A SHARED FUTURE WITH BELT AND ROAD FRIENDS

Over the past decade, China has been at the forefront of engineering and technological innovation. Under the Belt and Road Initiative, the country has joined hands with counterparts to complete the construction of numerous programs such as ports, railways, bridges and power plants. These have helped to promote connectivity and establish strong friendships with countries and regions within the BRI network. As this year marks the 10th anniversary of the BRI, it is an excellent time to reflect on the achievements that China has made in the initiative. The contribution of Chinese engineers has been instrumental in the success of the BRI. They have been involved in designing, constructing and maintaining projects that promote regional development, trade and investment. Utilizing their skills and expertise, Chinese engineers have demonstrated their commitment to creating a better future for all BRI partner countries and regions.

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In the decade of development since the inception of the Belt and Road Initiative, thousands of China-constructed projects that have improved the infrastructure and enhanced the progress of countries and regions involved in the BRI stand as testament to the dedication and resourcefulness of Chinese engineers.

By the end of 2022, China has inked more than 200 cooperation documents with 150 BRI countries and regions and 32 international organizations, cementing partnerships in projects aimed at building infrastructure and improving people's living conditions.

Xu Zhou, 40, a senior engineer at China Railway Erju 6th Engineering, has been devoted to BRI construction from Asia to Africa from the beginning. In 2012, Xu was assigned to Africa to participate in constructing the Addis Ababa-Djibouti Railway, which is the first electrified railway in East Africa. The assignment began his journey of technical exploration and innovation on the African plateau.

Construction of the railway on the Ethiopian highlands and the geological layers of volcanic rock and secondary soil formed by volcanic eruptions made it difficult for Xu and his team to find conventional filling materials that met the necessary standards within a 50-kilometer line. They brought testing instruments and walked for tens of kilometers on the route every day under the scorching sun to collect and analyze soil samples.

After walking more than 100 km along the railway line and conducting thousands of trial mixtures, the team succeeded in developing technologies to tackle the two major problems caused by volcanic ash — and helped save 20 million yuan ($2.89 million) in the project's construction costs.

"The Addis Ababa-Djibouti Railway was the first overseas project in which I participated, and it provided valuable experience for me in overseas construction procedures," Xu said.

After completing his tenure in Africa, Xu moved to Laos in 2017 to participate in the construction of the China-Laos Railway, which was opened in December 2021. In April, it launched an international passenger service. The construction was not easy due to Laos' tropical climate and distinct rainy and dry seasons. Xu said excavation of the route was next to impossible during heavy rains, and it was difficult to adopt large-scale machinery and equipment on-site — but the engineer and his team persevered.

Xu spent a month studying blueprints and working with technical personnel on-site, and together they developed a construction process that effectively solved the problems encountered during the rainy season.

Xu led the team to accomplish "mission impossible" in Laos, which included completing the first pile foundation for a bridge, developing the first bridge pier, building a steel plant in just 12 days and constructing a railway exhibition and experience center in 20 days.

Considering that more than 80 percent of the China-Laos Railway labor force was comprised of locals, Xu and his team also taught Chinese technological innovation to more than 30,000 workers. "By adhering to our work positions and fulfilling our responsibilities, we carry the heavy weight of being a 'Chinese engineer' and uphold the initial aspirations of 'a good man aspires to great things and broad prospects'," Xu said.

Tian Wei, another Chinese builder, is a senior engineer at China Construction Eighth Engineering Division Corp and since 2018 has served as chief engineer on the iconic tower CBD project in the New Administrative Capital of Egypt. Covering 65,000 square meters, the tower integrates office, hotel, business, sightseeing and other functions on 80 floors — including two that are underground.

In the beginning, Tian and his team spent three days analyzing the project, proposing 18 optimized plans based on the original design foundation. "In building super-tall structures in desert areas, structural safety is the top priority for the project team to consider," Tian said.

To accurately determine the bearing capacity of the tower's subterranean foundation, Tian led the team to design a testing device and carried out a 400-metric-ton rock plate test in Egypt for the first time.

"Through testing, the foundation design of the tower has become more robust and safe. Moreover, we have optimized the pouring scheme, further enhancing the stability and safety of the structure," Tian said, adding that eco-friendly enhancements are also part of the construction process.

Construction of the main part of the iconic tower was completed in 2021 and the rest is expected to be finished this year.

"I am particularly proud that through our efforts, more of our Egyptian counterparts have come to understand the level of Chinese construction technology," Tian said. "I have a dream of creating a milestone for overseas Chinese construction through this iconic tower project, which showcases our general contracting and engineering procedures and architectural technology."

The increasing number of graduates with science and engineering degrees in China each year indicates the "engineer dividend" has become an important force driving high-quality economic development in China, according to experts.