

Answer the questions:

- 1) What does a structural design engineer do?
- 2) What kinds of calculations does a structural design engineer need to make?

Read the interview with Harry, a structural design engineer. Choose the correct answer for each question:

- 1) What was Harry interested in as a child?
 - a) maths and science
 - b) making models
- 2) What is he designing now?
 - a) a crane
 - b) a skyscraper
- 3) What is he doing on the project at the moment?
 - a) checking construction
 - b) drawings and calculations
- 4) What part of his work does he like the most?
 - a) using CAD
 - b) using FEA

CAD: computer Aided Design

FEA: Finite Element analysis

- 5) What natural forces does Harry mention?
 - a) wave action
 - b) wind and seismic loads
- 6) What is one of Harry's job responsibilities?
 - a) site visits
 - b) talking to workers
- 7) When does Harry say you have to start thinking about your first job?
 - a) in your final year
 - b) before your final year

Would you like to do Harry's job? Why/why not?



I = interviewer, H = Harry

I: How did you become a structural design engineer?

H: I've always enjoyed making things. As a child, I made models of cranes and bridges. At that time, I didn't know anything about maths or science.

I: Where do you work?

H: I work for a specialist crane company in Kuala Lumpur.

I: What are you working on now?

H: I'm working on a new tower crane, for building skyscrapers. I'm generating a layout model, doing calculations, and producing detailed design drawings.

I: So you draw by hand?

H: Not much. I use a computer for CAD – computer-aided design. My most interesting work is using CAD.

I: What are your main responsibilities?

H: I have to make sure the calculations are correct. You have to know the reach and maximum load and its center of gravity, and how the loads are transferred from the tower base. Then we have to consider natural forces such as wind and seismic loads. Our work has to meet specifications, for safety reasons.

When a crane is delivered and put together, I need to visit the site. I usually talk to the workers, although I don't have to.

I: What advice would you give to anyone looking for a career in design engineering?

H: The hardest part is getting that first job. Use your college careers service and do lots of research while you're studying. You mustn't leave it until your final year. Try and get a holiday placement before your final year doing anything that might give you work experience.