

## IJGlobal ESG Technology Award – Infrastructure – Arup

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The IJGlobal ESG Technology Award for 2022 was won by Arup with the consultancy impressing the independent panel of judges with 2 digital technology innovations in the water sector.

These innovations may have major global implications for protecting public health, enabling the large-scale adoption of nature-based solutions and enhancing the resilience of communities.

Arup's wastewater-based epidemiology (WBE) has been used throughout the Covid-19 pandemic to detect SARS-CoV-2 in sewage to protect both community health and resilience of critical infrastructure.

Meanwhile its Terrain product is a digital solution that helps deliver large-scale blue and green nature-based solutions in cities rather than carbon intensive, heavily engineered grey ones to solve urban flooding challenges.

And the judges were impressed with one saying: "The Terrain software is particularly interesting given it is, thus far, quite uncommon to quantify nature-based solutions."

One judge particularly taken with Terrain says: "This is a fantastic tool from Arup for the water and wastewater industry that is undergoing adaptation challenges and – interestingly – learnt from sinking Shanghai. This tool seems to have the potential to be deployed in other urban 'adaptation' challenges ahead."

Another judge adds: "This achieves success through an innovative approach and demonstrates some impact in the relevant ESG field."

The digital WBE tools enabled Arup to trace the emergence of Covid 19 from sampling wastewater, having a major impact on the ability to manage spread of the disease and to maintain resilience of the critical water infrastructure.

As it states in the submission: "The health and societal impacts of this are significant. We have now made this technology available to others to develop similar approaches in developing markets around the world."

Arup's second example – WBE – showcases the digital technology that it developed as part of the Shanghai Urban Drainage Masterplan. Shanghai is sinking and proposed a massive \$40 billion series of interceptor tunnels.

The Arup submission states: "Our alternative solution of large-scale implementation of blue and green solutions across the entire city was developed using satellite and AI technology using a tool we called Terrain.

"This approach hugely reduced the scale and cost of the grey intervention and will create major improvements in air quality creating public spaces to play and live.

"This approach transformed a heavily engineered scheme into an integrated nature-based approach that delivers benefits across multiple categories of E, S and G. We have recently replicated this approach supporting Severn Trent in the UK to develop an innovative and value enhancing solution for Mansfield.

"We have known for some time that nature-based solutions, when compared with their concrete infrastructure equivalents, can provide a variety of additional benefits, but previously did not have the technology to show what is possible and measure the full value of the alternative."

Picture added after IJGlobal ESG Awards 2022 (left-to-right): IJGlobal editor Ila Patel; Steven Lloyd and Maya Shinozaki from Arup; IJGlobal editorial director Angus Leslie Melville.





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