



IABSE Future of Design Conference London 2017

Young Designer's Programme: Design Competition Brief Refugee Shelter Design

Many engineer's dream of working on the tallest skyscrapers and longest spanning bridges. It is usually what sparks our initial interest of becoming a structural engineer in the first place. Whether it was the Golden Gate Bridge, Burj Khalifa or Taipei 101; we have all marvelled at these amazing constructions. However, we should not forget that there is an equally important role that we, as engineers, should play. We are capable of creating clever solutions that can positively impact hundreds of thousands of people, and that is exactly what we are inviting you to work on...

The number of people being displaced due to wars, military conflicts and natural disasters rises every year. Refugee shelters face a number of challenges such as transportation, ease of construction and environmental impact. Currently refugee shelters vary enormously with regards to quality and effectiveness as well as durability. Modular design can come as a great help in creating refugee shelters in situations where time, effectiveness and safety are a priority.



Figure 1 - Example of a refugee shelter

Our challenge to you is to provide **concept design** for a modular refugee shelter. Your design should meet the following criteria:

- House a family
- Be able to connect to other modules to create larger structures like field hospital, school etc.
- Does not require extensive ground preparations
- Provide comfort in a range of temperatures
- Provide a good level of safety for people using the shelter (e.g. privacy, protection against bad weather etc.)
- Be suitable in an earthquake prone region

Designers should also consider the following:

- Shelter transportation
- Buildability and length of construction process
- Sustainability of the design (financial, environmental etc.)

Note that emphasis is placed on the concept of the design rather than formal calculations. You may want to apply some nominal loads to the structure and perform some back of the envelope calculations to check that it the structure is feasible. We will not require a nonlinear analysis of any members!

The ideas and reasoning behind the design is what we are focusing on (see below for the judging criteria).

Best of luck engineers!

Programme:

8 th May 2017	Design brief issued
12 th May 2017	Team registration starts Please note that teams can register till 4th August 2017.
30 th June 2017	End of questions period. Any questions about the brief or the competition should be sent to events@iabse.org.uk . Answers will be made available to all competitors and published on the IABSE UK website on the 10 th July.
10 th August 2017	Deadline for competition submission
1 st September 2017	Shortlisted entries notified
15 th September 2017	Judging and Presentation at the IABSE FoD conference

Judging Criteria

The submissions will be judged by a jury of engineers and architects on the basis of the following criteria:

- Innovation
- Structural feasibility
- Consideration of construction and buildability
- Appearance and suitability
- Transportation
- Sustainability

It is to be noted that the judging criteria focus on the solution to the brief, rather than the mode of presentation. While the quality of the presentation may affect the judges' decision, it is not essential to produce computer rendered images of the scheme; high quality hand sketches are an adequate communication device.

Depending on the number of submissions received, the jury will decide on the number of shortlisted submission that will be presented at the conference.

Prizes will be awarded at the jury's discretion.

Submission and Registration

Individuals or teams consisting of maximum 3 members to register from 12th May 2017 by sending the email with all team members on events@iabse.org.uk. All team members to be under 35 at the day of the conference.

Submissions are to consist of a single A2 size board, submitted in pdf format by email to events@iabse.org.uk. Boards should include the team's identification number clearly located in one corner. No other identifying marks (e.g. entrant names, company/organisation names or logos) should be displayed on the boards.

Entries should be submitted before 5pm on the 10th August. Entries received later than this time will be rejected.

Entries should be accompanied by the name of a team member that will be attending the conference. Entries will not be considered for shortlisting if none of the team are available to attend.

The organising committee will arrange for the shortlisted schemes to be printed. These boards will be displayed for public viewing throughout the conference, and will be available for collection at the end of the day.