

“At COP21, nearly 200 countries signed the Paris Agreement, but no concrete action yet”

“IPCC AR6: ‘A code red for humanity’”

An Urgent Issue That Has Been Left Unresolved For a Long Time

“The world is waiting anxiously for a durable and economically feasible solution to the pressing issue of climate change”, former UN Secretary-General Ban Ki-moon

“It's irritating because they only talk and don't act”
Queen Elizabeth II @COP26

“The world has entered a climate emergency”, UNFCCC Executive Secretary Patricia Espinosa

Adaptation

Solutions to address risks caused by climate change impacts



Water resources: Roads become water reservoirs



Disaster prevention: High water retention and water permeability > 12500mm/hr



Ecology and health: Roads become wetlands



Heat island mediation: Can be more than 20°C cooler than the asphalt roads during summer and can melt snow during winter



Food: Create urban farmlands

JW Eco-Technology

A Holistic Nature-based Solution for Climate Change Adaptation and Mitigation

JW Eco-Smart Sponge City



Mitigation

Solutions to reduce carbon emissions that contribute to climate change



Clean Energy: Roads become green power plants



Carbon capture and decontamination: Captures at least 70% of CO₂ and pollutants within 20 minutes



Low-carbon method: Reduce up to 83% carbon emissions



Safety: 510 kg/cm² or more for high load-bearing



Sustainability: Lifespan up to 30 years and above

2021 Initiative:

"Use JW Eco-Technology to Create City Water Banks for Converting Stormwater Into Resources"

Climate Emergency Action Int'l Forum Series 1: Water

NO WATER NO FUTURE

22 APR. 2022 13:30 (GMT+8)
17:30

International Conference Hall
Paul Cardinal Shanahan Building (Opposite)
Fu Jen Catholic University

水即未來

Zui-Wen Chen University of JW Eco-Technology	Li Shih-Feng, SD Member of Taiwan Fu Jen Catholic University	Norio Jiro Founder & Secretary General, AECCE	Jonas Svensson Head of Research and Development, JW Eco-Technology	Chung-Ho Wang Member of the Board of Directors, JW Eco-Technology	Shao-Hsun Chen Director General, JW Eco-Technology	Chao-Hsun Lai President, Fu Jen Catholic University	Kuang-Wu President, Fu Jen Catholic University
Juan-Manuel Escobar Founder & President, JW Eco-Technology	Juan-Manuel Escobar Founder & President, JW Eco-Technology	Yoshi-Aki Ueda President, JW Eco-Technology	Hanna Tudy-Cordell President, JW Eco-Technology	Kuang-Chao Chen President, JW Eco-Technology	Thaddeus Lee, DTM Chairman of the Board, JW Eco-Technology	Ming-Chia Hsu President, JW Eco-Technology	Jen-Hsiang Tsai President, JW Eco-Technology
Chen-Chen Chen President, JW Eco-Technology	Shi-Ming Chen, SD President, JW Eco-Technology	Ling-Yu Fu President, JW Eco-Technology	Paul-Curtis Davidson President, JW Eco-Technology	Francis Lo President, JW Eco-Technology	Me-Hsing Chang President, JW Eco-Technology	Ming-Chia Hsu President, JW Eco-Technology	Ming-Chia Hsu President, JW Eco-Technology

COP27 theme: Adaptation, Decarbonization, Education



Highly scalable:
Extensive application, education and training, and participation of all people



Localization:
Urban ecology restoration, desert oasis economy, island adaptation

Practical example:

Teachers and students of Li-Ming High School participated in the campus construction using JW Eco-Technology, which not only helped the school survive a rainstorm that poured 600mm of rain within 24 hours, but also turn 20,000 tons of storm water into water resources, solving the problem of annual flooding and water shortage in the 60 years since the school was built.



2022 Initiative:

"Achieving 2050 Carbon Neutrality with JW Solar Permeable Road"

氣候緊急行動系列國際論壇之二：生
Climate Emergency Action International Forum Series2: Life

改變契機

22 APR. 2022 09:00
17:00 (GMT+8)

NO CHANGE

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Invitation of speakers for 2023 International Forum, themed "Genuity", now in process



Water

Water Recycle & Reuse



Clean and Sustainable Water for Arid Areas



Hebei Province, China



Water Crisis



Flood & Drought Prevention

Water

Infiltration Rate > 12,500 mm/hr

On-site rainwater absorption
Unlimited circulation

About **300T** water stored within
underground JW Eco Water Bank



Drought

Flood

Water Pollution Improvement

Water

Dirty, Undrinkable → 1st Grade Water



Before	Test Items	After
0.91	Ammonia-Nitrogen	ND
157	Total Organic Carbon (mg/L)	2.7
10.3	Kjeldahl Nitrogen (mg/L)	0.68
9.39	Organic Nitrogen (mg/L)	0.67
4.6	Dissolved Oxygen (mg/L)	7.7



Test directed by: Bureau of Environmental Protection, New Taipei City & SGS

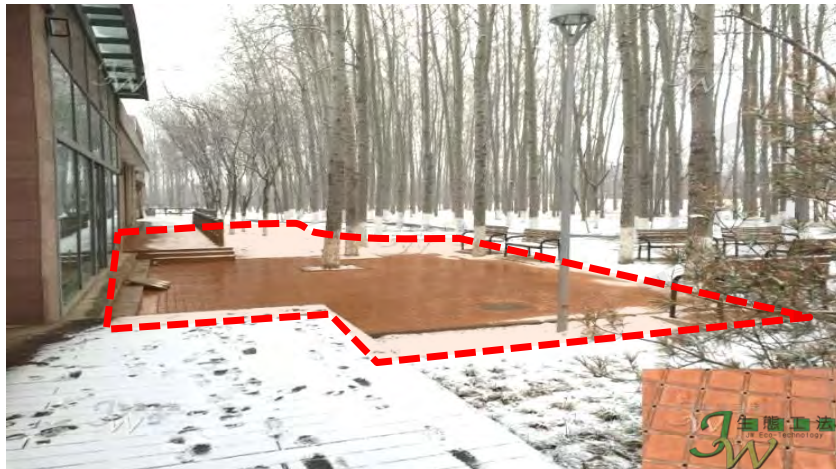




Temperature Regulation



Temperature



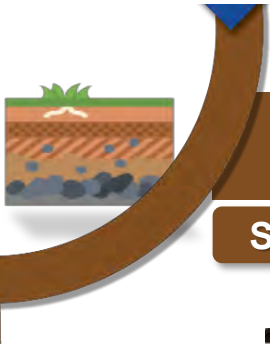
Winter: Snow Melting
(Olympic Park, Beijing)



Summer: Temperature Cooling
(Li-Men community, New Taipei City)



Heat Island



Soil Reviving & Wetland Forming

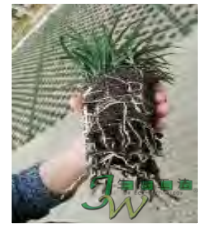
Soil



Traditional construction



Microorganisms & worms survive underground



Fertile lands for plantation and food.

Higher biological activities/bio-diversity and soil fertility results

Published in ASCE's Journal of Environmental Engineering, 2014



Desertification



HOME



Next Generation Renewable Energy



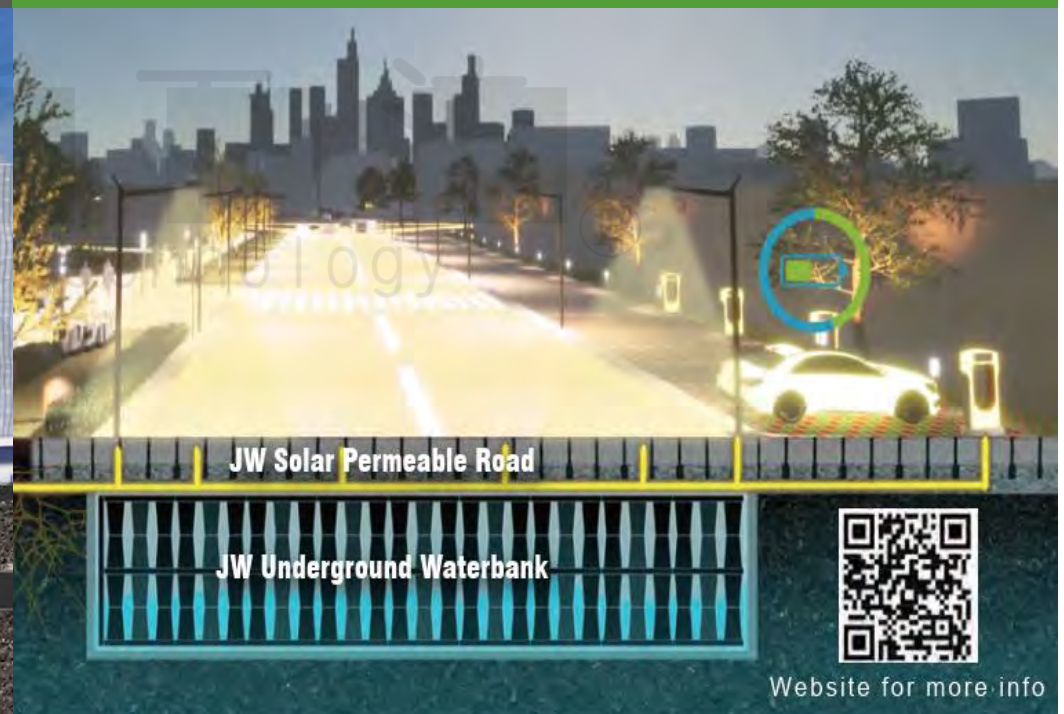
Energy

Traditional Cities



Unsustainable fossil fuels not only produce pollution but also are the main cause for global warming.

Roads Become Green Power Plant



JW Solar Road creates sustainable green energy, achieving carbon reduction

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Air Pollutant Absorption & Carbon Capturing

Air



CO	CO ₂	SO ₂
61%	76%	97%
NO	NO ₂	NO _x
66%	63%	64%



Up to **76%** of CO₂ captured
from car emission in 20 minutes

Published in Journal of the Air & Waste Management
Association, 2012

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Pollution



International Award

Publication & Certification

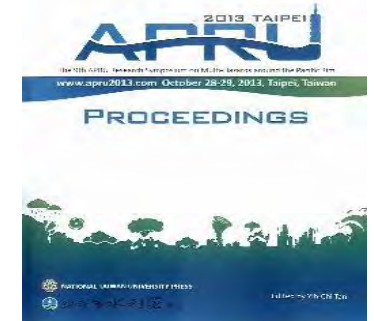
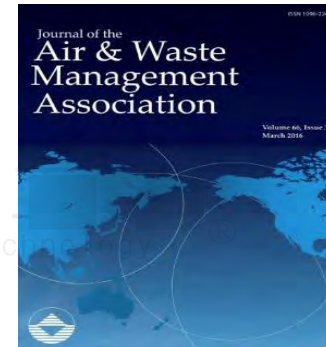
2017 IRF Global Road
Achievement Award

2018 Global
Energy Award

2019 Global
Energy Award

Air & Waste Management
Association

Association of Pacific Rim
Universities

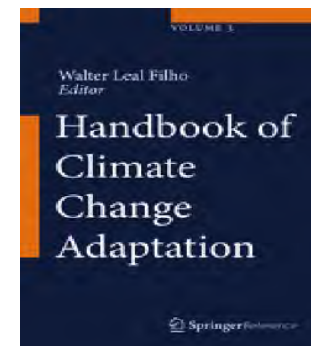


JIPA Best Invention in Green
Technology Award

Int'l Invention
Gold Medals

Handbook of Climate
Change Adaptation

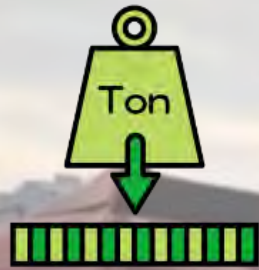
2019 LCBA
Low Carbon Certificate



**Carbon Reduction
Rate 77.8%-83.8%**



Safety & Resilience



>510 Kgf/cm²

High Compressive Strength

Good for Airports and Container Ports

**The only permeable pavement in the world
that bears heavy vehicles**



Solving issues of traditional
Permeable pavements



Yantian Port container dock, Shenzhen

Sustainability - 10Years of Witness

School Campus



Government Agency



Public Road



Only permeable pavement able to maintain high infiltration rate after 10 years



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JW生態工法 達成

JW Eco-Technology Directly Achieves



輔助達成

Supports



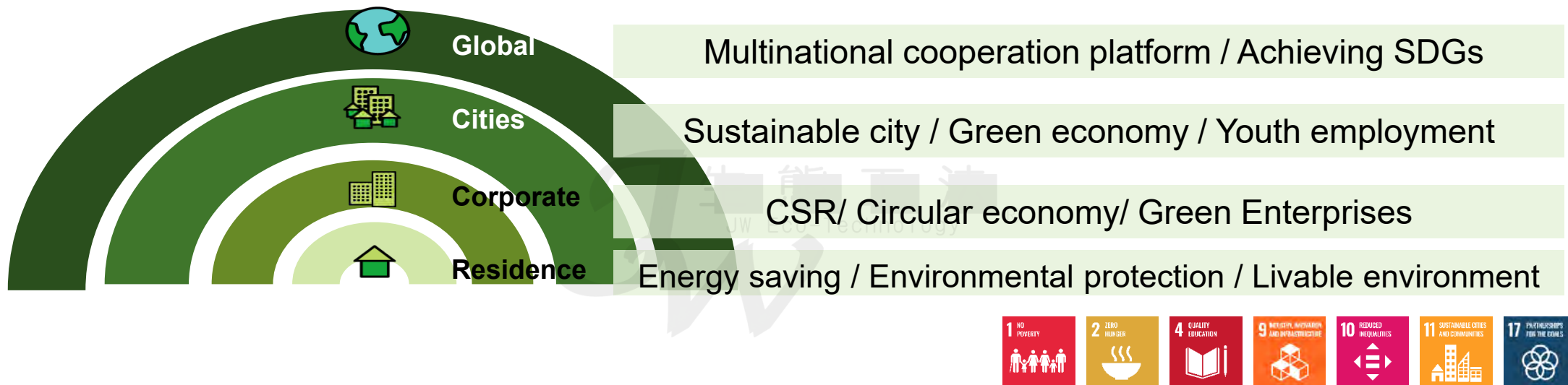
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Market Size and Business Model - I

Market Size: Highly replicable and scalable



Business Model: Diversified business cooperation

Technology licensing, brand franchising, product marketing, engineering consulting, cross-industry alliances, driving tourism

NEXT

Invitation of Co-founders for JW Eco-Technology Joint Foundation



- “Little drops make the mighty ocean”
“We know only too well that what we are doing is nothing more than a drop in the ocean. But if the drop were not there, the ocean would be missing something.” , said Mother Teresa.
When drops of water are integrated into the ocean, the effect of the drops will always exist as long as the ocean does not dry up.

Call for inviting global partners who care about the environment to co-found the JW Eco-Technology Joint Foundation.

Environmental protection around the world will shine a light brightly for everyone, for every family, for society, and for the earth, leaving a bright future for others





The August 23 Flooding (2018)

Tainan City, Taiwan



**600mm rain
within 24 hrs**

**Severe Flooding
For 7 days**

**Heavy Loss of
Lives & Property**

Source: pnn.pts.org.tw ; www.eoc.gov.taipei

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NEXT



The August 23 Flooding (2018)

Tainan City, Taiwan



Analysis of Causes

**Groundwater Overdraft
& Land Subsidence**

**Improper Planning
Infrastructure**

**Inadequate Flood
Management**

**Flood Detention Area
Over Developed**

Source: pnn.pts.org.tw

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NEXT

From Li-Ming High School, Tainan City **To**



Full of smelly &
flood guaranteed gutters

70cm lower
than surrounding ground

60 years of
flood, mosquitos, dengue fever

Gutter-free
Flood-free

22,800T
On site water recovery
Pavement = Reservoirs

**Environmental
Education Site**

Li Ming High School
“The Unflooded School”
- PTS INNNEWS



8,000m²
JW Eco Pavement
22,800T
Water retention

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JW Eco Smart Sponge City

Reserve a safe land for future generations



JW Eco hillside

JW Eco Oasis

JW Eco Riverside

JW Eco dock/airport

JW Eco Sponge Road

JW Eco Rooftop

JW Eco Farm

JW Eco Garden

JW Eco Green Wall

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