

# Kaynemaile for Exteriors



Kaynemaile®   
Architectural Mesh

For more on our exterior applications, visit us online:  
[kaynemaile.com/exterior](http://kaynemaile.com/exterior)



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[www.kaynemaile.com](http://www.kaynemaile.com)

Our culture of invention and collaboration gives you the freedom to create inspiring spaces.

Our mesh is used to create, divide and protect building interiors and exteriors around the world, backed by over 60 years of material science technology.

“Kaynemaile is the link between art and science.”

—Kayne Horsham, CEO & Founder



# Functional and Beautiful

We reimagined two-thousand-year-old chain mail armour into a unique architectural mesh called Kaynemaile—made using our own patented, award-winning technology.

Kaynemaile is lightweight and goes up fast, allowing you to cut construction timeframes and labour costs.

Manufactured from high grade polycarbonate, Kaynemaile's unique properties reduce solar heat gain by up to 70% without losing visual transparency. We can make our screens to any height or width without joins giving you exceptional design freedom.

Enagua at Playa Vista, Los Angeles, USA | Photography by Fred L'Ami



# Making Waves

PROJECT

Lawson Lane Campus

DESIGN ARCHITECTS

Arc Tec

LOCATION

Santa Clara, CA, USA

This stunning facade for the Lawson Lane Campus in Silicon Valley features Kaynemaile's range of three-dimensional, kinetic screens across the parking garage.







We worked with design architects Arc Tec and installers B.T. Mancini to complete this stunning facade for the Sobrato Organisation as part of a major office development in Santa Clara CA.

Spanning full height and only connecting to the building at the top and bottom meant that the system could be installed fast.

To ensure our architectural mesh is fire code compliant in the USA we worked with the renowned Southwest Research Institute to carry out stringent testing in their labs at San Antonio, Texas.

Unlike metal or membrane products that require a complex rigid frame and connection system, each Kaynemaile screen on this project has a self-supporting lightweight internal frame connected to vertical stainless steel cables.

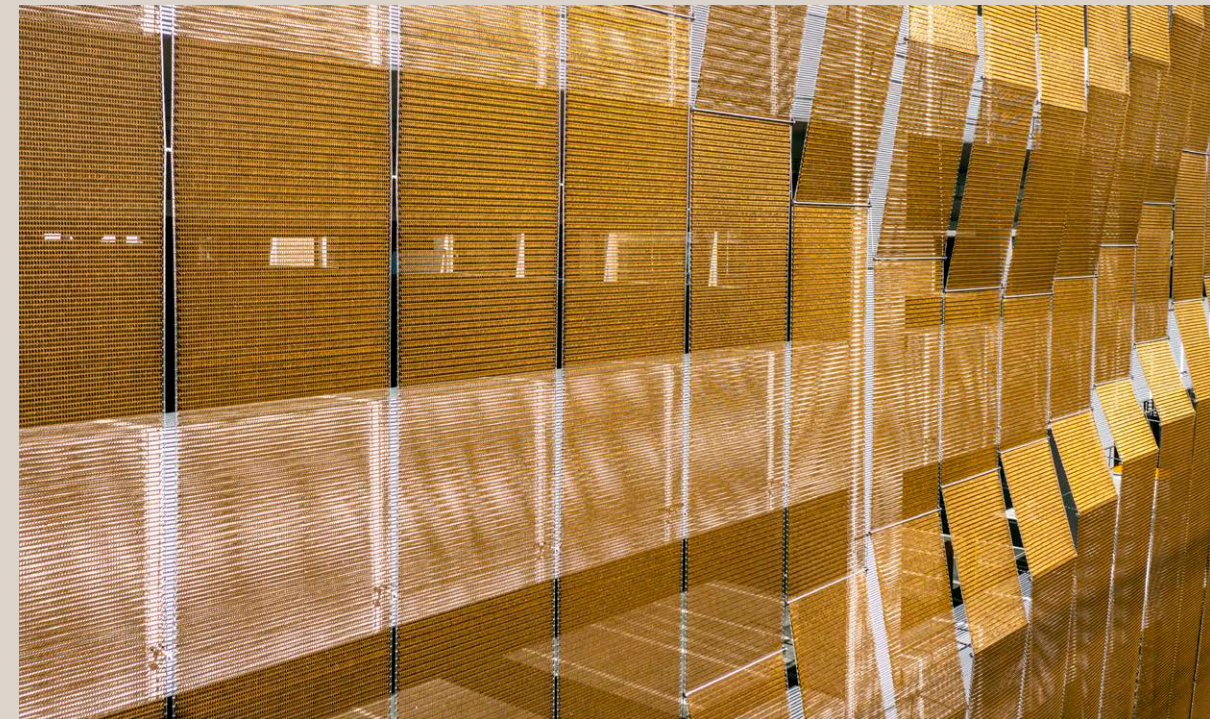
A ribbon of Kaynemaile bronze coloured polycarbonate mesh runs over each frame creating a kite-like structure providing compliant airflow through the garage.



The different locations of each projecting section give contrasting light and shadow effects, enhancing the deep wave across the face. The nature of the stainless steel internal support system combined with Kaynemaile's lightweight polycarbonate architectural mesh allows it to move with the wind along the San Tomas Expressway, creating a kinetic, expressive building for passers-by.

Kaynemaile's mesh is made from 100% recyclable engineering grade polycarbonate and manufactured to withstand the demands of high temperature and UV exposure zones, plus it's durable and easy to maintain.

With up to 70% solar reduction and compliant airflow all within a self-supporting package this Kaynemaile system is a beautiful addition to the architecture of Silicon Valley.











Photography by Brad Feinknopf

KAYNEMAILE EXTERIOR

*“This project has been a tremendous success and has been very well received in the city”.*

—STEPHEN A. MUNGER, SCHOOLEY CALDWELL

# Urban Movement

## PROJECT

Parking Garage at the Greater  
Columbus Convention Centre

## DESIGN

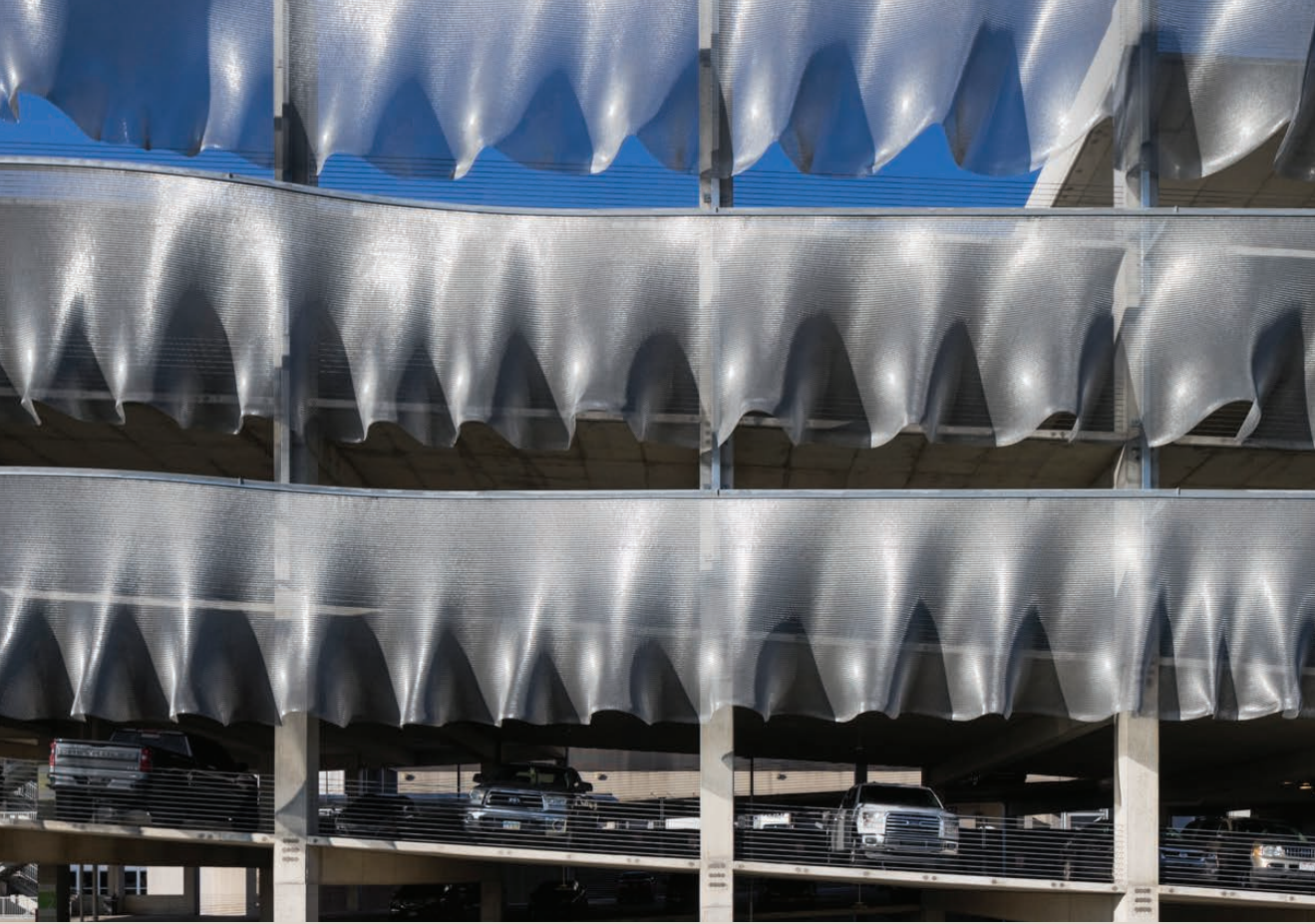
Schooley Caldwell, Ned Kahn, Kaynemaile

## LOCATION

Columbus, OH, USA

Kaynemaile worked with inspirational kinetic artist Ned Kahn and the team at Schooley Caldwell to develop the design for the parking garage facade at the Greater Columbus Convention Centre in Ohio.





The successful collaboration between Ned Kahn, Kaynemaile and the team at Schooley Caldwell was the key to the development of this stunning kinetic facade for the Greater Columbus Convention Centre.

The design and fluid movement is made possible through Kaynemaile’s unique manufacturing process as well as the material’s light weight (3kgs per square metre). Each of the three screens are single pieces of mesh 60 metres long x 4 metres high.

With Kaynemaile mesh already in use as a ceiling feature on site at the Union Ballroom, the architects and the event centre board knew our product and were highly supportive of this material selection.

Kaynemaile mesh is quick to install, requires less sub-frame than other materials and is robust. We are able to produce fire code compliant screens in unlimited sizes—with no joins or seams. A great solution for parking garage exteriors.

↑ ABOVE: When the breeze picks up, the mesh moves with it, creating a unique wave feature.

→ RIGHT: The three single piece screens measure a total of approx. 836sq.mts.







Photography by Angus Martin

KAYNEMAILE EXTERIOR

*“We were really impressed by the speed with which Kaynemaile expedited the project. The timeframe for this facade was six months and Kaynemaile succeeded in delivering within four”.*

—STEPHEN SIMPSON, SCENTRE GROUP

## Ocean Inspiration

PROJECT

Pacific Fair Shopping Centre Parking Garage

DESIGN

Scentre Group

LOCATION

Gold Coast, Australia

Kaynemaile’s self-supporting three-dimensional system transforms this utilitarian parking garage on Australia’s Gold Coast into a stunning landmark.



*“Using Kaynemaile really invigorated this project for us. It turned a parking garage into a compelling architectural statement.”*

— STEPHEN SIMPSON  
Regional Manager Design Projects, Scentre Group

When Scentre Group’s design team approached Kaynemaile with the concept for Pacific Fair it seemed like a perfect match. Initially designed with a rigid metal panel in mind it soon became apparent that the traditional material lacked the fluidity the designers needed. Additionally, the need for a substantial sub-frame for a metal panel system had increased the project costs significantly.

Kaynemaile can be made to any size in a seamless piece, this meant it worked with the pre-engineered structural frame heights and gave the project designers more flexibility.

With Scentre Group encouraged by the material’s possibilities, our fabrication team quickly turned out new screen concepts at scale for review—a fast track prototyping process that gave the client confidence to progress further with the design.

Kaynemaile’s collaborative approach extended into the detailing phase as a unique self-supporting fixing system was developed, providing the ability to be adjusted on site during install and allowing for future maintenance.

Along with the three-dimensional screens, a flat Obsidian Black coloured Kaynemaile screen was also produced for the parking garage exterior—a seamless single-piece screen measuring 50 metres wide by 9 metres high, which was lifted and fixed off in a day by hand without the need for costly site cranes.

*“We were really impressed by the speed with which Kaynemaile expedited the project. The timeframe for this facade was six months and Kaynemaile succeeded in delivering within four”* said Scentre Group’s Stephen Simpson.

During the day, the sun sparkles off the ten million or so individual Kaynemaile rings. At night the second layer of mesh becomes a rippling wave moving with the breeze from the nearby Pacific Ocean, transforming a utilitarian parking garage into a stunning landmark.

→ **TOP RIGHT:** The three-dimensional screen draws inspiration from the waves and golden sand of the nearby beaches.



← **LEFT:** This large Obsidian Black single piece screen was lifted and fixed off in a day.

→ **BOTTOM RIGHT:** Feature lighting gives the screen a distinct day and night look.











Photography by Archmospheres

*“It was a proud moment to see the canopy at the opening ceremony. Great team effort to turn an idea into a sensational reality!”*

—RICHARD FENNE, WOODS BAGOT DUBAI

# The WonderCool Effect

## PROJECT

The Arrivals Canopy at Expo 2020 Dubai

## DESIGN

Woods Bagot, Dubai

## LOCATION

Dubai, UAE

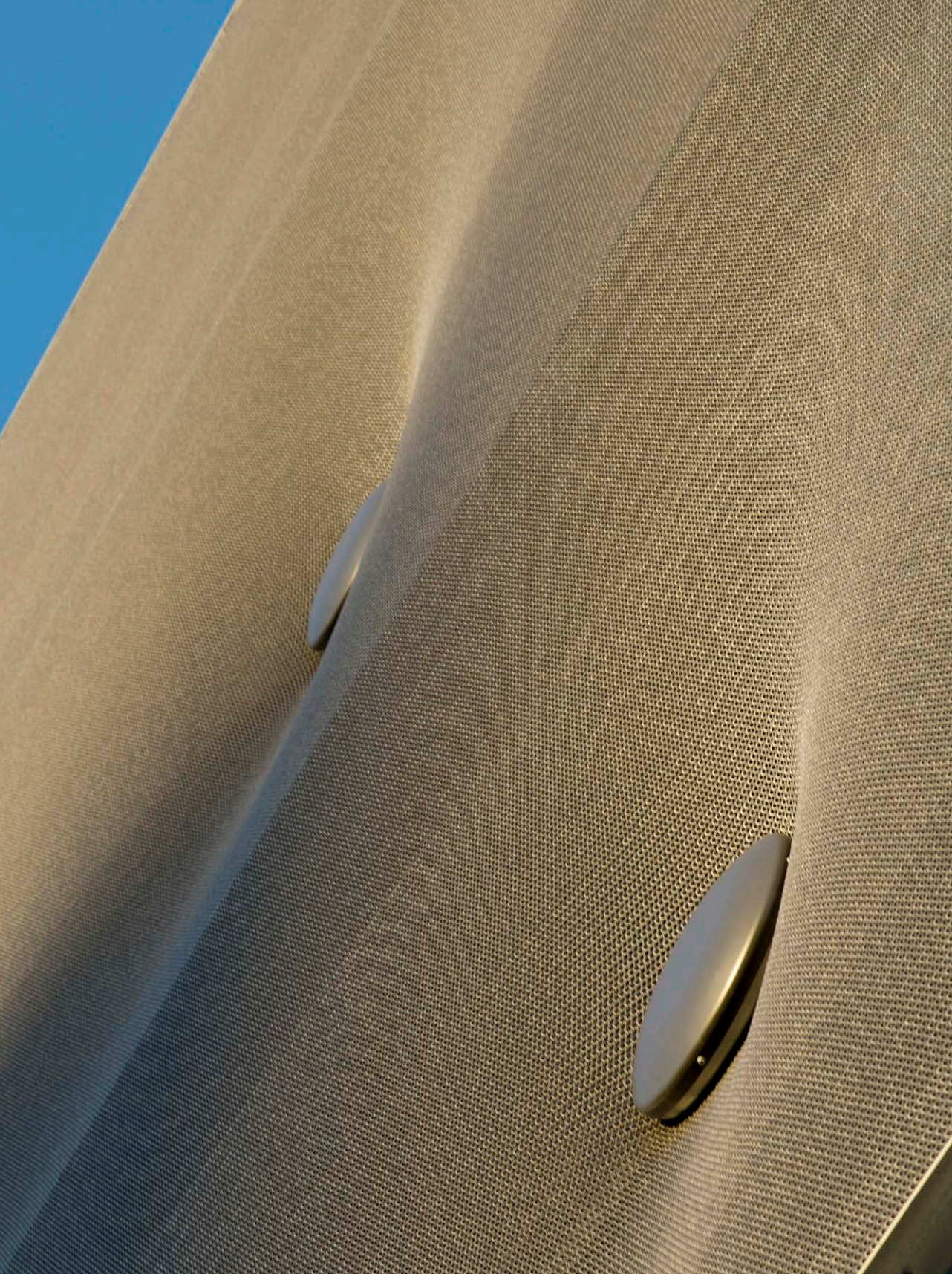
Kaynemaile’s soaring kinetic canopy acts as both outdoor air-conditioning and massive urban artwork. The fluid movement of the single-piece screens generate a calming sensory experience and trigger air movement. By night, the canopy comes to life as a backdrop to dynamic light shows.

Kaynemaile calls this unique combination of attributes ‘the WonderCool effect,’ bringing life and movement to urban spaces.









Photography by Iain Bond

# Seamless at Scale

PROJECT  
Angas Street Parking Garage

DESIGN  
Tectvs

LOCATION  
Adelaide, Australia

This multi-storey parking garage was clad using only eight individual screens—the biggest being a seamless piece 58 metres wide x 16 metres high.





Inspired by an old leather couch the unique concept called for button-like steel discs to be tensioned back into the Kaynemaile mesh. To achieve this design we prototyped the concept at scale, making sure it could be successfully realised and installed within the fast installation schedule.

The steel buttons create significant depth in the Kaynemaile screens, giving dynamic colour and shadow changes as the light moves from day to night across the facade.

With install speed in mind we designed our fixing system to allow these large screens to be lifted and fixed off in a day, significantly reducing road closures and disruptions to the surrounding neighbourhood.

Kaynemaile's three-dimensional properties mean these large screens provide up to 70% reduction in solar gain and code compliant airflow, reducing heat transfer into the building significantly.

↑ ABOVE: The depth of the pull back into the mesh is highlighted along the facade.

→ RIGHT: This single piece screen measures 58 metres wide x 16 metres high.





# Atlanta Intersection

PROJECT

The Interlock Parking Garage

DESIGN

Wakefield Beasley & Associates

LOCATION

Atlanta, GA, USA

The Interlock development in Atlanta features Kaynemaile's range of modular screens. Designed to work with standard floor heights they are a cost-efficient way to transform a utilitarian parking garage structure.







Described by the property developer SJC Ventures as ‘transformative mixed use’, the Interlock features apartments, retail, office space and a myriad of hospitality and community focused options and has a focus on urban living and connecting with Atlanta’s booming West Midtown.

Kaynamaile mesh reduces up to 70% of visible and infrared light waves from impacting on the building surface, providing an alternative route to solar gain protection for parking garages such as the Interlock.

This 800 space parking garage features almost 1000 square metres of Kaynamaile mesh screens across the facade.

Our flat screens give a seamless aesthetic to the facade design and require less subframe than traditional panel-sized products. The light weight of the mesh combined with the simple fixing system makes a fast installation schedule possible.

Kaynamaile mesh helps with natural ventilation in the garage allowing code-compliant free-air movement through the almost 80% open mesh area. This is thanks to the three-dimensional structure of the mesh with its low restricted cross-sectional area.

→ ↑ RIGHT & ABOVE:  
Kaynamaile’s modular  
screens blend seamlessly  
above the parking garage  
entrance.





*“We explored the idea of a structure that creates a unique spatial character internally, while becoming an abstract, recessive landscape element externally”.*

—CHROFI ARCHITECTS

# Spatial Shading

## PROJECT

Marsden Park Amenities Block

## DESIGN

Chrofi Architects

## LOCATION

Sydney, Australia

This amenities structure was designed to provide more than just shelter but also bring an element of joy and delight to the fast growing neighbourhood. Our custom gold coloured mesh adds an element of fun to the predominantly grey canopy structure while providing overhead solar shading.









# Vibrant Weather Protection

## PROJECT

Toi Rauwhāangi Massey College of Creative Arts  
and the University of Auckland

## DESIGN

Architectus and Athfield Architects

## LOCATION

Auckland and Wellington, New Zealand

Kaynemaile mesh provides protection from wind, rain and sun for atriums and courtyards, transforming under used spaces into vibrant meeting places.









# Geometric Shading

PROJECT

Carousel Shopping Centre Parking Garage

DESIGN

Scentre Group

LOCATION

Perth, Australia

Kaynemaile worked with Scentre Group to develop the screening for the Westfield Carousel multi-level parking garage in Perth, Australia.



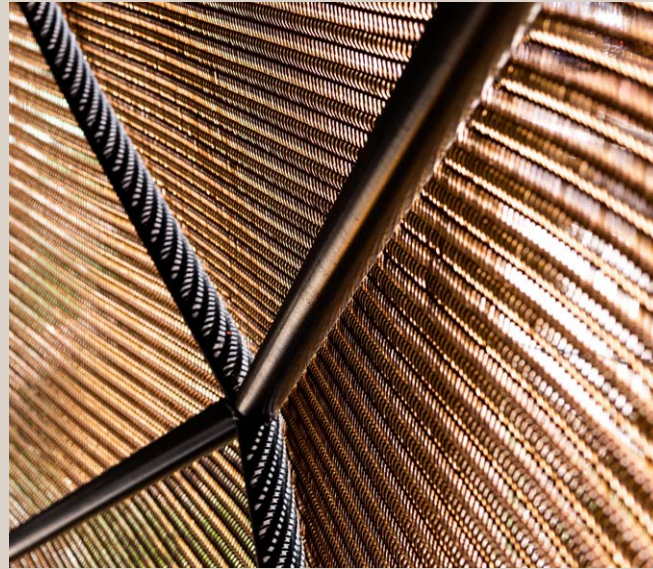
Photography by Dion Robeson



The three-dimensional design is made up of a series of projecting pyramids which are stretched across a steel sub-frame. The design covers all four sides of the large parking garage building with a total surface area of 650sqm.

The bronze coloured Kaynemaile mesh was an ideal choice for this project creating a dynamic, shimmering effect with contrasting light areas over the pyramid forms. Installation was fast given the scale of the job thanks to our simple fixing systems.

As Western Australia has a sub-tropical climate, using a material that cuts heat to the interior but maintains compliant air flow was crucial for the project. Kaynemaile significantly reduces both radiant heat through direct sunlight (EMR) and thermal conductive heat from entering the interior of a building by up to 70%. This gives you the ability to let daylight in and manage the passive solar gain—all while maintaining visual transparency.



← ↑ **LEFT & ABOVE:** The three-dimensional design is made up of a series of projecting pyramids which are stretched across a steel sub-frame.

→ **RIGHT:** Kaynemaile screens provide solar shading without obscuring views to the outside.







# Residential Living

Contemporary design and high-performance define Kaynemaile exterior screens for residential applications. Kaynemaile’s award-winning mesh provides energy-efficient solar protection and privacy for any residential project.



← ↑ LEFT & ABOVE:  
Kaynemaile screens  
integrate beautifully  
into these high end  
contemporary homes.

Photography by Adam Letch (above), Tony Savelli, Revolver Media (left).



→ **THIS PAGE:** Kaynemaile screens don't rust so are perfect for coastal conditions and wet areas.

→ **OVER:** Used within steel movable frames these Kaynemaile screens are perfect solar shading solutions.

With up to 70% solar reduction properties and simple fixing systems Kaynemaile mesh screens are perfect for residential shading. Our mesh can be fitted within movable exterior frames or used as fixed screens for solar and weather screening.

Kaynemaile offers an elegant material contrast on contemporary residential projects providing a different look from day to night. Ideal for coastal environments, Kaynemaile won't rust and is easy to maintain.



Photography by Adam Letch



Photography by Jacinta Harry, Open2view Tweed Coast



Photography by Jason Mann







# Why use Kaynemaile mesh.

Kaynemaile’s polycarbonate mesh is a patented, world-leading innovation. With over 60 years of material science and research to call on we know our mesh inside out. We think the benefits of our product are extraordinary.



## 70% Solar Reduction

Kaynemaile significantly reduces both radiant heat through direct sunlight (EMR) and thermal conductive heat from entering the interior of a building by up to 70%. This gives you the ability to let daylight in and manage the passive solar gain—all while maintaining visual transparency.



## Super Fast Installation

Kaynemaile is lightweight (3kg per square metre) and goes up fast, cutting down the install time dramatically and saving costs. Our fixing systems are simple and we don’t need the same level of sub-frame as metal products. This means our installed rate is more cost effective than metal or glass panel products.



## Unlimited Screen Size

We are not limited by panel size—we can make our screens to any height or width without joins or distracting gaps. This gives you freedom at the design concept stage that other materials don’t. Making our screens to the size you need them means less structure, less fixings, and less time on site.



## Eco-conscious Manufacturing

We are constantly striving to reduce the environmental footprint of our business. Our unique manufacturing process means we only make what we need. Our materials are fully recyclable using low-energy processes.



## Trusted Durability

Metal based materials corrode and oxidise in coastal conditions. Kaynemaile does not. Our mesh holds true to its tensile strength. We use mineral colour-fast pigments that will not stain your building when it rains, unlike traditional metal mesh materials.



## Unbeatable Strength

Our mesh is made from the highest performing thermoplastic. It is extremely robust and impact resistant. Thermally stable from -40°F to 248°F (-40°C to 120°C).



## Simple Attachment Systems

Our attachment methods for both exterior and interior systems are simple and based around two systems that utilise tube and hooks or extruded aluminium fixings. Even our custom projects are based around these simple attaching systems. For fixing details, contact us at [info@kaynemaile.com](mailto:info@kaynemaile.com).



## Fire Performance

KML22 65-FR

Kaynemaile mesh has been stringently tested for fire code compliance at the Southwest Research Institute at San Antonio, TX, USA.

For fire code information relevant to your region, visit us online: [kaynemaile.com/technical](https://kaynemaile.com/technical)



Test	Result
USA	
ASTM E84-19 Flame Spread index (FSI): 5 Smoke Developed Index (SDI): 350	Class A
NFPA 286	Pass, meets standard criteria (Class A)
NFPA 285	Pass, meets standard criteria
NFPA 268	Pass, meets standard criteria
NFPA 701	Pass
Conforming with section 803.12 stability at 200°F	Meets standard criteria
ASTM D 635	Classified HB and Class CC1
ASTM D 1929 Self-Ignition Temperature	968°F (520°C)
ASTM D 1929 Flash Ignition Temperature	842°F (450°C)
ASTM D 2843 Smoke Density Rating	70.9
EU	
BS EN 13501-1:2007 + A1:2009	B-s1, d0
BS EN ISO 11925-2:2010	Compliant
BS EN 13823:2010 + A1:2014	Compliant
DIN 4102 part 1	Pass B1
NZ / AU	
AS ISO 9705 Room Corner Test NZBC verification method C/MV2 appendix A	1s—Smoke production not more than 0.5m <sup>2</sup> /s <sup>2</sup> x 1000
NCC Specification C1.10	Group 1 flammability rating. SMORGA of 0.5m <sup>2</sup> /s <sup>2</sup>
AS 1530.3	Regulatory indices - Ignition index = 0 Spread of flame index = 0 Heat evolved index = 0 Smoke developed index = 1
IMO Resolution A.652	Pass smouldering cigarette & match flame equivalent
UL94-VO/3.0	Self-extinguishing



# Colour Range

We've come up with a range of stock colours to give you a wide range of looks for your exterior project.

## Colour Details

### Standard Exterior Colours

Bronze, Copper, Steel, Obsidian Black, Champagne.

\*Interior colours only. Some translucent colours may be suitable for exterior applications. Contact us to discuss further.

### Finishes

All colours are in a gloss finish.

## Warranty

Kaynemaile Architectural Mesh for standard applications has a 10 year warranty.\*

*\*Excludes kinetic or custom applications. Contact Kaynemaile to discuss your specific application.*



Flat White\*

Ruby Red\*

Azure Blue\*

Water Clear\*

Jade Green\*

Translucent Marine\*

Bronze

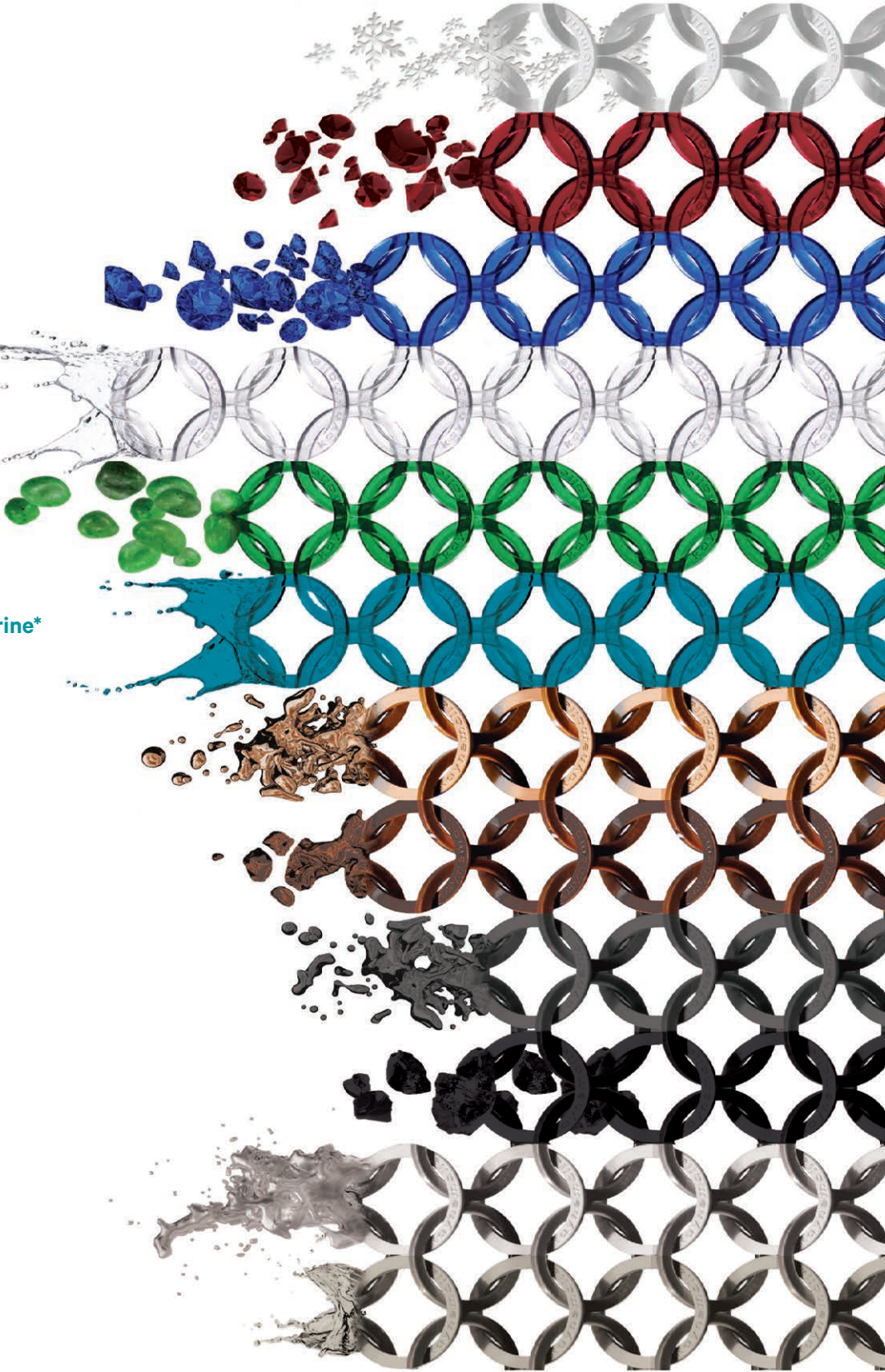
Copper

Steel

Obsidian Black

Silver\*

Champagne





# Technical Information

For more visit:  
[www.kaynemaile.com/technical](http://www.kaynemaile.com/technical)

Kaynemaile is extremely lightweight and easy to install. It goes up fast which dramatically reduces construction schedules and costs. It is tough and impact resistant, yet flexible enough to be stretched over a frame to execute complex three dimensional designs. Screens can be made to any height or width without joins or expansion gaps.

Kaynemaile mesh is lightweight and doesn't need the same level of fixings or substructure as metal products. Our screens go up fast cutting down install time dramatically and saving costs.

In line with our minimal waste philosophy, Kaynemaile mesh can be completely recycled at the end of its life.

## Features

**Weight:** 3kg/m<sup>2</sup> (0.6lbs/ft<sup>2</sup>)

**Sizes:** Unlimited in size.

**Colour range:** Kaynemaile exterior mesh comes in a range of solid colours. For colour range see page 54 of this booklet.

**Supplied hardware:** Kaynemaile mesh screens are supplied with mesh and our fixing system to suit your subframe.

## Hanging system

Our standard fixing arrangement for Kaynemaile mesh screens utilise our 12.7mm (0.5in) stainless steel tube at the top and bottom and our 23mm x 10mm (0.9in wide x 0.39in high) low profile anodised aluminium track at the sides.

## Frame requirements

Kaynemaile mesh screens are under tension vertically. Kaynemaile mesh screens need a frame around the full perimeter. The size of the screen will determine the sub-frame requirements.

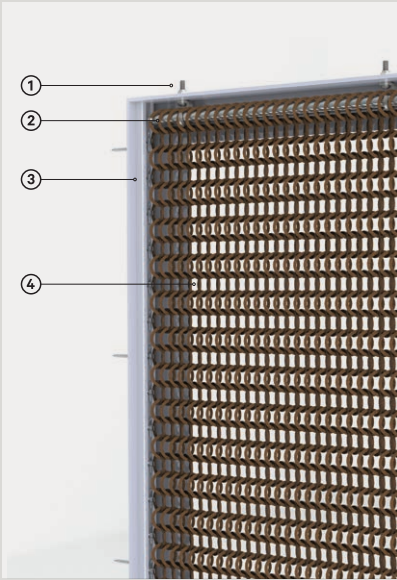
Our ideal sub-frame for large screens is a steel equal angle or box section. Get in touch to discuss the best option for your project.

## Screen tension

Kaynemaile mesh screens are tensioned vertically.

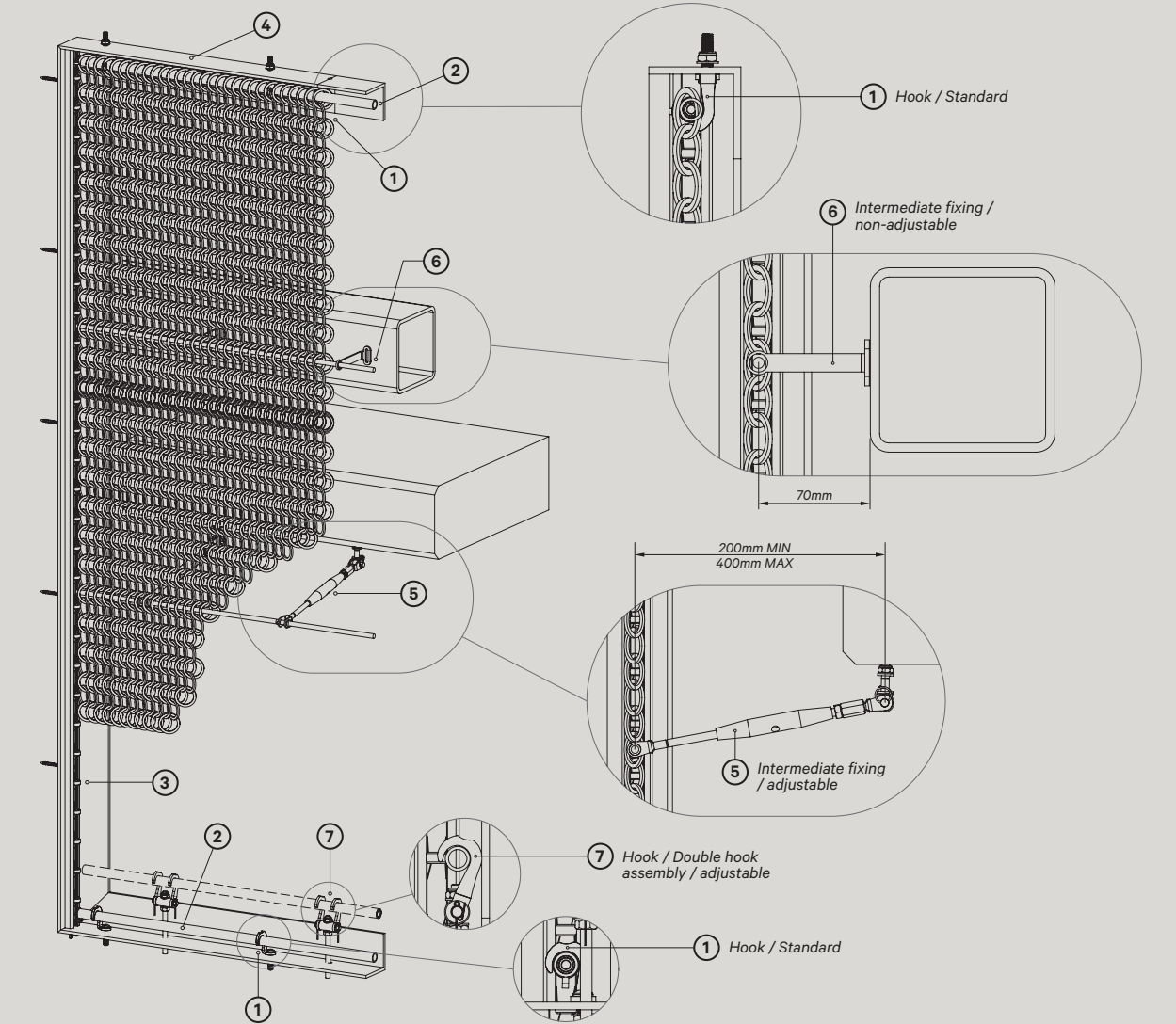
## How to specify your screens

To specify your Kaynemaile mesh screen just let us know the approximate width and height and we will advise on fixing details. If your screen is over 4m (13ft) approx. in height it may require intermediate fixings.



- |   |  |
|---|--|
| ① | Fixing screw   |
| ② | S/S hanging tube & hook                                  |
| ③ | Low profile aluminium track & polycarbonate fixing clips |
| ④ | Kaynemaile mesh  |

# Kaynemaile standard fixing arrangement for flat screens\*



- |   |   |
|---|---|
| ① | Standard 3mm (0.12in) thick stainless steel hook. Typical hook spacing is 300mm (12in) approx. however spacing varies based on the screen size and the project requirements. Hook fixings are M6 metric (0.25in). |
| ② | Standard 12.7mm (0.5in) stainless steel tube through top and bottom mesh rows.  |
| ③ | Standard aluminium low profile track. Finish is silver anodised. Typical fixings are M4/M5 at 200mm (7.87in) approx. spacing.   |
| ④ | Typical steel equal angle full perimeter subframe. Minimum size is 80mm (3.2in) wide approx.  |

\*Fixings and dimensions shown are for info purposes only. Contact Kaynemaile for specific information for your project.

- |   |  |
|---|--|
| ⑤ | Adjustable intermediate fixing. Screens over 4m (13ft) approx. may require intermediate fixings. An adjustable fixing is used where a backspacing exceeds 70mm (2.5in) or when the intermediate fixing is required to attach to the underside of a concrete slab or sub-frame. All intermediate fixings connect to 6mm (0.25in) solid stainless steel rod run internally through the mesh. |
| ⑥ | Non-adjustable fixing. Screens over 4m (13ft) high may require intermediate fixings. All intermediate fixings connect to a 6mm (0.25in) solid stainless steel rod run internally through the mesh.   |
| ⑦ | Adjustable double hook arrangement. Typically used for large screens that may require spot-applied tension adjustments or screens with non-parallel bottom edges.  |



Discover our interior applications online.

# Collaborate with us

We're happy to talk through your project with you — from product information to technical assistance. Call or send us an email. We're here to help.



For more on our interior range, visit us online: [kaynemaile.com/interior](https://kaynemaile.com/interior)

**Kaynemaile**  
Architectural Mesh

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