

A BUSINESS CASE FOR SUSTAINABLE OFFICE BUILDINGS

Georgia Myers and Richard Reed*

Faculty of Architecture, Building and Planning

University of Melbourne

Melbourne 3010 Victoria Australia

Tel: +61 3 8344 8966 Fax: +61 3 8344 5532

Email: gmyers@pgrad.unimelb.edu.au (*contact author)

Keywords: Sustainability, office buildings, market value, perception.

The market for sustainable buildings has rapidly gained momentum in the design and construction phases, however it appears that development and investment in these buildings by the private sector is limited. This is further complicated by the limited information available confirming the financial viability of sustainable buildings, with relatively little research conducted into the relationship between sustainability and the market value of commercial buildings. Currently the demand for sustainable buildings in Australia and New Zealand is being encouraged through government legislation and policy, where investment by the private sector has been relatively slow to develop due to the lack of evidential proof of the economic viability of sustainable buildings. Clearly if the progress and uptake of sustainable buildings is to develop within the property market, it is essential that the relationship between *market value* and *sustainability* should be understood in order to fully inform the investment industry.

This paper investigates the relationship between the elements of sustainability and the impact upon the market value of the office building. The findings provide an insight into the rapidly evolving area of sustainability and office buildings, with the emphasis placed on the valuation process which seeks to assess a hypothetical purchaser's perspective. One approach is to justify sustainability by demonstrating payback periods or increased value through reduced operating expenses, or alternatively by undertaking hypothetical adjustments to valuation equations to allow for claimed sustainable benefits - however the lack of concrete evidence about the correlation between value and sustainability leaves the investment industry unsure about the true financial benefits of sustainability. Although some research undertaken into the valuation methodology of sustainable buildings has developed the concept of the impact of sustainability on value, this paper contributes to the need for further research in this rapidly evolving area.

References:

- Armitage, L. (1997). Chapter 4: Australia. "Real Estate Valuation in Global Markets". H. C. Gelbtuch, D. Mackim and M. M.R. Chicago, Appraisal Institute: 476.
- Bartlett E. and Nigel H. (2000). "Informing the decision makers on the cost and value of green building." *Building Research and Information* 28(5/6): 315-324.
- Baum, A., Mackim D. (1989). "The Income Approach to Property Valuation". London, Routledge.
- Boyd, T. (2005). "Can we assess the worth of environmental and social characteristics in investment property?" Proceedings of the PRRES Conference January 2006, Auckland New Zealand, School of Construction Management and Property, Queensland University of Technology
- Boyd, T., Kimmitt P. (2005). "The Triple Bottom Line Approach To Property Performance Evaluation" PRRES Conference 2005, Cairns, Australia, School of Construction Management and Property, Queensland University of Technology.
- Case, S. (2005). "Finding the Best "Green" Value: Strategies Balance Cost, Human Health, and Environmental Concerns." *Government Procurement* 13(1): 14, 4.
- Corps, C. and RICS (2005). "Green Value: bringing real business benefits". RICS Business. RICS. UK, RICS. 2005.
- Davis Langdon Consultancy (2003). Investing in Sustainable Developments Key Players Group: Workshop 1 Report. Investing in Sustainable Developments. D. L. Consultancy. Holborn, London, Davis Langdon Consultancy.
- Davis Langdon Consultancy (2004). "The Cost of Going Green." *Info Data* November 2004: 1-7.
- Delmas, M., Toffel M. W. (2004). "Stakeholders and Environmental Management Practices: An institutional framework." *Business Strategy and the Environment* 13: 209-222.
- Easterbrook, G. (2000). "Why you can put a price tag on the environment. Green Values." *The New Republic* 223(20): 18.
- Emary, R. (1997). Chapter 5: New Zealand. "Real Estate Valuation in Global Markets". H. C. Gelbtuch, D. Mackim and M. M.R. Chicago, Appraisal Institute: 476.
- Figge F., Hahn T., Schaltegger S. and Wagner M. (2002). "The Sustainability Balanced Scorecard - Linking Sustainability Management to Business Strategy." *Business Strategy and the Environment* 11: 269 - 284.
- Figge F., Hahn T. (2003). "Sustainable Value Added - measuring corporate contributions to sustainability beyond eco-efficiency". *Ecological Economics* 48 (2004) 173 - 187. S. Direct, Elsevier. 2006.
- Figge F., Hahn T. (2005). "The Cost of Sustainability Capital and Creation of Sustainable Value by Companies." *Journal of Industrial Ecology* 9(4): 47 - 58.
- Frej, A. (2003). "Green Buildings and Sustainable Development: Making the Business Case". Urban Land Institute: Land Use Policy Forum Report, Aspen, Colorado, Urban Land Institute.
- Gottfried, D. (2004). "Green Equals Value." *Building for the Future/ A supplement to ASHRAE Journal* 46(9): S52-S53.
- Hargiatay, S. E. a. Y., Shi-Ming (1993). "Property Investment Decisions: A quantitative approach". London, E & FN Spon.
- Hemphill, L. M., Stanley; Berry, Jim (2002). "An aggregated weighting system for evaluating sustainable urban regeneration." *Journal of Property Research* 19(4): 353 - 373.
- Higgins, D. (2002). "Changes in the determinants of commercial property market performance." *Australian Property Journal* November: 286 - 290.
- Hopwood, B., M. Mellor, et al. (2005). "Sustainable Development: Mapping Different Approaches." *Sustainable Development* 13: 38-52.
- Internationals, C. (2006). "Colliers International Market Indicators, Melbourne CBD Office, Autumn 2006." Autumn 2006: 13.
- Investa, accessed at www.investa.com.au/InvestorInformation on the 20th August 2006
- IVSC (2005). IVS 1, "Market Value Basis of Valuation/Scope". International Valuation Standards. IVSC, International Valuation Standards Committee. 1.
- Jones Lang LaSalle, (Hilderson, P.) (2004). "Commercial Property Going Green." Jones Lang LaSalle White Paper, Jones Lang LaSalle, Australia
- Jones Lang LaSalle, (Mulholland, V., Hartmann, A., Plumb, C.) (2005) "Building Refurbishment – Repositioning your Asset for Success", March 2005, Jones Lang LaSalle White Paper, Jones Lang LaSalle, Australia

- Jones Lang LaSalle, (Myers, G. and Bannon, K) (2006) "Future Proofing New Zealand's Commercial Property for a Sustainable Tomorrow", July 2006, Jones Lang LaSalle White Paper, Jones Lang LaSalle, New Zealand
- Jones Lang LaSalle, (Wallbank, C., Apted, J. and Hilderson, P.) (2006) "Assessing the Value of Sustainability", February 2006, Jones Lang LaSalle White Paper, Jones Lang LaSalle, Australia
- Kats, G. (2003). "The Costs and Financial Benefits of Green Buildings. A Report to California's Sustainable Task Force". S. B. T. Force, Sustainable Building Task Force: 1-120.
- Kimmet, P. (2006). "Theoretical Foundations for Integrating Sustainability in Property Investment Appraisal". Faculty of Built Environment and Engineering. Brisbane, Queensland University of Technology: 10.
- Kohler, N. (1999). "The relevance of Green Building Challenge: an observer's perspective." *Building Research and Information* 27(4/5): 209-320.
- Lucy, S. (2002). "A commercial property's greenhouse gas emission profile: hidden asset or unaccounted liability." *Australian Property Journal* August 2002: 194 - 195.
- Lutzkendorf, T., Lorenz D. (2005). "Sustainable property investment: valuing sustainable buildings through property performance assessment." *Building Research and Information* 33(3): 212 - 234.
- Lutzkendorf, T., Lorenz D. (2006). "Is there a Market for Sustainable Property Investment Products?" European Real Estate Society Conference 2006, Weimar, Germany, European Real Estate Society.
- Mackmin, D. (1990). "A Study Companion to the Income Approach to Property Valuation". London, Routledge.
- Madew, R. (2006). "The Dollars and Sense of Green Buildings" 2006. G. B. C. Australia, Green Building Council Australia. 2006.
- Majersik, C. (2003). "The Impact of Energy Costs on Commercial Building Value". I. F. M. Transformation. New York, New York State Energy Research and Development Authority: 9.
- Nige Enever, D. I. (1995). "The Valuation of Property Investments". London, Estates Gazette.
- Nygaard, W. R. C. (1999). "Probability - based DCF: An alternative to point-value estimates." *The Appraisal Journal* 67(1): 68.
- Osborne, K. L. I., W.S. (2003). "When does a Capital Expenditure Increase Market Value?" *Journal of Property Valuation and Taxation* 14(3): 32.
- Pagourtzi, E. A., V.; Hatzichristos, T.; and French, N. (2003). "Real estate appraisal: a review of valuation methods." *Journal of Property Investment and Finance* 21(4): 383 - 401.
- Parker, R., J. (2000). "A brief history of the Australian discounted cash flow practice standard." *Journal of Property Investment and Finance* 18(2): 196-211.
- Parnell, P., Sayce, S. (1999) "Attitudes towards financial incentives for green buildings" Kingston University School of Surveying and Drivers Jonas Property Consultants
- Paumgarten von, P. (2003). "The business case for high-performance green buildings: Sustainability and its financial impacts." *Journal of Facilities Management* 2(1): 26-34.
- Pearce, D.W., Markandya, A. and Barbier, E.B. (1989) "Blueprint for a Green Economy". Earthscan, London, Great Britain
- Pratt, K. (2005). "Sustaining Values. Sustaining Values". F. F. M. R. M. a. Periodicals, FM Link. 2006
- Reed, R. G. (2006). "Residential Housing and the Green Agenda". API/PINZ International Property Conference, Cairns, Australia, Faculty of Architecture, Building and Planning, University of Melbourne.
- Reed, R. G., Wilkinson S. J. (2005). "The increasing importance of sustainability for building ownership." *Journal of Corporate Real Estate*, published by Emerald Group Publishing Limited 7(4): 339 - 350.
- Reed, R. G., Wilkinson S. J. (May 2006). "Combating climate change: how can cities best adapt." RICS Research: FiBRE Findings in Built and Rural Environments (May 2006).
- RICS (2005). "Green Buildings: Good For Business". News Release. R. M. Relations. UK, RICS. 2006: News release.
- Robinson, J. (1989). "Property Valuation and Investment Analysis: A Cash Flow Approach". Melbourne, The Law Book Company Limited.
- Robinson, J. (1997). "Price and Worth: scenario analysis and modern portfolio theory." *Cutting Edge*, RICS: 12.
- Robinson, J. (2005). "Property Valuation and Analysis applied to Environmentally Sustainable Development". PRRES Eleventh Annual Conference, Melbourne, Australia, The University of Melbourne.
- SAM, accessed at www.sam-group.com on the 15th June 2006
- Sarpong-Oti, W. (1998). "A Valuer's Perspective on Valuation of Natural Resources and Environmental Quality." *Australian Property Journal* November 1998: 336.

- Sayce, S., Connellan O. (2002). "From existing use to value in use: time for a paradigm shift?" *Property Management* 20(4): 228-251.
- Sayce, S., Ellison L. (2003). "Integrating sustainability into the appraisal of property worth: identifying appropriate indicators of sustainability". The American Real Estate and Urban Economics Association Conference, Skye, Scotland, Kingston University.
- Sayce, S., Ellison L., (2003) "Towards sustainability indicators for commercial property occupiers and investors", <http://www.sustainableproperty.ac.uk/sustainability-papers.htm> Accessed 27/4/2006
- Sayce, S., Ellison L., and Smith J. (2004). "Incorporating Sustainability in Commercial Property Appraisal: Evidence from the UK." *Australian Property Journal*: 226 - 233.
- Sayce, S., Ellison L., and Smith J. (2004i). "Incorporating Sustainability in Commercial Property Appraisal: Evidence from the UK". The 11th European Real Estate Society Conference, Milan, Italy, Kingston University.
- Sayce, S., Connellan O., et al. (2002). "Global Standards for a Global Profession: Developing Understanding for 'Value in Use'". FIG XXII International Congress, Washington, D.C. USA.
- Sheehan, J. (2002). "Environmental issues and their impact on Australian real estate." *Australian Property Journal* November 2002: 291 - 295.
- St Lawrence, S. (2003). "Review of the UK corporate real estate market with regard to availability of environmentally and socially responsible office buildings." *Journal of Corporate Real Estate* 6(2): 149-161.
- Sustainable Value, accessed at www.sustainablevalue.com on the 27th August 2006
- Suttell, R. (2006). "The True Costs of Building Green." *Buildings* 100(4): 46.
- The Australian Property Institute (2006) "Professional Practice 5th Edition" joint Australian Property Institute (API) and New Zealand Property Institute (NZPI) practice publication and manual.
- US Green Building Council (2003). "Making the Business Case for High Performance Green Buildings." Washington, US Green Building Council. 2006.
- Upstream (2006) "The Vicious Circle of Blame" accessed <http://www.upstreamstrategies.co.uk> accessed 17th September 2006.
- Whipple, R. (1995). "Property Valuation and Analysis". Riverwood, NSW, Australia, The Law Book Company.
- Wilkinson, S. J., Reed R. G. (2006). "Office buildings and the environment - the increasing importance of ESD". 12th Annual Pacific Rim Real Estate Conference, University of Auckland, New Zealand, PRRES.
- Wilson, B. (2006). "Finding the Value in ESD". Australian Property Council. 2006: News article.
- World Commission on Environment and Development (WCED)(1987) Brundtland Report, accessed http://www.are.admin.ch/are/en/nachhaltig/international_uno/unterseite02330/ on the 27th August 2006
- World Business Council, accessed at www.wbcsd.ch, on the 27th August 2006