



Urbines – Roof top urban wind turbines

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Urbines – Roof top urban wind turbines

Background to Project



- Elephant and Castle becoming a sustainable urban environment for completion by 2018.
- 10% of a buildings energy usage must be from renewable sources.
- Joint Project investigating the viability of urban wind turbines.



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Challenges of a Multi-disciplinary Project

Acoustics, Energy, Wind, Computing, Electrical, Structural & Mechanical Engineers



In the summer of 2007 a Proven 6 kW turbine was erected on Ashenden House an 11 storey concrete residential block of flats



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Monitoring Equipment

Wind **Noise** **Vibration**



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Design and Installation



Steel re-enforced concrete stubs



Vibration isolators and most importantly correctly installed washers!

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New Quiet Revolution 5



Installed Summer 2008


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Improved Designs and Installations




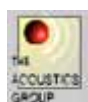

A better installation of vibration isolators and washers.

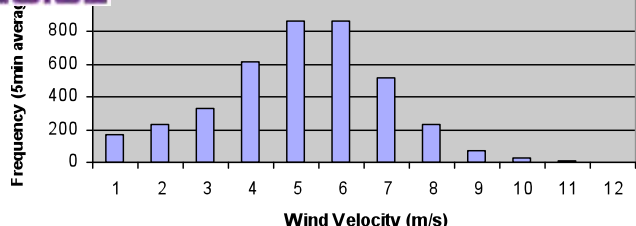


QR has additional vibration isolator between the mast and the frame



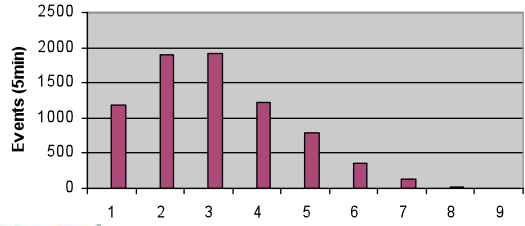




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5 Minute Wind Speeds January 2008








Ashden House Wind Distribution Sept 2008

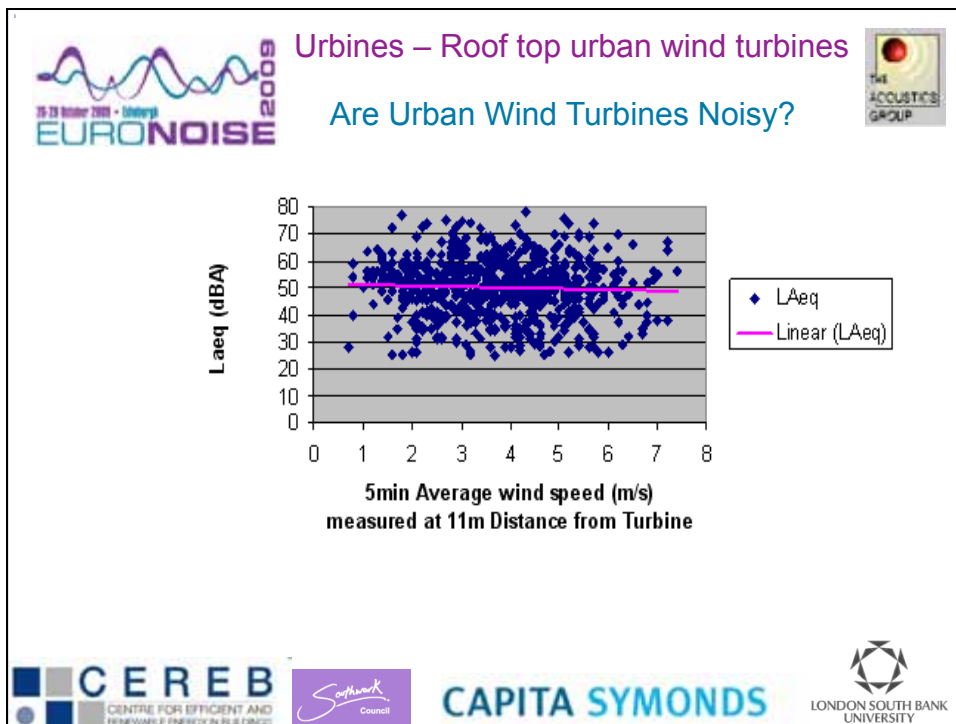
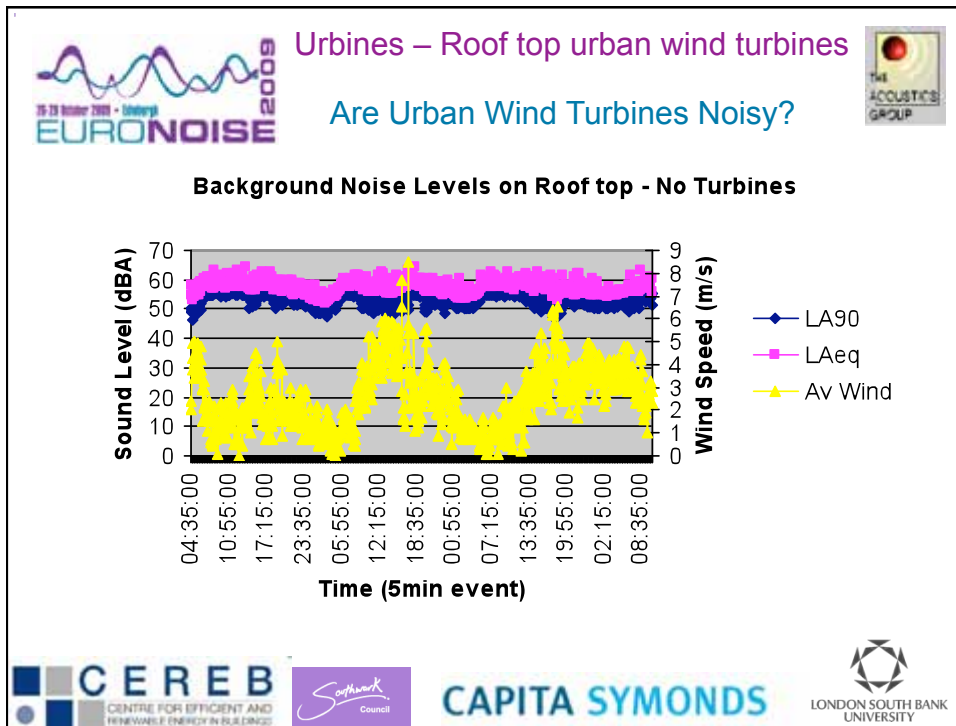
Average
4.6m/s

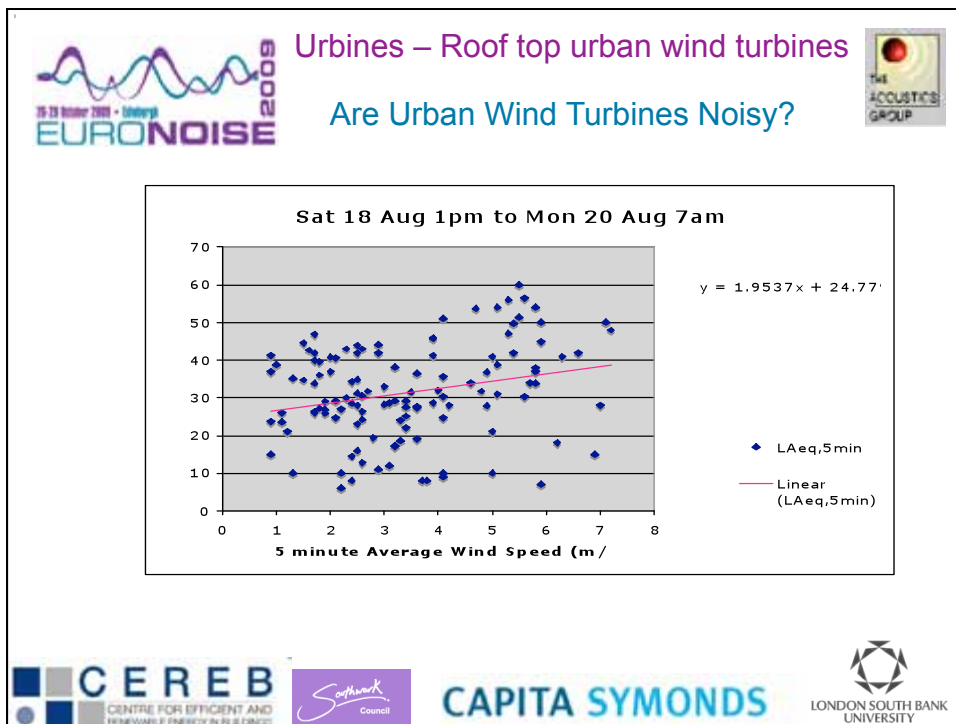
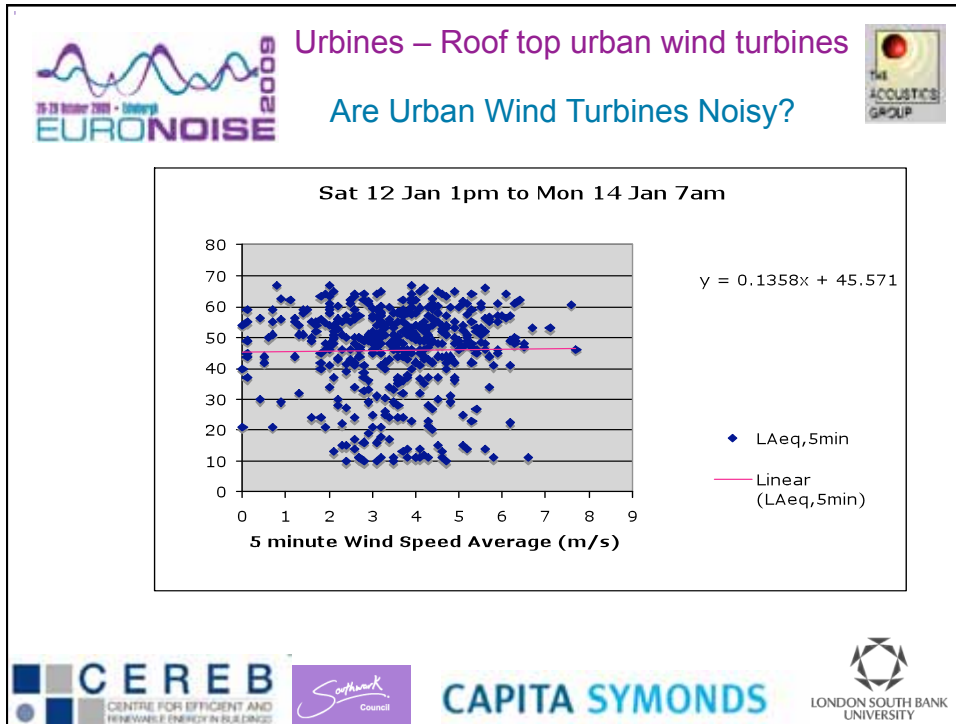


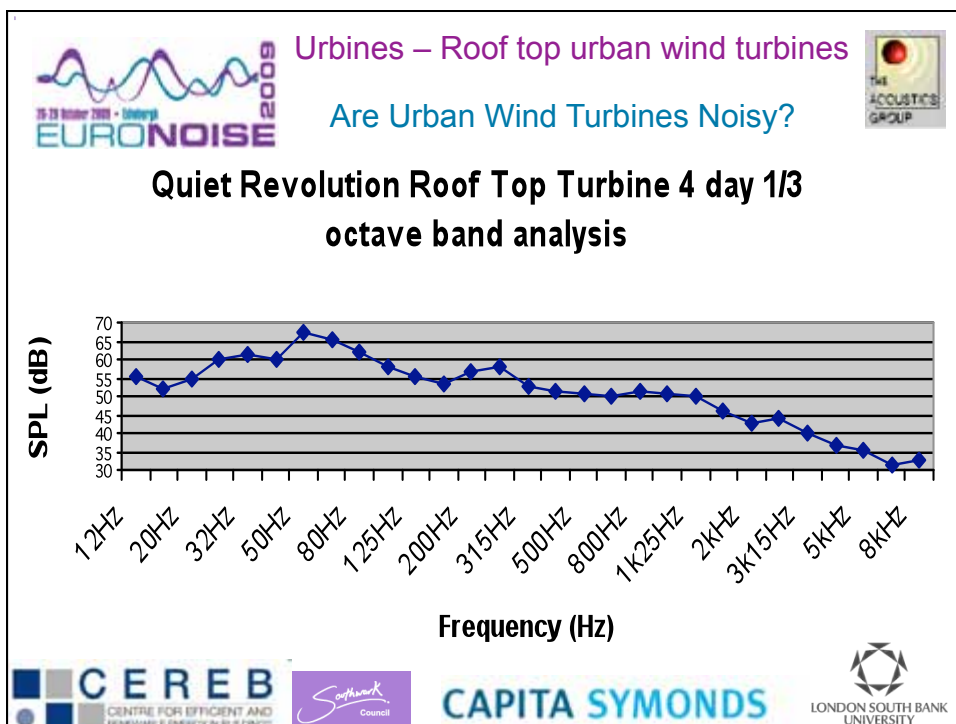
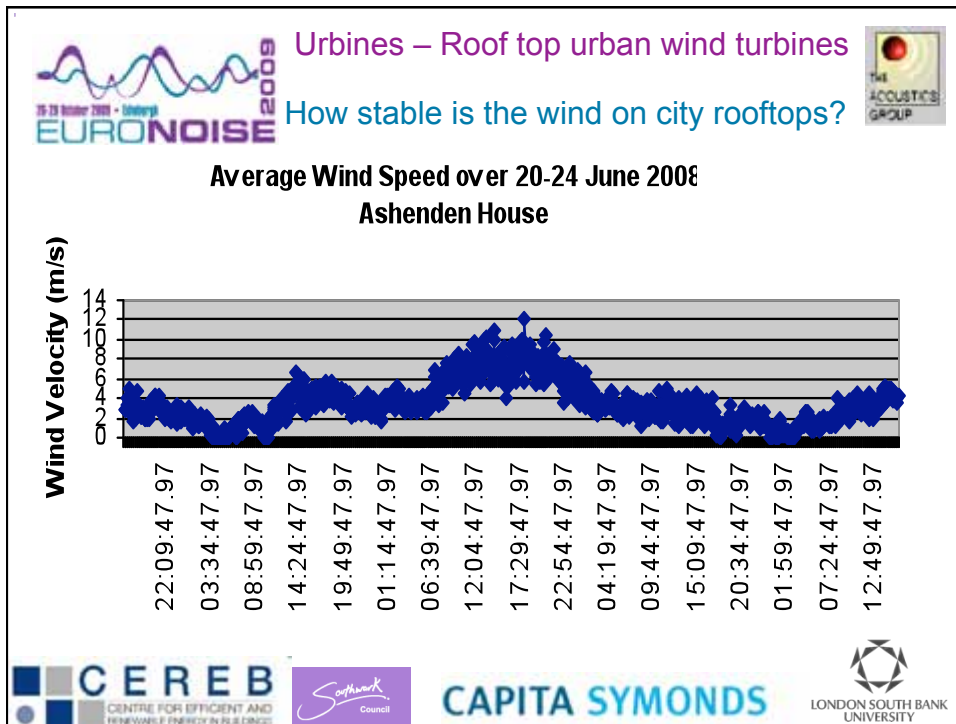
Wind Speed (m/s)

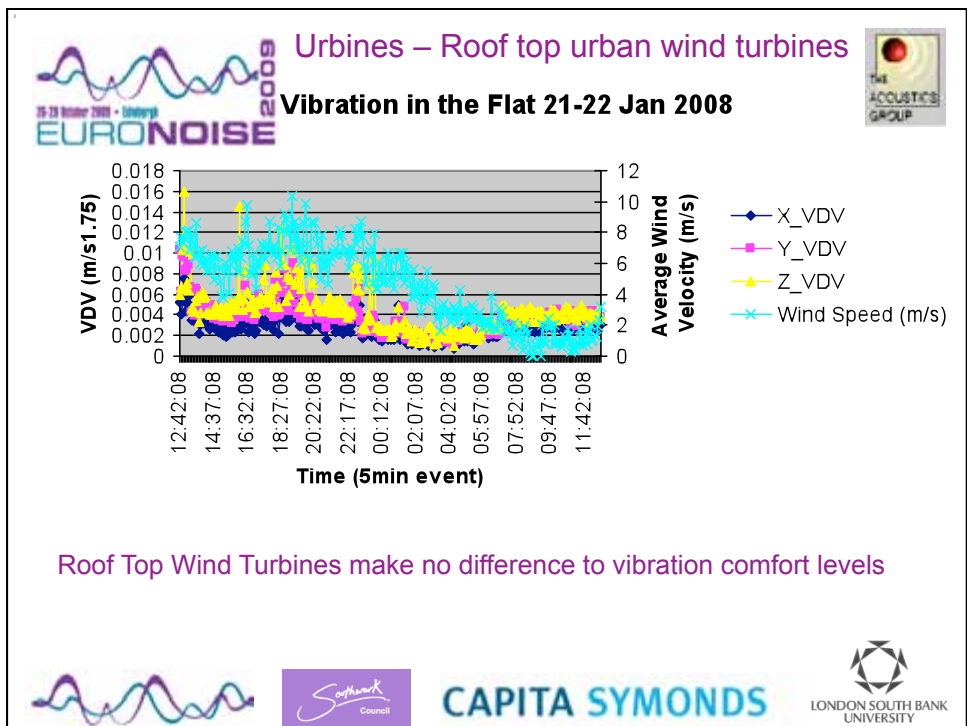
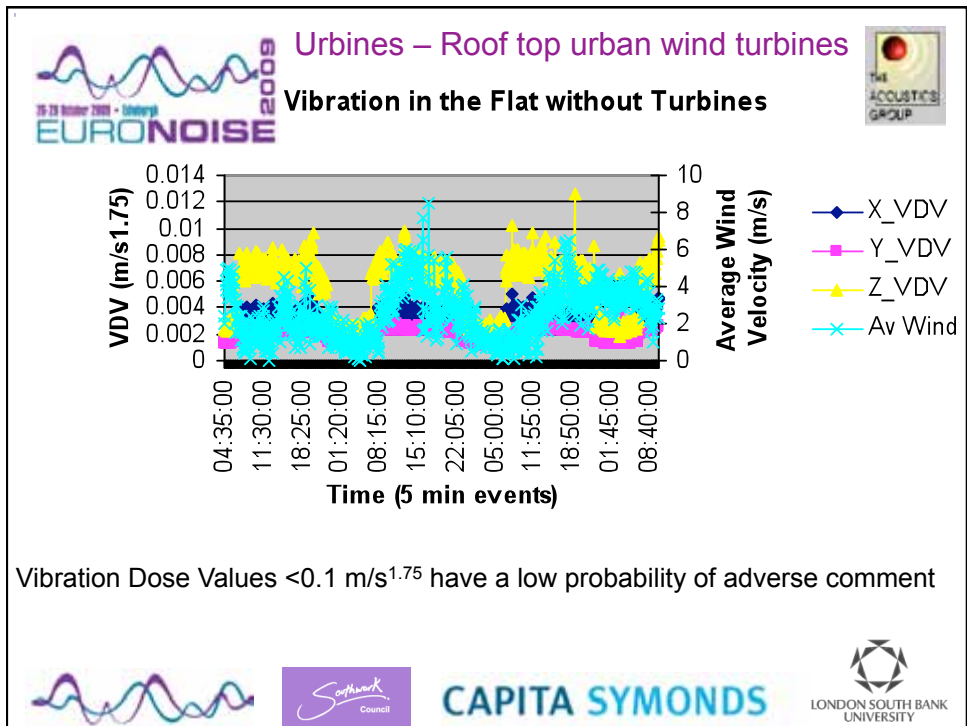
Average
2.5m/s

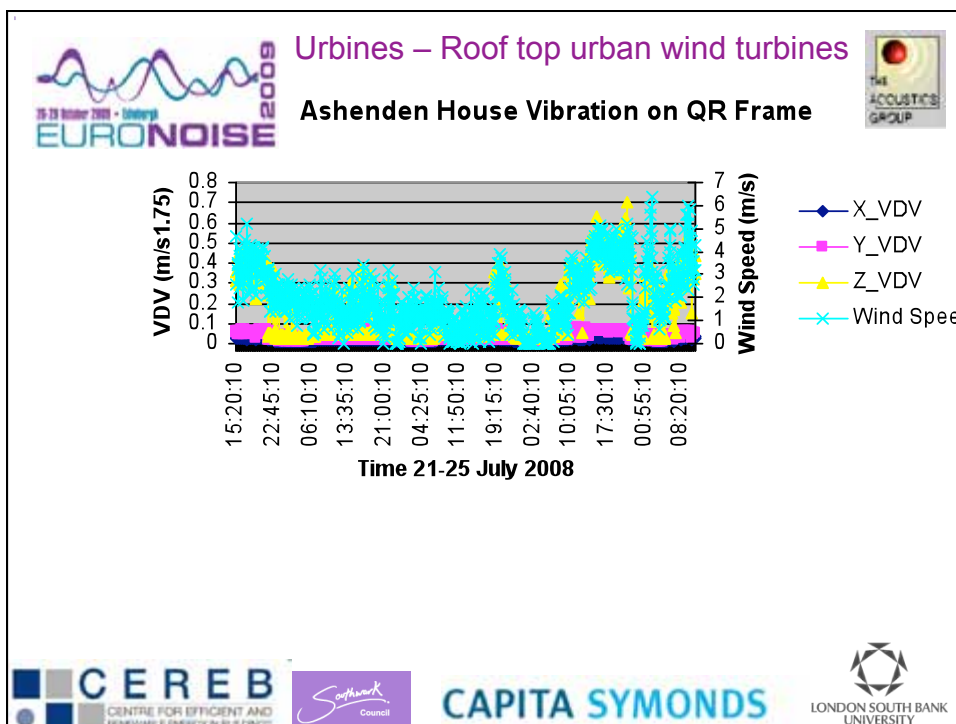
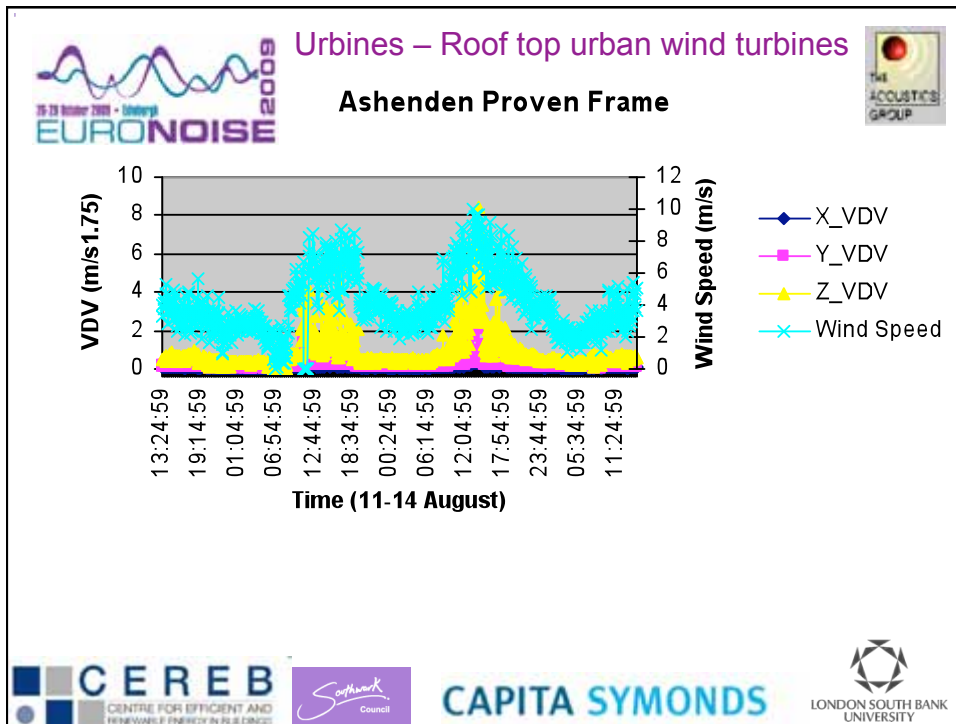

















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Another Urbine Site in Central London



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CENTRE FOR EFFICIENT AND
RENEWABLE ENERGY IN BUILDINGS

Southwark
Council

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Urbine Installation and Vibration Isolators



Better isolation installation

Heavy steel frame no isolation
between mast and frame

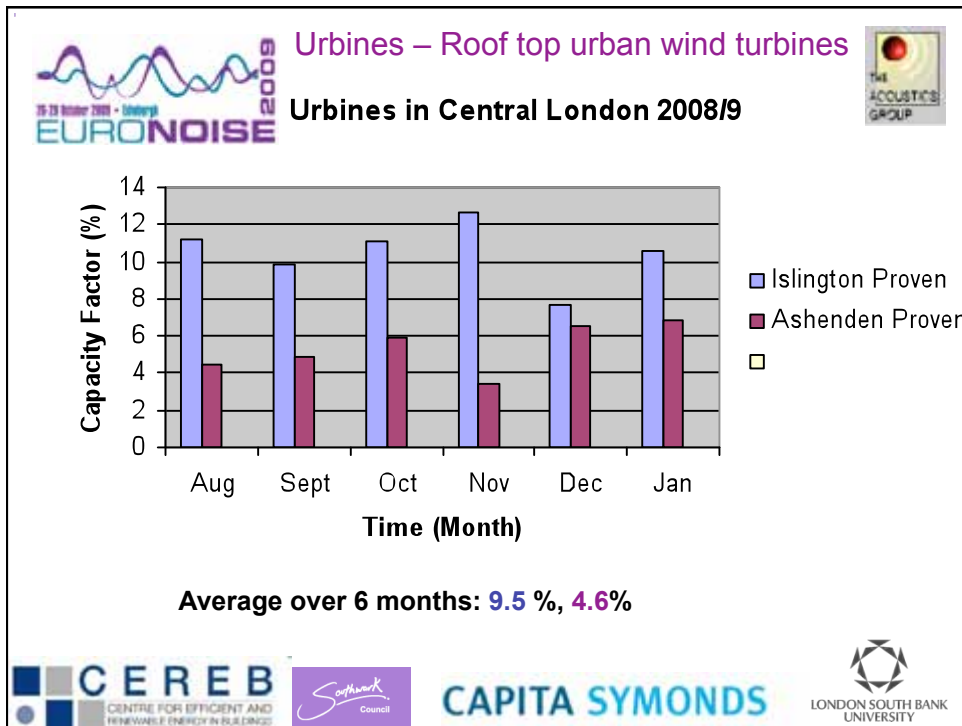


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- Urbines – Roof top urban wind turbines
- Conclusions
- Urbines to not acoustically affect the residents
 - Urbines to not acoustically affect the urban environment
 - Urbines need to be sited intelligently to be effective
- Logos: CEREB, Southwark Council, CAPITA SYMONDS, LONDON SOUTH BANK UNIVERSITY





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Acknowledgements

Thank You for Listening!

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