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# Ecolibrium

# WELL and good

Arup's Sydney HQ  
is focused on people.





The Sustainable Buildings Research Centre.

## LATIN (ENGINEERING) LOVER

Expatriate Italian Massimo Fiorentini, Affil.AIRAH, is part of the passionate staff at the University of Wollongong's Sustainable Buildings Research Centre. He is the reigning winner of AIRAH's Future Leader award.

### **Ecolibrium: How did you get to where you are today?**

**Massimo Fiorentini:** I started my engineering career early in my life; as a child I enjoyed experimenting with building simple electrical circuits, Lego robots and model cars. I officially made the decision to become an engineer when I attended the open day for future students at Politecnico di Milano, where I found some of the most fascinating displays I have seen of equipment/systems for all the engineering disciplines.

Studying engineering meant hard work, but great satisfaction. During the last year of my engineering studies I had the opportunity to join an exchange program as a visiting research student at University of Wollongong, with Prof Paul Cooper, F.AIRAH, as a supervisor. Here I had the chance to experiment with a wave energy converter scale model in a 15m wave flume, which was a great practical engineering experience that sparked my interest in the research and energy fields.

I then started my career at ABB as a product manager, but after a couple

of years I decided to follow my passion for research and continue my studies, enrolling in a PhD program at the University of Wollongong's Sustainable Building Research Centre (SBRC) as student leader for the Solar Decathlon China 2013 project.

After completing my PhD I continued working as a researcher at the SBRC on advanced control strategies for HVAC and energy systems, a role that I have enjoyed for the past three years.

### **Eco: How would you characterise your approach to work?**

**MF:** I love working as an engineer and as a researcher. It gives me the opportunity to tackle new practical problems every time I commence a new project, allowing me to explore my discipline's state-of-the-art thinking and contribute to expanding its current body of knowledge.

Engineering and research projects require a clear structure and organisation, but they have a large creative component that makes the project development process very enjoyable. I like to keep a creative and open-minded approach in the early stages of a project, while towards the end



Massimo Fiorentini, Affil.AIRAH

I prefer a more pragmatic attitude that guarantees the project's success.

### **Eco: Do you follow checklists?**

**MF:** Yes, I use a checklist at the start of each project, as it is very important to keep a project well organised, to make sure that the project is completed on time and with the best quality standard.

I still work on projects in various ways, as a project manager as well as doing practical development, depending on the project typology. I enjoy working both on the organisational aspects as well as on the development aspects, trying to keep a good balance between the two.



Illawarra Flame House.

### Eco: Are you open to new ideas, or are the old ways the best ways?

**MF:** I am not a supporter of doing things in a certain way "because we have always done it this way". Solid engineering knowledge and keeping an open mind are key to innovation in HVAC&R. Our industry has improvement margins in terms of efficiency, greenhouse gas emissions and comfort achievements, at both product and system installation levels.

I like collaborating with other professionals from both academia and industry, trying to create a bridge between the two worlds. I regularly participate in international workshops and conferences, and I am representing AIRAH on a Standards Australia committee.

### Eco: What are your favourite projects you have worked on?

**MF:** I was lucky to work on great projects during my studies and my professional career. As a student I enjoyed my Masters thesis work on an oscillating water column converter, as well as my work on the Solar Decathlon project during my PhD. They were both great, as I could work on all phases of an engineering project, including system modelling and design, experimental implementation and testing and system optimisation in terms of both design and real-time operation.

In my professional career in the HVAC&R industry I have had the pleasure to collaborate with various industry partners. I particularly enjoyed working with ARENS International on the advancement of their new natural ventilation control

algorithms and with Daikin Australia on the development of their future residential air conditioner controllers.

These projects were both great, as they have been a proof of successful collaboration between industry and academia towards the commercialisation of effective and efficient products.

### Eco: Do you have a mentor?

**MF:** I have been quite lucky so far, I found great mentors – such as our director, Prof Paul Cooper – who helped me to grow both personally and professionally. I admire many scientists, first among these, probably Nikola Tesla, for his ingenuity and perseverance, which really disrupted our world.

I like to mentor other SBRC staff and students; transferring knowledge is an important investment that ensures a successful development of a working group. I offer to teach in some courses as well, which is also a very satisfying experience.

### Eco: Are there interesting, funny or quirky facts you could share with us about your work and what you do?

**MF:** We have a table tennis table at the SBRC, regularly used for lunchtime matches, that certainly helps us control our stress levels and socialise with the new members of the centre.

It's an idea that we brought back from our Solar Decathlon competition, where we had table tennis matches in the evenings after long days on the construction site.

### Eco: What advice do you have for emerging engineers who wish to follow in your path?

**MF:** My advice for emerging engineers would be to follow their passion and try to work on what they like to do most. Engineering is a profession that allows a large number of career possibilities – with the right attitude and dedication it is possible to find a very satisfying job at each career level. The HVAC&R industry is surely very entertaining and diverse for an engineer to work in.

### Eco: What's the most important lesson you've learned throughout your working life?

**MF:** It is very important to have a solid knowledge in your field of expertise, as it allows you to critically evaluate the various work situations you encounter. Experience is significant, but the importance of having strong fundamentals is sometimes underestimated.

Knowledge and experience are acquired throughout the career. Having the right people around, that invest their time and effort mentoring you, is crucial.

### Eco: What's next for you, and what are your goals for the future?

**MF:** I like helping our industry make better, more efficient, cutting-edge products, especially in the control area. I am passionate about the possibility to really move our buildings towards net-zero energy as a standard, by better integrating and coordinating the building services with onsite generation and storage.

I am hoping to keep growing my research group in the area of controls and automation, building strong collaborations with our industry partners.

### Eco: What does AIRAH membership mean to you?

**MF:** AIRAH is the glue that holds our industry together. A large number of professional connections I made in my career in the HVAC&R industry were introduced by AIRAH members and leaders, and they allowed the development of stronger links between our research centre and the various industry leaders in Australia. ■