科技工藝 持續精進



上鎧鋼鐵
SHANG KAI STEEL

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SHANG KAI STEEL

機械科技打造精湛工藝

"Building Craftsmanship Through Mechanical Technology."

自 1988 年，上鎧鋼鐵致力於提供卓越的金屬擴張網。我們符合國際標準化組織 ISO 9001：2015 品質管理系統標準，因為每一個環節都達到自我的嚴格標準。

如今，上鎧鋼鐵加倍重視服務與數據，為了提高整體競爭力，從 2017 年全面更新工廠自動化機器設備與工廠電腦化管理，自工業 2.0 邁向工業 4.0，與歐美技術並駕齊驅。透過跨國／跨界思維，積極開發高附加價值與高端差異性產品，不斷嘗試創新與研發，致力於帶給客戶絕佳體驗。

在每次密切的合作關係裡，我們的技術總能不斷突破，與之創新。現在，您可以發現上鎧鋼鐵的產品為全球信任，「信任」一直是上鎧鋼鐵的最重要的品牌價值。我們擁有豐富的經驗及完善的生產設備，致力於提供客戶高品質、高價值之產品，以高標準滿足客戶之需求！

Since 1988, Shang Kai Steel has been dedicated to providing superior Expanded Metal meshes. We conform to the ISO 9001:2015 Quality Management System standards set by the International Organization for Standardization because every stage of our production meets our own strict standards.

Nowadays, Shang Kai Steel places a greater emphasis on service and data in order to improve overall competitiveness. In 2017, we fully updated our factory's automation equipment and computerized management, moving from Industry 2.0 to Industry 4.0. Through cross-national and cross-industry thinking, we actively develop high-value-added and high-end differentiated products, constantly trying to innovate and research, committed to providing customers with an excellent experience.

In every cooperation relationship, our technology always continues to break through and innovate. Now, you can find Shang Kai Steel's products to be globally trusted. "Trust" has always been the most important brand value for us. At Shang Kai Steel, we use state-of-the-art machinery and technology to create products of exceptional craftsmanship. Our advanced equipment and skilled technicians allow us to consistently deliver high-quality products that meet the high standard of our customers!



公司簡介
Company Profile

上鎧鋼鐵股份有限公司是由**董事長林宗志先生**創立，專門從事金屬擴張網製造。公司經營理念是「誠信、品質」。我們擁有多種設備和技術，可製造板厚範圍從 0.05mm-8.0mm，不限於任何金屬材質。我們可生產各國標準擴張網，並持有 ISO 9001 品質管理系統，並有特訂品質保證制度。在台灣高端產品市場中占有率超過八成，並銷售至世界各地。

Shang Kai Steel Co., Ltd. was founded by Chairman Chung-Chih Lin and specializes in the manufacturing of expanded metal mesh. The company's business philosophy is "integrity and quality". We have a variety of equipment and technology, and can produce sheets with thicknesses ranging from 0.05mm-8.0mm, not limited to any metal material. We can produce various national standard expanded metal meshes and have an ISO 9001 quality management system and a special quality assurance system. We have a market share of more than 80% in Taiwan's high-end product market and sell our expanded metal mesh products to customers worldwide.

上鎧鋼鐵在 1998 年開始轉型，從 OEM 和 ODM 代工轉為 OBM，以滿足客戶日益變化的需求。近年來，公司重視服務和數據分析，積極推動工廠自動化和電腦化管理，從工業 2.0 轉型為工業 4.0，開發出具有高附加價值和高端差異性的產品。我們致力為客戶提供優質的產品與服務，幫助客戶在國際市場上取得佳績。

In 1998, Shang Kai Steel began its transformation journey, shifting from OEM and ODM contract manufacturing to OBM, to better meet the changing needs of its customers. In recent years, the company has placed a strong emphasis on service and data analysis, actively promoting factory automation and computerized management, and transitioning from Industry 2.0 to Industry 4.0. The company has developed products with high added value and high-end differentiation. We are dedicated to providing our customers with high-quality products and services, helping them achieve success in the international market.

經過三十多年的發展，上鎧鋼鐵的目標是「站穩台灣，深耕亞洲，放眼全球！成為高端客戶唯一指定的金屬擴張網供應商」。作為台灣產業用金屬擴張網的領導廠商，上鎧展現出卓越的技術水準，在金屬網產業鏈中扮演著重要的角色。我們將繼續追求「共好、共創、永續」，朝向更高水準的企業發展目標邁進。

After more than 30 years, Shang Kai Steel has established itself as a leading supplier of metal mesh in Taiwan, Asia and the world. The company aims to be the "Top choice for high-end customers as a supplier of Expanded metal mesh". As a leader in Taiwan's metal mesh industry, Shang Kai Steel has demonstrated its expertise and commitment to excellence. The company will continue to pursue its goal of "mutual benefit, co-creation and sustainability" and strive for even greater success in the future.



LRQA

Current issue date: 28 November 2022
Expiry date: 28 November 2025
Certificate identity number: 10464760

Original approval(s): ISO 9001 - 28 November 2022

Certificate of Approval

This is to certify that the Management System of:

SHANG KAI STEEL CO., LTD.

No. 16 Juguang 2nd St. Daliao Dist., Kaohsiung City 831136, Taiwan

has been approved by LRQA to the following standards:

ISO 9001:2015

Approval number(s): ISO 9001 – 00038541

The scope of this approval is applicable to:

Manufacturing and sale of expanded metal and metal lath.

Luis Cunha

Area Operations Manager - North Asia & SAMEA

Issued by: LRQA Limited

IAF SKAS

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Issued by: LRQA Limited, 1 Trinity Park, Bickenhill Lane, Birmingham B37 7ES, United Kingdom

Page 1 of 1



Certificate

Standard: **ISO 14064-1:2018**

Certificate Registr. No: **CF 50943434 0001**

Report No: **38540393 001**

Certificate Holder: **Shang Kai Co., Ltd.**
No.16, Chu-Kuang 2nd Street, Ta-Fa Industrial District, Ta-Liao Dist., Kaohsiung City, Taiwan (R.O.C.)

Site: **Shang Kai Co., Ltd. Headquarters**
No.16, Chu-Kuang 2nd Street, Ta-Fa Industrial District, Ta-Liao Dist., Kaohsiung City, Taiwan (R.O.C.)

Scope:
Verification and Validation Body: TÜV Rheinland Taiwan Ltd.
- Process: Document review, interview, site visit and recalculation
Based on the information we have received and evaluated that:
- Programme: Voluntary
- Review Criteria: ISO 14064-3:2006
- Organizational Boundary: Operational Control
- Level of Assurance: Reasonable
- Materiality: 5%
- Global warming potential (GWP): IPCC 2013
- Base year: 2021 (2021.01.01~2021.12.31)
- Inventory year: 2021 (2021.01.01~2021.12.31)
- The total carbon emission is 447.399 tons of carbon dioxide equivalent (tCO_2e)
  - Direct emission is 65.3248 tCO_2e
  - Indirect emission is 381.9673 tCO_2e
- 2021 electricity emissions factor not publish, the inventory use 2020 electricity emissions factor for GHGs calculation

Validity: This certificate only reviewed the emissions data of inventory year, this certificate is not for the management systems certification.

2022-05-24

TÜV Rheinland Taiwan Ltd.

www.tuv.com

IAF TAF

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Precisely Right.



LCBA Low Carbon Construction

LCBA低碳工法標章證書

Low Carbon Footprint Building Construction Certificate of Accreditation

證書編號Certificate No: LCBA-LCC-015

申請廠商｜上鎧鋼鐵股份有限公司
工法名稱｜金屬擴張網外遮陽系統系列
申請人｜林宗志

碳減量效益之減碳比率	SKA 20-33：5.4% SKA 30-59：6.0% SKA 20-28：5.2% SKA 20-55：8.8% SKA 20-143金屬擴張網：6.1% SKA 20-59：6.9% SKA 15-06：5.3%

The following construction(s) was/were submitted and identified on behalf of the client as:

Shang Kai Steel Co., Ltd

Construction Name	Expanded metal SK-Architecture Type
Carbon Reduction	SKA 20-33：5.4% SKA 30-59：6.0% SKA 20-28：5.2% SKA 20-55：8.8% SKA 20-143：6.1% SKA 20-59：6.9% SKA 15-06：5.3%

低碳建築聯盟
Low Carbon Building Alliance
蔡福賢
Certified on 2022.05.27

LCBA



台灣精品獎
Taiwan Excellence Award 2023

特頒予
Presented to

上鎧鋼鐵股份有限公司
SHANG KAI STEEL CO., LTD.

具高耐風性能之建築用遮陽節能金屬擴張網
Sunshade Energy-Saving Expanded Metal Mesh for Building with High Wind Resistance
SKA Series

王美花

經濟部 部長
Minister, Ministry of Economic Affairs, R.O.C.
中華民國111年11月23日
23rd of November 2022



經濟部

潛力中堅企業
證書

上鎧鋼鐵股份有限公司
持續專注本業，在特定領域表現傑出，具有發展為卓越中堅企業之潛力，經評選後，榮獲第5屆潛力中堅企業，特頒此證，以茲證明。

部長 沈榮津

中華民國 108 年 10 月

Certificate of Potential Taiwan Mittelstand Award

This certificate of the 5th Potential Taiwan Mittelstand Award is presented to SHANG KAI STEEL Co., Ltd. in recognition of its outstanding performance in a specific field and for its strong potential to become a Taiwan Mittelstand Award winner.

Jong-Chin Shen
Minister of Economic Affairs, R.O.C.
October 2019



NATIONAL AWARD OF OUTSTANDING SMALL AND MEDIUM ENTERPRISES

國家磐石獎證書

上鎧鋼鐵股份有限公司

參加第26屆國家磐石獎－卓越中小企業選拔，經評審委員會評審結果，榮獲國家磐石獎，特頒此證。

經濟部部長 沈榮津

中華民國全國中小企業總會理事長

THIS IS TO CERTIFY THAT

SHANG KAI STEEL CO., LTD.

IS THE WINNER OF THE
26th NATIONAL AWARD OF OUTSTANDING
SMALL AND MEDIUM ENTERPRISES

Jong-Chin Shen
MINISTER
MINISTRY OF
ECONOMIC AFFAIRS, R.O.C.

CHAIRMAN
NATIONAL ASSOCIATION
OF SMALL & MEDIUM
ENTERPRISES, R.O.C.

中華民國 106 年 10 月 31 日



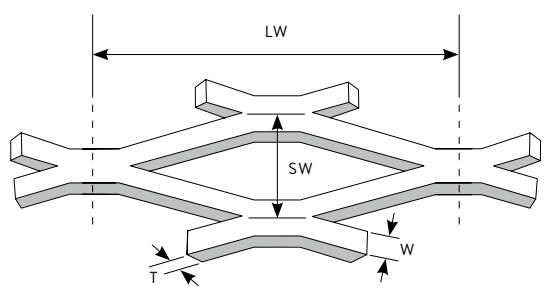


金屬擴張網

Expanded Metal

金屬擴張網是將金屬板材經由橫切和拉伸擴展，所形成規則相同的菱形網狀結構，使其具有較高的抗拉強度。由於可生產不同的金屬材質及材料耐候性高、表面處理多樣化、成品網面平整、孔徑均勻等特點，上鎧鋼鐵的擴張網能夠在各個產業中更被廣泛地使用。而現在我們對擴張網有了全新的定義，即『穩固安全』、『過濾通透』、『綠化節能』和『變化彈性』。和以往所不同的是，我們對於原料、製作環節和細節上的執著與追求，上鎧鋼鐵所生產的擴張網具有豐富的立體視覺效果，可以塑造出穿透性的美感，提升各產業產品的質感和價值，使金屬擴張網成為越來越多產業的選擇。

Expanded metal is a type of metal mesh that is made by cutting and stretching metal plates to form a regular pattern of holes. Its diamond-shaped structure gives it high tensile strength. Because of the weather resistance of different metal materials, the surface treatment is diverse, the net surface is smooth, the aperture is uniform and other characteristics, the Shang Kai Steel expanded metal can be more widely used in various industries. Nowadays, we have a new understanding of expanded metal, that is "stable and safe," "filter and transparent," "green and energy-saving," and "changeable and elastic." Different from the past, We are persistent in the material, production process, and details, and the Shang Kai Steel expanded metal has a rich three-dimensional visual effect, can shape the permeable beauty, enhance the quality of various industrial products, and make the expanded metal a more and more popular choice in various industries.



本公司亦可製造上述標準以外的產品，如有需要，請與我們聯繫。
Our company is also capable of manufacturing products beyond the mentioned specifications. If needed, please feel free to contact us.







擴張網介紹

- SW: 菱形短邊尺寸中心之間的距離。
- LW: 菱形長邊尺寸中心之間的距離。
- LWM: 寬度 (對應菱形長邊方向)。
- SWM: 長度 (對應菱形短邊方向)。
- 厚度 : 原料厚度。
- 總高度 : 網格總高度通常是材料厚度測量值的 1-2.5 倍。
- 網條 : 是菱形邊長之寬度。
- 所有厚度、網條重量均存在 +/-10% 的公差。
- 標準尺寸 : 915 x 1830 (LWM x SWM)、
  1220 x 2440(LWM x SWM)、
  1525 x 3050 (LWMXSWM)。

材料

鋼鐵、不銹鋼、鋁、鍍鋅鋼板、電氣鍍鋅鋼板、銅、鈦、鎳、銀、金。

表面處理

熱浸鍍鋅、粉體塗裝、陽極處理、氟碳烤漆。

Expanded Metal Technical Specifications

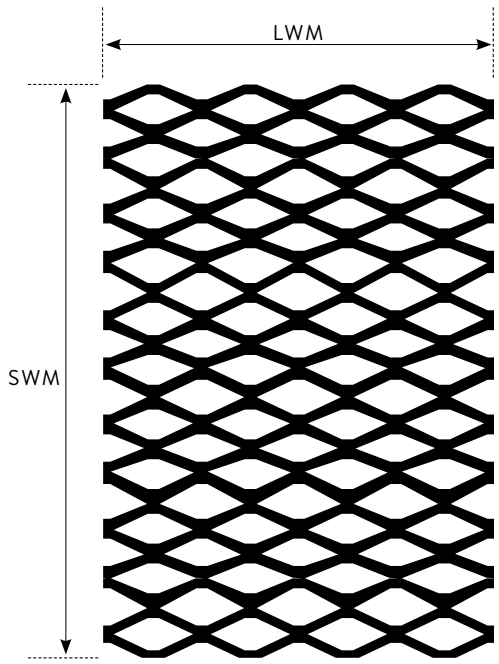
- SW: Short way Dimension of mesh.
  (Distance between centers in direction of short mesh)
- LW: Long way Dimension of mesh.
  (Distance between centers in direction of long mesh)
- LWM: Length (Long Way direction of the diamond)
- SWM: Width (Short direction of the diamond)
- Thickness: Material Thickness.
- Overall Thickness: The Overall Thickness can be as much as 1-2.5x the measurement of material thickens.
- Strand/Width: The width of diamond shape on each slice.
- All thickness, strand width and weight are subject to +/-10% tolerance.
- Standard sheet is 915 x 1830 (LWM x SWM)、
  1220 x 2440 (LWM x SWM)、
  1525 x 3050 (LWMXSWM).

Material

Mild steel、Stainless steel、Aluminium、Pre-galvanized steel、Electrical Galvanized Steel、Copper、Titanium、Nickel、Silver、Gold

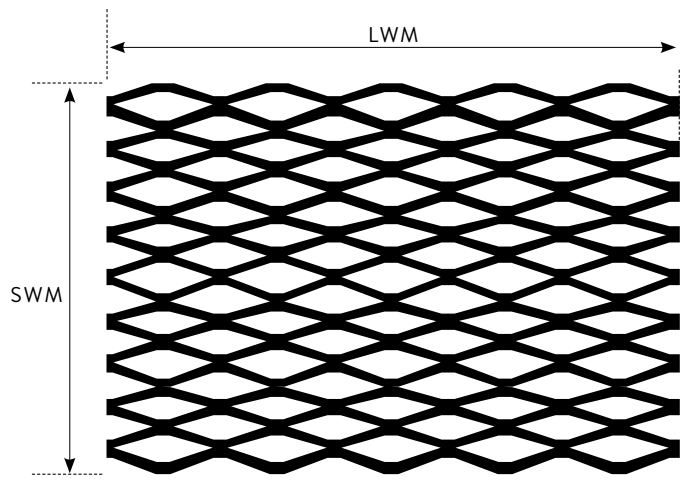
Surface treatment

Hot-dip Galvanizing、Powder coating、Anodizing treatment、Fluorocarbon coating



X 型式 /X Type

標準尺寸 Standard sheet
915 x 1830 (LWM x SWM)
1220 x 2440 (LWM x SWM)
1525 x 3050 (LWMXSWM)



Y 型式 /Y Type

標準尺寸 Standard sheet
2440 x 1220 (LWM x SWM)
3050 x 1525 (LWM x SWM)



穩固安全

金屬板經由等距拉撐形成擴張網，其扎實的力學載重結構，即使網目變形、破壞或被剪斷，依舊強穩堅固。相較於其他網材，金屬擴張網更可提供表面止滑的優勢，並可與非金屬材質契合，如：玻璃、混泥土、塑 膠 .....，以強化工程結構耐性、安全性與外觀完整性。

Durability and Safety

Expanded metal is made by uniformly piercing and stretching a single piece of metal, retaining its structural integrity that can withstand breakage and damage. The grating produced by our manufacturing process gives the surface of expanded metal better grip. This property is ideal for anti-slip walkways. By combining expanded metal with glass, concrete or plastic can create a stronger structure.

表面處理

擴張網的材質豐富多樣，金屬類如：鋼鐵、不銹鋼、鋁、鈦、鎳、銅 .....，非金屬類如：紙、 .....。因應材質特性有多種表面加工法可供選擇，如：熱浸鍍鋅、金屬電鍍、液體塗裝、烤漆處理或塑膠被覆等。經表面加工處理後的擴張網更經久耐用，具抗腐蝕性，搭配豐富的色彩選擇，使擴張網應用變化無窮、想像無限！

Coating and Color

Expanded metal can be made from various metal materials, such as steel, stainless steel, aluminum, titanium, nickel, and copper as well as nonmetal materials, such as paper, etc. All these possible materials comes a number of ways to coat the surface, such as, galvanizing, anodizing aluminum, positive electrode, PVC metallic coating, powder coating, and liquid coating. With the coating process, the material becomes more durable and resistant to corrosion. The surface can also be presented in a spectrum of colors, adding to its usability and ability to realize the client's imagination.





過濾通透

金屬擴張網的孔狀結構，在通透性上提供最佳優勢。不同尺寸的擴張網可應用於各領域：安全護欄與建築圍欄可保護隱私、減少陽光直接照射；架設於機場跑道兩旁整齊劃一的擴張網，可引導飛機起飛時所造成的混亂氣流。此外，孔洞細密精緻的擴張網可應用於雜質過濾器內，經由電化學原理或結合其他材料形成耐用與穩定性高的理想過濾網。

Permeability and Filtration

The diamond-shaped apertures in expanded metal can yield different levels of permeability depending on their size. It can provide privacy and diffuse light while still letting in air. The expanded metal which utilized on airport runways can safely disperse the airflow because of its air filtering effects. On a smaller scale, expanded metal becomes a fine mesh that can filter impurities through electrochemical filtration or in combination with other materials. Its durability and metallic properties make it an ideal filter.

變化彈性

運用擴張網勻稱的孔洞，搭配不同金屬的特性，擴張網目可無限連續拼接、彎曲各種角度。由於拼接大範圍、彎曲角度需要產品高度一致性，上鎧鋼鐵毫不妥協地提供幾近零誤差金屬擴張網，配合建築師、設計師盡情揮灑創意。

Versatility and Flexibility

Expanded metal is capable of covering areas small and large, straight and curved. The static pattern, coupled with the characteristics of different types of metal, resulting in a seamless appearance. Expanded metal can adapt to the clients' needs, in terms of various functions or designs. To guarantee a perfect fit, the cut of the metal must be consistently precise. Shang Kai Steel employs the highest standards in manufacturing products to make sure we stand out from the rest.

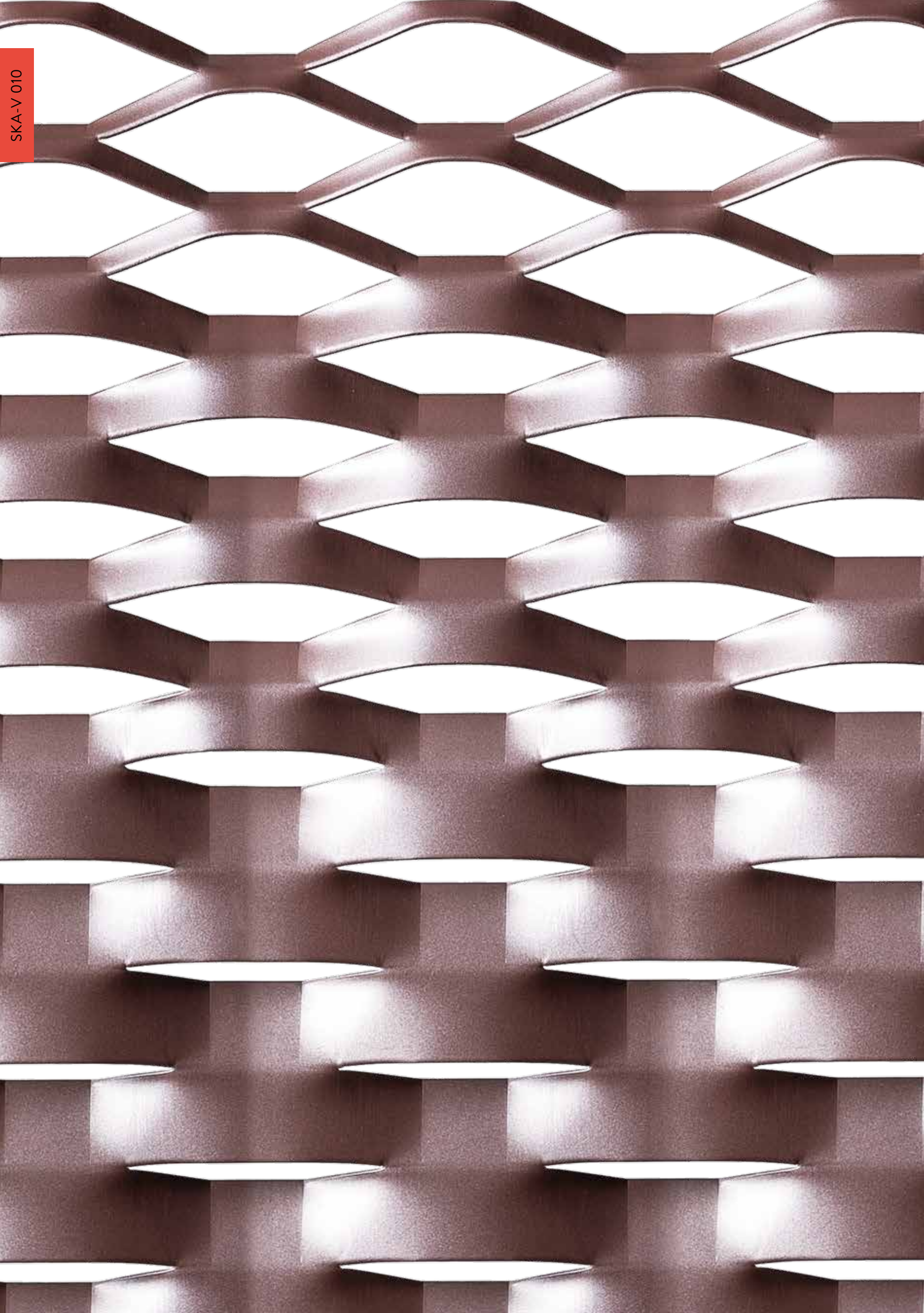
綠化節能

使用鋁製寬網目之擴張網於建築空間，網面傾斜角度可阻擋陽光直接照射，減少建築內部日照輻射，降低溫度。除了節省能源外，經過測試可讓藤蔓植物攀爬其上淨化空氣，美化建築外觀；更因擴張網於生產過程無廢料產生，使其成爲綠建築指標建材。

Eco-friendly and Energy Saving

Expanded metal is manufactured in an environmentally conscious way, using the entirety of the material to ensure nothing is wasted. Wide-strand expanded metal can be used in architecture to filter sunlight in specific angles and patterns to reduce solar radiation entering the 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 metal an excellent material in the construction of green buildings.

SKA-V 010

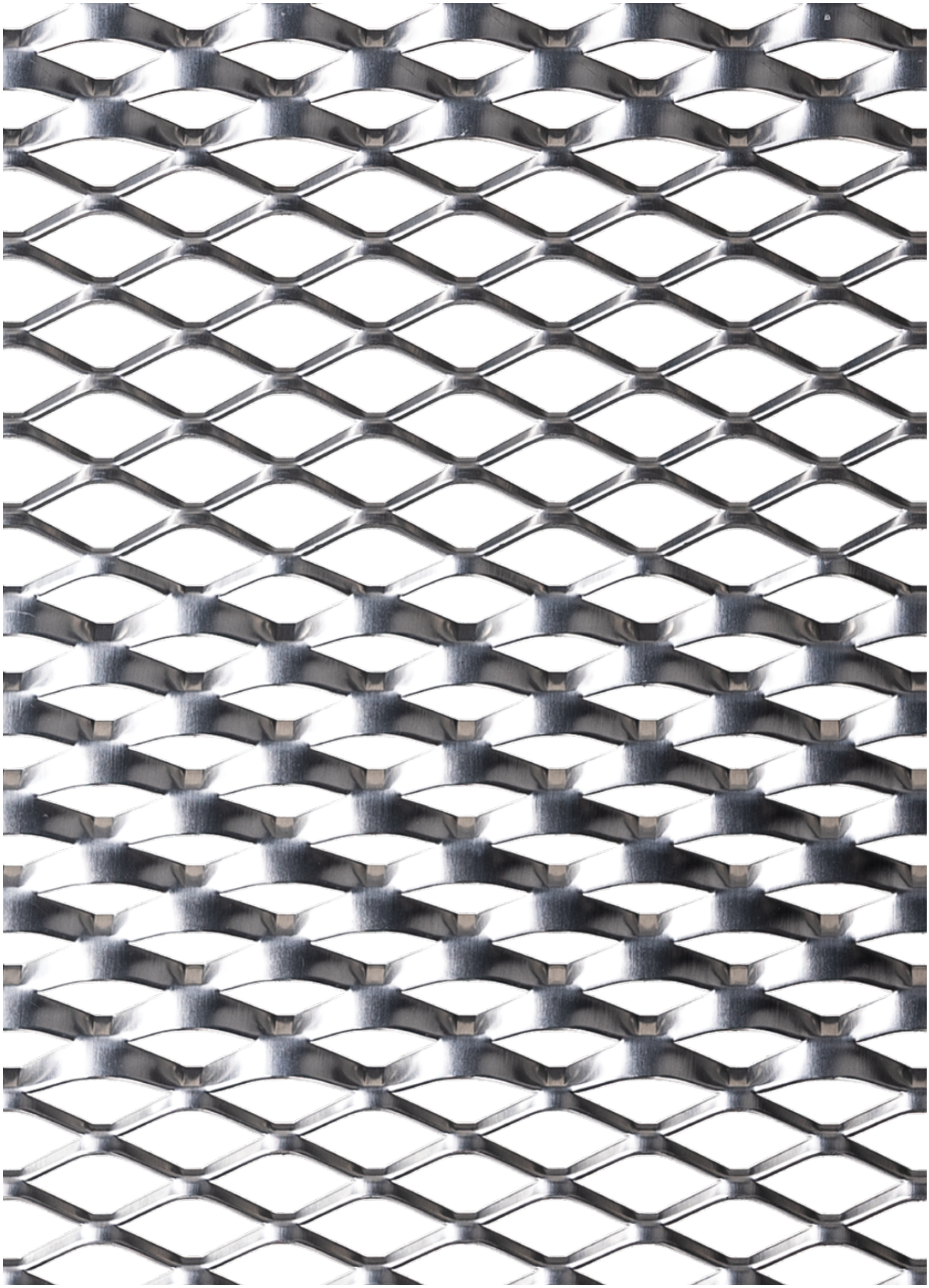


漸變型擴張網

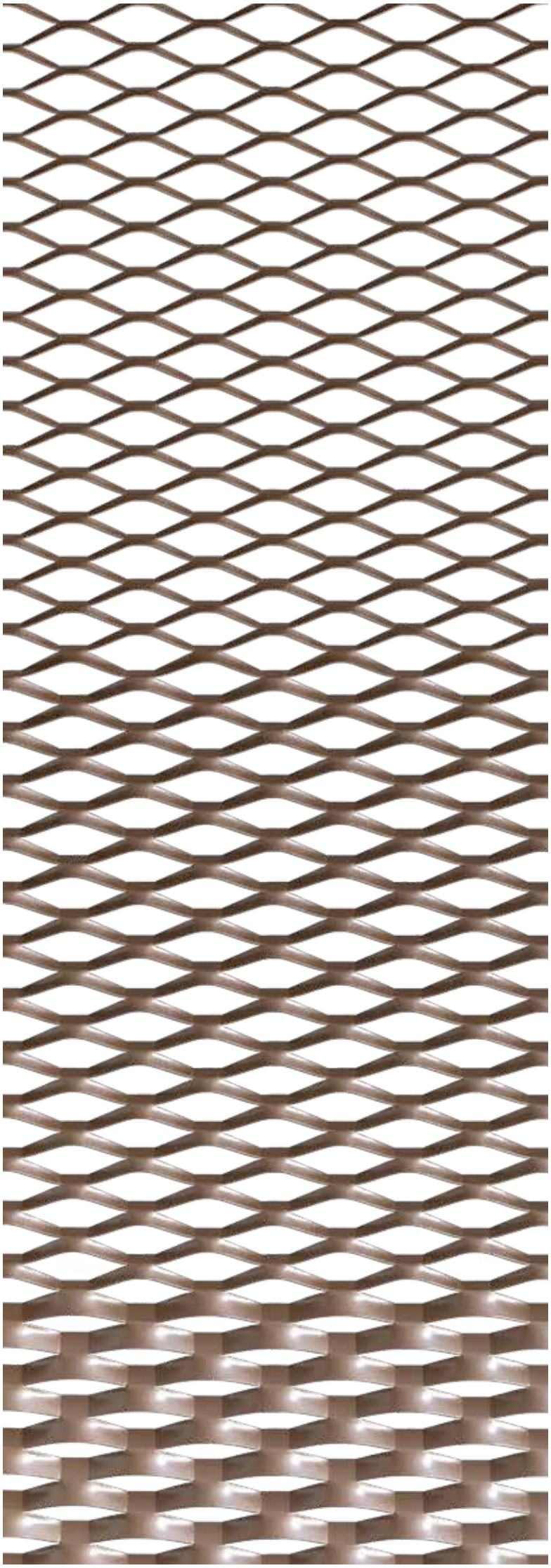
SKA-V Expanded Mesh

漸變型擴張網是為了增加靈活的視覺感受，它使用在現代化建築中往往起到畫龍點睛的作用。上鎧鋼鐵精於製造多種規格的金屬擴張網，通過獨步業界的工藝，在擴張網的水平面上製造出具有規律的漸進變化，使菱形網目能從小到大、從大轉小，甚至來回多變，展現深淺起伏的視覺效果。網孔變換的節奏，像是充滿節奏感的樂章，在以透視感、空間感創造視覺衝擊力的同時，更突顯建築體的生命力。我們一向追求突破，也正是如此，上鎧漸變型擴展網得以跳脫堅硬的金屬想像，擁有柔軟如水的身段，能夠連續且無限拼接，甚至彎曲變換角度，讓建築師與設計師不再受困於材料的工程技術極限，得以盡情揮灑創意。

The purpose of using various gradient expanded meshes (SKA-V) is to enhance the flexible visual experience in modern architecture. Shang Kai Steel creates metal expanded mesh in different specifications using state-of-the-art techniques to produce a regular gradient on the mesh's surface. This creates a visual effect of diamond shapes that change from small to large and back, providing depth and fluctuations to the building's appearance. The mesh holes' changing rhythm creates a sense of perspective and space, emphasizing the building's vitality. By breaking away from the traditional rigid metal image, the gradient mesh can be seamlessly spliced and bend at different angles, enabling architects and designers to unleash their creativity without being limited by material engineering constraints.



SKA-V003



SKA-V009　　比例 scale　1:5



SKA-V010　　比例 scale　1:5





台南沙崙
綠能科學城

Tainan Shalun Smart Green Energy Science City

型號 : SAK-V 010

建築師 : 九典聯合建築師事務所

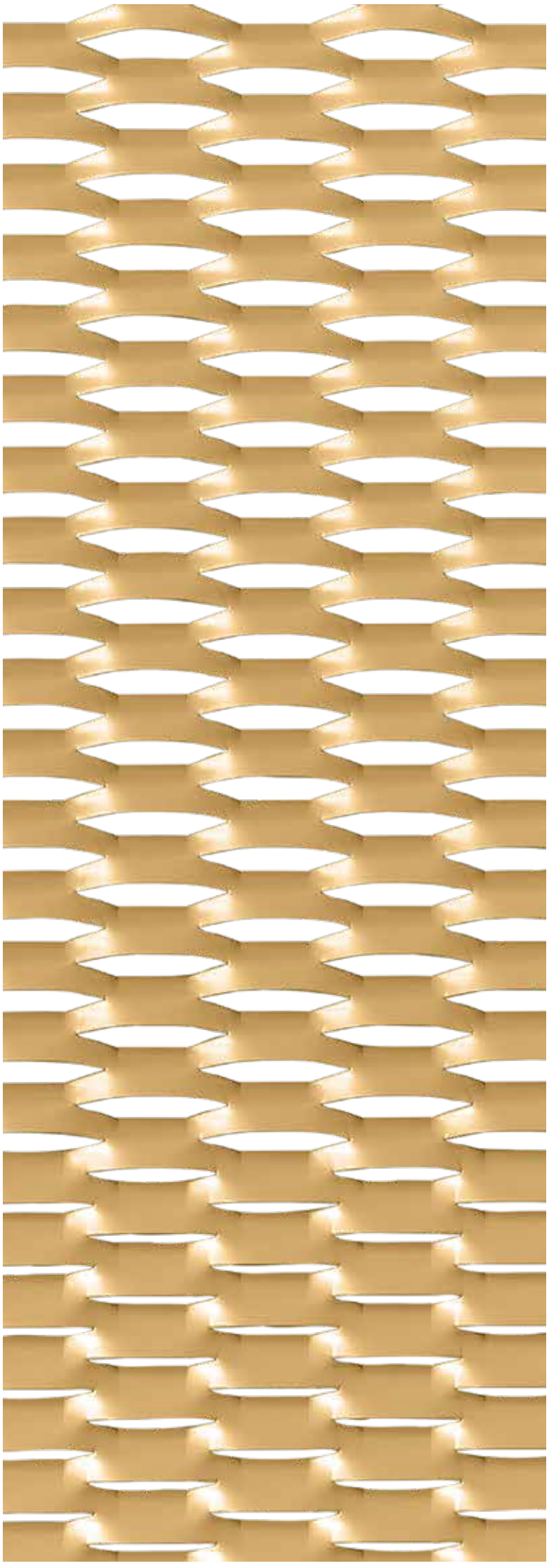
新世代綠金聚落的綠能科學城，同為新世代科技重鎮。使用製作環保、附有散熱節能功效的上鎧鋼鐵 SAK-V 010 擴張網正符合綠能思維。作為外牆建材環抱整棟建築，有效減少多餘的熱能，提供自然的微風增加對流，漸層的孔目顯現出做工的精細與高品質，單色烤漆後視覺的漸層感與木色邊框相輔相成，質感細膩且美觀舒適。

Model : SAK-V 010

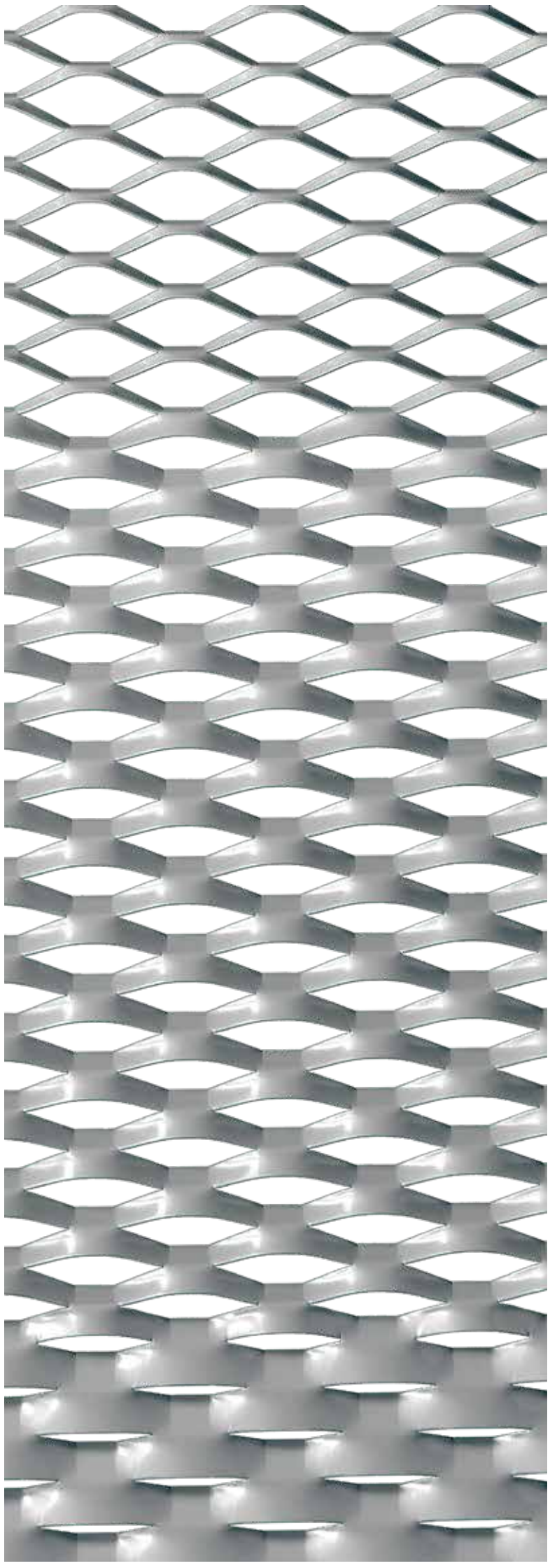
Architect : Bio-architecture Formosana

Tainan Shalun Smart Green Energy Science City strives to become a green energy science city for the new generation of green energy concourse, imperative to the new generation of technology. The exterior structure corresponds with the green energy values and is wrapped with SAK-V 010 expanded mesh made by Shang Kai Steel, which is environmentally friendly and has heat dissipation and energy-saving effects. The lathe efficiently mitigates overheating and allows natural breezes to flow in and increase convection. The gradual holes on the lathes demonstrate intricacy and quality. The visual gradation after monochromatic paint and the wooden frame complement each other, and the texture is delicate and aesthetically pleasing.

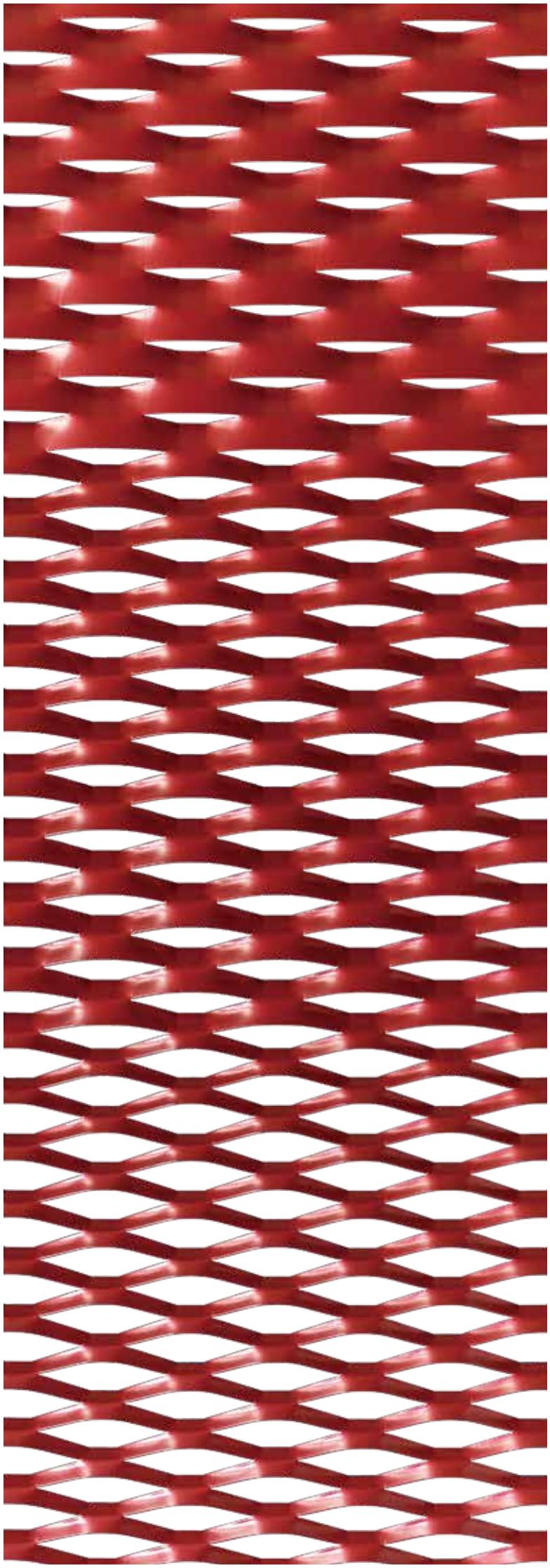




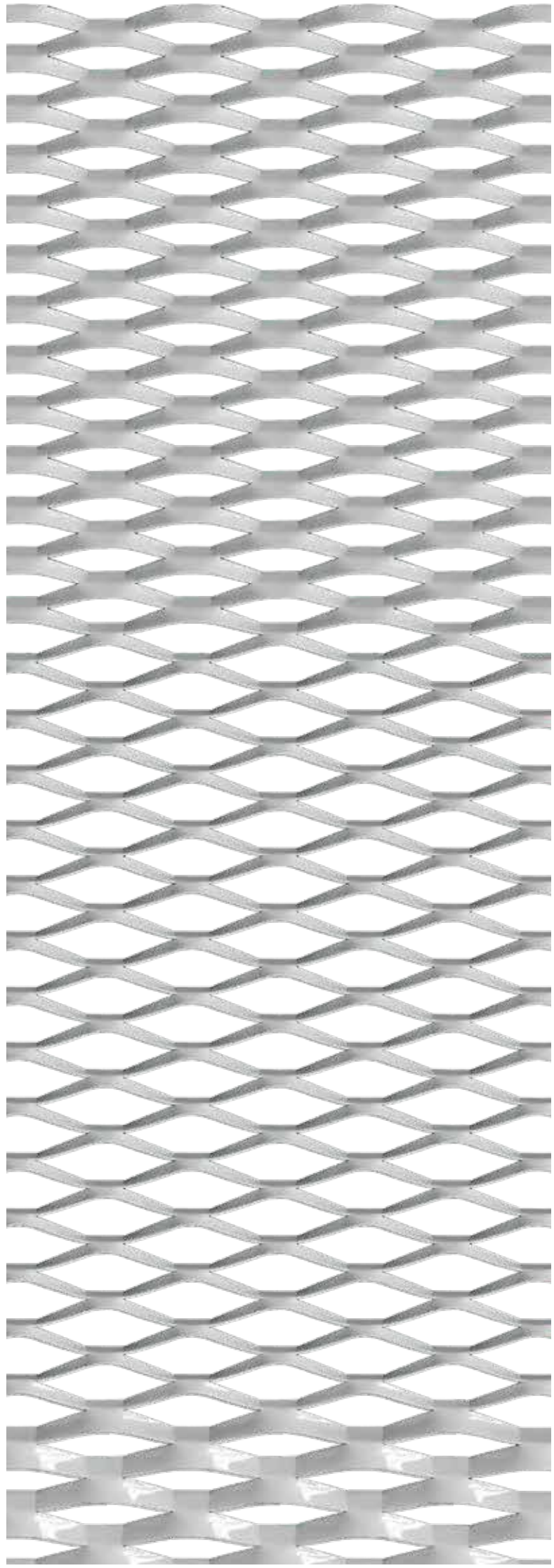
比例 scale　1:5　　SKA-V004



比例 scale　1:5　　SKA-V012



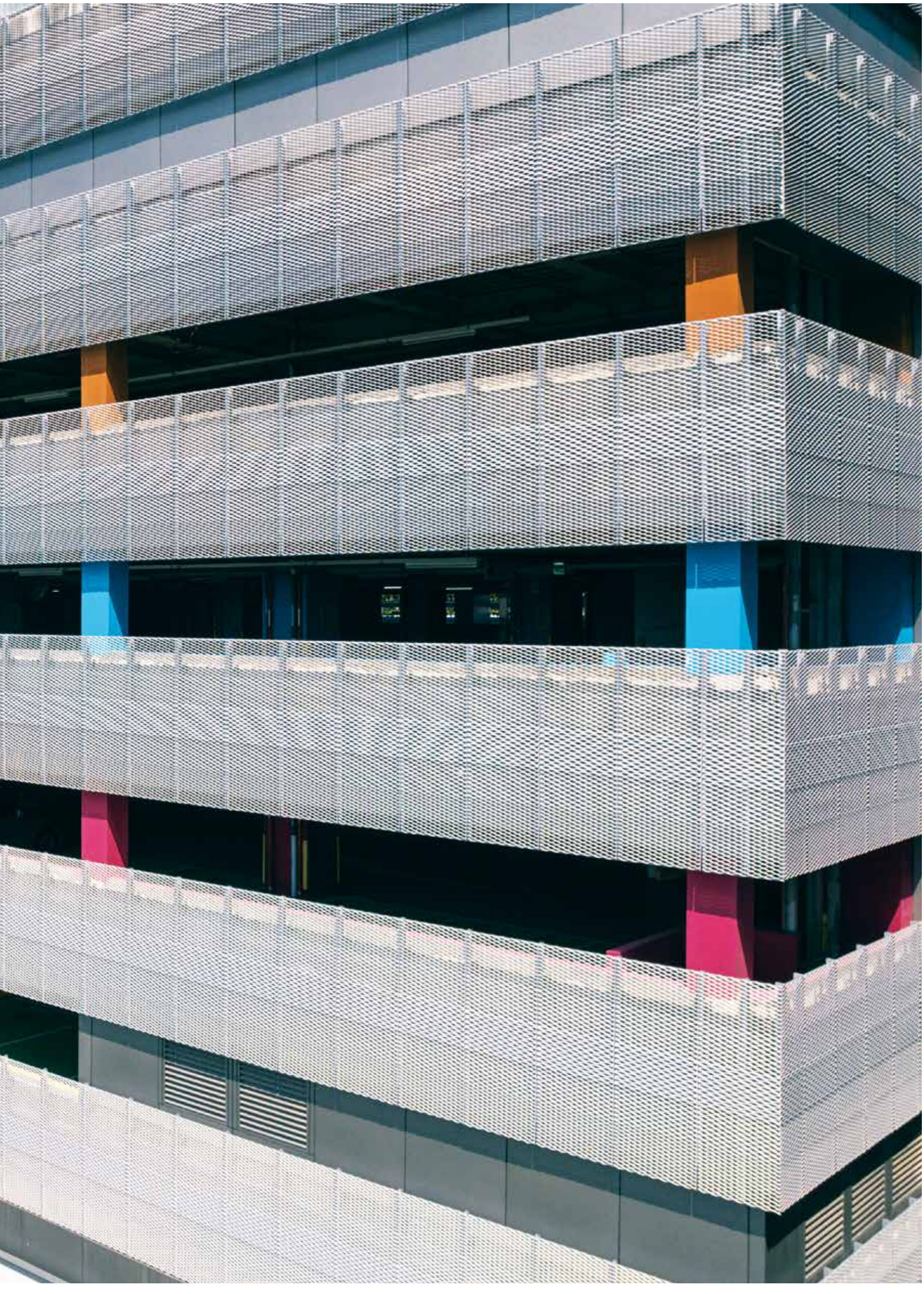
SKA-V014　　比例 scale　1:5



SKA-V015　　比例 scale　1:5




天赤集門店
金子半之助



台南夢時代

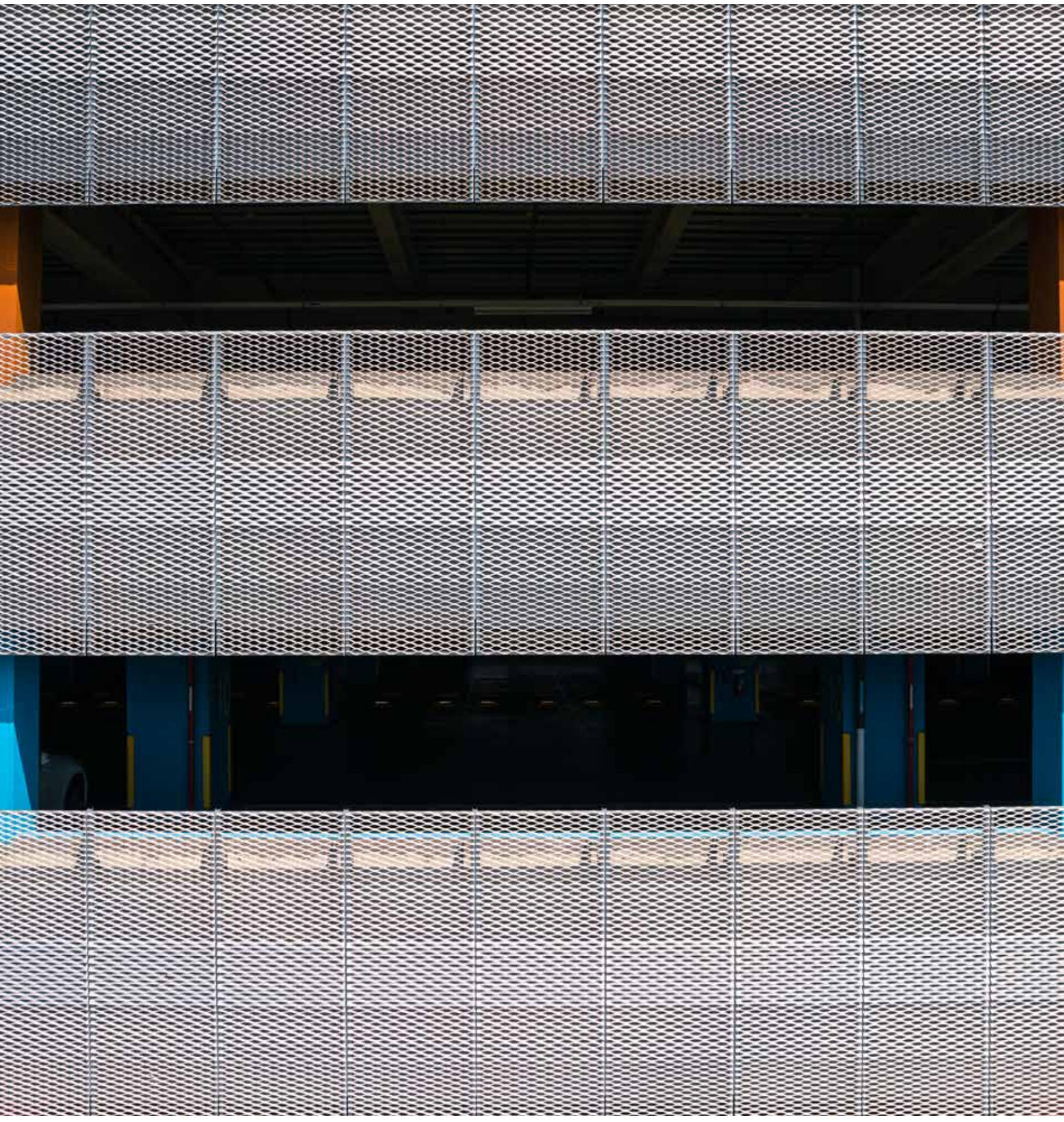
Taiwan Spinning (TS) Mall

型號 : SKA-V 014

南紡置地廣場位於古都台南。置地廣場停車場主體外牆造型使用上鎧鋼鐵的 SKA-V 014 漸變型擴張網。利用客製化漸變型工法調節網孔大小，控制室內光線和增加空氣流通，藉此調節南部炎熱的氣溫。這些特點使得置地廣場更具精緻時尚風格，創造了獨特的視覺震撼效果，並突顯了建築物的活力。南紡夢時代造就了獨一無二的特色。

Model : SKA-V 014

The T.S. Dream Mall is located in the historical city of Tainan. The parking building's main facade is covered by the SKA-V 014 various expanded mesh from Shang Kai Steel, using a custom gradient technique to change the mesh hole pattern. This controls indoor lighting and increases air circulation, regulating the hot southern temperature. The exquisite and fashionable style of the shopping center is highlighted, creating visual impact with a sense of perspective and space while emphasizing the building's vitality. This makes T.S. Dream Mall unique and special.



上鎧鋼鐵
SHANG KAI STEEL

上鎧總公司

831 高雄市大寮區大發工業區莒光二街16號

電話：07-7888-001~9 / 傳真：07-7888-010

北部發貨中心

320 桃園市中壢區長春六路20號

電話：03-461-2626 / 03-461-2969 / 傳真：03-462-0333

統編：22840979

No.16, Juguang 2nd St, Daliao Dist, Kaohsiung Taiwan 831

www.sksteel.tw / info@sksteel.com.tw

上鎧鋼鐵 SHANG KAI STEEL　Linked in　Instagram　LINE