

Low Energy High Rise

The optimisation of building sustainability using the Low Energy High Rise methodology

Alex McKenna

The Warren Centre for Advanced Engineering Limited



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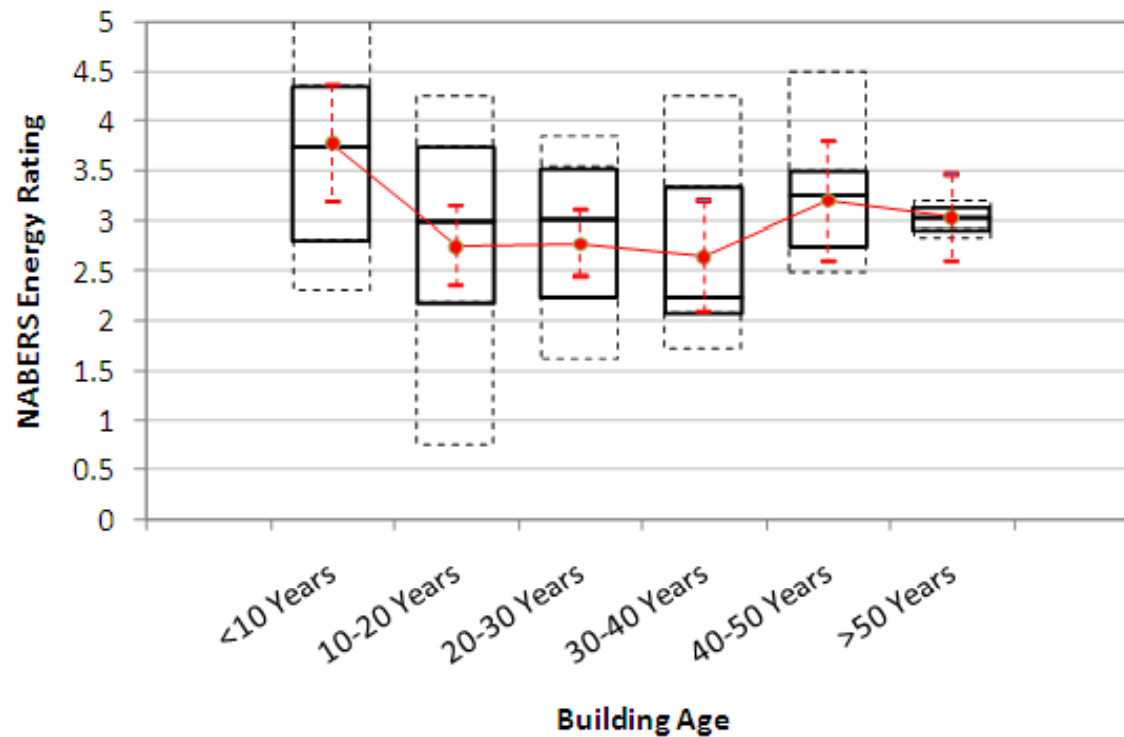
The LEHR Process – an overview

- Major survey of building attributes and management characteristics
- Index energy/water efficiency via NABERS
- Use statistics to relate NABERS to building/management attributes



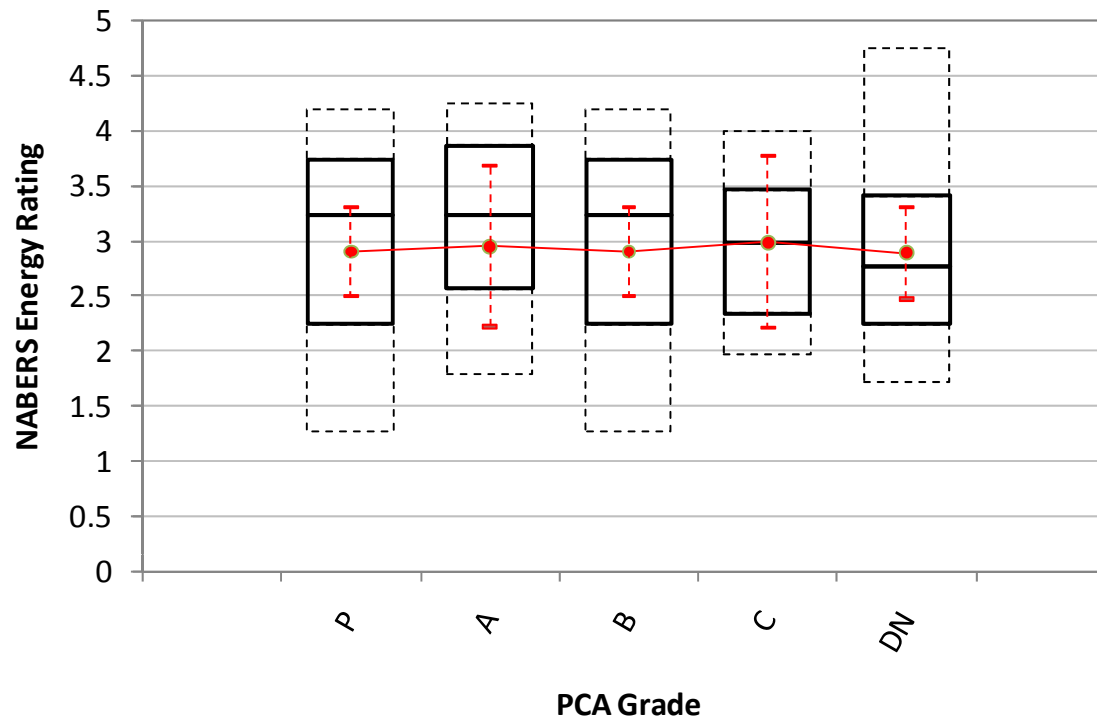
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- Newer buildings are more efficient



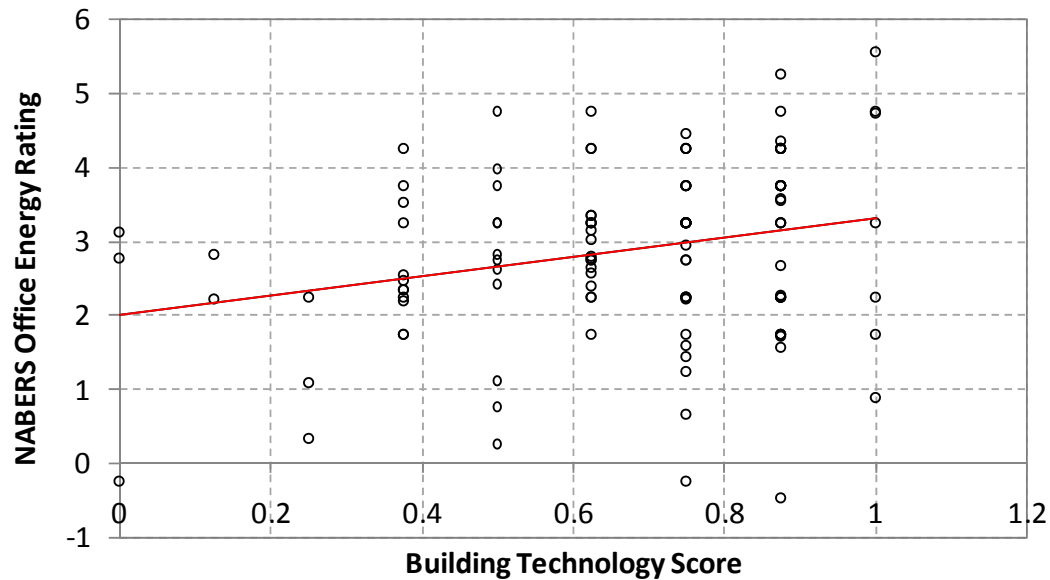
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- But no significant difference found between PCA grades



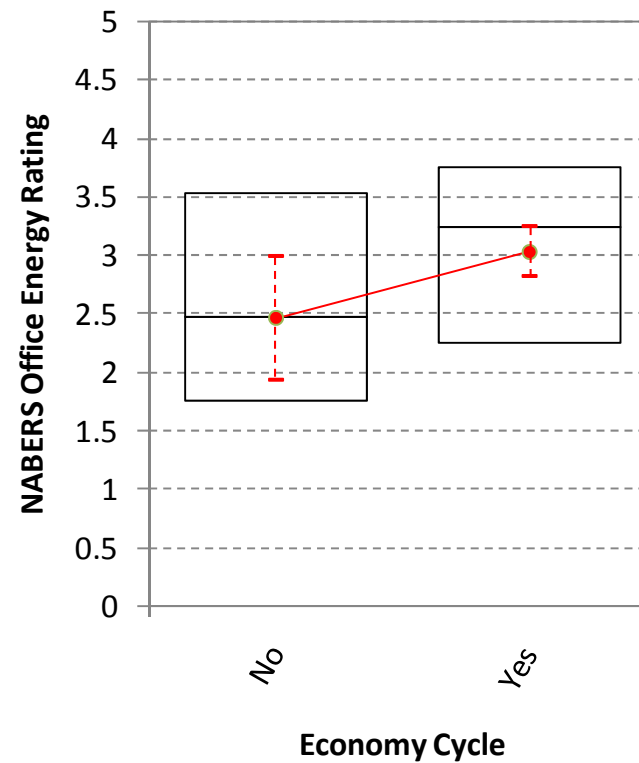
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- Better technology leads to better performance



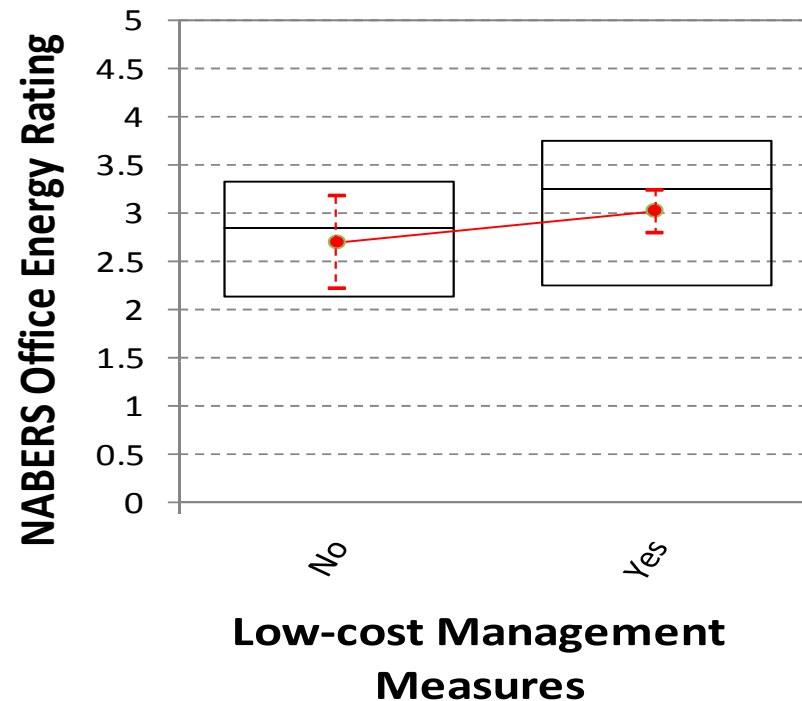
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- Buildings with economy cycles perform better



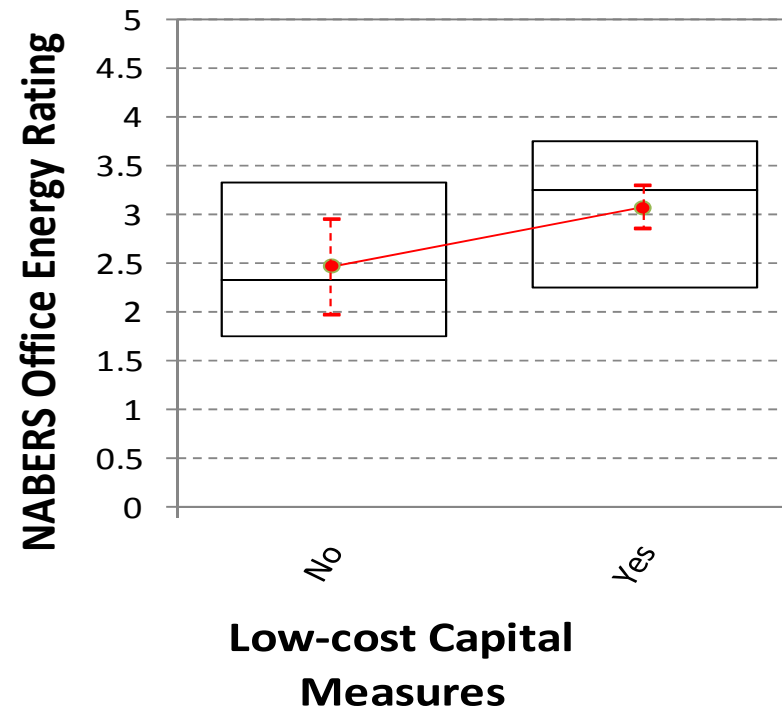
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- Buildings which had implemented low cost **management** measures performed better



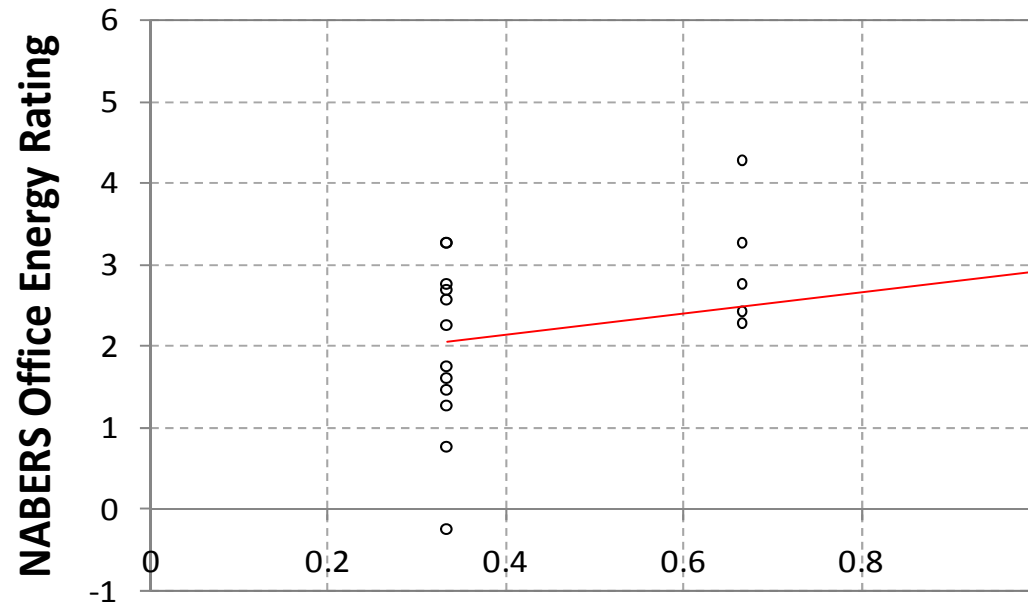
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- Buildings which had implemented low cost **capital** measures performed better



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- Buildings where asset, portfolio, property, engineering and services managers all reported that they could influence energy efficiency performed better

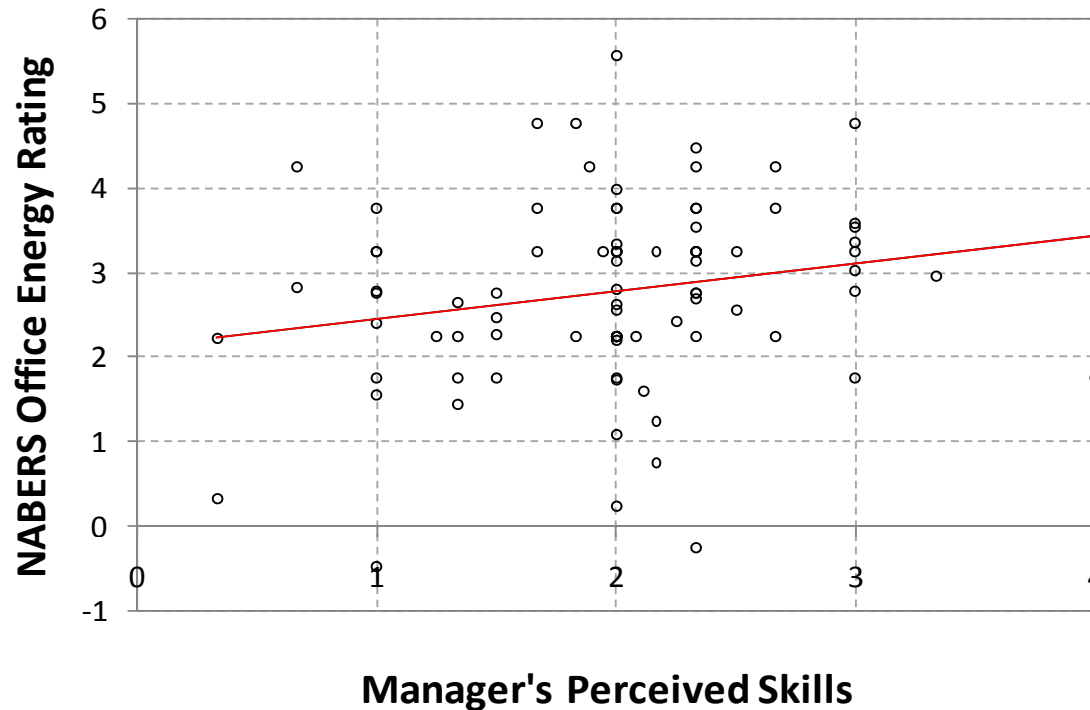


Multiple Managers



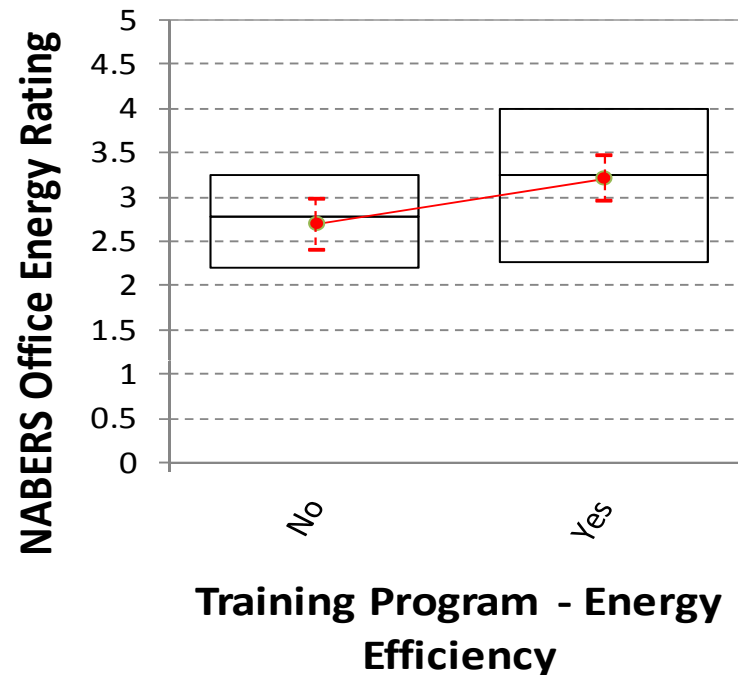
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- Managers who considered that they had a greater level of energy efficiency skills were generally found to operate buildings more efficiently



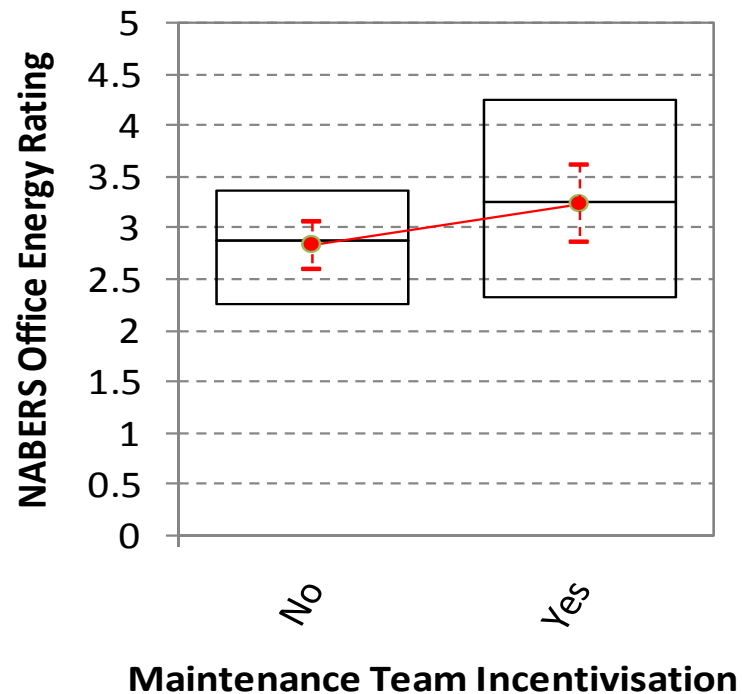
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- Sites performed better if there was an energy efficiency training program in place



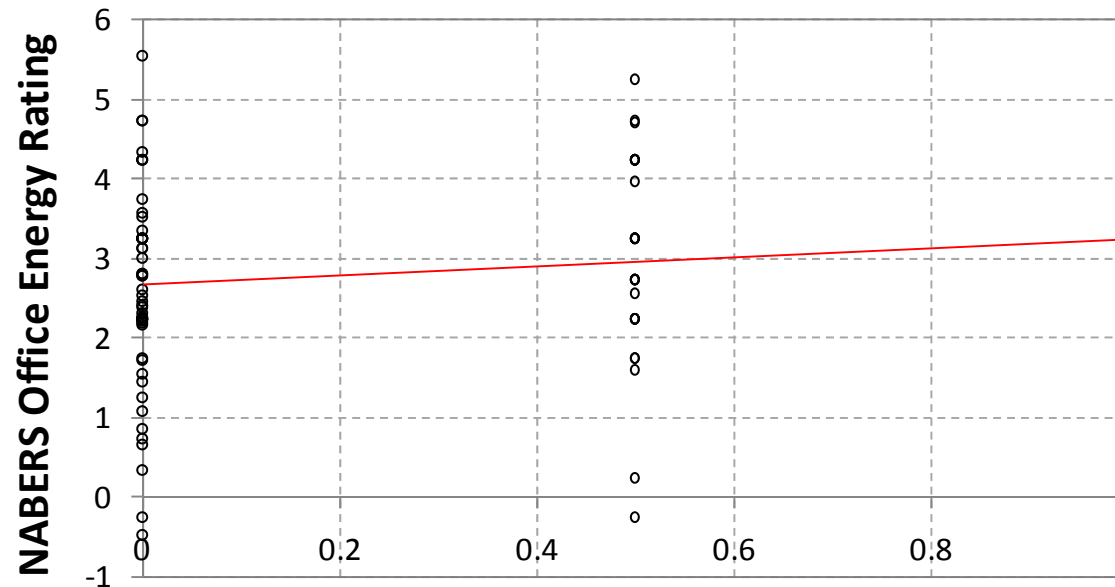
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- Efficiency penalties or incentives for maintenance contractors improve performance



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- Buildings which disclosed their NABERS performance to tenants performed better



Reporting to Tenants



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Project Conclusions

- The measures identified could lead to performance improvements of up to 30%
 - Approx 1 star relative to average
- Equivalent to a 1.2% reduction in Australia's total greenhouse emissions, when extrapolated to the CBD office building sector



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LEHR Stage 2

- LEHR materials covering:
 - Management
 - Monitoring and reporting
 - Technical
 - Managing the tenant fit out
 - Training
- Materials can be used as a best practice manual or as a diagnostic tool to address specific issues



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LEHR & optimising performance

- LEHR demonstrates day to day operation is critical
- While new can be better it is not a guarantee of performance
- The same challenges exist in empowering and enabling performance
- Every building needs to understand its advantages and disadvantages



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LEHR methodology to optimise performance

1. Get the day to day right
2. Identify current performance
3. Ensure the necessary skills are covered
4. Then consider at the building structure & services



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Using the LEHR approach

1. Operating
2. Maintaining
3. Improving



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Operating a sustainable building

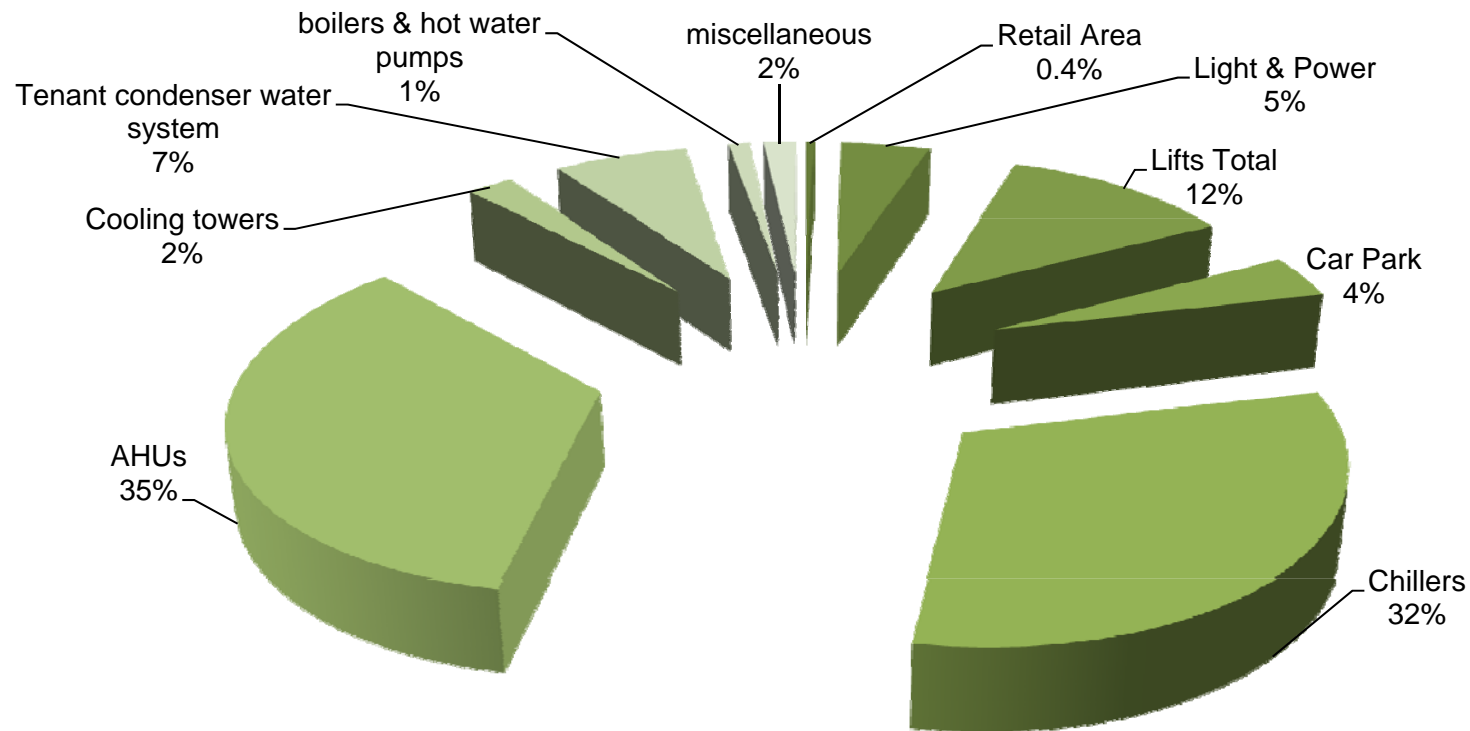
1. Know your baseline
2. Identify normal operating limits
3. Can you turn anything off?
4. Are you operating when you shouldn't be?
5. Can you use any passive systems (e.g. economy cycles)
6. What do you need to better identify areas for improvement



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Operating a green building

Breakdown of Base Building Electricity Consumption



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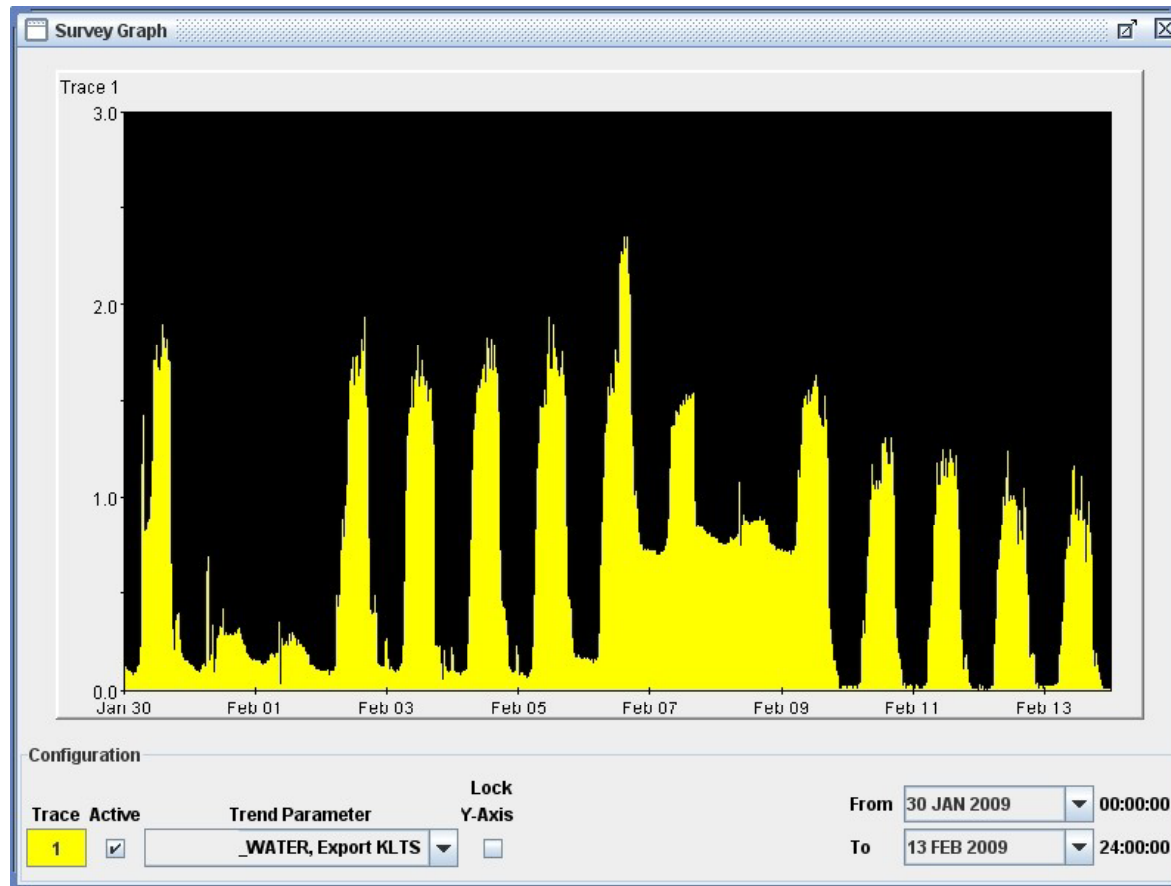
Maintaining a sustainable building

1. Monitoring – how?
2. Do you understand all the building systems?
3. Managing 3rd parties
 - I. Incentivised / penalised contractors
 - II. Useful consultants
 - III. Regular (and competent maintenance)



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Operating a green building



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Improving a sustainable building

1. What are your limitations
2. What is “easy” to fix
3. Can you better leverage your capex / R&M budget
4. External advice
5. Develop a strategy



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The process – documenting

- Building services summary
- Green Star report
- NABERS rating & Building Energy Efficiency Certificate
- Know what your building can do
- Make sure your leasing agents know what your building can do
- Identify the people who can assist



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More information

Contact details:

Alex McKenna

alex.mckenna@sydney.edu.au



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