

SUSTAINABLE CITIES, REAL ESTATE MARKET DYNAMICS AND THE CHALLENGE OF ECOLOGICAL MODERNISATION

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ABSTRACT

The theme adopted by IRERS 2008 'Benchmarking, Innovating and Sustaining Real Estate Market Dynamics' provides a timely focus on the importance of benchmarking and innovative solutions, in order to address the challenges faced by the real estate markets globally. These challenges have been exacerbated by the recent global credit crisis triggered by the subprime market in the United States and elsewhere. The credit crisis has generated anxieties that prompted an apparent flight from commercial mortgage-backed securities, and could therefore exert price pressures on the global real estate sector for a period of time.

The ensuing adjustments in the investment patterns that have accompanied the recent credit crisis come at a time when the real estate markets have had to engage with another compelling dynamic, in the form of environmental sustainability. Environmental responsiveness is vital, if the real estate markets are to have a future. Urban planning policies, property legislation and financial agendas, coupled with pressures from owners and tenants, make it crucial that real estate researchers and practitioners have greater appreciation of the issues and solutions that will shape the future of real estate as a sustainable industry.

Keywords: Real Estate Dynamics, Environment, Ecological Modernisation

INTRODUCTION

As the Worldwatch Institute's State of the World 2008 report indicates, there has been a sea change in business attitudes toward the environment over the last few years, across all sectors of commerce, manufacturing and real estate development. The change in attitude has been prompted by recognition that the environment is more than the need to comply with regulations, cost analysis and risk management. Waste management, pollution control and environmental planning provide

significant market opportunities furnished by the availability of substantial public and corporate funds aimed at mitigating environmental degradation (so called 'cleantech' opportunities) and reducing eco-liabilities (including carbon quota trading). With the costs of hydrocarbon fuels at a record high, the adoption of cleaner, environmentally sustainable energy saving measures now make a great deal of sense to raise profitability margins.

The *State of the World 2008* also highlights an important policy shift in recent years focused

on innovation as the key to environmental and economic sustainability. Technological breakthroughs and new energy auditing systems herald a new trajectory of business innovation, through private-sector investment guided by sensitively planned market and tax incentives. The new directions will involve tying the burden of environmental mitigation to tax credit and rebate regimes so that businesses have an incentive to think about opportunities for progress. Naturally, regional, national and local public agencies must be involved in this important process too, primarily in the form of facilitating and enforcing a pricing mechanism for costing environmental degradation and remediation measures, to help cut down on non-renewable resource use and reward energy saving schemes.

Recognising the crucial importance of incentivising businesses, the Foreword piece of the Wordwatch report makes the following observation:

“Venture capitalists do not blink at the prospect of only 1 project in 10 paying off. That kind of success ratio in government would be entirely unacceptable. In addition, the business community is in a better position to reward success in a way that will draw the most talented people into the quest for environmental solutions. Entrepreneurs who recognize the opportunity for a big payday put in long hours and motivate a team of people to put in extra effort.”

An innovative approach to environmental policy is emerging from the opportunities presented by information and remote/reconnaissance technologies. In our digital age, remote data collection technologies provide unprecedented opportunities to estimate the size and source of environmentally wasteful and inefficient processes and practices. It is now relatively easy to calculate and establish the source of emissions and resource use in a more accurate manner. Opportunities presented by the trade in carbon quotas are made possible predominantly through reconnaissance analysis of emissions across regions. As real estates contributes nearly half the energy costs of most advanced economies, the scale of this

sector's involvement in this process is bound to be very high.

The move towards market-based environmental solutions, away from centralised regulation, should see real estate businesses and their customers figure out ways to reduce environmental cleaning costs. The shift toward a 'Polluter Pays' model offers the prospect of raising the incentive at every level in the business hierarchy for energy conservation, improved life cycles and process innovation.

The principle of making the environment a central component of corporate strategy is very good business, because no industry today, including the real estate sector, can disregard growing energy costs, pollution damage, and other environmental challenges such as growing flood risks associated with global warming. Ignoring the environment places real estate businesses at competitive disadvantage. Of course, progress in environmental planning and management necessitate well-informed public policies, as aligning economic activities along sustainable trajectories can only be expedited through clear economic incentives for the sector.

ECOLOGICAL MODERNISATION

In a research article contrasting US and Northern European experiences in the area of ecological modernisation, Cohen (2006:530) observes:

“There is considerable evidence to suggest that Europe's environmental vanguard.. has achieved a weak form of ecological modernization over the past decade.. Within these nations, there has been a pronounced emphasis on supplanting remedial environmental management with innovative technologies capable of achieving stringent sustainability standards. Consistent with the tenets of ecological modernization, this is not a matter of ensuring superior performance based on narrow environmental criteria; rather it entails the full integration of

environmental considerations into product design and process organization. Such a shift becomes an important source of comparative economic advantage.

These observations are significant, both because they confirm that EM is gaining a foothold in European economies, and also because Cohen identifies a shift from constricted environmental criteria. The emphasis now lies in achieving greater integration between principles and processes, rather than mere projections of end goals and aspirations. The environment is steadily evolving as a mainstream, strategic business concern, as well as a context for city economies. This level of assimilation between environmental issues, commerce, and city economies is unprecedented, and is fundamentally altering the dynamics of Real Estate markets. Although primarily the result of necessity, the ensuing serendipity appears to be benefiting the aspiration to maintain reasonable standards of living as well as a healthy environment in which city communities can thrive.

According to ecological modernisation (EM) proponents, it is possible to develop economically and socially and - at the same time - conserve the environment. In a nutshell, and at the risk of oversimplification, EM equates pollution with inefficiency, which could be overcome through technological advances and sound policies. Restated with specific reference to pollution management in urban settings, the following two statements sum up the evolution of EM:

- Pre EM: Dilution is the solution to pollution
- Post EM: Through efficient processing and technical process compatibility, it is possible to achieve a non-polluting economy

Ecological modernisation scholarship has followed a reasonably evolutionary path, from the initial period (in the early 1980s) where the emphasis was placed on the primacy of new technologies in the battle to modernise environmental management. What distinguishes EM from other forms of environmentalism is that ecological modernisers

attempt to provide an 'enterprise-friendly' set of environmental reforms.

The theoretical approaches adopted by EM specialists have included analyses identifying how modern societies construct the environment; how social and economic change influences the environment and environmental relations; and understanding the social and economic institutions that promote or resist environmental sustainability. Many ecological modernisation advocates believe that, as economic development continues, a point can be reached where the quality of the environment will subordinate other considerations based on production and consumption factors alone. More specifically, they argue that ecological rationality is compatible with forces of production and moderate consumption, especially where technology, economic and policy measures incorporate substantive environmental considerations (Mol 2000). More recently, EM researchers have broadened their analysis to include the role of consumption as a driver of such reforms (Carolan 2004). According to this view, ecological modernisation is an environment-induced social change, set against a background where environmental crises provided the impetus for change at a social level.

At a more practical level, ecological modernisation, seeks to develop models for eco-efficiency, through emissions and waste reduction, resource substitution and the minimisation of resource inputs in industrial processes and services. Typically this entails taking externalities from one production process or service and using them as material inputs for another. Examples of management practices representative of ecological modernisation include strategic environmental management, technical process compatibility, life cycle analysis, and environmental quality assessment systems such as ISO 14001. Much of the analytical work of ecological modernisation has been of particular relevance to the local (principally urban) economies of Europe. Such work reflects the fact that European cities have been at the forefront of developing rational environmental practices to cope with such issues as energy consumption (through energy saving

technologies), air pollution, waste recycling and disposal, and transport (through the development and promotion of cleaner modes of transport).

However, ecological modernisers have been criticised for their technological optimism, seen by sceptics as ignoring the dynamics of power which can subvert environmental reform; and for seemingly underplaying the nature and scale of social changes required to move to more sustainable forms of development (Gibbs 2000). Earlier, Christoff (1996: 497) had reflected the views of the more sceptical critics of ecological modernisation that it "may serve to legitimise the continuing instrumental domination and destruction of the environment, and the promotion of less democratic forms of government, foregrounding modernity's industrial and technocratic discourse over its more recent, resistant and critical ecological components."

Christoff's pessimistic assessment of the potential of ecological modernisation is not widely shared even by groups traditionally falling outside capitalist terms of reference, as the following excerpt from a speech by John Prescott to the Fabian Society/SERA Conference (2003) indicates:

"There is a widespread view that environmental damage is the price we have to pay for economic progress.. Modern environmentalism recognises that...an efficient, clean economy will mean more, not less economic growth and prosperity.. Treating the environment with respect will not impede economic progress, it will help identify areas of inefficiency and waste and so unleash whole new forces of innovation."

Indeed, aspects of ecological modernisation have found their way into UK budget statements in recent years, as the following comments from the March 2003 Budget Statement to the House of Commons, by the Chancellor of the Exchequer Gordon Brown, pointed out:

"So to help British companies commercialise new environmental technologies, we are

today setting aside an initial sum of £20 million as seedcorn finance for the first enterprise capital fund for the environment. The energy used in buildings accounts for nearly half UK carbon emissions. So our third ambition is for Britain's homes and businesses to be the most energy efficient in the world."

Naturally, New Labour's apparent enthusiasm for ecological modernisation has been received by EM proponents with a degree of caution. As Barry and Paterson (2004:767) observed:

"New Labour's discourse of globalisation acts to create opportunities for EM in some policy arenas and hinder them in others.. the analysis reveals the potential, but also the limits, of this approach, which attempts to ignore the deep political questions raised by environmental degradation."

Barry and Paterson's point about the risks of subordinating political questions to the economic growth imperative had also been picked up by one of the main proponents of ecological modernisation. Writing in a chapter for the book *The Emergence of Ecological Modernisation: Integrating the Environment and the Economy*, Jänicke et al. (2000:149) make the following observation:

"ecologically-beneficial economic change tends to be neutralised by high growth... The industrialised countries will not be able to afford the luxury of high growth rates for much longer. They will have to become accustomed to solving universal problems not by economic growth, but by political action, as in matters of distribution."

Broadly speaking, the implementation of ecological modernisation falls into two categories: techniques and policies. There is a wide range of techniques and technical innovations, referred to in Huber's original work (1982) as 'super-industrialisation'. These include technological advances to reduce the consumption of resources and thus increasing 'eco-efficiency', as well as pollution prevention and

waste minimisation measures. As stated earlier, typically such techniques entail taking externalities from one production process or service and using them as material inputs for another. On the policies front, strategic environmental management, industrial life cycle analysis and the adoption of environmental quality assessment systems (such as ISO 14001) are the main characteristic items.

There follows an outline of the policies, codes of practice and audit systems that fit into the ecological modernisation framework, beginning with SEM (strategic environmental management). SEM involves helping business to take advantage of environmental challenges, and attempts to make these challenges into profit-making opportunities rather than threats that curtail business operations and prospects. The basic economic premise of SEM is that it can 'pay for itself.' (Buchholz et al. 1992).

There are a number of essential operational and practical steps that could be followed to establish a strategic environmental management:

- Cut back on environmentally unsafe operations and waste.
- Develop and expand environmental cleanup.
- Adopt environmental cleanup, recycling and reuse services.
- Purchase and run environmentally safe businesses.
- Adopt 'triple bottom line' accounting procedures, adding social and environmental performance to the traditional financial bottom line.
- Promote new production and service delivery technologies, with eco-efficient equipment and vehicles.
- Find alternative uses for wastes (reduce, reuse, recycle).
- Research the market for environmentally friendly products and services and generate consumer desire for these, but avoid being exposed for unsubstantiated claims!
- Take out business continuity insurance against climate-induced damage.

Wever (1996) proposed a system of integrating ISO 14000 compliance into existing environmental management systems. The system involved applying the techniques of total quality management to environmental management, which was labelled as TQEM. The ISO 14000 environmental management standards have been set up to help organisations minimise how their operations and services negatively affect the environment. ISO 14000 is similar to the quality management system ISO 9000, in that both standards focus on how a product or service is delivered, rather than the product itself. As with ISO 9000, certification is performed by third-party organisations rather than being awarded by ISO directly.

ISO 14001 is the most widely used standard within the ISO 14000 band, providing the requirements against which organisations are assessed; and it is flexible enough to apply to most organisations engaged in product or service delivery. ISO 14001 specifies requirements for:

- Environmental policy.
- Environmental impacts of products, activities or services.
- Planning environmental objectives and measurable targets.
- Implementation of programmes to meet objectives and targets.
- Checking and corrective action, and management review.

The audit procedure followed for ISO 14001 compliance is based on ISO 19011 which provides the audit protocol for both ISO 14000 (environmental management) and ISO 9000 (quality management) standards series together, identifying how to ascertain if intended regulatory tools have been successfully implemented. Typically, the conferment of ISO 14001 certification follows a number of predefined steps:

1. Gap Analysis (identifying, documenting and measuring the variance between ISO 14001 requirements and current situation)
2. Planning phase (scoping the compliance project)

3. Procedures phase (outlining an action plan)
4. Implementation (including training) phase
5. Internal audit, revision, and taking corrective action

Another important audit system connected with ecological modernisation is life cycle analysis. Developed in the UK as part of ISO 14001, the 1997-launched ISO 14040 (Lifecycle assessment - principals and frameworks) was subsequently strengthened, in the following year, through the introduction of ISO 14041 (Goal and scope definition). In the context of the operations of energy-intensive industry, life cycle analysis refers to the holistic approach of including all tangible and some intangible costs of production from the initial project conception to the final stage of delivering the product or service. Examples of tangible costs include energy consumption levels associated with pre-production, production, distribution, use, and disposal. Intangible costs may include estimates of cost of unusually long licensing processes or administrative hurdles confronting the introduction of new method of energy production.

It is worth noting that the British Standard BS8555 (published in April 2003) links environmental management systems ISO 14001 with the environmental performance evaluation ISO 14031. BS8555 encompasses the six phase achievement criteria used in the IEMA (Institute of Environmental Management and Assessment) Acorn Scheme. This standard can be used as a route towards ISO14001, and its inclusion of ISO 14031 allows the development of tasks focusing on indicators relevant to the needs of individual firms (IEMA 2006).

A TALE OF TWO CITIES: LONDON AND NEW YORK

Chapter 1 (Preamble) of the United Nations (2003) Habitat II agenda explicitly highlights the fundamental role of cities in any sustainability agenda:

"Cities and towns have been engines of growth and incubators of civilization and have facilitated the evolution of knowledge, culture and tradition, as well as of industry and commerce. Urban settlements, properly planned and managed, hold the promise for human development and the protection of the world's natural resources through their ability to support large numbers of people while limiting their impact on the natural environment. The growth of cities and towns causes social, economic and environmental changes that go beyond city boundaries."

The debate surrounding the concept of sustainable cities has often been the source of considerable controversy. In a paper by Portney (2002:364), the author usefully summed up the debate thus:

"Sceptics suggest that there is little that a single city can do to achieve, or even contribute to, sustainability. Advocates, however, suggest that cities are among the more important building-blocks necessary to help construct a foundation on which sustainable development can occur. Ultimately, this is an empirical argument ... The conceptual foundations of sustainable cities inevitably prescribe a very long-term process, perhaps taking decades to achieve substantial results."

Portney's study has provided a useful matrix of "elements" that can be used to assess the sustainability of a city. Although developed to examine the sustainability of a number of US cities, the table below can indeed serve as a useful (albeit broad-based) empirical template for any modern city. The debate that will follow will aim to use this table as a general frame of reference.

As Portney further observed (2002:371): "If it is possible to imagine that cities can take sustainability seriously and if it is also possible that cities can vary in the extent to which they do so, it is also possible to contemplate why some cities are more serious about pursuing sustainability than others." This statement is especially relevant in the context

of global cities, and their attempt at highlighting the need for setting benchmarks identifying their comparative strengths on the sustainability front. One such important comparative benchmarking exercise is the 'London New York Study' in which this author is a member of its project team. In January 2008, the research team commissioned a report examining, among other issues, the prospects of sustainability in these two major global cities.

There follow a number of interim conclusions of the London – New York Study:

- World cities with particularly 'green' credentials which London and New York could seek to emulate include Vancouver, where 90% of energy comes from renewable sources, mainly hydro-electricity. Vancouver also has a 100-year plan with far-reaching strategies that will enable the city to embrace emerging energy-efficient technologies. Moreover, the coastal city is seeking to take advantage of a broader range of renewable energy sources, including solar, wind, wave and tidal.
- London is increasingly thought of as a 'greener' city than New York, in particular since the introduction of its congestion charge scheme and the UK's ratification of the Kyoto Protocol. However, Mayor Bloomberg's new PlanNYC will address New York's environmental issues head on. However both cities could learn much from other, more environmentally sustainable world cities. A report published by the London Climate Change Partnership entitled 'Lessons for London' highlights the lessons that can be learnt from, for example, how Melbourne is managing its water resources efficiently, and how Shanghai and Philadelphia are adapting to city heat waves.
- Sydney, among other major global cities, has also embraced eco-friendly energy usage on a daily basis. In February 2003, Earth Power, a green waste generator, opened in the city and today restaurants and supermarkets deposit 2,100 tons a day of leftover food there. The facility turns waste into gas through anaerobic digestion, a combustion-free process, and produces 3.2 MW of electricity each day.
- A 2005 study by the Climate Group showed that many global cities had been more successful in reducing their carbon footprints than either New York or London. The most notable examples are Seattle, which achieved a 48% reduction in emissions between 1990 and 2000, and Toronto, which saved \$102 million in energy cost savings through building retrofits.
- London and New York have both stepped up their efforts to combat climate change in recent years. Whilst London made the earlier moves towards creating a "green" capital, in April of 2007 year Michael Bloomberg has redoubled New York's efforts by releasing PLANYC: an aggressive program to vastly improve New York City's environmental sustainability by 2030.

The elements of 'Taking Sustainable Cities Seriously' (after Portney, 2002)

Sustainable indicators project

1. Indicators project active in past five years
2. Indicators progress report in past five years
3. Does indicators project include 'action plan' of policies/programmes?

'Smart Growth' activities

4. Eco-industrial park development
5. Cluster or targeted economic development
6. Eco-village project or programme
7. Brownfield redevelopment (project or pilot project)

Land-use planning programmes, policies and zoning

8. Zoning used to delineate environmentally sensitive growth areas
9. Comprehensive land-use plan that includes environmental issues
10. Tax incentives for environmentally friendly development

Transport planning programmes and policies

11. Operation of public transit (buses and/or trains)
12. Limits on downtown parking spaces
13. Car pool lanes (diamond lanes)
14. Alternatively fuelled city vehicle programme
15. Bicycle ridership programme

Pollution prevention and reduction efforts

16. Household solid waste recycling
17. Industrial recycling
18. Hazardous waste recycling
19. Air pollution reduction programme
20. Recycled product purchasing by city government
21. Superfund site remediation
22. Asbestos abatement programme
23. Lead paint abatement programme

Energy and resource conservation/efficiency initiatives

24. Green building programme
25. Renewable energy use by city government
26. Energy conservation effort (other than green building programme)
27. Alternative energy offered to consumers (solar, wind, biogas, etc.)
28. Water conservation programme

Organisation/administration/management/co-ordination/governance

29. Single government/non-profit agency responsible for sustainability
30. Part of a city-wide comprehensive plan
31. Involvement of city/county/metropolitan council
32. Involvement of mayor or chief executive officer
33. Involvement of the business community (e.g. Chamber of Commerce)
34. General public involvement in sustainable cities initiative

- London's congestion charge is the city's biggest contribution to tackling climate change, and has been very successful; Mayor Ken Livingstone claims that London is the only large city in the world that has achieved a major shift in transport from car to bus. Four years ago, 38% of people used their cars daily in London, its now 19%; there has been a 72% increase in cycling over four years and there will be a 70% decrease in bus emissions as 500 buses are converted to run on hybrid electric-diesel motors; there are 20% more pedestrian crossings and 48% fewer people died on the roads last year compared with 2000.

I should note that developments in Malaysia echoes what is happening elsewhere among major developing economies in the world on the sustainability front. As the publications of the United Nations Development Programme – Malaysia indicate:

"Malaysia has seriously considered and integrated the environment as an important element in its planning processes, placing importance on environmental sustainability in its national policies and development plans. Malaysia is also a party to several Multilateral Environment Agreements such as the United Nations Framework Convention on Climate Change (UNFCCC) and is a member of the Like-Minded Group of Megadiverse Countries. Serious efforts to ensure environmental sustainability started with the enactment of the Environment Quality Act (EQA) in 1974 which provides the legal basis for the protection and control of environmental pollution and the enhancement of environmental quality. Since then, environmental sustainability has been consistently addressed in Malaysia's development plans. Starting from the Third Malaysia Plan (1976-1980) up to the present Eight Malaysia Plan (2001-2005), including the Outline Perspective Plan (OPP2 (1991-2000) and OPP3 (2001-2010)."

ASSESSMENT OF SUSTAINABILITY PROSPECTS FOR REAL ESTATE

According PRNewswire (February 12, 2008), a recent global survey of 1,254 senior business executives (including more than 300 CEOs) revealed that "energy efficiency is one of the top three sustainability priorities named by corporate officers of major companies worldwide." The survey showed that energy efficiency was a key consideration in corporate sustainability efforts, with serious implications for how corporate businesses manage their real estate. More than half of all respondents named energy efficiency as one of their sustainability priorities, a goal that can only be meaningfully addressed through real estate strategies.

The survey, conducted by the Economist Intelligence Unit (EIU), was co-sponsored by global real estate services firm Jones Lang LaSalle and seven other leading companies from different industries: A T Kearney, Bank of America, ExxonMobil, Orange, PricewaterhouseCoopers, SAP and SunGard.

The findings of the report shed light on the growing importance of corporate sustainability in enabling companies to compete and attract business. Although the survey did not initially focus on real estate topics, nearly half of all respondents selected one of three real estate strategies as the number-one sustainability priority from a list of 10 possible priorities. According to Dan Probst, Chairman of Global Environmental Sustainability Board at Jones Lang LaSalle:

"CEOs and other corporate officers are very focused on improving sustainability, but they may not realize the major impact their real estate departments can make in achieving their goals," said. "As this study shows, the path to sustainability often starts with real estate and facility strategies."

In particular, the survey reported the following conclusions:

- 33 percent of senior executives ranked "improving energy efficiency across global operations" as a major priority, and 19 percent ranked it as the leading priority.
- 36 percent ranked "improving the local environment around operating facilities" as a major priority, and 14 percent ranked it as the leading priority.
- 26 percent ranked "reducing greenhouse gas emissions and/or waste/pollutants as a major priority, and 13 percent ranked it as the top priority. Buildings are responsible for nearly three quarters of a company's total GHG emissions, excluding manufacturing.
- 37 percent ranked "communicating performance on sustainability to investors and stakeholders" as a major priority, and 24 percent ranked it as the leading priority.
- 36 percent of CEOs view "difficulty in developing targets, measures and controls required to entrench sustainable priorities within the organization" as a leading barrier to progress in sustainability.

The study also highlighted why sustainability makes good business sense, as global companies that have delivered strong share price growth over the past three years are found to be more proactive on corporate sustainability issues than those that have seen their share price stagnate or decline. A majority of executives (57 percent) reported that the benefits of adopting sustainability outweigh the costs, and believed that sustainable practices can reduce costs (particularly in the form of energy savings), open up new markets and improve firms' reputation.

As stated earlier in this paper, the ensuing adjustments in the investment patterns of the Real Estate sector that have accompanied the recent credit crisis come at a time when the real estate markets have had to engage with another

compelling dynamic, in the form of environmental sustainability. Environmental responsiveness is vital, if the real estate markets are to have a future. Urban planning policies, property legislation and financial agendas, coupled with pressures from owners and tenants, make it crucial that real estate researchers and practitioners have greater appreciation of the issues and solutions that will shape the future of real estate as a sustainable industry.

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