

# Требования к строительному проекту

## **I. Design Requirements**

- a. Determine appropriate bridge site location for the selected canal, with due consideration of the canal's historical functions and its contemporary role in the local economy.
- b. This is an open-ended design exercise to encourage well considered, innovative and creative solutions. All design parameters including load and site conditions are to be determined by the participants. These should include the bridge's design capacity, topography of the site, its groundwater, geological, geotechnical conditions as well as any potential long-term impact that the local climate change or earthquake history would have on the bridge's structural performance.
- c. The technical design standards to be used, the design load and all other relevant site conditions, are to be specified by the participants and should be clearly presented in the design scheme with narratives. Please use tabular form or sketches to illustrate where necessary.
- d. Scale of the Bridge: the bridge length, width and span combination shall be determined by the designers to ensure it is fit for purpose and meets the design requirements for the selected canal.
- e. Requirements for bridge types and design contents are as follows:
  - i. Bridge types: Highway Bridge, Railway Bridge, Municipal Bridge, Landscape Bridge, Pedestrian Bridge, Cycling Bridge or bridge for blended use;
  - ii. Bridge structures: Suspension, Cable-stayed, Arch bridge, Beam bridge, Truss bridge or combined, mixed, new conceptual, futuristic designs etc.;
  - iii. Structural element: bridge towers, pylons, arch ribs, beams, abutments, stay cables, main cables, deck auxiliary facilities, etc.;
  - iv. Materials: steel, concrete, combination and mixed, FRP composites; new materials, etc.;
  - v. Construction schemes: advanced, innovative and applicable construction schemes.
  - vi. Design concepts: safety, applicability, durability, innovation, aesthetic features, environmental sustainability, energy conservation, economy, constructability, easy maintenance, etc. Each work shall follow at least three of the above design concepts.

## **II. Entry requirements**

- a. It is recommended that the participants prepare a design appraisal with (preferably hand) sketches in preparation for the selection of the type of bridge. The appraisal should include two distinct and viable options for the proposed bridge structure, and how loading transfers from the main functioning frame to the substructure. Due consideration should be given to the bridge's serviceability and stability aspects. Review and critically appraise the two schemes (such as sustainability, functionality, construction and whole life costing) and identify the final chosen solution. Please specify the reasons for the choice before carrying out the final design.
- b. The electronic version of the work description shall be submitted in Word format. If it's in Chinese, use Song font with 4-size characters, 28-point line spacing, no more than 20 pages and 15,000 words; For English submissions, use Times New Roman font with size 11, single line spacing, no more than 35 pages and 10,000 words;

- c. The number of design drawings (design schemes, main structural drawings, construction schemes, etc.) shall not be more than 10 pages of A3;
- d. Renderings: color images with no more than 5 pages of A3. The electronic version should be submitted in JPG format.