

THE NINES: A STARWOOD LUXURY COLLECTION HOTEL

SAGE Hospitality
LEED Silver Certified



EXECUTIVE SUMMARY – VERSION 2.1

CASE STUDY PARAMETERS

The case study quantifies the cost premium for LEED Silver above the cost of a doing the same hotel on the same site without pursuing LEED. For example the credit for Public Transportation Access was considered zero cost because the site met the requirement. However, the Bicycle Storage and Changing Room credit called for program space and equipment not typically in the program, therefore a cost was accessed. Both hard and soft costs were analyzed. Incentives and utility cost reduction paybacks were also factored in.

RESULTS

The final analysis shows a 1.2% soft cost & hard cost premium to the project to pursue LEED Silver. After factoring in the incentives, the premium is reduced to 0.05%. The energy and water conservation measures continue to pay back approximately \$110,000 in savings each year. After 10 years, the property will save over \$1.1 million dollars in operating costs. Isolating the cash outflows and inflows related to LEED, the project realizes a 28% return on investment for funds spent on green initiatives.

The property will benefit from a 27% reduction in energy costs and 22% reduction in water and sewer charges. It will also provide a healthy indoor environment to guests and employees. The green initiatives that will be achieved and verified via LEED certification will set the property apart from others. It will give the property the ability to gain market share from the growing number of groups and individuals who are concerned about the environmental performance of the hotels they choose.

SUSTAINABLE SITES

CREDITS (7 of 14 possible)

Site Selection

cost premium
above typical

\$ 0

Development Density & Community Connectivity

\$ 0

Brownfield Redevelopment

\$ 0

Alternative Transportation, Public Transportation Access

\$ 0

Alternative Transportation, Bicycle Storage & Changing Rooms

\$ 26,400

Alternative Transportation, Parking Capacity

\$ 0

Heat Island Effect, Roof

\$ 35,660

Total Cost for Category

\$ 62,060

BENEFITS

Increased convenience for guests via car share program.

Reduced impacts of transportation and associated carbon emissions.

Mitigate on and off site environmental degradation.

WATER EFFICIENCY

CREDITS (3 of 5 possible)

	cost premium above typical
Water Efficient Landscaping, reduce by 50%	\$ 0
Water Efficient Landscaping, no potable use or no irrigation	\$ 0
Water Use Reduction, 20%	<u>\$ 32,300</u>
Total Cost for Category	\$ 32,300

BENEFITS

Reduced water consumption by 22%, enough to fill an Olympic swimming pool.
Expected water utility cost savings for property of \$7,854 per year.
\$280,963 reduction of City System Development Charges for efficiencies.

ENERGY & ATMOSPHERE

CREDITS (8 of 17 possible)

Prerequisite: Fundamental Commissioning (soft cost)

Optimize Energy Performance, 25% (5 points)

Enhanced Systems Commissioning (soft cost)

Ozone Depletion

Green Power, 50% for 2 year contract (operations cost)

Total Cost for Category

cost premium
above typical

\$ 41,800

\$ 281,750

\$ 17,100

\$ 10,000

\$ 13,483

\$ 364,088

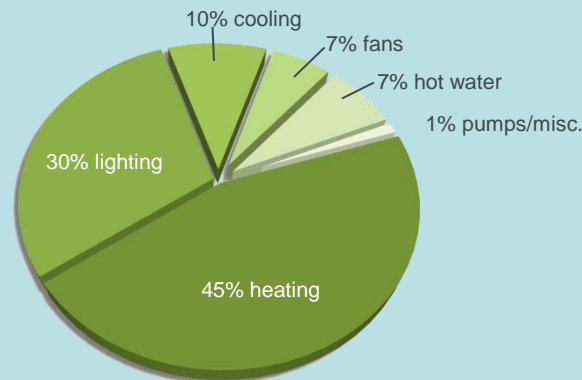
BENEFITS

Reduced energy consumption by 27%, equivalent to consumption of 80 households per year.
Expected utility cost savings for property of \$101,924 per year.

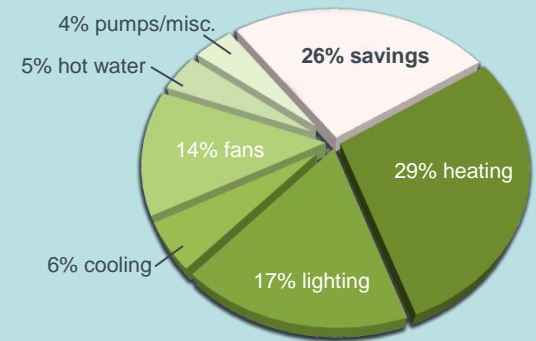
ENERGY MODEL

Energy Conservation Measures:

- High Performance Glazing
- Increased Building Insulation
- High Efficiency Lighting
- High Efficiency HVAC Equipment
- Simple Heat Recovery
- Resealing Historic Windows



Baseline/Typical Construction Energy Consumption



As Designed Energy Consumption

MATERIALS AND RESOURCES

CREDITS (6 of 13 possible)

	cost premium above typical
Building Reuse, 50% & 75% of Existing Walls, Floors & Roof	\$ 0
Construction Waste Management, Divert 75% from Landfill	\$ 100,000
Recycled Content, 10%	\$ 0
Regional Materials, 20%	\$ 0
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Total Cost for Category	\$ 100,000

BENEFITS

- Reuse of existing historic structure.
- 24 million pounds of material diverted from landfill or 785 truckloads.
- Reduced use of virgin material.

INDOOR ENVIRONMENTAL QUALITY

CREDITS (7 of 15 possible)

- Prerequisite: Minimum IAQ Performance (soft cost)
- Low-Emitting Materials, Adhesives & Sealants
- Low-Emitting Materials, Paints & Coatings
- Low-Emitting Materials, Carpet Systems
- Controllability of Systems, Lighting
- Controllability of Systems, Thermal Comfort
- Indoor Chemical & Pollutant Source Control
- Thermal Comfort

- Total Cost for Category

cost premium
above typical

\$	10,000
\$	0
\$	0
\$	0
\$	0
\$	0
\$	7,000
\$	15,000
\$	32,000

BENEFITS

Comfortable & healthy indoor environment for guests and employees.

INNOVATION AND DESIGN

CREDITS (5 of 5 possible)

	cost premium above typical
Green Housekeeping Policy (operations cost)	\$ 3,000
Exemplary Performance – public transportation access	\$ 0
100% Green Power for 2 years (operations cost)	\$ 9,854
Exemplary Performance –recycled content	\$ 0
LEED Accredited Professional	\$ 0
Total Cost for Category	\$ 12,854

BENEFITS

Healthy environment for guests and employees.
Support of renewable energy.

TOTAL LEED CREDITS RECEIVED (LEED Silver 33 to 38 points)	36
TOTAL COST ABOVE TYPICAL BUILDING FOR SUSTAINABLE INITIATIVES	\$ 606,902
TOTAL COST ABOVE TYPICAL BUILDING HARD COSTS ONLY	\$ 519,710

COST FOR LEED / SUSTAINABILITY BENEFITS ANALYSIS

The Nines, A Starwood Luxury Collection Property, Portland, OR - LEED Silver Certified

Values specific to the Pacific NW

Soft Costs

Incentive Registration	\$ 3,000
LEED Registration Fee	\$ 9,000
Commissioning	\$ 56,660
Energy model	\$ 30,720
LEED credit calculation	\$ 55,880
LEED process management	\$ 55,000
Total Soft Costs	\$ 210,260

Hard Cost Premiums above typical to achieve sustainability goals

Sustainable Sites	\$ 62,060
Water Efficiency	\$ 32,300
Energy & Atmosphere	\$ 291,750
Materials & Resources	\$ 100,000
Indoor Environmental Quality	\$ 32,000
Innovation & Design	\$ 0
Total Premiums	\$ 518,110

Soft & Hard Cost Premium 1.2% of cons. **\$ 728,370**

Incentives

State Grant Incentives	\$ 197,715
State Tax Credit Incentives (pass through)	\$ 216,104
<u>Reduced City Development Charges</u>	<u>\$ 280,963</u>
Total Incentives	\$ 694,782

Costs Premium Less Incentives

0.05% of construction

\$ 33,588

Utility Cost Pay Backs & Operating Expenses

Energy Cost Savings per year	\$ 101,924
Water & Sewage Cost Savings per year	\$ 7,854
Additional Ops Costs per year	\$ 1,200
<u>Green Power cost per year (2yrs)</u>	<u>\$ 11,646</u>
Operations Cost Savings year 1	\$ 83,636
Operations Cost Savings year 2>	\$ 108,778
Operations Cost Savings 10 years (assumes 2% utility cost increase per year)	\$ 1,175,746

Pay Back Period to Cover Premium

(incentives received approximately 12 months after completion)

12 Months

Nationwide Resource for Incentives: Database of Incentives for Renewables & Efficiency www.dsireusa.org

COST FOR LEED / SUSTAINABILITY ROI ANALYSIS

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Values specific to the Pacific NW

Inflows and Outlays	Development & Construction			Operations									
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<u>Cash Inflows</u>													
Utility savings				\$ 109,778	\$ 111,974	\$ 114,213	\$ 116,497	\$ 118,827	\$ 121,204	\$ 123,628	\$ 126,100	\$128,622	\$ 131,195
Incentives		\$ 280,963			\$ 413,819								
<u>Cash Outlays</u>													
Green Power			\$ (23,292)										
Green Housekeeping				\$ (3,000)									
Soft Costs Premium	\$ (210,260)												
Construction Premium		\$ (328,110)											
Equipment Premium		\$ (190,000)											
Buildings Depreciation Tax Savings	-			3,445	3,445	3,445	3,445	3,445	3,445	3,445	3,445	3,445	3,445
Equipment Depreciation Tax Savings				5,700	11,400	11,400	11,400	11,400	11,400	11,400	5,700		
	\$ (210,260)	\$ (237,147)	\$ (23,292)	\$ 115,923	\$ 540,638	\$ 129,058	\$ 131,342	\$ 133,672	\$ 136,049	\$ 138,473	\$ 135,246	\$132,068	\$ 134,640

Depreciation Tax Savings assumes straight line depreciation, 42% tax rate, 40 year building life and 7 year equipment life. Utility cost escalation assumed at 2%

Return on Investment

28%

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energy & water efficiency - healthy indoor environment - ability to increase market share - 3rd party verification

