

# Smart Natural Ventilation Technology

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**Experts at Solving Heat  
w/ Free Charge & Maintenance**

USA  
TAIWAN PAT.  
CHINA

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**Certification for 2014 Pittsburgh International Invention Contest**  
Double Silver Awards



## About Us

Established in 1985, SAVCO is dedicated to "green energy, environmental protection, and energy conservation." Through innovative ventilation, cooling, and energy-saving solutions.

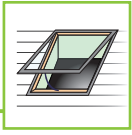
SAVCOOL product line employs non-powered natural ventilation technology to effectively solve heat-related building issues, reduce energy consumption, and help user enhance operational efficiency in comfortable and efficient work environments for various building materials.



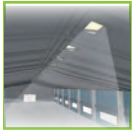
# SAVCOOL Ventilator

Smart Natural Convection of Patent Ventilator

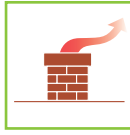
For Both Metal & Shingle Roof Usage



window



skylight



ventilation

ALL IN ONE



Free Power Driven



5 Times More Heat-Exhaust Efficiency



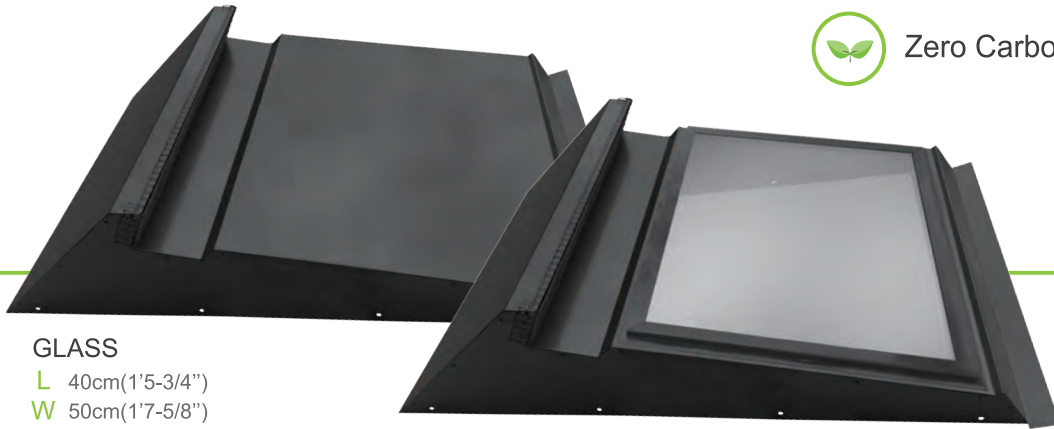
Rain Protection



Easy Installation

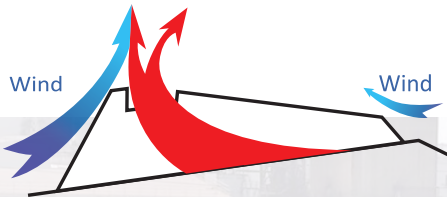


Zero Carbon Emissions



L 86cm(2'10-1/4")  
W 57cm(1'10-1/2")  
H 22cm(8-5/8")

GLASS  
L 40cm(1'5-3/4")  
W 50cm(1'7-5/8")



Double Effects

Stack Effect

+

Bernoulli's Principle



# SAVCOOL Ventilator

## Easy Install & Maintenance-Free

Simple to install, suitable for both residential and commercial buildings, no maintenance and no operate with its static design.

## 3 in 1 Functionality

Combines window, skylight, and ventilation features into one innovative solution.

## 5x Ventilation Efficiency

Delivers five times the ventilation efficiency compared to traditional ventilators, keeping your space cool and fresh.

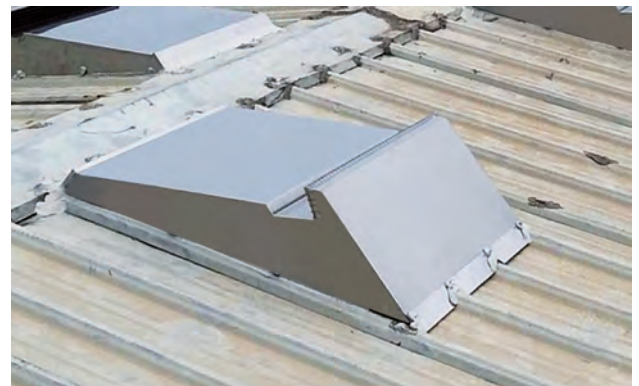
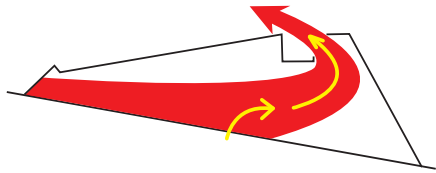


## Analysis for internal paths design

### SAVCOOL Ventilator **Upwards buoyancy & short paths**

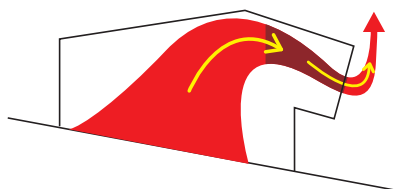
#### Upwards Buoyancy

The hot air is upwards buoyant. Shorter internal path is the quickest way for exhausting heat and therefore the design of internal path would maximize the capacity of eruption.



### Other Ventilators **Downwards buoyancy & sharp turns**

Too many internal sharp turns and downwards paths would slow down hot air to be exhausted out and therefore, the design of internal path would minimize the capacity of airflow.



# SAVCOOL Ventilator

## Turbine Vent vs. SAVCOOL Vent

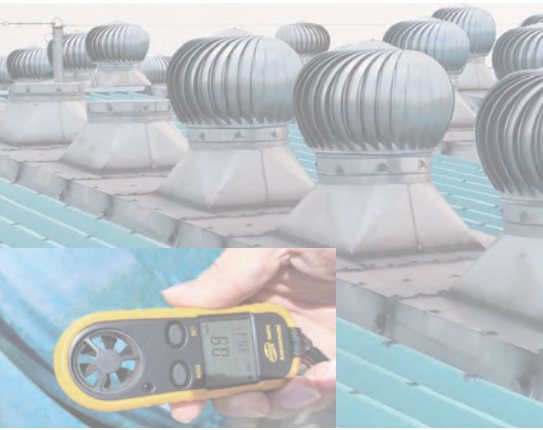
Before

0.9 m/s



After

2.9 m/s



- ✗ Stop spinning
- ✗ Water Leaking
- ✗ Maintenance

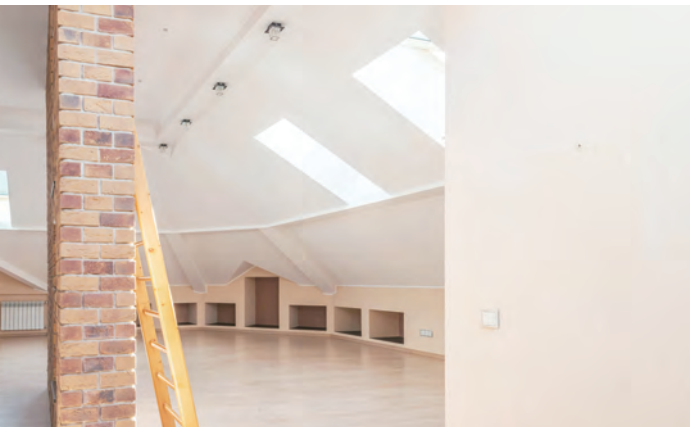


## Embrace Natural Light & Enjoy Cozy Ambiance

Maximum of Light Coverage








Optimizing your home or office with bright natural light. Expanding and brightening up your internal area.

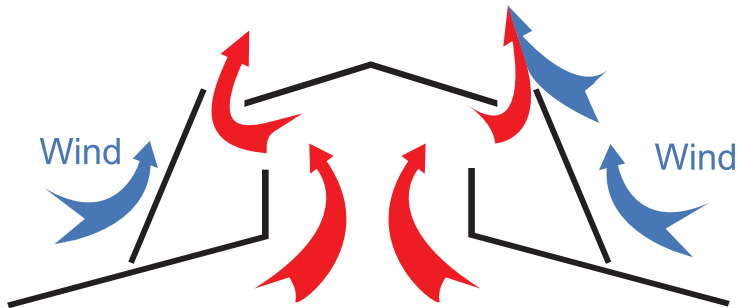


# SAVCOOL Airflow Tower Ventilation



-  Faster Heat Exhaust
-  Smoke Vents
-  Zero Carbon Emissions
-  Free Power Driven
-  Free Maintenance

## Maximum Efficiency of Convection

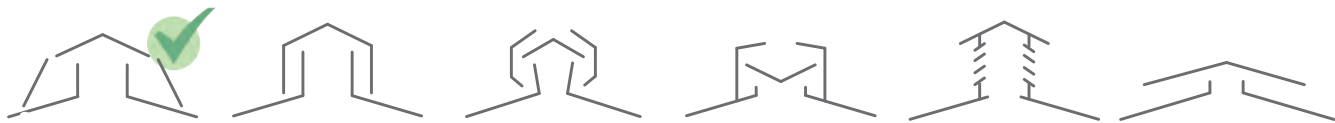


### Double Effects

**Stack Effect**  
+  
**Bernoulli's Principle**

The smart airflow tower utilizes double effects to exhaust heats rapidly ensure no heat gets trapped.

## Comparison with Various Types



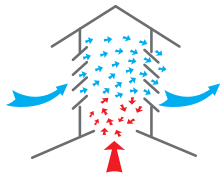
Wind Resistance	 Excellent	 Poor	 Poor	 Poor	 Poor	 Poor
Exhaust Speed	 Excellent	 Poor	 Poor	 Good	 Poor	 Poor
Water Resistance	 Excellent	 Poor	 Good	 Excellent	 Poor	 Poor
Cost	 Average	 Average	 Poor	 High	 Average	 Low

# SAVCOOL Airflow Tower Ventilation

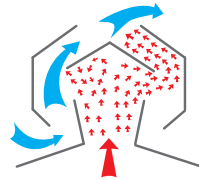
## Analysis of Issues in Traditional Airflow Towers

### Crosswind Effect

Cold wind (high density) could block inside hot air from exhausting out. Hot Air (low density) is stagnant and difficult to move around.

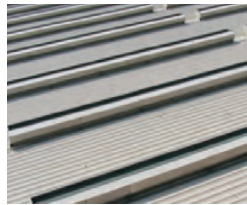
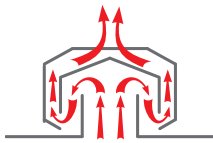


If the side-wind effect is strong enough, it would prevent inside hot air from venting out and the efficiency of heat exhaust would decrease.

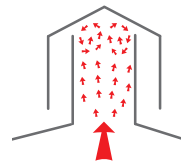


### Meandering Flow Path

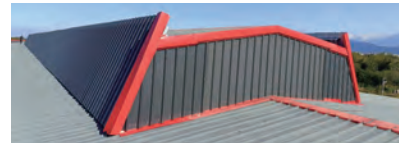
The design for too many internal sharp turns can cause the efficiency of heat exhaust to be slows down.



Although this can block rain from entering, it can also block heat exhaust.



## Cases Study



# Wind Power System Ventilation



When wind turbine is working, Wind Power System Ventilation(WPSV) can protect the generator and prevent it from over-heating or damage. The usage of SAVCO WPSV is to maximize air convection and the capacity of heat exhaust, while extractor fans or A/C cannot solve the problem of over-heating generator.



Application on Natural Air Convection



No More Sultry for Generator Room



Carbon Free



Rain/Wind Resistance





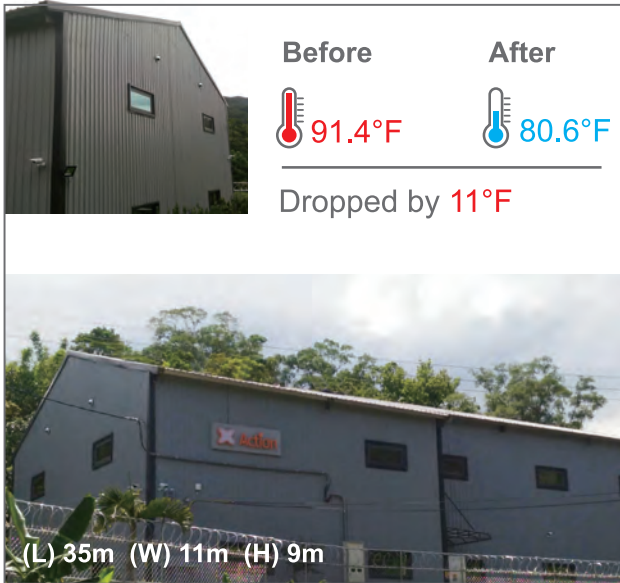
# Conserve Energy

Energy saving up to 42%

## Energy Saving of Friendly Environment

### Problem

The lab requires constant temperature of 61°F to implement high standard certification for TAF, UL and TUV.



Before: 91.4°F  
After: 80.6°F  
Dropped by 11°F

(L) 35m (W) 11m (H) 9m

### Result

After installation, the temperature dropped by 11 °F and electricity cost during summer time were reduced about 42%

Month	Electricity Bill	Electricity Saving
May-Jun	USD 4,000	None
Jul-Aug	USD 2,700	USD 1,300
Sep-Oct	USD 2,300	USD 400
Ratio of Electricity Saving		<b>42%</b>

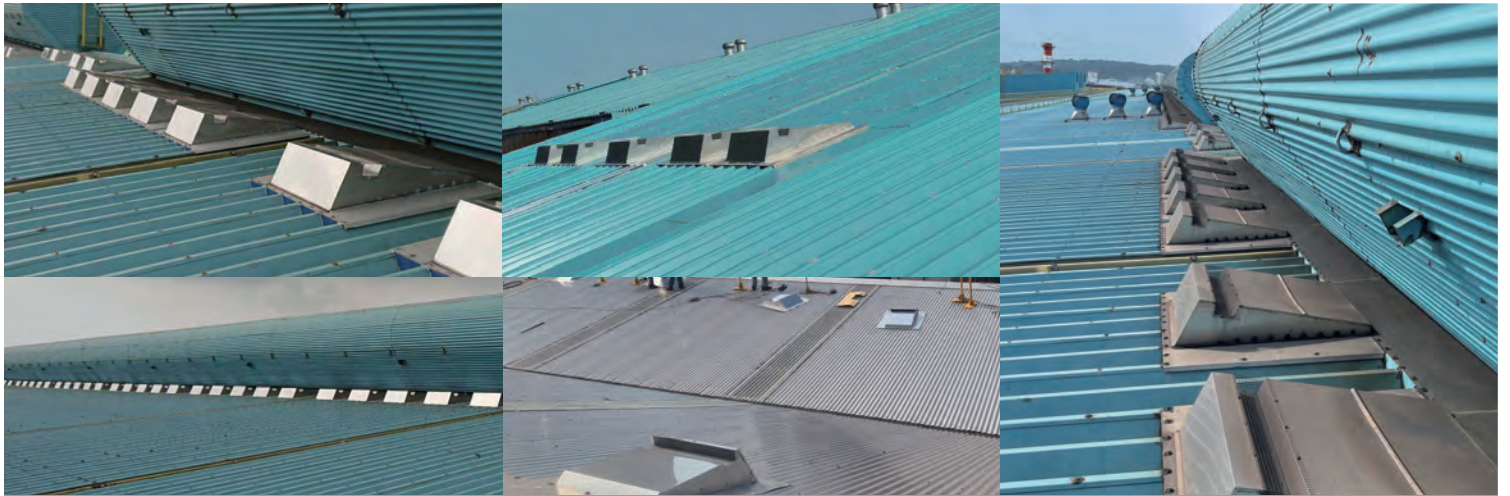
Conditional Requirement: Air conditioning is on 24/7 all year round with window shut.

## From Ventilation to Power

Integrating efficient heat exhaust with solar energy for a fully upgraded roof.



# Cases Study



**China Steel Corporation ( Forbes Global Top 2000 )**



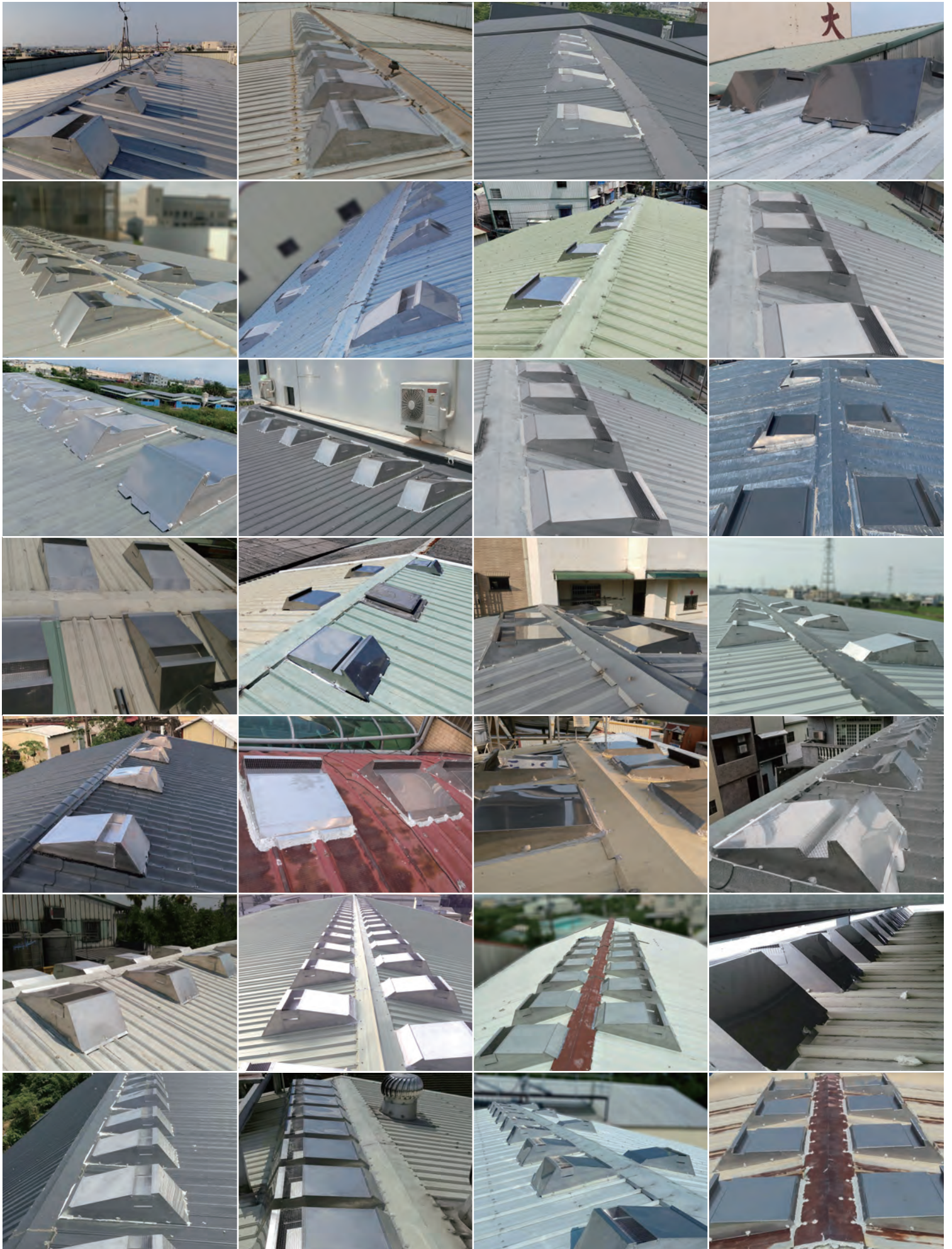
**Sinphar Pharmaceutical**



**KYMCO**



# Cases Study





## Taiwan Leading Brand

Thousands of Cases Study



**Carbon Free**



**Free Power Driven**



**Rain Protection**

**Efficiency Boost**      **Sustainable Ecology**

Linked in



SAVCO Link



**SAVCO Corporation**

80, Kwang Jeng Rd., Dail 41278, Taichung, Taiwan

T :886.4.2491.5555 / 6666

F :886.4.2491.7777

www.savco.biz

savco@savco.biz / savco.savco@msa.hinet.net