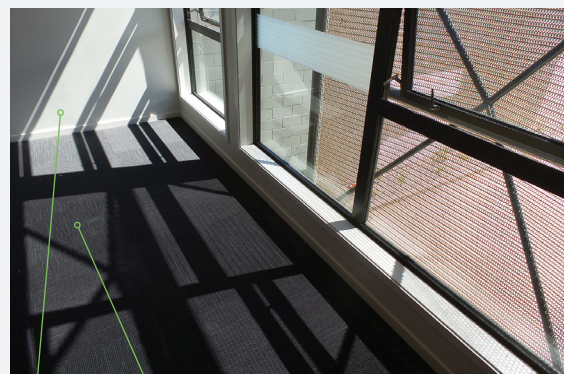
**Project:** Distribution Centre facade  
**Architect:** Thomas Chong Architect Ltd & BMC Architecture Ltd



Exterior Facade



Inside-out visibility



Full sun without RE/8 mesh      70% shading with RE/8 mesh



## Kaynemaile Light Transmission Test Results

An independent test was undertaken on our mesh by the Institute of Geological and Nuclear Sciences (GNS), New Zealand. This graph represents the average light transmission through RE/8™ bio-circular architectural mesh in standard exterior colors (Bronze, Steel, Copper, Obsidian Black, Translucent Black, and Silver).

The transmittance of single glazing is close to 100%, and for typical steel mesh, it can be more than 53% - in other words, more than half of the sunlight that hits a steel mesh can enter a building. In contrast, the opaque RE/8 mesh shows an average transmittance of 30% for visible light (400nm – 700nm), and just 22% transmittance in the infrared.

RE/8 LIGHT TRANSMISSION TEST

