



Yorkshire people on love, life and everything



ENGINEERING EXPLORATION: Dr Robert Richardson with a selection of robots at the School of Mechanical Engineering at Leeds University

Dr Robert Richardson is the lead academic member in an ongoing robotic exploration of mysterious 'air shafts' found inside the Great Pyramid, at Giza, Egypt. The Great Pyramid is the largest of the three pyramids in the Giza necropolis and is believed to have been built around 2,600BC by the Egyptian emperor Khufu, possibly as a tomb, although scholars

disagree over this. Dr Richardson, 34, has always had a flair for programming, problem solving and taking on seemingly insurmountable challenges, like working out ways to get robots into the heart of collapsed buildings, which is what he was doing when he was first invited to take part in the ongoing pyramid project in 2005. Later this year, he will swap his office at the School of Mechanical Engineering, University of Leeds for one of the most enigmatic buildings in the whole of history. Interview by Neil Hudson.

Most people have seen pictures of the Great Pyramid and you think you know how big it is but when you first arrive and look up at it, it's just mind-bending. It's amazing to think human beings built this. The next thing I think is how lucky I am to work there, the Queen's Chamber is not open to tourists and that's where we work. The shafts are interesting in that we do not know what they were for. There are a lot of theories about that. From our point of view, we are not trying to speculate about their use, only to collect as much data as possible to evaluate the theories of others. There are two so-called 'air shafts' in the Queen's chamber in the Great Pyramid. A robot discovered the southern shaft in the Queen's Chamber is blocked by a small door. This door has been drilled to reveal a small chamber and another blocking stone of unknown purpose. The north shaft leads to a blocking stone of similar appearance to that in the south shaft; this stone has not been drilled.

I have been to the pyramids about half a dozen times now and whenever I come back, people always ask why I haven't got a tan but it's because I've been working inside for most of the time.

The one thing I could not live without is music. I find that when things get difficult or I can't think clearly, listening to some music helps me unwind. I like all kinds of

music but I'm drawn to soundtracks by the likes of John Barry.

I've done all kinds of part-time jobs, including being a dustman, which I liked but my first proper full-time job was writing computer programmes for a company which made diesel motors and power generators. I did that for about six months.

I think I'm most proud of my daughter, Alice, who is 19 months old, just because she's changing every day. When I get home from work, I find something different every day and it's amazing.

The best thing about Leeds is it's a big city and it has that big city feel but without a lot of the problems of traffic and so on that other places like Manchester have. I lived in Manchester for about five years and I just found it too big.

To relax I like going to the gym. In my job, I often have a lot of very important things to do all at once and it can be hard to juggle them all. I find that going to the gym to exercise is a good way of cooling off and unwinding and helping me to think. In fact, I sometimes have my best ideas while I'm exercising.

The best piece of advice I can think of is to take your time with things. I'm one of those people who can be quite impatient. When I'm faced with a problem, my instinct is to just dive straight in but often that can lead to you going down the wrong path and it's better to just sit and think it through.

My philosophy on life is it's good to do things which seem difficult, but are also worthwhile. Taking on worthwhile challenges is the best way to become more able and make a difference. My

- Food:** Mexican
- Film:** The Mothman Prophecies
- Actor:** Harrison Ford
- Author:** Isaac Asimov or Simon Singh (*Fermat's Last Theorem*)
- Star sign:** Aries

work with designing robots is a prime example. There are lots of robots designed to go around the outside of buildings on tracks but designing one to go inside a building that has collapsed is difficult, because it has to go through small gaps, or over rubble which might collapse.

People always seem surprised when I tell them I'm a vegetarian but I don't know why really. It's not something I try to push on other people, it's just a choice I made and it's right for me. I've been a vegetarian for about 14 years and I have no regrets.

Dr Richardson will work on the Great Pyramid project, sponsored by France-based Dassault Systemes, with associates Shaun Whitehead, of Scoutek Ltd (mission manager) and Dr TC Ng (mission founder), under the supervision of Dr Zahi Hawass, of the Egyptian Supreme Council of Antiquities.



ANCIENT EGYPT: The Sphinx and the Great Pyramid