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Please attach a letter from the FIDIC MA/Associate or Affiliate in your country validating your submission.

Why do you think this project should receive an award? How does it demonstrate:

- innovation, quality, and professional excellence
- the principles of transparency and integrity
- sustainability and respect for the environment

Jiangsu Coastal Expressway is located at the east coast of Jiangsu and connects three cities, i.e. Lianyungang, Yancheng and Nantong. It consists of the section from Lianyungang to Yancheng and one from Yancheng to Nantong. The 318.376-km highway is a key section of Shenyang-Haikou Expressway in Jiangsu Province in the national “7918” expressway network, as well as an arterial highway in the east coast of Jiangsu. It was built by stages and sections, starting from September 2002 and completed and opened to traffic in 2010.

During design and construction, the Coastal Expressway stucked to creative practice, applied remarkable techniques, and made a series of innovative achievements, which were later applied to a number of major projects in the eastern region of China, including Linlian Expressway, Jixue Expressway, Jianghai Expressway, Xizhang Expressway and Taicang Port Evacuation Expressway. It has formulated a complete set of technical standards and quality-control regulations of how to drive concrete thin-wall pipe into soft foundation. It also proposed a practical way of dealing with soft and thick soil foundation, especially in controlling deformation. Besides, it gropes and comes to conclusions of regulations between stress and settlement deformation of PCC pile in soft foundation. In addition, it systematically put forwards reinforcement mechanism, design approach, construction technology, engineering detection, organization and management, and quality-control of PCC pile. Finally, it presented one practical calculation method of how to reinforce PCC pile in soft foundation.

The Coastal Expressway succeeded in solving technical problem of underground water’s negative effects on ultralow embankment, which has efficiently reduced construction costs on subgrade treatment, saved land resources, and provided valuable experience of promoting and constructing “reasonably low embankment” in highway.

SBS modified asphalt was used in the whole upper and middle layer, and in part of lower layer of heavy traffic sections. Middle layer of the whole way is mixed in polyester fiber. All these measures improve cracking and rutting resistance, and extend durability of bituminous pavement as well.

Field tests of SEU-2 and SEU-1 curing agent and stabilizing silt on embankment and side slope respectively raised a rational and efficient set of construction technology. Its high cost-effective performance offered technical supports on slope protection in silty embankment.

The Guanhe Large-span Bridge construction effectively solved the problem of large-area



concrete pouring of cushion cap, as well as the combination of steel and concrete panel crack in composite beam bridge and the waterproof of bridge deck, successfully adopted cable-stayed anchor plate technology, accumulated construction experience in long piles with large diameter, summarized the ultra-thick plate welding and inspection technology, promoted the usage of the fiber-asphalt-concrete bridge deck pavement technology and waterproof layer of bridge deck with epoxy-asphalt, and provided a good reference for similar bridge construction in China.

A database on the behavioral characteristics of highway service area users was established by performing large scale investigation and analysis. And by studying the characteristics of vehicles, drivers and passengers, as well as the overall statistical patterns, and innovative forecasting model on the rate of single vehicle drive-in was built, tackling the engineering issue of calculating the adaptability of service areas. In total statistics and frequency counting method, on the basis of validating the established model in the empirical method, a quantitative analysis way to determine the service area scale was presented. A guideline for the highway service area planning design and function layout design was prepared for the first time, which had filled the domestic blank in this field.

The interchange areas in this Coastal Expressway applied the sprayed grass planting technology, gave sufficient consideration to the original topography so as to make the mound natural, the water areas broad, the water surface curve soft and natural, main feature clear, and environment harmonious. It highlighted the constellation effect through the groups of trees, shrubs, and presented the local characteristics along the project. Across the high filling bridgehead sections, the steel bar net spray-seeding was applied; the general high filling bridgehead section adopted gunting spray seeding (sandy soil section needs steel bar nets), and the spray-seeding can be directly applied in the sections with good conditions. The bridge of overpass in branch roads within 200m of main line on both sides applied spray-seeding technology or planting Boston ivy, wintercreeper, ivy and other climbing plants which would play a good role in environmental protection.

Due to the existence of a large number of sandy soil sections along the expressway, to prevent the side slope from scouring, improving the subgrade slope stability and guarantee the ecological protection, the innovative design of saucer-type road shoulder ditches is applied to make the centralized drainage on the pavement. Meanwhile, the full ecological protection was applied to the side slope, and most of masonry rubble drainage and protective works were cancelled.

According to the feature of rich tourism resources along the project, the overall arrangement was made for crossing bridges on the branch sections of Yantong Expressway. A series of design were made in three nodes in order to enhance the brand effect of the expressway.

Since it was opened to traffic in 2006, the daily traffic flow on average was more than 40,000. The construction of the Coastal Expressway has further optimized the trunk highway network layout, remitted the trunk highway transportation pressure, strengthened the communication of north and south parts of Jiangsu province to accept the radiation from Shanghai, intensified the ties between southern area, middle area and northern area of Jiangsu, promoted the complementary advantages and common development. The travel time from Dafeng, well-known as a Vegetable Garden, to Shanghai, was reduced from 4.5 hours to 2.5 hours, down 44.4%. Furthermore, it was of great significance to construct "East Jiangsu at Sea" and



develop the marine economy, cultivate new economic growth points of Jiangsu Province, improve the external traffic conditions of cities along the project, improve competitiveness of urban, make a great difference in better city functions and so on, and help the project service areas achieve a sustainable economic and social development.

The whole process of project management consulting service and bidding procurement in the Coastal Expressway project adhered to the concept of FIDIC; the engineering consulting company provided professional, objective and fair services and advice based on quality, and always safeguarded the interest of the proprietor. It complied with *Integrity-risk Prevention and Control Manual* and did well in "special engineering management", insist on regular inspections, special supervision and inspection, petition investigation and punishment system, so as to ensure "safety, high quality, transparency and integrity" in the construction of Jiangsu Coastal Expressway.