

AIRAH
HVAC INDUSTRY PROBLEMS SEMINAR
SYDNEY, 8 NOV 2011

SPECIFICATIONS -
MISUNDERSTANDING BY OMISSIONS

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THE PROBLEM

Alleged HVAC system performance failures

- Too hot, too cold, draughty, lack of comfort
- Too noisy
- BMS not working

Following recent experiences as an “expert witness” and with involvement for “rectification”, the question is, allegations of failure

- By who?
- On what basis?

What was the contractual performance promise, setting aside some of usual suspects – i.e

Omissions or errors in design, installation, commissioning, maintenance or inappropriate operations

Some performance failure allegations maybe due to misunderstandings of the contractual promise between the occupant or user and the original design team.

What about that specification – how can the limitations be communicated to the occupant or user?

EXAMPLES

Air conditioning comfort

Usual spec – interior 21/24 deg.C 40-60% RH

ambient 7 deg.C winter, 32 deg.CDB/23deg. CWB summer



EXAMPLES

Problem – UNDER WHAT CONDITIONS AND ASSUMPTIONS;

- R, U, SHGC at facade
- 12 hour operation? Or what – not 30 minutes on a hot afternoon
- Temp. Measured at controlling sensor, not someone's desk, chair, bed
- Blinds/shutters drawn – radiation control. Pity about the view!
- Doors and windows closed – no afternoon breezes
- Occupancy and usage - 10 bods, 1 copier?
- Zones – day? night ? What is a zone?

Solution

Fully define usage and operational criteria for client and for user.

Show that temperatures selected are based on recognised authority such as AIRAH DA9, ASHRAE 55, ISO 7730 or similar so that it just does not look like a brainstorm out of your office.

EXAMPLES

Interior Noise

Possible specification – AS2107 (2000) Recommended Design Sound Levels; or “40dBA” or similar



EXAMPLES

Problem

User does not understand 30/40/50 dBA. They are sometimes promised “inaudible”.

Solution

Explanation (not in the specification) that general office noise is about 45-50 dBA, suburban traffic noise about 65-70 dBA –
To where – to whom?

EXAMPLES

BMS not functioning

Problem

BMS operation and installation not specified adequately

A brief control description and points schedule is generally **not** adequate, and not understood.

Signal feedback from HVAC components is essential to the BMS. If the screen indicates damper/valve closed, is there actual feed back from the damper/valve actuator or in duct temperature – that BMS commands actually function or not.

Solution

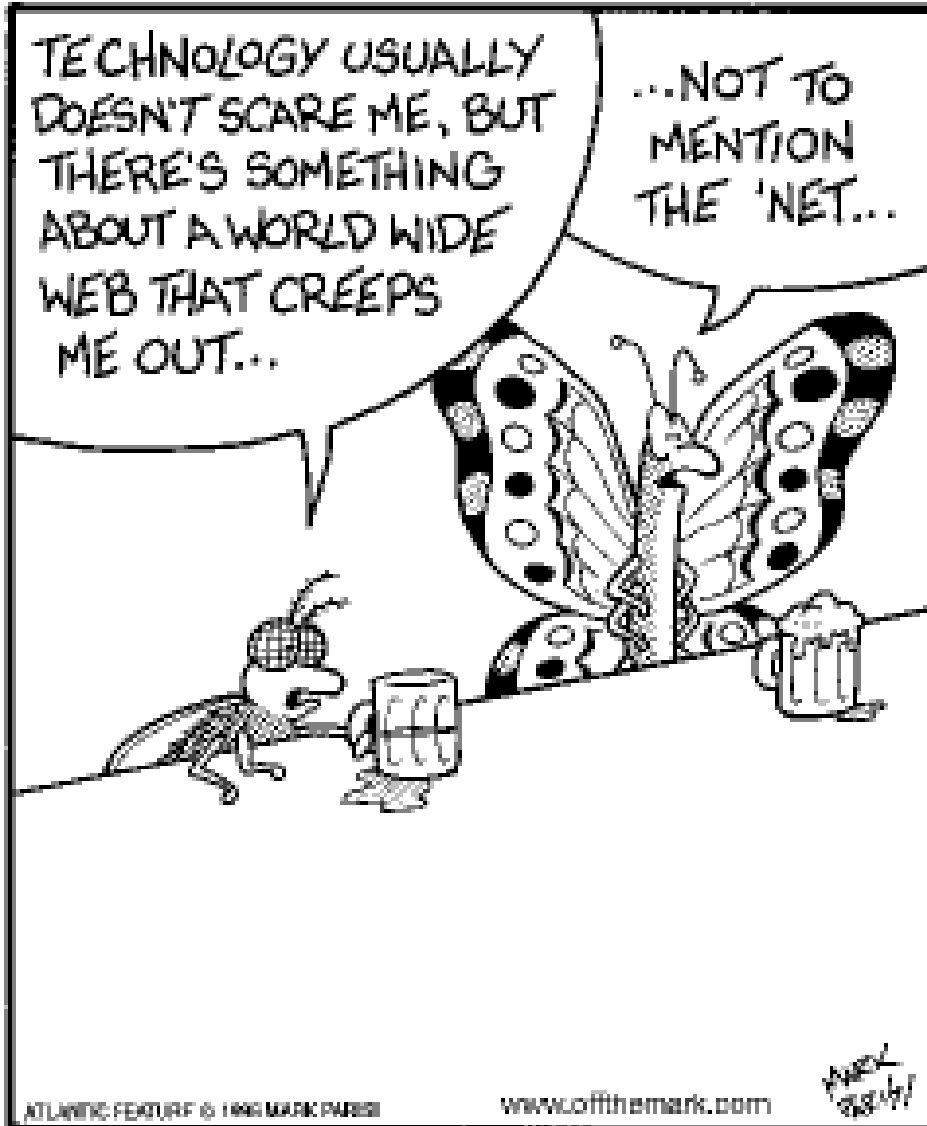
Full functional description required;

- What controls
- How do they operate
- What are the outcomes
- Feed back status from control elements to the screen

off the mark

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