

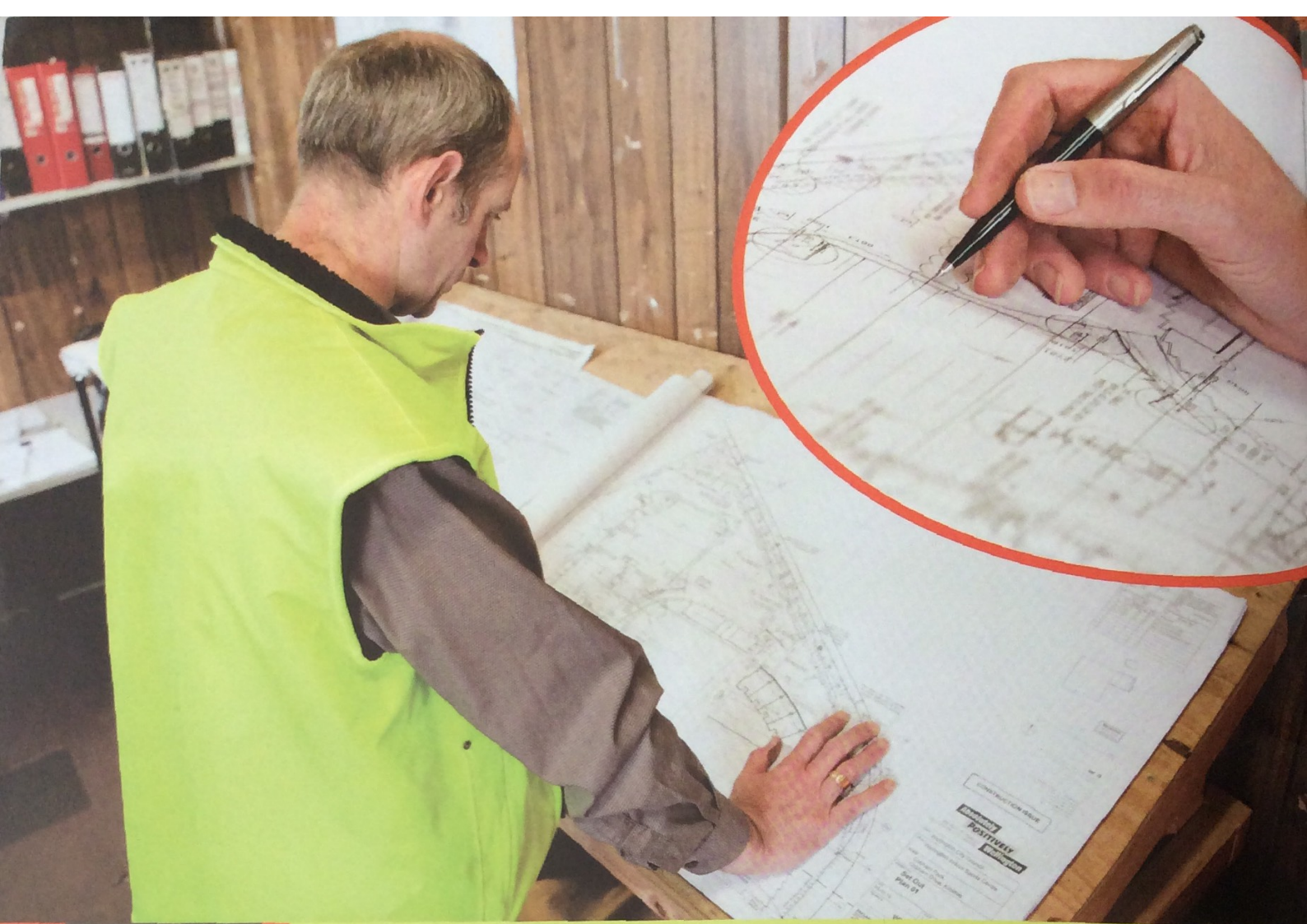
Holding It All Together

by Dave Armstrong



Meet structural engineer John Mason.


John's interest in engineering began when he was a boy. He enjoyed putting together kitset models and making things with construction sets. But when he was given a small working model of a steam engine, he got really hooked on engineering – making things that work. Later, during the school holidays, he worked in architects' and engineers' offices. This made him decide that engineering would be a good career.



A structural engineer works with architects to design a building. Architects design the shape of the building. They decide how it will be used and what the outside will look like. The structural engineer helps design the supports, or skeleton, of the building. He or she makes sure that the building is strong and sturdy and won't fall down in storms or earthquakes.

So what qualities do you need to be a structural engineer? John reckons that the most important qualities are an interest in making things and an interest in how things are put together. Structural engineers also spend a lot of time solving problems. They must pay attention to every detail.

It helps to be good at maths and science, and most engineers use computer technology such as computer-assisted drafting or



CAD. John has a big interest in computers. He has developed his own software especially for engineering tasks.

Engineering has a creative and design side too, so if you're good at art and like drawing, you might make a good structural engineer. "I like the detailed design aspect of the job," says John. His favourite constructions are the Sydney Opera House and a number of bridges around the world. "With buildings, the supporting structure is often on the inside," explains John, "so you can't always see it. But with bridges, you can usually see the supporting structure very clearly."



Part of John's job involves meeting with clients. These are the people who pay for the building, so he has to let them know what's going on! He works with architects as well, so that together they can design a building that looks good and is strong and solid.

John also works with the people who actually construct the building – builders, carpenters, plumbers, and other tradespeople. Often that involves putting on steel-capped boots, a hard hat, and a safety vest and visiting the building site. Engineers have to work together with many different people to solve problems. You need to be good at working in a team if you want to be a structural engineer.

Next time you walk past an interesting building, see if you can work out how its supporting structure is designed. Is the building a special shape? What materials is it made from? Who knows – it might be one of John Mason's jobs.

