

ADB REDUCED RISK AND OPTIMIZED PLANNING WITH 5X MORE OPTIONS USING GENERATIVE DESIGN

ASIA DEVELOPMENT BANK

Asia Development Bank's (ADB) goal is to invest in projects that achieve a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while achieving its efforts to eradicate extreme poverty.

PROBLEM

Rayerbazar WWTP is a new plant being planned by Dhaka WASA & proposed for ADB funding. The biggest risk factors for this project were the cost and time related to land constraints and acquisition. Dhaka is a dense city and it was imperative that the footprint of this WWTP be minimized as much as possible.

SOLUTION

ADB partnered with Transcend to pilot its generative design software to streamline project planning and design for the Rayerbazar WWTP. Transcend Design Generator (TDG) enabled ADB and Dhaka WASA to generate 10+ concept design options, compared to 2-3 options typically evaluated for a project. Compact WWTP site-specific options included features like deeper reaction tanks, rectangular vs. circular clarifiers, and a phased facility build-out.

OUTCOMES

1. Reduced risk with 5x more options

ADB and Dhaka WASA used TDG to minimize the project's risk by generating 5x more design options with lower physical footprint, translating to significant cost-savings.

2. More detail, better insights

TDG's automated engineering documents, including a 3D BIM model, informed ADB and Dhaka WASA with details for project planning and future construction bidding. This level of detail was not previously available for concept designs.

3. Faster Decisions: 8 Months to 8 Weeks

TDG produced outputs within hours significantly speeding up the decision-making process. Decisions that typically take 8-10 months can now be accomplished within 8-12 weeks using generative design software.

AT A GLANCE

CHALLENGES

- Significant land constraints and acquisition costs for the project
- Limited detail available for concept designs
- Lengthy decision-making timelines

BENEFITS

- Reduced project risk with 5x more compact design options
- Streamlined project planning with data-driven insights
- Expedited decision-making from 8-10 months to 8-12 weeks

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"With Transcend's generative design capabilities, we identified options that reduced project risk and cost by minimizing the facility's footprint. Transcend sped up our decision-making by generating actionable data, including CAPEX, OPEX, and footprint information within hours."