

AIRAH seminar
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MISTAKES

Expectations or Lies or Incompetence
Residential Apartments – Air Conditioning

Presented by:
ALAN OBRART



THE ISSUE

Disappointments, complaints by the occupants as to the thermal performance of their apartment air conditioning;

- Not cooling enough
- Not warm enough
- Drafty
- Noisy

THE LAYERS OF THE PROBLEM

1. UNREALISTIC EXPECTATIONS OF THE OCCUPANT

- Cool like supermarkets – 18 deg C on summer afternoon
- Heat so they can run around barefoot and in tee shirts in winter
- Not audible?
- Shades and blinds not drawn so they can see the view
- Air conditioning switched on at 5pm – hot afternoon with windows still open

2. PROMISES FROM THE REAL ESTATE / PROPERTY INDUSTRY

Apartment is fully air conditioned !!!

no explanations

no clarifications

3. SPECIFICATION FROM AIR CONDITIONING DESIGNER

Consultant or contractor

- The usual AIRAH (DA9) interior and exterior conditions – summer 32 deg.C DB, 23 deg.C WB, winter 7 deg.C
- Interior 21-24 deg.C
- Noise to AS2107

Assumptions

- all blinds and shades on sunlit glass drawn-continuous?
- HVAC operation for “reasonable” time
- Temperatures measured at the “zone” thermostat
- Day/night – living/bedrooms

What thermal zones are included in the thermal calculations/industry estimates – un-shaded western summer at 180-250 watts/sqm or night time 50-70 watts/sqm floor area ?

What was allowed for ducted system return air thermal load pick up from non air conditioned zones?

THE FATAL MISTAKE

- No communication between the HVAC designer and the real estate sales man
- Full apartment air conditioning, day, night, living, bedrooms – the lot under all conditions
- Living room only – no allowance for 30-50% of thermal load pick up from non air conditioned zones
- No allowance for lack of shades and open windows and 10 minutes of run time to cool the apartment

