



JW ECO-TECHNOLOGY DING TAI CO., LTD.

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Written Submission for the UN 2023 Water Conference

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Sir/Madam,

Water is indeed a precious and limited global resource. Water has circulated countless times throughout the natural world and may have an infinite cycle. From this perspective, we should not be worried about water resources. However, human development patterns have disrupted the water cycle by prioritizing drainage in the construction of buildings and roads, blocking surface water e.g. rainwater from reaching the groundwater. In addition, water is used only once and then discharged or transported long distances to sewage treatment plants, resulting in inefficient use of water. Furthermore, excessive groundwater extraction causes groundwater scarcity and ground subsidence, resulting in urban micro-climate changes, which leads to a vicious cycle of subsequent flooding. Nowadays, climate change has caused long periods of no rain and extreme rainfall, further aggravating the problem of deteriorating water resources.

To achieve sustainable use of water resources, it is necessary to accelerate the efficiency of the water cycle to achieve a "water-positive" state, where the amount of water recharged to the groundwater is greater than the amount of water taken. Therefore, implementing an "on-site water recycling" system that allows water to enter the ground quickly, store, and purify it for reuse is crucial to solving this problem. By adopting such a system, we can promote sustainable use of water resources and ensure that we preserve this vital resource for future generations.

JW Eco-Technology overturns traditional construction method of urban infrastructure and thinking in the fields of civil engineering, water conservation, etc. It opens up enclosed surfaces, allowing for autonomous air circulation between the atmosphere and the soil underground, achieving on-site water recovery, air and water purification, carbon capturing, and resolving the heat island effect. This helps to address three major environmental disasters of cities, and curing urban problems.

JW Eco-Technology provides a holistic water adaptation model that creates an on-site water cycle by integrating surface and groundwater resources. This model involves collecting and storing all surface water, including rainwater and sewage, as ground water in an underground reservoir and purifying it. The groundwater in the underground reservoir can be pumped out for reuse as surface water and the used water can be reintroduced into the system, thus achieving multiple use and water circulation.



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In other words, the "on-site water circulation" allows water to quickly enter the ground, be stored, purified for reuse, and recycled indefinitely. This new water management system can revolutionize our traditional "prioritizing drainage" and "discharging sewage" approach, achieving truly sustainable development. By adopting JW Eco-Technology, we can ensure sustainable use of water resources and reduce our dependence on external water sources, ultimately contributing to the preservation of this vital resource.

Indicator cases for JW Eco-Technology are as follows.

1. the Li-Ming High School (LMHS),

For over 60 years, the campus had been frequently flooded due to being 70 cm below the road level. By changing the pavement to JW Eco-Technology, the campus became a large underground reservoir without drains, requiring no change to its other facilities. During the heavy rainfall of over 600mm in 24 hours that caused severe flooding for 7 days in Southern Taiwan in August 23rd, 2018, LMHS, though located in the most severely hit area, did not accumulate any water and held over 20,000 tons of floodwater, allowing for the reuse of water resources. This is the best example for "Using JW Eco-Technology to Convert Stormwater into Resources."

2. Zhangjiakou in China, the host city of 2022 winter Olympics, locates leeward of the Gobi Desert and paved more than 30,000m² of JW pavement, which becomes stable water sources for living and irrigation, to fully absorb rainwater underground, reduce evapotranspiration and pollution.

As long as there is human civilization, there will be roads. JW Eco-Technology can be applied to all roads and outdoor pavement, which shows the scalability and replicability of JW Eco-Technology. Whether for new roads or transformation of existing roads, JW pavement has corresponding practical cases. Any users who need ground contact are the biggest beneficiaries. The JW Eco-Technology can be applied from the smallest scale of homes to communities, cities, and countries, providing highly scalable solutions that is locally adaptive conditions and the "JW Eco-Smart Campus/Community/City" that we can build together to solve existing and future water problems.

President, DING TAI CO., LTD.
Inventor of JW Eco-Technology