Retrofitting Victoria’s B, C & D Grade Buildings

Russell Evans

June 19, 2012

Agenda

1. Introduction
2. Understanding our building stock
3. Commercial office building retrofitting
4. Key Findings
Introduction

Brief:

- To develop a greater understanding of:
  - the size and impact of existing B, C and D grade commercial building stock in Victoria
  - drivers and barriers to improve environmental performance
  - ESD retrofitting initiatives in this sector

Key Market locations:

- City of Melbourne municipality
- Metropolitan Melbourne
- Regional Victoria

Parameters:

- Size and number of storeys
- Construction type
- PCA Grade
- Age
- Ownership
- Location
- Tenant Structure
- Typical energy/water consumption and GHG emissions
Understanding our building stock

**Number of Buildings**

- Regional: 17%
- City of Melbourne: 18%
- Metropolitan (not incl CoM): 65%

**Building Area (GFA)**

- Regional: 8%
- City of Melbourne: 46%
- Metropolitan (not incl CoM): 45%

Source: Davis Langdon Research, Valuer General Victoria 2010

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**Understanding our building stock**

**GHG Emissions**

- Metropolitan: 1,094 Million kgCO2
- City of Melbourne: 1,127 Million kgCO2
- Other Regional: 96
- Regional Centres: 126

Greater Potential for Emissions Savings

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Understanding our building stock
City of Melbourne Municipality

[Map image]

Source: City of Melbourne CLUE 2008

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Understanding our building stock
City of Melbourne – Tenant Structure by PCA Grade and NLA

[Bar chart image]

Source: Davis Langdon Research, City of Melbourne CLUE 2008
Understanding our building stock

City of Melbourne – Number of tenants

No. of buildings

0 50 100 150 200

Premium
A Grade
B Grade
C Grade
D Grade

Number of Tenants

Sole 2 to 4 5 to 10 11 to 20 Greater than 20

Source: Davis Langdon Research, City of Melbourne CLUE 2008

Understanding our building stock

City of Melbourne – PCA Grade

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Understanding our building stock

City of Melbourne

[Bar chart showing the number of buildings by grade and non-residential floor area (NLA) over different construction years.]

Source: Davis Langdon Research, City of Melbourne CLUE 2008

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Understanding our building stock

Metropolitan Melbourne

[Road map of metropolitan Melbourne with various regions highlighted.]

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Understanding our building stock

Metropolitan Melbourne

<table>
<thead>
<tr>
<th>GFA (m²)</th>
<th>No. of Buildings (RHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North and West</td>
<td>0</td>
</tr>
<tr>
<td>South East</td>
<td>200,000</td>
</tr>
<tr>
<td>City Fringe</td>
<td>500,000</td>
</tr>
<tr>
<td>Outer East</td>
<td>800,000</td>
</tr>
<tr>
<td>Inner East</td>
<td>1,000,000</td>
</tr>
</tbody>
</table>

Source: Davis Langdon Research, City of Melbourne CLUE 2008

Retrofitting Victoria’s B, C and D Grade Buildings

Understanding our building stock

Metropolitan Melbourne

<table>
<thead>
<tr>
<th>GFA (m²)</th>
<th>B Grade</th>
<th>C Grade</th>
<th>D Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dandenong</td>
<td>10,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Footscray</td>
<td>5,000</td>
<td>3,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Frankston</td>
<td>3,000</td>
<td>2,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Source: MAV, DPCD, Davis Langdon Research

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Understanding our building stock

Metropolitan Melbourne

- North and West: 113
- South East: 543
- City Fringe: 217
- Outer East: 260
- Inner East: 363

- Greater Potential for Emissions Savings

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Source: Davis Langdon Research, Valuer General Victoria 2010
Understanding our building stock

Regional Victoria

![Graph showing the number of buildings and GFA in different regions of Victoria.](image)

Source: Davis Langdon Research, Valuer General Victoria 2010

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**Understanding our building stock**

**Regional Victoria**

- **Greater Geelong**: 41
- **Greater Bendigo**: 24
- **Ballarat**: 23
- **Greater Shepparton**: 17
- **Latrobe**: 21

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**Regional Victoria – Mean age of building stock**

- **Latrobe**: 34 years
- **Greater Shepparton**: 35 years
- **Greater Geelong**: 54 years
- **Greater Bendigo**: 61 years
- **Ballarat**: 64 years

Source: Davis Langdon Research, Valuer General Victoria 2010
Understanding our building stock

Regional Victoria

Source: Davis Langdon Research, Valuer General Victoria 2010

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Commercial Building Retrofitting

- Drivers
- Barriers
- Retrofitting Decision Making Process
- Retrofitting Cycles
- Retrofitting Market Regulations and Incentives
- ESD Planning and Upgrades

Drivers

- Tenant demand
- Government purchase policies
- Commercial building disclosure
- Financial gains
- Rising cost of utilities

- Impact of carbon tax
- Industry leadership
- Healthy workplaces
- Corporate Social Responsibility
Commercial Building Retrofitting

Drivers - Commercial Building Disclosure

Greater than 2000m² = 690
Less than 2000m² = 24,014

Source: Davis Langdon Research, Valuer General Victoria 2010

Commercial Building Retrofitting

Drivers - Green Building Funding

Source: AusIndustry

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Commercial Building Retrofitting

Barriers
- Financial risks
- Disruption to tenants
- Lack of tenant demand
- Industry risks
- Climatic conditions
- Heritage overlays

Commercial Building Retrofitting

Retrofit Decision Making Process
- Ownership Type
- Tenant Type/Structure
- Property Attributes
- Economic capacity for investment
- Rising cost of utilities
Retrofit Decision Making Process – Ownership Type

Source: Wilkinson 2009

Retrofit Decision Making Process – Tenant Type/Structure

Source: Wilkinson et al 2009
Commercial Building Retrofitting

Retrofitting Market Finance Mechanisms, Regulations & Incentives

ESD Planning Phase

- Baseline Data
- Implement ESD Initiatives
- Monitoring & Validation
- Education Planning and Budget
- ESD Initiatives
- Benchmarks
Key Findings

- Buildings constructed between 1960 and 1999 would yield the largest opportunity for industry to embed environmental features into existing buildings.
- B, C and D grades represent 80% of the City of Melbourne office market.
- Due to lack of data the exact ratio of lower grade building stock in metropolitan and regional areas cannot be determined.
- Although D grade buildings represent 20% of the office buildings in the City of Melbourne, they account for only 6% of the total office Net Lettable Area (NLA).
- Metropolitan Melbourne will emit approximately (1,094,000 tonnes (45%)) same GHG emissions as the City of Melbourne (1,127,000 tonnes (46%).
- Commercial Building Disclosure thresholds currently capture 690 existing buildings across Victoria. If the threshold for disclosure was lowered to 500m² NLA, it would capture an additional 2,107 buildings across the state.
- Key barriers include financial risks, disruption to tenants, lack of tenant demand, capital constraints and industry risks.

Key Findings

- Key drivers for retrofits include the establishment of interactive education tools for tenants and building managers, and easier access to finance for building retrofits.
- A heritage buildings retrofit strategy would have a significant impact in regional centres.
Introduction

Data Source
- City of Melbourne Census of Land Use and Employment (2008)
- Valuer General Victoria
- 1200 Buildings Segmentation Study
- PCA Office Quality Grade Matrix
- Australian Bureau of Statistics
- Warren Centre
- Municipal Association of Victoria (MAV)
- Department of Planning and Community Development (DPCD)
- Davis Langdon Research

Thank You

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