COST OF GREEN IN NYC
PROJECT SPONSORS

URBAN GREEN COUNCIL

Urban Green Council is the New York Chapter of the U.S. Green Building Council (USGBC). Urban Green’s mission is to lead the advancement of sustainability in the urban built environment through education, advocacy, collaboration, and research. Established in 2002, Urban Green is supported by contributions from members and sponsors, as well as foundation and government grants. In-house experts in environmental law, architecture, and engineering work with a dedicated network of volunteers to realize a common vision: cities that function in harmony with the natural environment and contribute to the health and well-being of all.

DAVIS LANGDON & SEAH INTERNATIONAL

Davis Langdon provides comprehensive consulting services to owners, architects, government agencies, and institutions. Founded in 1974, Davis Langdon has eight offices nationwide. With five interrelated specialist business units which cover cost management, sustainability consulting, research, project management and risk consulting, Davis Langdon is able to service its clients’ projects from a broad perspective. The firm is a member of Davis Langdon & Seah International (DLSI), the largest construction cost consulting group in the world. Membership in DLSI provides Davis Langdon with a global perspective on the quickly changing world economy and access to shared technology and data.

The Davis Langdon research group provides analysis and strategic advice on all aspects of the economics of project procurement, covering such topics as global commodity prices, local bid market conditions, and the cost and benefits of sustainable design. Davis Langdon was awarded the USGBC Leadership Award in 2008 for research in sustainability and cost.

NEW YORK STATE ENERGY RESEARCH & DEVELOPMENT AUTHORITY

The New York State Energy Research and Development Authority (NYSERDA) was established by law in 1975 as a public benefit corporation. NYSERDA provides energy-related technical and financial packaging assistance to businesses and institutions to promote energy efficiency and economic development, as well as providing energy research and development programs that promote safe and economical energy production efficiency technologies in New York State. NYSERDA also analyzes the effect of New York’s energy, regulatory and environmental policies on the State’s business, institutional, and residential energy consumers.
INTRODUCTION

Advocates of green building have long held that environmentally friendly, energy efficient construction need not be more expensive; in the long run, green building will be cost effective both for the building owner and society at large. Several national studies and leading practitioners suggest that if there is a cost premium for building green, it is very small. Yet without a study specifically addressing buildings located in dense, urban environments, many question the applicability of these findings to the New York City market.

The number of LEED projects registered each year in New York City has increased exponentially, but there is still a long way to go before LEED design becomes the construction standard. In New York City, nearly 5,000 permits for new construction projects were issued in 2007, but only around 200 of these projects registered for LEED certification. One explanation for the comparatively slow adoption of sustainable building practices in New York City is the perception that green building is expensive, but is this perception accurate?

Urban Green Council, a leader in advancing sustainability of the urban built environment, recognized a critical research need. The Council, with funding assistance by the New York State Research and Development Authority (NYSERDA), engaged Davis Langdon to conduct a data-based study of the cost of building green in the City. This report examines recent construction projects in New York City in order to determine whether or not sustainability adds to project costs, and, if so, how much.
Figure 1:
CUMULATIVE NUMBER OF REGISTERED LEED PROJECTS IN NYC
as of October 2008

Figure 2:
NUMBER OF NEW CONSTRUCTION BUILDING PERMITS AND LEED APPLICATIONS IN NYC
EXECUTIVE SUMMARY

The Cost of Green in New York City found no significant difference in the cost per square foot between green and non-green buildings, based on analysis of luxury high-rise residential and commercial interiors projects.

In analyzing the data, the study also discovered that New York City LEED projects exhibit similar patterns of LEED credit achievement; certain credits are commonly achieved and others are rarely pursued.
EXECUTIVE SUMMARY

Throughout 2008, data was gathered on 107 recent projects, of which 63 were either pursuing or had achieved LEED certification. These projects were evaluated and reviewed as a group; subsequently, construction costs for two subsets were analyzed statistically: high-rise residences (38 projects) and office interiors (25 projects).

The study investigated a variety of construction measurements in order to obtain a full picture of green building practices in New York City. In the costs section of the report, statistical analysis was used to assess the impact on construction costs of building to LEED standards. In addition, soft costs associated with LEED were also examined. In the characteristics of green section, the study looked at LEED credit achievement patterns in order to determine how LEED buildings in New York City differ from those built elsewhere. The final section uses case studies to provide a detailed look at the costs and benefits associated with building to LEED standards. This section also explores carbon modeling as a methodology to measure and compare projects’ environmental impacts.

COSTS
In analyzing high-rise residential buildings, the study found that there is no statistically significant difference in construction cost between LEED and non-LEED projects. Visual examination of this data set indicates that projects with various levels of LEED certification are distributed throughout the range of costs with no apparent pattern.

The distribution of commercial interiors projects appeared to follow that of the residential buildings, but the pattern was not statistically clear. In addition, a visual examination of this data set suggests that the highest levels of LEED may have been achieved at a lower cost than other levels of LEED.

Soft costs associated with LEED certification were not substantial in terms of overall project cost. The median cost of LEED design fees was $0.56/sf, the median cost of LEED documentation was $0.30/sf, and the median commissioning cost was $1.55/sf. The range in LEED fees was considerable, with some projects, for example, adding nothing for LEED design fees and others adding as much as $6.62/sf.

CHARACTERISTICS OF GREEN IN NYC
New York City LEED projects exhibit similar patterns of credit achievement: over 75% of New Construction (NC) projects surveyed in New York City achieved 25 common LEED points, and over 75% of Commercial Interiors (CI) projects achieved 24 common LEED points.

These sets of commonly achieved credits, which are similar to those found in San Francisco, may be unique to dense urban environments with strong public transportation infrastructure; construction projects throughout the rest of the United States typically incorporate a somewhat different set of sustainable design features. Going green in New York City follows a specific path, shaped by factors such as the city’s infrastructure, density, building codes, and construction practices.

Table 1: HIGH-RISE RESIDENTIAL BUILDINGS
Cost Normalized to Construction Year

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<tr>
<th></th>
<th>LEED</th>
<th>NON-LEED</th>
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<tbody>
<tr>
<td>AVERAGE</td>
<td>$440/sf</td>
<td>$436/sf</td>
</tr>
<tr>
<td>MEDIAN</td>
<td>$439/sf</td>
<td>$407/sf</td>
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Table 2: COMMERCIAL INTERIORS PROJECTS
Cost Normalized to Construction Year

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<thead>
<tr>
<th></th>
<th>LEED</th>
<th>NON-LEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVERAGE</td>
<td>$191/sf</td>
<td>$204/sf</td>
</tr>
<tr>
<td>MEDIAN</td>
<td>$158/sf</td>
<td>$163/sf</td>
</tr>
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In 2007 and 2008, as world economies began to tumble, New York City experienced a significant drop in construction starts. From 2003 to 2006, the number of New York City permits issued for new construction projects hovered at or above 6,000 per year, but in 2007 the permits issued by the City dropped to around 5,000, and in 2008 dropped again to near 4,000. The current recession is strongly impacting the construction and real estate industries and, by extension, the green construction industry.

Undoubtedly, project teams are now on the lookout for every opportunity to save money. However, where green is a stated project goal, teams find ways of incorporating green elements into their projects by tailoring their design choices and budgets appropriately. Observations of the construction market across the country shows that teams with reduced funding sources are not debating the inclusion of sustainable design measures, but are instead considering whether to continue with the project at all, regardless of green goals. For those projects able to continue with construction, green has become an added selling point and turning away from sustainability would be a poor long-term strategy. As Jeff Blau, President of Related Companies, contends, “Building green is no longer just an option that we consider, but as a leading developer, it is a responsibility that we embrace. In this difficult economic environment, we all need to be more vigilant then ever to reinforce our commitment to building green.”

Figure 3: NORMALIZED COST OF 16 LEED AND 22 NON-LEED HIGH RISE RESIDENTIAL CONSTRUCTION PROJECTS IN NYC

Figure 4: NORMALIZED COST OF 12 LEED AND 13 NON-LEED COMMERCIAL INTERIOR CONSTRUCTION PROJECTS IN NYC
Project Directors:

Susan Kaplan
Chair, Board of Directors, Urban Green Council
Director of Sustainability, Battery Park City Authority
Lisa Fay Matthiessen
Associate Principal, Davis Langdon
Peter Morris
Principal, Davis Langdon
Russell Unger
Executive Director, Urban Green Council
Alexis Sparko
Sustainability Consultant, Davis Langdon

Graphics:
Devon Berger
Alexis Sparko

Research:
Jennifer Crawford
Melanie Dubin
Susan Kaplan
Penny Knops
Richard Leigh
Lisa Fay Matthiessen
Jeff Rios
Michael Rudin
Alexis Sparko
Russell Unger

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Urban Green Council members
can access the full study at:
www.urbangreencouncil.org/coststudy

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