



**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



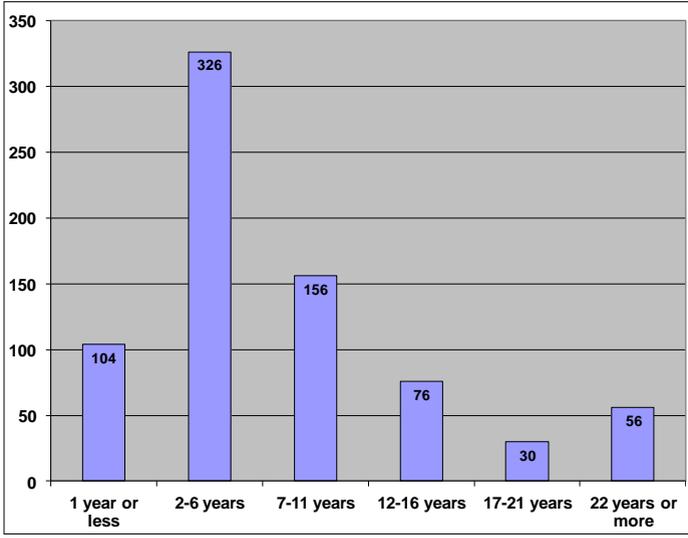
## Premise-Building Fit:



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



## Duration:



## 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



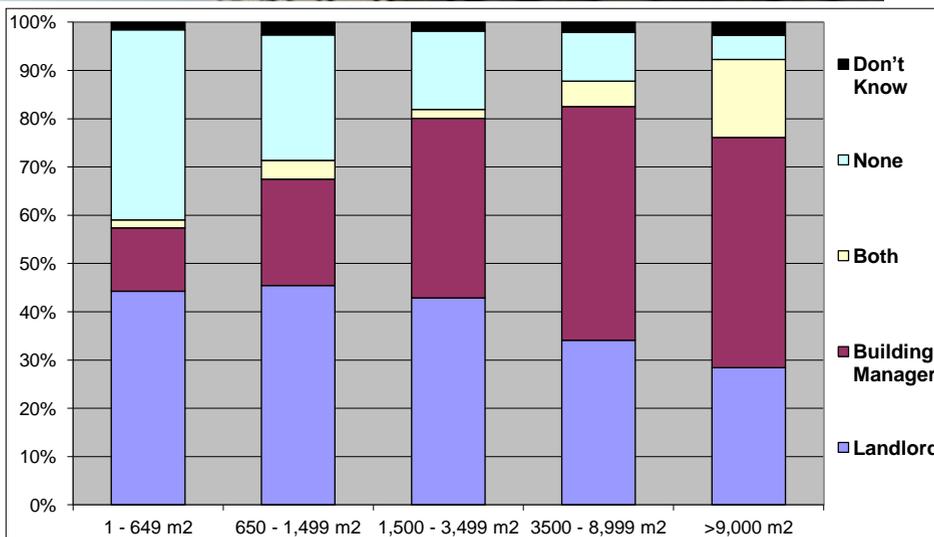
## Equipment and Appliances:



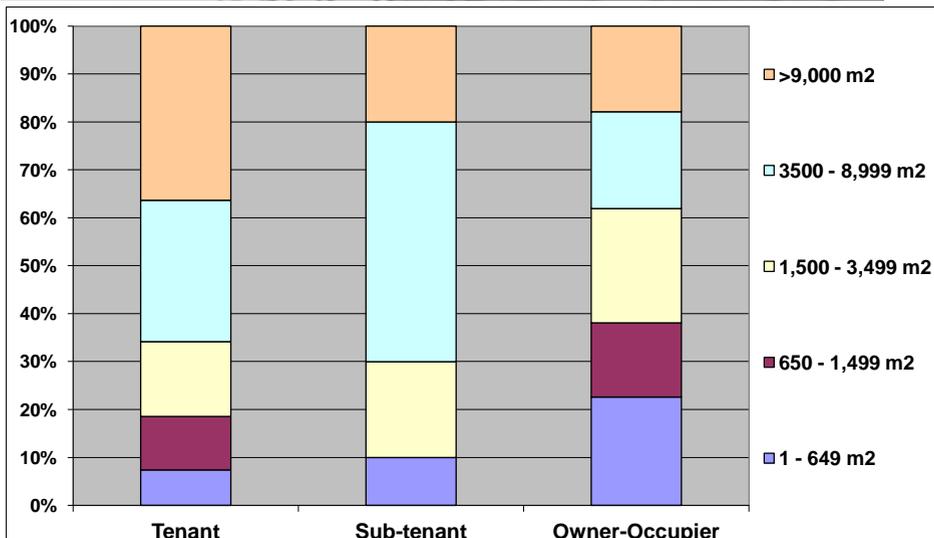
Equipment/Appliance	Mean	Median
Computers	21.9	4.5
Printers	3.3	2
Computer Server	1.6	1
Refrigerators/Freezers	2.3	1
Microwaves	1.6	1
Photocopier	1.6	1
Projector	0.6	1
Stand Alone Fax Machine	0.7	1
Electric Whiteboard	0.5	0
Dishwasher	0.8	0
Wash Cooler	0.9	0
Cook-top/Oven	0.7	0



### It's Not Quite that Simple Building Size & Building Management



### It's Not Quite that Simple Building Size & Tenure



**It's Not Quite that Simple  
Building Size & Energy Payment**




**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



## 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

