信義 建筑玻璃产业
ARCHITECTURAL GLASS DIVISION

XYG

# 2019 DESIGN AND SELECTION OF ENERGY EFFICIENT GLASS FOR BUILDINGS



Ho Chi Minh VIETNAM

信義 建筑玻璃产业
ARCHITECTURAL GLASS DIVISION

# What is Xinyi +

信義 建筑玻璃产业
ARCHITECTURAL GLASS DIVISION

XYG

# 集團簡介
# GROUP PROFILE



## EST. SINCE 1988

信义玻璃成立于1988
全球领先的综合玻璃制造商

XYG 信義玻璃 XINYI GLASS

引领绿色新生活
LEADING A GREEN NEW LIFE

திலிளிகிஜி நிலிகிஷ்ஷிஷி

கிஹ்ரிஜிளி நிலிகிஷ்ஷிஷி

நிலிகிஷ்ஷிஷி

ஷிளிலிகிஸி
நிலிகிஷ்ஷிஷி
ங்ஹ்ரிமிலிஞ்மிழிநி
நிலிகிஷ்ஷிஷி
ணிலிணிசிஜிஸிளிழிமி
சி நிலிகிஷ்ஷிஷி

முழுமுழுதும்

விமிசிஸிளிநிஸிமிஞ்
ஷிசீஷிஜிணிவி,
ஷிஜிகிழிமி - கிலிளிழிணி

ழிணிகீ
ணிழிணிஸிநிச்

கீமிழிஞ் நிளிகீணிஸி

லிமி ங்கிஜிஜிணிஸிசீ

ஷிளிலிகிஸி
திகிஸிவி

信義 建筑玻璃产业
ARCHITECTURAL GLASS DIVISION

# Xinyi Group has 4 listed companies in Hong Kong Stock Exchange

**Xinyi Glass（0868.HK）**

High-quality float glass, automotive glass and architectural glass.

**Xinyi Solar（0968.HK）**

Solar glass production, Back-glass,

**Xinyi HK（8328.HK）**

Lithium battery production and development, battery module structure design, Energy storage systems

**Xinyi Energy（3868.HK）**

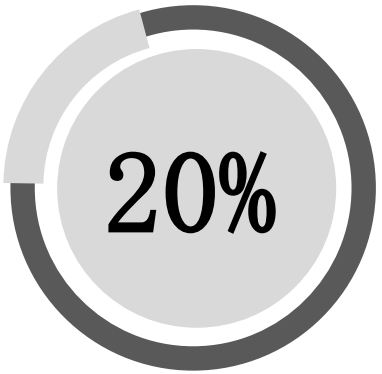
Large scale of Solar farm investment, design, operation and EPC service

信義 建筑玻璃产业
ARCHITECTURAL GLASS DIVISION

# Architectural Glass

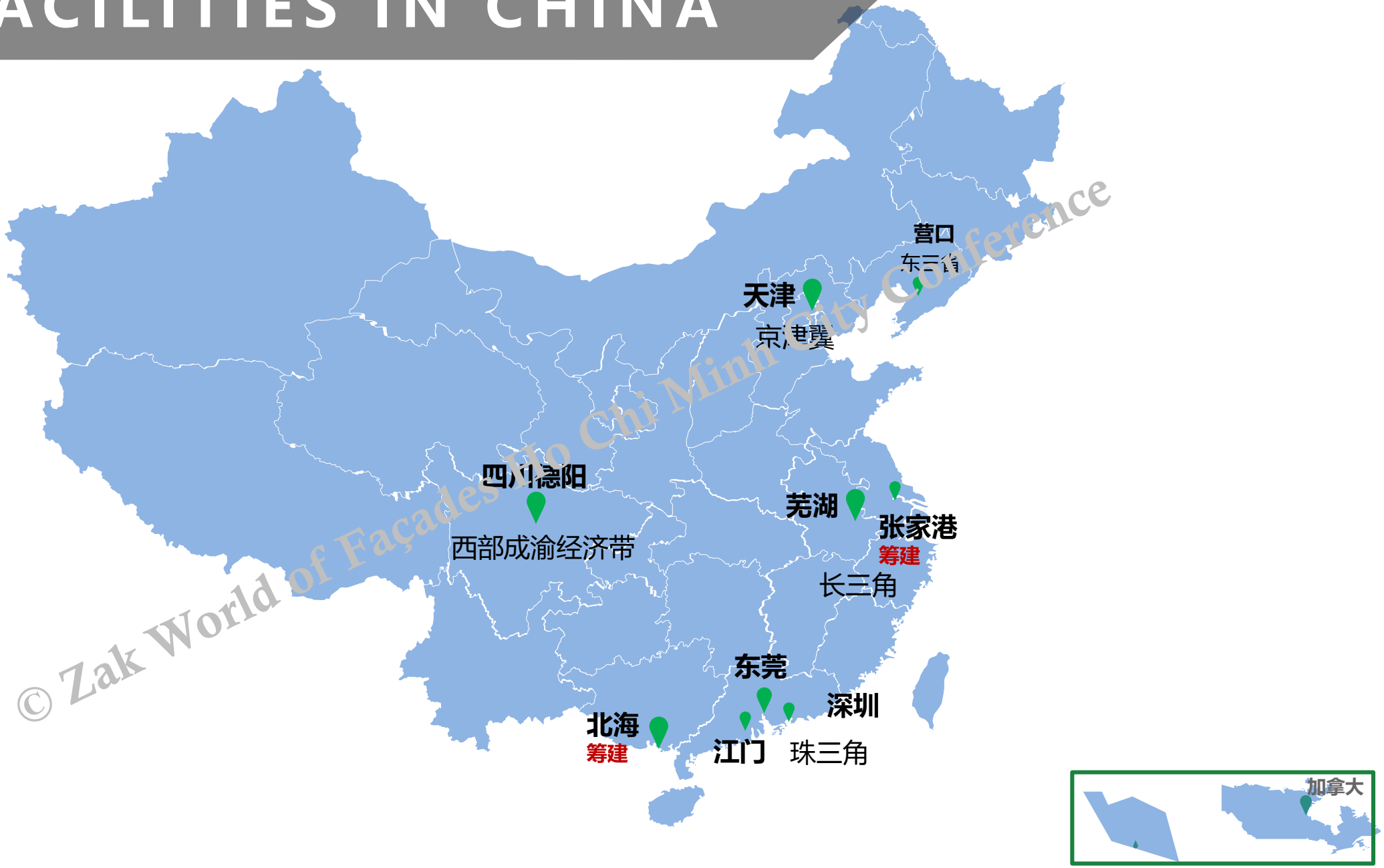
The largest low-e energy saving glass manufacturers and glass industry leaders of architectural glass in China,
reflective coated glass；
single-silver Low-E glass；
high-end double and triple-silver Low-E glass；
combination product of laminated, insulated, tempered and Ceramic ；






**20%market share of LOW-E energy-saving glass in China**

# XINYI FACILITIES IN CHINA

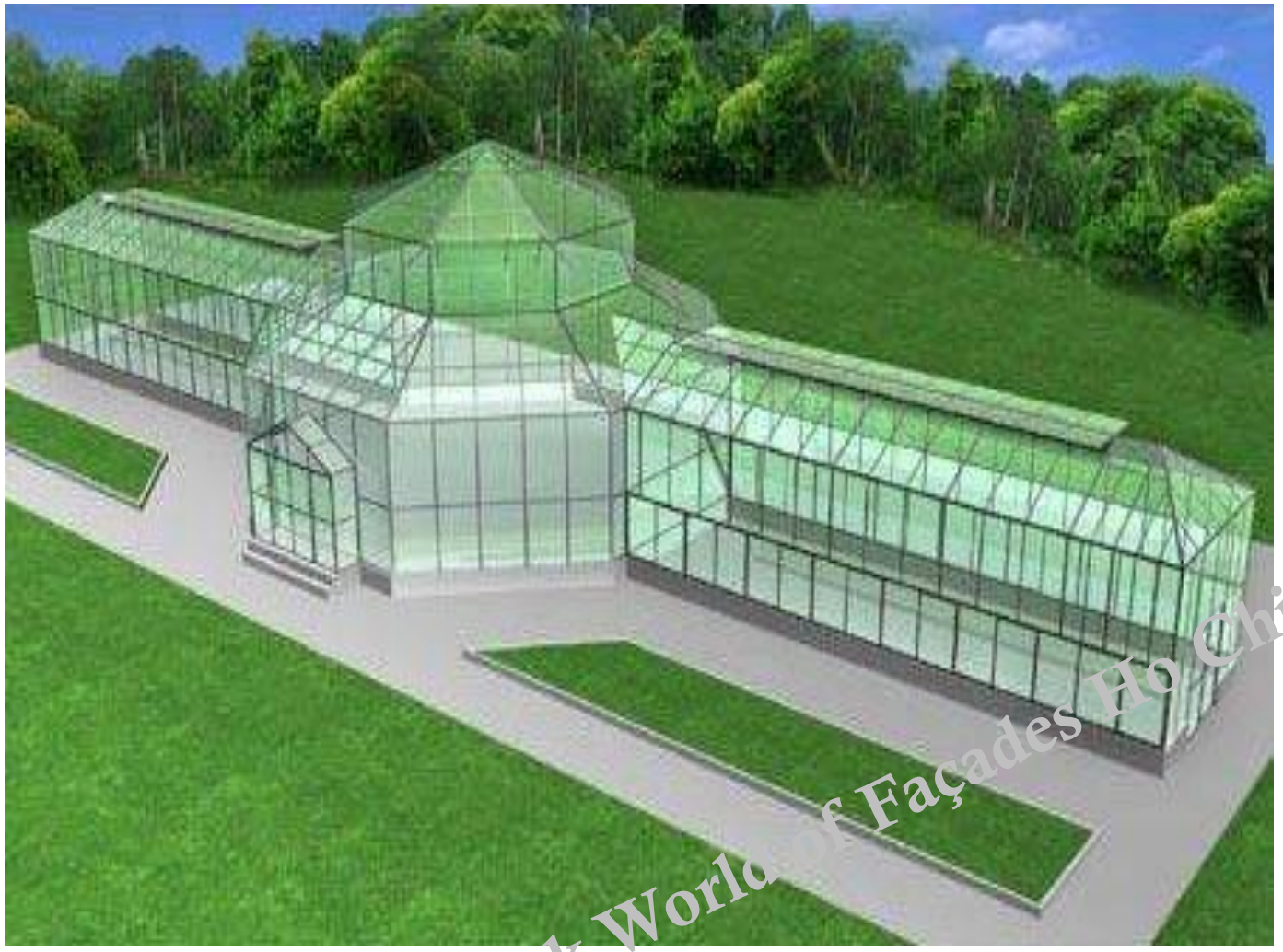


# XINYI OVERSEA FACILITIES

Total : 400,000 M2

产品：优质浮法玻璃、建筑玻璃、太阳能玻璃

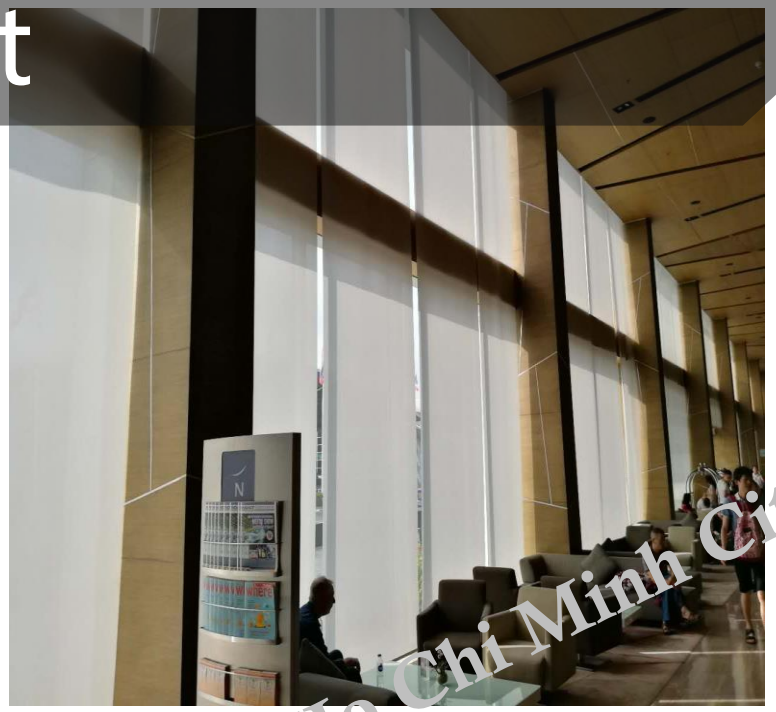

**Xinyi Glass, Malasia**






# FUNDAMENTAL

# Greenhouse Effect





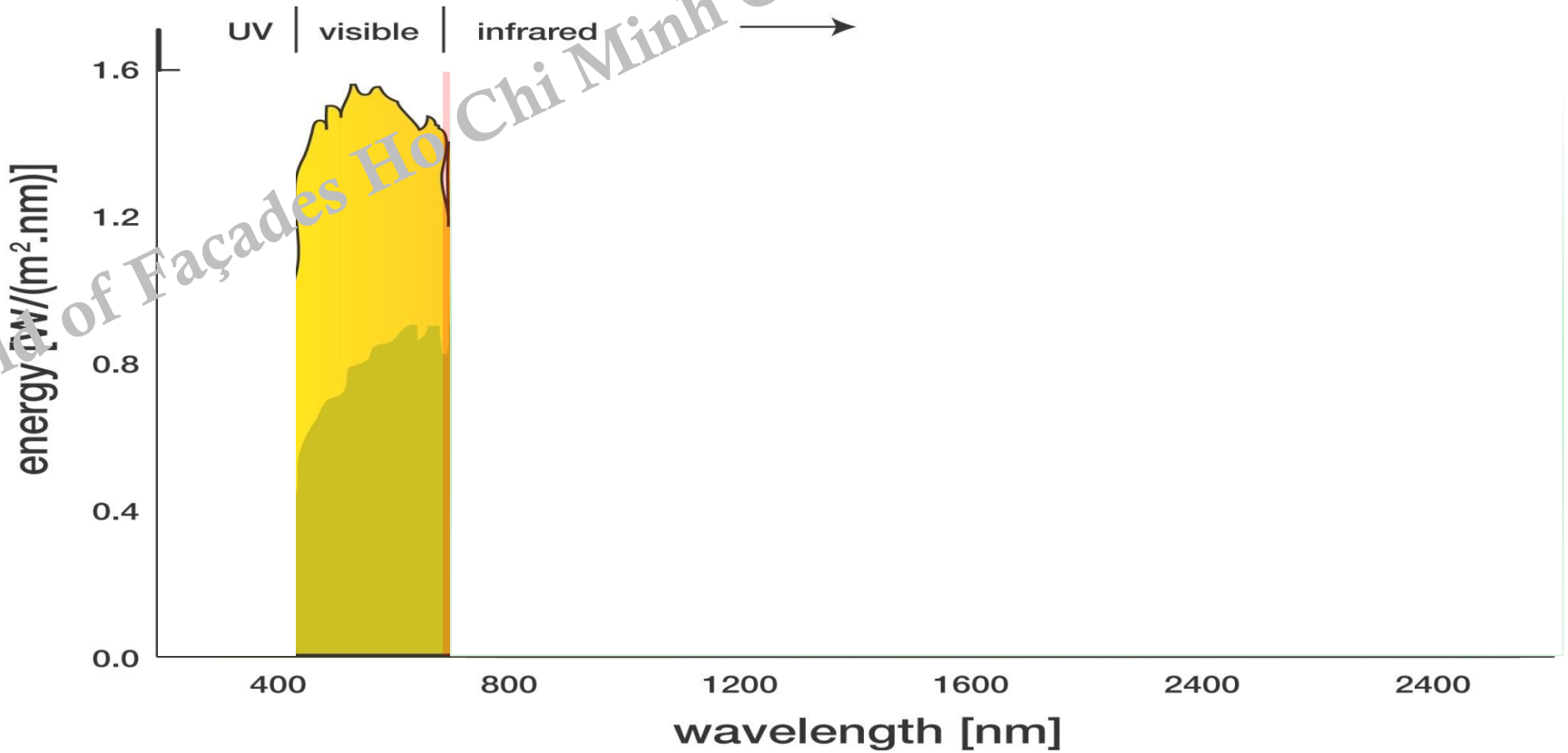
- Greenhouse works mostly by reducing airflow, thus retaining warm air inside the structure
- Tinted glass does stop some direct solar energy but in-direct heat can still partially pass through by re-radiation inwards



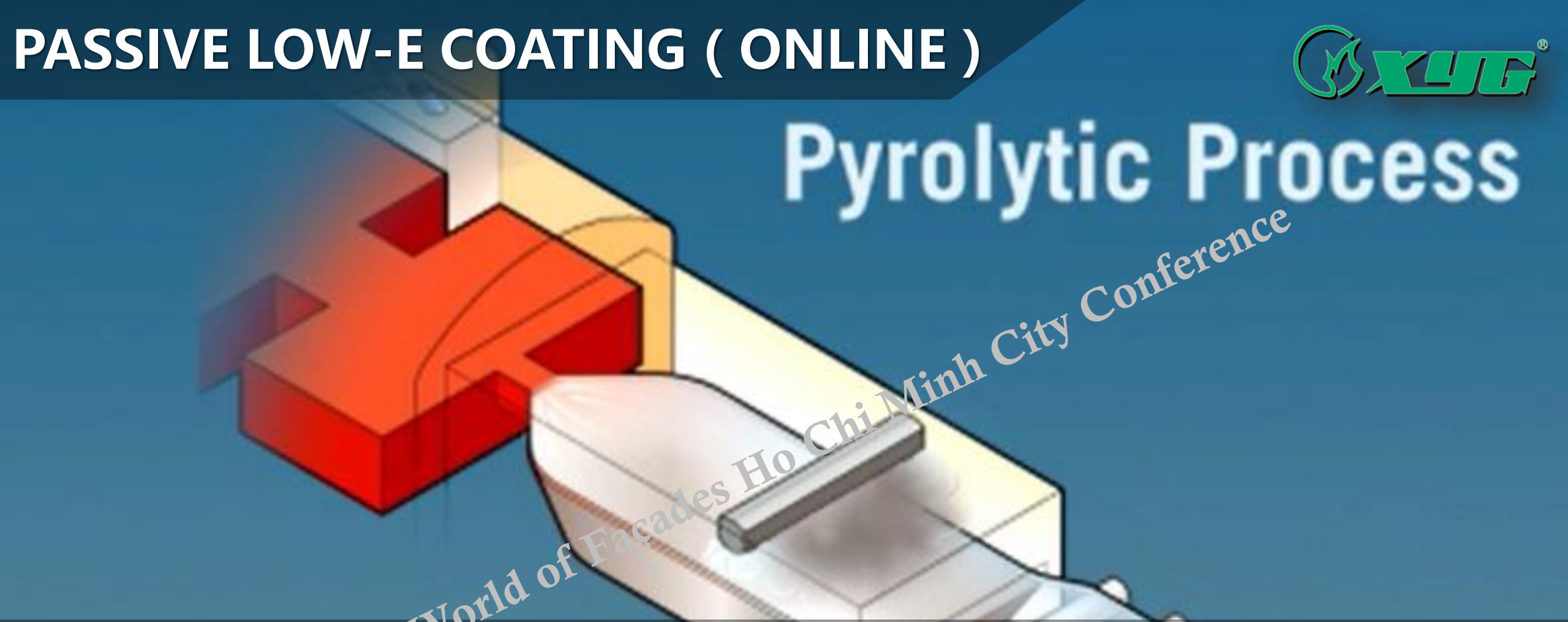
**By combination of insulating structure, incorporated with Low E coated glass, we can greatly reduce direct+indirect energy transmission**

# Solar energy spectrum & Regulated Solar Patterns by Coatings





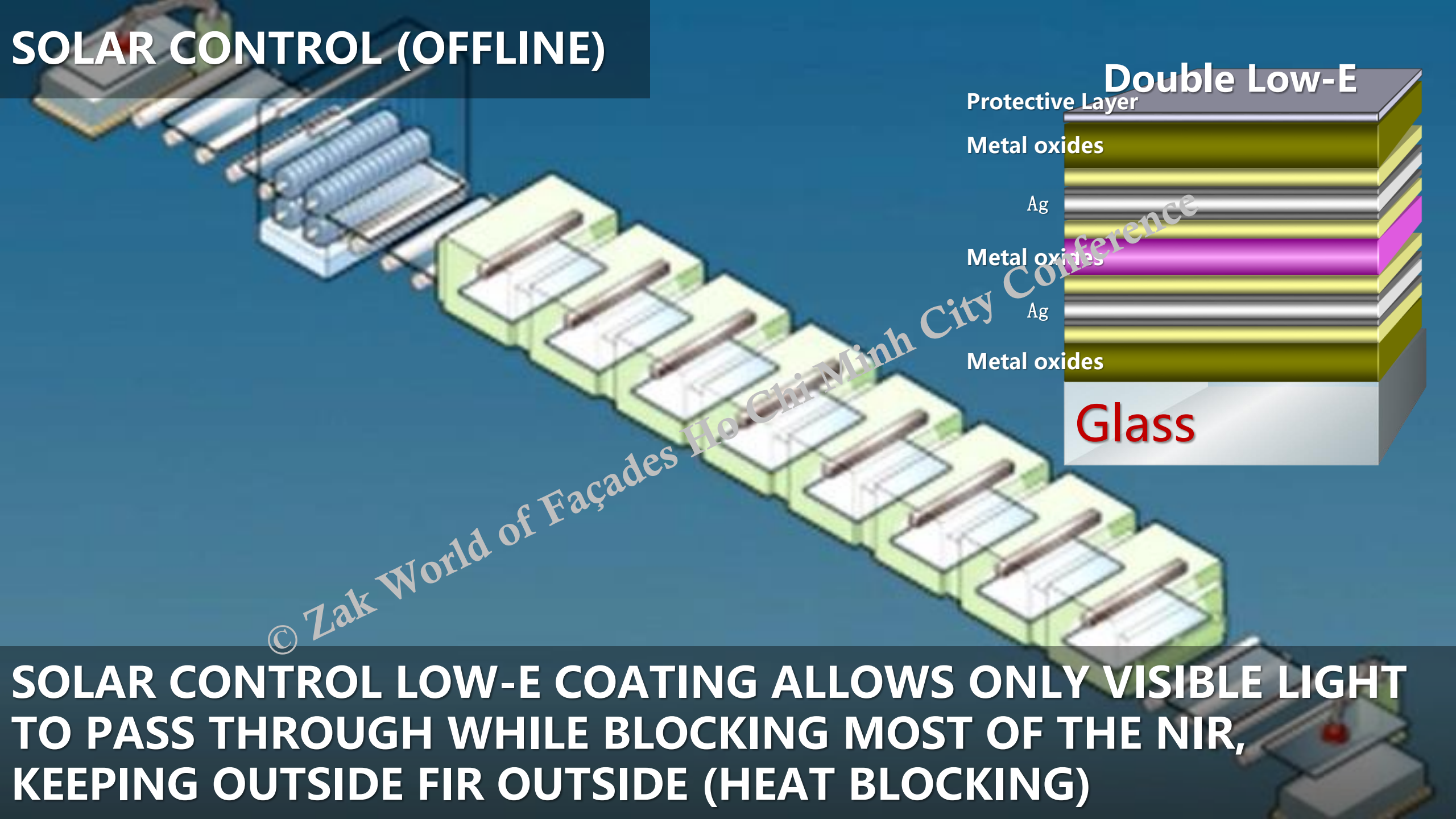
# PASSIVE LOW-E COATING ( ONLINE )






ONLINE LOW-E COATING ALLOWS LARGE PORTION OF NIR TO PASS THROUGH THE WINDOW TO HEAT THE BUILDING INTERIOR WHICH RERADIATES IN THE FORM OF FIR BEING THEN REFLECTED BACK INSIDE (HEAT RETENTION)

# SOLAR CONTROL (OFFLINE)






**SOLAR CONTROL LOW-E COATING ALLOWS ONLY VISIBLE LIGHT TO PASS THROUGH WHILE BLOCKING MOST OF THE NIR, KEEPING OUTSIDE FIR OUTSIDE (HEAT BLOCKING)**

# APPLICATION

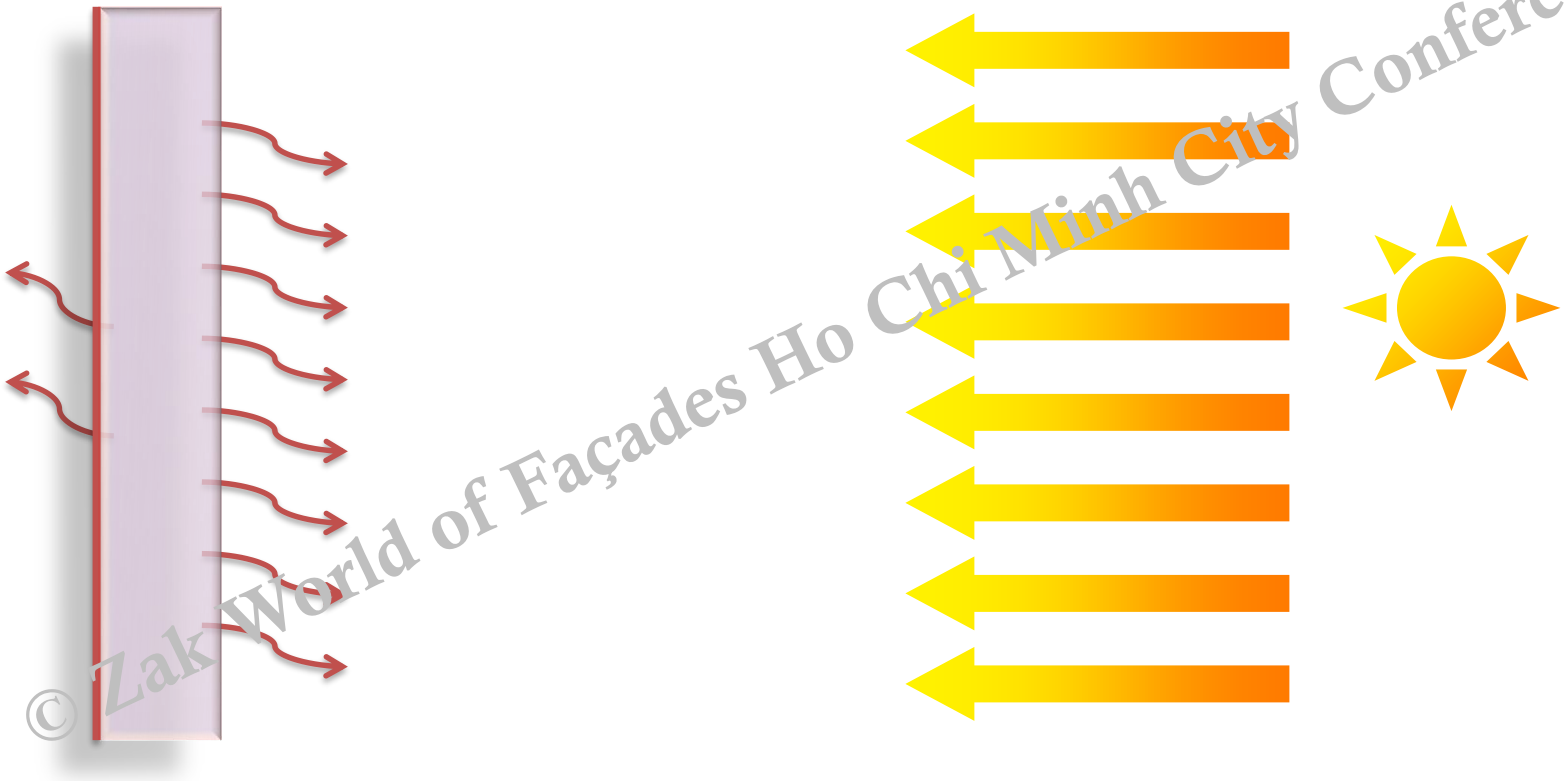
- Passive low-E coating (by online pyrolytic process) suitable for heating dominated climate zones

- Solar control type low-E (by offline MSVD) suitable for cooling dominated climate zones

# HOW DOES A LOW-E COATED TINTED GLASS WORK ?

Inside

Outside



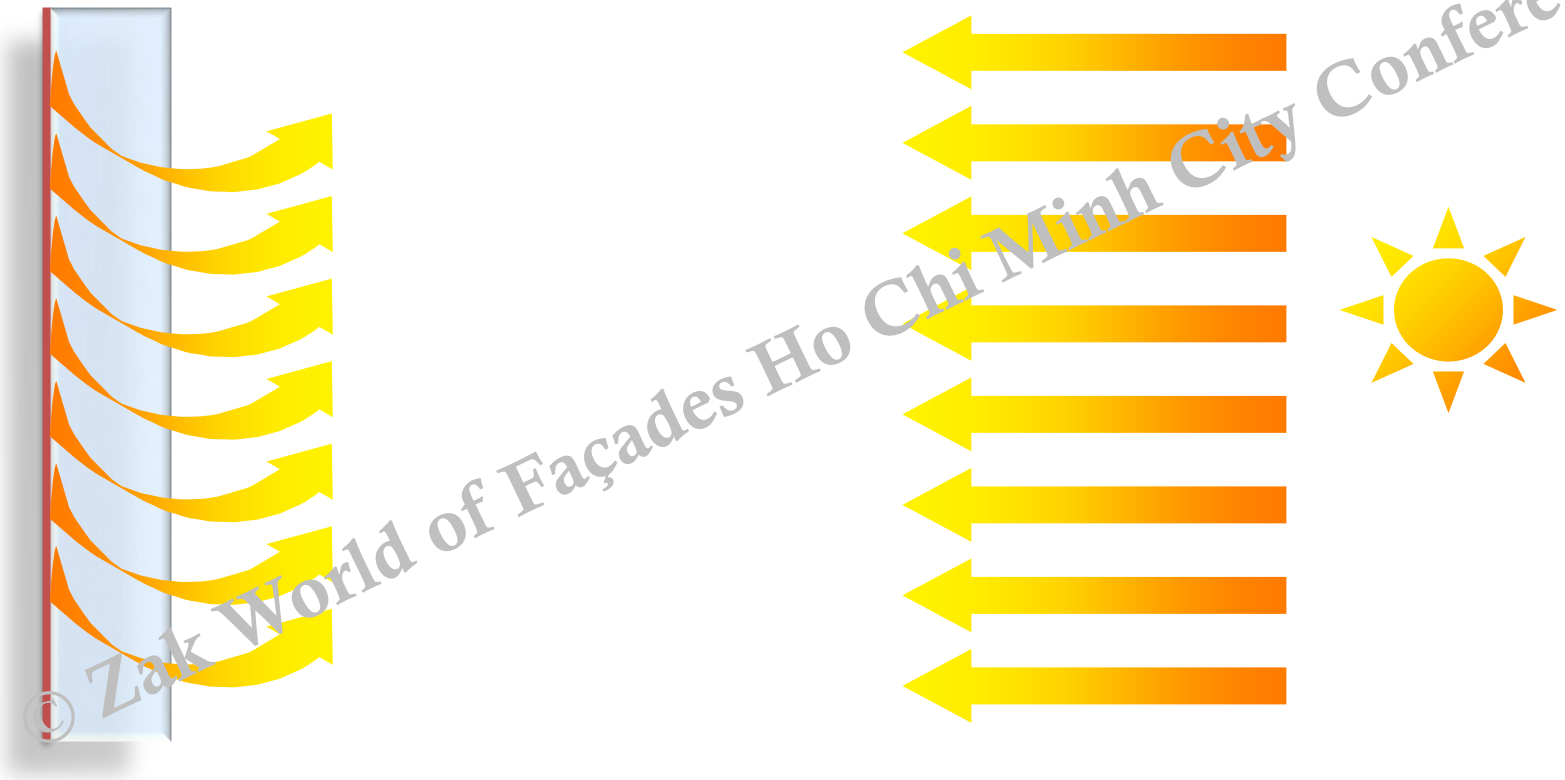


**Down conversion – low NIR reflection, high absorption**

# HOW DOES A LOW-E COATED ULTRA CLEAR GLASS WORK?

Inside

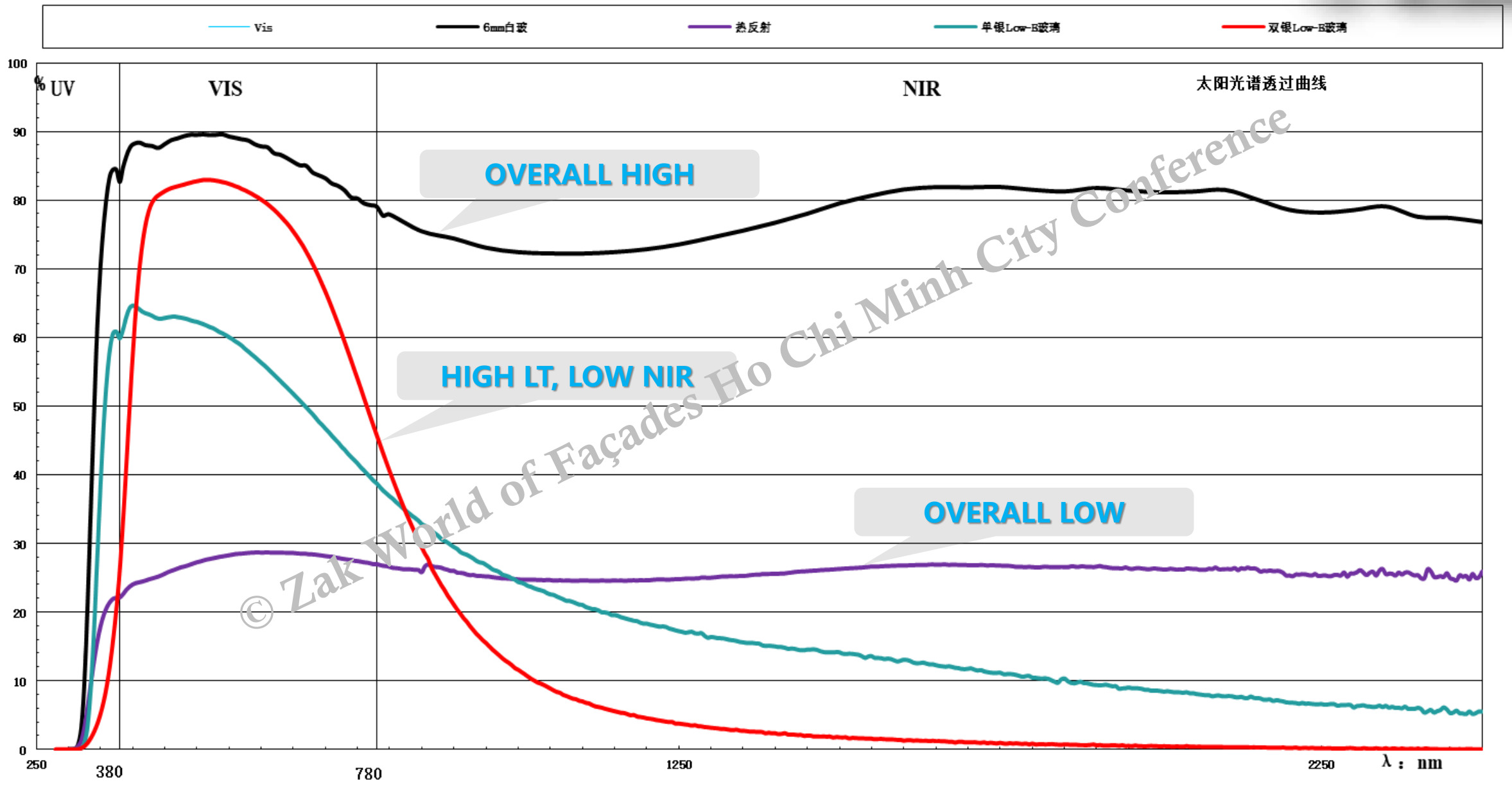
Outside



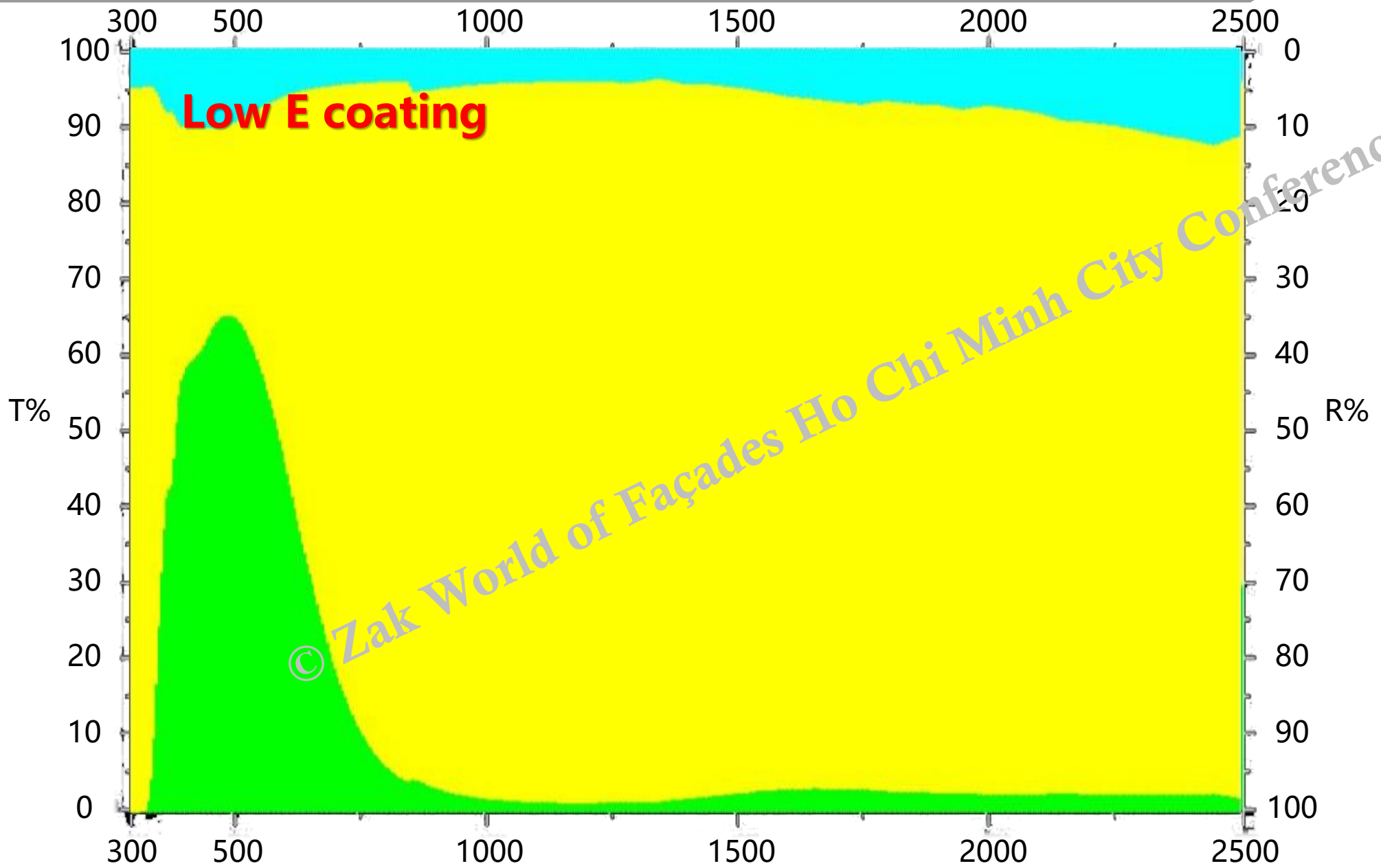


**TOTAL REFLECTION – high NIR reflection, low absorption**

# DIFFERENT GLASS SOLAR SPECTRUM CURVES



# SUPER HEAT-ABSORBING GLASS



In general, to achieve solar shading, there are two types of units:

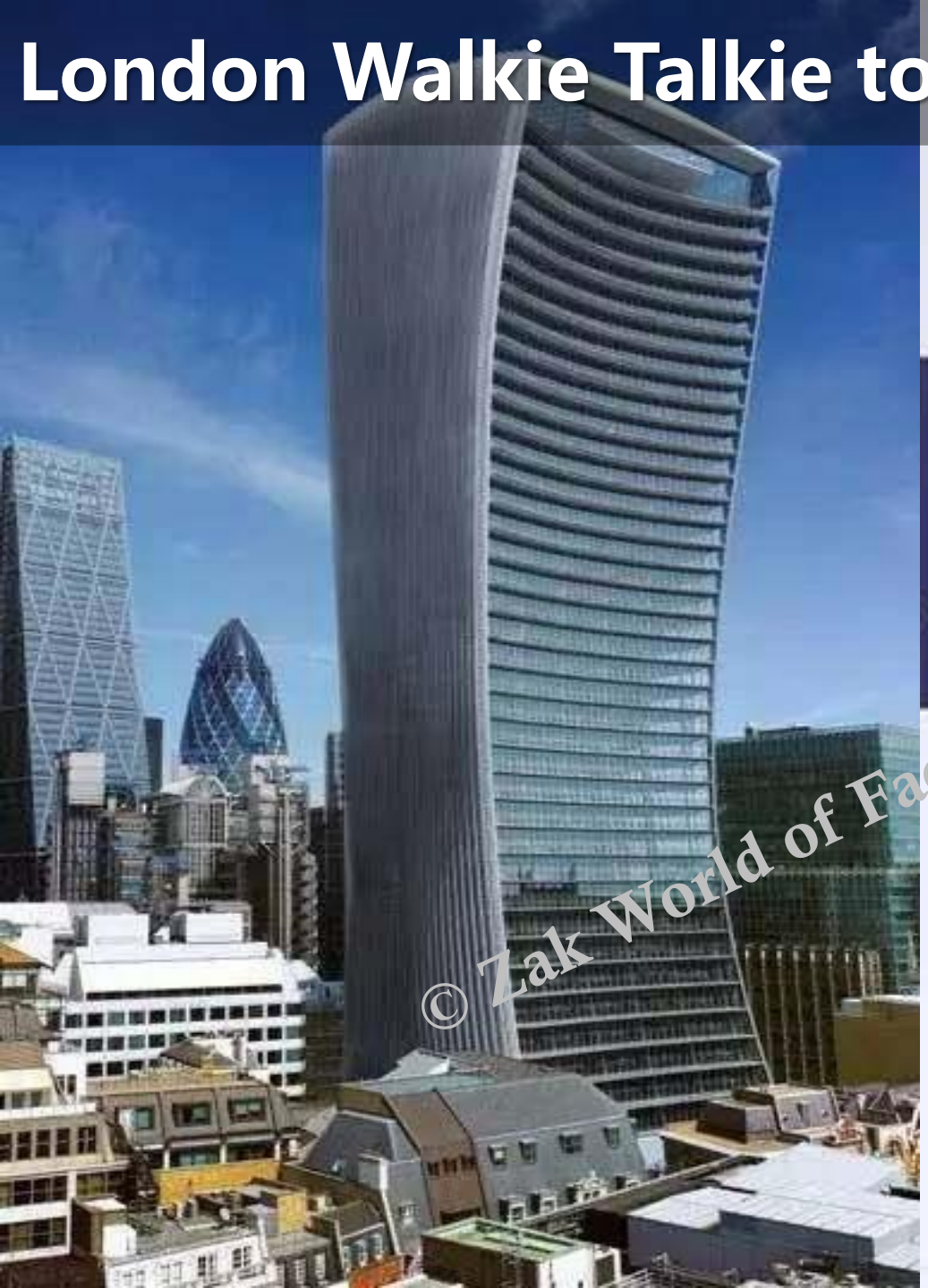
-high NIR reflection, low absorption

-low NIR reflection, high absorption

Low-e on clear glass is more efficient in terms of keeping heat outside than on tinted glass

Selection depends on façade geometric shape and surrounding buildings

# London Walkie Talkie tower



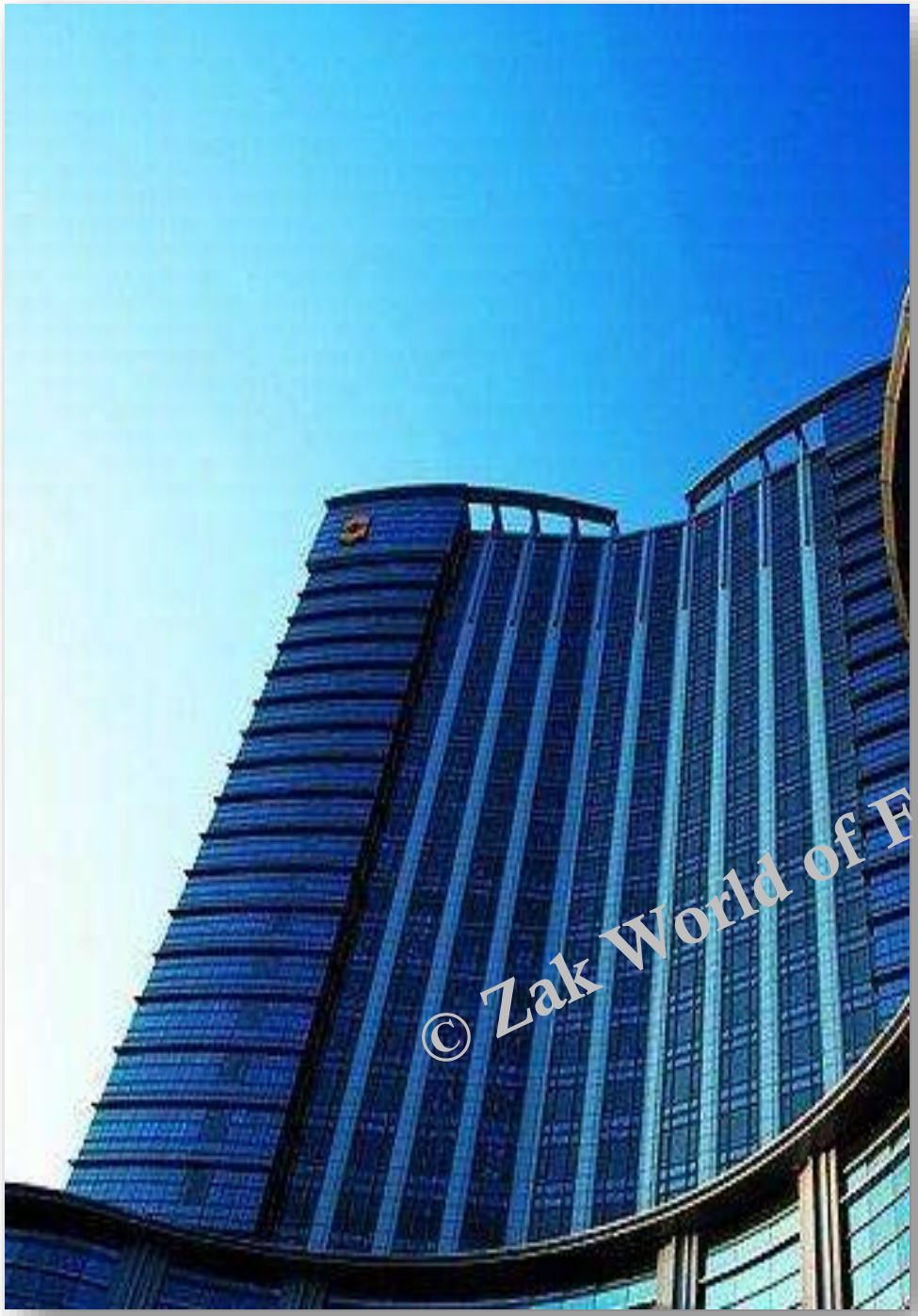
The concave shape of the skyscraper means that a large amount of sunlight is relected into a small area

This effect currently lasts for around two hours per day, and is suggested to be present for approximately two to three weeks due to the changing position of the sun in the sky

Curved face

# London Walkie Talkie tower





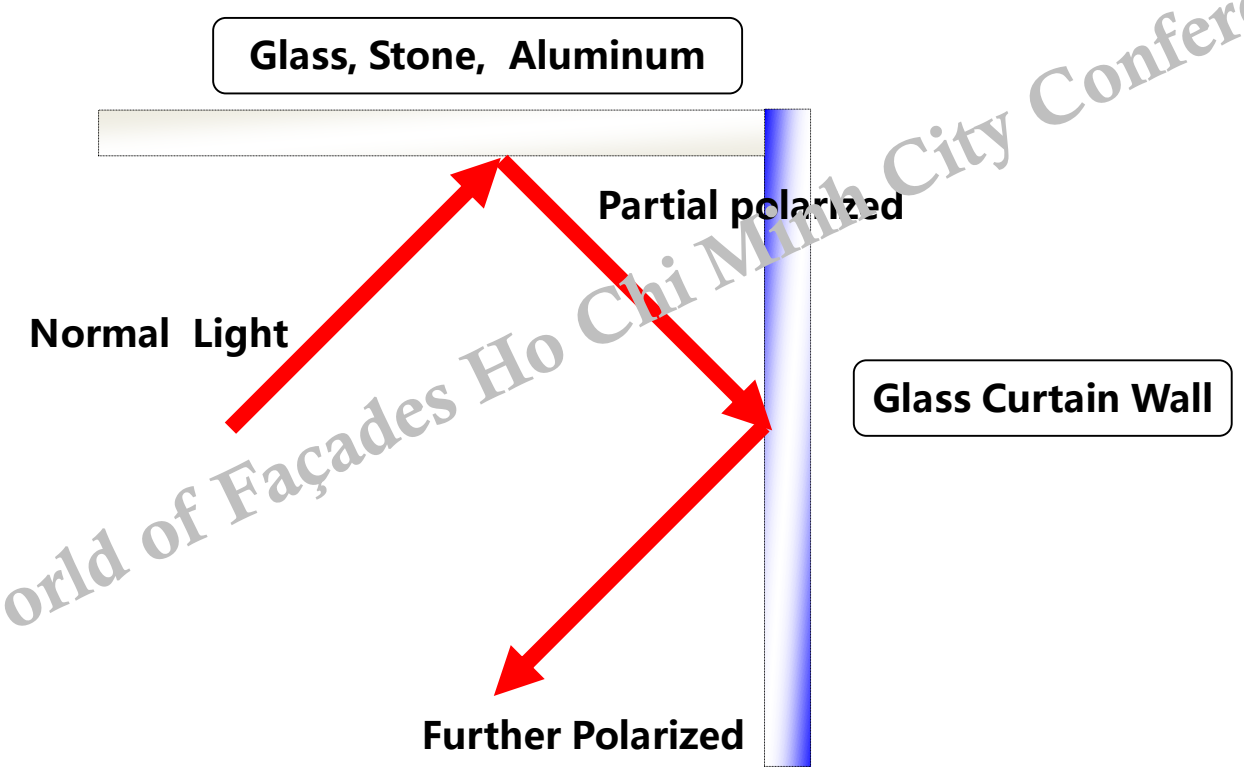

XYG
© 1st World of Façades Ho Chi Minh City Conference


© Zak World of Façades Ho Chi Minh City Conference

# AESTHETICS ISSUES

# Polarized light may affect appearance

# Some designs may affect appearance



# CORNER COLOR SHIFT

# VIEWING ANGLE CHANGES HUES

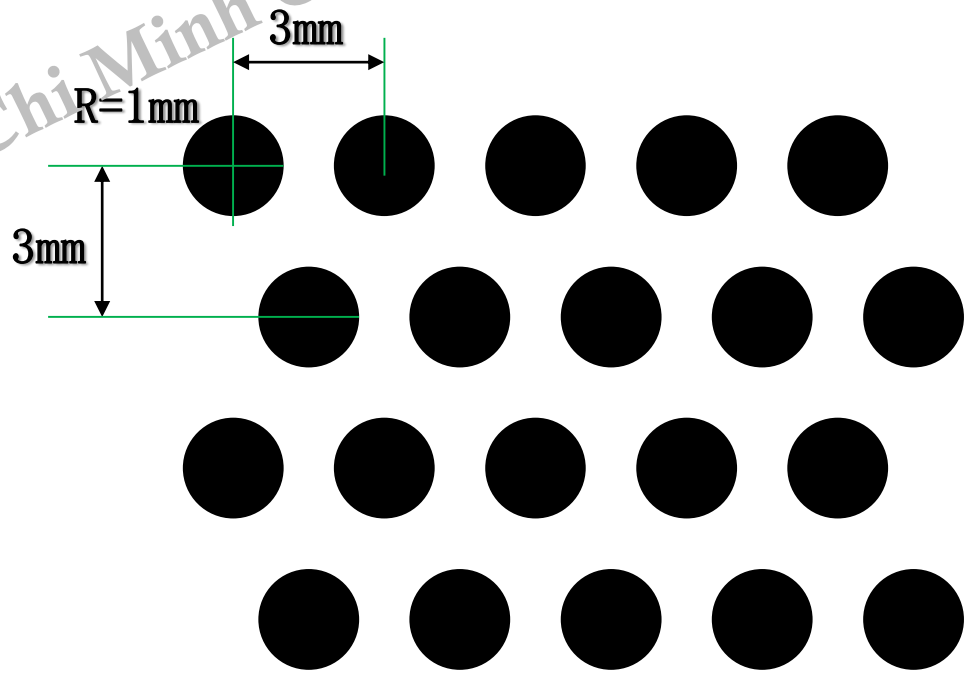
# MOIRE INTERFERENCE

# MOIRE INTERFERENCE

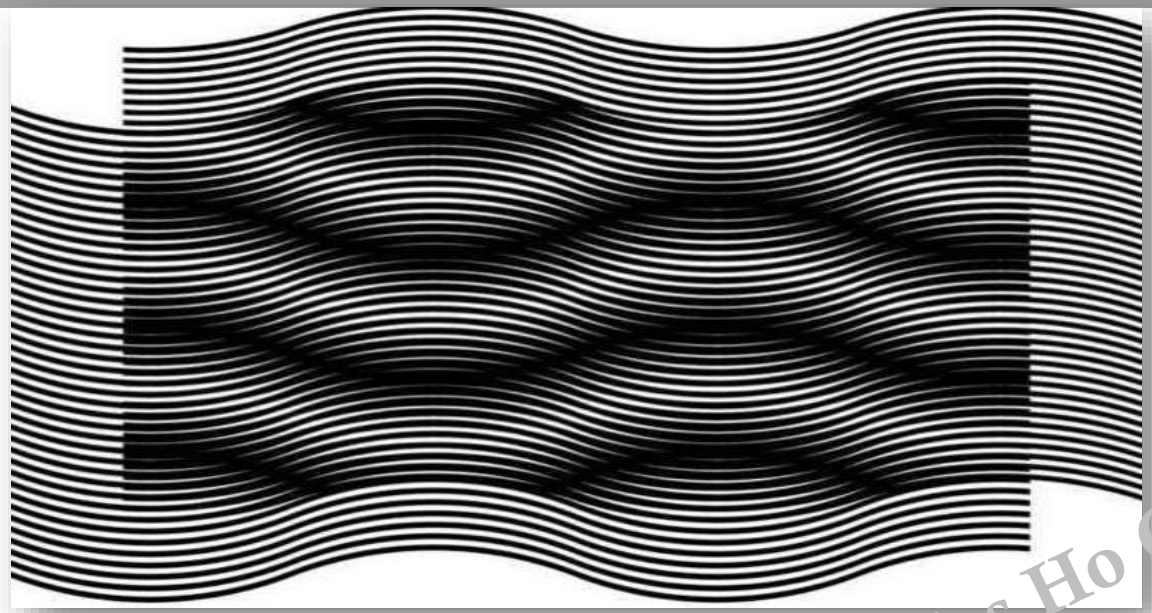
# CONFIGURATION

**OUTSIDE** **INSIDE**


## DOT MATRIX

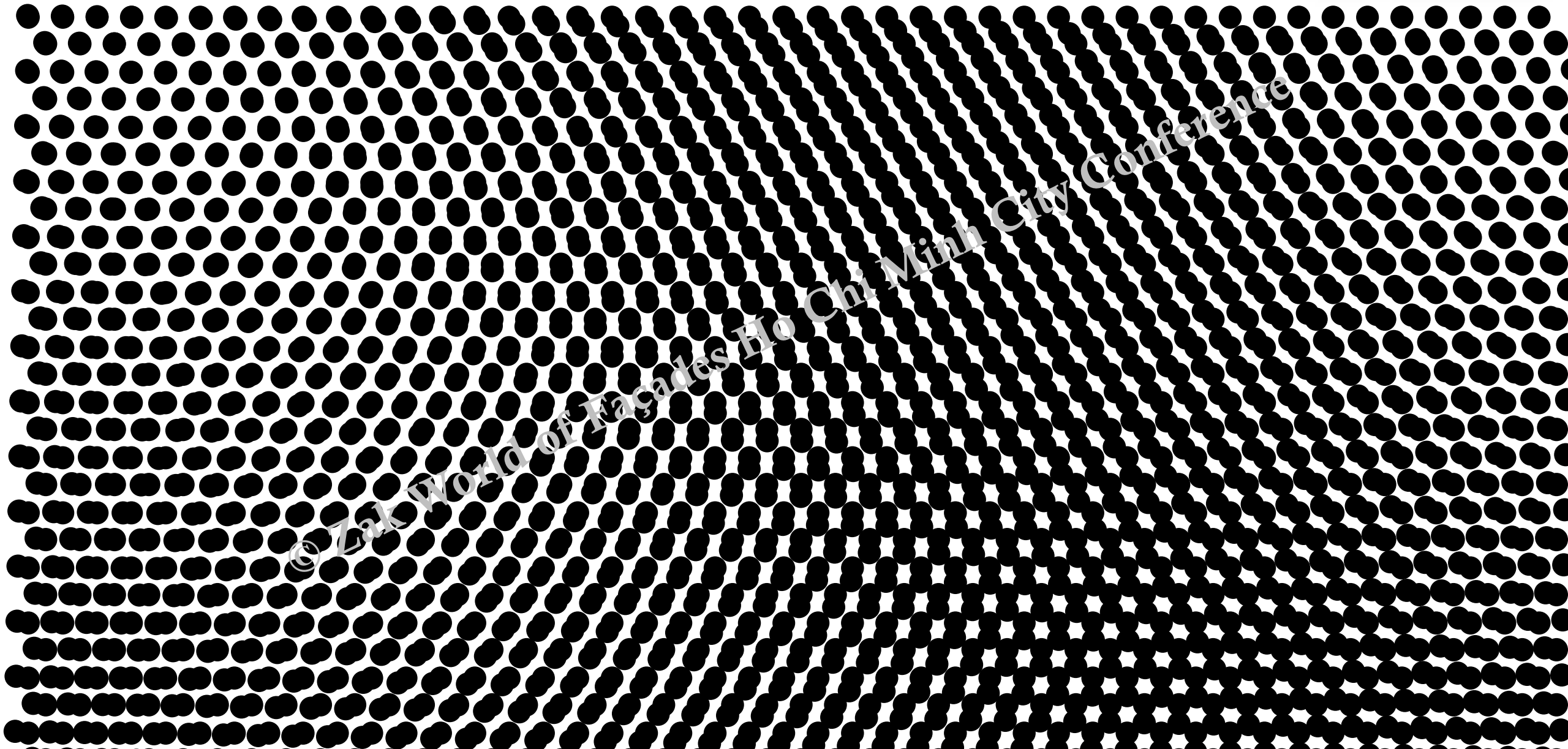


# MOIRE INTERFERENCE





# DEMO



# INNOVATIVE PRODUCTS

# SWITCHABLE GLAZING - PDLC !


# DIMMABLE GLASS

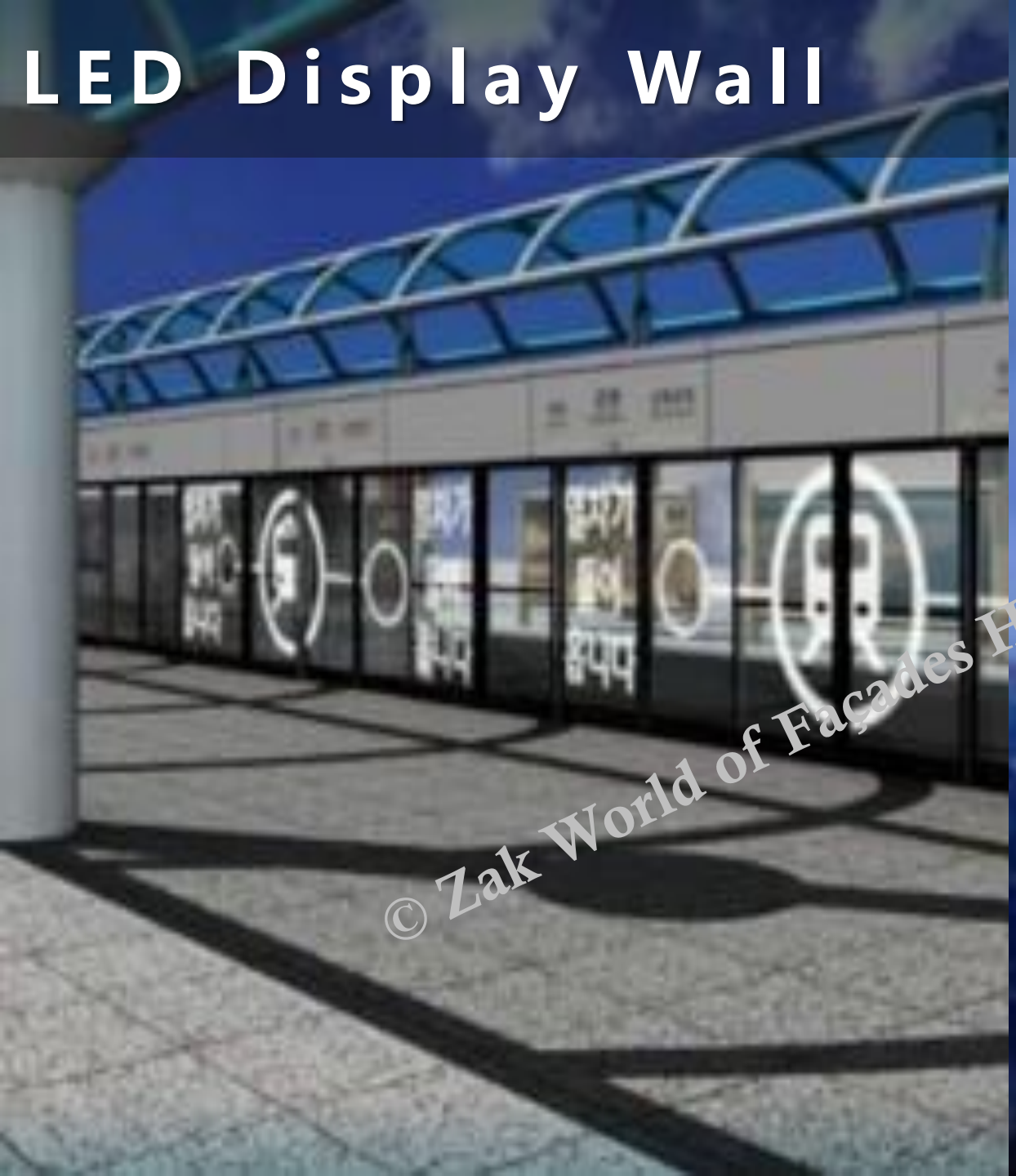


SC value changeable, LT switchable from 68% down to 5%

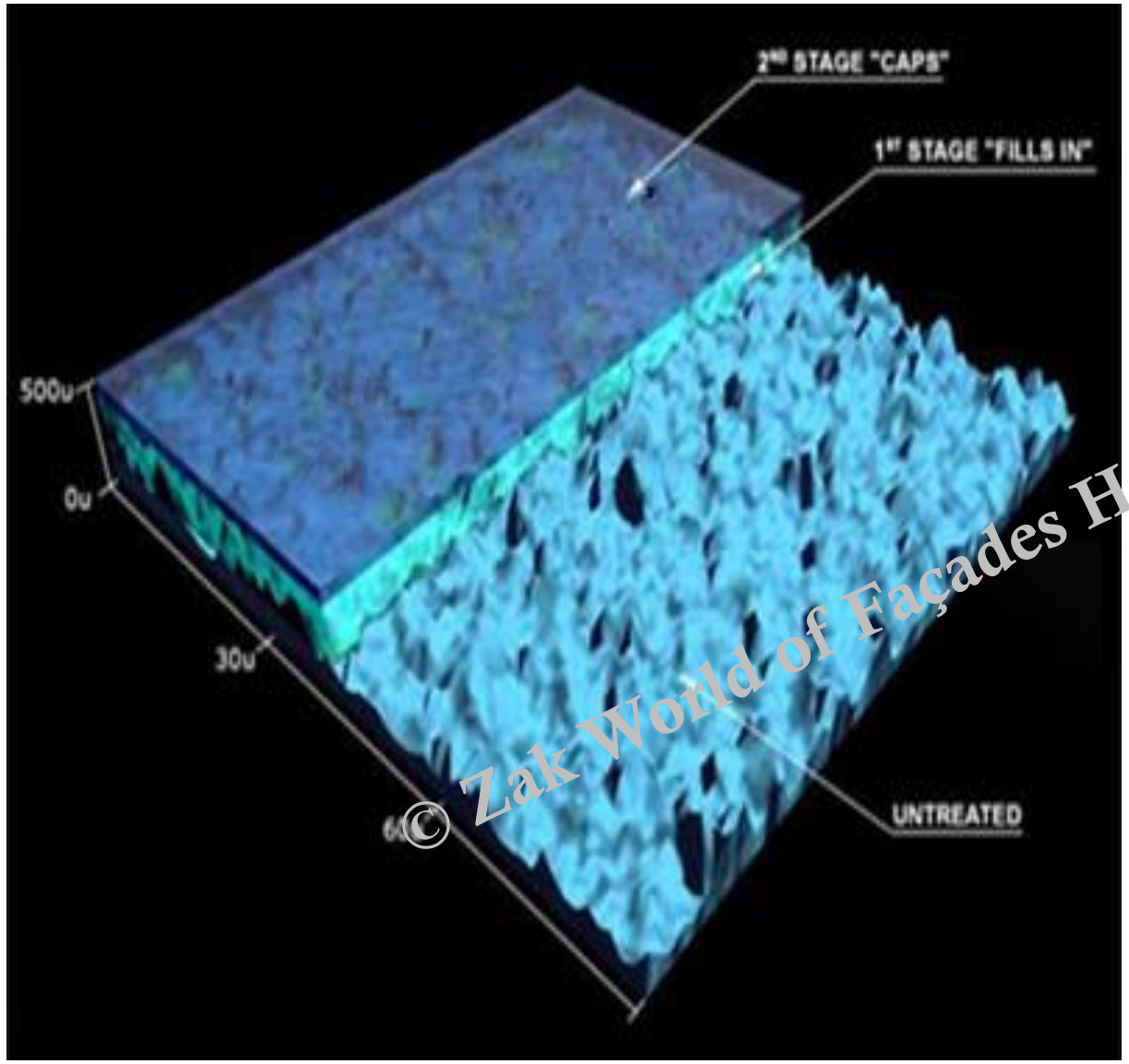
Suitable for exterior glazing as shadeless windows

# LED Display Wall

# LED Display Wall



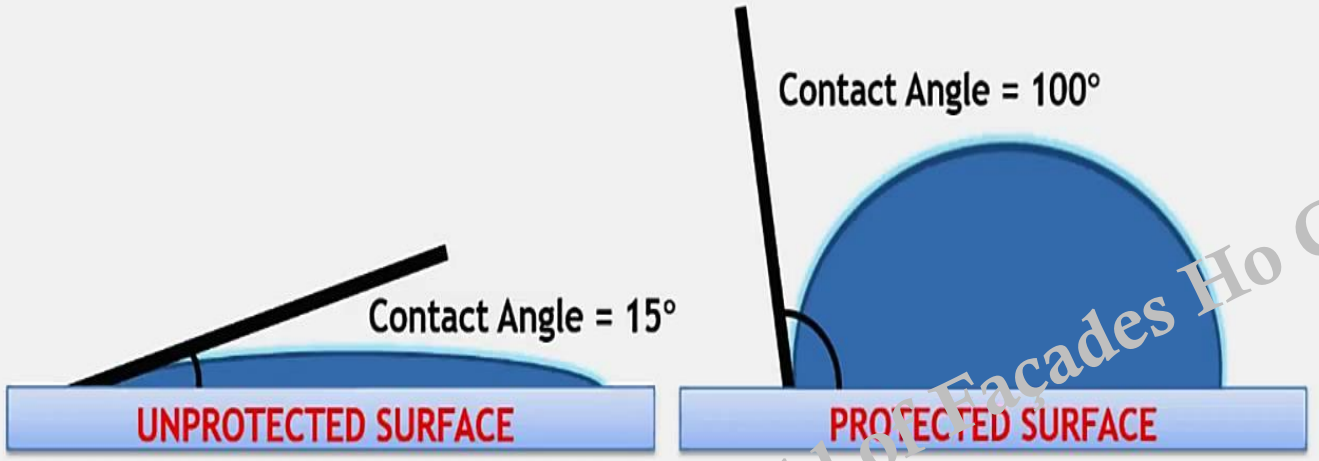
# EASY-TO-CLEAN GLASS




On surface 1#, a nano-sized material is coated to gain the easy cleaning effect , which fills up the roughness of the raw glass surface to make it much more smooth

# EASY-TO-CLEAN GLASS

## Hydrophobic Protective Coating Measurement #1:
*Contact Angle*




**HIGHER CONTACT ANGLE MEANS:**

- Surfaces are more repellent to water and other substances
- Resulting in reduced staining
- Needing less cleaning and maintenance

# MANY THANKS
# FOR YOUR ATTENTION