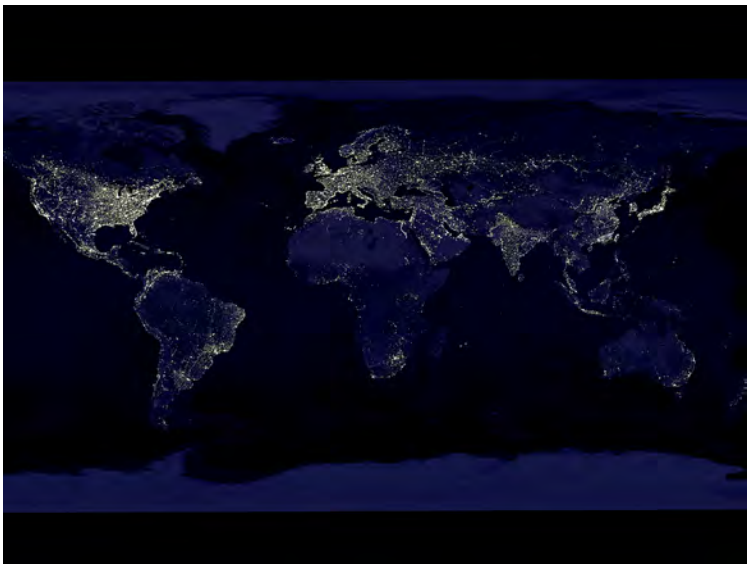
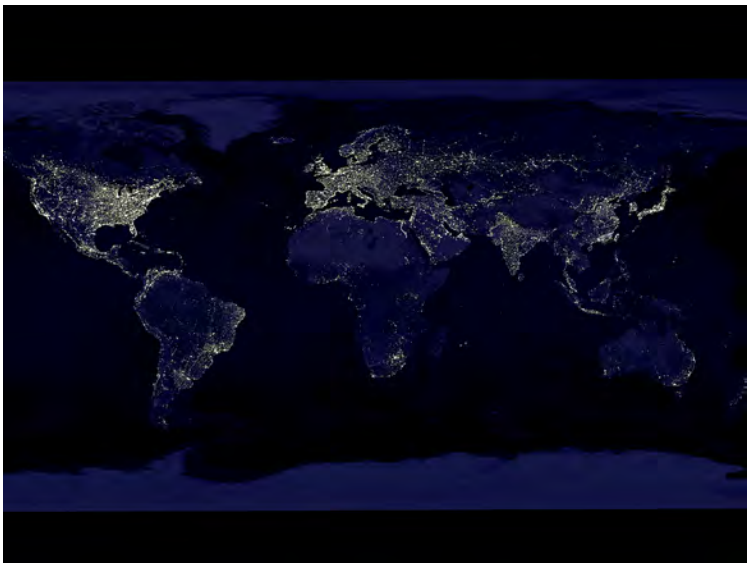
THE GLOBAL CONTEXT FOR ACTION

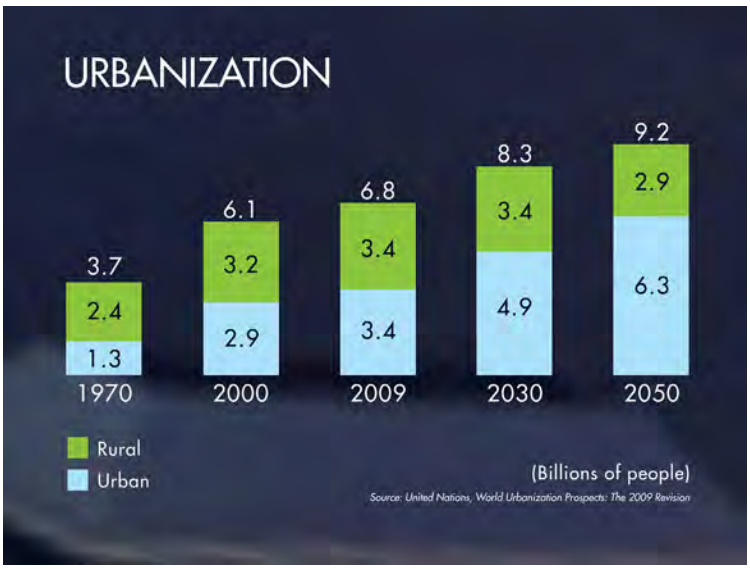
United Technologies
Building & Industrial Systems

Mary Milmoe
Vice President, Communications
UTC Building & Industrial Systems

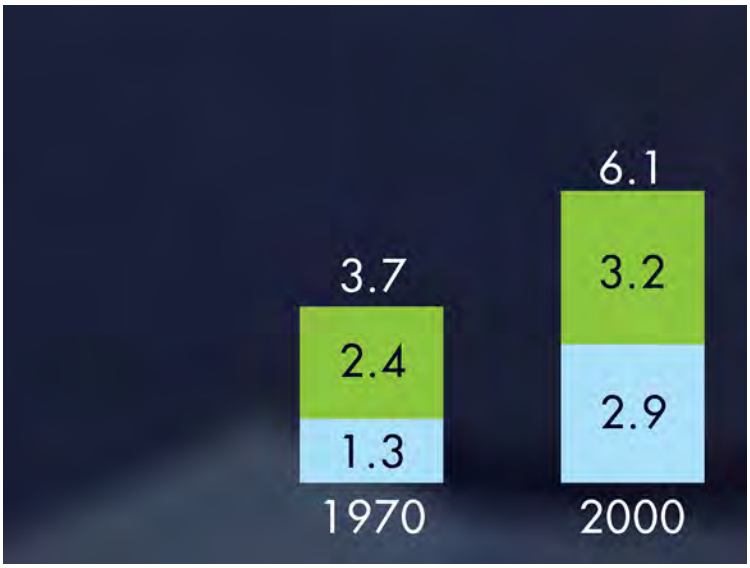
This presentation contains no technical data



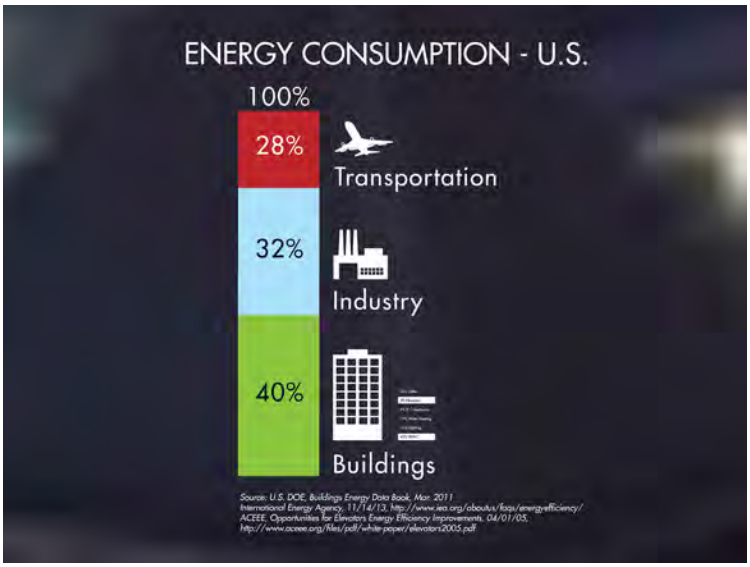


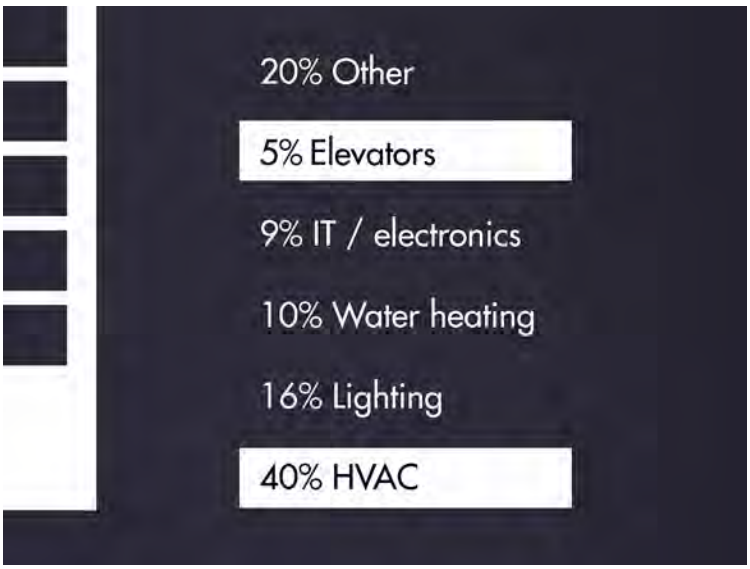


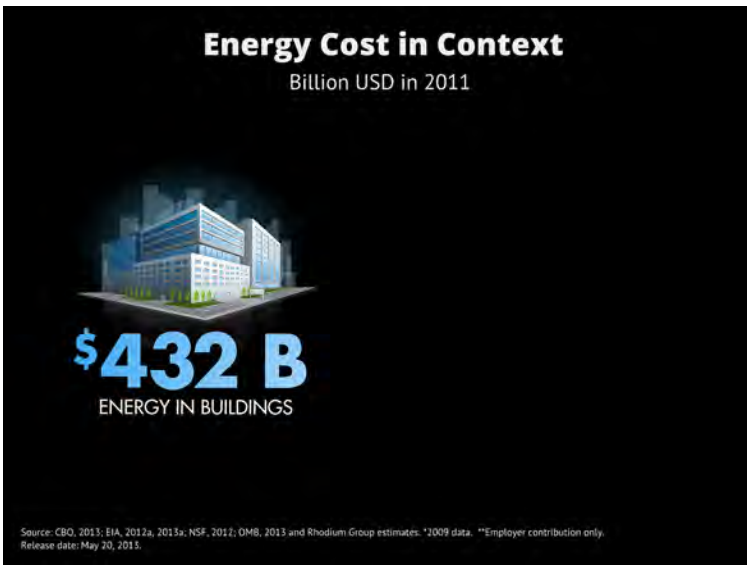
6.1
3.2
2.9
2000
6.8
3.4
3.4
2009
8.3
3.4
4.9
2030


3.7
2.4
1.3
1970
6.1
3.2
2.9
2000

8.3
3.4
4.9
2030
9.2
2.9
6.3
2050


ENERGY CONSUMPTION - U.S.
100%
28%
Transportation
32%
Industry
40%
Buildings
Source: U.S. DOE, Buildings Energy Data Book, Mar. 2011
International Energy Agency, 11/14/13, http://www.iea.org/aboutus/faqs/energyefficiency/
ACEEE, Opportunities for Elevators Energy Efficiency Improvements, 04/01/05,
http://www.aceee.org/files/pdf/white-paper/elevators2005.pdf


20% Other
5% Elevators
9% IT / electronics
10% Water heating
16% Lighting
40% HVAC


Energy Cost in Context
Billion USD in 2011
$432 B
ENERGY IN BUILDINGS
Source: CBO, 2013; EIA, 2012a, 2013a; NSF, 2012; OMB, 2013 and Rhodium Group estimates. *2009 data. **Employer contribution only.
Release date: May 20, 2015.

Energy Cost in Context

Billion USD in 2011

$432 B
ENERGY IN BUILDINGS

$181 B
CORPORATE TAX

Source: CBO, 2013; EIA, 2012a, 2013a; NSF, 2012; OMB, 2013 and Rhodium Group estimates. *2009 data. **Employer contribution only.
Release date: May 20, 2013.

Energy Cost in Context

Billion USD in 2011

$432 B
ENERGY IN BUILDINGS

$282 B
PRIVATE R&D

$181 B
CORPORATE TAX

Source: CBO, 2013; EIA, 2012a, 2013a; NSF, 2012; OMB, 2013 and Rhodium Group estimates. *2009 data. **Employer contribution only.
Release date: May 20, 2013.

Energy Cost in Context

Billion USD in 2011

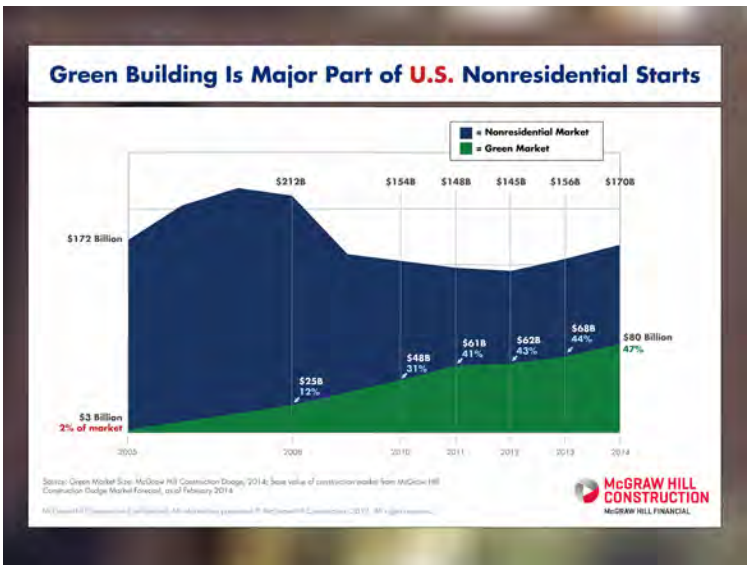
$432 B
ENERGY IN BUILDINGS

$436 B
HEALTH INSURANCE FOR BUSINESS

$282 B
PRIVATE R&D

$181 B
CORPORATE TAX

Source: CBO, 2013; EIA, 2012a, 2013a; NSF, 2012; OMB, 2013 and Rhodium Group estimates. *2009 data. **Employer contribution only.
Release date: May 20, 2013.



30% Improvement in American Energy Savings:

$34 B
BUSINESSES

$23 B
HOUSEHOLDS

$8 B
GOVERNMENT

Annually

Internal Rate of Return (IRR)

28.6%

Over a 10 year period

Internal Rate of Return (IRR)

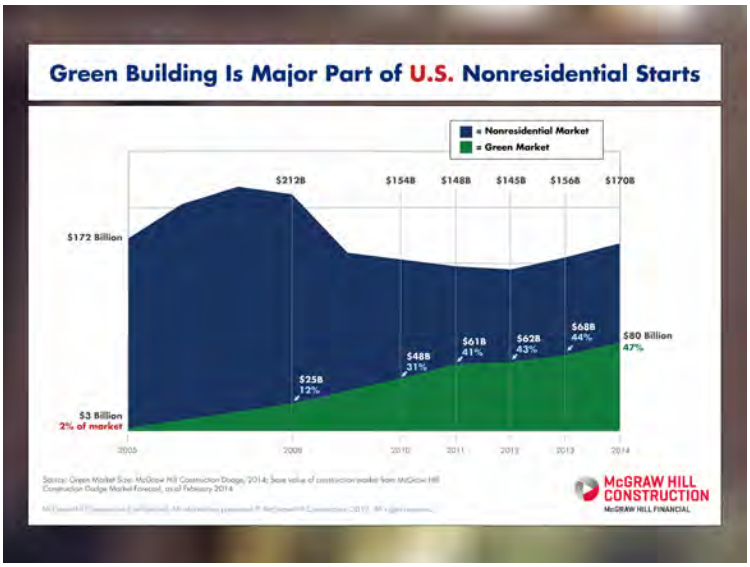
28.6%

Over a 10 year period

>

4x BETTER

Than average corporate bond yield



3% rent premium

Professor Nils Kok
Maastricht University – Netherlands
University of California at Berkeley

7% higher cash flow

Professor Nils Kok
Maastricht University – Netherlands
University of California at Berkeley

13% higher transaction price

Professor Nils Kok
Maastricht University – Netherlands
University of California at Berkeley

$1.4T

$1.4T

PREVI

$1.4T

PREVI

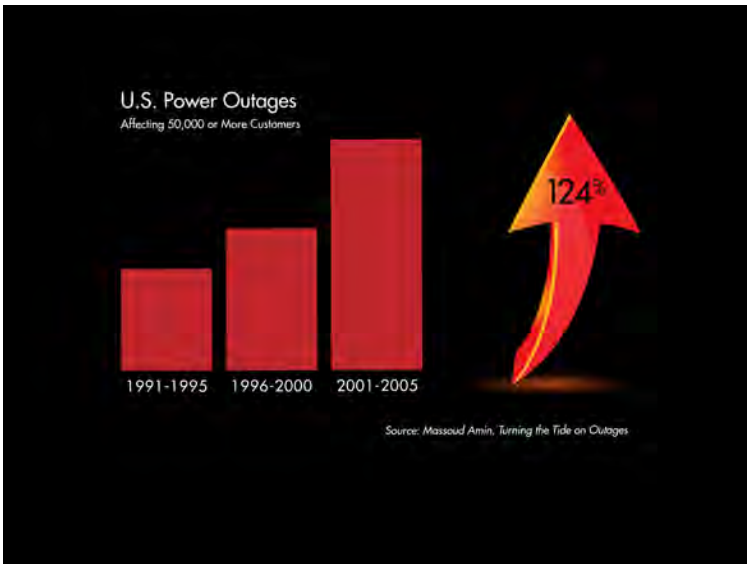
apg
All Pensions Group

$1.4T

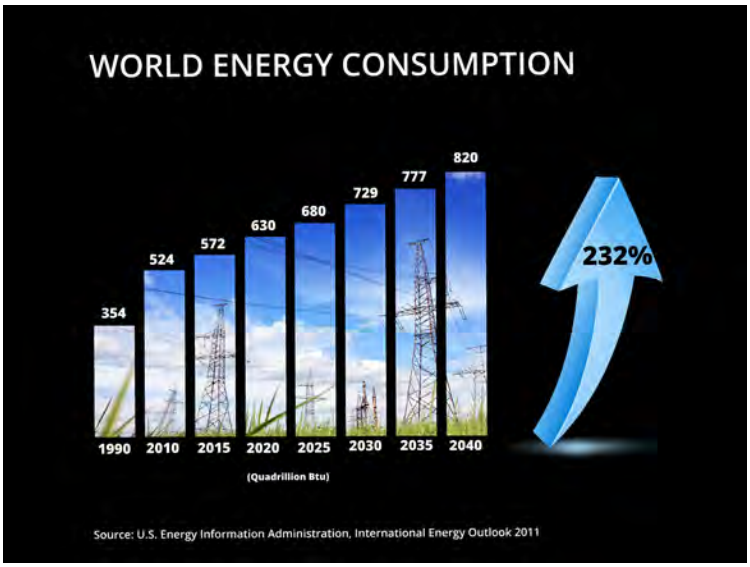
PREVI

apg
All Pensions Group

TEACHERS'
PENSION PLAN

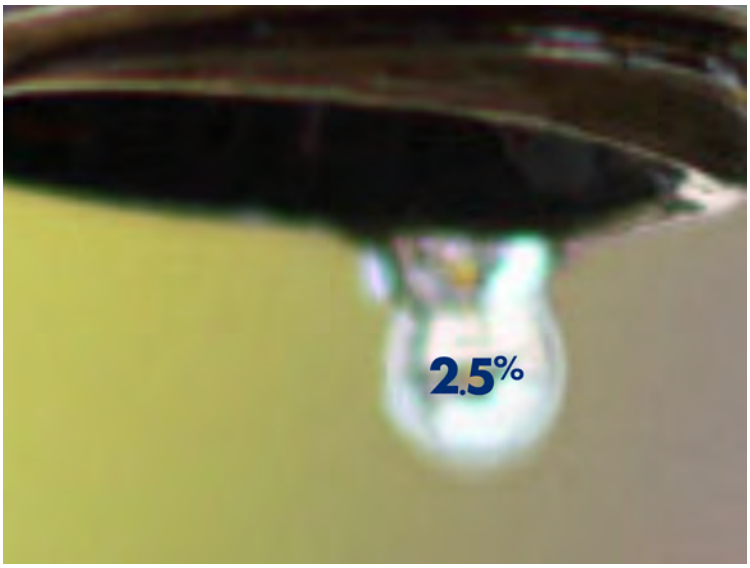

U.S. Power Outages
Affecting 50,000 or More Customers
124%
1991-1995
1996-2000
2001-2005
Source: Massoud Amin, Turning the Tide on Outages

http://www.sacbee.com/2012/07/31/4679785/India-blackout.html


WORLD ENERGY CONSUMPTION
354
524
572
630
680
729
777
820
232%
1990
2010
2015
2020
2025
2030
2035
2040
(Quadrillion Btu)
Source: U.S. Energy Information Administration, International Energy Outlook 2011

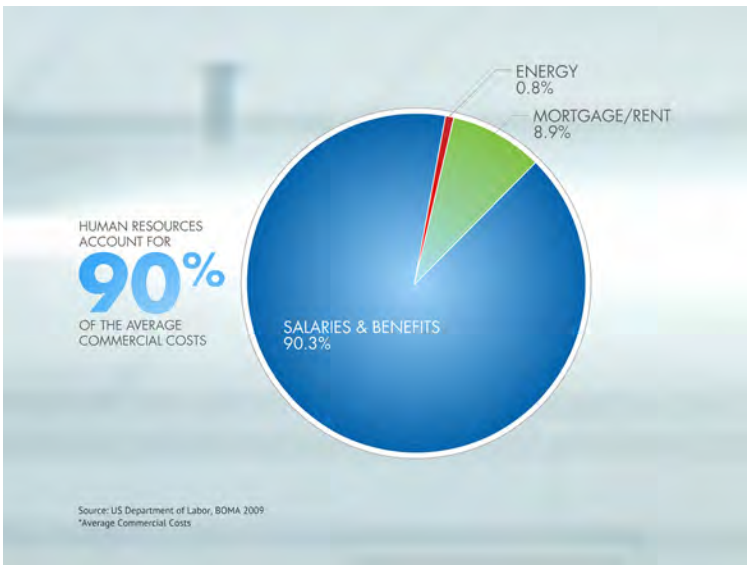
SAUDI ARABIA OIL
EXPORT
CONSUME

SAUDI ARABIA OIL
EXPORT
CONSUME
2030


2.5%

2x

2/3
by 2025


ENERGY
0.8%
MORTGAGE/RENT
8.9%
HUMAN RESOURCES
ACCOUNT FOR
90%
OF THE AVERAGE
COMMERCIAL COSTS
SALARIES & BENEFITS
90.3%
Source: US Department of Labor, BOMA 2009
*Average Commercial Costs

Carrier
United Technologies
turn to the experts

CO2NSERVATION METER

158,020,558.09

Metric tons of CO2e **SAVED**
Measuring avoided greenhouse gas emissions since 2000.

32,920,518.17 Passenger vehicles **REMOVED** for one year

21,740471.68 Home electricity use **SAVED** for one year

www.NaturalLeader.com

UTC Building & Industrial Systems 2013 Environmental Performance Accomplishments

37% REDUCTION in Greenhouse Gas Emissions from the 2000 baseline

44% REDUCTION in Water Consumption from the 2006 baseline

49% REDUCTION in Industrial Waste from the 2006 baseline

73% REDUCTION in Air Emissions from the 2000 baseline

Our environmental reporting standards encompass the ongoing analysis and correction of data, as applicable, following the close of a reporting period. Previously reported annual environmental metric results may change between annual reporting periods, and we will include any prior year data revisions in current reporting.

sustainable solutions

improve buildings — The AquaEdge™ 23XRV is the world's leading efficiency screw chiller, 44% better than industry standard.**

improve efficiency — Otis® Gen2® Elevator with ReGen™ drive reduces energy consumption by up to 75% compared to traditional elevators with conventional drives.

improve fire protection — Marioff's HI-FOG® gas-driven pump unit uses up to 90% less water than traditional sprinkler systems.

improve shipping — NaturaLINE™ can reduce CO_2 emissions by up to 35% compared with previous equipment.

improve safety — Fenwal Protection Systems use non-ozone-depleting suppression agents with a low global warming potential of 1.

improve freshness — The Vector™ unit features electric standby capability with fuel, noise and emission reductions for trailer refrigeration.

improve efficiency — Interlogix's Two-Way Talking Security Touch Screen uses time triggers to help users manage energy consumption.

improve refrigeration — The CO_2Olutec™ integral solution uses the natural refrigerant CO_2 and fully integrates refrigeration, heating and cooling systems, resulting in energy savings.

improve efficiency — The Finsyn-Nenuf™ PPC400 control system reduces boiler fuel demand by up to 7% versus mechanical systems.

improve comfort — The Infinity® Hybrid Heat™ system with Greenspeed™ intelligence is the most efficient ducted, air source dual fuel system available.*

improve efficiency — Since 1984, KORESCO has guaranteed more than $3 billion in energy and operating cost savings at more than 7,000 facilities.

*Based on the Otis® Gen2® Elevator with ReGen™ drive. Actual energy savings will vary based on customer-specific factors. **Based on AHRI Standard 550/590 (I-P) 2011 for 2013 model year. ***Based on a 2013 Carrier study. Actual energy savings will vary based on customer-specific factors. ****Based on Vector™ 1800 Series with Hybrid Heat™ system compared to a 1990 model year Vector™ 1800 Series. Measured in accordance with Energy Star Load Sense standard required by the U.S. Department of Energy/Environmental Protection Agency Energy Management Program/Energy Efficiency Guide.

improve buildings — The AquaEdge™ 23XRV is the world's leading efficiency screw chiller, 44% better than industry standard.**

improve — Marioff's HI-FOG® gas-driven pump unit uses up to 90% less

efficiency — ReGen™ drive reduces energy consumption by up to 75% compared to traditional elevators with conventional drives.

improve shipping — NaturaLINE™ can reduce CO_2 emissions by up to 35% compared with previous equipment.

improve — The Vector™ unit features electric standby capability with fuel, noise and emission reductions for

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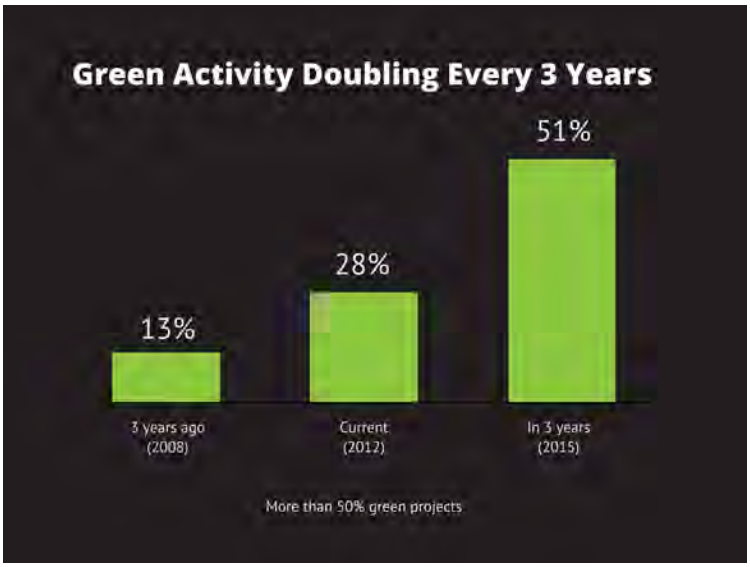
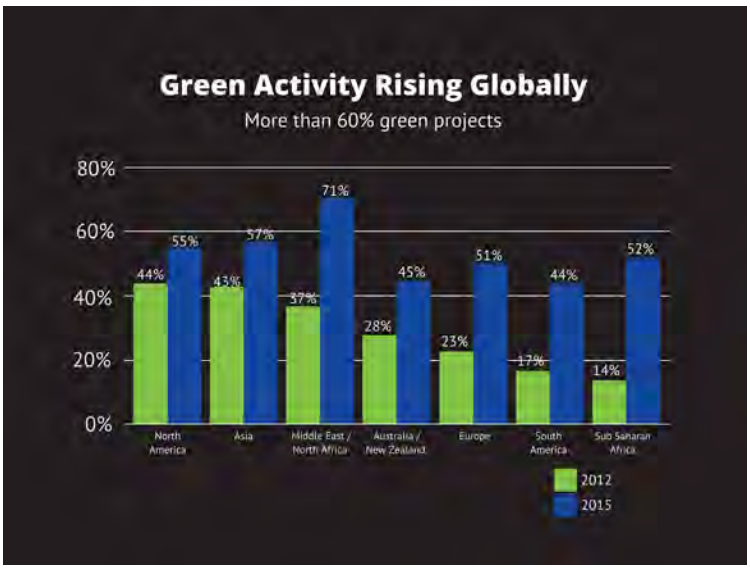
improve fire protection — Marioff's HI-FOG® gas-driven pump unit uses up to 90% less water than traditional sprinkler systems.

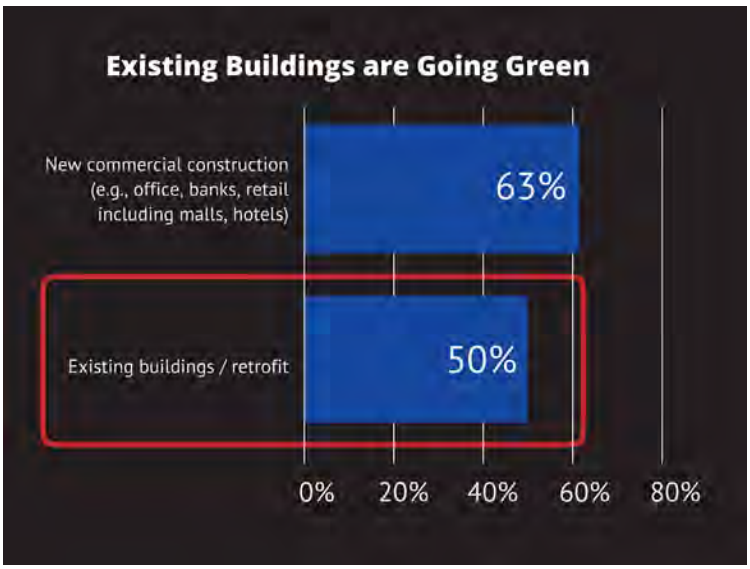
improve — Fenwal Protection Systems use non-ozone-depleting

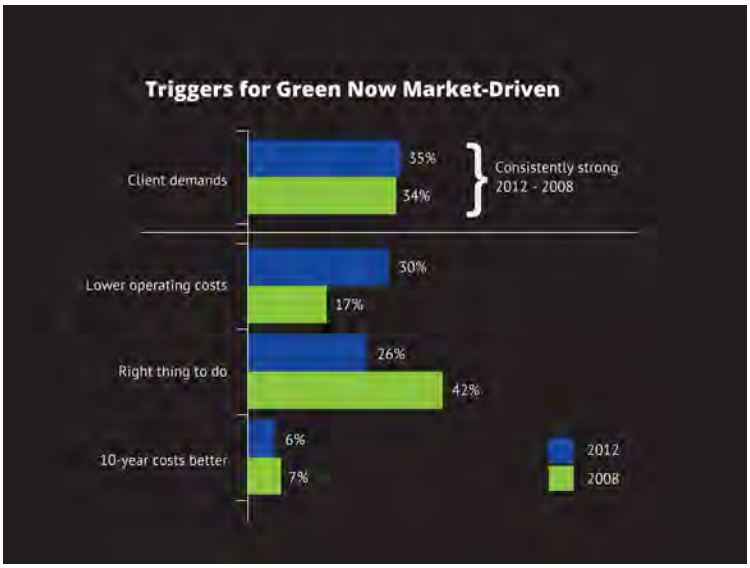
WORLD GREEN BUILDING COUNCIL
Argentina
CHINAGBC
China
France GBC
France
India
SINGAPORE GREEN BUILDING COUNCIL
Singapore
USGBC
United States

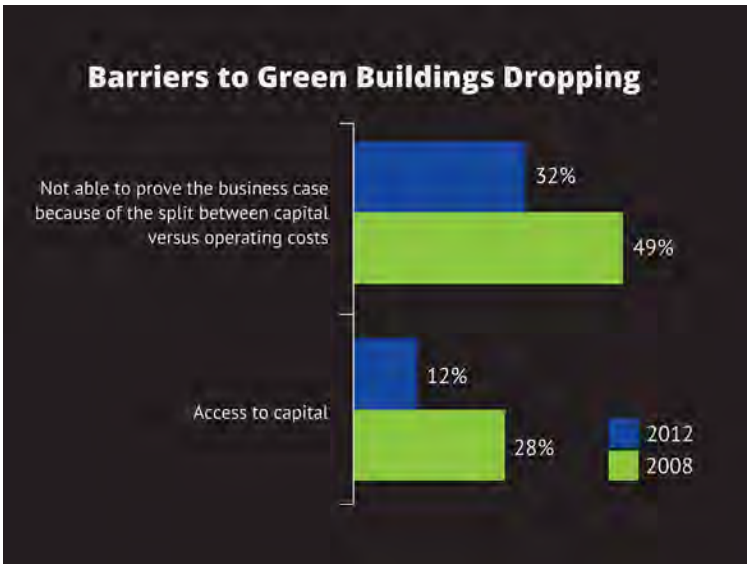
In Partnership with
McGraw-Hill CONSTRUCTION
United Technologies
In Association with
WORLD GREEN BUILDING TRENDS: Business Benefits Driving New and Retrofit Market Opportunities In Over 60 Countries
Key Findings from a New McGraw-Hill Construction SmartMarket Research Study

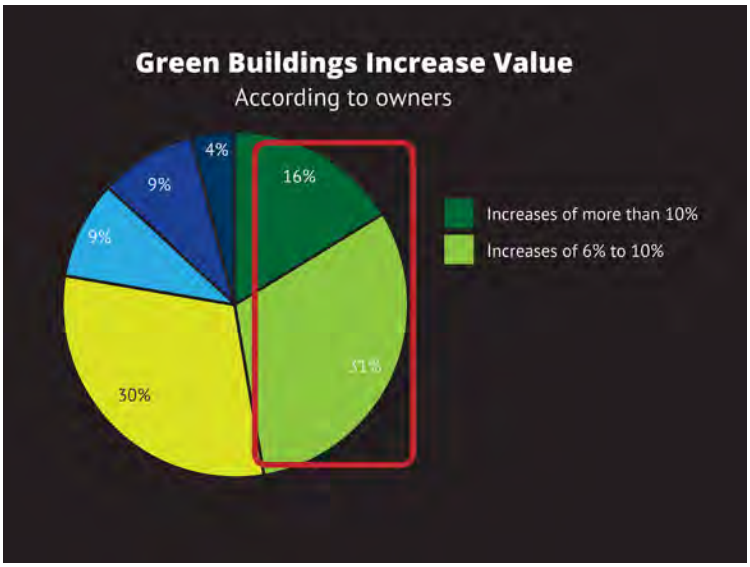

Green Activity Doubling Every 3 Years
13%
28%
51%
3 years ago (2008)
Current (2012)
In 3 years (2015)
More than 50% green projects

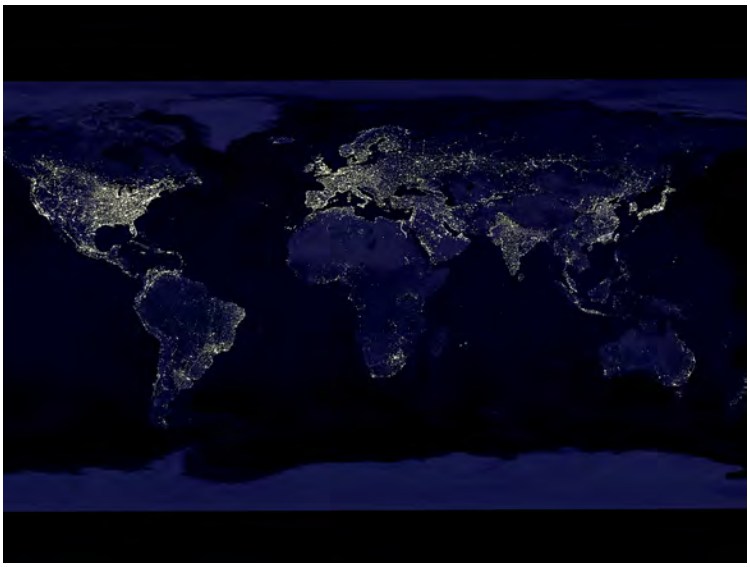

Green Activity Rising Globally
More than 60% green projects
80%
60%
40%
20%
0%
44%
55%
43%
57%
37%
71%
28%
45%
23%
51%
17%
44%
14%
52%
North America
Asia
Middle East / North Africa
Australia / New Zealand
Europe
South America
Sub Saharan Africa
2012
2015

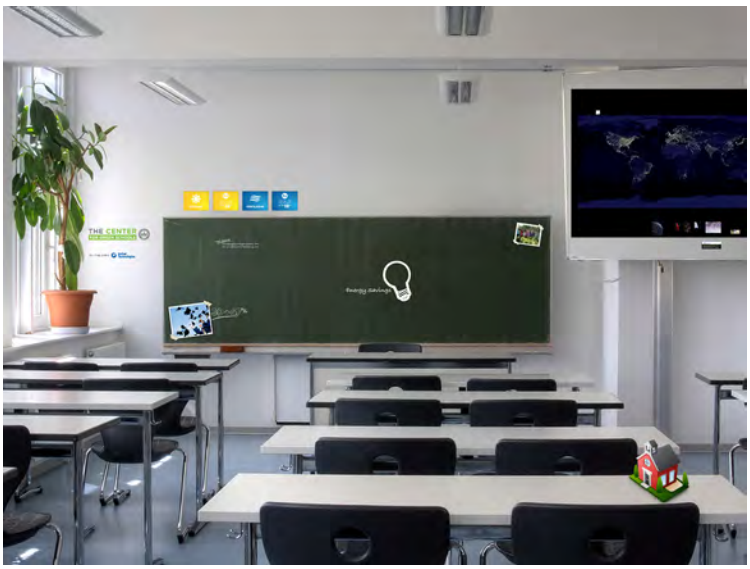

Existing Buildings are Going Green
New commercial construction (e.g., office, banks, retail including malls, hotels)
63%
Existing buildings / retrofit
50%
0%
20%
40%
60%
80%

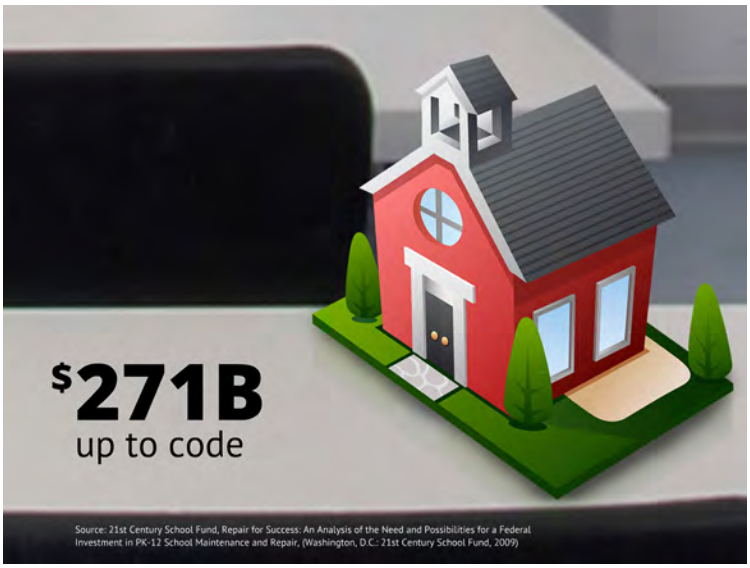

Triggers for Green Now Market-Driven
Client demands
35%
34%
Consistently strong
2012 - 2008
Lower operating costs
30%
17%
Right thing to do
26%
42%
10-year costs better
6%
7%
2012
2008

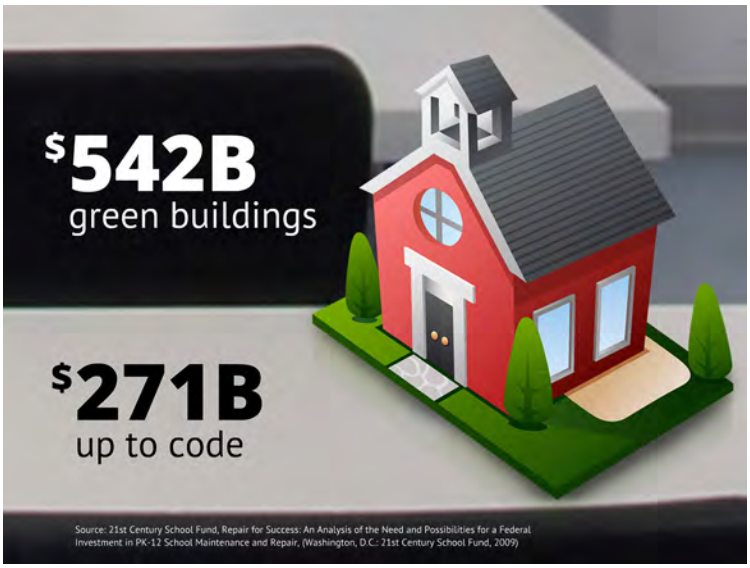

Barriers to Green Buildings Dropping
Not able to prove the business case because of the split between capital versus operating costs
32%
49%
Access to capital
12%
28%
2012
2008

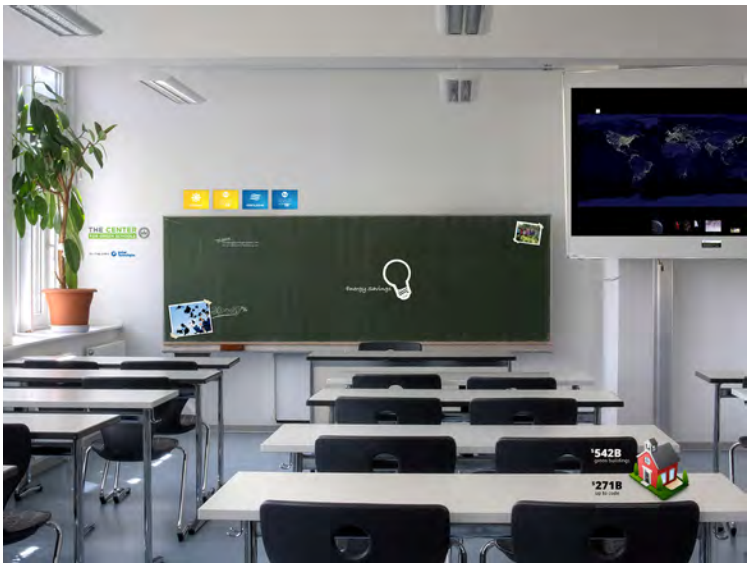

Green Buildings Increase Value
According to owners
4%
9%
9%
16%
30%
Increases of more than 10%
Increases of 6% to 10%



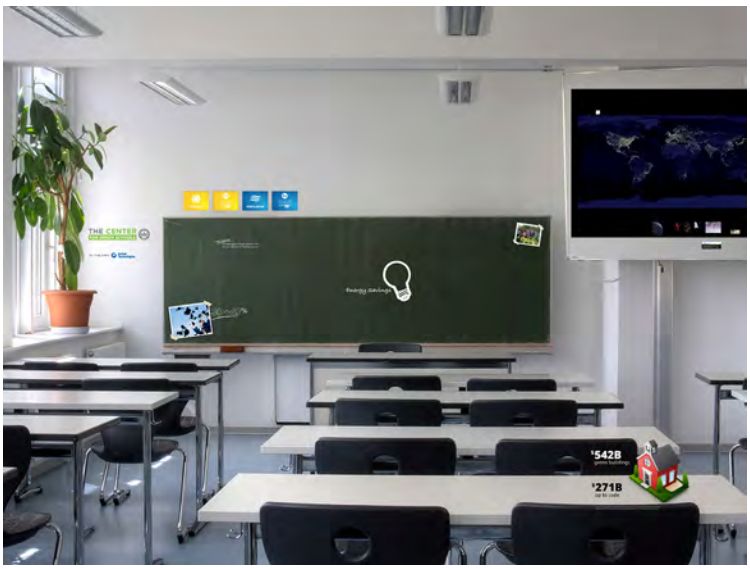


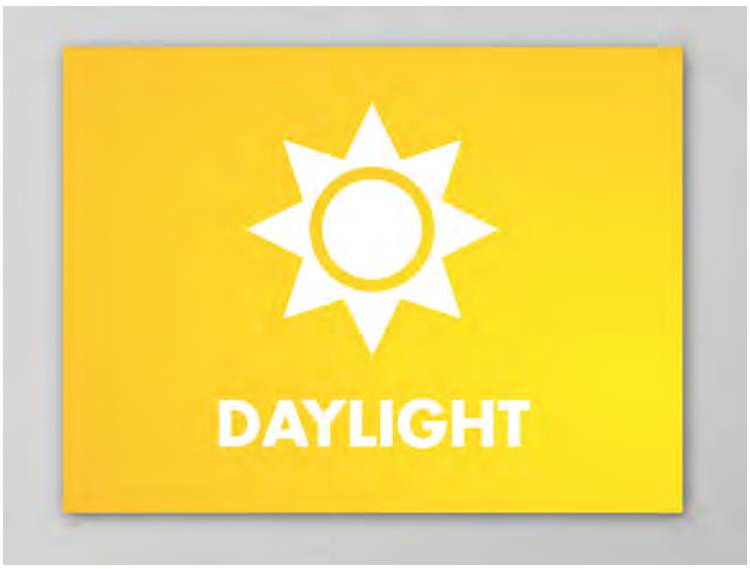

$271B
up to code
Source: 21st Century School Fund, Repair for Success: An Analysis of the Need and Possibilities for a Federal Investment in PK-12 School Maintenance and Repair, (Washington, D.C.: 21st Century School Fund, 2009)


$542B
green buildings
$271B
up to code
Source: 21st Century School Fund, Repair for Success: An Analysis of the Need and Possibilities for a Federal Investment in PK-12 School Maintenance and Repair, (Washington, D.C.: 21st Century School Fund, 2009)


$542B
$271B

THE CENTER
FOR GREEN SCHOOLS
U.S. GREEN BUILDING COUNCIL
USGBC
founding sponsor
United Technologies


$542B
$271B


DAYLIGHT

A+

TEST SCORE INCREASE

UP TO 26%

Source: The Impact of School Buildings on Student Health Performance: A Call for Research, McGraw-Hill Foundation and Center for Green Schools

VENTILATION

A+

TEST SCORE INCREASE

UP TO 10%

Source: McGraw-Hill, Lawrence Berkeley Lab's Indoor Air Quality Resource Bank

Test Scores

Kensington High School, PA for the Creative and Performing Arts

Test Scores

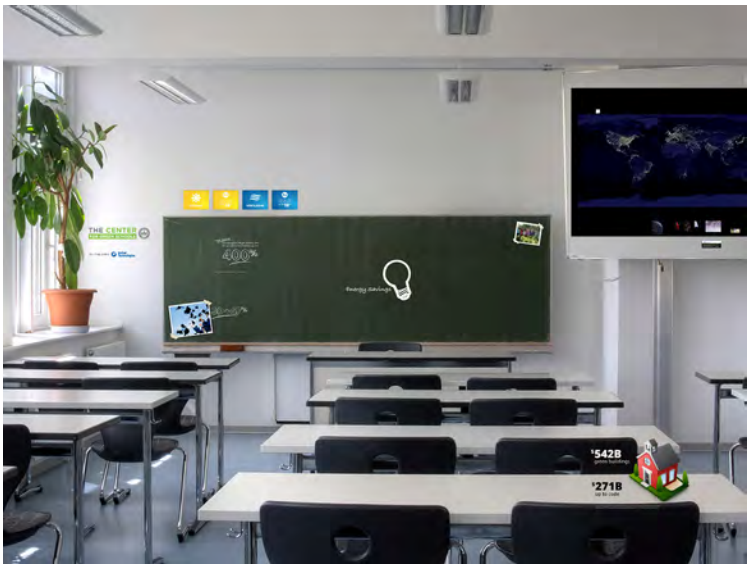
Kensington High School, PA for the Creative and Performing Arts

400%

Source: American Institute of Architects and the U.S. Green Building Council

30 ⇨ 67%

Source: American Institute of Architects and the U.S. Green Building Council


THE CENTER
$542B
$271B

Energy Savings

$2B /yr
Energy Savings
U.S. EPA, 2008; U.S. DOE, Energy Smart Schools, 2002.

=
35,000
New Teachers
Based on national average teacher salary in 2008. National Education Association Research, "Rankings and Estimates: Rankings of the States 2008 and Estimates of School Statistics 2009," December 2008.

#greenapple

improve buildings™