



Dow Building Solutions Success Stories in Asia Pacific







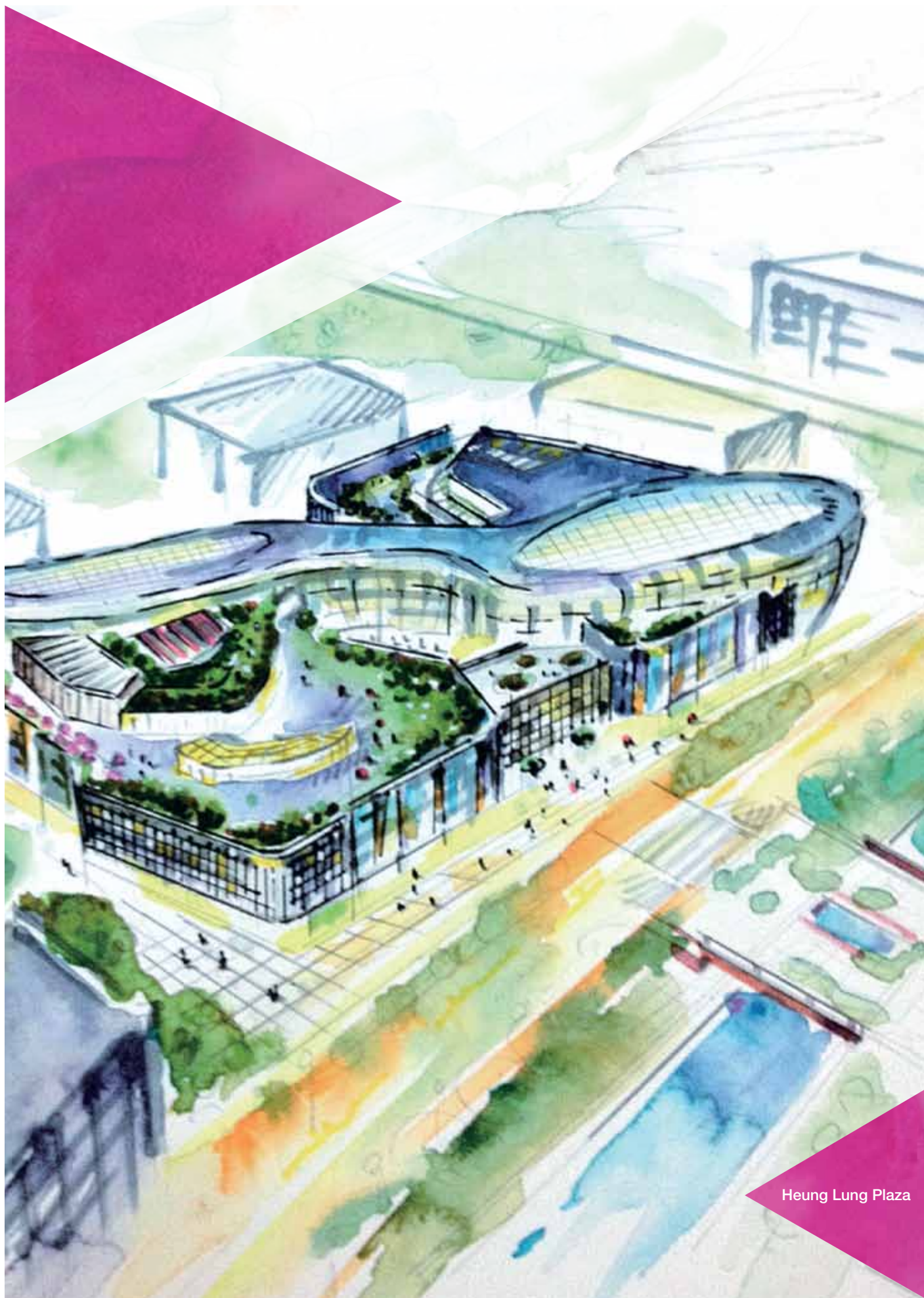
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Solutionism™ –

is the belief that together, science and humanity can solve anything.



Heung Lung Plaza



COMMERCIAL

STYROFOAM™ at Heung Lung Plaza in Ji'nan

► Location

Ji'nan, China

► Used Product

STYROFOAM™

Project Name

Heung Lung Plaza

Project Profile

Dow Building Solutions secured 1,000m³ STYROFOAM™ for roofing in Heung Lung Project in Ji'nan, 2011. Heung Lung Plaza consists of a large shopping mall and office building.

Key reason to choose the product

STYROFOAM™ can make the interior environment more comfortable with its **high insulation value**, moreover, **energy saving, heating/cooling costs reduction, superior compressive strength, excellent water resistance** make it a value added product. Besides that, with our **professional customer service, superior job site management and installation**, we won the customers' high appraisal.



STYROFOAM™ at Shanghai World Financial Center

► Location

Shanghai, China

► Used Product

STYROFOAM™

Project Name

Shanghai World Financial Center

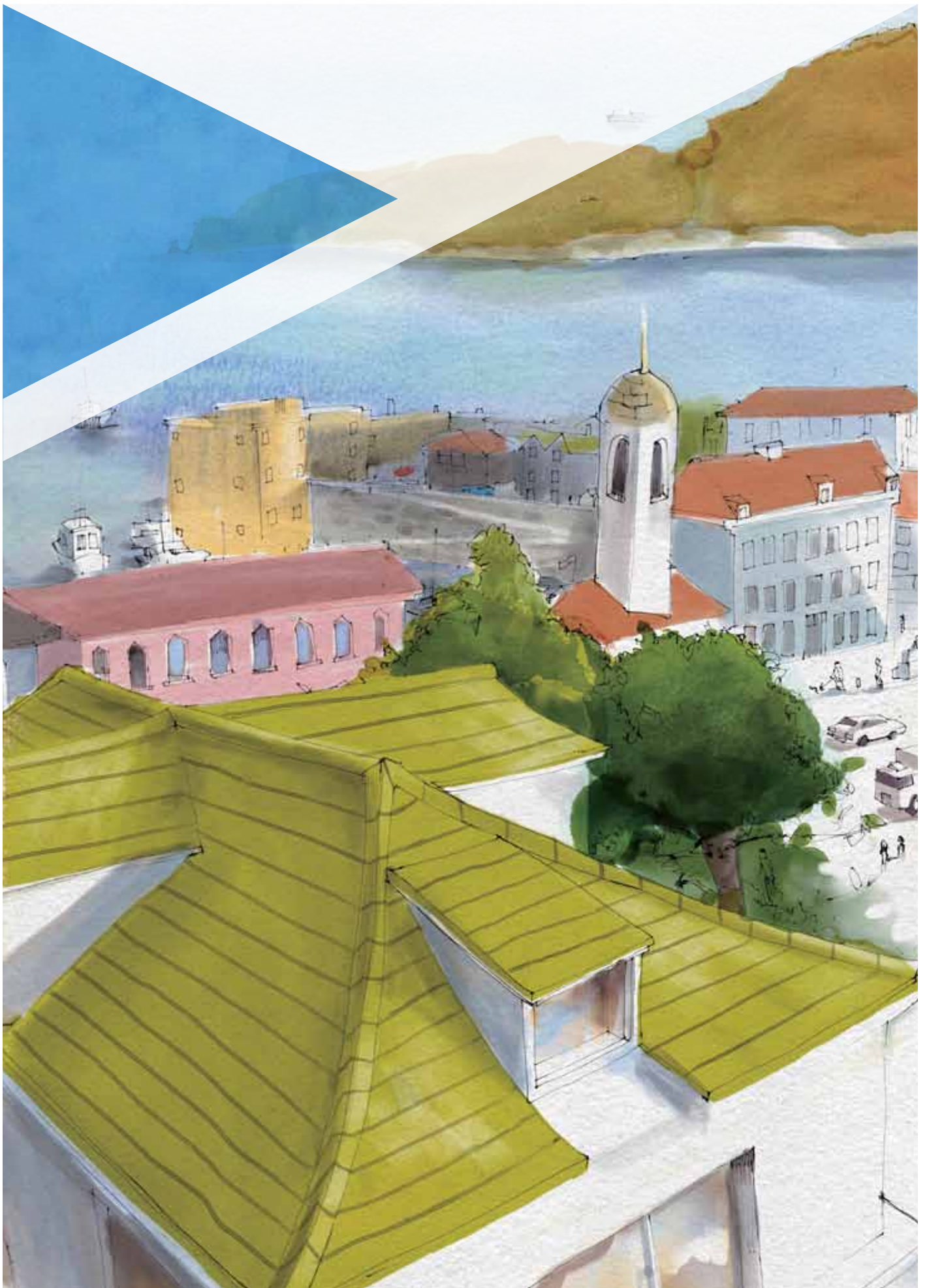
Project Profile

Shanghai World Financial Center is a super high skyscraper in the city as well as the 2nd highest in the mainland China with a height of 492 meters. It is a multifunctional office-based building combining offices, commerce, hotels, exhibitions and sightseeing. STYROFOAM™ was installed at the top roof of the building.

Key reason to choose the product

Due to outstanding performance of STYROFOAM™ such as **excellent water resistance, good dimension stability, high insulation value** and **superior compressive strength**, it was successfully applied at the roof of Shanghai World Financial Center.





RESIDENTIAL

Dow Building Solutions Key EIFS Projects in China

► Location

Nanjing, China

► Used Product

GU LI FU™ XPS EIFS
(exterior insulation and finish system)

Project Name

Xin Yu Hua Fu

Project Profile

Dow GU LI FU™ XPS EIFS was successfully applied in the residential buildings of Xin Yu Hua Fu, Nanjing via collaboration with the developer – YuRen Group. Dow XPS EIFS total volume of the project is approximately 50,000m².

Key reason to choose the system

Backed by Dow corporate reputation as a Fortune 500 leader in Science & Technology and STYROFOAM™ recognized as the best quality XPS product in EIFS market, the developer had confidence in our wall insulation system with superior performance of **high durability, crack resistance and excellent adhesion** and finally adopted GU LI FU™ XPS EIFS for their residential buildings.



Dow Building Solutions Rockwool EIFS Projects in China

► Location

Nanjing, China

► Used Product

Dow Rockwool EIFS

Project Name

Rui Cheng 3rd Phase

Project Profile

Dow Rockwool EIFS was successfully applied in the residential buildings of Rui Cheng 3rd phase, Nanjing via collaboration with the famous developer in East China – SuNing Real Estate. Total volume of the insulation materials is approximately 50,000m². The height of the building is about 100 meters with 33 floors.

Key reason to choose the system

As a strategic partner with SuNing Real Estate, our Rockwool EIFS not only provides **superior insulation performance and high pull strength** but also solves the problem of **fire resistance** at tall buildings. Backed by Dow corporate reputation as a Fortune 500 leader in Science & Technology and our reference projects, it helps to enhance the image and ensure the quality of this real estate project.





RESIDENTIAL

Dow GU LI FU™ XPS EIFS at Rui Cheng 2nd Phase

► Location

Nanjing, China

► Used Product

GU LI FU™ XPS EIFS

Project Name

Rui Cheng 2nd Phase

Project Profile

Dow Building Solutions experienced a significant success in providing materials to SuNing system project - 80,000m² GU LI FU™ XPS EIFS for 2nd phase of Rui Cheng in Nanjing.

Key reason to choose the system

The integrated wall insulation systems developed by Dow Building Solutions aim to provide more comprehensive and safer energy-saving solutions for the building industry in China. Dow GU LI FU™ XPS EIFS contains a wide range of products, including Dow STYROFOAM™ insulation board, cellulose ether, redispersible latex powder and primer. Besides the significant **energy-saving** result, the system also shows the performance of **crack resistance** and **high durability** and **protects buildings from aging and damages** by minimizing temperature variance and exterior wall condensation.



Dow Building Solutions Signed GU LI FU™ XPS EIFS with Jinchuan Group in China

► Location

Jinchuan, China

► Used Product

GU LI FU™ XPS EIFS

Project Name

Jinchuan Group 27# Land

Project Profile

The project is located in west China and with the building area around 800,000m² which consists of 300,000m² high-rise buildings and 500,000m² multi-story buildings. The insulation area is about 300,000m² with 200,000m² multi-story buildings and 100,000m² high-rise buildings. The Jinchuan Group specified Dow GU LI FU™ XPS EIFS for wall insulation after project bidding.

Key reason to choose the system

The energy efficiency solution provided by Dow fully met customers' needs on insulation & fire resistance, considering our **qualified system** with **credible security, appropriate water vapor permeability, superior fire resistance, excellent adhesion and high durability performance**, the decision maker finally chose Dow GU LI FU™ XPS EIFS for their wall insulation.



► **Dow Building Solutions
Won the Annual PU Project
Bidding, issued by Landsea
Real Estate Group**

► **Location**

Suzhou, Shanghai, Wuhan,
Chengdu, China

► **Used Product**

Dow Spray PU Foam (SPF)

Project Name

Landsea Annual Spray PU Foam Insulation Project Bidding for Roofing and Floor

Project Profile

Dow Building Solutions won the annual Spray PU Foam insulation project bidding for roofing and floor which was issued by Landsea Real Estate Group in 2012, the projects cover the areas in Chengdu, Wuhan, Shanghai and Jiangsu, about 80,000m² SPF in total. The current project includes Landsea Green Block in Mudu, Suzhou which consists of 12 buildings inclusive high-rise buildings and townhouses. Dow Spray PU Foam I material was applied at the roofing and floor, 70mm thickness for roofing and 50mm thickness for floor insulation.

Key reason to win the project

Landsea Real Estate Group is well known as a leading developer in science & technology, it dedicates to developing the green projects in China, the energy efficiency solutions provided by Dow help us to win the bidding via Landsea strict technical and commercial evaluation and appraisal. **Sustainable and lightweight**, Dow SPF system provides **superior R-value, improved foam and coating yields**, the integrated installation contributes to **increase productivity and save labor cost**, plus the rich installation experience provided by our distributor, Landsea gave us high appraisal.



► **Dow Building Solutions
Key EIFS Projects in China**

► **Location**

Nanjing, China

► **Used Product**

NAI LI FU™ EPS EIFS

Project Name

SuNing Venice Water City

Project Profile

Dow Building Solutions China secured a project named SuNing Venice Water City developed by SuNing Global Real Estate in Nanjing. It includes 23 apartment buildings and the wall insulation area for EPS EIFS is around 170,000m² plus 1,000m³ XPS for roofing.

Key reason to choose the system

Considering good features of NAI LI FU™ EPS EIFS such as **stable long-term R value, excellent weathering resistance, low water absorption** to support **excellent anti freeze-thaw result, superior impact resistance and affordable system**, the developer confirmed NAI LI FU™ EPS EIFS as the wall insulation system.





"We have discussed and tested over and over with Railway Technical Research Institute and finally the performance of STYROFOAM™ DX-45 was proven by this specification."

Satomichi Amatsuji, Account Manager in charge of Industrial Sales Dept. of STYROFOAM™ said.

"The extension of Shinkan-sen line is now planned up to Hokkaido, Northern Island of Japanese archipelago. This will be another big business opportunity for this XPS solution." Amatsuji added.



INFRASTRUCTURE

STYROFOAM™ Used Under Railroad of “Shinkan-Sen” Bullet Train in Japan

► Location

Yokohama-City,
Kanagawa Prefecture, Japan

► Used Product

STYROFOAM™ DX-45

Project Name

Japan Railway Shin-Yokohama Rail Yard

Project Profile

Japan Railway Shin-Yokohama Rail Yard used STYROFOAM™ under the railroad of “Shinkan-sen” bullet train. This project is the very first case which used extruded polystyrene (XPS) underneath the railroad of a bullet train. Shinkan-sen, which travels at over 300km/h in most of its routes, used many different techniques which ensure very high levels of comfort and safety.

Key reason to choose the product

STYROFOAM™ DX-45 with **superior compressive strength** was specified to reduce the weight of the widening area and to maintain stabilized subgrade of the incoming line of the rail yard.



STYROFOAM™ at Haneda International Airport

► Location

Tokyo, Japan

► Used Product

STYROFOAM™ DX-29

Project Name

Haneda New International Terminal

Project Profile

STYROFOAM™ DX-29 was successfully specified in Haneda International Airport, backed by a good reference of our products used under the runway of Anchorage airport. Total volume of STYROFOAM™ used for Haneda project was around 4MMbf (≈ 9,500m³).

Key reason to choose the product

Since the new international airport buildings were built on soft reclaimed ground, STYROFOAM™ DX-29 with the superior performance of **high compression strength** was used as a light weight fill block under the apron in front of the airport terminal in order to reduce the weight over the underground jet fuel pipelines.





HEALTHCARE

Queensland Children Hospital Roofing Project with STYROFOAM™ XPS and PIR Products

► Location

Queensland, Australia

► Used Product

THERMAX™ 2.5, TUFF-R 1.0,
STYROFOAM™ XPS

Project Name

Queensland Children Hospital

Project Profile

The project size of Queensland Children Hospital is about 9,000m² with total close to 600m³ of THERMAX™ 2.5 inches to its roofing insulation in 2011, and there is similar project with another 500m³ in 2012. THERMAX™ was used under the concrete car park soffits, TUFF-R was used under the concrete roof slab, and STYROFOAM™ XPS was used above the concrete roof slab.

Key reason to win the project

Dow Building Solutions commercial team successfully won the project due to specification by architects, our products **meeting local fire and energy efficiency code**, effective communication with developer, **professional technical service** provided by Dow and **excellent portfolio of insulation solutions**.



Fiona Stanley Hospital in Australia Deploys Dow Building Materials

► Location

Perth, Australia

► Used Product

STYROFOAM™ XPS

Project Name

Fiona Stanley Hospital

Project Profile

Dow Building Solutions was selected by Fiona Stanley Hospital as a building materials supplier in Australia. When it opens in 2014, Fiona Stanley Hospital in Murdoch will be Western Australia's flagship health facility.

Key reason to choose the product

As a recognized **global leader in extruded polystyrene insulation (XPS)**, Dow Building Solutions contributes STYROFOAM™ XPS insulation products and **practical expertise** to the Fiona Stanley Hospital project which helps to build up a flagship hospital in local.





COLD CHAIN

STYROFOAM™ in the Largest Cold Storage Warehouse in Japan

► Location

Higashi-Ogishima, Kawasaki-City,
Kanagawa Prefecture, Japan

► Used Product

STYROFOAM™ EK-II

Project Name

Nichirei Higashi-Ogishima Project

Project Profile

Nichirei Corporation is the largest cold storage warehouse company (the 6th in the world) as well as the No.1 frozen processed foods supplier in Japan. STYROFOAM™ was applied in this project. Regarding the construction of facilities, refrigerated warehouse is in the main, four-story reinforced concrete building with total floor area of 45,259m². This site is located nearby Kawasaki port and will be mainly used for intermediate storage of imported frozen food and raw material of fresh fruit juices.

Key reason to choose the product

In order to materialize **highly energy-efficient** warehouse for reducing CO₂ emissions, Nichirei has chosen STYROFOAM™ EK-II, **non Freon XPS**, for **both exterior and interior insulation materials**. This project will be sure to affect other warehouse companies in Japan about their choices of insulation materials.



Dow Building Solutions Secured Thailand Service Cold Storage Floor Project

► Location

Thailand

► Used Product

STYROFOAM™ SP

Project Name

Thailand Service Cold Storage

Project Profile

The project size is about 600m³ of STYROFOAM™ SP 50mm for cold storage floor insulation by collaboration with developer - Service Cold Storage, strong influence to other cold storage insulation projects in the future.

Key reason to choose the product

It attributes to successful project specification by architect, our effective communication with developer, **superior product performance of insulation, creep resistance and compressive strength, excellent technical service and floor loading calculation capability** provided by Dow.





COLD CHAIN

► Singapore Cold Storage Project

► Location

Singapore

► Used Product

STYROFOAM™

Project Name

Sheng Siong Supermarket Cold Storage

Project Profile

Dow Building Solutions team secured the cold storage project in Singapore, our flagship insulation product STYROFOAM™ was successfully installed at Sheng Siong Supermarket which is one of the biggest cold storage floor projects in Singapore. Total volume was around 1,000m³. This is an important landmark project and demonstrates our capabilities to Singapore cold chain market.

Key reason to choose the product

STYROFOAM™ provides superior performance such as **high insulation, creep resistance, compressive strength and good dimension stability**, with our **excellent technical service and floor loading calculation capability**, we secured the project.



► Dow Building Solutions Won President Food Taoyuan Cold Storage Project in Taiwan

► Location

Taiwan

► Used Product

STYROFOAM™ SP

Project Name

President Food Taoyuan Cold Storage

Project Profile

The owner of cold storage - Taiwan President Food Company adopted about 500m³ STYROFOAM™ SP for the floor, since our team set up a good standard on low temperature cold room (-35°C) in Taiwan, we expect more cold storages to be installed with the excellent insulation material such as STYROFOAM™ in the future.

Key reason to choose the product

Considering **long term creep and high compressive strength performance of STYROFOAM™** which meets the standard, our communication efforts with designer to specify the product, and **professional technical service** to end user and installer, our products were adopted by the owner finally.



► Dow Building Solutions
Secured Jingxue (Taizhou)
Cold Storage

► Location
Taizhou, China

► Used Product
STYROFOAM™

Project Name
Jingxue Cold Storage

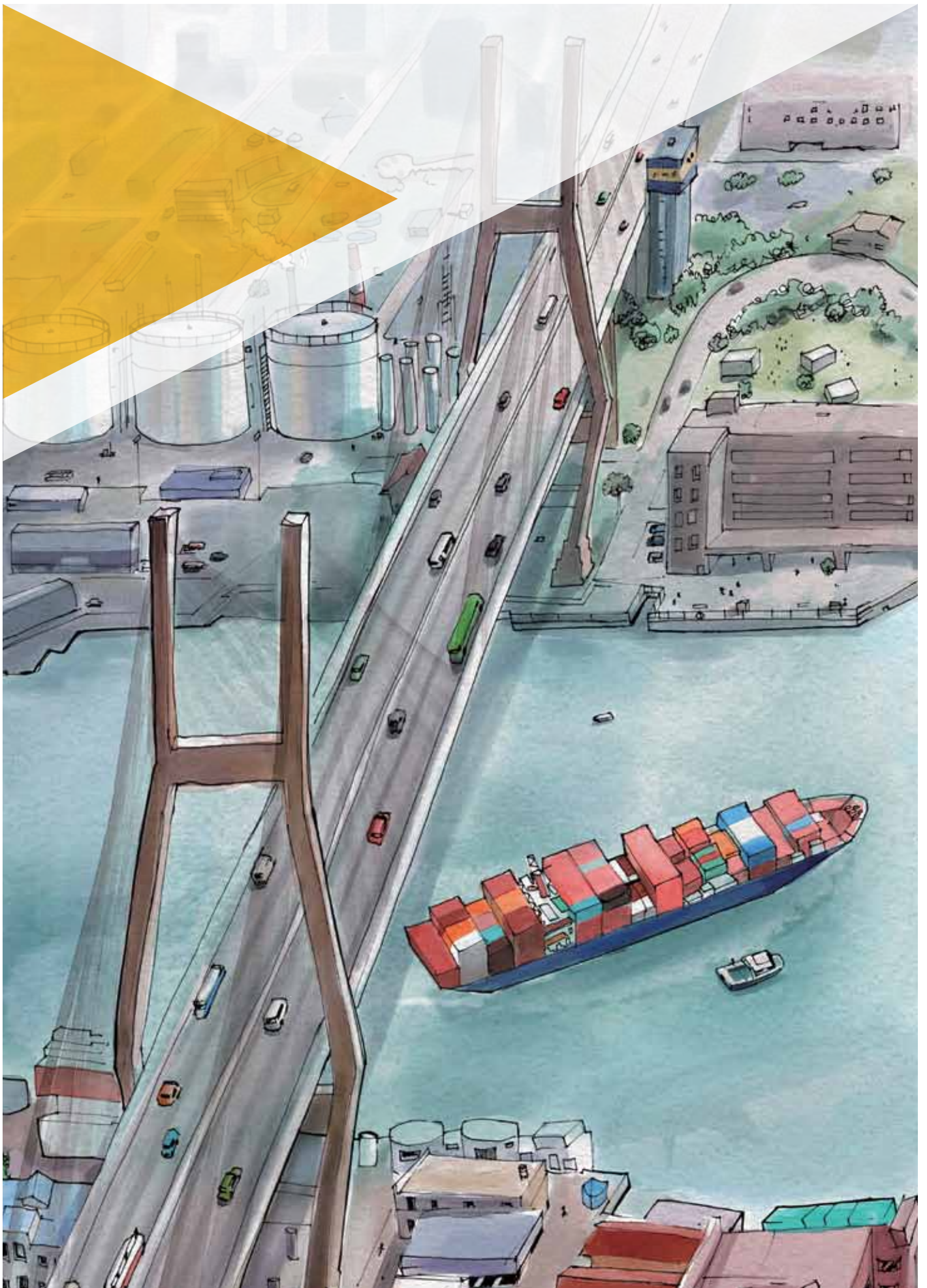
Project Profile

Dow Building Solutions secured Jingxue (Taizhou) Cold Storage by collaboration with developer - Changzhou Jingxue Co. Ltd., the project size is about 3,000m³ STYROFOAM™ XPS components in 2011.

Key reason to win the project

We offered **high compressive strength performance** product to meet customer's requirements, kept effective communication with the customer, and provided on-time delivery, **excellent technical and customer service** to make sure the **high quality** of the project.







INDUSTRIAL

▶ Dow Building Solutions
Won Shenlong Auto (Wuhan)
3rd Plant

▶ Location
Wuhan, China

▶ Used Product
STYROFOAM™

Project Name
Shenlong Auto 3rd Plant

Project Profile
Dow Building Solutions won the project of Shenlong Auto (Wuhan) 3rd Plant by good collaboration with developer - Dongfeng Shenglong Auto Co. Ltd., the size is about 2,600m³ STYROFOAM™ XPS boards for roofing.

Key reason to win the project
Key reasons for our success can be mainly attributed to our team's good preliminary work to specify STYROFOAM™ XPS board, **professional technical service, superior job site management and installation.** With the outstanding performance of STYROFOAM™ such as **high insulation value, energy saving, good dimension stability, superior compressive strength and excellent water resistance** make it a value added product.



▶ Dow SPF Roofing System and
STYROFOAM™ at Chiatai
Tianjin Plant

▶ Location
Tianjin, China

▶ Used Product
Dow Spray PU Foam (SPF) Roofing
System, STYROFOAM™

Project Name
Chiatai Tianjin Seawater Farming Plant

Project Profile
Dow Building Solutions China team secured the Chiatai Tianjin roofing project by providing an entire roofing system including STYROFOAM™, Spray PU Foam and accessories, plus the professional technical support on energy efficiency optimization & risk abatements for leakage and corrosion of roof assemblies. Totally around 5,100m² of 60mm thick STYROFOAM™ and 6,900m² of 30mm thick SPF were installed in Chiatai Tianjin Plant.

Key reason to choose the product
The Dow Spray PU Foam roofing system and STYROFOAM™ provide significant benefits to Chiatai as the whole system addresses **waterproofing, insulation, wind uplift resistance, corrosion resistance and air sealing.** The combination of our **strong service capabilities and customized roofing systems** enables us to **deliver a comprehensive solution** to address customers' entire roofing needs, which really sets us apart from competitions. The roofing system also further strengths and upgrades our insulation offerings.





INDUSTRIAL

STYROFOAM™ at Wuhan Coca-Cola Plant

► Location

Wuhan, China

► Used Product

STYROFOAM™

Project Name

Coca-Cola (Hubei) Beverages Ltd.

Project Profile

Dow provided STYROFOAM™ and customized roofing solutions to Coca-Cola Company which met the owner's requirements on fire resistance and technical criteria, it was applied at the roofing of the plant in Wuhan finally.

Key reason to choose the product

With Dow recognized brand awareness, qualified product and solutions which met the owner's expectation on ideal plant, we secured the project successfully. STYROFOAM™ provides **low water absorption, high insulation value, superior compressive strength** and **even temperature distribution throughout the interior** which helps to make a sanitary environment for production.



STYROFOAM™ at Lu An Zhou Bridge in Changzhou, China

► Location

Changzhou, China

► Used Product

STYROFOAM™ with 350 KPa
compressive strength

Project Name

Lu An Zhou Bridge

Project Profile

The project is an industrial bridge across Changjiang River connecting Lu An Zhou and shore of Changzhou, the owner is China Resources Group which is a famous petro-chemical enterprise in China. The project adopts STYROFOAM™ which features superior compressive strength with 350 KPa, a special application of STYROFOAM™.

Key reason to choose the product

The **brand influence** of Dow Chemical and excellent performance of STYROFOAM™ as well as our in time and **comprehensive technical services** made the owner choose our products finally. The owner can benefit from **less concrete deformation** resulted from the deck floor of the bridge due to STYROFOAM™ protecting the bridge deck effectively from high temperature caused by direct sunlight.





OLYMPIC PROJECT

► Dow Building Solutions' Insulation Materials at Olympic Village for Nanjing 2014 Youth Olympic Games

► **Location**

Nanjing, China

► **Used Product**

Dow PU Insulation Material, STYROFOAM™

Project Name

Nanjing Youth Olympic Village

Project Profile

Dow Building Solutions China commercial team won the project of wall insulation and acoustic flooring for Nanjing Youth Olympic Village in 2012. Dow Building Solutions' PU materials were successfully adopted by the developer - Nanjing AOTI Construction and Development Co., Ltd. for the wall insulation of the Olympic Village. Approximate 20,000 square meters of PU insulation were installed in the first stage in June 2012. Besides that, STYROFOAM™ XPS boards were also used with acoustic material for flooring at Gym Center to provide both excellent insulation and acoustic performance for noise reduction and are the demo materials for training venues at Youth Olympic Village.

Key reason to choose the system

This significant success is mainly attributed to our commercial team's great efforts to provide energy efficiency solutions for green buildings which exactly meet customers' needs on **insulation & fire resistance**, as well as outstanding team works in Dow.

To highlight low carbon economy, energy-saving technologies and materials will be applied to the construction of the village, said officials of the construction headquarters for the Hexi new urban area of Nanjing. **Dow PU material provides superior insulation performance, excellent water proof and physical performance, high strength, durable and good flame retardant** which helps to build up green, safe and healthy environment. **As the Official Chemistry Company of the Olympic Games, Dow provides science-based solutions that improve the Olympic experience for host cities, athletes and fans everywhere.**



Remarks: The success stories included in this brochure are part of Dow Building Solutions' projects in Asia Pacific. For more project references or further inquiries, please contact your local Dow Building Solutions' Account Managers.



Dow combines the power of science and technology to passionately innovate what is essential to human progress. The Company connects chemistry and innovation with the principles of sustainability to help address many of the world's most challenging problems such as the need for clean water, renewable energy generation and conservation, and increasing agricultural productivity. Dow's diversified industry-leading portfolio of specialty chemical, advanced materials, agrosiences and plastics businesses delivers a broad range of technology-based products and solutions to customers in approximately 160 countries and in high growth sectors such as electronics, water, energy, coatings and agriculture. In 2011, Dow had annual sales of \$60 billion and employed approximately 52,000 people worldwide. The Company's more than 5,000 products are manufactured at 197 sites in 36 countries across the globe. References to "Dow" or the "Company" mean The Dow Chemical Company and its consolidated subsidiaries unless otherwise expressly noted. More information about Dow can be found at www.dow.com.

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