



UNEP **Finance Initiative**
Innovative financing for sustainability

Responsible Property Investing

What the leaders are doing

“Man really is the only animal that builds his terrarium around him as he goes and real estate is really the business of building that terrarium. So we have a tremendous ethical content, a tremendous social purpose.”

James A. Grasskamp
pioneer of modern real estate studies



Responsible Property Investing

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Message from the PWG

The purpose of this report is to help those making investment decisions on existing commercial real estate portfolios to understand how environmental, social and governance (ESG) issues impact upon the current value and prospective investment performance of the assets they own and manage. In our view, efforts to understand and respond to these issues constitute the practice of Responsible Property Investing (RPI). We hope the report will help property asset owners, managers and developers understand how they might implement financially sound RPI practices.

As ESG issues grow in importance for society at large, and governments develop ever more stringent policies in response, the context within which property investment decisions are made is changing irrevocably. For example, if tenants increasingly exercise a preference for occupying more 'sustainable' properties, then the income growth from such investments should prove superior to that from less sustainable, less desirable, stock. Similarly, if investors increasingly prefer to be seen to hold sustainable properties in their investment portfolios, then less sustainable assets will prove less liquid, more risky and potentially less valuable than more sustainable assets. If new social and regulatory standards emerge aimed at improving the sustainability of existing buildings, then less sustainable assets will probably require greater expenditure and deliver poorer returns. Any investors who pre-empt these new standards may be well placed to outperform their competitors.

Given this changing context, it is the fiduciary responsibility of property investors to (at least) understand the implications of these issues and to seek economic ways to improve the sustainability of the assets they buy and hold. With this in mind, the PWG has brought together representative case studies from some of the foremost property investment organisations around the world committed to improving the environmental and social performance or governance of their property portfolios. The following report provides examples of how existing property investors are meeting their social and fiduciary responsibilities simultaneously, and are 'doing well by doing good'. It provides robust examples of emerging and innovative practice today, which the PWG hopes will become common and widespread practice tomorrow.

Signatories to the UN Principles for Responsible Investment (PRI) might benefit from reading this report in conjunction with the joint UNEP FI and PRI report, Building Responsible Property Portfolios, published in June 2008, which is the first attempt to interpret the PRI for a specific asset class.

Paul McNamara

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Introduction



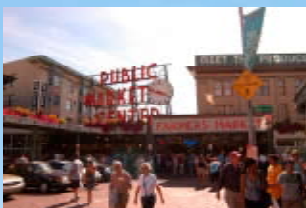
This is the first project of the United Nations Environment Programme Finance Initiative (UNEP FI) Property Working Group (PWG). UNEP FI is a global partnership between the UN Environment Programme and the financial sector, which works to understand the impacts of environmental and social considerations on financial performance.

The Property Working Group is composed of UNEP FI members with property assets. So far, participants include leading institutional property investors and financial intermediaries from Europe, the US, Australia, Japan, and India. What they share in common is a desire to promote sustainability in the real estate and property financial sector.

The purpose of this first project was to compile briefs that could educate property asset owners, managers, and developers about financially sound responsible property investment (RPI) strategies. By RPI we mean property investment or management strategies that go beyond compliance with minimum legal requirements in order to address environmental, social and governance issues.

The project was based on the belief that property investors should do more to address social and environmental concerns. Properties controlled by owners and asset managers are clearly linked to a variety of such issues ranging from global warming to labor rights. These issues can frequently be addressed without diluting financial returns and we believe that it would be unwise for investors to ignore the risks these issues represent should they continue to go unresolved.

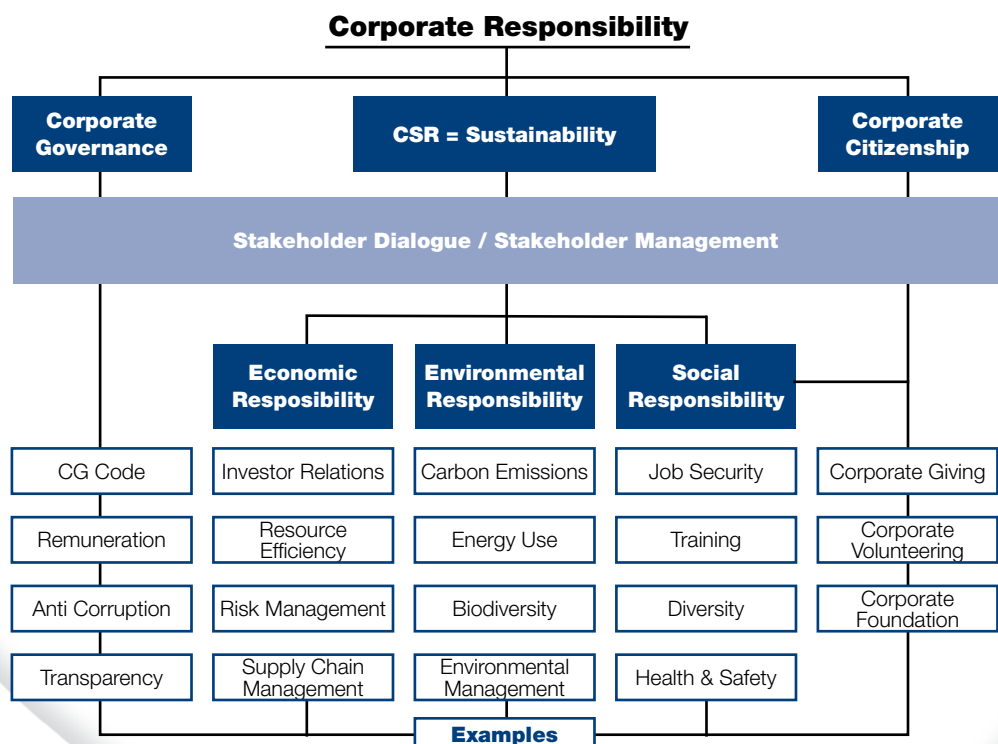
RPI touches upon literally dozens of property locations, design, and management characteristics because so many geographic, physical and human elements contribute to the social and environmental performance of buildings. However, to simplify the topic, we offer the following 10 elements of RPI. We consider property portfolios or asset management plans exhibiting any of these characteristics to be more responsible because they help our building stock perform better on a variety of social or environmental indicators:



- **Energy conservation:** conservation retrofitting, green power generation and purchasing, energy efficient design
- **Environmental protection:** water conservation, solid waste recycling, habitat protection
- **Voluntary certifications:** green building certification, certified sustainable wood finishes
- **Public transport oriented developments:** transit-oriented development, walkable communities, mixed-use development
- **Urban revitalization and adaptability:** infill development, flexible interiors, brownfield redevelopment
- **Health and safety:** site security, avoidance of natural hazards, first aid readiness
- **Worker well-being:** plazas, childcare on premises, indoor environmental quality, barrier-free design
- **Corporate citizenship:** regulatory compliance, sustainability disclosure and reporting, independent boards, adoption of voluntary codes of ethical conduct, stakeholder engagement
- **Social equity and community development:** fair labor practices, affordable/ social housing, community hiring and training
- **Local citizenship:** quality design, minimum neighborhood impacts, considerate construction, community outreach, historic preservation, no undue influence on local governments

RPI should be placed in the larger context of Corporate Social Responsibility (CSR). The idea of CSR dates back to at least the 1950s when Bowen wrote *Social Responsibilities of the Businessman* and called for “broadly based discussion and individual soul-searching on the part of actual participants”.¹ As this quotation suggests, there are differing views on what these responsibilities should be. Some take an economic perspective and argue that social activity is appropriate when it’s consistent with profitability. In this view, for example, a shopping center might help improve its neighborhood if it makes the area more attractive to customers or enhances customer loyalty. Or they might recycle more if it lowers their disposal expenses. Others take a more ethical perspective and argue that companies have certain moral obligations even if they diminish financial returns. Still others see companies as citizens that benefit from participating in a successful society. It is both their responsibility and in their self-interest to work with others to address societal concerns.

The corporate responsibility framework



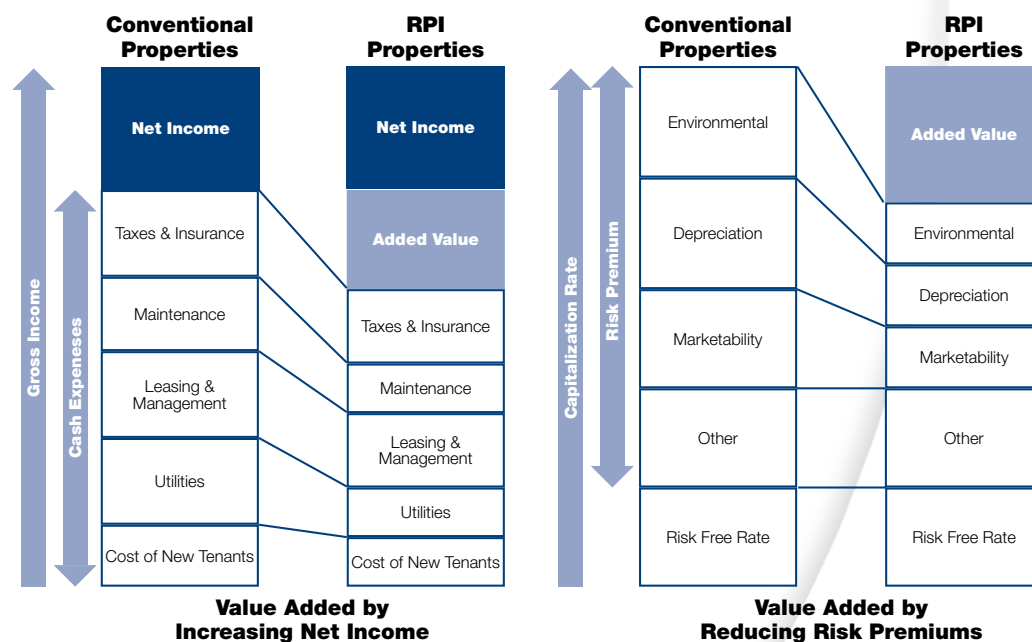
Source: Joachim Schlange, Systain Consulting GmbH, Hamburg

¹ Bowen, H.R. (1954), *Social Responsibilities of the Businessman*, Harper and Brothers, New York.

In this project, the PWG was particularly interested in economic reasons for engaging in CSR. While the group acknowledges other justifications for responsible conduct, it was particularly interested in identifying and sharing strategies that address environmental, social and governance issues in financially prudent ways. This was thought to be the best way to persuade property investors to become more engaged in RPI.


There are two types of financially prudent RPI strategies: the no cost approach and the value added strategy. In the no cost approach, managers find ways to improve the social or environmental performance of their properties at zero added expense. Turning out the lights in unoccupied areas, for example, is a no cost strategy that helps fight global warming. Value added strategies, on the other hand, require some financial outlay which pays for itself by either increasing net incomes (via higher rents or lower costs) or reducing risk premiums (via lower environmental risks, less depreciation, less marketability risk, etc.). For example, higher quality design, which beautifies our cities, may cost more for finer materials and architectural services, but there is evidence that the added costs are more than offset by higher rents.

The value added approach is summarized in the following illustration adapted from Ito.² It illustrates how RPI properties can produce more income by lowering various types of cash expenses, or how value can be enhanced because of lower capitalization rates associated with lower risk premiums.



Each of the briefs in this collection attempts to explain a specific and definable approach to RPI, such as transit-oriented development or certified green buildings. In each brief, the strategy is introduced, followed by a short comment on its “materiality” or how the strategy can be financially consequential for property investors. This is followed by another short statement on how the strategy can benefit the broader public interest. Next we summarize the research that’s been published on the economics of the approach. The focus is on whether it pays to use the approach or building feature in a conventional property investment strategy. With a few exceptions, only peer reviewed studies from academic journals are reported in order to base our findings on the best possible research available. Finally, one or more cases in which the strategy was actually implemented by a property investor are presented. We include financial information from the cases when it is available. Much of the case information was provided by the subjects and not subjected to independent verification. As with all case studies, readers should be the ultimate judge of whether the findings in any given case seem valid for their own situation.

² Ito M (2005), A note on environmental value added for real estate. Prepared for the Tokyo Association of Real Estate Appraisers. The Sumitomo Trust & Banking Co., Ltd., Real Estate Consulting Department.



One overall conclusion that comes from these briefs is that RPI can be applied by managers in different aspects of the property investment sector. Lenders can incorporate RPI criteria into their underwriting processes. Asset owners can assess the social and environmental performance of their portfolios and ask fund managers to incorporate RPI principles into their management strategies. Fund managers can increase allocations to property types that yield greater social or environmental benefits such as green buildings, brownfield developments, transit oriented developments, low-income housing, and historic properties. Asset and property managers can implement RPI by improving the eco-efficiency of their properties, using fair employment practices, hiring from locally underemployed groups, and engaging in other community programs. And developers can create projects that adopt socially and environmentally considerate construction practices, create greener properties, target underserved areas and communities, and incorporate stakeholder consultation through the development process.

Another conclusion that can be drawn is that there are indeed both “no cost” and “value added” strategies for implementing RPI. However, a great deal more could be learned about RPI. There are some other strategies that remain uncovered in this collection because too little hard information is available about them. Examples include flexible interiors, barrier-free design, stakeholder engagement, and sustainability reporting, to name a few. In addition, much of the financial research reported here is useful but sometimes incomplete or out of date. For example, there is far too little systematic information published on the cost-effectiveness of water conservation strategies or fair labor practices and most of our studies on the value of quality design are from the 1980s. We hope to see these gaps filled in over the coming years via a systematic, worldwide, cooperative effort among researchers and property professionals.

It is our sincere hope that this collection will continue to grow and improve. If you have a story to tell, please let us know. With better scientific research and more case studies, we hope to give investors an increasingly comprehensive understanding of the opportunities and limits associated with responsible property investing.

Community Development



Brief Description: Community development is the process of building communities, particularly at the local level, with a focus on improving public health, education, housing, employment, and crime prevention.

Materiality: Property values, vacancy rates, maintenance expenses, rental rates, and insurance rates can all be adversely affected by social problems in the neighborhood of property investments. Shopping centers and residential properties in particular can benefit from higher incomes, lower crime, and other improvements in nearby communities.

Public Interest: Individuals, families and communities can all benefit from improvements in various social indicators such as unemployment, educational attainment, housing, health, and crime. Improvements in social justice, equal opportunity and other broad social goals can also be promoted through community development projects.

Economic Research: Most investors understand that the social conditions around their properties can affect value, risk and profitability in a variety of ways. The prosperity of neighborhood residents affects their spending on housing, professional services and retail services. Shoplifting, vandalism, graffiti and other property crimes discourage tenants, shoppers, homeowners and employers. Better educational attainment attracts industry. Therefore, investments by property owners in community development programs can produce both favorable financial and social returns.

Empirical studies help support this idea. Research has shown that higher crime in a neighborhood discourages retail business and depresses property values.¹ Other studies have found that property owners (and possibly commercial tenants) are willing to pay for interventions, like better security, lighting or neighborhood organizing in order to reduce property crimes.²

When the effects of various “social amenities” including aspects of human, social, and cultural capital were reviewed in Boston, researchers showed that property values in neighborhoods were positively associated with education levels, the percentage of two-parent households, homeownership rates, and English proficiency, all else being equal.³

All of this suggests that investments by property owners that improve the social conditions around their properties could pay them back in the form of higher incomes and valuations. Moreover, tenants may be willing to pay a premium for such programs if they produce lower crime, better employees, less graffiti, or other material benefits.

Case Studies:

Ethical Property Company, UK
PRUPIM, UK – 4 Youth Program
Learning Links Centers, USA
Hermes, UK – Community Engagement Programs
Phoenix Realty Group, USA – Urban Equity Funds



¹ Fisher, B. (1991), A neighborhood business area is hurting. *Crime and Delinquency*, 37, 363-374. Also see Bowes, D.R. (2007), A two-stage model of the simultaneous relationship between retail development and crime. *Economic Development Quarterly*, 21(1), 79-90. Also see Buck, A.J. (1991), A Von Thunen model of crime, casinos and property values in New Jersey. *Urban Studies*, 28(5), 673-686. Also see Gibbons, S. (2004), The costs of urban property crime. *The Economic Journal*, 114, F441-F463.

² Thaler, R. (1978), A note on the value of crime control. *Journal of Urban Economics* 5, 137-145.

³ Fu, S. (2005), What has been capitalized into property values: human capital, social capital, or cultural capital? Center for Economic Studies, Bureau of the Census, Washington, D.C.



Case No. 1

Ethical Property Company, UK Investing in Social Change

The Ethical Property Company (EPC) is supported by two institutional investors: Henderson Investors and Morley Fund Management. The company buys properties and develops them as centers that bring charities, co-operatives, community, and campaign groups together under one roof where they can share skills and ideas. Groups in The Ethical Property Company's centers benefit from reasonable rents, flexible tenancy terms and office space and facilities designed to meet their needs.

Anyone can buy shares in the company. EPC currently has over 1,200 shareholders, some investing as little as £300.

The Company currently owns and manages twelve centers around the UK. Many more are planned, to be developed with funds raised from a new 2006 share issue. All the centers are managed according to ethical guidelines as detailed in the EPC Code of Practice and all tenants are required to meet ethical criteria.

The centers fall into two types. *Ethical Resource Centers*, which are usually city center based and provide offices for national and regional social advocacy organizations, and *Community Resource Centers*, which are mostly located in the inner city and provide a base for local community organizations and local residents who can visit the center for training, advice or education services.

The centers currently house over 130 organizations, working on issues as diverse as climate change, development, refugee support, peace, women's issues, alternative transport and the arts. Some are charities, while others are social businesses. Yet all these organizations share a common view of the world and a desire to bring about social change. They also are key stakeholders in the EPC.

About the Shareholders

All investors but two are individuals and include families, bankers, a trainee rabbi, a financial adviser and a celebrity comedian. EPC is supported by two institutional investors: Henderson Investors and Morley Fund Management.

There are ten shareholders with holdings over 100,000 shares. These include the managing director, with 148,280 shares, the non-executive director, with 436,095 shares, Morley Fund Management (462,000 shares) and Henderson Global Investors (881,000 shares).

Financial Performance

The Ethical Property Company measures itself against a range of financial indicators and publishes them in their Social Accounts each year.

1. EPC measures the *financial returns* generated by the company. It does so by comparing the dividend per share paid with the dividend forecast in the latest share issue prospectus. At 3.25 pence per share, the dividend for 2005-2006 was equal to the forecast. The measure is therefore 100%.
2. EPC measures the *capital value of each share* in the company, calculated as the net asset value per share. In 2006 this was 154 pence, up 9% on the prior year's value of 142 pence.
3. EPC measures the percentage of all shares on which dividends were waived in the preceding year. This was 10.0% in 2006, making a total contribution to the



dividend waiver fund of £20,743. The fund is used to support special initiatives, such as rent-free space for new and struggling groups and disabled access improvements.

4. EPC reports a measure of how easily shareholders can *sell their shares on the Matched Bargain Market* when they need to. In 2006, a total of 211,535 shares were traded on the market, with a surplus of 10,000 shares left untraded at the year end. These were new investors looking to buy rather than existing shareholders looking to sell.
5. EPC measures the percentage of annual rental income spent on *repairs and maintenance and insurance of buildings*. In 2006 the percentage was 10.6%, down 0.9% on last year.
6. EPC reports a measure of the 'square foot months' that the *properties are empty*, expressed as a percentage of the 'total square foot months' for all our properties. For the year, the percentage of empty space was 0.5%, the same as the last year.

Social Accounts

EPC offers investors a financial, social and environmental return. So in addition to the financial audit, EPC monitors a wide range of social and environmental indicators and publishes the results each year in their annual report.

Measuring social and environmental returns is still a very inexact science. EPC measures its performance on each of their indicators against national standards, wherever they exist and publishes them as social accounts. They also set targets for improvement on their own results year on year. In 2006, for the first time they have introduced their own targets for energy consumption and carbon emissions which are more demanding than the standards set by the Building Research Establishment (BRE) which was used in previous years. They are heading towards external verification for the 2007-2008 accounts.

Currently EPC classifies their social and environmental returns under five broad headings.

1. *The nature of their tenants.* They let their properties only to organizations with a strong social purpose.
2. *The landlord-tenant relationship.* They aim to manage their properties according to strong social and environmental principles as detailed in their Code of Practice.
3. *The social and environmental impact of the company and its buildings.* They monitor and look to improve on energy and water use, travel to work and waste management. They also look to purchase as many of their products and services as possible from ethical sources.
4. *Tackling Social Exclusion.* They aim to purchase properties in areas in need of regeneration, and help to tackle social exclusion by supporting local community groups. They also expect to make their buildings as accessible as possible to all members of society.
5. *Honesty and Transparency.* They aim to be open and transparent with all their stakeholders.

“As a social justice organization, African Initiatives is committed to making sure our suppliers, wherever possible, share our principles. The Ethical Property Company does this. They show that it is possible to provide functional, well serviced office accommodation while maintaining social and environmental considerations. And most importantly, they can do it at a good rent.”

Mike Samson, African Initiatives



Case No. 2

PRUPIM UK
4 Youth Programs

Police statistics show that youth nuisance and criminal damage reported to the center management of The Galleries, in Washington County Durham, decreased by approximately 70%.

Prudential 4 Youth is a program that seeks to engage and empower young people as partners in tackling crime and community safety issues. It is the most recent development of an 11 year relationship with Crime Concern, a national crime prevention charity and social business that develops solutions to crime and anti-social behavior.

Combining PRUPIM's long-standing commitment to the community and Crime Concern's expertise in crime prevention (typically anti-social behavior, shop theft and vandalism), the program brings together shopping center staff, retailers, young people and local agencies to:

- encourage young people to take action against a range of community safety issues,
- foster partnerships to divert young people from potential criminal activity,
- dispel some of the myths and fears associated with young people in modern society,
- give young people a voice in their community.

Prudential 4 Youth is currently operating in 14 of PRUPIM's shopping centers. Examples of completed and ongoing programs include:

Arndale Center - Manchester: Pupils from a local high school created a drama, "Off the Rails", around a variety of anti-social behaviors. With assistance from the Greater Manchester Police, this drama was made into a video that was premiered at the Salford Film Festival in 2005. This imaginative project, involving over 500 young people, has contributed to a 21.6% reduction in reported insurance claims as a result of malicious damage at Manchester Arndale. The project achieved a Business in the Community Award for "an innovative community program" demonstrating "excellence at working in partnership with the public, private and voluntary sectors". The project film was awarded a commendation from National Crimebeat Awards.

Grafton Shopping Center - Cambridge: Running since 2002, the project in Cambridge most recently focused on challenging stereotypical views of young people that often lead to other people feeling intimidated when shopping. The Youth Action Group produced a video called "Who Do They Think We Are?" funded by Cambridge Arts and Business, highlighting the misconceptions of youth culture to local authorities, police and government education departments.

West Orchards Shopping Center - Coventry: This project took the form of a social enterprise competition. Members of the winning "company" saw their idea, TXT ZONE, implemented at the West Orchards Center. Visitors to the center can now report any form of anti-social behavior to the control room via text message. TXT ZONE is being evaluated with a view to rolling it out across PRUPIM's entire shopping center portfolio. As a consequence of this project 74% of all customers surveyed felt safer in the knowledge that the project was in operation. The West Orchards! Say Yes! challenge not only had an excellent outcome, it also had a positive impact on all young people involved with the TXT ZONE scheme winning its creators the National Award for Social Enterprise and the Deutsche Bank Spotlight award.

The Galleries - Washington, County Durham: Since the formation of the Washington Youth Group, police statistics show that youth nuisance and criminal damage being reported to the center management of The Galleries has decreased by approximately 70%.



Cwmbran Town Center, Wales: The Street Sounds project led by Torfaen Community Safety Department Musical Youth project included multi-media based workshops and involved 100 young people. The interim evaluation report showed there has been a 41% reduction in the number of shopping center incidents recorded during the project compared to the same period in the previous year.



Kirkgate Shopping Center, Bradford: Pupils from two local primary schools were selected to join the 4 Youth program. The 10 and 11 year olds spent an afternoon in the Kirkgate Center learning about security and how the center and retailers tackle shop theft. They also had the opportunity to talk to the center's security staff as well as the city wardens and representatives from the police. The youngsters were then challenged to develop their own "big crime book" – focusing on anti-social behavior. The finished books will be distributed to other schools as an education tool.



The Center Manager said: "The two big books that have been produced are absolutely fantastic and hammer home the dangers of drug-taking and getting in with the wrong crowd. Both schools have created books that have a powerful message and I'm sure they will make an impact with other children and hopefully encourage them to think again before making the wrong decision about which route to follow in life."



Case No. 3

Learning Links Centers, USA. Learning Links Centers



Funding for public education programs is limited and the quality of education, particularly in the larger metropolitan areas, is suffering. With the comparatively low salaries on offer to teachers and the rising cost of living, attracting and retaining teachers is increasingly difficult.

With this in mind, Learning Links Centers LLC was founded to become a socially responsible investment and management company that will address these needs by offering much needed services for the children and school teachers in low to moderate income neighborhoods.

The basic model involves the acquisition of apartment buildings, in low to moderate income neighborhoods. A percentage of the units are set aside for full time school teachers. The teachers are given a discounted rental rate for tutoring the children that reside in the building. In addition, each of the buildings is equipped with a resource center/study room for the purpose of studying, away from the television and other distractions. The children are offered resource materials, such as books and maps, as well as computers with supervised internet access. All this while giving market rate returns or greater to investors.

Property Management

Learning Links Centers takes a very active and high profile approach to each of the buildings it manages. They make an effort to build a professional relationship with each and every tenant and make it easy for them to contact the property managers. Furthermore, Learning Links trains each on-site manager, and stresses the importance of how all tenants should be treated equally and with respect.

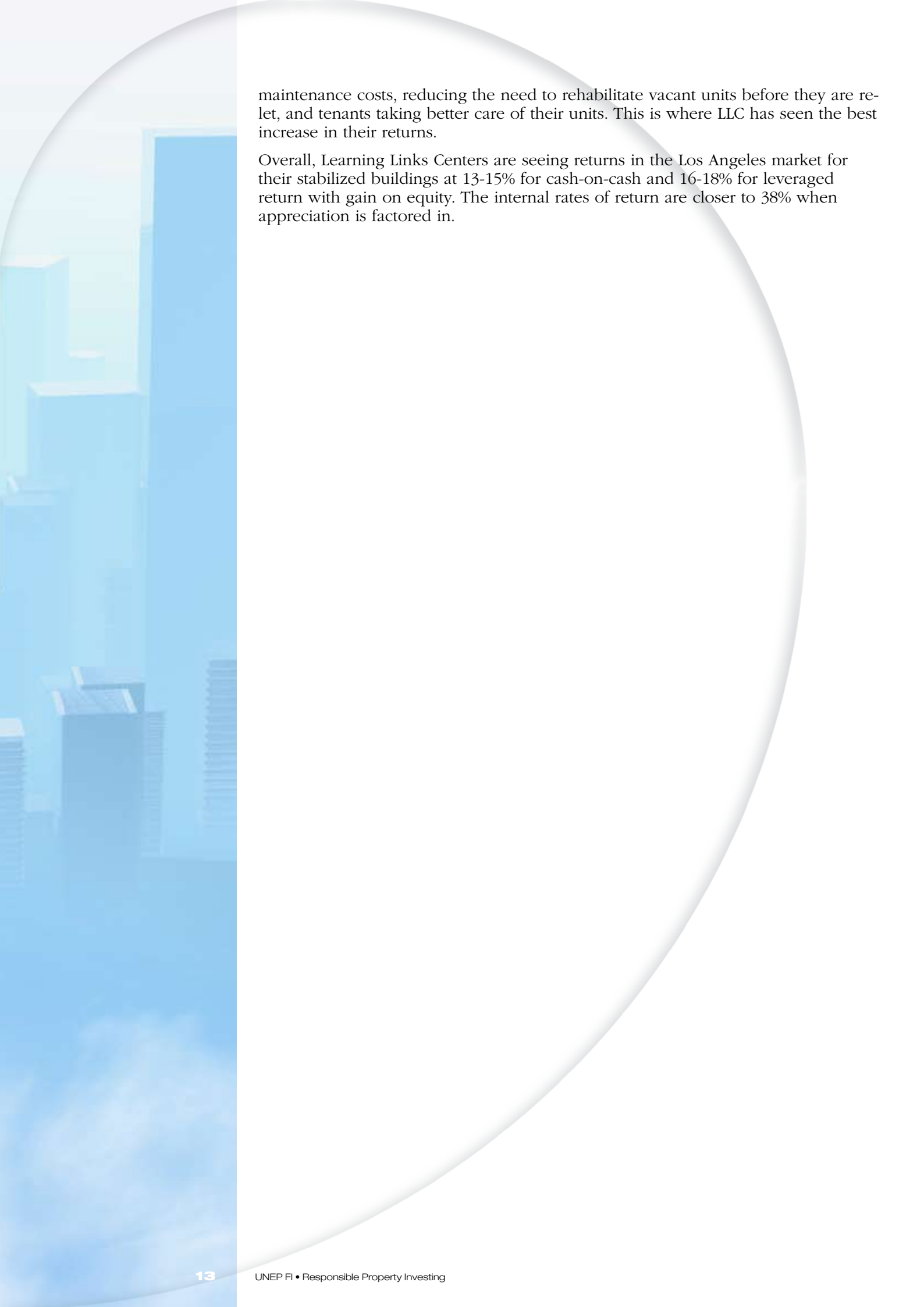
Management increases the efficiency of the buildings and their cash flow, and reduces vacancy rates by:

- personally interviewing each prospective tenant
- maintaining each unit to its highest potential
- communicating with all tenants
- quarterly inspections of units to verify and approve tenants' maintenance
- having a staff capable in all aspects of maintenance/repairs
- quick turnarounds on vacant units
- personal relationships created with suppliers through years of experience (e.g. for carpets or appliances)
- monthly maintenance and financial reporting for our clients.

Surveys of current market conditions in the neighborhoods surrounding LLC properties indicate that the average vacancy rate in the neighborhood ranges from 5 to 10%, with some buildings as high as 40% due to heavy gang activity. LLC properties are currently running about 1-2% vacancy rates for stabilized buildings.

By reducing vacancy (using a Los Angeles based model of a market vacancy of 4%, decreasing to 1% with the Learning Links Model), there is a corresponding increase in the net operating income of approximately 8.50%, and an approximately 26% increase in the net income (from 7.8% to 9.9%), which in turn, assuming a 6.0% capitalization rate, increases the return from appreciation of the building by 10.4%. If we assume a leveraged position of 75% loan to value ratio, the equity increase would be equivalent to a 34% increase in value. This, of course, only factors in the gain from a decrease in vacancy; even higher gains are possible by lowering

By reducing typical levels of vacancy, there is an increase in the net operating income by approximately 8.50%, and an approximately 26% increase in the net income.



maintenance costs, reducing the need to rehabilitate vacant units before they are re-let, and tenants taking better care of their units. This is where LLC has seen the best increase in their returns.

Overall, Learning Links Centers are seeing returns in the Los Angeles market for their stabilized buildings at 13-15% for cash-on-cash and 16-18% for leveraged return with gain on equity. The internal rates of return are closer to 38% when appreciation is factored in.

Community Engagement Programs

Executive Summary

Hermes Real Estate (Hermes) recognizes the importance of Responsible Property Investment (RPI), and how this applies to the management of their portfolio. The establishment of a Responsible Property Management (RPM) Program has evolved over the past 10 to 15 years, and now encompasses all aspects of RPI including community engagement. The RPM Program is designed to allow Hermes to monitor its Property Managers (PMs) through various tools, and promote good practice learning amongst the various PMs, in order to facilitate continued improvement in all areas of RPI.


Introduction

In 2006, Hermes published *Responsible Property Investment: Defining the Challenge*, which sets out the four key challenges of compliance, good practice, strategy, and management systems. These challenges provide Hermes with an operational framework and standard against which the management teams can measure performance.

The Responsible Property Management (RPM) program addresses the Hermes RPI Challenges in relation to its management of property assets. Using the RPI Challenges as the blueprint for this RPM Program, Hermes and their dedicated consultants have developed a series of workbooks and tools that are used to monitor the performance of its Property Managers (PMs).

Figure 1 illustrates how these tools apply to the different levels of property management – either for a property manager across a portfolio; or at a property/site specific level. Each tool is designed to stem from, and feedback to, the RPI Challenges, allowing Hermes to measure how its PMs, and subsequently its properties, are scoring against the four challenges.

Figure 1 Responsible Property Management

 The 4 RPI Challenges				
Responsible Property Management				
Scope	Upstream Tools	Link to RPI Challenges	Monitoring Progress	Rewarding Achievement
	Corporate RPI Workbook	1, 2.1, 2.3, 3, 4	“Regular Review Meetings; Sustainability Improvement Requirements (SIRs*) & e-workbook”	Best Property Manager Awards & Performance bonus
	Utility & Waste Reports	2.1 c d g, 3b		
Property / Site	RPI Good Practice Matrix	2.2 a b c d e f g, 3d 2.1 b c d e f g h, 3b”	Sustainable Improvement Requirements & Regular Review	Best Property Awards
	Upstream Performance BM	2.1 c d g h		

* Sustainability Improvement Requirements

Community Engagement

In relation to community engagement, the Hermes RPI challenges state that property owners and managers should:

Develop and manage property assets with consideration for the impact on local communities and support local communities in improving their quality of life.

Source: Responsible Property Investment: Defining the Challenge, Hermes Real Estate, 2006.

Hermes believes that active community engagement is a vital part of creating both sustainable investments and maintaining a thriving local economy.

One of the key areas of the RPM program is the dialogue and sharing of good practice between property managers on community and environmental issues. This is facilitated in two principal ways:

First, PMs complete the *RPI Good Practice Matrix*. The RPI Good Practice Matrix was first developed in 2005 specifically for shopping centers within Hermes' portfolio. The tool uses the "Community" challenges as the criteria for recording what initiatives are in place across the portfolio. It is not a set of requirements for properties, rather it is a prompt for PMs and properties to illustrate what community initiatives are being carried out at each site. Good practice case studies, identified by the RPI Good Practice Matrix, are shared among PMs as a means of raising awareness on – and standards of – community management initiatives. In 2006 the first RPI Good Practice Matrix for commercial office properties was introduced.

It is a requirement of all properties taking part in the RPM program to complete the RPI Good Practice Matrix bi-annually, and submit at least one good practice initiative in relation to each of the Hermes community challenges each year.

Second, Hermes organizes two events per year which act as forums for good practice sharing for all the PMs. The *RPI Spring Forum* gathers all of Hermes' PMs and building managers together to discuss community and environmental initiatives that may be applicable at other properties in the Hermes portfolio. This allows the dissemination of knowledge between PMs and across property types. Best practice initiatives are rewarded at the annual *Hermes RPI Awards*. This is the focal point of the year for those taking part in the RPM program and the event sees PMs judged across the full scope of RPI with a particular focus on best practice community and environmental initiatives.

The RPM program's strength, especially in terms of community engagement, lies in its ability to stimulate knowledge and good practice sharing across the Hermes portfolio. Hermes uses its sustainability consultants to facilitate this good practice sharing, and has also recently employed a Community Champion with specific responsibility for encouraging community initiatives across all property types.

Some examples of recent good practice community initiatives include the following:

Best Practice Community Initiatives

thecentre:mk – Retail Apprenticeship

thecentre:mk shopping centre in Milton Keynes has developed a retail course for school based students. Retailers provide a weekly half-day placement during term and students undertake weekly half-day taught sessions over a two year period to work towards the Edexcel First Certificate in Retail.

The cost of delivery of the course was met by Milton Keynes Council. Additional costs were met free of charge by *thecentre:mk*. These include the provision of space for training and the recruitment of retailers onto the program.

The aim of the course is to help change student perceptions of retail and help them see that retail offers continuous development, multiple opportunities and a career.

Youths no longer play football in the service yards and have discouraged their contemporaries from doing the same. This has drastically limited damage and complaints from tenants and other property owners.

The success of the scheme has resulted in funding from the Learning and Skills Council to run future programs from September 2007.

Idlewells – Football for the Future

Idlewells shopping center in Sutton-in-Ashfield has developed a scheme to give teenagers and young adults the opportunity to play football in a controlled and supervised setting. Participants also have the opportunity to learn about health and fitness and are encouraged to show a good standard of behavior.

Idlewells is situated in one of the UK's most deprived areas. The scheme has meant that these young people have a place where they can be coached in football, learn about team building, nutrition and health issues and develop their presentation of themselves. At the last count 45 youths were taking part in *Football for the Future* for two sessions per week. They have all signed “contracts” to maintain a certain level of behavior and conduct within the shopping center, school and leisure center.

Crystal Peaks – Big Sleep In

Crystal Peaks shopping center in Sheffield has joined with the Sheffield Archer Project to support the homeless in the area. A one-off fundraising event originally designed to support awareness of the homeless has now been substantially expanded and transformed into a longer term campaign, which has already significantly benefited both the charity and the shopping center.

The *Big Sleep In* was a one-off fundraising event at Crystal Peaks that helped support the BBC's National Homeless Awareness Month, and the center's adopted local charity, the Sheffield Archer Project. The success of the event led to an increase in scope to a 12 months active campaign of fundraising and consistent donations of specific goods and materials for the benefit of Sheffield's homeless.

This has led to an immediate benefit to the homeless through the weekly distribution of collected goods. To date 63 large bags of clothing and 19 large boxes of other essential items including toiletries, food and sleeping bags have been delivered to the Archer Project HQ for distribution. The shopping center has benefited from lots of positive press coverage.

MEPC Birchwood – Express Bus

Birchwood Park, a mixed-use business park in Cheshire, provides a free express bus with the aim of making the park less reliant on car based commuting. This is funded in an innovative way.

In addition to standard car parking allocations MEPC currently leases about 400 car spaces under license agreements to occupiers of the park. The spaces are priced at £750 per space per annum with £250 of this figure being highlighted as a “service charge to support alternative travel initiatives.” Companies acquiring additional car spaces are made aware of this fact.

From January 2005 MEPC has used a large element of this income to finance a free to use peak time express bus service to link Birchwood Park with Warrington Town Center. A key aim of the bus service was to connect with train services arriving at Warrington Central and Warrington Bank Quay stations.

The service has been highly successful with patronage increasing by 429% since its first year of service. Over 174,000 trips have been made to date. The bus service is free to use and available to all tenants of Birchwood Park.

An obvious benefit of the express bus has been improved accessibility to Birchwood Park from Warrington Town Center. The bus service supports those who do not drive and helps to significantly reduce the number of vehicles traveling to and from the park. There are real issues with parking and congestion and the bus service helps to alleviate these issues.

REALM Atlantic Village – Retail Support and Education in the Community

Atlantic Village is an outlet village in Bideford, Devon, which has developed a program to create learning opportunities for everyone in the center and to raise the profile of retail as a career within schools and colleges.

Atlantic Village has a total of 250 employees within the center. The center teamed up with the local North Devon College and national Skillsmart retail to manage a center based NVQ (national vocational qualification) program. Eighty Atlantic Village employees enrolled onto levels 2 and 3 completing their certificates by October 2006. In 2007, 35 further candidates enrolled which means that in two years 54% of the work force at Atlantic village had been through varying levels of NVQ training raising individual and team skills levels considerably.

In order to further work based training and “retail as a career” awareness, the center manager has conducted:

- tours, presentations and forums at the center for groups of business studies and A-level candidates
- presentations in schools regarding retail as a career
- presentation at the college to school tutors and careers advisors on retail careers
- piloting in conjunction with the college a new one year full time diploma course (level 2). The center manager has offered all candidates supported weekly work experience within the center for the duration of the course. This also raises potential job opportunities for candidates within the center.

Quantifiable Benefits

The RPM program is an ongoing process of engagement and improvement with the PMs. It is therefore difficult to directly link any associated savings (financial or otherwise) with a specific task or activity.

However, some properties have calculated the value of free PR generated from community initiatives through press and media coverage, which does give some indication of the quantifiable value of active community engagement.

Clarks Village generated £152,978 in PR value from its community events between January and September 2006, and Crystal Peaks generated £65,655 in media exposure value from its Big Sleep-In initiative.



Case No. 5

Phoenix Realty Group, USA Urban Equity Funds

Phoenix Realty Group (PRG) is a national US real estate investment firm that creates and manages private equity funds to invest in for-sale and rental housing as well as community revitalizing commercial projects near job centers and public transit. The firm provides capital and expertise to community-based developers to build urban and infill projects that are affordable to middle-income households. PRG has attracted more than \$700 million in investments from many of America's leading pension funds, banks and insurance companies who are looking for significant yield coupled with the opportunity to invest in socially responsible projects that address the middle-income workforce's strong need for housing. PRG's private equity funds will be responsible for creating \$3 billion in real estate development across California, New York, New Jersey and Connecticut, while employing thousands of workers and generating millions of dollars in property and sales tax revenues for state and local coffers.

Many of the projects are built on infill locations within a city's established urban core to avoid sprawl of new construction in greenfield locations. These sites may include the remediation of vacant industrial property or the adaptive reuse of historically significant, but functionally obsolete office or industrial buildings. The residential units are targeted to be affordable to families with incomes that are 80% to 200% of the applicable Area Median Income (AMI). This targeting helps address the "affordability gap" where median home prices are far higher than what the middle-income family can afford. For example, the AMI for New York City is approximately \$70,000, less than half the income needed to purchase a median-price home, and the LA County AMI is approximately \$56,000, less than one-third of what is necessary to afford the median-price home in that market.

In order to create housing opportunities that are both desirable and affordable to the middle-income segment, PRG employs several key strategies in its urban and infill developments, such as:

- keeping land prices and "per door" costs low by seeking land on the periphery of job centers and high-growth areas
- designing higher density developments with smaller unit sizes
- focusing on the adaptive reuse of existing commercial properties where available
- using high quality yet reasonably priced amenities
- building in areas close to mass transit, cutting commute times and reducing congestion
- including open spaces and community-serving retail.

PRG has seen a great deal of success with its first wave of for-sale units in Los Angeles. At Puerta Del Sol in the Lincoln Heights neighborhood, the project's proximity to a light-rail station created a strong draw for the middle-income workforce commuting into Downtown LA and other job centers. Located on the site of a former furniture manufacturing facility, the design, amenities and price points of Puerta Del Sol helped it become the fastest-selling community in the market, according to weekly surveys of comparable projects in adjacent communities. In the 14 months ending July 2007, sales averaged more than 10 units per month. Today, Puerta del Sol serves as a gold standard for how PRG's workforce housing strategies can provide homeownership opportunities for the middle class, revitalize urban neighborhoods and still yield impressive returns for investors. In fact, returns were found to be significantly higher than underwritten at the property level, while still maintaining the ability to provide housing priced 25% lower than the area median.

The middle class is the largest segment of the U.S. population and they present an unending demand for appropriate, affordable housing. The undersupply of housing

affordable to this population coupled with an historical lack of institutional capital focused on workforce housing leaves PRG well positioned to continue serving this marketplace. This translates to a tremendous opportunity for institutional investors to partake in socially responsible real estate investment while first and foremost fulfilling their financial goals.



Puerta Del Sol middle income workforce housing development

Design Quality



Brief Description: The Roman architect Vitruvius thought that a well designed building should have “commodity” or fit its purpose, “firmness” or durability, and “delight” or beauty. More than 1,300 years later, 13th century Florentine architect Alberti held virtually the same point of view and today, the UK Commission for Architecture and the Built Environment (CABE) defines good design in much the same way: fit for purpose, sustainable, efficient, coherent, flexible, responsive to context, and good looking.¹ High quality design, in CABE’s view, is to a large extent an objective question. There are matters of taste and preference, which fall under the topic of style, but on the whole, matters of quality can be objectively assessed. The Design Quality Indicator is one example of a procedure that can be used by everyone to evaluate the design quality of buildings.²

Materiality: Poor design can lead to accelerated functional obsolescence and the rapid depreciation of even new buildings. Design excellence, on the other hand, can increase rents and lower vacancy rates, often by more than the cost of additional design work and finer materials.

Public Interest: Many public values can be enhanced through better design, some more tangible than others. Safety, security, sustainability, health, and beauty can all be at stake. Building design not only affects the structures themselves, but also determines the look and functionality of public streets, squares, parks, plazas, and natural areas.

Economic Research: The designed functionality of a mall can affect economic parameters like occupancy and revenues by location. Design deficiencies can also contribute to success or failure. In particular, core public spaces should be continuous, axial lines that easily bring shoppers from the entrances to the interior, and stairs should get customers easily from one level to another. In one case, a “European-styled” mall in Denver ignored this basic principle, and so it proved functionally obsolete from its opening, leading to the developer defaulting on loan payments, foreclosure, and the mall eventually being resold for 25% of its construction cost.³

1 CABE, 2006. *Design Review: How CABE evaluates the quality of architecture and urban design*. Commission on Architecture and the Built Environment, London.

2 <http://www.dqi.org.uk/DQI/default.htm>

3 Brown, M.G., 1999. Design and Value: Spatial form and the economic failure of a mall. *J. of Real Estate Research* 17(1/2), 189-225.

A series of case studies of commercial speculative workplaces in the UK compared well-designed projects to similar projects nearby of lesser quality. Quantitative evidence indicated that better urban design enhanced financial values. In addition, in depth interviews with investors, developers, occupiers, designers, and public authorities revealed how the benefits of good design significantly outweighed the costs, particularly on the prestige end of the market. Also, good design did not cost more and so it could be delivered at competitive rates. As a result, features like better external linkages, more “life-giving” uses (e.g. patio restaurants), and the configuration of buildings to face public spaces, could be used in the marketing phase to place better designed buildings above the competition in their local markets.⁴

In Chicago, office buildings that received the Chicago American Institute of Architecture jury award for aesthetic architectural excellence from 1955 to 1978 rented for an average of 22% more per square foot, controlling for other explanatory factors. Although the buildings cost more to build, because of architectural fees and more expensive materials, the cost differential was well below the resultant capitalized value for “good” new architecture.⁵

The effect of building amenities on costs, rents, vacancies, and profitability for office buildings larger than 100,000 square feet was studied in Boston and Cambridge, Massachusetts. Design quality was determined by a survey of architects that had served on jury panels and were familiar with the structures. The results were inconclusive as to whether better design cost more to construct because of data deficiencies. However, better design was associated with higher rents, all else being equal. The best designed buildings rented for 21.6% more than the worst designed ones after controlling for other factors. In addition, the better designed buildings had lower vacancy rates, although these findings were statistically less certain than those for rents. Given the inconclusive findings on construction costs, however, the ultimate effect of design on profitability was also inconclusive.⁶

Case Study:

The Birmingham Alliance, The Bullring

4 Carmona, M. et al (2002), Stakeholder views on value and urban design. *Journal of Urban Design* 7(2), 145-169.

5 Hough, D.E. and Kratz, C.G., 1983. Can “good architecture meet the market test? *Journal of Urban Economics* 14, 40-54.

6 Vandell, K.D. and Lane, J.S., 1989. The economics of architecture and urban design: some preliminary findings. *AREUEA Journal* 17(2), 235-260.



Case No. 1

The Birmingham Alliance The Bullring



The Bullring is a 1.2 million square foot commercial area built on 26 acres in the heart of Birmingham City Center, UK that opened in 2003 with over 185 shops and restaurants. New public spaces, walkways, performance areas and stunning contemporary architecture are all important elements of the project. Upon completion, the £530 million project was the largest retail-led city center regeneration project in Europe. It is built over 3 levels and divided into 2 malls anchored by Selfridges and Debenhams. The malls are linked by boulevards and landscaped squares, adorned by £2 million of public art. The famous Sky Plane is a 7,000 square meter glass roof without visible means of support that unites the various elements of The Bullring.



In 2004 The Bullring received the Silver Jubilee Cup – the premier award given by the Royal Town Planning Institute. The judges stated that “The Bullring project is an outstanding example of innovative and positive planning which has reclaimed public space for the pedestrian and has created a stimulating urban experience for all.” A year later it received the Design Award for New Projects over 500,000 Square Feet from the International Council of Shopping Centers.

While no data have been collected to show that design excellence at The Bullring has added value, the owners “instinctively know it does”. In particular, “we know that when the market has a downturn, good design retains tenants and maintains footfall, which are both key to a successful center.”

The Bullring has also been successful in regenerating the city center and creating employment in areas of high unemployment. A job recruitment campaign, called Bullring Jobs 2003, was launched in partnership with Birmingham City Council, Solihull Learning and Skills Council, Jobcentre Plus and Pertemps Employment Alliance. The project has delivered a number of initiatives to engage and connect local people to employment opportunities while offering a comprehensive recruitment service to Bullring tenants. This included a dedicated recruitment bus which visited over 100 locations within the city and registered over 15,000 people. From the 5,500 retail job vacancies available on opening, the Bullring Jobs Team was able to place over 2,600 people into jobs. More than half (52%) of these people were drawn from the city’s priority wards (high unemployment areas), over 75% were previously unemployed and 49% were from black and minority ethnic groups. Through working in partnership, the project was also able to minimize impacts on existing city center employers.

Energy Conservation in Existing Buildings



Brief Description: There are a variety of measures that asset and property managers can use to reduce energy use in existing buildings.

Materiality: Energy conservation lowers operating costs which in turn can increase net operating incomes. Certain measures may also improve tenant comfort and satisfaction, leading to better tenant retention.

Public Interest: Energy conservation can reduce global warming and produce other co-benefits including¹:

- improved social welfare and poverty alleviation by helping households cope with utility bills,
- reduction in local and regional air pollution,
- improved quality of life and building value through greater thermal comfort,
- noise mitigation (a by-product of more insulation and triple-glazing),
- improved economic productivity and economic competitiveness due to greater employee productivity, lower absenteeism, and increased sales in retail settings sometimes linked to energy efficient buildings (with increased daylighting),
- new business opportunities and jobs associated with conservation services,
- energy security.

Economic Research: Systematic studies are finding conservation measures that are cost-effective in most types of properties and locations. A review of 80 studies on five continents found that in developed countries, the measures with the greatest potential to save energy include shell retrofits including insulation (especially windows and walls), space heating systems, and efficient lights (especially shifts to compact fluorescents and efficient ballasts). However, the cheapest options include better appliances (including efficient televisions, computers and peripherals), ventilators, air-conditioners (especially in warmer climates when they displace expensive peak power), water heating equipment, lighting and building energy management systems.² In one of the most comprehensive (and financially conservative) studies, looking at the non-domestic UK building stock, the following measures were found to produce greater annual savings than costs over their expected lifetimes, using a 25% discount rate. In other words, these projects produce an internal rate of return of at least 25%.³

Cost-effective in all circumstances

- lighting
 - turning off lights for an extra hour
 - replacing 38mm fluorescent tubes with 16mm
 - metal halide and low voltage floodlights
- energy efficient boilers
- reducing room temperatures
- energy efficient air conditioning
- hot water tank lagging⁴

1 Urge-Vorsatz, D, Harvey, LDD, Mirasgedis, S and Levine, MD (2007), Mitigating CO₂ emissions from energy use in the world's buildings. *Building Research and Information* 35(4), 379-398.

2 Ibid.

3 C. H. Pout, F, MacKenzie, R Bettle (2002) *Carbon Dioxide Emissions from Non-Domestic Buildings: 2000 and Beyond*. BRE (Building Research Establishment) Report No.442.

4 Reported to be cost-effective at a 15% discount rate in Mortimer, N.D. et al (1998) Carbon Dioxide Savings in the Commercial Building Sector. *Energy Policy* 26(8): 615-624.

- low energy office equipment⁵
- reflective night blinds in open refrigerated display cases.⁶

Cost-effective in some circumstances

- lighting
 - replacing 26mm fluorescent tubes with 16mm
 - reflective tungsten halogen spots
 - high frequency ballasts
 - electronic control gear compact fluorescent lamps
 - basic timers for lighting
 - presence detectors
 - fixed period timers (stairwells)
- insulation of 200mm in pitched roofs
- low watt inline & axial fans
- thermostatic radiator valves (TRVs) fully installed.

A similar study was conducted in Greece that found the following measures to be economically feasible as private investments for nearly all combinations of building age, size, use, and climate zone, assuming a 15% discount rate (i.e. an internal rate of return of at least 15%), no subsidies, and no disincentives:⁷

Feasible in offices, hotels, hospitals, schools, and residential

- roof ventilators
- low-energy bulbs
- replacement of old cooling devices.

Feasible in offices, hotels, hospitals and schools

- replacement of old diesel boilers (with diesel or natural gas)
- regular inspection of central heating boilers
- intelligent programmable controls
- thermostats in central heating boilers
- building energy management system
- external shading of buildings
- night-time ventilation
- cogeneration.

In addition to these capital investments, certain management strategies have also been found to be economically viable means of saving energy in existing buildings:

- Building commissioning or auditing – the process of checking the performance of existing building energy systems – has been found to produce 15% in energy savings and to pay back the investment in 0.7 years in a study of 224 office, retail, hotel, education, laboratory and hospital commissioning projects throughout the US.⁸
- Cooling supply air to 50°F instead of the conventional 55°F has been shown to produce a 5-6% energy cost saving due to lower fan energy requirements.⁹

All of these measures are made feasible by the savings they produce from lowering energy consumption. However, if tenants were willing to pay more for energy efficient buildings, then additional measures could become financially feasible. One study in Sweden found that renters of multi-family flats are willing to pay up to 13% higher rents for various energy-saving measures including new windows, ventilation systems, and façade insulation.¹⁰ In another study of finance and business services sector tenants, 69% of the survey respondents said they would pay “marginally more” for “greener” offices, in which energy efficiency is a primary consideration.¹¹

Case Studies:

Investa, Australia – 110 George St., Parramatta
 PRUPIM, UK – The Mall Centre at Cribbs Causeway
 AXA REIM, France – Refurbishment of an office building

⁵ Ibid.

⁶ Ibid.

⁷ Georgopolou, E. et al (2006), Evaluating the need for economic support policies in promoting greenhouse gas emission reduction measures in the building sector: the case of Greece. *Energy Policy*, 34, 2012-2031.

⁸ Mills, E. et al (2004), The Cost-effectiveness of commercial-buildings commissioning. Lawrence Berkeley National Lab – 56637, Website: <http://eetd.lbl.gov/emills/PUBS/Cx-Costs-Benefits.html>.

⁹ Marriott, C. (2006), 3 simple approaches to energy efficiency, *ASHRAE Journal*, July, 2006.

¹⁰ Banfi, S., et al (2005), *Willingness to pay for energy-saving measures in residential buildings*. CEPE Working Paper No. 41, Centre for Energy Policy and Economics, Swiss Federal Institutes of Technology, Zurich.

¹¹ GVA Grimley, *Research: Sustainability, Towards Sustainable Offices*, Spring 2007. GVA Grimley, London.



Case No. 1

Investa, Australia **110 George Street, Parramatta**

Site Profile

110 George St. is located in the Central Business District (CBD) of Parramatta, near Sydney, Australia.

Investa purchased the building in 1997.

The building consists of a net lettable area of 20,976 m² of offices across six floors with eight separate suites per floor, one level of retail consisting of 19 outlets and currently operates at 95% occupancy.

The building houses a number of extended hours trading and 24/7 tenants. The chillers supply individual air handling units within each pod.

Baseline Year Data

Baseline year electricity consumption was 4,568 MWh (4,424 tonnes of CO₂-e) at a cost of AUS\$312,346. There is no consumption of gas at the site.

Approach

Investa implemented the EP&T model to reduce the electricity, gas and water consumption at the site. EP&T is an “Australian technology company delivering innovative, end-to-end energy services that guarantee improvement to your triple bottom line”. The EP&T model consists of the following steps:

Step 1

Install the EDGE Intelligent System – an electricity, gas and water monitoring and reporting system, including intelligent meters, a memory module to acquire, store and transmit data and a software system that provides a management and reporting system used to diagnose energy inefficiencies.

Step 2

Set up the EDGE system with site specific equipment and operational details.

Step 3

Remotely monitor the electricity, gas, and water usage, then diagnose and identify potential savings.

In the initial assessment using the EP&T system, a number of apparent anomalies were identified that suggested the property was using more energy than it needed to in a number of areas.

The primary focus was then directed towards developing a solution to provide the optimum energy efficiency with the existing control strategies and heating, ventilation and air conditioning (HVAC) equipment. Common area lighting was also targeted, which did not appear to reflect occupancy patterns for the site.

The initial recommendation was to review the current control strategies and schedules to more closely reflect occupancy at the site. The site was fitted with a TAC Building Management System (BMS) providing automated controls to the HVAC plant, outside air and economy cycles.



As a result, the following ideas were recommended for review and possible implementation:

- review thermostat temperature settings for core, low occupancy and after hour operations
- revise outside air/economy cycles relative to temperature particularly in low occupancy periods
- implement auto transformers for selected circuits of car park lighting only
- implement optimum stop program or control strategy
- tighten the operating hours to meet with lease requirements
- review weekend consumption to ensure only tenant required equipment is operational
- review high overnight base loads.

Step 4

Recommend energy saving initiatives where identified capital expenditures would result in significant savings.

EP&T identified opportunities to implement Power Factor Correction (PFC), Variable Speed Drives (VSD) and Auto-transformer projects. PFC can lower utility bills by lowering capacity charges for energy transmission infrastructure. VSD saves the energy used by fans and pumps by slowing air or fluid flows, which are sometimes higher than they need to be, by slowing motor speeds (and thus reducing energy use) rather than by using dampers or control valves. Auto-transformers can cut energy costs in a fluorescent or high-intensity discharge lighting system where lighting reductions are acceptable.

In addition to the Monitoring Analysis Reporting System (MARS) component, a range of capital expenditure project proposals were provided for Investa's consideration. Of these, Power Factor Correction and Variable Speed Drives were implemented.

Step 5

Provide case studies, which substantiate the savings flowing from the above recommendations.

The Power Factor Correction unit delivered an annual saving of AUS\$10,998. The full benefit from the implementation of the VSD's was expected to be approximately 207,500 kWh (200 tonnes of CO₂-e) or AUS\$14,500.

Comments

By using MARS, Investa was able to identify those capital expenditure projects that provided it with the maximum benefit.

The approach allowed for the identification of existing problems within the site operations through the monitoring of the energy consumption via the EDGE metering, while the capital expenditures provided additional energy reduction and/or financial benefits.

The case study reveals the value to Investa of adopting the EP&T model and approach.

As a result of these projects, the new Australian Building Greenhouse Rating (ABGR) for the site improved from 1.5 Star in 2002 to 4.0 Star in 2006.

Cost Benefit Analysis

A majority of the modifications made were at minimal or no cost. They involved correcting or modifying existing strategies to more closely reflect occupancy and only required BMS technician time to be implemented.

The savings observed in HVAC exceed AUS\$20,000 annually with the additional AUS\$10,000 savings of the base building light and power, resulting in a total annual savings of AUS\$30,000 and 363 tonnes of CO₂.

Case No. 2

PRUPIM, UK**The Mall Shopping Centre at Cribbs Causeway, Bristol**

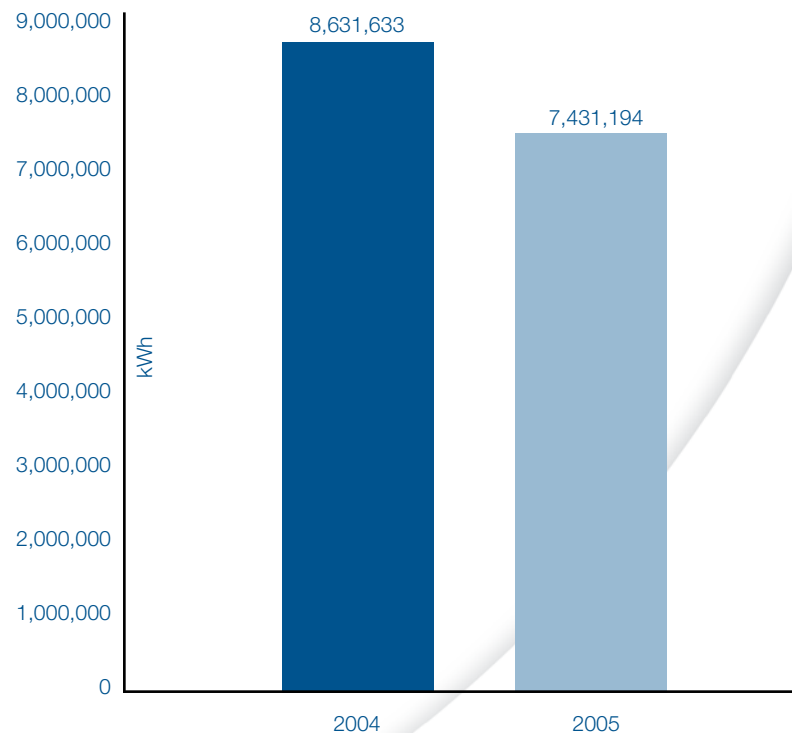
The Mall at Cribbs Causeway has set a target to reduce its energy consumption annually by 10%. Between 2004 and 2005, energy consumption (electricity and gas) fell by an impressive 14%.

These reductions in energy consumption were achievable in part by the installation of a system to enable the majority of car park lights to be switched off at night. Furthermore, fundamental operational changes to the plant controls were made.

The center's Building Management System provides close monitoring of consumption using half-hourly readings. Month on month comparisons enable managers to actively check performance and monitor the success of efficiency measures introduced.

Center management staff are also keen to communicate with tenants on energy efficiency, regularly sending out marketing materials, including those from the Carbon Trust, as well as addressing the issue of energy consumption during tenant liaison meetings.

The switches necessary to allow most of the car park lights to be switched off at night cost £10,000 to install. The outlay was paid back in just over two years from energy savings. Over ten years, the project will yield a 38% internal rate of return.



Case No. 3

AXA REIM, France

Refurbishment of an Office Building



**64 – 68 rue du Dessous
des Berges
75013 Paris
Built in 1971
7800 Sq meters
4 basement floors, 7 floors**

Situation in 2005

- Heat production using domestic fuel oil, 3 boilers of 774 kW each, subject to ICPE regulations (Installation Classée pour la Protection de l'Environnement) such as storage of inflammable products,
- 90 and 35 kW rated refrigeration units running on refrigerant R22 cooled by water cooling towers (also subject to ICPE regulations),
- The terminal units were primarily induction units. Fan coil convectors were installed on the 7th floor to replace the existing induction units, but with no modification of the ventilation network.

Owing to the date of construction and the ICPE constraints, some characteristics did not meet regulatory requirements. It would only be possible to correct them as part of a strategy to replace and modify the existing installation.

The ventilation system was complex and unusual. The air extracted from the offices was used as fresh air for the car park. This particularity and the complexity of the ventilation networks had consequences for fire safety due to the numerous connections between the various levels and parts of the building. The configuration did not permit smoke extraction from the car park. The level of safety was very negative for the liquidity of the asset.

Works Program

The program was developed in collaboration with the property manager, taking advantage of the fact that the main tenant of the building was leaving. It is an example of how energy managers can take advantage of the void time between tenants. One can do the most during new construction and there are opportunities in the everyday management of occupied properties, but the period between tenants presents opportunities that may not be available in an occupied property.

Most of the installations and equipment dated back to when the building was constructed and it was necessary to replace nearly all of them.

Various possible solutions were evaluated. Finally the most cost-effective strategy was selected. The work program consisted of:

- replacing the induction units with individual heat pumps instead of fan coil units
- selecting a cleaner energy source and producing fewer greenhouse gas emissions by substituting fuel oil with natural gas
- eliminating the water cooling towers situated on the roof terrace and implementing dry cooler units.

The work was carried out in two stages:

- replacement of the refrigerating unit from Nov 2005 to March 2006
- renewal of the heating unit and changes to the source of energy from April 2006 to September 2006.

There were several advantages with this solution:

- it had the least impact on the existing installation
- it reduced power requirements for both refrigeration and heating, which importantly allowed the ICPE constraints to be disregarded
- removal of the air cooling towers, not properly positioned in relation to the fresh air intakes, eliminated the sanitary risk from *legionella*, the cause of Legionnaires' disease
- the new cooling system was placed on the roof terrace, eliminating the conformity problems that existed with the original basement location
- the use of refrigerant R22 was eliminated (before it is prohibited in 2014)

- the choice of natural gas enabled the domestic fuel oil installation to be eliminated; the oil tanks had required significant maintenance (testing, tanks for leaks, overfill limiter etc.)
- improved fire safety in the parking lot
- a significant reduction of water consumption
- it was the cheapest among all those investigated.

The only disadvantage was that electricity consumption increased due to higher needs for the dry coolers compared to the water cooled towers.

Differences in energy consumption before and after the works

Differences		
	Cost	GHG
Electricity	18631€	26T
Fuel	-27285€	-133T
Water	-13156€	
Total	-21810€	-107T

The project produced an annual saving of 21,810€, equal to a 19% reduction in electricity, fuel, and water expenses. CO₂ emissions were reduced by 107T – a 30% reduction from the former situation.

The total cost for the refurbishment was 2,600,000€ or 330 €/sq meter. The project was considered necessary and this was the least cost solution. Therefore, this was not considered to be a special expense for energy and water conservation and hence the concept of payback rate or rate of return does not apply.

Conclusion

This is a modest example of property and asset management integrating the energy conservation concern from the outset. It demonstrates how an accurate preliminary study of such a refurbishment project can lead naturally to a more efficient and less expensive energy solution.

Fair Labor Practices



Photo by Robert Yager.¹

Since tenants may be willing to pay 7% higher rents for the expectation of better maintenance and upkeep, the cost of sufficient wages and benefits could be passed on to tenants while also increasing the profitability of properties.

Brief Description: Fair labor practices in property investing generally refer to giving lower-skilled employees and contract workers, such as janitors, security personnel and other laborers in property organizations or their vendors, adequate salaries, benefits, and rights to organize in a healthy, safe, and secure work environment. Governments, employers, and workers, via the UN International Labour Organization, have adopted principles to promote decent working conditions worldwide. They address freedom of association and collective bargaining, equality of treatment and opportunity, abolition of forced and child labor, employment promotion and vocational training, social security, conditions of work, labor administration and labor inspection, prevention of work-related accidents, maternity protection, and the protection of migrants and other categories of workers such as seafarers, nursing personnel or plantation workers.

Materiality: Property managers employ workers in technical, janitorial, management, security, and service positions. Labor-management problems can disrupt business operations. High quality labor standards can promote higher levels of safety, cleanliness, physical integrity, efficiency and service for tenants and visitors. This can lead to better tenant retention, fewer vacancies, and even rent premiums. Labor union pensions and banks are major sources of capital for property investors in some countries and therefore the labor practices of property investors can affect access to capital as well.

Public Interest: Fair labor practices can improve the quality of life for workers, which in turn can produce better personal, family, and social outcomes.

Economic Research: Asset and property managers can add value to their investments by increasing the perceived worth of properties to tenants through better tenant services and amenities such as management, security, cleaning and maintenance.¹ One study found that an expectation by prospective tenants of better maintenance and upkeep resulted in 7% higher rents, all else being equal.²

Better services are associated with fair salaries and benefits. Janitorial companies, for example, that have excessive turnover rates because of poor wages and benefits, will clean 25% less office space per employee than companies without turnover problems.³ This means that fair wages and benefits can lead to better building services.

Tenants may be willing to absorb higher rents in order to pay for satisfactory wages and benefits. One study found that a cleaning contract that gives janitors a living wage plus health benefits would require building owners to raise rents by 2.4 cents per rental dollar.⁴ Since tenants may be willing to pay 7% higher rents for the expectation of better maintenance and upkeep, the cost of sufficient wages and benefits could be passed on to tenants while also increasing the profitability of properties.

Case Studies:

General Growth Properties, USA – Janitorial Services Code of Conduct
Kennedy Associates Real Estate Counsel, LP, USA – Multi-Employer Property Trust
Amalgamated Bank, USA – LongView Ultra Construction Loan Fund
CalPERS, USA – Responsible Contractor Policy

¹ Copyright © 2007 Institute for Sustainable Communities Leadership for a Changing World, Institute for Sustainable Communities, 629 K Street, NW, Suite 200, Washington DC, 20006-1629 p 202.777.7560

² Hall, J.G. (1994), The intangible business component of commercial real estate investments. *Real Estate Issues* 19(1), 13-22. Also see Izman, S and Ihlenfeld, NA (1991), Real estate asset management. *Real Estate Review* 21(2).

³ Glascock, J.L., et al. (1993), Owner tenancy as credible commitment under uncertainty. *Journal of American Real Estate and Urban Economics Association* 21(1), 69-82.

⁴ *Cleaning and Maintenance Management* (Sept. 1995), "Employee turnover – high and low." Vol 32, 9, pg. 8.

⁵ Gozan, J. and Moye, M (2000), Impacts of quality building management and services on real estate investments. *Service Employees International Union*.



Case No. 1

General Growth Properties Janitorial Code of Conduct



As a company, we want to encourage our vendors to do the right thing for the people who show up every day and make our malls the special places they are. It is important to us that the janitorial staff in our malls have access to affordable healthcare for themselves and their families.

John Bucksbaum, CEO General Growth Properties

General Growth Properties, Inc. is the second largest US-based publicly traded real estate investment trust (REIT) based upon market capitalization. General Growth has ownership interest or management responsibility for a portfolio of more than 220 regional shopping malls in 45 states, as well as ownership interest in master-planned community developments and commercial office centers. General Growth's international portfolio includes ownership and management interest in shopping centers in Brazil and Turkey. The Company's portfolio totals approximately 200 million square feet and includes more than 24,000 retail stores nationwide.

In August 2007, General Growth announced that janitors at the company's 194 owned regional shopping centers in the US will receive access to affordable health insurance and market-based wage rates under new standards it established for its vendors. Under the program, third-party cleaning service vendors who do business with General Growth will be required to sign a commitment to meet minimum standards with respect to important compensation elements and treatment of their employees. While particular wages and benefits will continue to be determined by the individual vendors, certain components will be consistent among them all:

- individual and family health plans with affordable premiums that are 75 percent employer-paid and ultimately borne by General Growth. More than 3,000 janitors who are employed 20 hours or more per week at General Growth centers will be eligible
- competitive wages within the regional market in which each mall is located. Wage increases will be based upon a survey of wages for comparable workers
- an employee complaint resolution process to ensure that janitors are given the opportunity to have concerns addressed and are treated by their employers with the respect and dignity they deserve.

"As a company, we want to encourage our vendors to do the right thing for the people who show up every day and make our malls the special places they are," said John Bucksbaum, chief executive officer of General Growth Properties. "

The new program will be phased in as vendor contracts expire over the next 12-24 months. Vendors began implementing wage increases in early 2007. The amount of the wage increase will be based on regional market conditions and for most will be in the range of 20 to 25 percent.

In addition to providing access to affordable quality healthcare and better wages, General Growth is committed to using cleaning products that are environment-friendly. These include "Green Seal" products that are biodegradable, low in volatile organic compounds, low in aquatic and human toxicity, and free of such things as ammonia, phosphates and reproductive toxins. Green Seal is an independent non-profit organization that certifies environmentally friendly products and services.

The company has articulated a clear business case for this commitment. It strives to provide a special shopping experience, and the cleanliness provided by janitorial vendors contributes to that objective. It is therefore in the company's interest to be associated with an appreciated, well-trained, motivated and dedicated group of janitors, and job benefits are important elements for the successful recruitment and retention of such individuals. Being a proactive and responsible employer also helps eliminate the need for employees to reach out to governmental agencies for workplace fairness. Finally, customers, shareholders, retail tenants and employees want to be associated with a company that is respected as a good corporate citizen. Providing health care and other benefits is one example of good corporate citizenship. Therefore, this initiative gives GGP's stakeholders confidence in its social responsibility and enhances its corporate reputation.

Case No. 2

**Kennedy Associates Real Estate Counsel, LP
Multi Employer Property Trust**

\$6.83 BILLION
in net assets

358 TOTAL
number of buildings

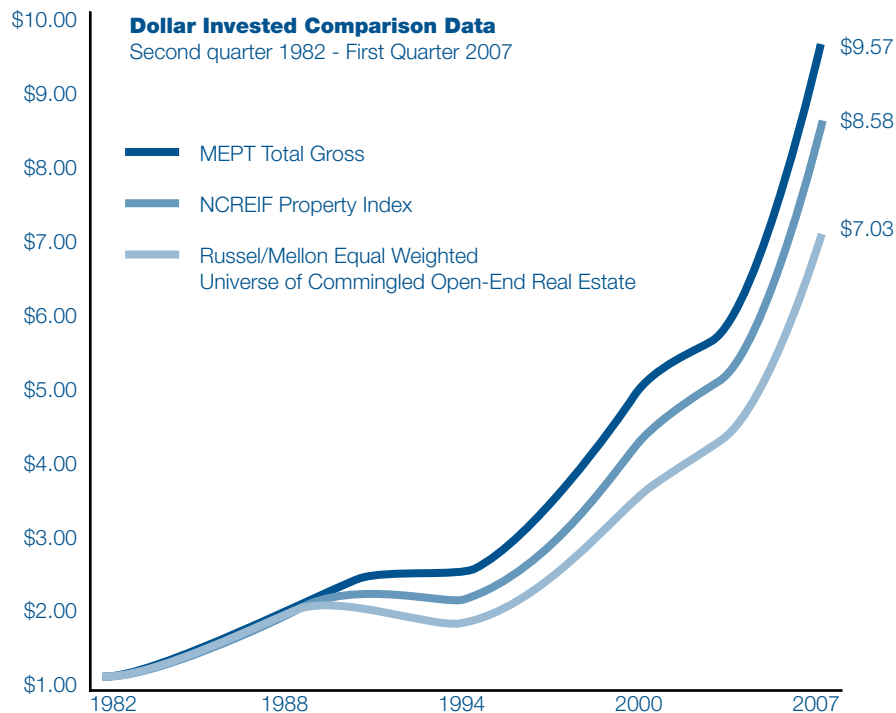
318 TOTAL
participating
pension plans

The Multi-Employer Property Trust (MEPT) is an open-end commingled equity real estate fund. MEPT invests in a diversified portfolio of primarily new construction, 100% union-built, institutional-quality real estate properties in more than 24 major metropolitan markets across the United States. The Fund owns, builds and acquires office buildings, warehouses, flex/research and development facilities, retail centers, apartment complexes and hotels in order to maintain a diversified, core portfolio that produces strong and stable current income.

Founded in 1982, MEPT has grown to become one of the largest open-end funds with \$6.83 billion in net assets, 358 buildings owned nationwide, and over 318 participating pension plans. With a 24-year track record, MEPT's seasoned management team has consistently delivered competitive and stable returns for its investor base while providing an investment vehicle that offers flexibility and liquidity, creates jobs, and contributes to the overall economic vitality of the markets where the Fund invests.

Philosophy

Since its inception in 1982, MEPT's philosophy has been to create a diversified portfolio of institutional-quality, income-producing real estate to provide competitive long-term risk-adjusted investment returns, an investment vehicle with flexibility and liquidity so that investors can easily increase or decrease participation in the Fund and the collateral benefit of job creation.



The result of this commitment is a diversified portfolio of primarily new construction, 100% union-built, high-quality real estate properties in major metropolitan markets around the country, which produce strong and stable current income and superior returns for investors. The development of this portfolio has created over 52.7 million job hours and more than \$9.9 billion of economic activity

in investor communities. Moreover, investors have enjoyed the opportunity to redeem their investment without ever experiencing a withdrawal queue.

Performance

MEPT's objective is to provide investors with competitive and stable returns over an entire real estate cycle. MEPT targets property types that will generate a steady stream of income, thus reducing the adverse effects of significant swings in real estate market performance. On a risk-adjusted basis, MEPT consistently outperforms the long-term returns of the indices in its asset class.

MEPT has had only one year of negative returns in its 25 year history. In 1992, a severe recession and real estate downturn caused negative returns for MEPT as well as the overall industry benchmarks. MEPT has performed well against benchmarks and its peers, meeting or exceeding expectations.

There are three industry benchmarks that MEPT uses to measure fund-level performance and property-level performance: Russell/Mellon Equal Weighted Universe of Commingled Open-End Real Estate Funds; NCREIF Property Index; and NCREIF Open-End Index. Out of the three, Russell/Mellon offers the most appropriate benchmark for evaluating performance.

MEPT's long-term returns have consistently outpaced the benchmarks. A dollar invested in MEPT in 1982 at the Fund's inception has significantly outgrown that same investment in the NCREIF Property Index, NCREIF Open-End Index, or Russell/Mellon Equal Weighted Universe of Commingled Open-End Real Estate Funds.

On a risk-adjusted basis, MEPT consistently outperforms the long-term returns of the indices in its asset class.

Case No. 3

Amalgamated Bank

LongView Ultra Construction Loan Fund

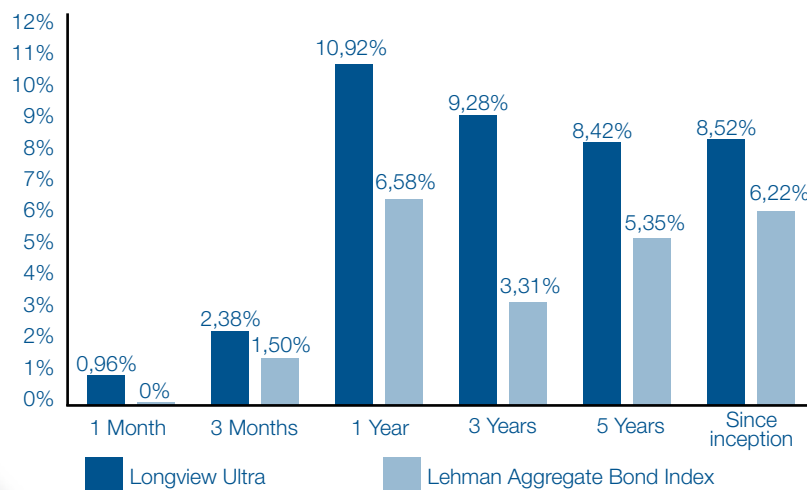
The LongView Ultra fund was created to provide a sound means to invest in a portfolio of high-quality, short-term construction loans secured by the projects being built. All projects financed by LongView ULTRA use 100% union labor. This fund is available to all qualified pension plans. For every \$30 million invested in the Fund, approximately 231,000 hours of work are created each year.

Each contractor and subcontractor performing construction work on projects is bound by, and signatory to a collective bargaining agreement with a labor organization whose jurisdiction covers the type of work to be performed and is affiliated with or approved by the Building and Construction Trades Department of the AFL-CIO or the Fund. So long as the loan is in effect, service workers employed in the building will be covered by a collective bargaining agreement with an AFL-CIO affiliated union whose jurisdiction covers the type of work being performed.

Amalgamated Bank’s construction loan strategy began in November 1998, with current assets of \$132 million. The first project closed in August 1999. To date, four projects are complete and paid off, there are currently eight active projects with two closings pending final due diligence. The Fund is a commingled trust established under the laws of the State of New York. The trustee, investment manager, and custodian are Amalgamated Bank.

The loan portfolio consists of a variety of real estate construction loans in different geographic areas. Since inception, the Fund has been involved with projects in Boston, Chicago, Philadelphia, and Washington, D.C. as well as several locations in California. Once construction loans are repaid, the Bank promptly reinvests the funds into new projects, continuing a cycle of job creation and greater economic impact.

The Wharf at Rivertown was the total rehabilitation of the existing Chester Station power plant. The project is located on the Delaware River in the town of Chester, Pennsylvania. The project was successfully completed and paid off. In addition to contributing to the return of the ULTRA, approximately 150,000 man hours of union labor were created.





Case No. 4

CalPERS (California Public Employees' Retirement System), USA

Responsible Contractor Policy

The following is excerpted from the CalPERS Statement of Investment Policy for Responsible Contractor Program, adopted August 15, 2005:

"CalPERS ("the System") supports fair wages and benefits for workers employed by its contractors and subcontractors...subject to fiduciary principles which require competitive returns on real estate investments...The System believes that an adequately compensated and trained worker delivers a higher quality product and service...

A responsible contractor... is a contractor or subcontractor who pays workers a fair wage and a fair benefit...and who complies with service-disabled veteran business (SDV/BE) policy... What constitutes a "fair wage" and a "fair benefit" depends on the wages and benefits paid on comparable real estate projects. Fair wages and fair benefits are based upon local market factors... [If other requirements for competitive return, competitive bidding, etc.] are satisfied, the System expresses a strong preference that Responsible Contractors be hired...

This Policy shall apply to domestic real estate advisors or partners, single family real estate investments, and joint ventures and partnerships where CalPERS owns a greater than 50% ownership interest (and associated advisor or partner and subcontractor contracts and bids arising out of those investments)...

Advisors' or Partners' responsibilities shall include...providing an annual report to the System Staff, describing their own efforts as well as those by property managers and their subcontractors...Property managers shall have responsibility for...[requiring] that bidders provide to the property manager a Responsible Contractor self-certification on a form approved by the System. Trade unions/service unions shall... [deliver] to the property manager or advisor or partner, lists of names and telephone numbers of Responsible Contractors. The System's staff shall [be responsible for] reviewing the advisors' or partners' annual reports regarding compliance with the Policy...[and reporting] periodically to the Investments Committee on these findings and making recommendations for corrective action as necessary...

The Policy shall absolutely apply to all contracts of a minimum size of \$50,000...

The Policy avoids a narrow definition of "fair wage", "fair benefits", and "training" that might not be practical in all markets...In determining "fair wages" and "fair benefits" concerning a specific contract in a specific market, items that may be considered include local wage practices, state laws, prevailing wages, labor market conditions, and other items...

The System supports a position of neutrality in the event there is a legitimate attempt by a labor organization to organize workers employed in the construction, maintenance, operation, and services at a System owned property."



Good Corporate Governance



Brief Description: Corporate governance refers to “corporate decision-making and control, particularly the structure of the board and its decision making procedures.”¹ There is a link between corporate financial performance and the quality of its governance, particularly “the process of active ownership and oversight of management.”²

Materiality: The quality of governance can affect shareholder value, the ability to raise capital, and the capacity to respond to internal and external problems and opportunities.

Public Interest: Investors, employees, and external stakeholders depend on corporate governance to give fair consideration to their interests in the management of corporate affairs.

Economic Research: Good governance pays. Research indicates that certain characteristics of real estate investment trust boards can improve financial performance. These include small size, not having the board chaired by the CEO, and having a majority of outside directors.³ Both independent boards and increased institutional ownership can play a monitoring role and act as a check on management’s tendency to over-invest in bad times.⁴ Excessive compensation for executives can also raise concerns. In theory, as compensation for work increases, the relative price of leisure increases and managers will choose to work harder. This is called the substitution effect. However, in the case of REITs, research points to the opposite outcome, which is called the income effect. In that case excessive income and wealth lead executives to choose more leisure, producing less effort and lower performance.⁵

Case Study:

Hermes, UK – Corporate Governance Principles and Responsible Property Investment

¹ Hermes (2005). *Corporate governance and performance*. Hermes Pensions Management Ltd., London.

² *Ibid.*

³ See Feng, Z., et al (2005), How important is the Board of Directors to REIT performance? *Journal of Real Estate Portfolio Management* 11(3), 281-293 and Ghosh, C. and Sirmans, C.F. (2003), Board independence, ownership structure and performance: evidence from real estate investment trusts. *Journal of Real Estate Finance and Economics* 26(2/3), 287-318.

⁴ Hartzell, J.C., et al (2006), The effect of corporate governance on investment: evidence from real estate investment trusts. *Real Estate Economics* 34(3), 343-376.

⁵ Scott, J.L., et al (2005), The labor-leisure choice in executive compensation plans: does too much pay reduce REIT performance? *Journal of Economics and Business* 57, 151-163.

Case No. 1

Hermes, UK

Corporate Governance Principles

Hermes is a fund manager independent of any broader financial services group. It invests funds on behalf of over 240 clients including pension funds, insurance companies, government entities and financial institutions, as well as charities and endowments. However, Hermes' largest client is the BT Pension Scheme (BTPS) who, as owner of Hermes, gives its investment management perspective a unique insight and close alignment to the needs of other long-term investors and especially pension funds.

Hermes delivers client specific investment management strategies covering all the primary retail, office and industrial real estate markets in the UK.

In addition to providing bespoke segregated funds, Hermes offers tax-exempt co-investors the opportunity to participate mutually in an established and actively managed UK portfolio via Hermes Property Unit Trust (HPUT).

The investments of the Trust consist primarily of freehold, leasehold land and buildings. It is the policy of the Committee of Management to spread these investments over a wide range of properties, so as to maintain a balanced investment portfolio with capital growth potential and beneficial yield. Properties may also be acquired, developed or otherwise dealt with by way of joint ventures.

Real Estate assets are managed by Hermes Real Estate Investment Management Ltd (HREIM).

When it comes to investing in equities, Hermes' overriding requirement is that companies be run in the long term interest of shareholders. Hermes believes that companies following this approach will not only benefit their shareholders, but also the wider economy in which the company and its shareholders participate. Hermes believe a company run in the long term interest of shareholders will need to effectively manage relationships with its employees, suppliers and customers, to behave ethically, and have regard for the environment and society as a whole.

To this end, it operates its investment process through the adoption of a number of key principles. These cover communication, financial measures, strategy as well as social, environmental and ethical concerns.⁶

Responsible Property Investment

Hermes has extended its commitment to good corporate governance into the realm of property. The company believes that a comprehensive and clearly articulated approach to responsible property investment is an essential step to addressing the growing number of corporate social responsibility issues that exist within the property investment market. The 'Challenges' set out below articulate how Hermes is addressing corporate and social responsibility in property investment and provide a simple framework for others to consider.

Challenge 1: Compliance

Property owners and managers pursuing RPI strategies must ensure that they and the property assets that they manage comply with all current legislation and regulatory requirements and demonstrate preparedness for forthcoming legislation. In particular, they should demonstrate a commitment to the highest standards of health, safety and welfare, to the prevention of pollution and to the efficient use of resources.



⁶ For the principles in full, see www.hermes.co.uk/pdf/corporate_governance/Hermes_Principles.pdf

Challenge 2: Good Practice

Property owners and managers pursuing RPI strategies should work towards good practice in relation to their most significant impacts. In particular they should cover the following areas:

- **Environment:** Ensure that property assets make a positive long-term contribution to the protection and enhancement of the local and global environment. Property assets should be acquired, developed, managed and disposed of with particular regard to the efficient use of natural resources and impact on local ecology.
- **Communities:** Develop and manage property assets with consideration for the impact on local communities and support local communities in improving their quality of life.
- **Stakeholders:** Develop and manage property assets through effective relationships with stakeholders.

Challenge 3: Strategy

Property owners and managers pursuing RPI strategies should acquire, develop, manage and dispose of property assets in line with a strategy which takes into consideration the environmental and socio-economic risks and opportunities which contribute to the properties' ability to deliver long term investment performance.

Challenge 4: Management Systems

Property owners and managers should have appropriate systems and procedures in place to ensure that RPI can be effectively implemented. These should be supported by performance evaluation systems designed to incentivize the delivery of long-term investment value by those responsible for the property asset. Property assets should be acquired, developed, managed and disposed of by those who are able to demonstrate that they have the strategies, competency, skills and resources in place to address these RPI challenges.

How RPI adds value:

"...there are many areas where RPI adds value through limiting risk, increasing the appeal of a property and, ultimately underpinning and improving returns. For example: complying with legislation and tracking potential legislation limits financial risk and anyway, the potential for reputation damage makes compliance a non-negotiable standard; operational efficiency can provide directly measurable financial benefits through cost savings and, in certain circumstances, may have the potential to generate additional revenue; development and investment that is sensitive to community needs gains quicker and earlier support from planners, grant providers, occupiers and users. In addition, in the medium term and as the subject grows in importance, the combination of occupier and investor awareness of these issues will have a direct impact on rental and investment values positively for those buildings that are RPI compliant - and negatively for those that are not."

Rupert Clarke, CEO

Hermes Real Estate

Responsible Property Investment: Defining the Challenge

Green Buildings



The green Swiss RE building in London

Available studies show that green buildings can be built without a cost premium. Without added costs, added benefits are not needed to justify the investment.

Brief Description: Green buildings are offices, hotels, homes, shopping centers, hospitals, factories and other buildings designed to conserve natural resources and improve human health. Voluntary certification programs have been developed that set standards for green buildings including LEED (US and international), BEAM (Hong Kong), BREEAM (UK and international), High Environmental Quality (France), Green Globes (USA and Canada), CASBEE (Japan) and Green Star (Australia). Most certified green properties are new buildings, neighborhoods, or communities, but they can also be existing buildings with high levels of environmental performance.

Materiality: The benefits claimed for green buildings include reduced running costs, reduced health and safety risks, lower absenteeism and increased productivity, improved image for the producer and occupier, easier letting, higher rents, better retention and comparable or reduced cost of construction.¹ All of these benefits have been claimed for individual cases, however more general scientific evidence based on controlled studies are yet to be published.

Public Interest: Green buildings can provide a wide variety of environmental benefits related to global warming, air pollution, resource conservation and indoor air quality.

Economic Research: If green buildings can be built at the same cost as conventional buildings, then it's not as important to show they have lower running costs or produce other economic benefits. Without added costs, added benefits are not needed to justify the investment. That is why it's notable that the available studies on the cost of green buildings are showing they can be built without a cost premium. In a 2004 study of LEED-qualified buildings (and the 2006 update), by the cost-estimating firm of Davis Langdon, researchers found that when LEED and conventional buildings with similar programs were compared, there was no statistically significant difference between them in their cost per square foot. They concluded that "many projects achieve sustainable design within their initial budget or with very small supplemental funding," and that owners are finding ways to build green by making choices, such as by increasing the budget for green features and reducing it elsewhere in the project.² In a similar study for the U.S. General Services Administration, a small cost impact was found but it was far below both the accuracy normally expected of early estimates and the contingency carried in most GSA project budgets at the conceptual stage. In other words, LEED rating "could potentially be achieved within a standard GSA project budget (without a green building budget allowance)."³ A third study of 20 buildings in the UK reached similar findings.⁴

If green buildings do cost more, however, occupiers may be willing to pay extra for them. For example, 69% of all finance and business services sector tenants in the UK recently said they are willing to pay "marginally more" for "greener" offices.⁵

Notwithstanding this promising view of potential tenants, there is still insufficient scientific evidence on the financial benefits of green buildings for owners and occupiers. Researchers typically describe the benefits and illustrate their case with selected examples. But scientifically controlled, representative studies are needed.⁶

1 Shiers, D.E. (2000) "Green" developments. *Property Management* 18(5), 352-365.

2 Matthiessen, L. and Morris P. (2003) *Costing green: a comprehensive cost database and budgeting methodology*. Davis Langdon Adamson.

3 Steven Winter Associates, Inc. (2004) GSA LEED Cost Study: Final Report. U.S. General Services Administration, Washington, D.C.

4 Shiers, D.E. (2000) "Green" developments. *Property Management* 18(5), 352-365.

5 GVA Grimley, *Research: Sustainability, Towards Sustainable Offices*, Spring 2007. GVA Grimley, London.

6 Lutzendorf, T. and Lorenz, D. (2005), Sustainable property investment: valuing sustainable buildings through property performance assessment. *Building Research and Information* 33(3), 212-234.

One of the difficulties is that green building certification tools allow developers to choose which strategies to emphasize. As a result green buildings differ in their attributes and performance and so the benefits produced by one green building may not be reproduced in another if they feature different green elements. In addition, other factors, such as variations in utility prices, climate, building management, commissioning practices, worker habits and office equipment can all affect a building's environmental performance. These other factors need to be controlled for when studying the benefits of green buildings in order to be confident that superior environmental performance is due to the attributes required for green labeling.

One of the most promising opportunities associated with green buildings is in the area of health and productivity from the thermal, lighting, ventilation and air quality characteristics of green buildings. Since companies spend 70 times more per square foot per year on employee salaries than on energy, a 1% increase in productivity can offset an entire annual energy bill.⁷ Looked at another way, a 1% productivity gain would equal about a 15% decrease in property costs since in a typical building the share of employment costs is almost 15 times larger than the share of property costs.⁸ Consequently, it is encouraging that a 2002 review of the best available scientific evidence found that indoor environmental quality “substantially affects health and productivity”.⁹ Moreover, a more recent controlled study of a precast concrete manufacturing facility before and after a move to a new green building (expected to receive a LEED silver rating) found productivity increased by 25%. However, some factors that could not be controlled for, including a new plant layout and a new drug-free policy, may also have explained some or all of the change. The study also found significant benefits related to energy and water use, falling by 32% and 34% per square foot, respectively.¹⁰

More research is needed in order to quantify the benefits of green buildings related to running costs, image, productivity, rents, occupancy and valuation. In the meantime, it is increasingly evident that green buildings can be built at little or no extra cost. Therefore, whether or not green buildings actually produce the hoped for gains should not deter investors from participating in this rapidly emerging sector. Indeed, one recent survey of American executives found that 36% of all institutional real estate investors, fund managers, REITs, owner/operators and developers have invested in green buildings to some degree and 31% are planning to or giving it consideration.¹¹ Given these trends, some now argue that it is increasingly risky not to be green. Conventional buildings could depreciate faster if they fall out of favor compared to their greener competitors.

Case Studies:

ICADE EMGP, France – Green Office Building, Aubervilliers
IL&FS Investment Managers, Ltd., India – Chennai-One
Hammerson, UK – Green Mixed Use Projects and Retail Centers
Morley, UK – Edinburgh Council Headquarters



A New Green Hotel in Vancouver, Washington

7 Lutzkendorf, T. and Lorenz, D. op. cit.

8 Ries, R. et al (2006), The economic benefits of green buildings: a comprehensive case study. *The Engineering Economist* 51, 259-295.

9 Kumar, S. and Fisk, W.J. (2002), *The Role of Emerging Energy-Efficient Technology in Promoting Workplace Productivity and Health: Final Report*. Lawrence Berkeley National Laboratory, Berkeley, CA.

10 Ries, R. et al., op. cit.

11 Pivo, G (2007), Exploring Responsible Property Investing: A Survey of American Executives. Forthcoming in *Corporate Social Responsibility and Environmental Management*. A summary version is available at <http://www.u.arizona.edu/~gpivo/RPI%20Survey%20Brief.pdf>.

Case No. 1

ICADE EMGP, France Green Office Building, Aubervilliers



Description:

This is a 10,000 square meter property located on a Paris Metro line in Aubervilliers, France. It consists of a two-floor basement for the car park, a ground floor containing the main entrance, services and retail and seven additional floors for offices. It was certified under the “High Environmental Quality Offices” program – a French sustainable building certification – and was built at no additional capital cost. To date it has achieved a 20% lower than average running cost, mainly due to lower energy consumption, no filter replacements required in the chilled beams and fewer repairs because of the high quality commissioning.

The project was designed to achieve the following goals:

- indoor health
- energy and water efficiency
- CO₂ reduction
- user comfort and control
- faster lease up and better tenant retention.

The following elements were used to achieve these goals:

- triple glazed windows with integrated blinds for efficient daylighting and street noise reduction
- a north-oriented entrance to allow for totally glazed siding without air conditioning
- chilled beam air conditioning
- lavatories with light controllers
- workspace with direct daylight access
- partitioning flexibility
- user adjustable air diffusers, air controls and light dimmers
- motorized controlled blinds with automatic shutdown when solar heat is sufficient
- two flow flush systems (three and six liter).

Case No. 2

IL&FS Investment Managers, Ltd., India Chennai-One, Coimbatore

Overview

IL&FS Investment Managers Limited (IIML) is the private equity investment arm of Infrastructure Leasing & Financial Services Limited and one of India's leading infrastructure development and finance companies.

ETL Infrastructure Services Ltd (EISL) is a Chennai based development company focusing on providing supporting infrastructure for fast growing industries such as Information Technology services (IT), hospitality and textiles. EISL is committed to environment-friendly and sustainable development. The company aims to achieve an audited energy saving of at least 30% over conventional infrastructure in all its buildings.

IL&FS's first building, Chennai-One, a 1.25 million square foot IT Special Economic Zone, won Gold Certification for its energy efficiency and environmental sensitivity under the "Leadership in Energy and Environmental Design (LEED) Green Building Rating System™".

The project is located on the Old Mahabalipuram Road, the so-called "IT Corridor" of Chennai. It was completed by October 2006 and consists of 1.2 million square feet of office space for IT businesses apart from food court and parking space.

Project Implementation

The company, consistent with its policy to establish "green buildings", emphasized the following aspects in design and implementation of the project:

- sustainable site planning
- water efficiency
- energy efficiency
- conservation of materials
- indoor environmental quality.

Sustainable Site Planning

Diligent site planning has ensured that the negative impact on the environment is kept to a minimum. The site has excellent public transport access, obviating the need for commuting by car. By allocating separate preferential parking area for carpools, the company attempts to encourage use of shared vehicles. Other environment friendly aspects of the site planning include:

- parking space for over 500 bicycles and changing rooms to promote pollution-free commuting
- battery charging stations at site to promote use of electric vehicles
- structured parking facilities to reduce heat-island effects -thermal gradient difference between exposed & inside areas.

Water Efficiency

Efficient use of water is another aspect given careful consideration in planning and designing the facility. All waste water (gray water) generated at site is used for landscaping purposes. Landscaping has been designed with a view to minimize the overall water requirement. Water requirement of the facility is 30.4% lower compared to other similar buildings. Excellent storm water management and treatment system have been implemented at the site to avoid storm water runoff.

Other initiatives in water efficiency include:

- 100% treatment of waste water generated at site to tertiary standards

- use of special bathroom fittings such as sensor based urinals for all men's toilets low flow water closets, low-flow showers and sinks and ultra-low flow lavatories to reduce water overall consumption.

Energy and Atmosphere

The heating, ventilating and air-conditioning (HVAC) system in the building does not use chlorofluorocarbons or hydrochlorofluorocarbons (CFCs and HCFCs) considering the negative impact of such gases on the ozone layer. The climate-responsive building design reduces heating and cooling loads and thus the energy consumption for this purpose. A 32% energy savings is achieved compared to similar buildings Energy efficiency features include:

- high performance glazing: the building uses glass with U-value of 0.33, shading co-efficient of 0.16 and visual light transmittance of 0.13
- superior roof insulation: the building uses over-deck 2.5 (R-15) extruded polystyrene insulation for the roof
- efficient lighting design: the building saves 20% of lighting energy over the base building using efficient compact fluorescents with dimmable electronic ballasts
- high co-efficient of performance (COP) chillers: the building has air-cooled chillers with COP of 2.91. Variable speed drives have been installed for secondary chilled water pumping systems to save energy
- use of energy recovery units: several heat recovery units have been installed to cool incoming fresh air, thereby reducing mechanical air-conditioning costs.

Materials and Resources

Nearly 96% of the waste generated on site during construction, such as scrap steel, concrete debris, cement bags, paint containers, granite waste and mortar waste has been recycled. Several materials with high recycled content such as steel, cement, aluminum, glass, false ceiling etc., have been used in the project totaling 15.6% of the total materials cost. More than 88.0% of materials used in the project were manufactured or harvested within 500 miles of Chennai, thereby supporting local/regional industries and reducing pollution due to transportation.

Dedicated spaces have been allocated for collection, storage and disposal of recyclable materials including paper, glass, metals and plastics.

Indoor Environment Quality

A special indoor air quality management plan was implemented during the construction phase to ensure the wellbeing of construction workers. The building air-conditioning and ventilation systems were designed as per ASHRAE 62 standards for acceptable indoor air quality. Smoking is prohibited in all public areas of the building to minimize exposure of occupants to tobacco smoke. Carbon dioxide levels inside the building are constantly monitored and fresh air intake is modulated to provide superior indoor air quality. Dedicated entrance dust filtering systems and exhaust systems for pantries, copy rooms etc., minimize pollutant cross contamination of regularly occupied areas.

Financial Implications

The building was constructed at a total cost of Rs 1.273 billion (US \$28.3 million) or Rs 1,065/square foot (US \$23.7). According to the development company, the cost increase due to the environmentally friendly design and implementation was around 3%, over conventional buildings. However, the building commands a monthly rent that is better than comparable properties in the vicinity. This is in recognition of the financial benefit accruing to the tenants from the lower running costs.

Conclusion

ETL Infrastructure Services Ltd plans to stick to its environmental policy for all its new projects. Over the next four to five years it intends to develop approximately 95 million square feet in various locations in southern India. The environmentally sensitive design and implementation, with proven savings in operating costs, is expected to give the company significant competitive advantage in the long term.



Case No. 3

Hammerson, UK Green Projects



Hammerson's ten-year development pipeline of mixed-use projects in the UK will amount to over 2 million m². These include town and city center projects in Aberdeen, Brent Cross, Bristol, Cricklewood, Kingston, Leeds, Leicester, Milton Keynes, Peterborough and Sheffield.

As part of its commitment towards creating a framework for more sustainable developments Hammerson has taken an industry-leading step in carrying out comprehensive environmental reviews for each of these projects. The New Retail Quarter Sheffield and Eastgate Quarters Leeds, are two such large scale regeneration projects which will represent a total investment of over £1.5 billion and create some 200,000 m² of retail and leisure space by 2013.

Key elements of each review include finding ways to:

- secure BREEAM Excellent rating for each development (British Research Establishment Environmental Assessment Method)
- generate renewable energy sources
- optimize waste re-use through stringent waste management procedures
- optimize the use of building form and massing
- select materials from environmentally sustainable sources
- use natural ventilation instead of mechanical ventilation
- use natural resources as efficiently as possible
- support site-wide water conservation strategies through good building design to limit consumption
- introduce noise and dust controls during the construction process
- introduce a "Green Travel Plan" for each destination to encourage the use of greener forms of transport for visitors and employees
- ensure biodiversity is considered as part of the sustainable strategy for each development
- ensure that consultants embrace sustainable processes and follow a strict Environmental Management Plan and that all contractors belong to the Considerate Contractors Scheme
- develop sustainability guidelines for all occupiers.

Brent Cross Cricklewood

The regeneration of Brent Cross Cricklewood in north London will make use of a wide range of initiatives and new technologies to minimize environmental impact. The area will be transformed by generous green spaces, with existing areas of open space improved and new public and nature parks created to provide a range of different habitats.

The 61-hectare regeneration project will include the provision of 7,500 new homes, a transformed Brent Cross Shopping Center, a thriving high street and a range of new community facilities including school buildings for Whitefield, Mapledown and Claremont Primary Schools, a major new health center and a new sports and leisure center.

The development will also bring the largest investment in transport infrastructure in the area's history. This will include a new train station on the Midlands Mainline and a new bus station. Significant improvements to road junctions and pedestrian links and cycle routes will include a new bridge over the A406, dedicated pedestrian walkways, cycleways and bus lanes and five new pedestrian bridges.

When completed, the new Brent Cross Cricklewood development will be one of the most environmentally-friendly schemes in the country. Its pioneering combination of automated waste collection, waste treatment and combined heat and power facilities have been designed to dramatically reduce CO₂ emissions.



The individual facilities include:

- a state of the art waste handling and recycling facility which will first separate and sort all recyclable materials and then pass the remaining waste through a treatment cycle which will generate renewable fuel. This fuel will then be used in a new combined heat and power plant which will provide electrical power, district heating and cooling to buildings across the regeneration area
- delivery of domestic waste from the development to the new handling facility using an automated waste collection system consisting of a network of buried pipes along which waste is moved.

Other sustainable measures include:

- the recycling of 40% of household waste and 60% of household waste rising to 70% by 2020
- the introduction of green or planted rooftops on 10% of the roofspace across the area to reduce heat loss from buildings and to improve air quality
- the collection of at least 10% of rainwater to be used for irrigation
- drainage measures to prevent water run-off during storms and heavy rain
- the installation of low-water use fittings: taps, showers and toilets and A-rated white goods
- the design and construction of buildings which reduce the carbon footprint as assessed against the government's Code for Sustainable Homes, including the use of building materials that do not contribute to global warming.

Brent Cross: Greening a 31 Year Old Shopping Center

Opened in 1976, Brent Cross was the first large enclosed shopping center to be built in the UK. Now over 30 years old, the design of the 81,800m² two-level shopping center was not to the standards of sustainability required today. In seeking to minimize its environmental impact, joint owners Hammerson plc and Standard Life Investments Ltd have implemented a number of strategies directed towards recycling, energy saving and sustainability. These have included regular environmental impact assessments that have resulted in a number of initiatives.



Over the past three years Brent Cross has:

- installed 9,000 energy efficient lights – saving enough energy to power 200 houses for a year
- installed water-reduced urinals – saving approximately 750,000 liters of water a year, the equivalent of an Olympic swimming pool
- increased the recycling of all waste produced at the center, with a target to achieve 45% by the end of 2007 – a 30% increase on the national average
- saved 15,984 trees as a result of cardboard recycling measures
- introduced plans to install automatic taps throughout the center by the end of 2007 – saving a further 365,000 litres of water a year
- recycled 0.7 tonnes of plastic per month – with a target to reach 4 tonnes per month before the end of 2007
- sourced electricity from renewable sources
- undertaken a study to restrict artificial lighting usage within legislative requirements – preliminary findings suggest this will reduce electricity usage at Brent Cross by a further 6%.

Case No. 4

Morley Fund Management, UK City of Edinburgh Council Headquarters



**City of Edinburgh Council
Headquarters, Waverley
Court, 4 East Market
Street, Edinburgh
Completed – November
2006
18,033 Sq meters
5 floors**

Waverley Court in Edinburgh, the new headquarters for the City of Edinburgh Council was developed by Morley Fund Management acting on behalf of Norwich Union Life and Pensions and was fully pre-let to the Council for 20 years. The site of the new Council headquarters building is in the heart of Edinburgh, located to the east of Waverley Station at the junction of New Street and East Market Street.

A key objective of Morley's approach was to create a landmark building which demonstrates environmental excellence in all aspects of design and function with exceptional levels of accessibility. The design sought to address directly the principle issues highlighted in the Council's brief for their new building and to provide a building with a positive urban identity and presence. The brief provided by the Council set out the following aspirations and goals:

- the building in its appearance, location and design must provide users with a sense of civic pride and project a positive image of the council as a corporate organization
- the building must achieve high levels of sustainability as the council is committed to sustainable development in all new city center projects. In short, the building should provide leadership by example to Edinburgh's businesses, organizations and citizens
- the building must encourage staff to work productively and effectively together and enable them to meet when interaction is needed while providing islands of calm for concentrated thought
- to achieve a workplace that is a source of pride, giving staff a source of self worth as someone privileged to work in the building
- to provide a light, bright and airy environment with the ability to control air flow, temperature and light
- to create a modern, attractive and efficient work space that can be arranged so that people can readily work individually or in teams
- to provide a single, easily identifiable and accessible public contact area
- to achieve easy sub-division of the accommodation should the council wish to reduce its occupancy of the building at some future point.

Sustainability Measures – Key Figures

Morley's development has been driven by the need to create a building that is highly sustainable on a number of levels. Specific sustainability measures were set in place at the inception of the project including all stakeholders in the process agreeing a Partnering Charter for the project. In addition, a Sustainability Management System was established. This has informed every step in the development of the project and played a particularly strong role in the procurement of the building contractor. The design and construction team have evaluated thermal comfort standards, net carbon emissions and construction air tightness in order to deliver a project that will meet the aspirations of the City of Edinburgh Council. The modular nature of the structural grid and elevational treatment of the building fabric provide a flexible basis for sub-division of the building. The following aspects of the design all lead to a building with high sustainability credentials:

- development of a brownfield site immediately adjacent to major transportation modes
- flexibility for sub-division of building to multiple occupancies in future if required



- landscaped roof terraces increase bio-diversity, reduce rainwater runoff to drainage systems and act as thermal “buffers” to floor slabs;
- exposed concrete soffits stabilize internal environment and provide free cooling in summer
- careful use of sun-shading devices around building perimeter further reduce cooling requirements
- use of solar panels and waterless urinals
- provision of a workplace with a strong sense of well-being for building occupants
- rainwater and underground water harvesting to collection tanks below ground with water recycled to fill street cleaning machines.

Key notable sustainability criteria are as follows:

- the air-tightness for the whole $2.8\text{m}^3/\text{h}/\text{m}^2$ @50 pascals. The average for UK commercial buildings is $15\text{m}^3/\text{h}/\text{m}^2$ @50 pascals
- the building achieved a BREEAM rating of “very good” with an environmental performance index of 9 out of 10
- the base build energy use is $275\text{kWh}/\text{m}^2/\text{annum}$. This compares to a figure of $348/\text{m}^2/\text{annum}$ for a Type 4 office building.

Conclusion

The result of this project is that Morley Fund Management has developed a first class headquarters office building, designed, built and finished to the highest standards.

The building has enabled the tenant, City of Edinburgh Council, to reduce their carbon footprint benefiting both their occupational requirements from an operational point of view and also the environment as a whole.





Photo by Harvey McDaniel

Green Power Purchasing and Production

Brief Description: Green power is electricity generated from renewable sources including solar, wind, biomass, landfill gas, geothermal, combined heat and power (co-generation), tidal power and small, low-impact hydro. Many electric utilities offer optional, voluntary green power programs to their customers. It is available in more than a dozen countries around the world. In the US, customer participation rates in some markets were as high as 17% at the end of 2006.¹ The Netherlands had the highest market penetration at 13% of residential customers in 2002.² In Australia, more than 21,000 organizations purchase accredited green power. These include property investors Investa Property Group, Macquarie Office Trust, and DB REEF Funds Management Limited.³ In the US, those real estate investors replacing a significant portion of the electricity with green power include The Tower Companies, Cherokee Investment Partners, and Melaver, Inc.⁴

Materiality: In most cases, green power cannot be purchased at a discount. However, green power may be a cost-effective strategy for complying with carbon regulations and may reduce the risk of future energy price hikes and regulations.

Public Interest: Green power can be produced with fewer environmental impacts, particularly related to air pollution and global warming.

Economic Research: Generally green electricity commands a modest price premium at 0.5 to 1.5 cents (US) per kilowatt-hour. However, in Germany, Finland and the Netherlands, it is being offered at below the price of standard supplies.⁴ Studies of consumers in Japan and the US show a willingness to pay more for green power in exchange for the environmental benefits.⁵ That may be the case with some commercial property occupiers as well, especially those with corporate social responsibility or sustainability programs.⁶ One way to overcome any additional cost is to combine green power purchasing with cost-effective investments in energy efficiency measures.⁷ There are also circumstances where the price is equal to or lower than conventional sources. In the PRUPIM case (see below), green power was obtained at a lower contract price. In the Netherlands, green power is exempted from pollution taxes, making it hardly any more expensive than other power and in Austin, Texas, green power can be purchased for 0.13 cents less per kilowatt hour.

Case Studies:

PRUPIM, UK – Green Power Purchasing Contract
New Gaea Co., Ltd, Japan – New Gaea Projects

1 U.S. Department of Energy, Top Ten Utility Green Power Programs (as of December 2006). Website: <http://www.eere.energy.gov/greenpower/resources/tables/topten.shtml>.

2 Bird, L. et al (2002) *Green Power Marketing Abroad*. National Renewable Energy Lab, Golden, Colorado.

3 <http://www.greenpower.gov.au/organisations-that-use-greenpower.aspx>

4 <http://www.epa.gov/greenpower/>

5 See Nomura, N. and Akai, M. (2004) Willingness to pay for green electricity in Japan as estimated through contingent valuation method, *Applied Energy*, 78: 453-463. Also see Wiser, R.H. (2007) Using contingent valuation to explore willingness to pay for renewable energy, *Ecological Economics*, 62: 419-432 and Roe, B. et al (2001) US consumers' willingness to pay for green electricity, *Energy Policy* 29, 917-925.

6 Holt, E.A. et al (2001) *Understanding non-residential demand for green power*. National Wind Coordinating Committee, Washington, D.C.

7 *Green Power Business Guide 2005*. National GreenPower Accreditation Program, Australia.

Case No. 1

PRUPIM, UK

Green Power Purchasing Contract

In August 2005, UK's Buying Force Ltd, an energy procurement service provider partly owned by PRUPIM, undertook the procurement of a bulk electricity contract on behalf of some 70 PRUPIM customers and their managing agents. The contract, worth £75 million, was agreed with Scottish and Southern Energy, one of the largest energy companies in the UK.

The new contract provides electricity to PRUPIM's 240 managed properties at a significant discount (approximately 7%) to the current market rate, against a background of steeply rising energy prices. Since Buying Force procured this contract, the price of oil has already risen substantially. Buying Force was able to use the £75 million bulk purchase to secure the best prices.

Clients of Buying Force were not only looking for the best price in the current marketplace but many of them were keen to ensure that their own corporate responsibility policies were met in terms of the supply of green energy which is currently in short supply.

The most innovative feature of the contract is that the electricity offered to customers is generated from Combined Heat and Power (CHP) plants, and, as such, is exempt from the UK Climate Change Levy, a tax on the non-domestic use of energy. CHP plants generate both heat and electricity from a single source. This has ensured that the rate charged for the electricity supplied is even more competitive. This green electricity will reduce CO₂ emissions by 21,000 tonnes per annum.

The CHP sourced electricity is actually 0.01 pence per kilowatt-hour cheaper than standard "brown" electricity, saving approximately £15,000 per annum across the PRUPIM portfolio.

An additional feature of the contract recognized that many of Buying Force's clients are investors and look for the freedom to buy and sell property without penalty in terms of the electricity prices to their retained properties. Buying Force was, therefore, able to achieve a fixed price structure to support their clients' acquisitions and disposals.

Given that supplies of green energy are limited, this deal is exceptional and stands out as one of the leading initiatives within the property industry.

Case No. 2

New Gaea Co., Ltd.

Solar Powered Apartment Buildings: The New Gaea Projects

Project Description

The New Gaea projects are the first private investments in Japan in apartment buildings equipped with solar energy systems.

As a clean new energy source, many people are hopeful that solar systems will succeed. However, it is hard to financially justify investments in photovoltaic systems because of their additional expense.

Shibaura Tokuki Co. Ltd. runs a solar panel and air conditioning business in Kitakyushu City. The firm has succeeded in developing solar powered apartment projects by making full use of its technical knowledge and experience. The New Gaea projects are now administered by New Gaea Co. Ltd., a subsidiary of Shibaura.

All New Gaea apartments are not only equipped with solar systems, but other premium facilities such as “Eco Cute” (a high efficiency hot water system using a CO₂ coolant heat pump), energy efficient air conditioners, induction heat cooking units and water purifiers. Subsidies for new energy saving equipment are fully utilized.

To date, New Gaea has completed the following four projects, totaling 147 apartment units:

List of Completed Projects

Apartment Name	Location	Completion Time	Structure & Number of Floors	Number of Units
New Gaea Kamiishida	Kitakyushu City Fukuoka Pref.	Feb. 2005	Reinforced Concrete 6 Floors	43 units
New Gaea Tachiarai	Tachiarai-Machi Mitsui-Gun Fukuoka Pref.	Feb. 2006	Reinforced Concrete 5 Floors	15 units
New Gaea Takano	Kitakyushu City Fukuoka Pref.	Mar. 2006	Reinforced Concrete 3 Floors	33 units
New Gaea Hakatahigashi	Kasuya-Machi Kasuya-Gun Fukuoka Pref.	Mar. 2007	Reinforced Concrete 9 Floors	56 units



Financial Characteristics

Project Costs

The project costs on New Gaia Hakatahigashi, the most recent project, are as follows:

Item	New Gaea Hakatahigashi (Based on actual data) (US\$)	Conventional Apartments (Estimated from market prices) (US\$)	Comment
Land	1,117,815	1,117,815	
Construction	4,589,583	4,589,583	
Subtotal	5,767,399	5,767,399	
Solar systems	358,750	0	
Eco Cute water heater	205,800	0	Conventional apartments are not equipped with Eco Cute heaters.
Air conditioners	54,950	54,950	
Water purifiers	60,760	60,760	
Infrared Heat cooking units	47,180	47,180	
“Touch Gate” entry system	20,143	20,143	
Subtotal	388,833	183,033	
Total Project Cost	6,514,981	5,950,431	
(Subsidies)	(158,953)		

The total cost for the solar system and other premium facilities amounted to nearly \$750,000. These costs were offset with government subsidies and favorable financing. Banks were willing to finance the project at a reduced interest rate because of the enhanced image and extra stable incomes expected for the project.

Rental Income

Tenants save an average of about 70% on their utilities. Because of this, the occupation rate has been 100% and there is a long waiting list, even though rents run about 10% higher than market norms.

Cash Flow

The cash flow for New Gaea Hakatahigashi is as follows. The total project cost was covered by the loans, subsidies, and deposits from occupiers. However, the analysis assumes loans to be 90% of the total project cost (after subsidies deduction).

Item	New Gaea Hakatahigashi (Actual data) (US\$)	Normal Apartment (Estimated from market data) (US\$)	Comment
Rent (including parking, etc.)	487,333	438,600	New Gaea’s rents are about 10% higher than normal projects in the neighborhood.
Taxes	24,000	22,500	New Gaea’s taxes are expected to be slightly higher than normal because of the higher construction costs.
Insurance	458	2,292	New Gaea’s insurance is much lower because no facilities use fire for cooking, heating, or hot water.
Maintenance	8,500	8,500	
Utilities (common use part)	2,500	25,000	For New Gaea most of the electricity for the common use and occupied areas is solar.
Net operating income	451,875	380,308	
Rate of return on total capital	6.94%	6.39%	Calculated as NOI/Total project cost
Debt service** for land & building	226,277	231,445	For New Gaea, \$5,303,759 was borrowed at 1.8%. Conventional financing was assumed to be \$4,965,310 at 2.5%. Both are amortized over 30 years.

Item	New Gaea Hakatahigashi (Actual data) (US\$)	Normal Apartment (Estimated from market data) (US\$)	Comment
Debt service** for facilities	85,666	81,292	For New Gaea, \$416,667 was borrowed at 1.4%. Conventional financing was assumed to be \$390,078 at 2.1%. Both are amortized over 5 years.
Before tax cash flow	139,932	67,572	
Return on equity**	22.02% Equity \$635,603	11.36% Equity \$595,043	Before tax cash flow/Investor equity (Subsidies are not included, which were \$158,953 for New Gaea)

Based on this analysis, the New Gaea project performs better financially than conventional apartments.

Conclusion

Solar systems can be financially feasible in the apartment business. They require high technology and know-how to introduce the facilities, but under the circumstances reported here, solar energy can be used successfully in property investments.

Historic and Cultural Preservation



Brief Description: Historic and cultural preservation involves investments in the preservation, restoration and reuse of historic buildings, sites and landscapes.

Materiality: Historic properties can be more attractive and valuable to tenants and customers because of their associated amenity values. Such benefits must be considered alongside functionality issues, but at the very least façades can be retained even as new functional standards are achieved.

Public Interest: Historic preservation enriches and educates people, promotes cultural diversity and supports tourism and community development.

Economic Research: Studies have found that the value of historic properties depends in part on their historic characteristics. For example, one study found that both authenticity and historical façade elements represented nearly 15% of the total value of houses in the Netherlands.¹ Official historic designations can also increase property values. For example a study of nine Texas cities found that designated properties were five to 20% more valuable, all else being equal.² And in midtown Manhattan, proximity to landmarks was found to be a strong influence on the value of office buildings.³ With more focus on investment returns, a study of the investment performance of historically listed office buildings in the UK found that total returns on listed offices in the City and West End ran slightly below those on unlisted properties between 1980 and 2004, while those outside Central London ran slightly ahead.⁴ Citizens may also be willing to pay higher taxes to help subsidize preservation. For example, in one study of historic preservation in Newcastle's Grainger Town in the UK, researchers found that citizens would pay at least £1 million per year in extra taxes to support preservation.⁵ This is consistent with other studies around the world.⁶

The research on UK investments returns suggests that, depending on location, historically listed properties can produce either a slightly higher or slightly lower total return over the long run. However, the work on amenity values leaves it unclear as to whether the higher values and rents associated with historic features will translate into investment returns. If existing historic amenities are already capitalized into the value of properties when they are bought and sold, they would not give any particular advantage to investors. On the other hand, new historic studies on individual buildings that lead to new historic designations, restoration work that strengthens historic amenities and the protection of nearby existing historic sites and properties might all lead to better rents, occupancy rates and valuations. Moreover, as the following case illustrates, it is possible to take advantage of tax credits and earn market rate returns in the process of acquiring and rehabilitating historic structures.

Case Study:

National Trust for Historic Preservation, USA – National Trust Community Investment Corporation

¹ Ruijgrok, E.C.M. (2006). The three economic values of cultural heritage. *Journal of Cultural Heritage* 7, 206-313.

² Leichenko, R. et al (2001), Historic preservation and residential property values. *Urban Studies* 38(11), 1973-1987.

³ Shilton, L. and Zaccaria, A. (1994), The avenue effect, landmark externalities, and cubic transformation: Manhattan office valuation. *Journal of Real Estate Finance and Economics* 8, 151-165.

⁴ RICS (2006), *The investment performance of listed offices*, Royal Institute of Chartered Surveyors, London.

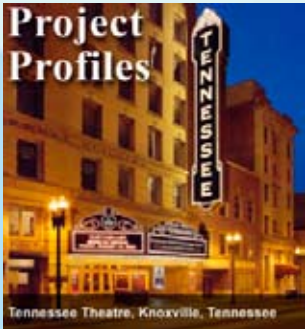
⁵ Garrod, G.D. et al., (1996), The non-priced benefits of renovating historic buildings. *Cities* 13(6), 423-430.

⁶ Mourato, S and Massimiliano, M. (2002), Economic Valuation of Cultural Heritage: Evidence and Prospects. In M. de la Torre (ed.), *Assessing the Values of Cultural Heritage*. The Getty Conservation Institute, Los Angeles.



Case No. 1

National Trust Community Investment Corporation, USA



The National Trust Community Investment Corporation (NTCIC) is the for-profit subsidiary of the National Trust for Historic Preservation. It makes equity investments in real estate projects in all 50 states that qualify for federal and state historic rehabilitation tax credits. NTCIC works with a wide variety of property owners including for-profit developers, nonprofit organizations and local governments. Its focus is on projects that have a high economic impact on the surrounding community.

NTCIC's primary investment vehicles are National Trust Community Investment Funds I and II. Since its inception in 2000, NTCIC has placed more than \$144 million in 33 properties ranging in total development cost from \$500,000 to \$105 million. NTCIC also pioneered the "twinning" of historic and New Markets Tax Credits (NMTC's) in 2003, was the first "Community Development Entity" (CDE) to sign a NMTC allocation agreement and was the first to report a Qualified Equity Investment to the Community Development Finance Initiative Fund of the US Treasury. It has closed the most twinned transactions of all NMTC allocatees. In addition to providing additional NMTC equity to projects through its own allocation, NTCIC also provides NMTC referral and CDE compliance services through its National Trust New Markets Partners Program.

The National Trust Community Investment Corporation's primary investment partner has been Bank of America. The Trust has also completed transactions and has ongoing investment relationships with Chevron, Texaco and National City Bank.

Investors generally earn an annual return of 8 to 15% in cash and tax credits for their investments. The banks can then use the tax credits to defray their own federal corporate income taxes.

NTCIC is a wholly owned for-profit subsidiary of the National Trust for Historic Preservation, the leading nonprofit advocate for historic preservation in the United States. All NTCIC profits are returned to the National Trust to support its many preservation-based community development programs including the National Trust Main Street Center and the National Trust Loan Funds.

Parks, Plazas, Atriums and Natural Areas



Brief Description: Installing or refurbishing natural areas, urban plazas, public parks or atriums in or adjacent to investment properties.

Materiality: Nearby open spaces can increase property values, especially for residential, retail and office properties.

Public Interest: Parks, plazas, atriums and natural areas provide recreational amenities. Landscaped open spaces can also provide wildlife habitat, storm water management, shading, wind breaks and mitigation of urban heat islands.

Economic Research: The following scientific studies indicate that open spaces of various kinds enhance property values. They also suggest that in many instances these increases can offset their costs. Unfortunately, with the exception of the first study cited, the empirical evidence is limited to residential buildings, although open space is likely to benefit commercial property as well. Consider, for example, the benefits of Sydney harbor or New York's Central Park for commercial property values.

- In Baton Rouge, Louisiana, atriums increased rents in buildings by 7%.¹
- In Seattle, Washington, larger shoreline setbacks produced higher property values for properties adjacent to the setbacks.²
- In Boulder, Colorado, the sales price of single family homes adjacent to a greenbelt were 32% higher than those 3,200 feet away. The overall value of homes in the study neighborhood increased by \$5.4 million while the cost to purchase the open space was just \$1.5 million.³
- In Castellon, Spain and in Berlin house prices were found to decrease with increasing distance from urban parks.⁴
- In the Netherlands, a view of open land increased home values by 6 to 12%.⁵
- In Austin, Texas, properties adjacent to greenways were up to 20% more valuable than other properties.⁶
- In Franklin County, Ohio, preserving 10% of existing farmland within one mile of a house increased its value by 3-6%. The increase was even greater for more expensive homes. Homeowners were willing to pay more to preserve farmland, though not quite enough to cover the full cost of preservation. Homeowners were also willing to pay 15-26% more for homes with neighborhood parks.⁷
- A study of three subdivisions in Michigan found that residential lots bordering a forest preserve sold for 19-35% more than other properties.⁸

This process by which park land is capitalized into the value of nearby properties is called the “proximate principle”. A review of the empirical evidence shows that a reasonable guideline for the premium from park land is about 20% for properties fronting a passive park. If the park is small and heavily used the figure may be lower. If the park is large, well maintained and sparsely used, the premium is probably higher. The premium for properties two or three blocks away is roughly

1 Doiron, J.C. et al. (1992), Do market rents reflect the value of special building features? The case of office atrium. *The Journal of Real Estate Research* 7(2), 147-155.

2 Brown, G.M. Jr. and Pollakowski, H.O. (1977), Economic valuation of shoreline. *The Review of Economics and Statistics* 59(3), 272-278.

3 Correll, M.R. et al (1978), The effects of greenbelts on residential property values. *Land Economics* 54(2), 207-217.

4 Moranco, A.B. (2003), A hedonic valuation of urban green areas. *Landscape and Urban Planning* 66, 35-41 and Luther, M. and Gruehn, D. (2001), Putting a price on urban green spaces. *Landscape Design* 303(summer), 23-25.

5 Luttik, J (2000), The value of trees, water and open space as reflected by house prices in the Netherlands. *Landscape and urban Planning* 48, 161-167.

6 Nicholls, S. and Crompton, J.L. (2005), The impact of greenways on property values: evidence from Austin, Texas. *Journal of Leisure Research* 37(3), 321-341.

7 Roe, B. et al. (2004), The effects of farmland, farmland preservation, and other neighborhood amenities on housing values and residential growth. *Land Economics* 80(1), 55-75.

8 Thorsnes, P. (2002), The value of suburban forest preserve. *Land Economics* 78(3), 426-441.

10% and there's wide agreement that the benefits extend for 500 to 2,000 feet. The proximate principle operates for park, forests and reserves in urban, suburban and non-urban areas.⁹



If the 20/10% proximate principle is correct, then private investors can pay for parkland from enhanced property values. For example, assume a nine square block area is worth \$9 million, or \$1 million per block, without a park. If the center block is used for a park then the four half blocks fronting it (the equivalent of two total blocks) would increase in value by 20%. The remaining six developable blocks would increase in value by 10%. The total value for the eight developed blocks would be equal to $(2 \times \$1\text{million} \times 1.2) + (6 \times \$1\text{million} \times 1.1)$ or \$9 million. In other words, a developer could provide the park without losing any value. If landscaping, benches, other improvements and maintenance expenses could be financed from local tax revenues or development on part of the park block, then the net cost of the park would be zero or possibly profitable. This example assumes the amenity value only extends for one block from the park. The research cited above suggests it could well extend further – enhancing the value of more properties and making more funds available for park improvements.

For investors, the key idea here is that by inserting green space, a landlord can increase value above that which would otherwise occur. For green spaces that are already there, arguably, the added value is entered into the higher levels of rent, but this is then simply capitalized at the time of buying the investment and selling the investment and, therefore, over the life of the investment holding, it would probably not affect the level of returns delivered. Positive externalities are part of the start and end price. Improved returns come from their not being there at the beginning but being there at the end of a development or investment. An exception to this principle, however, may be the establishment of permanent protection for previously existing open space. In that case, the investor quite possibly could enjoy the added value obtained from the higher rents associated with permanently protected reserves, as opposed to open space subject to development.

Case Studies:

Hermes, MEPC – Wellington Place, Leeds
PRUPIM – Prudential Grass Roots

⁹ Crompton, J.L. (2001), *The impact of parks on property values: A review of the empirical evidence*. *Journal of Leisure Research* 33(1), 1-31.

Case No. 1

Hermes, MEPC Wellington Place, Leeds¹⁰



Leeds is a former industrial city in the north of England, which is now experiencing strong service led economic growth.

Wellington Place will be a mixed use development incorporating offices, residences, restaurants and cafes along with a public square and beachfront park over 14 acres of riverside land. It will create one of the largest new city centre business quarters in Europe, incorporating 2.7 million square feet (250,000 sq. m.) of mixed use development. The scheme will transform a currently unattractive and underutilized piece of land on the River Aire into an attractive place to work, live and visit and regenerate this part of Leeds. The landscape design vision centers on creating a journey through a series of unique spaces culminating at a major new riverfront destination.

The development site is located on the edge of the central business district of Leeds, close to major transport connections, key waterways and a growing residential community. The area is surrounded by a mix of recently constructed office and residential buildings.

The creation of a high quality public realm is critical to the success of Wellington Place. Together with good architecture, this creates a strong identity for the development. A significant percentage of the development is therefore being allocated to public open space with private and semi private open space within buildings as residential courts and atria.

Two major spaces within the project exploit historic remnants of the rail yard and a stretch of river frontage. A network of smaller spaces and pedestrian routes adds another level of detail and complexity, creating a varied and exciting public realm. Tree planting is to be used extensively along streets and within spaces.

The main pedestrian spine is clearly identified by the scale and layout of buildings. It is well articulated and activated through the use of landscape features, most notably a linear water feature running along its length.

The beachfront terraces will be planted with a combination of native and ornamental species of riparian nature to enhance habitat value on this edge of the river. The soft, planted edge will be managed to encourage habitat for amphibians, invertebrates, birdlife and in particular otters.

“We particularly welcome the connection the central street makes between Wellington Street and ‘the beach’ and viaduct.”

Formal Response by CABE – Commission for Architecture and the Built Environment

¹⁰ Excerpted and adapted from Carey Jones Architects et al. (2006), *Wellington Place, Leeds, Landscape Design Statement, Document No. 2B*. Produced on behalf of MEPC (UK) Ltd.



Case No. 2

PRUPIM, UK

Prudential Grass Roots

Prudential Grass Roots, a partnership between conservation charities BTCV (formerly the British Trust for Conservation Volunteers), PRUPIM and Prudential plc, won a Charity Times Award in 2005. The program won the Corporate Community Involvement category that recognizes the active involvement of a commercial company directly with a charitable project.

Since 2001, Prudential Grass Roots has supported communities to improve their local environment. The program is helping to drive regeneration for people and wildlife in communities around shopping centers and business parks invested in by Prudential plc and managed by PRUPIM.

So far, 11 projects have been carried out, in areas as diverse as Bradford, Stirling, Reading, Wolverhampton and Cwmbran, South Wales.

In addition to leaving lasting environmental benefits, Prudential Grass Roots projects have also helped to tackle social exclusion, encouraging healthy activity, personal development and life-long learning. For example, the Grass Roots project at Phoenix Park in Wolverhampton has revitalized an area of wasteland near the Prudential-owned Mander shopping centre, Wolverhampton. Previously blighted by vandalism and anti-social behavior, Phoenix Park is now a green space complete with nature trail - a much needed resource for local schools and the community.

The Charity Times Award judges agreed that they were particularly impressed with how the company's involvement with BTCV went much further than simply a corporation fulfilling its social responsibility obligations. It was apparent that the relationship was a mutually beneficial arrangement that enabled both organisations to reach out and engage with local communities.



Before

"Open spaces are an enormous asset to any urban community, but if neglected, they invite crime and anti-social behaviour. This project challenges that behaviour and helps build a sense of ownership and confidence in the community."

Tony Muston, Chair of the Friends of Phoenix Park Group



After

"The Mander Centre is at the heart of Wolverhampton and we have always played a significant part in the life of the city. The Grass Roots project at Phoenix Park is a natural extension of this and we are delighted to have been part of this amazing transformation."

Graham Evans, Center Manager, Mander Shopping Center

Safety & Risk Management



In just one year in the US, plaintiffs were awarded over \$400 million for premises liability cases, excluding the lion's share of cases that were settled out of court.

Brief Description: Ongoing efforts to reduce risks to the health and safety of property tenants, visitors and staff, especially from accidents and criminal activity.

Materiality: Safety hazards can constitute a significant liability for property owners and developers.

Public Interest: Unsafe shopping, living and working conditions can lead to injuries, sickness and even accidental deaths. For example, 18% of all fatalities in US private industry are in building construction, related trades and real estate.

Economic Research: Premises liability refers to a land or property owner's legal responsibility for injuries and accidents that occur on their property. These can include slips and falls, use of equipment on the property, parking lot assaults, falling objects, shopping cart injuries and so on.

In a study of the 75 largest counties in the US, there were 1,268 premises liability cases that were tried and disposed during the study year, second only to claims involving automobiles. In 522 (42%) of these cases, the plaintiffs won and were awarded over \$400 million in damages. Nearly 25% of these awards were over \$250,000. The median award was \$59,000.¹ In all likelihood, these figures vastly undercount the total exposure for these issues because they exclude cases settled out of court, cases related to sick building syndrome and damages to the reputations of properties and owners. Government experts estimate that only 2 to 3% of liability cases go to trial, meaning that the number of actual premises liability cases could be in the order of 40-60,000 per year. Assuming these cases settled for just one-quarter of the median award for court cases (or \$15,000) the total cost for cases settled in and out of court would approximate \$600-900 million per year in the US alone.

Case Studies:

PRUPIM – The Mall at Cribbs Causeway Risk Management
Hermes Real Estate – Risk Management Process
CNP Assurances (Group Caisse des Dépôts)

¹ Cohen, T.H. et al (2001), Civil Trial Cases and Verdicts in Large Counties, 2001. *Bureau of Justice Statistics Bulletin*, April 2004. US Department of Justice, Office of Justice Programs, Washington, D.C.



Case No. 1

PRUPIM, UK

The Mall at Cribbs Causeway, Risk Management

The Mall at Cribbs Causeway consists of 135 stores, 17 restaurants and cafes and a range of facilities all under one roof. Its managers are committed to operating the business to the highest standards of safety. Management has adopted a robust safety management system, which was subjected to external scrutiny by the British Standards Institution in order to gain Occupational Health and Safety Advisory Services (OHSAS) 18001 accreditation.

Health and Safety Policy Statement for the Mall at Cribbs Causeway

1. The Health and Safety at Work etc. Act of 1974, imposes statutory duties on employers and employees. To enable these statutory duties to be carried out, it is the policy of Prudential Assurance Company Ltd, so far as is reasonably practicable, to ensure that responsibilities for health and safety are properly assigned, accepted and fulfilled at all levels of the organization. As the nominated senior person representing Prudential on site, the Commercial Director affirms that “it is The Mall’s policy to ensure the health, safety and welfare of all our employees while at work; in addition we accept that we have a duty of care to employees of our facilities management contractor, MacLellan International. Furthermore, it is our policy to ensure the health, safety and welfare of any other persons who may be affected by our work activities such as retail staff, contractors and members of the public.” To assist, the Commercial Director has appointed a Compliance Manager as the on-site Competent Person with regard to health, safety and fire prevention. The full policy document is available from the Management Offices on request.
2. It is the Commercial Director’s intention, so far as is reasonably practicable, to ensure that:
 - the provision and maintenance of plant and systems of work are safe and without risks to health
 - arrangements for use, handling, storage and transport of articles and substances for use at work are safe and without risks to health
 - adequate information is available with respect to articles and substances used at work detailing the conditions and precautions necessary to ensure that when properly used they will be safe and without risk to health
 - the provision of such information, instruction, training and supervision as is necessary to secure the health and safety at work of all employees
 - with regard to any premises under our control or operation on which we are working, the maintenance of all plant, machinery and equipment so that they are safe not only to employees and sub-contractors but to any person who may be affected
 - the working environment is safe and without risks to health and that adequate provision is made with regard to the facilities and arrangements for their welfare at work
 - the Health and Safety Policy is appraised and updated as and when necessary following liaison with the Compliance Manager and Health and Safety Consultants. Communication of any such changes will be made to all employees. Retailers will be represented via The Mall Safety, Health and Fire Committee
 - the above responsibilities are carried out by Store Managers for the demised parts under their control.
3. The Commercial Director reminds all staff that it is the duty of every employee at work:
 - to take reasonable steps to protect their health and safety and the health and safety of other persons who may be affected by their acts or omissions at work

- co-operate with all health and safety arrangements in the workplace, including risk controls, safe systems and personal protective equipment
- the above duties fall upon all retail staff and contractors carrying out business on the premises.



An Industry First

The Mall at Cribbs Causeway has received certification to OHSAS 18001. The Mall is the first shopping center in the UK to be awarded this safety certificate. This recognizes that The Mall has a totally integrated risk management system. This system was put in place by a joint effort between The Mall, BSI Management Systems and facilities management contractor MacLellan International.

Case No. 2

Hermes Real Estate, UK Risk Management Process



Introduction

Risk management within the Hermes Real Estate property portfolio is ultimately the responsibility of a number of nominated property managers who are required to co-ordinate and manage risk management services undertaken on Hermes' behalf. Standards for these services are incorporated in the Property Managers Property Management Agreement and a more specific Property Managers Manual. The services typically include:

- asset protection audits, which address a wide range of issues such as unsatisfactory conditions, management failings, health and safety in common areas and contamination problems
- statutory engineering inspections to satisfy UK and EU legislation related to wiring, appliances, work equipment and other topics
- specialist health & safety services that examine health and safety, fire risk assessments, asbestos, water hygiene and disability access issues
- management of property damage claims to ensure they are resolved as quickly as possible.

Audit Process

With so many different property managers and consultants involved in the management of Hermes' exposures, it is essential that there is a robust audit process in place to ensure that Hermes' standards are being achieved and their reputation protected. An annual audit of each property manager's management organization and procedures is carried out to ensure they are sufficient to enable the required services to be properly provided. In addition, a program of asset protection audits is carried out at selected properties each year. Scores derived from these audit processes contribute towards the Annual Responsible Property Investing (RPI) Awards. This audit process was formally audited for Hermes by Zurich Risk Services some three years ago and more recently by Norwich Union Risk Service, which described it as the most robust process they had seen in the UK property market.

Audit Tools

Hermes has two well developed tools that significantly assist the audit process.

E-workbook

E-workbook was introduced in April 2005 as a new risk management tool. This is a web based system designed to store all reports prepared in respect of Hermes' managed properties together with all risk improvements arising from these along with latest information regarding their completion status.

Currently, there are approximately 12,400 reports uploaded together with approximately 22,000 risk improvement requirements, of which around 84% have been satisfactorily completed.

This system provides significant information regarding each property manager's activities and produces key performance indicators (KPIs) that allow direct performance comparisons over a range of issues.

Latest statistical information is provided to each property manager at 31st March, 30th June, 30th September and 31st December as well as being reviewed at programmed quarterly meetings.

The availability of this more accurate statistical information from e-workbook has helped to make the scores awarded for the purpose of the Annual RPI awards much more transparent.

Hermes Annual RPI Awards

The annual RPI awards are very competitively contested by property managers, all of whom are striving to be better than the rest!

Currently risk management performance accounts for 50% of the overall score achieved with Upstream awarding a similar score in respect of their sustainability and community disciplines.

Currently risk management awards are presented to:

- the best “principal” property manager (who manages a portfolio of properties)
- the best “specific” property manager (who manages a single property or complex)
- the best commercial property
- the best retail property
- the best risk and safety initiative
- the property manager who makes the greatest contribution to Cunningham Lindsey’s fees.



Case No. 3

CNP Assurances (Groupe Caisse des Dépôts, France) Safety and Building Program

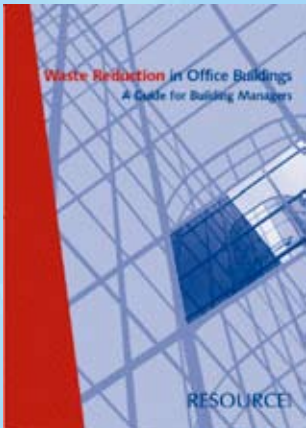
The purpose of the program is to enhance the safety of buildings. It commenced in 1999 and is repeated every six years for all rental and office buildings in France owned by CNP (approximately 10,000 residences and 300,000 m² of offices).

Expert diagnoses are carried out on 36 specific criteria per building. The resultant report identifies any problems encountered in the building over the previous period, assesses their importance and recommends priorities for remedial action. On the basis of these reports, improvement plans are drawn up and implemented.

The building inspections are subcontracted to a technical engineering and design firm. These subcontractors are responsible for visiting each building, drafting individual record sheets including analyzing the problems observed, recommending improvements and priorities and estimating the cost of recommended work. From these documents the building owner then establishes and leads the improvement program.

The program has resulted in significant improvements in the safety of high rise buildings and dwellings built before current regulations.

Recycling and Solid Waste Management



Brief Description: Waste disposal and recycling at commercial properties.

Materiality: Litter, odors, noise and other problems from improper waste handling can cause complaints, reduce tenant retention and lower rents and property values. Recycling programs can lower disposal fees and increase operating incomes.

Public Interest: Recycling conserves natural resources and reduces the need for expensive landfills. Proper on-site waste management eliminates nuisances and improves aesthetics.

Economic Research: Offices

The following example, developed by Resource New South Wales (NSW)¹, explains how recycling in office buildings can both increase recycling and lower the cost of waste removal and disposal.

Studies by Resource NSW found that the waste generation rate in offices was approximately 0.03 kg per m² floor space per weekday, of which about half was recyclable paper. If a cleaner (costing \$27 per hour) takes five minutes per 100m² floor space to empty desk bins and take the waste down to the dock (Cleaning Makes Cents, BOMA International, 1997) and the cost of waste removal/disposal is \$200 per tonne, then the cost of cleaning and waste removal is approximately \$2.85 per 100m² floor space.

Suppose a new system is implemented where waste desk bins are replaced with paper recycling desk bins and a central bin for garbage. Also suppose paper recycling costs about \$1 per tonne paper in administration fees and the desk paper bins are only cleared three times per week. If 50% of the paper is recycled and the time taken by the cleaner to empty the central garbage bin is five minutes, the cost of cleaning and waste/recycling removal is approximately \$2.67 per 100m² floor space. This compares to a cost of \$2.85 per 100m² without recycling. The savings increase as the recycling rate increases.

Economic Research: Shops

The US Environmental Protection Agency in collaboration with the International Council of Shopping Centers has reported on several instances where recycling in shopping centers has been cost-effective²:

- Westfield Shoppingtown Mission Valley, a 1.5 million-square-foot outdoor shopping center in San Diego saw its annual waste disposal costs drop by more than 40% between 1994 and 2002.
- Plaza Camino Real Shopping Center, once the largest trash producer in Carlsbad, California, shaved more than \$67,000 from its waste disposal costs in a single year.
- VF Outlet Shopping Village, in Reading, Pennsylvania, Managed to decrease its annual waste disposal costs by 67% between 1995 and 2002.

Case Studies:

VF Outlet, Inc., USA – VF Outlet Shopping Village

F&C, UK – Clean Sweep Program

PRUPIM, UK – The Mall Shopping Centre at Cribbs Causeway, Bristol

¹ Resource NSW (2002), Waste reduction in office buildings: a guide for building managers. Resource NSW, Parramatta, NSW.

² US Environmental Protection Agency, A guide to waste reduction at shopping centers. US EPA, 2004.



Case No. 1

VF Outlet, USA

VF Outlet Shopping Village, Reading Pennsylvania³



Overview

VF Outlet Village in Reading, Pennsylvania, is located on the site of the former Berkshire Knitting Mills, which was once the largest hosiery mill in the world and operated from 1908 to 1975. Today, it is a thriving outlet complex, owned and operated by VF Outlet Inc., with over 450,000 thousand square feet of retail space, offering consumers a variety of name brands.

In the early 1990s, VF Outlet Shopping Village found that its solid waste disposal costs had reached \$100,000 per year. For mall management, bringing these costs down was a key motivation for launching a facility-wide recycling program.

The program began with a focus on recycling old corrugated cardboard (OCC), which the tenants generate in large quantities. Over the years, the program has gradually expanded to include everything from plastic films and bottles to paper, aluminum, glass, and yard waste (which is composted). All the facility's 80 tenants participate in the program – indeed, the terms of their lease require participation. The program's success is illustrated by the fact that, as of 2002, the facility's annual solid waste disposal costs had fallen to \$32,000 – a 67 percent drop. VF Outlet Shopping Village received Waste Watcher Awards from the Pennsylvania Department of Environmental Protection in 1998, 2000 and 2001.

Operational Details

- Tenants at VF Outlet Shopping Village collect recyclables such as OCC, plastic wrap and paper from their retail operations. The tenants take these materials to one of eight consolidation areas within the mall, loading docks and closets.
- Shoppers can deposit cans and bottles in bins located throughout the facility and in the food court. Custodial staff empties these bins daily and haul the recyclables to the consolidation areas.
- The facility's maintenance and grounds staff pick up recyclables from the consolidation areas daily. They bale OCC and then store it in an onsite trailer; other recyclables are taken to a staging area. A local recycling company picks up all recyclables on an "as needed" basis.
- The recycling program is managed by the facility's maintenance foreman. Nine maintenance and grounds staff contribute part of their time to the effort, some of them spending an hour or two each day collecting materials and baling OCC.
- Tenants receive a handbook that provides information about the recycling program. The program manager also meets with new tenants to explain the program and their obligations.
- To inform tenants of program accomplishments, the program manager posts information on recycling results at each of the eight consolidation areas.

Cost Effectiveness

VF Outlet Village's recycling program has been cost effective from the outset due to two factors: the income generated by recycling OCC and the money saved by reducing waste disposal costs.



2002 RECYCLING TOTALS	
OCC:	499 tons
Mixed paper:	15 tons
Plastics:	8.5 tons
Glass:	1.25 tons
Aluminum:	0.50 tons
Total recycled:	524.25 tons

³ This case is reprinted from US Environmental Protection Agency, *A guide to waste reduction at shopping centers*. US EPA, 2004.

VP recycled 499 tons of OCC in 2002, generating over \$25,000 in income. The facility derives little or no income from its other recyclables, but for each ton of material recycled, it avoids a \$50-per-ton waste disposal fee. VF saved approximately \$25,500 in avoided disposal fees in 2002, on a volume of over 510 tons recycled.

Estimated labor costs for the recycling program totaled \$26,000 in 2002, compared to over \$50,000 in avoided costs and income for the recycling program. Other costs include the capital invested in recycling equipment (two bailers for OCC, bins for bottles and cans and a box truck that is used for collecting both recyclables and solid waste). This equipment has been purchased gradually over the years.

Keys to Program Success

- The recycling program has the support of senior management.
- The program started small, with its original focus on OCC recycling. The program expanded to include other recyclables as resources allowed.
- The program manager educates tenants on their recycling obligations through the distribution of a handbook and through face-to-face meetings. VF considers tenant education the biggest challenge for its recycling program.
- VF sought the help of the county recycling coordinator in finding markets for recyclables.

Case No. 2

F&C, UK

St. Christopher's Place, Clean Sweep Program



F&C has made a commitment to manage its property investment assets sustainably and to work together with local communities to improve environmental and social surroundings.

The F&C Commercial Property Trust plc owns St. Christopher's Place in London W1.

When problems involving waste disposal became an issue for the wider community, the General Manager took decisive action. She was unhappy with the sometimes chaotic and ad hoc waste disposal processes of individual occupiers at the scheme. These problems had developed over a period of time due to the fragmented requirements and responsibilities for disposing of waste from each of the shops, offices, restaurants and residential dwellings in the immediate area.

The General Manager consulted with the Commercial Waste Officer from Westminster City Council (WCC). Working together, they launched Operation CLEAN SWEEP to tackle the issues. This involved extensive consultation and lobbying of local residents and businesses with a view to providing a single, effective, coordinated waste disposal service that would tackle the issues of noise, smell, damage and mess which resulted from the individual occupiers' different waste disposal needs and solutions.

The CLEAN SWEEP solution proposed by WCC and F&C was to use a single contractor who would collect refuse on a strict timetable and in a coordinated and controlled manner using prepaid bags. Many occupiers have now opted to use the services of WCC Commercial Waste and all occupiers are being encouraged to do so.

So far, they have managed to reduce anti-social noise resulting from a multiplicity of refuse contractors' vehicles, as well as the emissions from the vehicles and the unpleasant sight and smell of the rubbish in the streets, produced at various times throughout the day by this varied and integrated community. There has been an overall increase in efficiency and a sense of co-operation between local businesses, residents and management.

To date, not all occupiers have been contacted regarding the success of CLEAN SWEEP, but the scheme's visionaries are still working hard to extend the program, not only to all the tenants of F&C, but also out into the immediately surrounding neighborhood to the tenants of adjacent landlords such as Prudential plc and others. They have further plans to introduce a system for segregation of waste within the overall scheme and improve the amount of recycling, bringing down the costs still further for all the scheme's participants. In a short time the shopping, leisure and living experience of occupiers and visitors to St. Christopher's Place has improved and both F&C and WCC look forward to taking further steps towards increasing recycling and improving local environmental conditions.



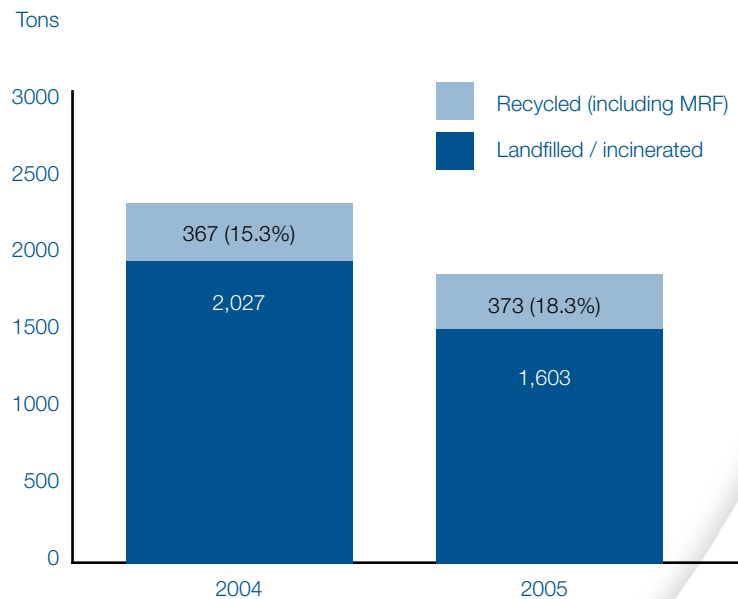
Case No. 3

PRUPIM, UK**The Mall Shopping Centre at Cribbs Causeway, Bristol**

The Mall Shopping Centre at Cribbs Causeway increased its recycling rates between 2004 and 2005, while the total amount of waste produced at the centre decreased over the same period.

Through audits and inspections, regular waste recovery targets have been set. More balers for cardboard, plastic, coat hangers, plastic bottles, aluminum and steel tins have been introduced. At the point of collection, segregation in loading bays has been improved, making it easier for contractors to collect waste and process it, once it is in their possession.

The Mall also works with retailers to ensure that special wastes are dealt with appropriately. For example, hazardous waste is collected specifically from retailers when requested. Operatives are then tasked with the collection of waste and its safe return to the appropriate segregation area. To support retailers in this process, a list of hazardous wastes is provided.



Transportation Demand Management & Transit Oriented Development



The weight of evidence to date shows that development near transit stops enjoys land value premiums and generally out-performs competitive markets.

Brief Description: Transportation demand management (TDM) includes efforts to reduce the demand for travel by single-occupant vehicles, as compared to increasing the supply with more roads and parking, which is usually more costly. Worksite-based TDM strategies include private sector programs and services, such as shuttle services and guaranteed rides home, which encourage employees to change commuting patterns by providing incentives that make public transportation more attractive.¹ Transit Oriented Development (TOD) is another strategy aimed at reducing driving alone. It includes the development of properties in higher density, mixed-use areas near transit facilities with high quality walking environments in order to facilitate the use of public transportation systems.

Materiality: TDM and TOD lower the risk of depreciation caused by the possibility that traffic congestion and higher fuel costs might erode access to locations exclusively dependent on automobiles. Properties with good linkages to public transportation can appreciate in value in response to public investments in transit networks, increased transit use stimulated by higher fuel prices and heightened interest in urban living among retirees and young adults.

Public Interest: TDM and TOD can reduce energy consumption, dependence on foreign oil, traffic congestion, spending on roads, traffic related deaths and injuries, air and noise pollution and urban sprawl. They can also increase transit system use and revenues, improve housing choices, promote urban revitalization and improve access to jobs, housing and cultural opportunities for those who are too young, too old, handicapped, or unable to afford auto transportation.

Economic Research: TDM programs have not been subjected to the same level of economic research as TOD programs. However, in theory, market distortions cause more vehicle use than would occur in an efficient market and a more efficient transportation system should lead to greater economic development, which is associated with higher property values.² TDM benefits can include congestion reduction, parking savings, road safety, community livability and efficient land use. Improved accessibility to properties, in particular, can directly enhance their rents and valuations. TOD, on the other hand, has been intensively studied. For example, a major US study in 2004 identified over 100 TOD projects in the US alone, mostly around heavy-, light- and commuter-rail stations.³ Interviews revealed that developers think TOD performs better than most products and were quite optimistic about its prospects where congestion is worsening and there is political support for such projects. After reviewing the scientific literature, the study concluded that “the weight of evidence to date shows that development near transit stops enjoys land value premiums and generally out-performs competitive markets. This generally holds for residential housing (especially condominiums and rental units) as well as office, retail and other commercial activities.” In Dallas, for example, values from 1994 to 1998 for transit-oriented retail and office increased by

¹ See Victoria Transport Institute, OnlineTDM Encyclopedia for a list of strategies at <http://www.vtpi.org/tdm/>.

² Litman, T. (2002), *Economic Development Impacts of Transportation Demand Management*, Victoria Transport Policy Institute, Victoria, B.C., Canada. Also see National Center for Transit Research at the Center for Urban Transportation Research (2007), *Economics of Travel Demand Management*, NCTR at CUTR, University of South Florida, Tampa.

³ Cervero, R., et al, (2004), *TCRP Report 102: Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects*, Transportation Research Board, Washington, D.C.

37% and 14%, respectively, compared to 7.1% and 3.7% in other Dallas locations.⁴ A follow-up study showed that from 1997 to 2001, office properties near transit gained value 53% faster than elsewhere, though premiums were not found for retail.⁵ These benefits may not hold in all cases, especially during recessions when there is less congestion caused by unemployment and weak demand for real estate.

Similar findings have been published outside the US. A study of Bogota, Columbia found rent premiums for multifamily properties closer to transit⁶ and a Hong Kong study found rent premiums associated with Mass Transit Railway entrances at shopping centers⁷.

Future demand for housing near transit stations is expected to be strong in the US. According to one study, at least a quarter of all households seeking housing in the next 20 years will be looking for housing within ¼ mile of a transit stop.⁸ Householders older than 45 show particular interest in denser, centrally located housing, including Transit Oriented Development. This group of home buyers will account for nearly a third of the total homeowner growth in the next several years.⁹

There can be challenges to developing successful TOD and walkable urban environments. Financing can be difficult to obtain due to perceived risk with mixed use development, appraisal difficulties, reluctance to fund pioneering projects and the need to obtain short term returns. Other challenges include finding locations where there is sufficient demand to support higher density, mixed use development and coordinating the financing and opening of retail, commercial and residential uses with high quality infrastructure so that tenants and buyers are provided with a fully functioning mixed use development at the time of initial occupation.

Case Studies:

KOAR Development Group/Shamrock Capital Advisors, USA – Solair Wilshire

Hermes/MEPC, UK – Birchwood Park Express Bus

Hughes Development, USA – Mockingbird Station, Dallas



Homes and shops at a transit station in Stokkel, Brussels

4 Weinstein, B. and Clower, T., *The Initial Economic Impacts of the DART LRT System*, University of North Texas, Center for Economic Development and Research, 1999.

5 B. Weinstein, *DART Light Rail's Effect on Taxable Property Valuations and Transit-Oriented Development* University of North Texas, Center for Economic Development and Research, January 2003.

6 Rodriguez, D.A. and Targa, F. (2004), Value of accessibility to Bogota's Bus Rapid Transit system. *Transport Reviews*, 24(5), 587-610.

7 Tay, R.S. et al (1999), The determination of rent in shopping centers: some evidence from Hong Kong. *J. of Real Estate Literature*, 7, 183-196.

8 Center for Transit Oriented Development, (2004). *Hidden in Plain Sight: Capturing the demand for housing near transit*. Center for Transit Oriented Development, Oakland, California.

9 Myers, D. and Gearin, E. (2001), Current preferences and future demand for denser residential environments. *Housing Policy Debate*, 12(4), 633-659.

Case No. 1

KOAR Development Group/Shamrock Capital Advisors
Solair Wilshire




KOAR Development Group is currently developing Solair Wilshire, a 22 story mixed-use, transit-oriented high rise along the Wilshire Entertainment Corridor in Los Angeles. The project is a joint development with the Los Angeles County Metropolitan Transportation Authority (“MTA”) that will fuse 186 cosmopolitan residences, 40,000 square feet of specialty retail, an integrated parking structure, an MTA bus layover and the subway portal into the flagship nexus of Koreatown. The design is a spectacular glass wall residential tower sitting upon an expansive two story retail platform and parking structure – an architectural beacon within the Wilshire corridor.

The Solair project is the result of five years of delicate orchestration of public and private interests, creative land negotiations, resourceful financing and capital alliances, traffic and parking issues and relocation of services and facilities. The entitlement process was one that welcomed input from the community and planners and the five years of predevelopment was a negotiation against the backdrop of public interests and private incentives. Two public agencies – the MTA and the Los Angeles Department of Transportation (“DOT”) plus a private land owner were involved with the gymnastics of land negotiation that resulted in a land swap, ground lease and joint venture relationship. In particular, KOAR swapped buildable land with MTA for a new transit layover and a ground lease as part of the joint development and additionally purchased excess DOT parking area. The private land owner became an investor in the development. A parking garage was designed to accommodate the mixed use building and the MTA commercial parking needs. Traffic was constantly monitored as MTA bus stops and layovers were temporarily relocated and scheduling of heavy concrete pours was coordinated with the City Council and LAPD for round the clock operations with minimal traffic diversions. Several night concrete pours were scheduled from 9pm through 6am the next morning.

Upon completion, the development will transform a once maligned transit node into a bouquet of commercial, retail and residential vitality that promises parking, food venues, shops and services around the clock. The carefully crafted joint development agreement between KOAR and not-for-profit MTA defines the mutual benefits of a private developer promoting public good within a transit-oriented context.



The Solair Wilshire project involved community meetings, City, State and agency (MTA, LADOT) presentations within every department and at every approval level, environmental impact studies, traffic analyses and engineering assessments of soil, groundwater, wind, sunlight, shade and sound. The flagship development at the strategic intersection of Wilshire Boulevard and Western Avenue deserved the planning and entitlement scrutiny. The result is a transit-oriented lifestyle development that combines the transportation hub of subways and buses, a 40,000 square foot specialty neighborhood retail and dining center and 186 cosmopolitan homes. The project will be the cornerstone of the vital and expanding Koreatown and will set a planning and design example for other Los Angeles neighborhoods in galvanizing its residents, local commerce, regional transportation and community vision. The key to the optimal building solution was KOAR’s ability to embrace flexibility throughout the entitlement process, in responding to the panoply of venture partners, lenders, the City, community and engineers. Although KOAR arranged the project financing entirely with private capital, the development has from onset through entitlements to construction, been one of public agency and private developer collaboration.



Solair is projected to be consistent with KOAR's mission to develop projects that generally meet three economic thresholds: 20% margin on project development costs, 20% Return on Equity and 20% IRR, assuming land assemblage, entitlement, construction and market risks.

Funding for the Solair project is comprised of equity from KOAR and private individuals, a \$127 million construction loan from Corus Bank and \$25.5 million in mezzanine financing provided by the Genesis Real Estate Funds ("Genesis"), managed by Shamrock Capital Advisors. Genesis provides gap financing to developers, in the form of equity, preferred equity or mezzanine debt, while pursuing a "double bottom line" philosophy of generating both risk-adjusted returns for its investors and stimulating economic development in low or moderate income communities throughout southern California.

Local developer KOAR Development Group has teamed with global construction giant Bovis Lend Lease to build the edifice. Renowned architect Archeon infuses its vast Asian experience with world and sustainable technology from a cavalcade of engineers and consultants. The modern interiors were inspired by the internationally recognized firm of Super Potato from Japan. Tishman Construction Company brings its national prominence to manage the construction for KOAR.



Case No. 2

Hermes/MEPC, UK

Birchwood Park Express Bus

Birchwood Park is a 123 acre mixed-use business park in the UK located close to the M6 and M62 motorway interchange, providing excellent links to the surrounding region and beyond. With over 1,100,000 sq ft of space, Birchwood Park is home to more than 125 companies with approximately 4,200 people. Its amenities include a conference center, restaurant, health and fitness club and nursery. Created by MEPC, a leading developer of sustainable business communities, Birchwood Park makes available a variety of building types and sizes, on flexible lease terms, in a location which is attractive, secure and accessible.

Summary of the Initiative

The Birchwood Park Express Bus was first established in December 2004 and seeks, in conjunction with the Birchwood Park Shuttle Bus, to enable Birchwood Park to become a location that is less reliant upon car based commuting than was historically the case.

In addition to standard car parking allocations MEPC currently lease circa 400 car spaces under License Agreements to occupiers of the park. The spaces are priced at £750 per space per annum with £250 of this figure being highlighted as a “service charge to support alternative travel initiatives.” Companies acquiring additional car spaces are made aware of this fact.

From January 2005 MEPC have used a large element of this income to finance a free to use, peak time, express bus service that links Birchwood Park with Warrington Town Centre. A key aim of the bus service was to connect with train services arriving at local rail stations.

This “Birchwood Park Express” complements the “Birchwood Park Shuttle” which links the park to Birchwood railway station and is financed by the Birchwood Park estate charge.

Steps to Success

In 2001 the first free bus service was introduced, the Birchwood Park Shuttle. This service operates on a circular route around Birchwood Park and meets with Birchwood Station. This service has been highly successful with patronage increasing 429% since its first year of service. Over 174,000 trips have been made to date.

In addition to the success of the Shuttle Bus, the 2002 Birchwood Park Staff Travel Survey identified a lack of public transport options from Warrington Town Centre due to slow journey times and indirect routes. There was an obvious need for additional bus service and this became The Birchwood Park Express.

Benefits

An obvious benefit of Express Bus has been improved accessibility to Birchwood Park from Warrington Town Centre. The bus service supports those who do not drive and helps to significantly reduce the number of vehicles traveling to and from the park. It also alleviates some acute problems relating to car parking and congestion.



Warrington Town Centre

The bus service is free to use and available to all tenants of Birchwood Park. It is so successful that neighboring companies outside Birchwood Park make financial contributions in order to be able to use the services for their staff.

Recent consultations with tenants have shown there is a demand for more bus services and these options are being investigated.

Quantifiable Benefits

The cost of operating the Town Centre Express Bus service is £4,284 per month. This is in addition to the £4,488 spent to run the Shuttle Bus. The total for both is £105,000 per year. This is offset by the £100,000 produced each year by the extra car park charge and contributions from neighboring property owners and may also contribute to greater tenant loyalty and satisfaction.

Express Bus Patronage

In 2006 18,419 trips were made on the Birchwood Park Express significantly reducing the number of car trips into the park and making a significant contribution towards accessibility and sustainability objectives.

As with the Shuttle Bus, patronage for the Express Bus has grown every year since 2005.

Case No. 3

Hughes Development, USA Mockingbird Station, Dallas

“Rents at Mockingbird Station’s lofts command a 40% above-market premium.”

Steve McLinden, National Real Estate Investor
November 1, 2006

Mockingbird Station is a transit oriented developed located immediately adjacent to a major Dallas Area Rapid Transit rail line station. It contains retail, restaurant, cinema and office space as well as loft apartments and parking. In addition to the transit, connections to local bus, taxi and shuttle services. The site is four miles north of downtown Dallas on ten acres (four hectares) and contains over 500,000 square feet of rentable building area.

The project was financed without special tax districts or permit abatements. Some federal funding was provided for offsite pedestrian access improvements to the area, however, the developer paid the full cost for all needed road improvements and for connecting the project to the rail platform.

The project has proven to be very successful. Residential occupancy rates have exceeded market norms and produced above-average rents for the area. The retail and office space is nearly fully occupied.



Tree Planting and Preservation



Shoppers are willing to spend 9 to 12% more for various types of goods and services in shopping areas with trees in the streetscape.



Brief Description: Planting and preserving trees around urban and suburban properties.

Materiality: Trees can serve as amenities that increase rents in commercial properties, value in residential properties and sales in retail centers. They can also reduce operating expenses by lower heating and cooling costs.

Public Interest: Trees give shade, save energy, clean the air, sequester carbon, screen noise, support wildlife, reduce erosion, lessen wind, define space, add privacy and make neighborhoods more attractive.

Economic Research: Studies have found that trees and landscaping benefit property owners. One study of 85 office buildings in Cleveland found that landscaping with good aesthetic value added 7% to the average rental rate. The study also found that landscaping which provided good building shade added another 7% to rents.¹ The authors reviewed prior research and concluded that other studies had found similar benefits.

In a series of three US research projects, the value of trees to retailers was studied in a large urban central business district, the downtown shopping district of a mid sized city and the main street districts of smaller cities and towns. In all three types of locations, trees had positive effects on consumer responses and behavior. Consumers perceived places with street trees to be more attractive and to offer higher quality products. Shopping areas with trees also attracted customers from greater distances who would spend more time, pay more for parking and visit the areas more frequently, all else being equal. Shoppers were willing to spend nine to 12% more for various types of goods and services in shopping areas with trees in the streetscape.²

Researchers have also found that wind-shielding by trees can lower heating expenses while shading and evapotranspiration can lower cooling costs.³ In one study done in a cold, windy climate, office buildings that were sheltered from wind by trees reduced their winter heating requirements by 16 to 42%.⁴ Another study found energy use reductions of 7 to 17% for retail stores and 5 to 18% for offices from multiple measures aimed at reducing urban heat islands. Over 75% of these savings, however, came from using light colored “cool” roofs and shade trees.⁵

Case Studies:

Icade Patrimoine, France – Operation 10 000 Trees and EMGP Campus Arboretum

¹ Laverne, R. and Winson-Geideman, K. (2003), The influence of trees and landscaping on rental rates at office buildings. *Journal of Arboriculture*, 29(5), 281-290.

² Wolf, K. (2005), Business district streetscapes, trees and consumer response. *Journal of Forestry*, 103(8), 396-400.

³ Akbari, H. et al. (2001), Cool surfaces and shade trees to reduce energy use and improve air quality in urban areas. *Solar Energy*, 70(3), 295-310.

⁴ Wang, F. (2006), Modelling sheltering effects of trees on reducing space heating in office buildings in a windy city. *Energy and Buildings*, 38(12), 1443-1454.

⁵ Akbari, H. and Konopacki, S. (2005), Calculating energy-saving potentials of heat-island reduction strategies. *Energy Policy*, 33(6), 721-756.

Case No. 1

Icade Patrimoine France Operation 10 000 Trees

Context



Icade Patrimoine is a French apartment building operator. In May 2004, its Director decided to extend its management agreement with the Forestry Society in order to improve his future clients' environment by offering "one tree per apartment". In 2004 Icade Patrimoine was owner of 45 000 housing units and 35 000 trees, so the project came to be known as "Operation 10 000 Trees".

The 2005 plantation campaign was aimed at:

- improving the attractiveness and financial value of the company's residential properties
- adding qualitative value to external spaces in order to complete or rehabilitate underdeveloped strategic spaces such as entrance halls or entry routes
- diversifying vegetation to extend the blossom season and improve the inhabitants' quality of life.

Details of the Operation

Based on the Forestry Society's expertise in tree selection, 17 sites were selected for tree planting according to the following criteria:

- accompany projects focused on green surroundings improvement
- improve zones with a lack of vegetation
- give a strong vegetal visual identity to the park and community spaces such as around play gardens or building entrances
- anticipate renewals for trees at the end of life, etc.

Funding for the operation reached nearly two million euros. Planted trees were eight years old in average, with a three to six meter height.

Particular measures have been taken to ensure the sustainability of the plantations. First, the warranty period has been extended from two to four years. A strict follow-up in watering has been defined in a register and a supervision procedure has been set up. Tree trunks have been well protected, with bamboo, against physical attacks and extreme weather conditions such as dryness and wind.

It is important to note that this operation has not caused any of the maintenance charges paid by the tenants to be modified, as incremental costs in watering will be carried by Icade Patrimoine for a period of four years.

Tree Species Selection

The 17 residences included 8,776 housing units, 835,000m² of landscape and 5,304 existing trees at the end of 2004 (representing 120 trees per hectare of green land). In 2005, 1,322 new trees and 8,640 shrubs were planted, increasing tree density to 150 trees per hectare of green land by the end of the project. To improve tree sustainability, the species were carefully selected to better resist climate change and extreme weather conditions:

- 424 "noble" trees of large size and great longevity (over 80 years old) were selected: oak, magnolia, hornbeam, ginkgo biloba, Serbian spruce, black pine tree, sequoia, larch tree, etc.
- 176 "noble" trees of small or middle size and high longevity (greater than 40 years): yew, laurel, holly, juniper, hawthorn, etc.
- 722 trees of middle size, particularly flourishing or with exceptional fall blossom and with an average longevity (less than 40 years): maple tree, chequer-tree, apple tree, wild cherry tree, lilac, birch, hazel tree, willow, etc.



Conclusion

This campaign is considered a complete success because 98% of the trees have continued their growth and only 2% have been replaced under the warranty conditions.

Case No. 2

Icade Patrimoine France From Warehouse to Business Campus

Context

Within the Icade group, Icade EMGP is developing a business park of offices and other uses, known as the EMGP Campus, on a former warehouse centre in northern Paris. The project is ambitious: transforming the area into a business campus, offering various services such as transportation, security, food service and other personal services.

Details of the Operation

Adding vegetation is crucial for this area. Generally speaking, green land improves the landscape while providing quiet and peaceful resting spaces. Natural landscapes also give people who live and work near them a sense of belonging and collective identity. They help attract companies seeking to offer their employees a better environment. Trees and vegetation are therefore a major means of improving the value of a real estate investment, while also applying principles of sustainable development and environmental quality.

Since this area is so close to the circular highway surrounding Paris, Icade EMGP has made it a priority to achieve a good balance between the natural and built environment. This is the main reason Icade EMGP has decided to double its vegetal space (including trees, shrubs, clumps and grass lawns) and create an arboretum.

The botanical garden, with its various tree species, is aimed at protecting nature and biodiversity, keeping the public spaces welcoming and healthy and absorbing greenhouse gases. It will be completed within 10 to 15 years. An effort is being made to use species that will best adapt to climate change, such as Greek oaks or steppe birch trees, in order to enhance sustainability and avoid having to replant after several years. Also, groves are being planted in a more original way than the usual classical linear rows, corresponding to a more modern and living vision of vegetation. The goal is to create small forests and ecosystems.

Other aspects of the project include respecting certain proportions between the mineral and vegetal worlds, properly managing rainwater and using ecological management and maintenance principles consistent with a long-term perspective. Since three to four meter high trees cost between 500 and 1,000€ each, depending on the species, the botanical garden, with one tree per 2m², will require a significant investment.

Conclusion

Planting trees along with low plants varieties will provide an immediate effect on the new business park program, as it allows new tenants to feel more at ease right away. It is the solution chosen by Icade EMGP to attract businesses and add value to this real property.



Jardin botanique des Vosges



Urban Regeneration

Brief Description: Investing to revitalize and regenerate urban places.

Materiality: Owning properties in cities and regeneration areas can improve the risk-adjusted returns and diversification of property portfolios.

Public Interest: Urban regeneration can advance physical accessibility, social integration, urban vitality, economic development and infrastructure efficiency. It can also reduce urban sprawl, conserve natural resources and lessen dependence on automobiles, foreign oil and related carbon emissions. However, projects must be carefully planned to avoid involuntary displacement, trade diversion, gentrification, the loss of affordable housing and historic structures, noise and congestion.

Economic Research: Evidence indicates that investments in urban areas can be financially competitive.

According to research on urban regeneration areas in the UK¹:

- “investment performance in regeneration areas has matched and in the retail sector, exceeded national and local city benchmarks”
- there has been “a lower level of risk per unit of return than the market as a whole”
- “properties within urban renewal areas can potentially increase portfolio diversification.”

The most recent update of the Urban Regeneration Index, produced by IPD for Morley Fund Management and English Partnerships found that “total returns for all property in regeneration areas have outperformed all UK property over the last five years...Over five years to 2006 the regeneration annualized total return was 16.7% y/y which compared with 15.1% y/y from the IPD UK Annual Index. This outperformance has been seen across all commercial property sectors and residential.”²

Case Studies:

Morley Fund Management, UK – Morley Igloo Fund

CalPERS, USA – CURE Program

Shamrock Advisors, USA – South Pas Town Square

Mitsubishi Estate Company, Japan - Marunouchi Area Redevelopment Project

“Total returns for all property in regeneration areas have outperformed all UK property over the last five years.”

¹ McGreal, S., et al (2006), Risk and diversification for regeneration/urban renewal properties: evidence from the U.K.. *Journal of Real Estate Portfolio Management*, 12(1), 1-12.

² <http://www.ipdindex.co.uk/results/indices/regeneration.asp> [accessed on Sept. 10, 2007].

Case No. 1

Morley Fund Management, UK Igloo Regeneration Fund

Igloo was established in 2002 and was the UK's first urban regeneration fund. It invests in mixed-use urban regeneration projects in major towns and cities in the UK. The nature of the Fund's activities means that it has strong socially responsible investment (SRI) characteristics. It is jointly managed by Morley Fund Management and Igloo Regeneration Ltd.

As at 30 September 2005 the Fund had a gross asset value of £37.2m comprising 20 assets. The Fund is only open to professional investors with over £5m to invest.

Morley is a leading and innovative real estate fund manager in the UK and a leading provider of specialist funds, which invest in defined real estate market sectors. In particular they have a track record of identifying market sectors beyond those that UK real estate fund managers have traditionally confined themselves to.

Morley identified an opportunity for financial returns in the UK urban regeneration market. In Morley's view, regeneration areas were erroneously perceived by the institutional investment community as high risk and low return. This suggested an under-pricing.

Academic underpinning for this initiative came from two pieces of work. The first was a study by UK performance measurers Investment Property Databank that showed that over 20 years investment in the most deprived locations in the UK had produced returns slightly higher than the prime market and with slightly less volatility. This research is now published as the urban regeneration index.³

The second was a study by the universities of Ulster, Aberdeen and Dundee financed by the UK government, the Economic and Social Research Council and the Royal Institute of Chartered Surveyors. This showed that investing in areas where the government was pursuing urban regeneration policies produced real estate returns 20% higher than the rest of the market.

Igloo's policy on socially responsible investment, written with URBED (Urban and Economic Development, Ltd.), has two aims:

- to enhance the value of their investments
- to enhance the value of their brand with public sector land owners in order to improve their ability to access investment opportunities.

Igloo invests in real estate with latent value potential. This derives from good locations in relation to major urban city centers where value is depressed by poor physical environments and stigma but where value is capable of being released by a combination of public and private investment (urban regeneration).

In these locations, design quality is extremely important to achieving value (see CABA Value of Good Design⁴). Igloo's primary occupier market is creative industries that are very design quality sensitive. This is the first leg of the SRI policy.

Igloo also identified early (in 2001) the long-term trends in energy prices and regulation. As a long-term investor Igloo introduced the environmental leg of the SRI policy to underpin long-term exit values.

In the deprived communities in which Igloo works, it is important to have the support of the local community to maximize value and minimize management costs. This is the third leg of the SRI policy.

All three legs also reflect the goals of Igloo's public sector partners – government, local government, regional development agencies and urban regeneration agencies.

³ IPD, Morley Fund Management and English Partnerships (2006), Urban Regeneration Index, January 2006.

⁴ CABA (2002), *The value of good design: how buildings and spaces create economic and social value*. Commission for Architecture and the Built Environment, London.

This makes Igloo the investor of choice for many of these agencies. Igloo wins 80% of the projects it competes for and 50% of its projects are acquired off the market, reducing transaction costs.

Urban regeneration is a long-term process. It involves land assembly in areas where viable commercial development without public subsidy is not possible. It then involves community engagement, master planning and urban design, physical development and active neighborhood management. Igloo finds that the process can take five to ten years. Value enhancement comes through mainly four to seven years into the project when values typically move from 20% to 80% of the values in adjoining prime areas.

Returns come from a combination of land value enhancement, development profit, rental income and capital growth (partly general market growth and partly regeneration effect growth).

Igloo does not seek to maximize returns through risk exposure to development. Rather it seeks to minimize risk by maintaining a roughly equal exposure to investments (rental producing completed buildings) and developments. Igloo is also seeking to build a portfolio of rent producing property in regeneration areas.

The pattern of Igloo's risk/return curve over the life of the fund is:

- Years 1 - 5 Low return/high risk at the start
- Years 6 - 10 High return/high risk during the development completion phase
- Years 11 - 15 20% plus index out-performance/low risk during the investment phase

Within the development portfolio, exposure is divided between land and construction and is partly held directly and partly held in partnership with public agencies. Igloo actively mitigates risk in the development portfolio through a variety of techniques including holding land on option, priority returns, public sector first loss, pre-lettings, etc. It also holds development assets at cost (normal accounting rules) so the returns from half the portfolio are only realized on disposal or completion as investments.

Igloo therefore focuses on medium and long-term returns (to 2011 and 2016) rather than on quarterly returns (which are roughly half the underlying returns). This allows it to avoid the trade offs many investors make to enhance short-term returns at the expense of long-term returns.

Igloo's Projected Internal Rates of Return

	Fund Geared	Fund Ungeared	Fund Benchmark IPD Benchmark, UK Universe
December 2011	16.0%	14.3%	10.9%
December 2016	13.3%	11.9%	9.4%



Case No. 2

CalPERS, USA

California Urban Real Estate

Since CURE's inception, CalPERS' average annual return has been 19.8% before fees and 16.5% after fees, through December 31, 2006. This compares to the benchmark industry returns as measured by NCREIF (National Council of Real Estate Investment Fiduciaries) of 8.1 percent.



The California Public Employees' Retirement System (CalPERS) is the largest public pension fund in the USA. It provides retirement and health benefits to approximately 1.5 million public employees, retirees and their families and more than 2,500 employers. As of March 2007 the market value of CalPERS' real estate assets was US\$19.5 billion.

The California Urban Real Estate program is part of the total real estate portfolio. According to CalPERS policy, "CURE investments include...low-to-moderate-income housing, multi-family low-income housing, commercial or residential or both, urban infill, community redevelopment and rehabilitation...Investment in the program does not imply reduced expectations for returns or increased willingness to accept risk. The system shall only invest in situations where the investment risk is no greater than in other real estate investments made by the system. If the risk inherent in a particular project is unacceptably high, then the system shall require guarantees, subsidies or other financial assistance by government agencies to reduce risk to an acceptable level."

CalPERS relies on investment partners to put the program in place. As of May 2007 CalPERS had twelve investment partners in its CURE program.

By the end of 2006, through CURE, CalPERS had directly invested approximately \$0.9 billion of equity into urban real estate projects, which had a total asset value of approximately \$2.2 billion.

According to the Treasurer of the State of California, "The strong earnings... prove once again that we can do well by doing good. CalPERS' urban real estate investments are achieving Double Bottom Line success – generating solid earnings for taxpayers and pensioners and at the same time creating housing, jobs and economic opportunity in California's underserved communities. The public commitment...has paid off and has given real hope to communities that are struggling to lift themselves up economically."

According to an independent report⁵, "While CURE targets urban investment, it does not either make markets or take excessive risk in very early development of blighted inner city neighborhoods. For these difficult projects, early risk takers, either entrepreneurial developers or non-profit organizations are still required whether it is 125th Street, New York or downtown Los Angeles. But once a neighborhood has begun to show early signs of revitalization potential, CalPERS is prepared to bring considerable investment dollars that enable early development to move to the next level. For example CalPERS' partnership with CIM Group Inc. in downtown Los Angeles brought the area its first supermarket in eighty years."

⁵ Hebb, T., (2005), Pension Fund and Urban Revitalization: California Case Study B: CalPERS' California Urban Real Estate Initiative. Labor and Worklife Program, Harvard Law School.



Case No. 3

Shamrock Capital Advisors, USA South Pas Town Square



DECOMA Developers, LLC/Shamrock Capital Advisors is working with the City of South Pasadena's Community Redevelopment Agency and Community Redevelopment Commission ("CRC") to develop South Pas Town Square, a low-density collection of six mixed-use, sensitively designed buildings infilling a three-block area in South Pasadena's historic Downtown core. Upon completion, South Pas Town Square will provide the community of South Pasadena with a sense of place, a strengthened downtown with an improved retail environment and a mixed-use neighborhood where homes coexist with commercial activity.

Anchored by the Rialto Theatre (a neglected National Historic Landmark), the revitalization area currently sits as a disjointed mix of 1970s-era suburban bank buildings and some culturally significant one and two-story commercial structures – all held together by surface parking lots. The development plan unifies the area with new buildings linked to old buildings by way of pedestrian paths, gathering spaces and a town square. The new structures will house 60 new dwelling units, 22,379 square feet of retail uses, 8,390 square feet of restaurant uses and 6,543 of office uses. Parking will be accommodated in a new underground structure and on improved surface parking lots. It will be the first US Green Building Council LEED rated green building project in South Pasadena.

The development plan for South Pas Town Square was truly a joint effort between the CRC, DECOMA and the project's architect, Kaplan McLaughlin Diaz (KMD). Prior to selecting DECOMA, the CRC prepared and issued a document called the "Framework for Downtown Development". This framework helped establish the planning, design and zoning criteria for the site. In addition, the City of South Pasadena conducted a survey called "Staying Small Successfully." The survey helped the City and CRC obtain feedback and public opinions about the direction for the Downtown redevelopment area. After its selection as the preferred developer, DECOMA incorporated the Framework and Staying Small results into its outreach program, hosting a series of community meetings during the Summer of 2005 – the first four meetings called "Town Talks" were designed to obtain input from all attendees on a range of topics such as public space, parking, entertainment, residential, retail, restaurants and the Rialto. These meetings were followed up with "Architect Talks", a series of three meetings led by KMD to present planning concepts and project ideas.

Acquisition of the land proved to be quite challenging with 18 separate property owners including the Community Redevelopment Agency, which was able to contribute 1.11 acres of land. Over two years DECOMA was able to secure the remaining land necessary to complete the development program by way of property purchases using friendly condemnation, options and owner participation agreements.

South Pas Town Square is an excellent example of DECOMA's unique approach to addressing community revitalization goals. DECOMA believes that only when a development has a beneficial impact to the surrounding community can it be considered successful. DECOMA's approach to working with South Pasadena is defined as a public endeavor that generates a sustained and all-embracing private market reaction that works in partnership with the city's vision and improves the quality of life for the surrounding community.

Funding for South Pas Town Square is comprised of a proposed \$39 million construction loan (lender to be determined), a \$500,000 City predevelopment grant and equity from DECOMA and the Genesis Real Estate Funds ("Genesis"), managed by Shamrock Capital Advisors. Genesis provides gap financing to developers, in the form of equity, preferred equity or mezzanine debt, while pursuing a "double bottom line" philosophy of generating both risk-adjusted returns for its investors and stimulating economic development in low or moderate income communities throughout southern California. The project is expected to produce an internal rate of return of 25% over a four year hold.





2002
Marunouchi Building



2003
Mitsubishi UFJ
Trust



2004
OAZO



2005
Shin-Tokyo
Building



2006
Shin-Marunouchi



2007
The Peninsula
Tokyo

Case No. 4

Mitsubishi Estate Company, Japan

The Marunouchi Area Redevelopment Project

The Marunouchi Area is an international business center that lies between Tokyo Station and the Imperial Palace in the City of Tokyo. The 120 hectare district contains approximately 100 buildings, of which MEC owns and manages roughly 30%. About 4,000 companies have offices there, including nearly 10% of the companies listed on the First Section of the Tokyo Stock Exchange.

MEC believes that developing sustainable urban infrastructure is a key to maintaining the value and competitiveness of cities, both domestically and globally. In 1998, MEC commenced the first stage of the Marunouchi Redevelopment. This was a 10-year program encompassing the upgrade, reconstruction and renovation of a portion of this district. In this phase, 500 billion yen were invested into redevelopment of six buildings and renovation of other existing properties.

A series of new buildings were completed, beginning with the Marunouchi Building in August 2002, followed by six more buildings. With the completion of the Peninsula Tokyo in September 2007, the first stage of the Marunouchi Redevelopment was completed.

Second Stage Guidelines

In 1996, the Otemachi Marunouchi Yurakucho District Redevelopment Project Council began work on Area Development Guidelines, which were completed in 2000. The Guidelines have been recently amended to emphasize sustainable development, as indicated by the following goals:

- to measure, compile and analyze the environmental data on buildings and to establish the think tank called ECOZZERIA
- to improve energy efficiency and carbon neutrality for area
- to establish lower environmental impacts from traffic and logistic systems
- to conserve water and waterways
- to manage public spaces in ways that save energy and water
- to increase waste recycling
- to better prepare for large scale disasters
- to create and grow new environmental businesses.

The Shin-Marunouchi Building

The Shin-Marunouchi Building, one of the flagship projects in the area, is a product of the Guidelines and a showcase for MEC's commitment to environmental improvement through redevelopment. The building is a landmark in the area and features several environmental elements:

- the buildings base height is just 31 meters, designed to respect nearby historic buildings
- the building forms part of a wind corridor between Tokyo Bay and the Imperial Palace to help create natural cooling
- low-E double paned glass, an air-barrier air conditioning system, louvers and fins are employed to reduce energy use
- solar cells are used to generate electricity
- rooftops on the 6th, 7th and 34th floors are planted with trees. Planted wall structures are also applied
- a dry mist system uses reclaimed water to sprinkle nano-size mists in the summer to cool down on the street. The streets are specially made to keep the water longer than conventional materials
- MEC also promotes offsite tree-planting activities with other land owners as part of a Green Trees Network for the area



Soft Approaches

MEC has established a think tank called ECOZZERIA aimed at gathering and analyzing environmental data for the area. ECOZZERIA hold events regularly to promote sustainable development.

An NPO Area Management Association was formed in 2002. With support from the companies in the area, it operates a low-emission hybrid, free bus service for the public. It also coordinates music festivals.

MEC founded the Tokyo 21st Century Club to encourage start-up businesses to interact with local academics.

MEC recently introduced the Eco Point Program. It operates like an airline flight mileage program by offering in-kind benefits for attending the activities that ECOZZERIA organizes.

Next Steps

MEC will soon develop Marunouchi Park Tower as part of the second stage of redevelopment. The Sustainable Development Guidelines will be applied to the project. A highlight of the project will include the reconstruction of the first red brick commercial building in Japan, originally built in 1894.



Solar Cells



Plant Wall



Dry Mist



Water Conservation



Brief Description: Water conservation in buildings falls into three general categories:

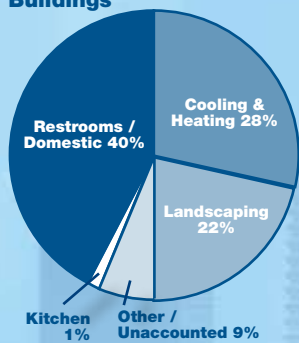
1. Reducing losses (for example, fixing leaky faucets and pipes)
2. Reducing use (for example, installing ultra-low-flush toilets)
3. Reusing water that is currently being discarded (for example, using rainwater runoff to irrigate landscapes).

Materiality: Water conservation can reduce operating expenses and improve net operating income.

Public Interest: Water conservation benefits water quality, fish and wildlife, trees, groundwater reserves and other environmental systems. It also reduces the need for expensive additions to public water works.

Economic Research: The following table gives the potential savings from cost-effective measures identified by site audits at various types of establishments. Cost-effective was defined as measures with simple payback periods acceptable to the type of business where the audit was conducted.¹

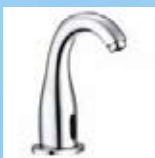
Water Usage at Office Buildings



Source: City of San Jose, Environmental Services Department

Potential Water Savings from On-site Water Audits		
Type of Business	Number of Site Audits	Average Savings
Car Wash	12	27%
Church–nonprofit	19	31%
Communications & Research	10	18%
Eating & Drinking	102	27%
Education	168	20%
Healthcare	90	25%
Hospitality*	222	22%
Hotels & Accommodations	120	17%
Landscape Irrigation	6	26%
Laundries	22	15%
Meeting/Recreation	20	27%
Offices	19	28%
Sales	56	27%
Services	58	30%
Transportation & Fuels	24	31%
Vehicle Dealers & Services	12	17%

*Hospitality includes "eating and drinking" and "hotels and accommodations"



The Massachusetts Water Resources Authority provides the following water efficiency suggestions and examples from typical facilities in their area.

Restrooms – domestic

- install water saving aerators or spring-loaded valves on all faucets
- install water saving showerheads
- retrofit toilets and urinals with low consumption valve replacement kits
- replace existing higher consumption toilets and urinals with Ultra Low Flush (ULF) toilets and ULF or waterless urinals

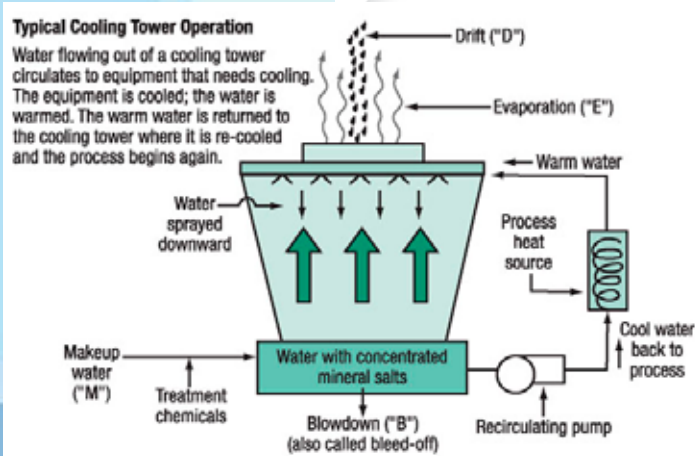
¹ "Study of Potential Water Efficiency Improvements in Commercial Businesses" (April 1997). U.S. Environmental Protection Agency and the State of California Department of Water Resources

- if only replacing a limited number of toilets, replace heavily used fixtures located in high traffic areas first
- when remodeling, replace fixtures with ULF models.

Example 1: One Boston facility took advantage of renovations to the building to replace 126 existing 3.5 gallons (13.25 liters) per flush toilets with 1.6 gallons (6.06 liters) toilets. When completed, the change will reduce total water use by 15%. With an implementation cost of \$32,000 and estimated annual savings of \$22,800, payback occurs in 1.4 years.

Example 2: By installing 30 faucet aerators, a commercial building in Brookline could reduce water consumption by 190,000 gallons (719,701 liters) per year. The cost of the devices and labor is approximately \$300 and the savings for the retrofit are estimated at \$1,250 per year -- a payback of two months.

Cooling and heating



Cooling Towers

- avoid excessive cooling tower blowdown (the portion of the circulating water flow that is removed in order to maintain the amount of dissolved solids and other impurities at an acceptable level). Use automated blowdown systems so that blowdown is done only as needed, rather than on a routine basis
- make-up water (water used to replace water lost to evaporation and blowdown) should be submetered and recorded regularly to address any anomalous usage patterns that could indicate leaks or problems in the system
- use side-stream filtration to reduce concentrations of solids. These systems continuously filter a portion of the water used during cooling and return filtered water to the tower

- consider ozone treatment for cooling tower. This can reduce water use by permitting more cycles between blow-downs.

Other Items

- check steam traps and ensure steam condensate is returned to boilers for reuse
- limit boiler blowdown; check continuous blowdown systems and adjust if necessary
- minimize the water used in cooling equipment, such as compressors, in accordance with manufacturer's recommendations. Use solenoid controls and timers to match cooling water to the duty cycle of equipment
- employ an expansion tank for boiler blowdown drainage rather than cold water mixing
- replace water-cooled equipment with air-cooled units where possible and economically feasible.

Example 3: By incorporating a once-through A/C condenser into the existing chilled water loop, a downtown Boston facility saved an estimated 460,000 gallons (1,742,434 liters) of water per year, netting \$3,000 annually. The implementation cost for this measure was \$1,800 resulting in a payback of seven months.

Case Studies:

Caisse des Dépôts, France – Water Consumption Follow-Up Program
PRUPIM, UK - The Mall Shopping Centre at Cribbs Causeway
Investa, Australia – 60 Martin Place
Hermes, UK – Tower 42



Case No. 1

CNP, France

Water Consumption Follow-Up Program

Caisse des Dépôts is a state-owned financial institution that performs public-interest missions on behalf of France's central, regional and local governments. One of its subsidiaries, CNP, is a leading personal insurance company in France. ICADE, another subsidiary, manages investment properties for CNP.

ICADE is undertaking a program on behalf of CNP to analyse and control water consumption for all CNP apartment and office building properties in France. The project began in 2005 and is ongoing.

The project focuses on invoices in order to identify opportunities for improvement.

Part of the M&G Group

PRUPIM

Case No. 2

PRUPIM, UK

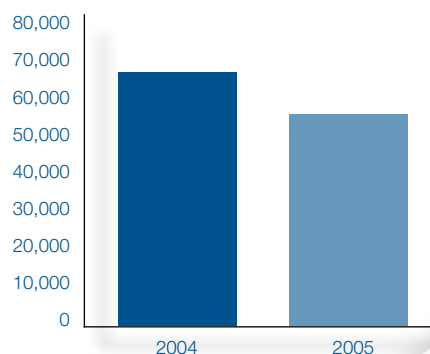
The Mall Shopping Centre at Cribbs Causeway, Bristol

Between 2004 and 2005, The Mall Shopping Centre at Cribbs Causeway reduced water consumption by 17%. This was achieved through more prudent use of the external water feature and the installation of presence sensing urinals and passive infra-red sensors in the urinals.

Meanwhile, Back at Headquarter

In the spirit of 'every little bit helps', managers at PRUPIM headquarters – Princeton House – inserted 'Hippos' in all their water systems. The results:

- reduced water consumption by 25%
- cost of installation, £300
- saving per annum; £168 in 2006, projected £1,400 in 2007.



Case No. 3

Investa, Australia **60 Martin Place**



60 Martin Place is a mixed-use building with a basement, plaza, retail and 28 upper floors. The 34 year old building contains 27,999 m² of net lettable area.

Through a few simple interventions, Investa was able to reduce water use by 27% per year.

Water savings initiatives included

- flow restrictors on tap ware
- urinal sensors and waterless urinals.

According to Investa, one way to create a healthy and environmentally friendly office is to select waterless urinals and dual-flush toilets. One mounted urinal uses over 150,000 liters of water for flushing each year. This can be reduced by 98% by switching to waterless systems.²

² Information on a variety of water-saving options for bathrooms can be found at www.waterrating.gov.au.

Case No. 4

Hermes, UK Tower 42



Tower 42, London's Tallest Building
Photograph © Andrew Dunn

Hermes upgraded the urinals in Tower 42, the tallest building in the City of London, to a waterless system. This has significantly reduced the amount of water used from 8,500 units in September 2005 to just 2,600 units in 2006.

Several products were investigated, some that used small amounts of water and some that used no water. One of the no water systems was identified for trials. The product, manufactured by a company called WhiffAway, offered the following benefits: massive savings on water costs, easy cleaning, low maintenance, no more limescale and no flush controls. It is an environmentally friendly product and eliminates the need to use harmful chemicals.

Successful trials on level 24, the most frequented washroom within Tower 42 due to the restaurant, resulted in an order being placed to fit waterless urinal systems on all 78 units.

With no water being used in any of the urinals the annual savings are in the region of 12,300,000 liters. This means that Hermes is not only eliminating the need for valuable water resources but they no longer have to dispose of it once it is used. Another environmental saving came from not needing to pump the water to the various tanks, which means less demand on the electrical supply and a reduction in CO₂ emissions. There also has been a reduction in the amount of chemicals needed to treat over 12 million liters of water.

Despite the installation cost of £3,510, the first year savings came to £5,800. For every year thereafter the waterless urinal system is saving of approximately £9,300. So over a ten year period the estimated saving is in the region of £90,000.

In addition to the savings highlighted above, there has been a significant reduction in labor resources due to the low maintenance these units offer.

UNEP FI Property Working Group

UNEP FI is a global partnership between UNEP and the financial sector. Over 170 institutions, including banks, insurers and fund managers, work with UNEP to understand the impacts of environmental and social considerations on financial performance. The aim of UNEP FI's Property Working Group is to encourage property investment and management practices that achieve the best possible environmental, social and financial results.

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