



BEES has already highlighted:



- ▶ **Complexity of the Supply Chain in the Non-Residential Buildings sector**
- ▶ **The necessity of differentiating between:**
  - Building Consumers and Occupants
  - Different types of Building Owners
- ▶ **Different Building Owners have different Goals and Imperatives:**
  - Building Ownership as Self-Employment
  - Building Ownership as Investment
- ▶ **Building Owners’ Goals and Imperatives have considerable influence on take-up of Resource Optimisation Opportunities**

Emerging data is now:



▶ Extending our understanding of Ownership

▶ The different conditions in which Building Owners and their Tenants operate

▶ Providing new Insights into Determinants of Resource Optimisation

▶ Highlighting new Aspects of the Sector:

- Building Owners – buildings acting as operational infrastructure
- Articulation between:
  - Building Management
  - Building Stock
  - Ownership
  - Building Use



Prompted by:



▶ Recognition of slow take-up of Technical Solutions

▶ Recognition of the Reality of Decision-Making and the Dynamics of Change

- Occupant Behaviour matters
- Changing Occupant Behaviour requires Leadership
- Design and Operations matter
- Changing Design and Operations depends on the Imperatives of Developers, Owners, and Businesses

▶ Getting change requires:

- More sophisticated understanding of Stock, Ownership, Management, and Use
- Matching messages to the different Imperatives ruling different Market Segments



## So today:



- ▶ **Report on the 791 Premises surveyed through BEES to date – a few more to come**
- ▶ **Describe the patterns of use emerging from that data**
- ▶ **Highlight some patterns around building size, ownership, and management**
- ▶ **Comment on the implications for resource optimisation initiatives**



## 791 Premises:



- ▶ **Around 468 operate primarily as offices in buildings typified by QV as CO or CM**
- ▶ **The remainder are primarily:**
  - Retail – 221
  - Cafes & Restaurants – 63
- ▶ **Premises tend to employ ‘white collars’:**
  - Managerial – 92.8%
  - Professional – 62.7%
  - Clerical and Administrative Workers – 57.4%
  - Sales – 41.6%
- ▶ **41% were multi-site businesses**



Buildings Occupied by Premises:



- ▶ 72.4% no double glazing
- ▶ 64.3% centralised air conditioned buildings
- ▶ 45% open and close windows
- ▶ 46.1% centralised central heating system

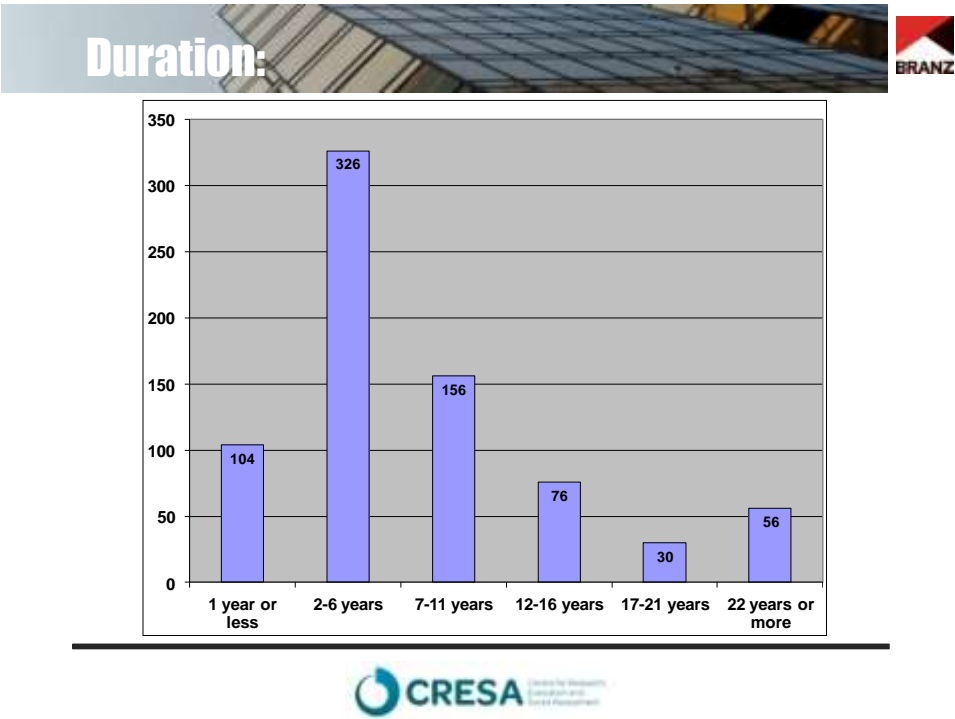


Premise-Building Fit:




Building Storeys	Whole Building Occupation	Partial Occupation	Total
1 Floor	14	18	32
2 Floors	8	60	68
3 Floors	6	15	21
4 Floors	2	14	16
5-9 Floors	2	62	64
10+ Floors	0	97	97






Energy Sources:



Energy Type	Premises	%
Reticulated Electricity	786	99
Natural Gas	104	13
Diesel or Fuel Oil	22	2.8
Wood, Waste, or Biomass	5	0.6
Self-Generated Electricity	10	1.3
Coal	2	0.3
Geothermal	1	0.1



Paying for Energy:



Energy Payment for all Sources	Premises	%
All Sources Paid to Suppliers	558	71
All Sources Itemised in Lease or Rent	94	12
All Sources Non-Itemised	56	7.1
Mixed Payment	22	2.8
Unknown or Not Specified	61	7.7
Total	791	100

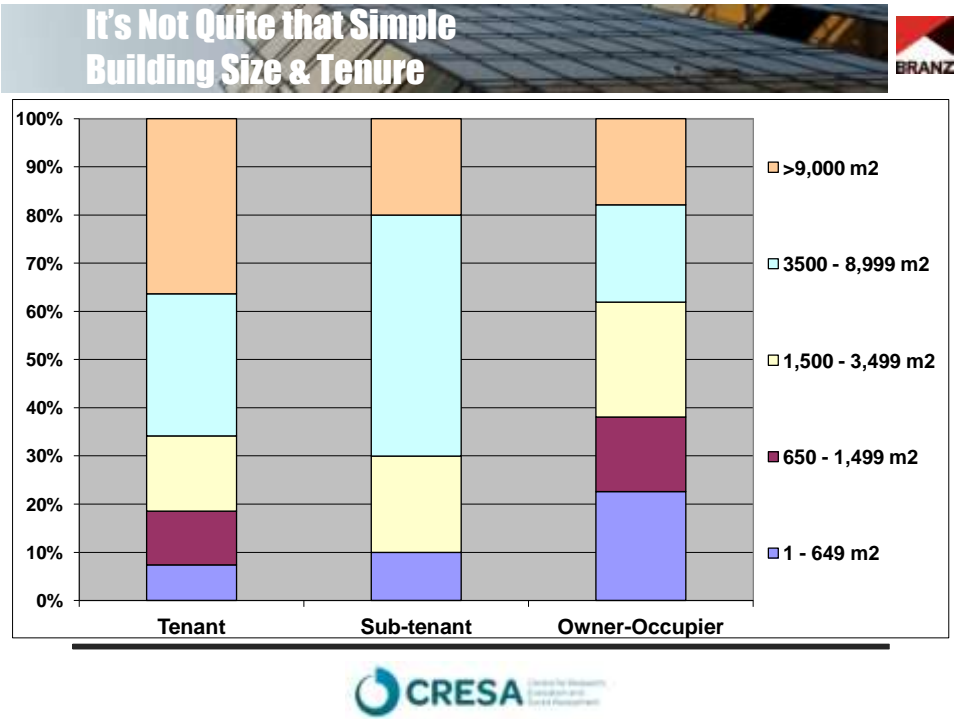
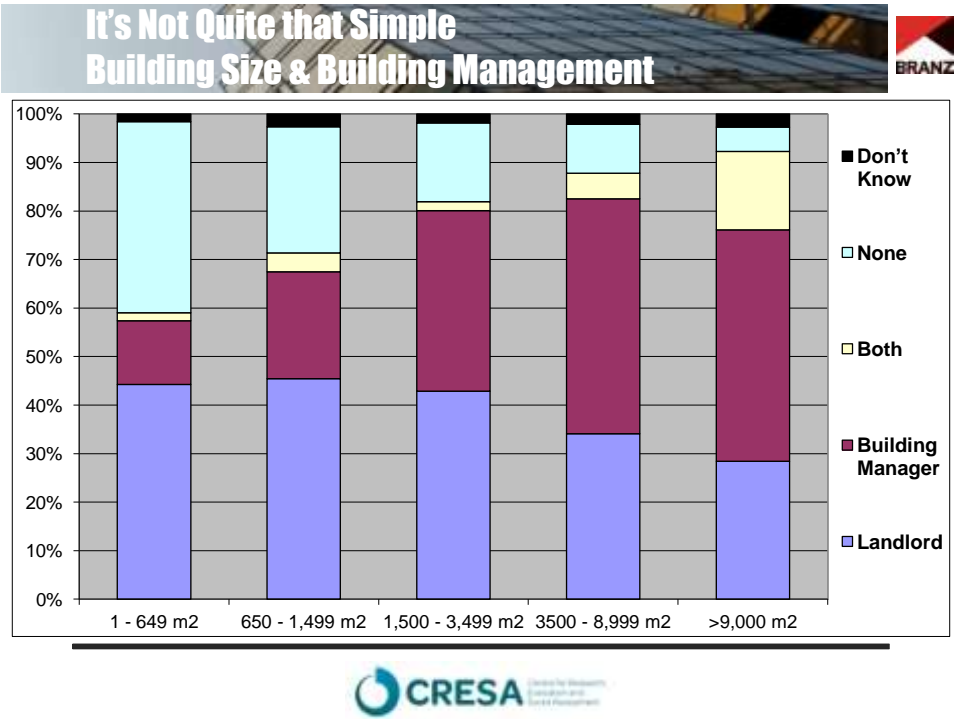


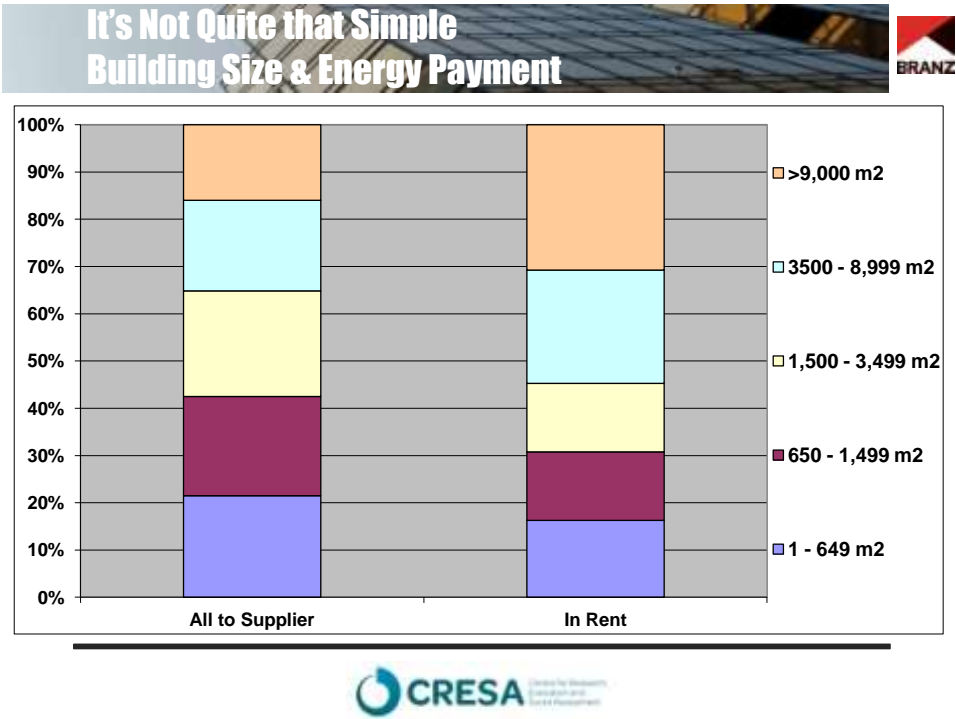
Equipment and Appliances:



Equipment/Appliance	Mean	Median
Computers	21.9	4.5
Printers	3.3	2
Computer Server	1.6	1
Refrigerators/Freezers	2.3	1
Microwaves	1.6	1
Photocopier	1.6	1
Projector	0.6	1
Stand Alone Fax Machine	0.7	1
Electric Whiteboard	0.5	0
Dishwasher	0.8	0
Wash Cooler	0.9	0
Cook-top/Oven	0.7	0









- When Trying to Optimise Energy Efficiency

– Targeting is Different:


- ▶ Energy Price Signalling can be More Direct for Premises in Smaller Buildings
  - ▶ Problems of Principal-Agency and Moral Hazard are greater in Large Buildings
  - ▶ Larger Buildings more likely to be Managed by Building Managers and Smaller Buildings by Owner Occupiers
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Design & Management are Different:



- ▶ **Smaller Buildings:**
  - Owner Occupiers
  - Long Duration of Occupancy
  - Low Refit
  - Low Potential for Effectively Managing Complex Systems
  
- ▶ **Larger Buildings:**
  - Opportunities for Efficiency Improvement through Fit-Out
  - Building Management Pathway for Efficiency



Policy, Management & Design:



- ▶ **Must Recognise:**
  - Different Owner/Manager Imperatives
    - Some owners are more like householders
  - Complexity of use
    - Lots of tenants vs few
    - Change of use
  - Different intervention opportunities
    - Design and build
    - Consumption
    - Lease change for:
      - Retrofit
      - Refit

