

**Weldlok<sup>®</sup>**

**SK-A Aluminium  
Expanded Mesh**

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**Imagine the  
possibilities**

**Examples of innovative uses.**

**For architects and  
construction companies.**

The Weldlok<sup>®</sup> brand  
is proudly owned by





**NEPEAN Building & Infrastructure  
is a division of NEPEAN, Australia's  
largest privately-owned engineering,  
mining services and industrial  
manufacturing organisation.**

Through our Weldlok® brand, NEPEAN Building & Infrastructure supplies Weldlok® SK-A Aluminium Expanded Mesh.

This brochure is designed to assist architects, construction companies, civil engineers and others involved in commercial and residential property development. It showcases images of innovative uses for Weldlok® SK-A Aluminium Expanded Mesh and provides key technical information.



# **Weldlok® SK-A Aluminium Expanded Mesh is used to create aesthetically pleasing architectural features in building interiors and facades.**

# Numerous features and benefits

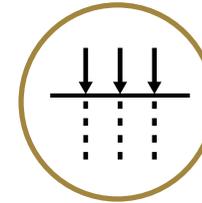
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A unique high quality, eco-friendly and innovative product, which allows architects and construction companies to realise their visions.



## DURABILITY AND SAFETY

Weldlok® SK-A Aluminium Expanded Mesh is made by uniformly piercing and stretching a single piece of metal whilst retaining its structural integrity, resulting in durability and resistance to breakage and damage. The manufacturing process produces expanded mesh with strong grip surfaces, making it ideal for anti-slip walkways. Combining expanded mesh with glass, concrete or plastic in buildings helps create a strong structure.



## PERMEABILITY AND FILTRATION

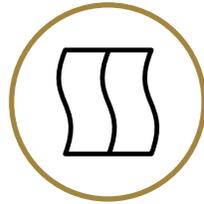
The diamond-shaped apertures in Weldlok® SK-A Aluminium Expanded Mesh can provide different levels of permeability, depending on their size. It can provide privacy and diffuse light while still letting in air. For example, the expanded mesh on airport runways can safely disperse the air flow because of its air filtering effects. On a smaller scale, fine expanded mesh can filter impurities through electrochemical filtration, or in combination with other materials. Its durability and metallic properties make it an ideal filter.





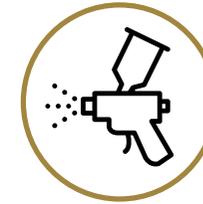
## ECO-FRIENDLY AND ENERGY SAVING

Weldlok® SK-A Aluminium Expanded Mesh is manufactured in an environmentally conscious way, using the entirety of the material to ensure nothing is wasted. Wide-strand expanded mesh can be used in architecture to filter sunlight in specific angles and patterns, to reduce solar radiation entering a building. It acts as both a barrier and insulator and saves energy by maintaining the interior temperature. It is also an excellent structure for vines and other climbing plants to grow on. These qualities make the expanded mesh an excellent material in the construction of green buildings.



## VERSATILITY AND FLEXIBILITY

Expanded mesh is capable of covering areas small and large, straight and curved. The static pattern creates a seamless appearance. Expanded mesh can be adapted to our clients' needs, in terms of function or design. To guarantee a perfect fit, the cut of the metal is consistently precise. The highest standards are used in manufacturing Weldlok® SK-A Aluminium Expanded Mesh products to make sure we stand out from the rest.

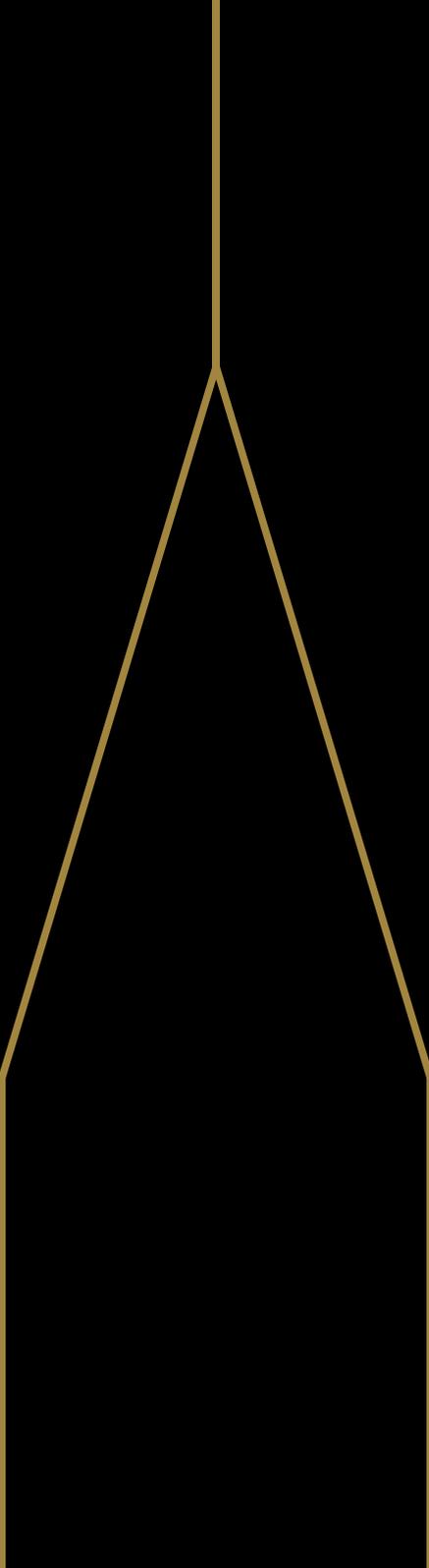


## COATING AND COLOUR

Weldlok® SK-A Aluminium Expanded Mesh is made from aluminium. The surface can be coated in a number of ways such as anodising, positive electrode, PVC metallic coating, powder coating, and liquid coating. After the coating process, the material becomes more durable and resistant to corrosion. The surface can also be presented in a spectrum of colours, adding to its usability and ability to realise our client's design vision and imagination.







# Examples of innovative uses

**Weldlok®**

**SK-A Aluminium Expanded Mesh**

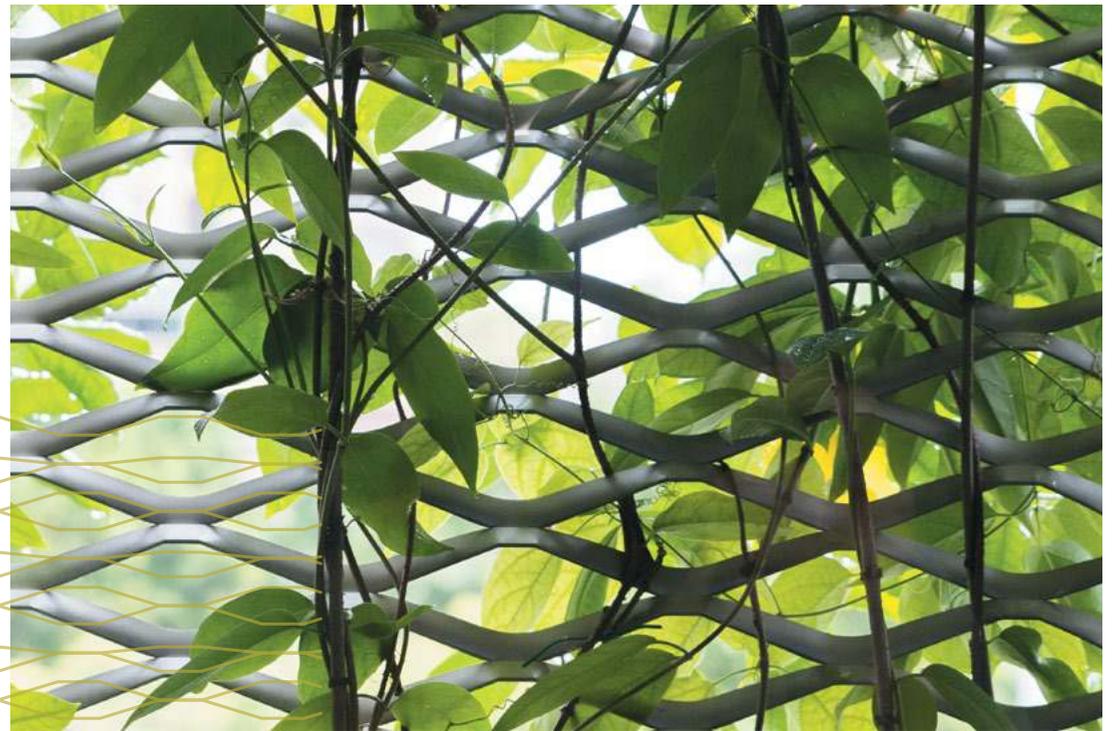
CASE STUDY:

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# Green facade



This complex, located in downtown Singapore, employs a green facade comprised of climbing plants and specialised Weldlok® SK-A Expanded Mesh. A green facade not only adds life to a building but also has energy saving and noise reducing qualities. Inhabitants can enjoy the comforts of nature even amidst a busy city. We worked with the architect to create several variations of SK-A to complete his vision. The SK-A we used is lightweight, easy to install and resilient to weather and earthquakes. This collaboration gave us the opportunity to explore new products and expand our expertise.



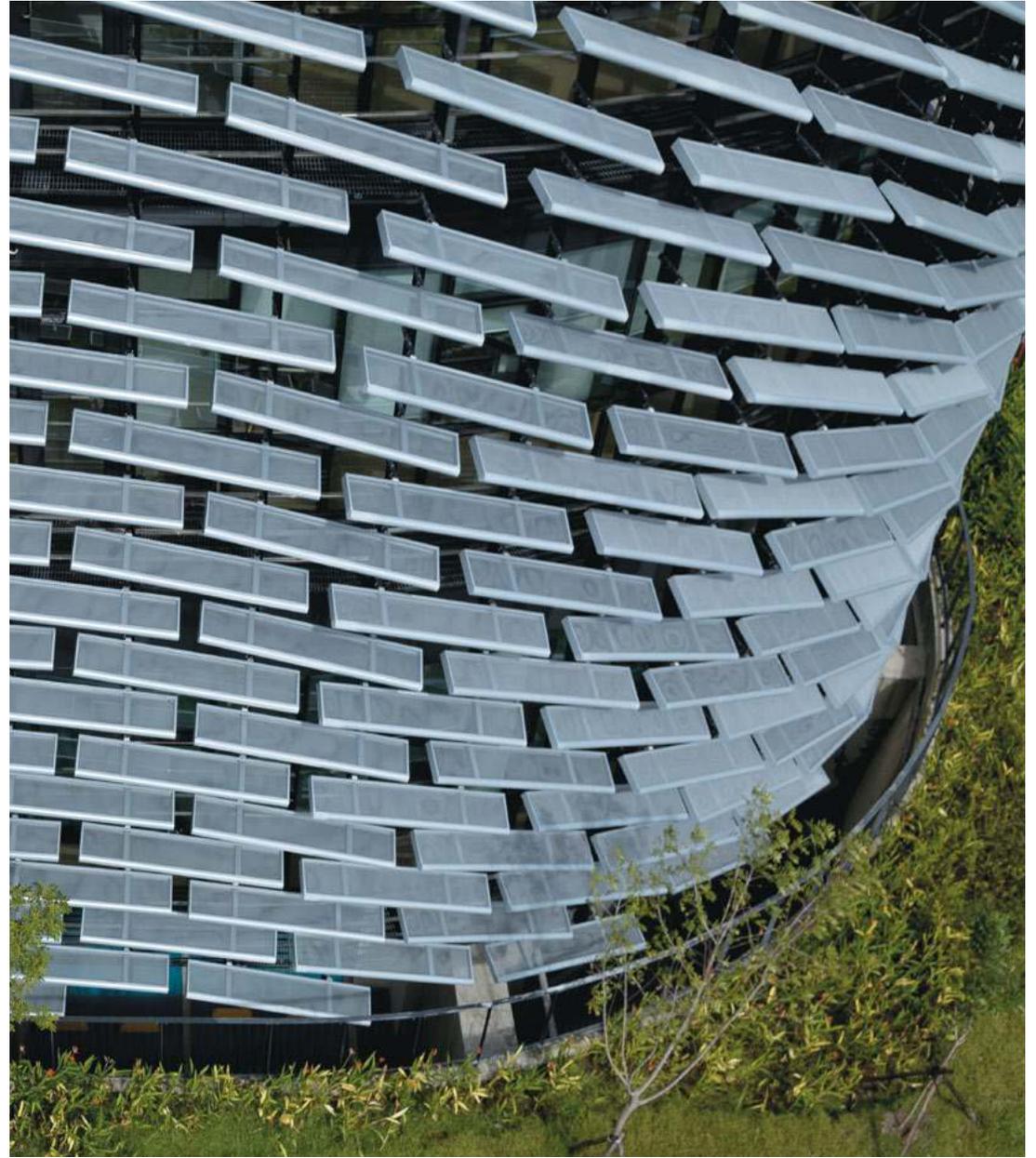
## CASE STUDY:

# Central Taiwan Innovation & Research Park

Environmental impacts were considered in all aspects of this building. Bio-architecture Formosana, an architectural firm known for their commitment to eco-friendly buildings, achieved the highest grade of Taiwan's green building label with this project.

Weldlok's® partners collaborated with the architects and the construction company to come up with innovative solutions to the designs that have never been accomplished before. The building facade is composed of aluminium Weldlok® SK-A Expanded Mesh, which can filter sunlight, reduce solar radiation and insulate the interior from heat and cold. By working together, our design team and the architects found a way to utilise SK-A to its full potential in design and function.





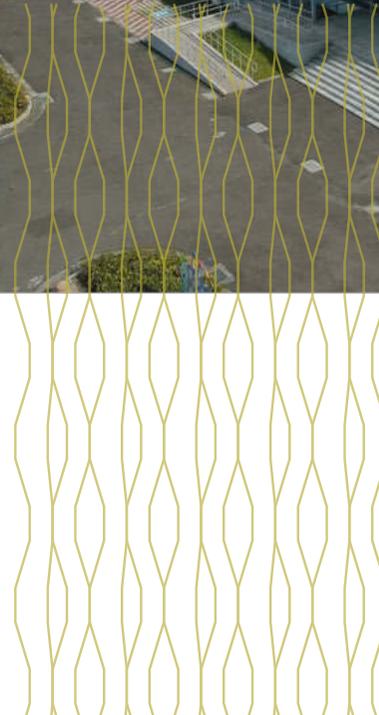
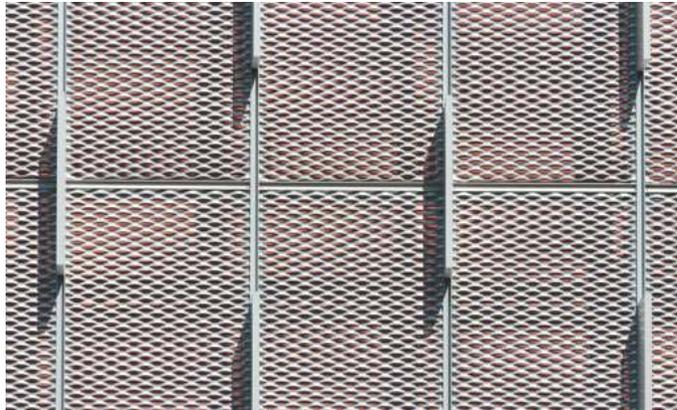
CASE STUDY:

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# Yai -Tai Operational Centre for Aquaculture



This centre was designed by Hoya architectural firm and inspired by aquatic life. On the exterior of the building, the pattern of SK-A Weldlok® Expanded Mesh embodies the building as the scales of a fish. Inside the building, the shadows cast by the pattern imitate the reflection and movement of water, giving the illusion of being underwater.



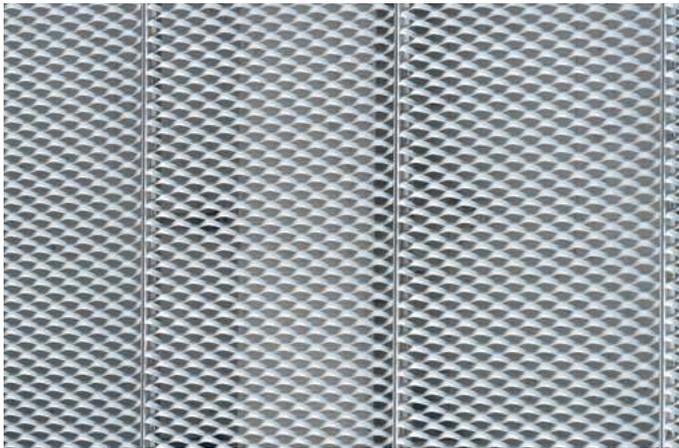
Our design team successfully achieved the architects' vision and were able to shorten the construction time by preparing the specified pattern of SK-A with precision.

CASE STUDY:

# Kaohsiung Public Library Caoya Branch

The layout of this library branch is light and open. The wall perpendicular to the entrance is a mixture of Weldlok® SK-A Expanded Mesh and concrete. The SK-A panels intersect and overlap the concrete, demonstrating the versatility of Weldlok® SK-A Expanded Mesh.





CASE STUDY:

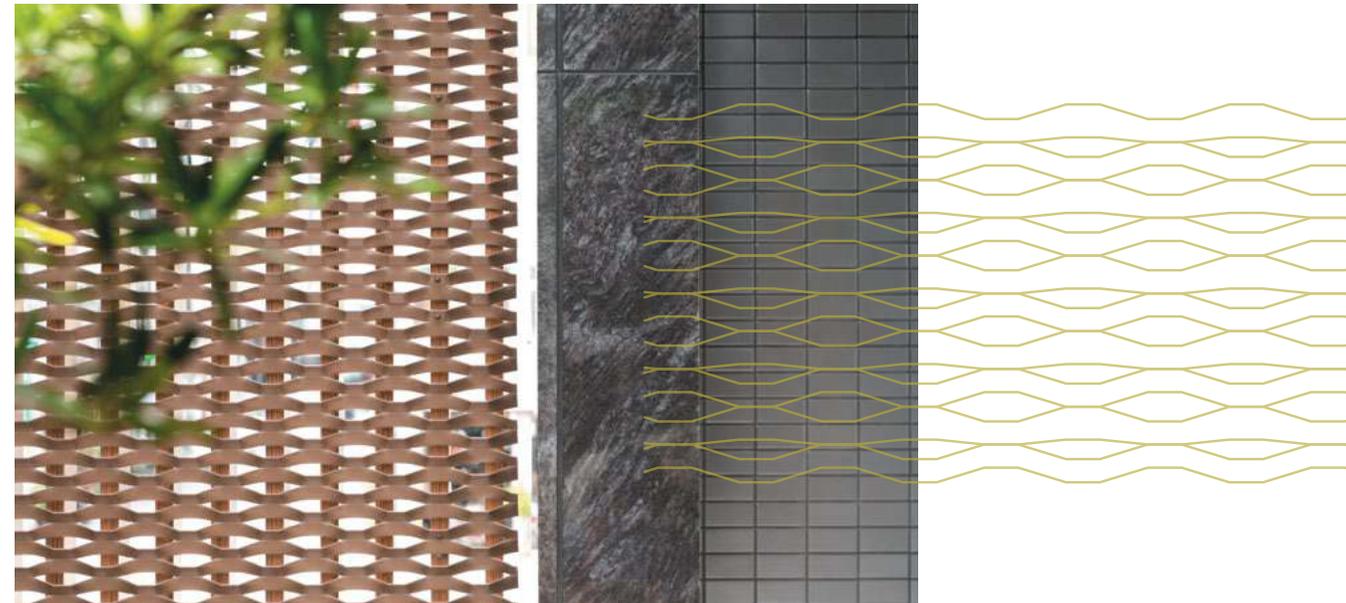
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# Residential Building



In this residential building, the facade of Weldlok® SK-A Expanded Mesh on the west side is designed to correlate with the position of the sun. At noon, the sunlight refracts on the wide mesh and diffuses into the area beneath. Wind is able to circulate through the building, permeating coolness even during warmer weather.

In this project, we developed a construction system that assisted the installation of the facade and matched the ends of each panel in a continuous pattern. The metal was coated to be resistant to corrosion in any type of weather and was painted to match the colour of the building.



CASE STUDY:

# Metro Station Ceiling



The ceiling, which is made of Weldlok® SK-A Expanded Mesh, of the most bustling MRT station in Kaohsiung, is a presentation of the industrial history of the city. The vast network of Weldlok® SK-A Expanded Mesh conceals the overhead pipelines while still allowing convenient access to them. Weldlok® SK-A Expanded Mesh is fire resistant and water-permeable, thus raising the level of safety in such a high traffic location.

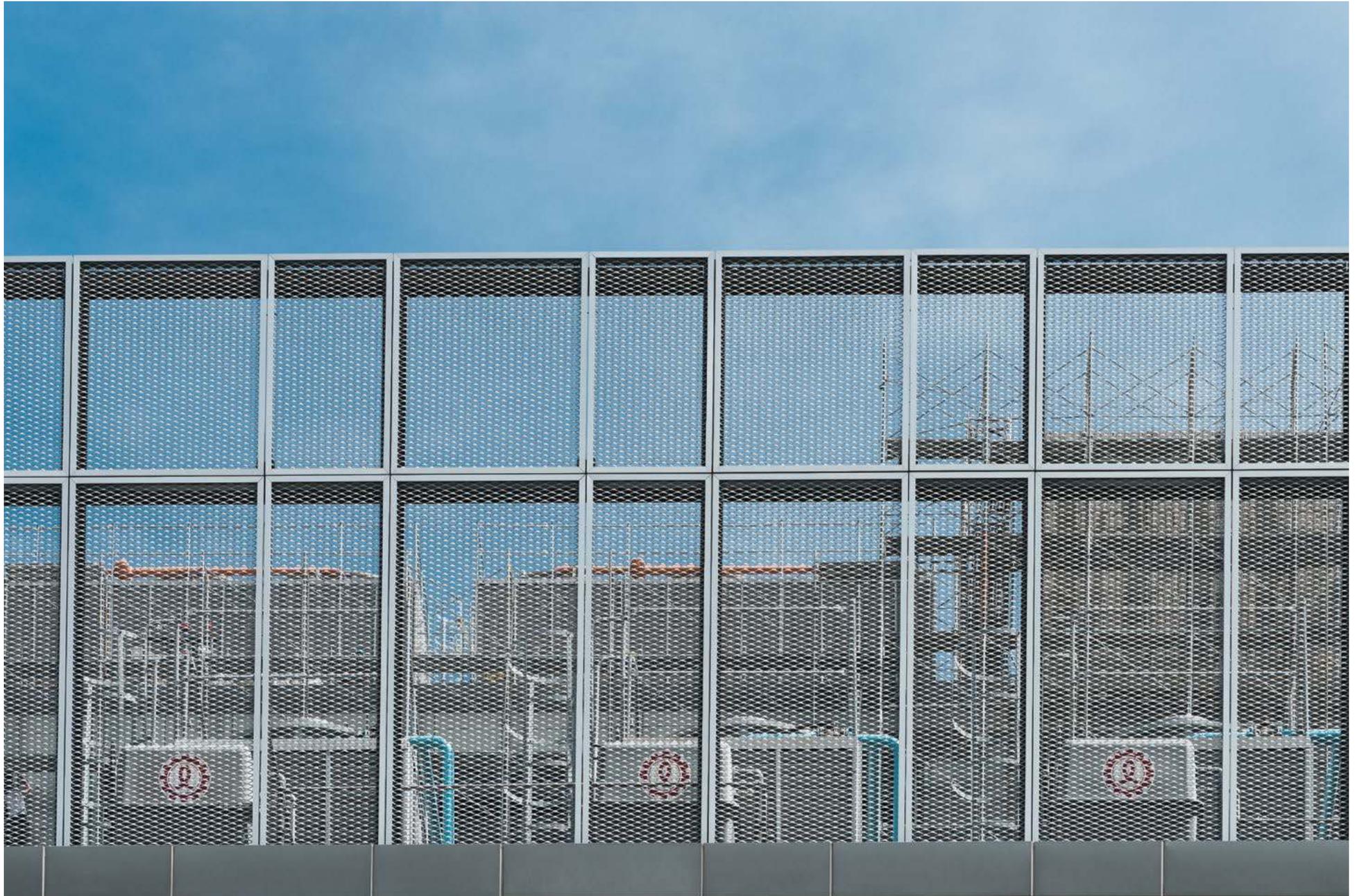


## CASE STUDY:

# Construction Fence

In this project Weldlok® SK-A Expanded Mesh is used as fencing on these buildings to conceal HVAC units while still allowing airflow in to prevent overheating. Weldlok® SK-A Expanded Mesh offers protection from forces of nature while simultaneously complementing the surrounding architecture. Functioning as fencing, the expanded mesh can be easily installed at any location with minimal maintenance.





CASE STUDY:

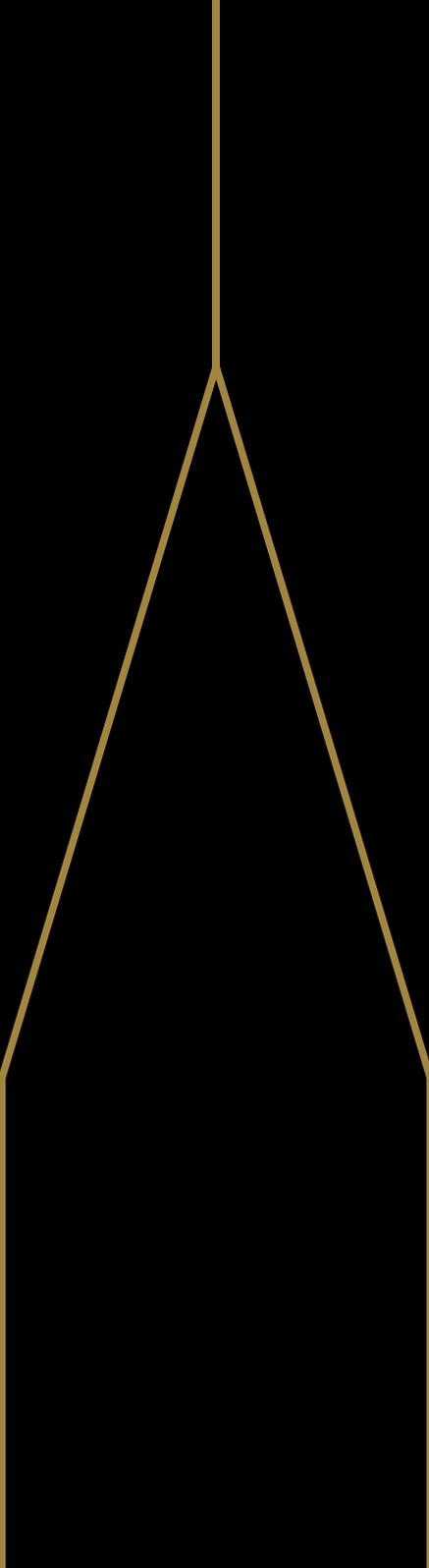
# Qiaotou District Courthouse



This courthouse is acknowledged as one of the most prominent courts in Kaohsiung – Taiwan. It uses Weldlok® SK-A Expanded Mesh is used to surround the exterior of the building. Weldlok's® partners have designed frames with slim borders to give the entire structure a distinct and refined appearance. Each piece of SK-A mesh was measured precisely to fit together and to act as an insulating barrier. Certain frames are equipped with hinges to allow quick evacuation and to allow sunlight to enter into the building, which improves the safety and comfort of all occupants.







# A Technical Guide

**Weldlok<sup>®</sup>**

**SK-A Aluminium Expanded Mesh**

# Product specifications

## Weldlok® SK-A Aluminium Expanded Mesh

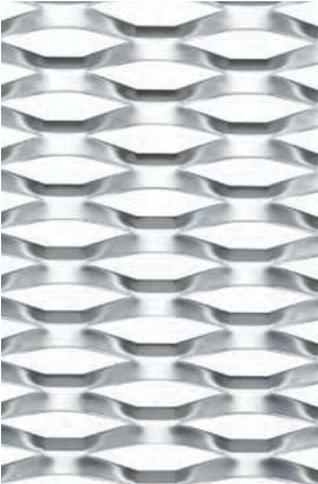
Our attention to detail brings out the appeal of Weldlok® SK-A Aluminium Expanded Mesh. It is an architectural element with many beneficial qualities. Installed on building exteriors, aluminium SK-A mesh is an eco-friendly material that is capable of dissipating heat and filtering sunlight. It can also support climbing plants that purify the air while reducing noise pollution. SK-A mesh is a valuable addition to environmentally conscious buildings and projects seeking energy conservation.



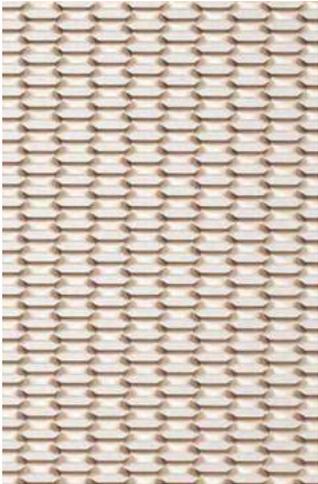
SKA 2004



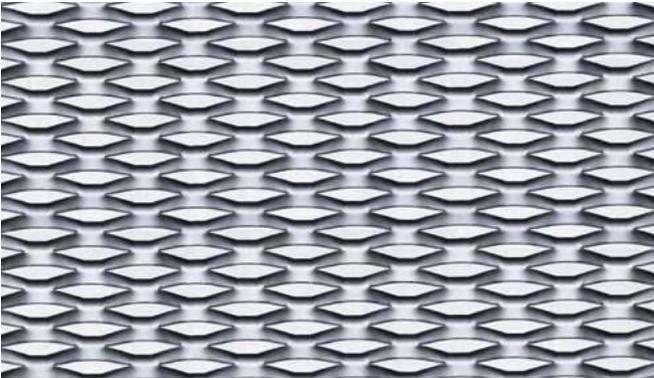
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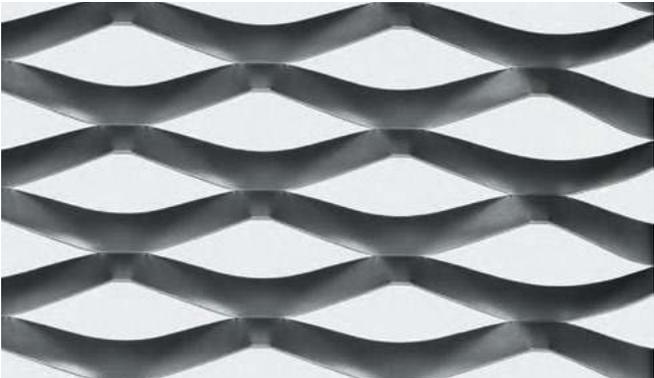
SKA 3019



SKA 2045



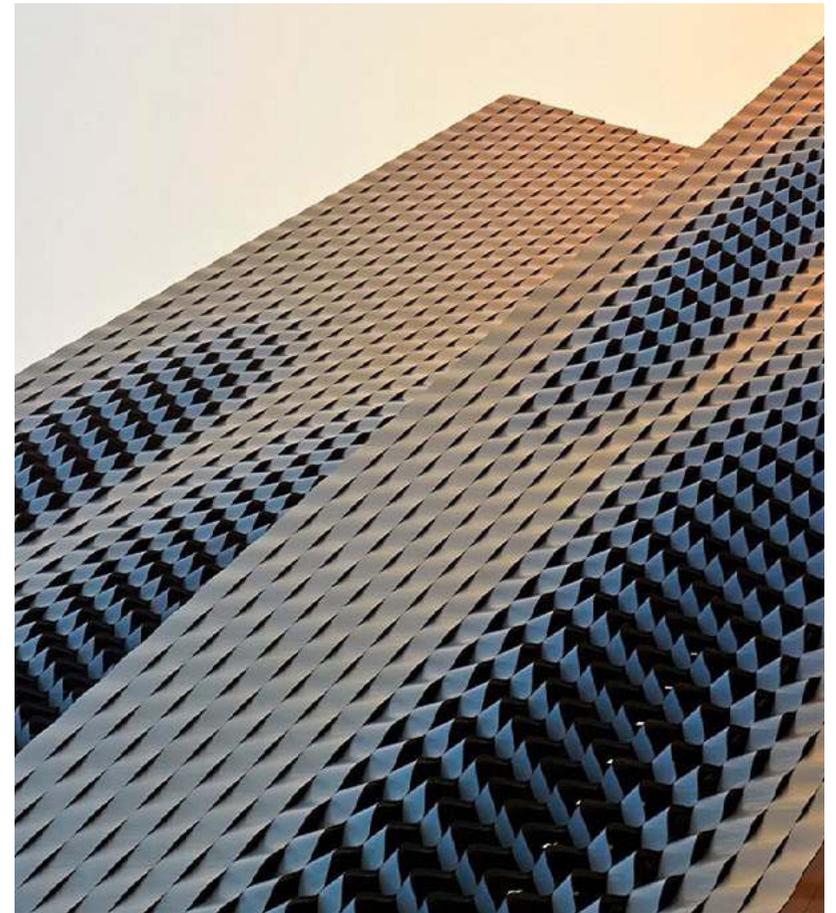
SKA 2024



SKA 2046

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Weldlok® SK-A Aluminium Expanded Mesh can be custom designed. Clients can choose the expanded mesh pattern, dimensions and finish that fit the requirements of their projects. All variations of SK-A mesh are produced with the utmost precision and quality.

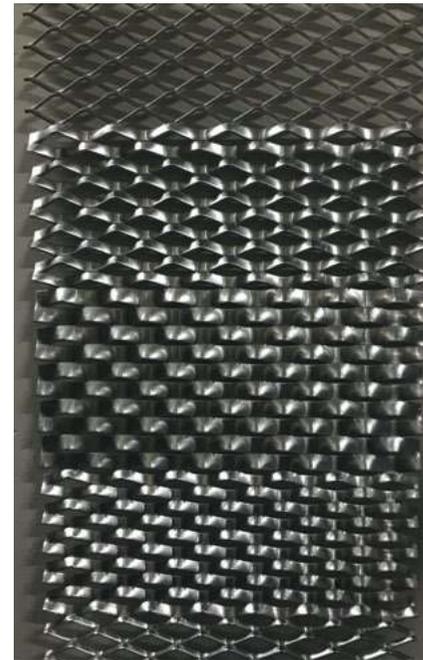
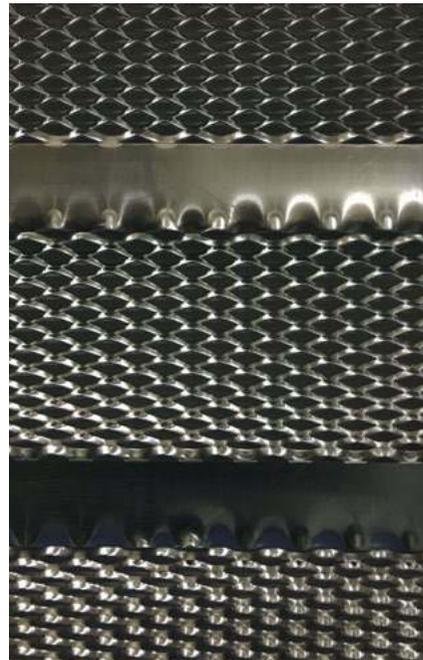


# Vario Mesh

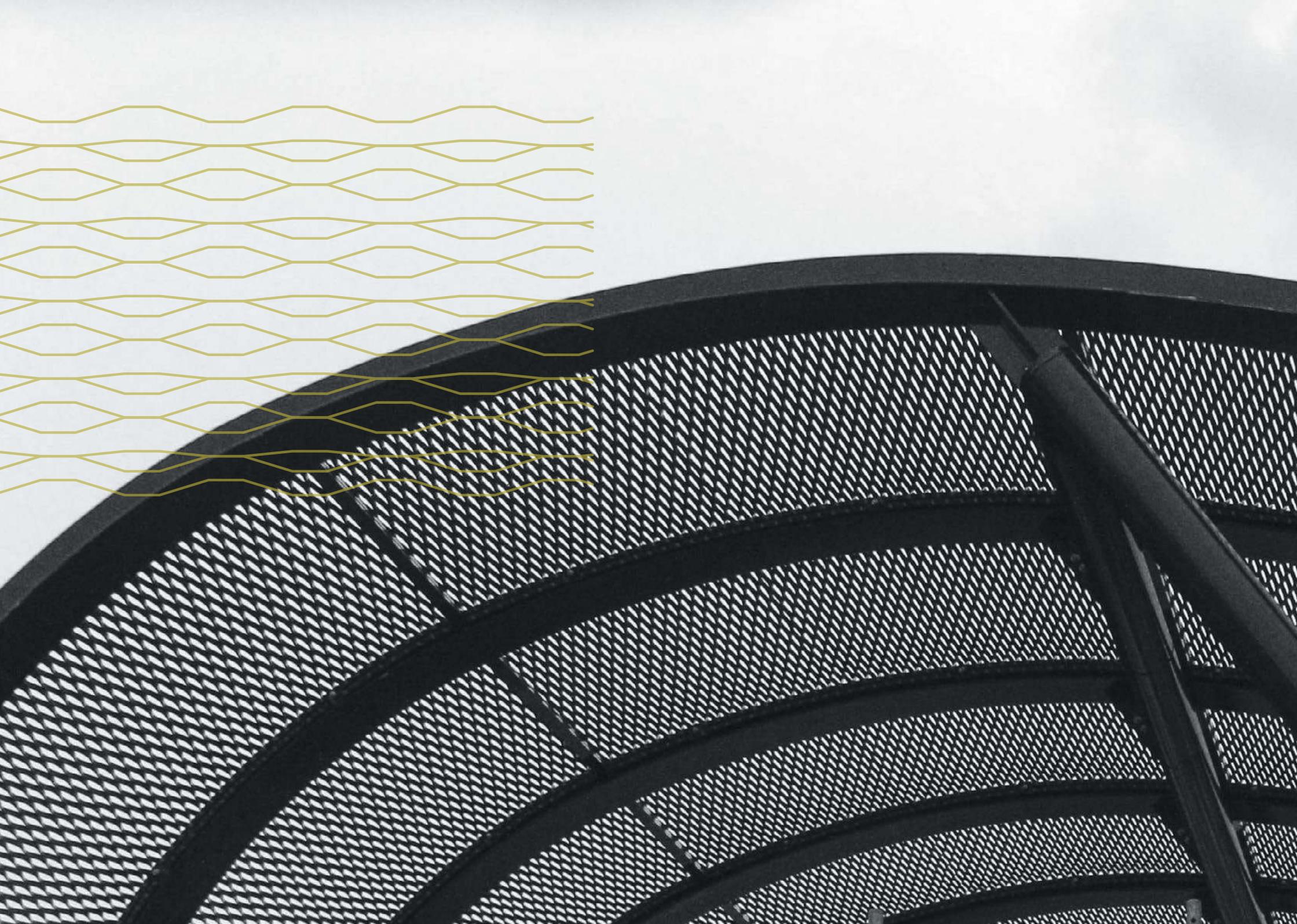
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## Vario Mesh

Weldlok® SK-A Aluminium Expanded Mesh brings a new innovative pattern that combines two or more patterns in one piece, creating the ultimate freedom of design. Fully customised, our design team can work with the clients to achieve their design ideas with high precision.



Imagine  
the possibilities





## NEPEAN Building and Infrastructure

Originally founded as Graham Group, NEPEAN Building & Infrastructure is one of Australia's largest fully integrated manufacturer and supplier of metal products for the industrial and commercial building sectors.

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