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# Ecolibrium

# WELL and good

Arup's Sydney HQ  
is focused on people.



## A deeper level of understanding

Stefan Jensen, F.AIRAH, is wondering how greater inclusion for refrigeration engineering can take place.



Stefan Jensen, F.AIRAH

In several HVAC&R organisations across the world, the debate is presently ongoing as to how a higher level of inclusion for the refrigeration engineering discipline may be achieved. It appears that the core issue here is that the demarcation lines between air conditioning and refrigeration are becoming increasingly blurred.

The technology transformation that the global HFC phase-down and the Paris Treaty will trigger, will not be manageable in a timely fashion by the air conditioning industry unless it upskills itself within the refrigeration engineering discipline.

Equally, the refrigeration industry will find it very difficult to take advantage of the huge business opportunities that this technology transformation will trigger within air conditioning services, unless it starts to understand more about how the air conditioning sector works. The particular reference here is to the segment of the air conditioning industry that services the multi-residential building sector and the industrial warehouse construction activity.

### NOT A (TECHNICAL) PROBLEM

A five-time improvement in air conditioning efficiency that the Global Cooling Prize seeks to reward (see p.14) is not a significant technical problem. It is an investment and regulatory issue.

It is very unlikely that a typical coefficient of performance improvement from 2.5 to 12.5 in air-cooled split air conditioning units will ever be achievable. However, by applying known refrigeration engineering principles within air conditioning as a discipline, there is little doubt these improvement levels are achievable. Continuing to do what we do now will never get us there.

Continuation of these discussions treating refrigeration as a specialised and separate discipline within the HVAC&R sector as a whole will merely ensure it stays that way.

### SETTING COMMON GOALS

Convincing air conditioning practitioners that the way ahead for them leads through a deeper understanding of refrigeration engineering has a better chance of setting common goals and getting everybody moving forward at a comparable pace.

Convincing refrigeration practitioners that they do have business opportunities in air conditioning, provided air conditioning practitioners can accept that refrigeration is not always something that arrives on a truck, may actually start to break down the silos that have caused the “R-inclusion” debate in the first place.

In this context, it may be helpful to ask this question: “What is the common denominator in almost all air conditioning systems worldwide?” The answer is “the vapour compression refrigeration system”. ■

*Disclaimer: The opinions of Stefan Jensen, F.AIRAH, are his alone, and not necessarily shared by AIRAH.*

### Would you like to know more?

Stefan Jensen, F.AIRAH, will be speaking at Refrigeration 2019 taking place in Melbourne later this month. Go to [www.airah.org.au/conferences](http://www.airah.org.au/conferences)

## Up close



Based in Sydney, Gordon Lacey, Affil.AIRAH, is the general manager of DST Dryer. Lacey is speaking at Refrigeration 2019 later this month.

### Responsibilities

I am responsible for everything that happens!

### Specialty

Desiccant system design: I have presented over 10 papers on this subject.

### Passions

Energy efficiency. Our systems on supermarket systems using waste heat are unparalleled.

### Challenges

I am challenged by lack of awareness for designers of Seibu Giken, the world’s biggest desiccant rotor supplier, and their design practices applied to refrigeration and HVAC.

### Professional development

System training by factory experts, and design interaction. I am a member of AIRAH, and directly involved with technicians in all system faults.

### What are you discussing at Refrigeration 2019?

I will be giving an overview of the recent developments in desiccant technology and how these are now allowing for versatility to cover a range of cold-chain design applications. I will detail how a new technique – using waste heat from site condensers to regenerate desiccant cooling – can improve cold-chain environments and save energy.

The presentation will summarise desiccant designs across a variety of cold chain applications – including cold stores, loading docks, plate freezers, spiral freezers, supermarkets and ice rinks – highlighting their potential benefits. I will also provide an introduction to relevant psychrometrics. ■