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# civil + structural ENGINEER

CELEBRATING THE DESIGNERS OF THE WORLD AROUND US

## ONE YEAR AFTER HARVEY

Hard lessons in Houston



**NV5: 2018 Top Hot Firm**

**Improving federal project delivery**

**Repairing 100-year-old concrete structures**

**Principles of photogrammetry and LiDAR**





## HOW THE CONSTRUCTION INDUSTRY SAVES THE WORLD

PUBLIC SUPPORT AND PRIVATE-SECTOR  
INVESTMENT IS DRIVING TURKEY'S  
INFRASTRUCTURE EXPANSION.



Turkey's new airport under construction in July 2018.

**I AM IN ISTANBUL** meeting with the director of construction from Turkish Airlines, which is one of the largest airlines in the world. They are building the largest airport in Europe, and the second largest airport in the world, expected to serve 150 million passengers annually when it is complete. This will be Istanbul's third "new" airport and will replace the current Atatürk International. His mission is to complete this airport by October 2018. In a live aerial picture of the construction, the runway is largely bare ground and the access road is a mound of soil. At that time, they had only three months before an opening ceremony led by Turkey's Prime Minister. "We shall overcome," the director said.

This project is enormous. Construction cost is US\$8 billion. The terminal building area alone has 1.4 million square meters. Total project duration is 42 months — blazing speed. When I was here two years ago, the state of the airport was barely a digging ground.

What makes this project so unique is not only the size and speed of construction, but that it is 100 percent privately financed — a giant public-private partnership (P3). The government provided land and license, and the private sector consortium designed, is building, and will operate it for 25 years, while paying a \$1 billion license fee per year to the government. The airport will be owned by the Turkish government.

It is not only a huge engineering feat, but also P3 at its best. The Turkish government's political will to modernize and build the country is bar none. It all comes down to the fact that there's large public support behind it.

Ten years ago, I was embedded in the Istanbul government to assist a \$1 billion seismic risk reduction program financed by the World Bank. My job was to work with the Istanbul government to build international technical capacity in the project management unit called IPCU. Their job was huge — 2,000 schools and hospitals needed to be seismically strengthened as soon as possible. Initially, IPCU had a team of about 20 engineers and administrators. But these guys were motivated, smart, and efficient. They worked day and night to manage the \$1 billion project. Public support and pressure was tremendous after the 1999 Istanbul earthquake, which collapsed scores of large schools. When it was complete, it was considered to be one of the most successful projects the World Bank had ever done. And it was on time and under budget.

During the project, after every lunch meeting, my Turkish colleagues and I would go to an ancient religious school, which converted to a tea shop, to smoke some water pipe. As Inman sang prayers, we contemplated how we could make Istanbul safer from the earthquake devastation. These engineers were good men.

All these great projects are possible because of public support. Without it, nowhere to go.

Turkey is currently going through an extremely tough economic and political period. The coup d'état two years ago stopped economic expansion, and conflicts with the West on political differences are deep. Its currency is dropping value exponentially. But I see a bright future in Turkey. It is one of few countries in the world that really understands West and East, and they sincerely want to be a part of a global solution. With its incredible public support for infrastructure construction and powerful private sector, Turkey will build its own way back economically.

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