

Economic Costs and Benefits of Green Buildings

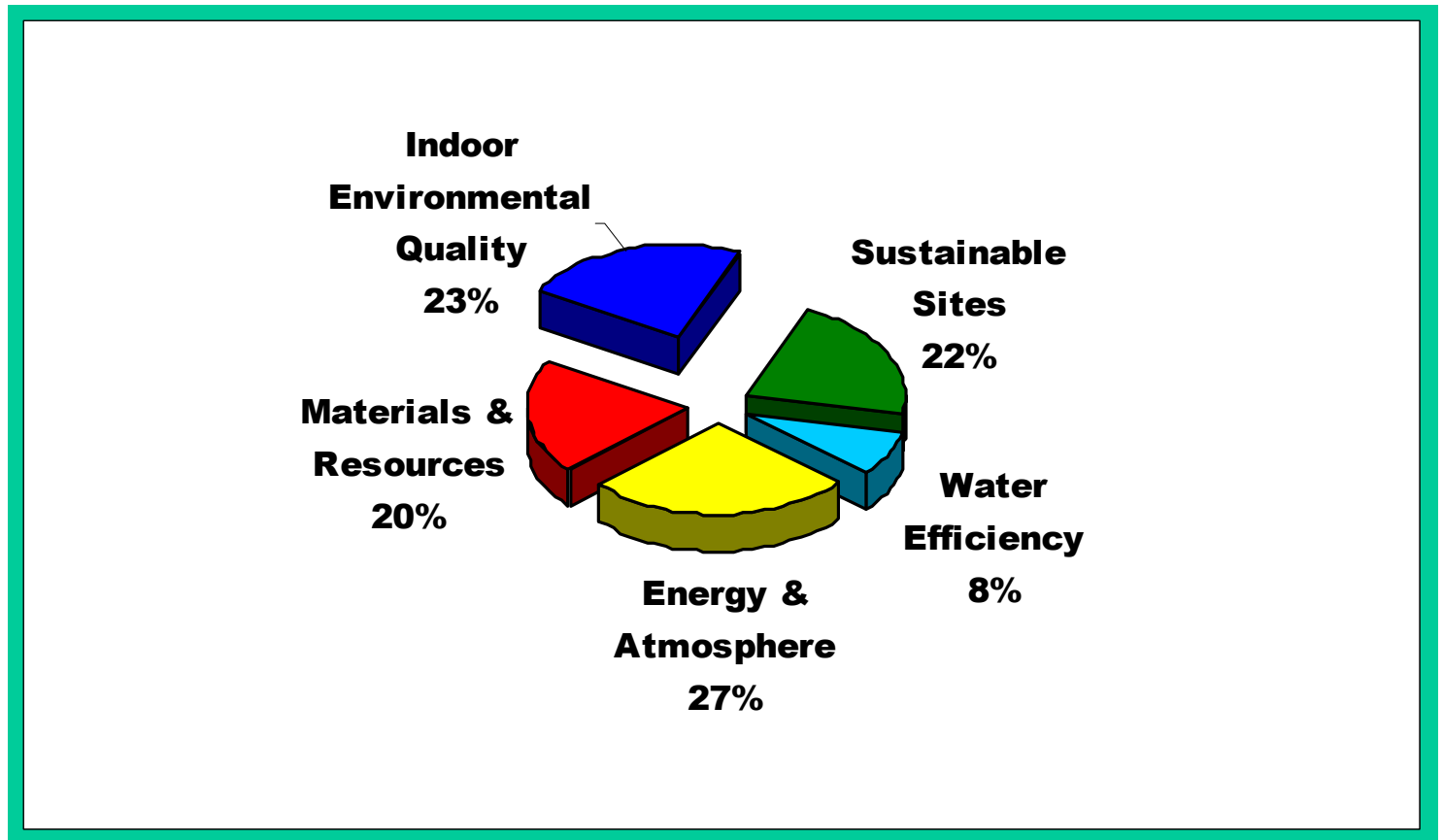
ABA

June 15, 2005



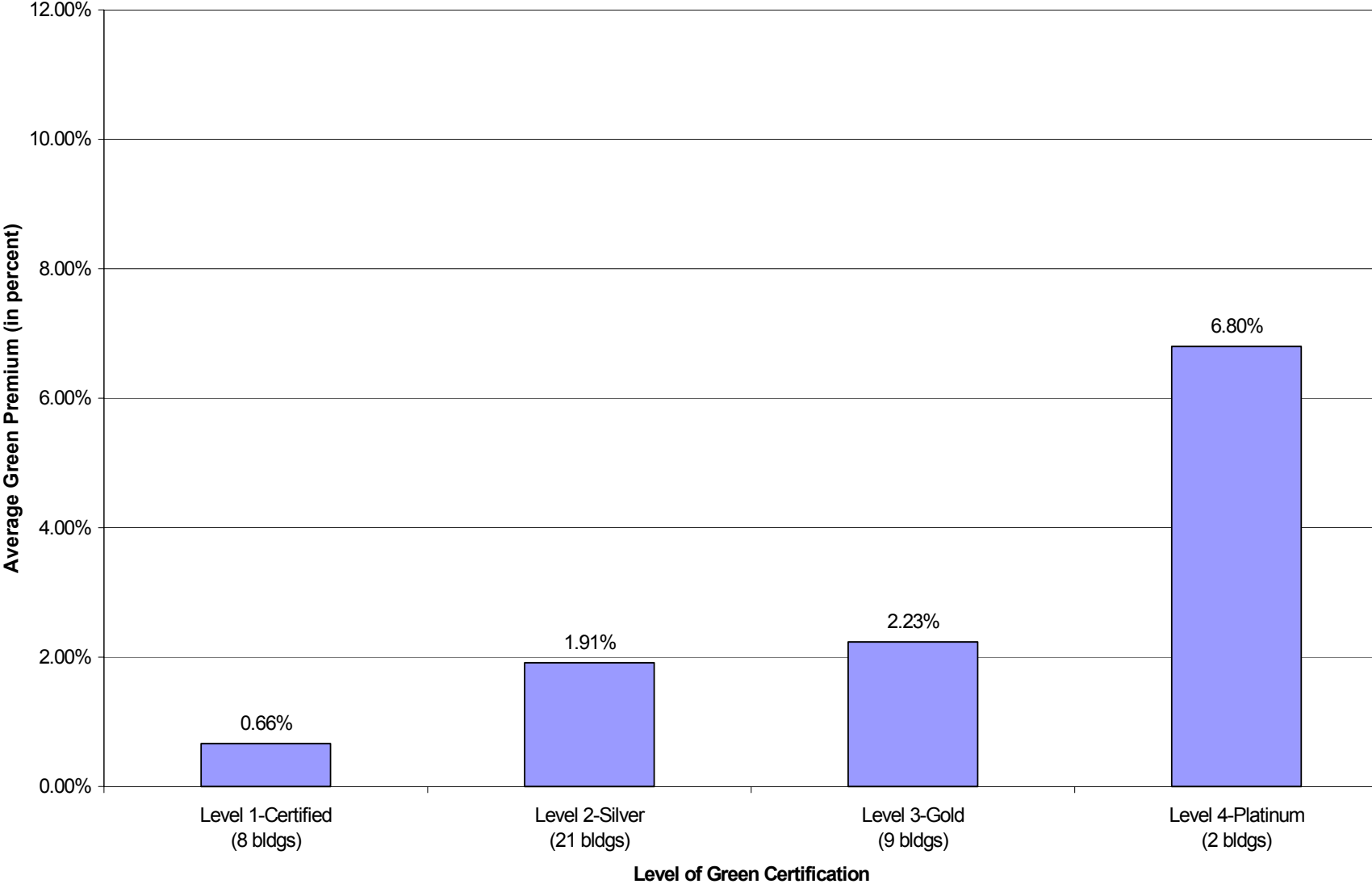
Greg Kats

LEED™ Point Distribution



Five LEED credit categories

Average Green Premium vs. Level of Green Certification (for Offices and Schools)

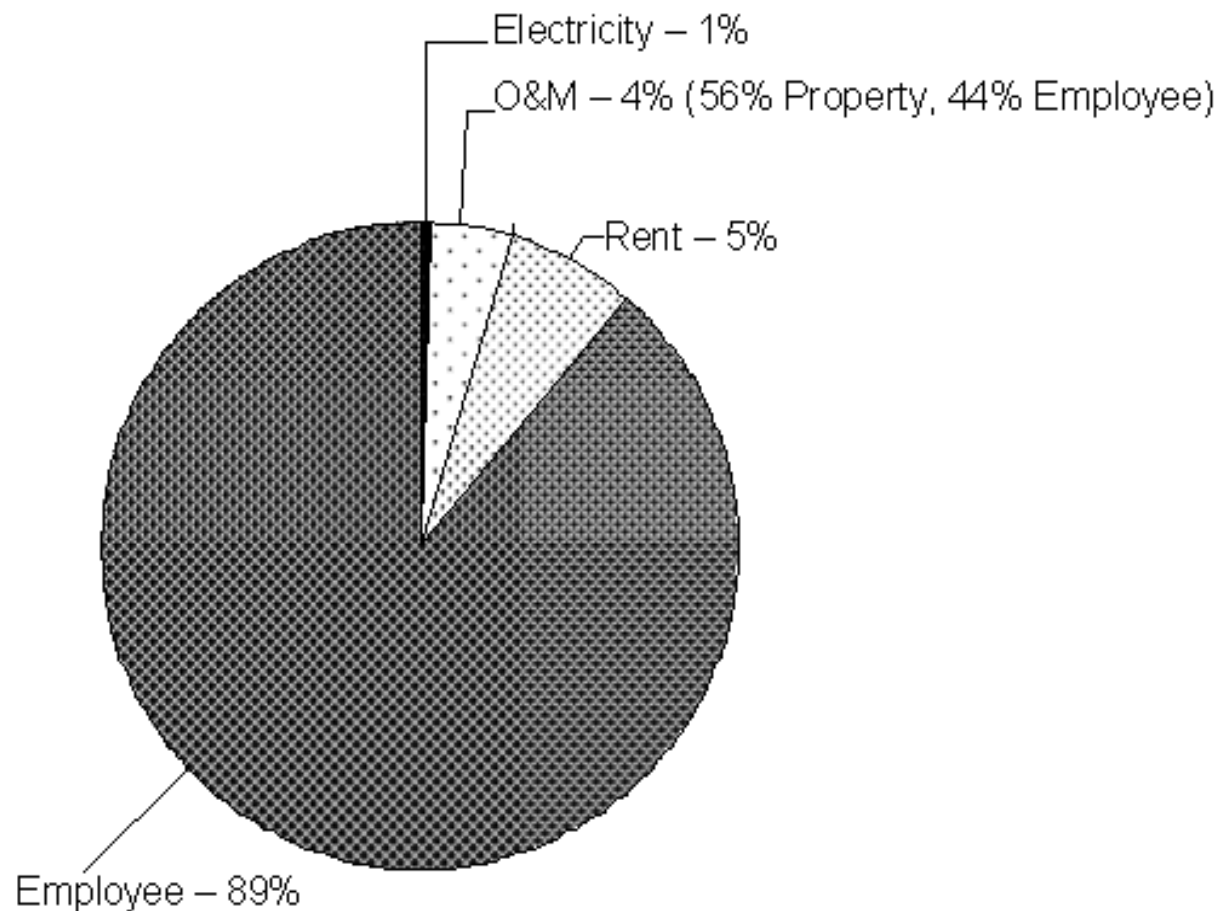


Reduced Energy Use in US Green Buildings

	Certified	Silver	Gold	Average	<i>Current</i>
Energy Efficiency	8%	30%	37%	28%	33%
On-Site Renewable Energy	0%	0%	4%	2%	1%
Green Power	10%	0%	7%	6%	20%-25%
Total	28%	30%	48%	36%	45%-50%

Source: USGBC data, Capital E Analysis

Costs in California State Employee-Occupied Office Buildings (2001)

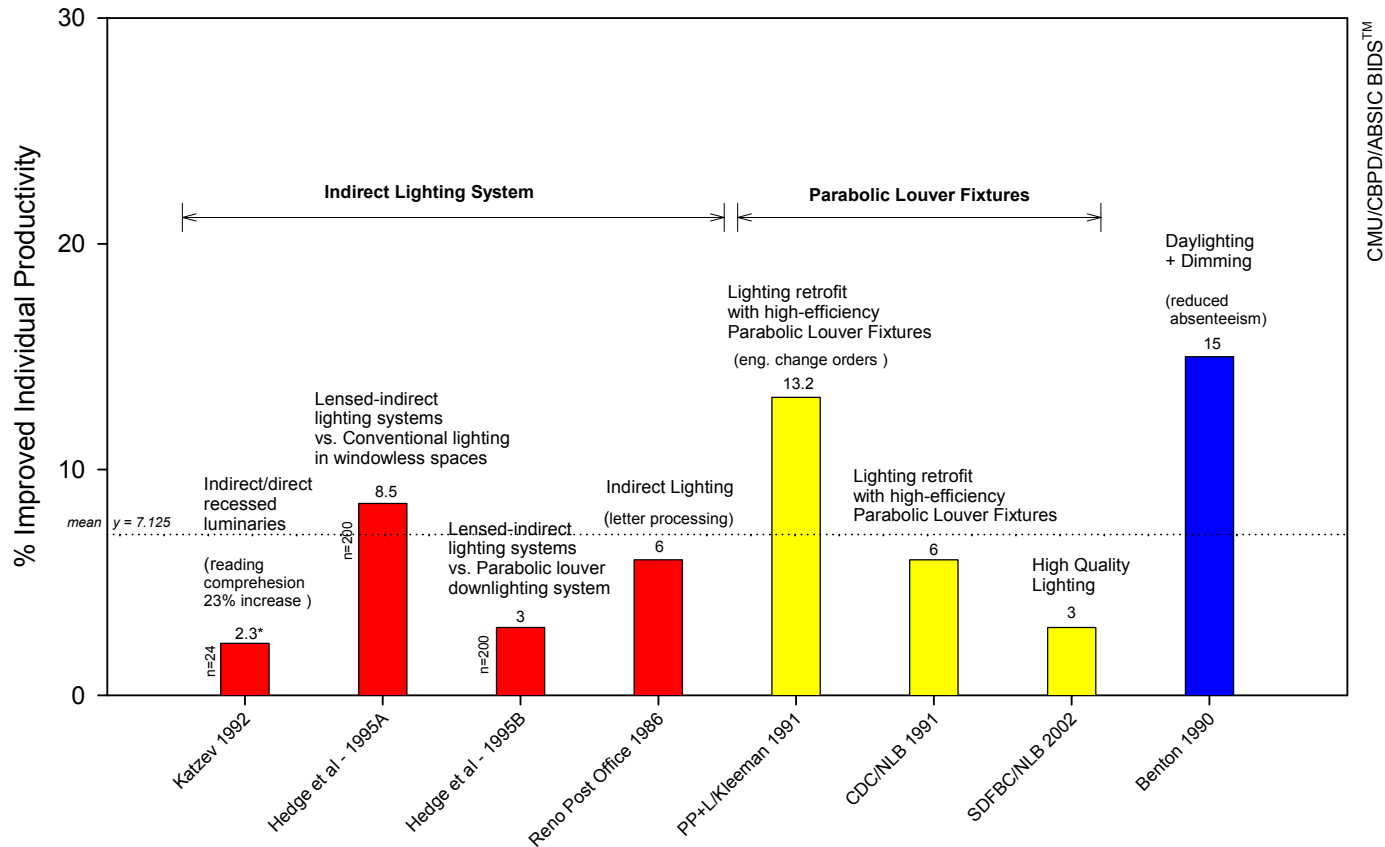


Source: Real Estate Services Division of Department of General Services, California

www.cap-e.com

Increased Lighting Control

Productivity gains ranging from 3% to 34%, with a mean of 7.1% (BIDS/Carnegie Mellon)

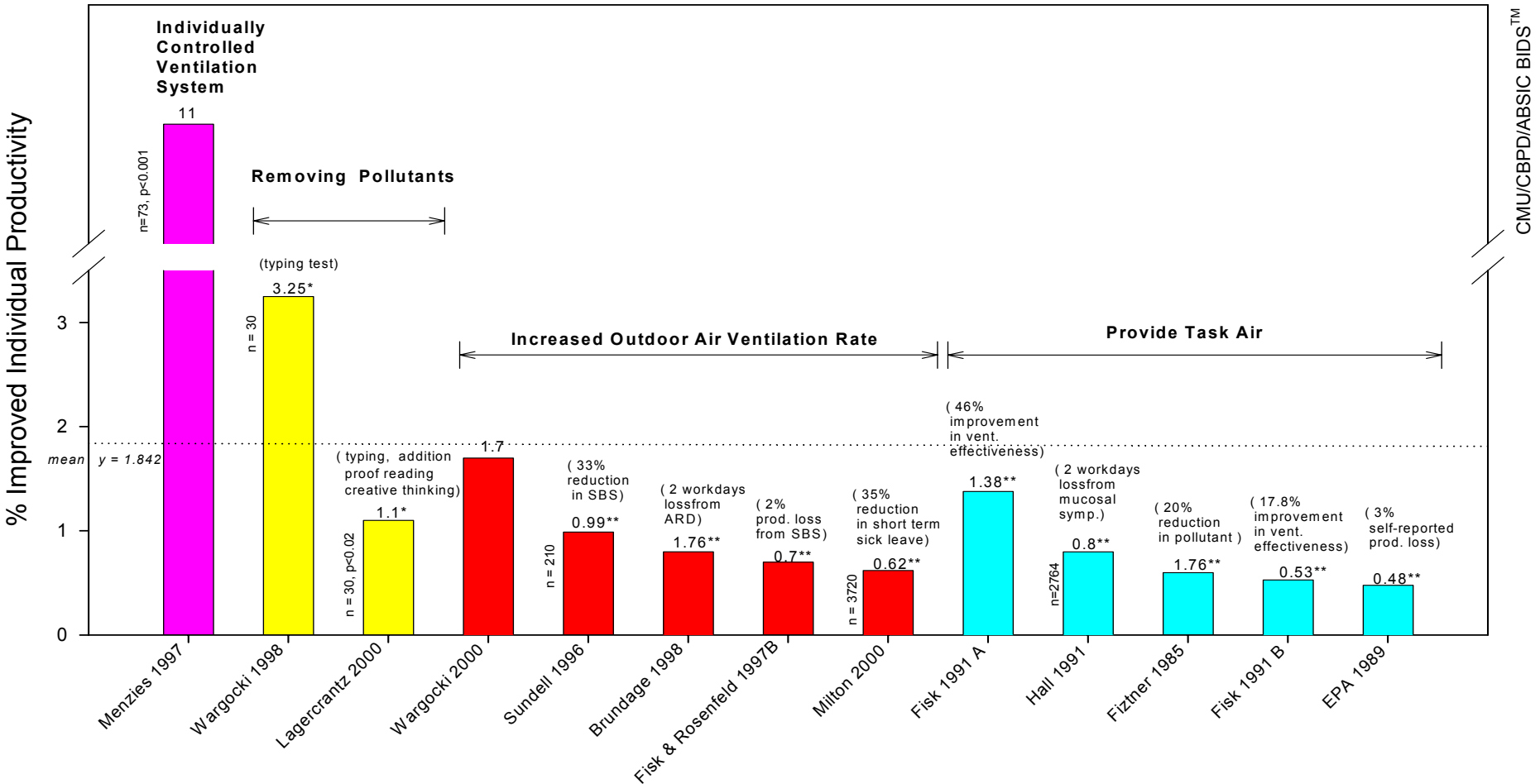


Case Studies Introducing Improved Performance with Lighting Control Strategies

(* Performance improvement for specific tasks multiplied by estimated time at tasks)

Increased Ventilation

Gains range from 0.5% to 11%, mean of 1.8% (BIDS/Carnegie Mellon)



CMU/CBPD/ABSIC BIDS™

Case Studies Introducing Improved Ventilation Strategies

- (* Performance improvement for specific tasks multiplied by estimated time at tasks)
- (** Improved ventilation effectiveness calculated relative to productivity gains from other studies)

Financial Benefits of Green Buildings

Summary of Findings (per ft²)

Category	20-year Net Present Value
Energy Savings	\$5.80
Emissions Savings	\$1.20
Water Savings	\$0.50
Operations and Maintenance Savings	\$8.50
Productivity and Health Value	\$36.90 to \$55.30
Subtotal	\$52.90 to \$71.30
Average Extra Cost of Building Green	(-3.00 to -\$5.00)
Total 20-year Net Benefit	\$50 to \$65

Source: Capital E Analysis

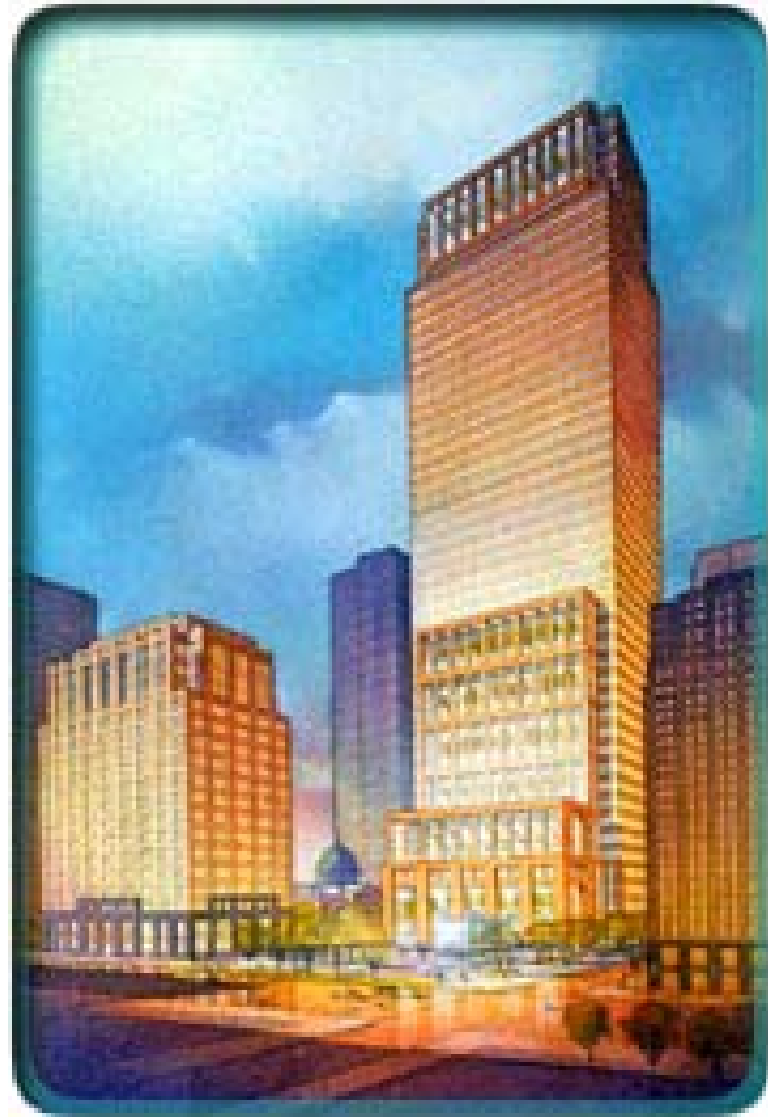
Additional Benefits

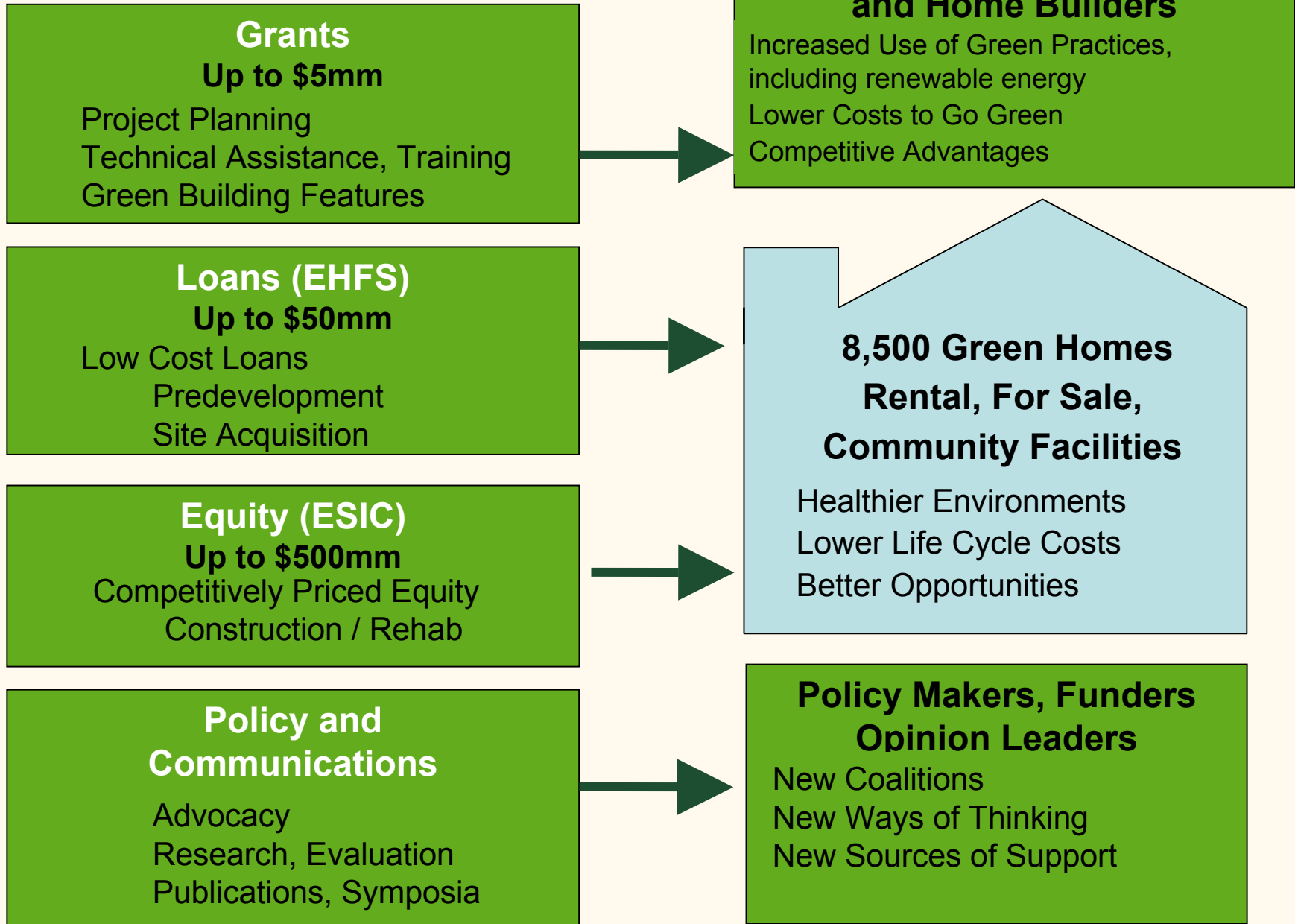
- Insurance
- Employment
- Security
- Brand Value/Goodwill
- Ethical/Equity
- Reduced public infrastructure costs
- Increased financial returns/opportunities

The green building insurance link

	Energy & Atmosphere	Professional Liability	General Liability	Business Interruption	Property Liability	Health Insurance	Life Insurance		
Prereq 1	Fundamental Building Systems Commissioning (Required)	+	+	+		+			
Prereq 2	Minimum Energy Performance (Required)	+/-	+	+		+/-	+		
Prereq 3	CFC Reduction in HVAC&R Equipment (Required)							+	
Credit 1.1	Optimize Energy Performance, 20% New / 10% Existing (2 points)	+/-	+	+		+/-	+	+	
Credit 1.2	Optimize Energy Performance, 30% New / 20% Existing (2 points)	+/-	+	+		+/-	+	+	
Credit 1.3	Optimize Energy Performance, 40% New / 30% Existing (2 points)	+/-	+	+		+/-	+	+	
Credit 1.4	Optimize Energy Performance, 50% New / 40% Existing (2 points)	+/-	+	+		+/-	+	+	
Credit 1.5	Optimize Energy Performance, 60% New / 50% Existing (2 points)	+/-	+	+		+/-	+	+	
Credit 2.1	Renewable Energy, 5% (1 point)	-		+				+	

One Liberty Plaza







Green Communities Initiative

National Partners Include

American Institute of
Architects

The American Planning
Association,

Bank of America

Blue Moon Fund

BP America

Fannie Mae

Freddie Mac

The Home Depot
Foundation

J.P. Morgan Chase

Natural Resource Defense
Council

For full set of partners and descriptions see:

<http://www.enterprisefoundation.org/resources/green/about-partners.asp>

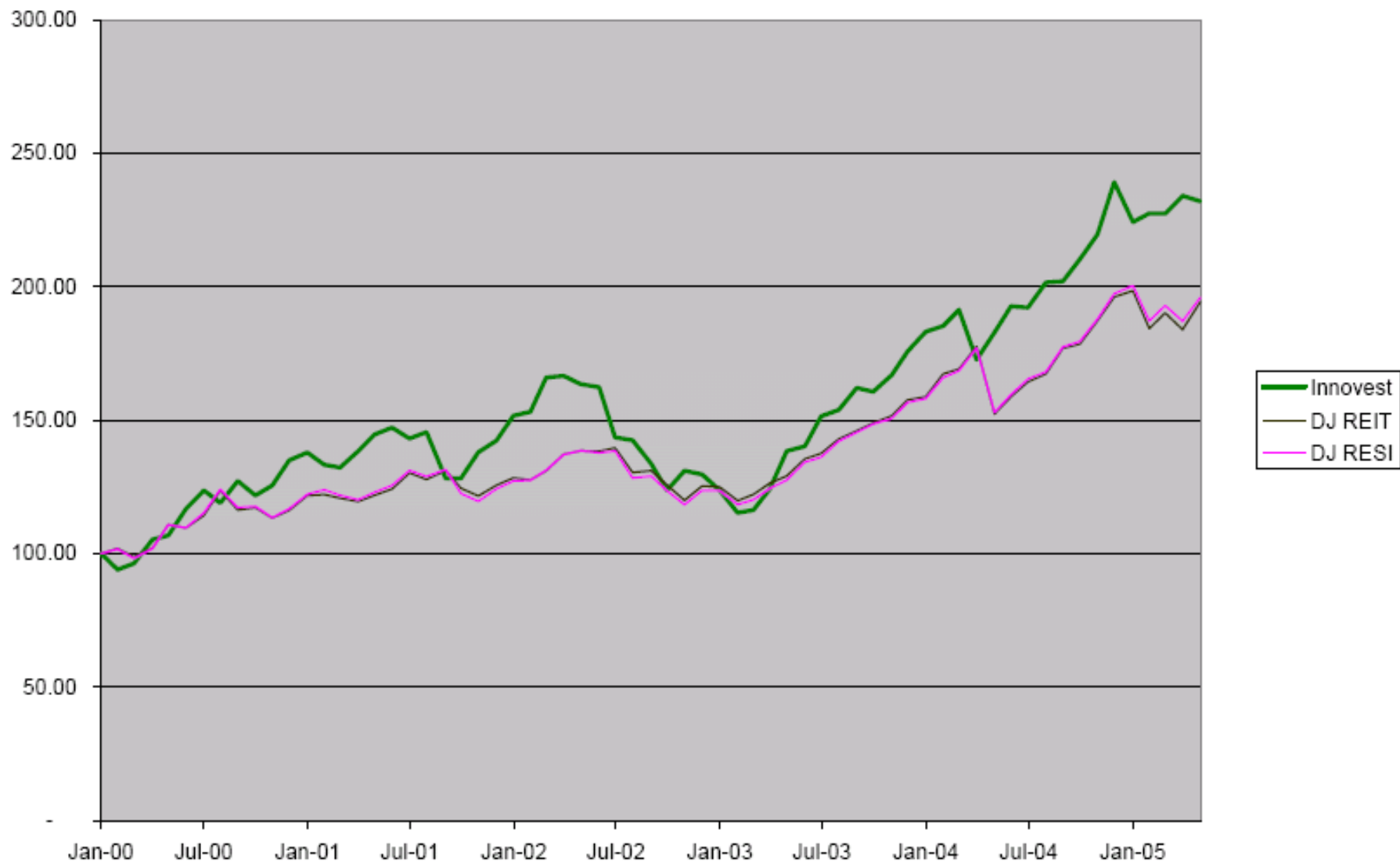
Green REIT: New Real Estate Investment Opportunities for Institutional Investors and Fiduciaries

Federal Analysis of quarterly returns of 124 U.S. REITS* revealed:

- 10.4% market value premium, for REITS with portfolios with superior energy efficiency
- Value premium emerged over two year period of analysis
- Based on sophisticated analytic tools now used by several dozen financial institutions

*Source: ERG, Innovest et al. (2003) Estimating the Value of Participation in EPA's Energy Star Program

Innovest vs DJ REIT / RESI Jan 2000 to May 2005



Thank you!

For copies of report and summary slides please see:

www.cap-e.com

Re Green low income housing see:

www.greencommunitiesonline.org

Re: Funding for green college/university buildings contact:

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