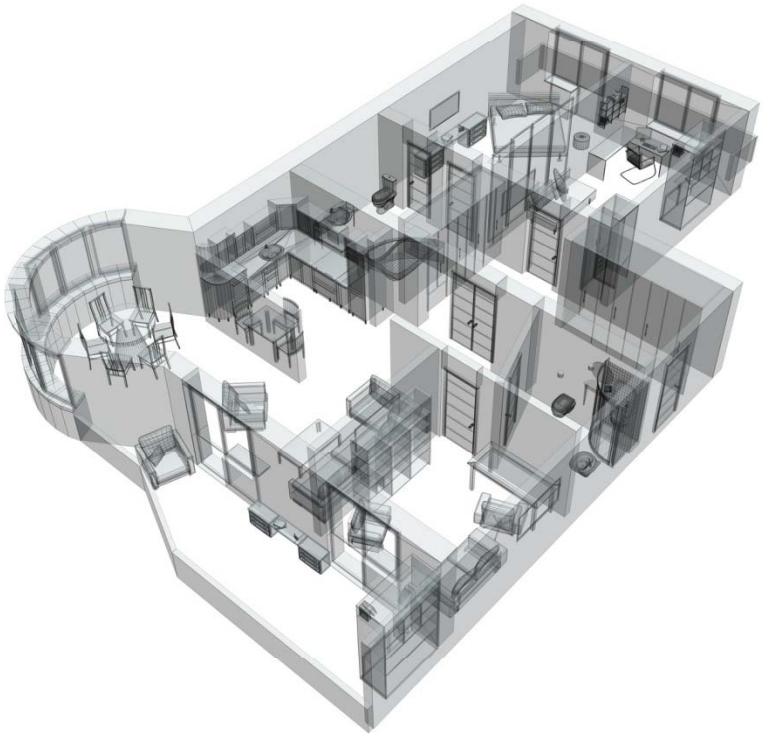
Underwriting for Green Multifamily Development



National Community Development Lending School (NCDLS)
March 14 – 17, 2009
New Orleans, Louisiana

Galley Eco CAPITAL

What to expect from our time together today

INTRODUCTIONS & AGENDA

Course Objectives

Core concepts for underwriting green multifamily development

- Research supporting the green business case
- Framework for green underwriting
- LEED-NC credits that impact project cash flow
- Case study application

Program Emphasis

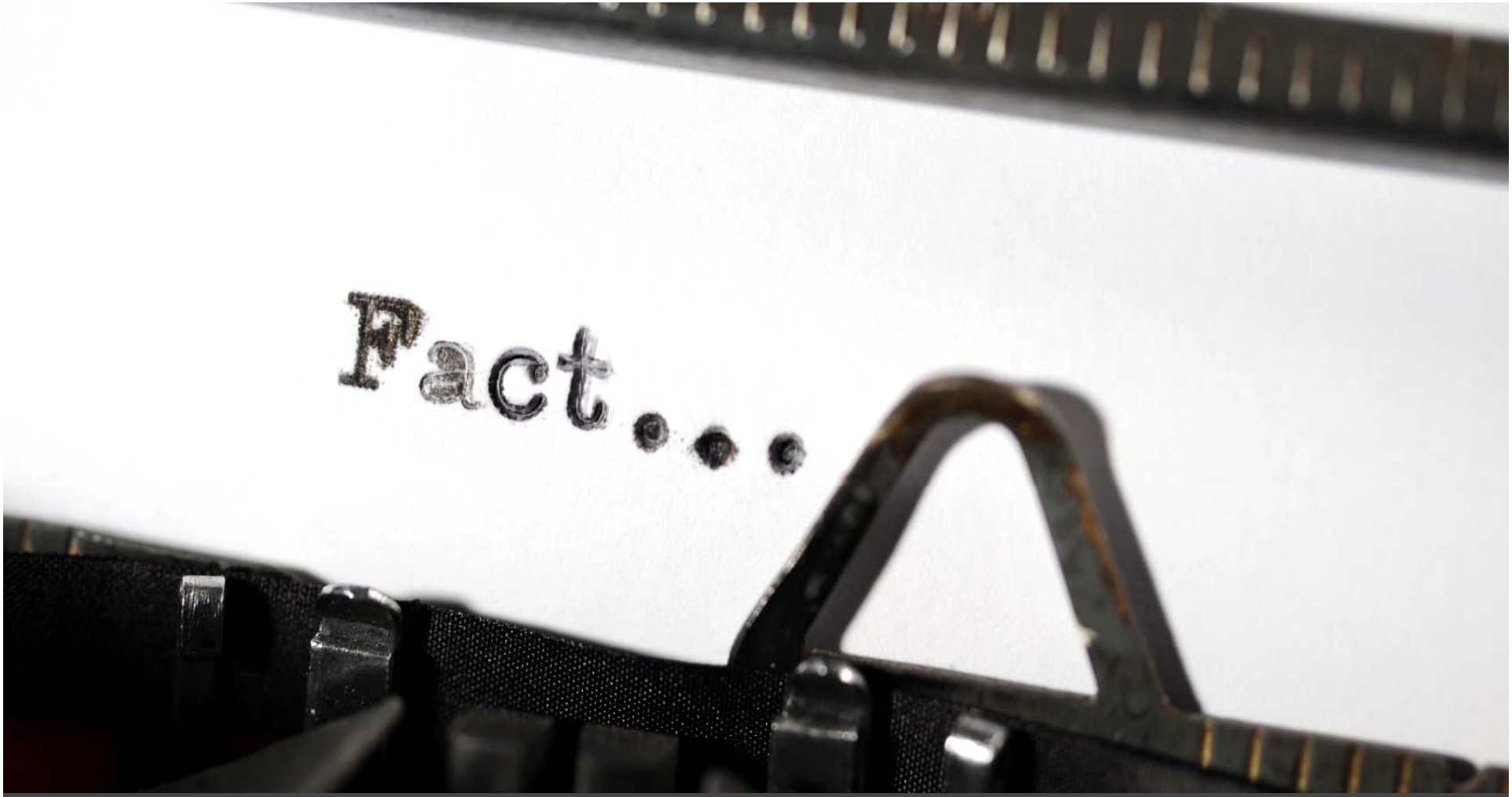
- Framework for underwriting green investment case
- Rating system NOI impacts
- Reinforcement exercise: case study
- Next steps, resources, references

Will NOT cover

- Technical construction/design issues
- Specific financing programs/criteria
- Real estate finance (assumes prev. experience)

Course Agenda

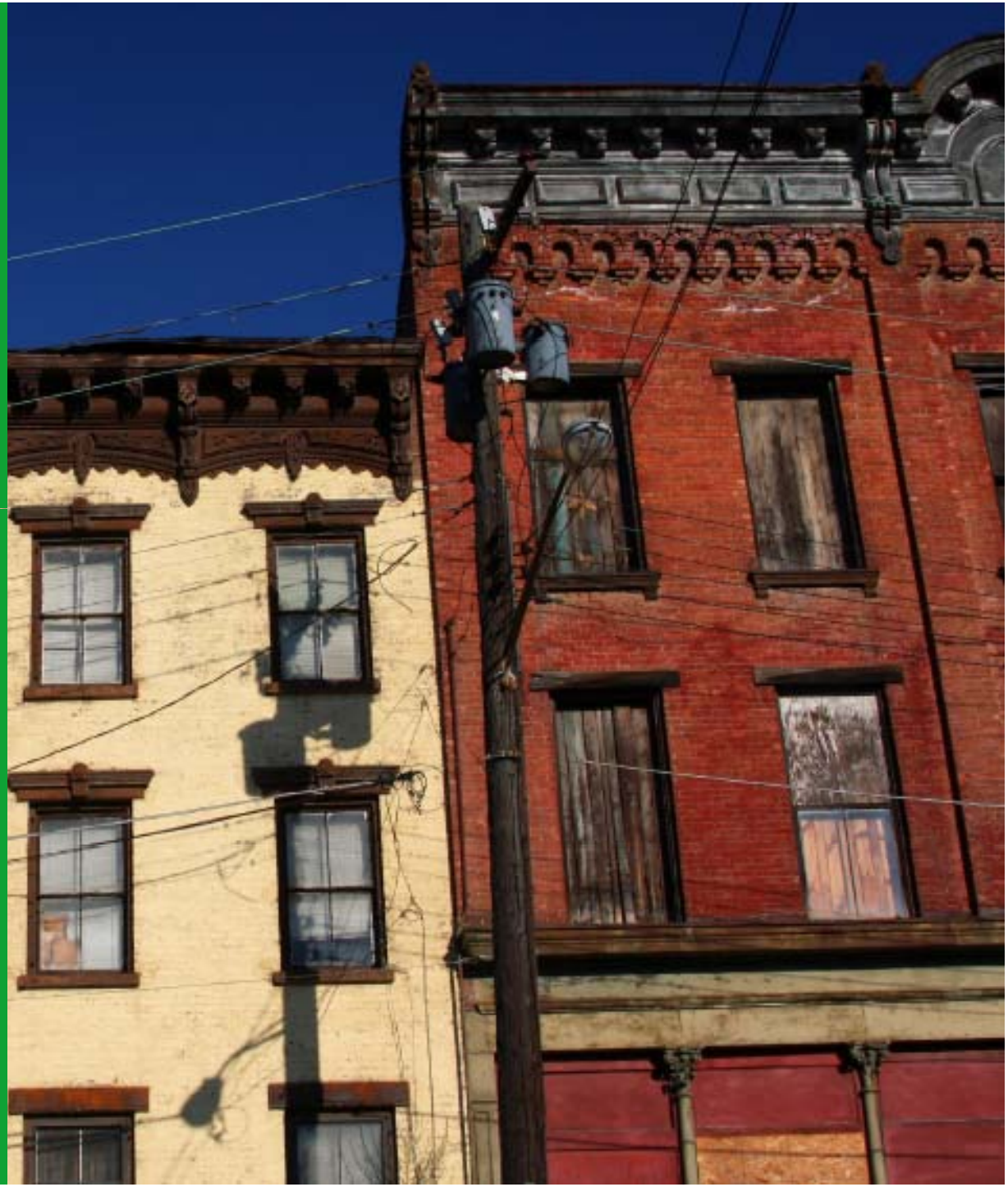
Start	End	Minutes	Topic
8:30	8:45	0:15	Introductions & Agenda
8:45	8:50	0:05	Program Emphasis and Objectives
8:50	9:05	0:15	Make the Case for Green Multifamily
9:05	9:25	0:20	Use GAPS to Frame Green Underwriting
9:25	9:55	0:30	Prioritize Green Strategies by Cash Flow Impact
9:55	10:10	0:15	Summary
10:10	10:25	0:15	BREAK
10:25	10:35	0:10	1st Half Q&A
10:35	11:05	0:25	Case Study Presentation: Green Multifamily Development
11:05	11:35	0:30	Case Study – Analysis
11:35	11:45	0:10	Review of Case Study
11:45	12:00	0:15	Summary & Closing Questions



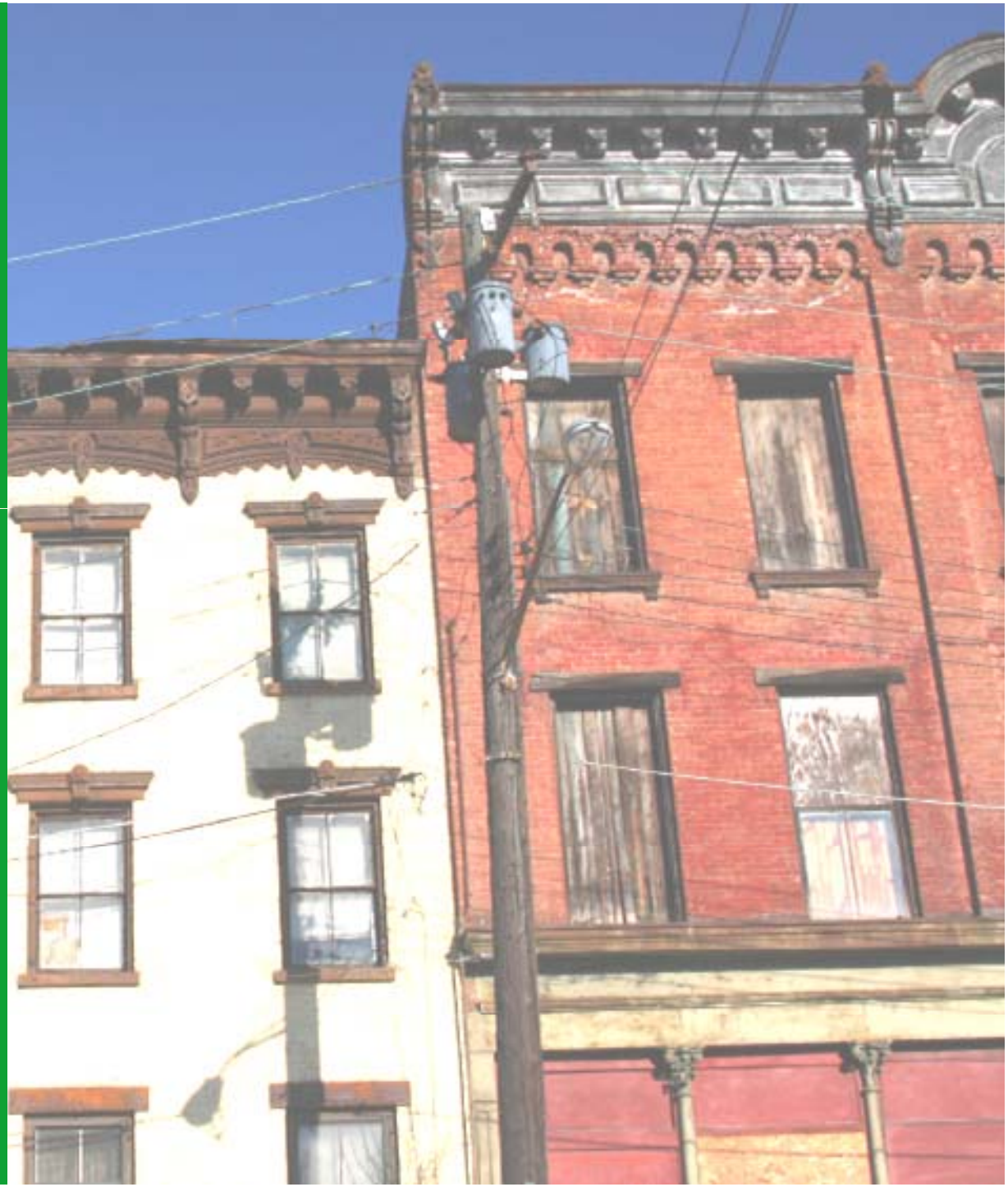
Research the drivers behind your green business case

MAKE THE CASE FOR GREEN MULTIFAMILY

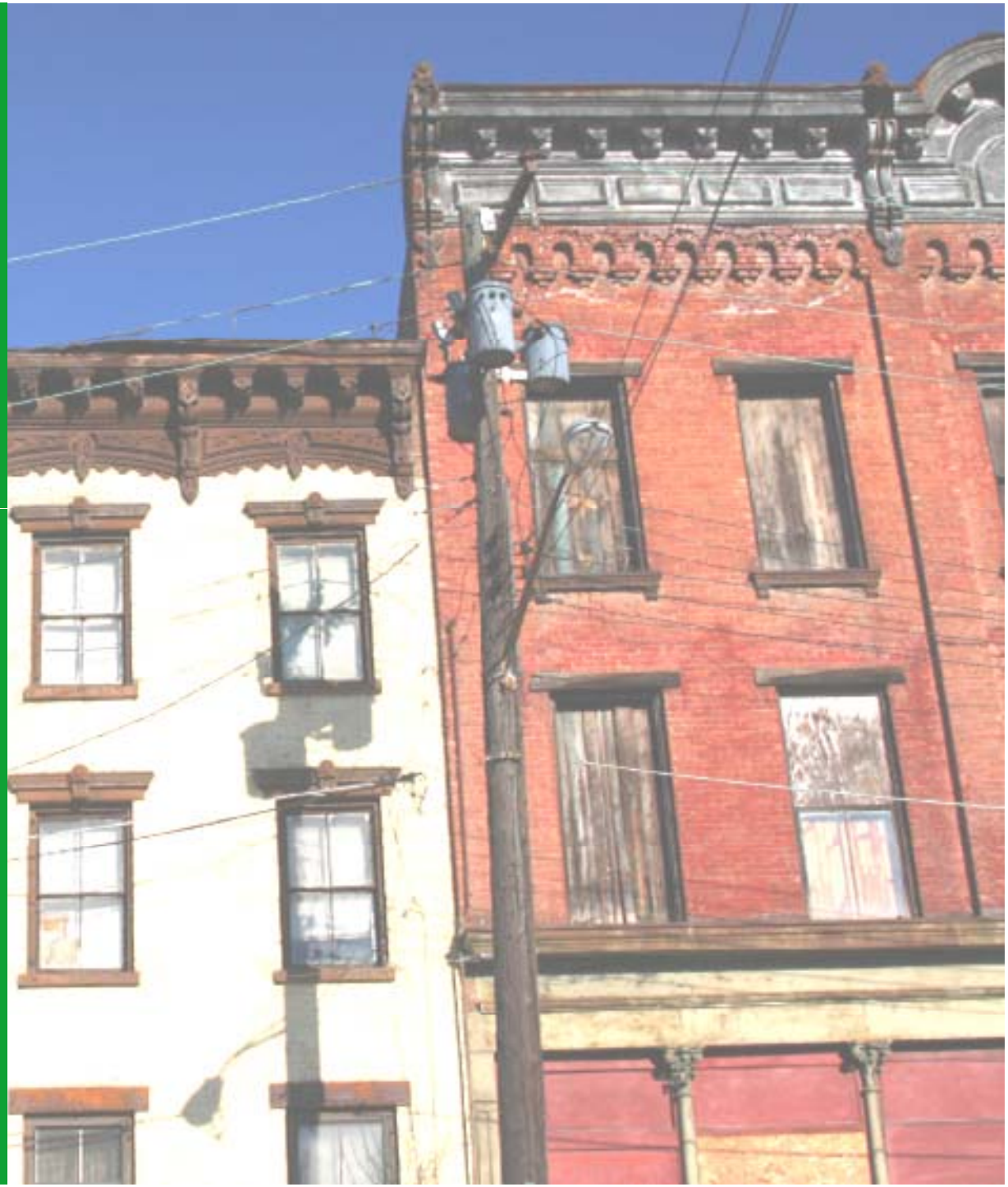
Inefficient buildings waste money, weakening livelihood and communities.



It’s particularly challenging now to create long-term value through our investments.



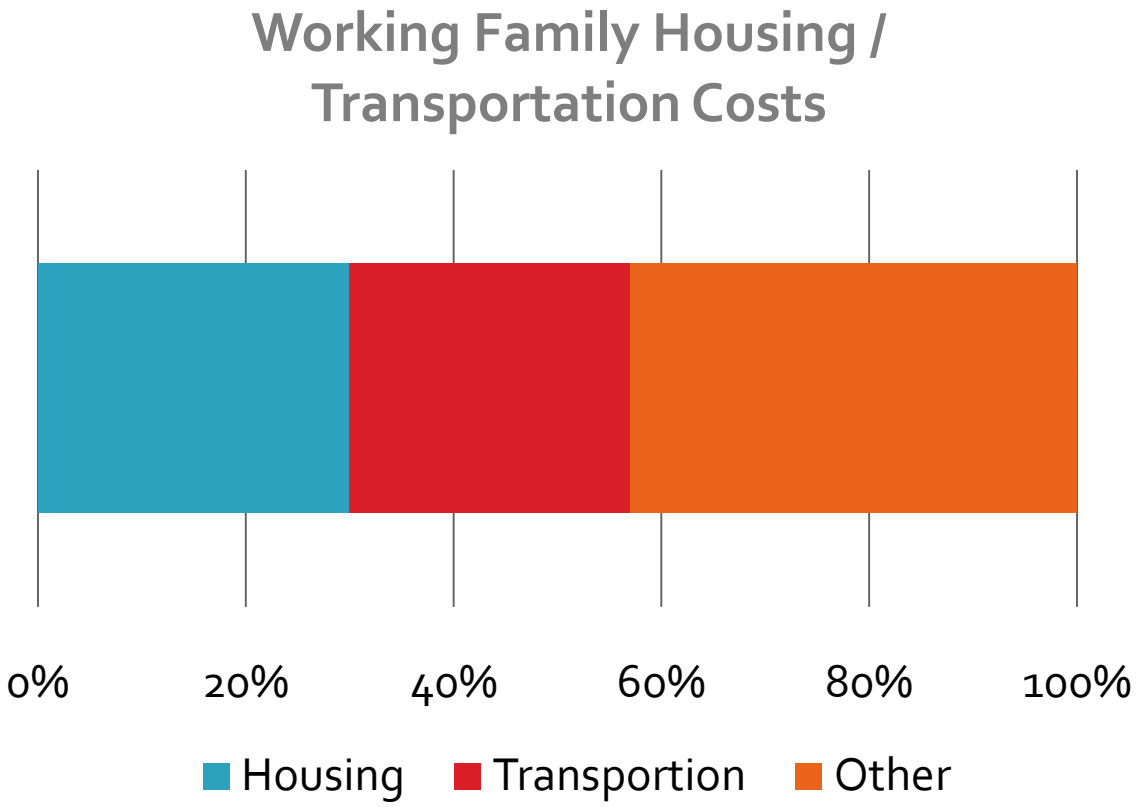
Our sustainable investment decisions should be based on a fact case.



Use energy and green building research to develop the drivers for green investing.

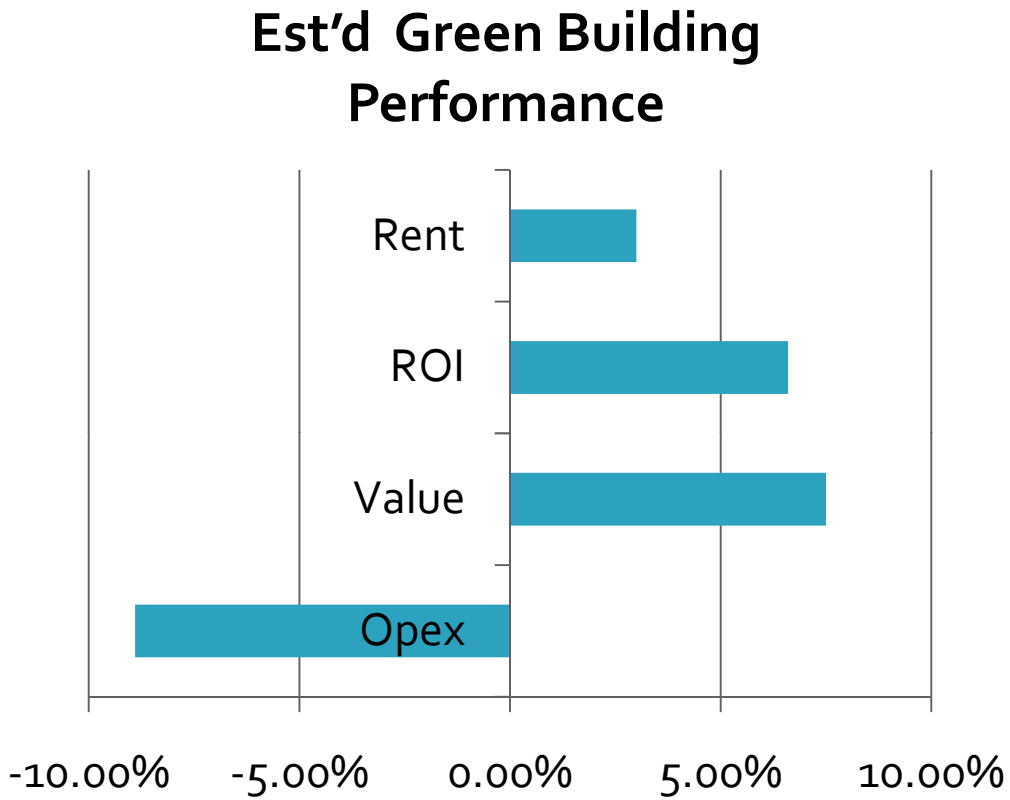
57%

amount of income working families spend on housing + transportation.



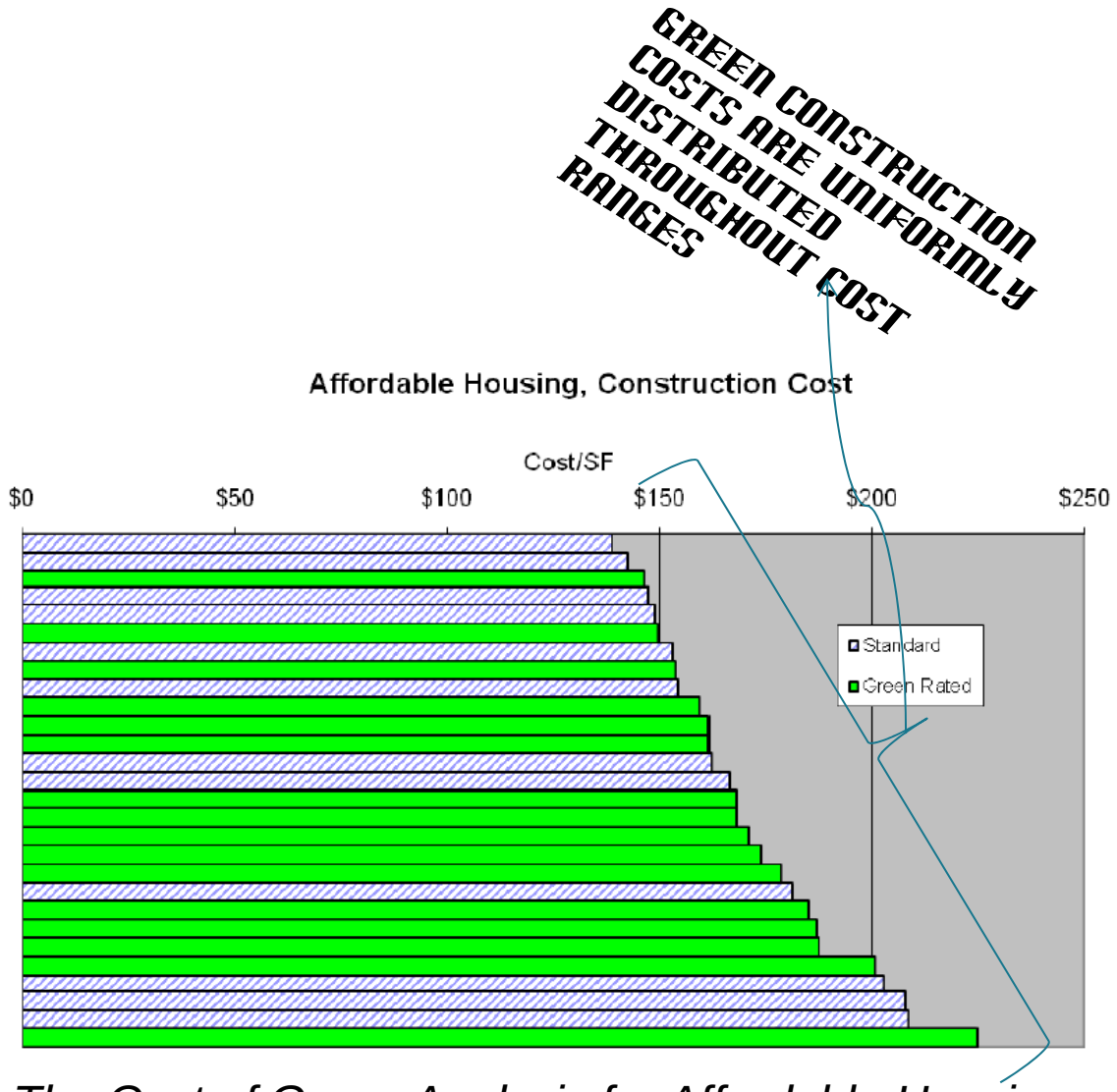
Redefining Affordability, Center for Neighborhood Technology

Green real estate outperforms.



Period.

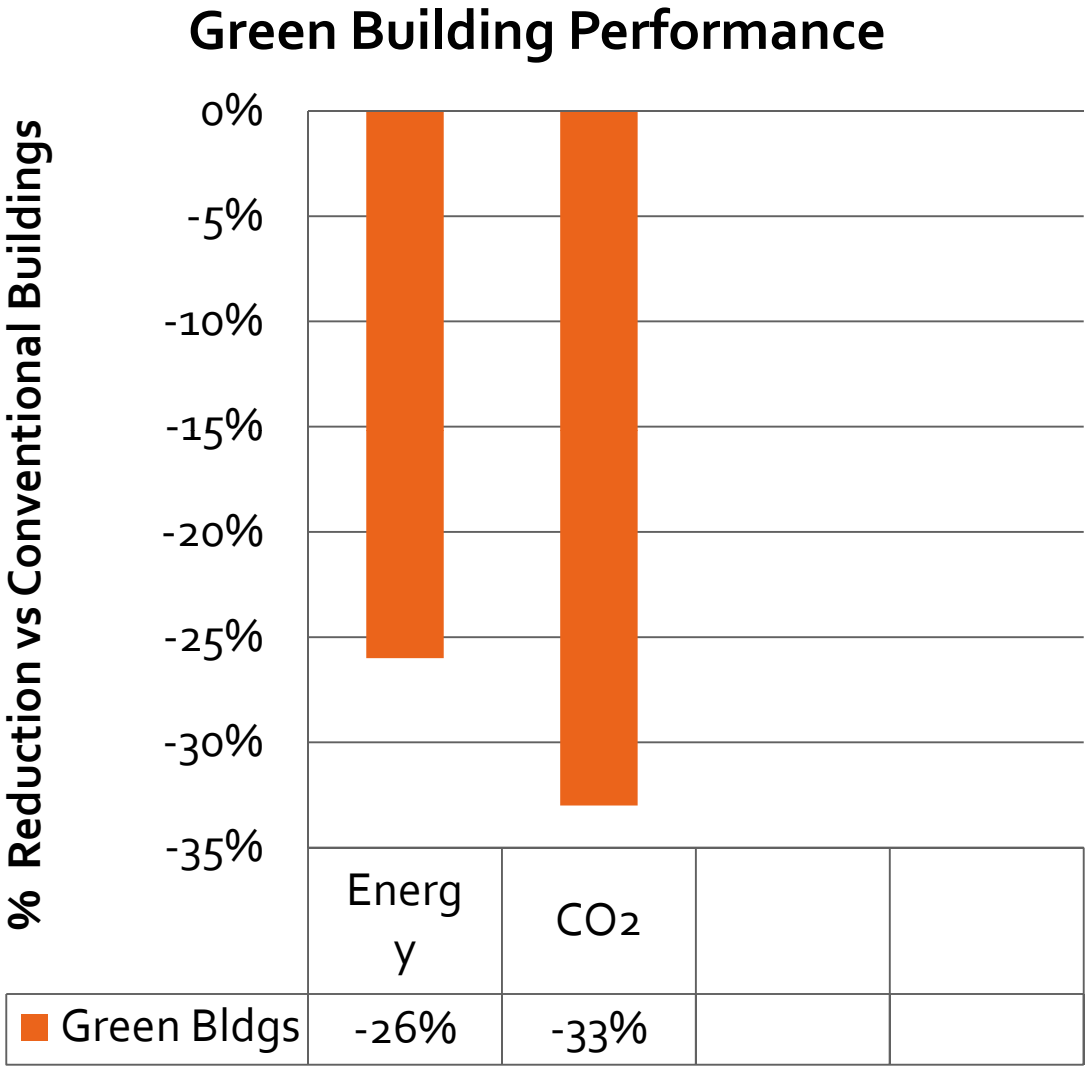
Green affordable housing is *not necessarily* costlier than conventional construction.



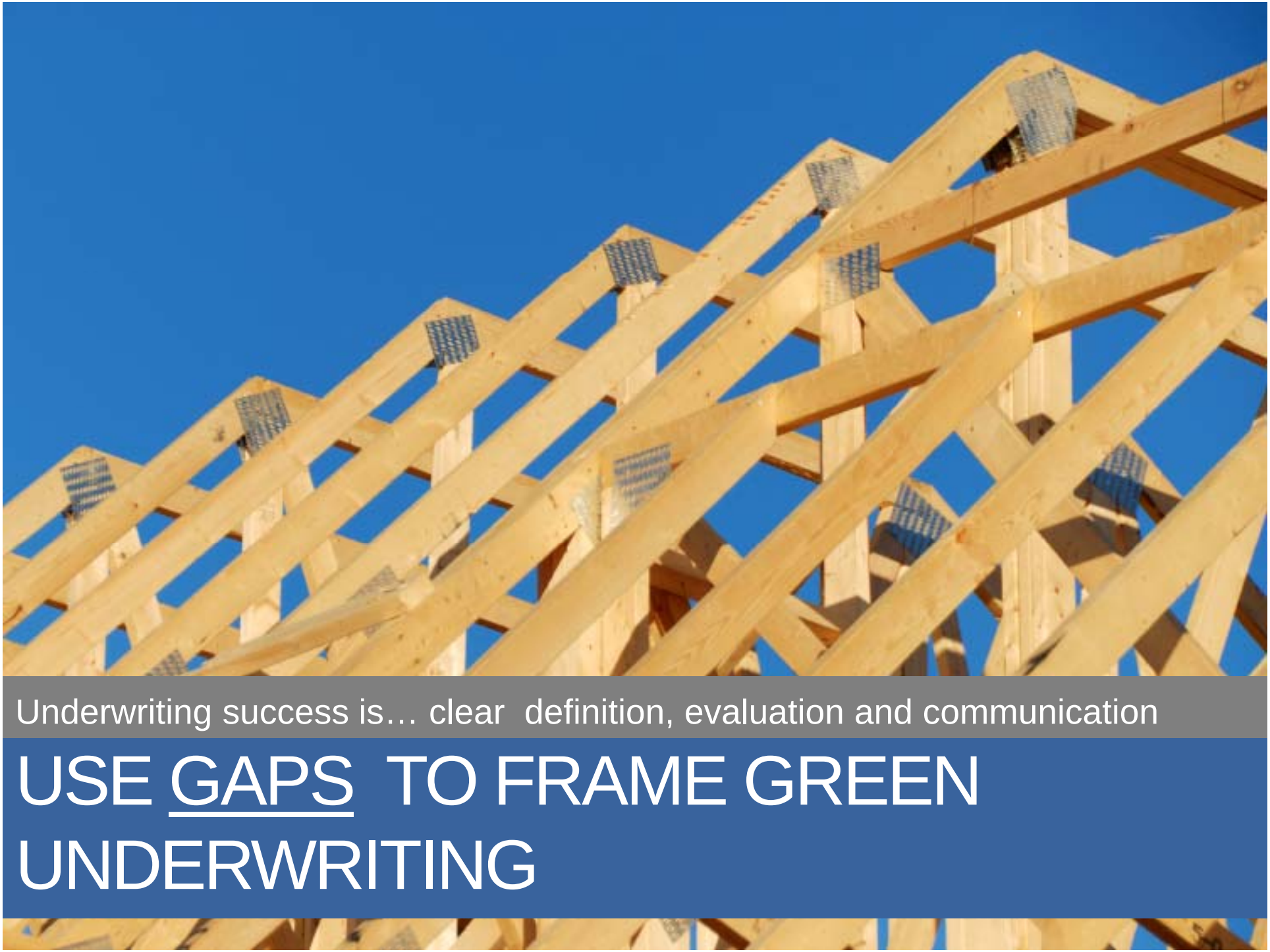
The Cost of Green Analysis for Affordable Housing in Portland and Seattle, Davis Langdon, 2009

Does energy and green building research really support community development goals?

The green business case mitigates resource supply and cost risks.



Use research, tailored to *your region and program*, to support your green investment case.

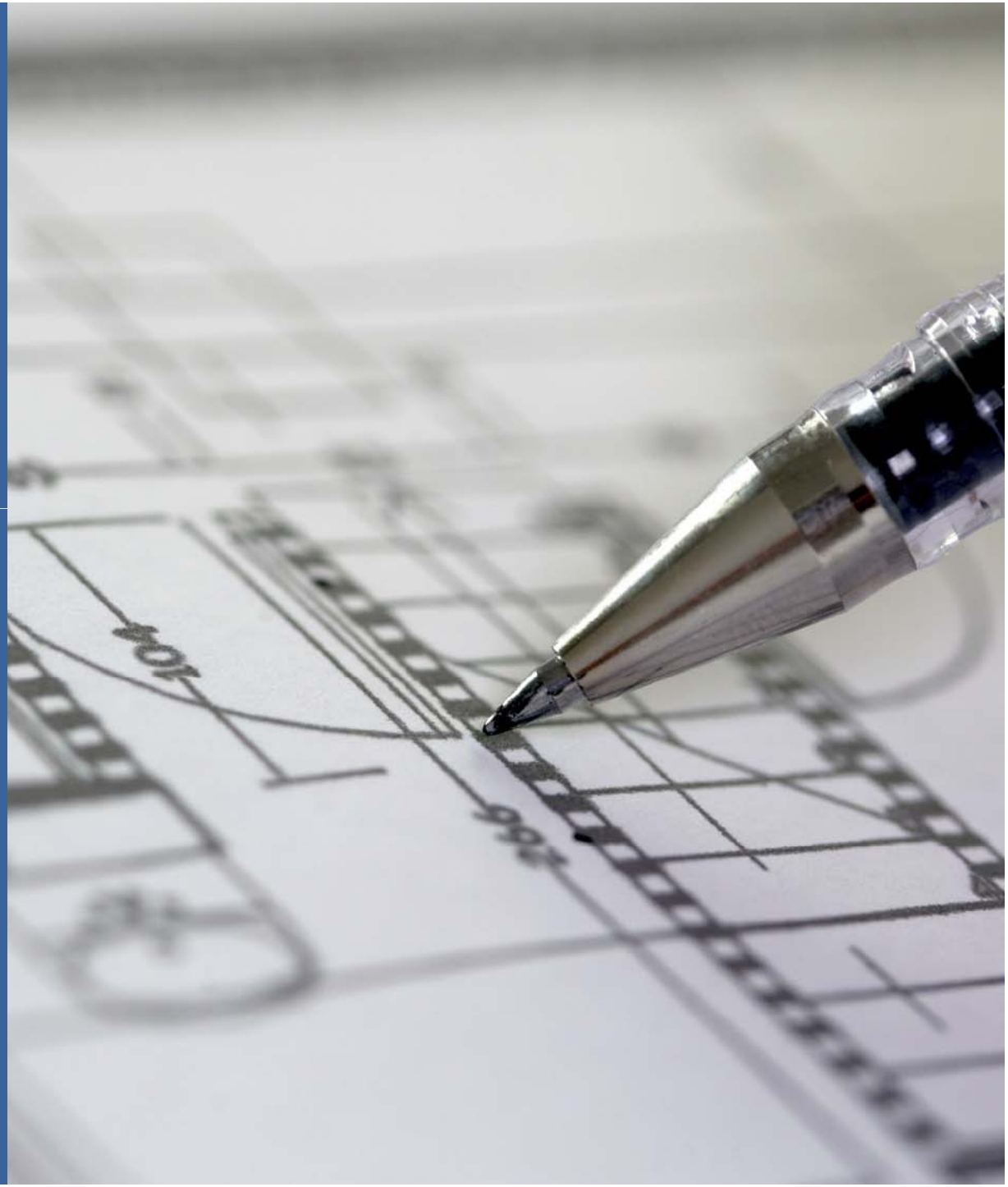


Underwriting success is… clear definition, evaluation and communication

USE GAPS TO FRAME GREEN UNDERWRITING

Real estate underwriting is very complex and challenging.

You must quickly analyze lots of complex information and reliably execute.



Green criteria can increase the data burden, plus there's no standard approach for green investment due diligence.

We need a framework to define, evaluate and communicate the project's green value-add.

Use ***GAPS*** to structure green underwriting evaluation and communication

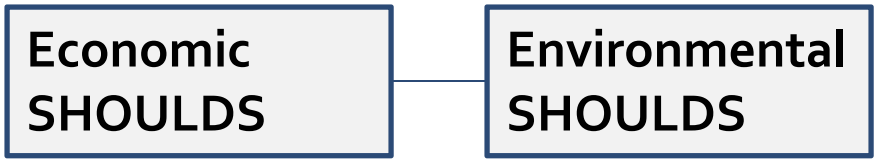
Go for the ***SHOULD***

Analyze the ***IS***

PIN down ***CAUSES***

Select the right ***SOLUTIONS***

Go for the ***Should*** with 3rd Party Certification



- Assess the goals of the project's green strategies
- Defines green building
- Transparency
- Scientifically-verifiable independently evaluated claims,

Key Multifamily Rating Systems

PROGRAM	COVERAGE	PROJECT TYPE	PROPERTY TYPE
USGBC: Leadership in Energy and Environmental Design® (LEED) for Homes	Nationwide	New construction	Commercial Single family and multifamily
USGBC: LEED for Existing Buildings	Nationwide	Operations and maintenance	Commercial
USGBC: REGREEN	Nationwide	Rehab	Single family
EPA: ENERGY STAR Qualified Homes	Nationwide	New construction Rehab	Single family Manufactured and modular Low-rise multifamily
EPA: Home Performance with ENERGY STAR	Participating areas—currently less than half the states	Rehab	Single family Low-rise multifamily
Enterprise Community Partners: Green Communities	Nationwide	New construction Two levels of rehab	Single family and multifamily
NAHB: National Green Building Standard	Nationwide	New construction Residential remodeling	Single family and multifamily
The Green Building Initiative: Green Globes	Nationwide	New construction Rehabilitation	Commercial
Southface Institute: EarthCraft House™	Southeastern states	New construction Four levels of rehab	Single family and multifamily
Build It Green: GreenPoint Rated	California	New construction Rehabilitation forthcoming	Single family and multifamily

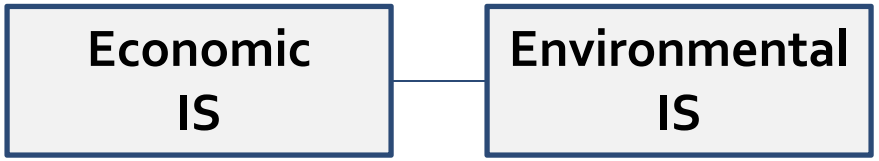
From Local Initiatives Services Corporation

6

the number of common rating criteria for underwriter focus

1. Site-level sustainability
2. Water efficiency
3. Energy reduction measures
4. Waste diversion/recycling
5. Material and resource conservation
6. Measurement and verification

Analyze the IS with Your **BAU**



- Clarify known externalities / risks in conventional building performance.
- Energy costs are typically 30%-35% of OPX; rising 10%-20% p.a.
- Points out issues to solve with 3rd party certification and integrated design

Clarify your BAU benchmark

- Code-compliant
- Average building performance compared to:
  - EnergyStar?
  - Market data?
  - Internal portfolio metrics?

PIN down causes

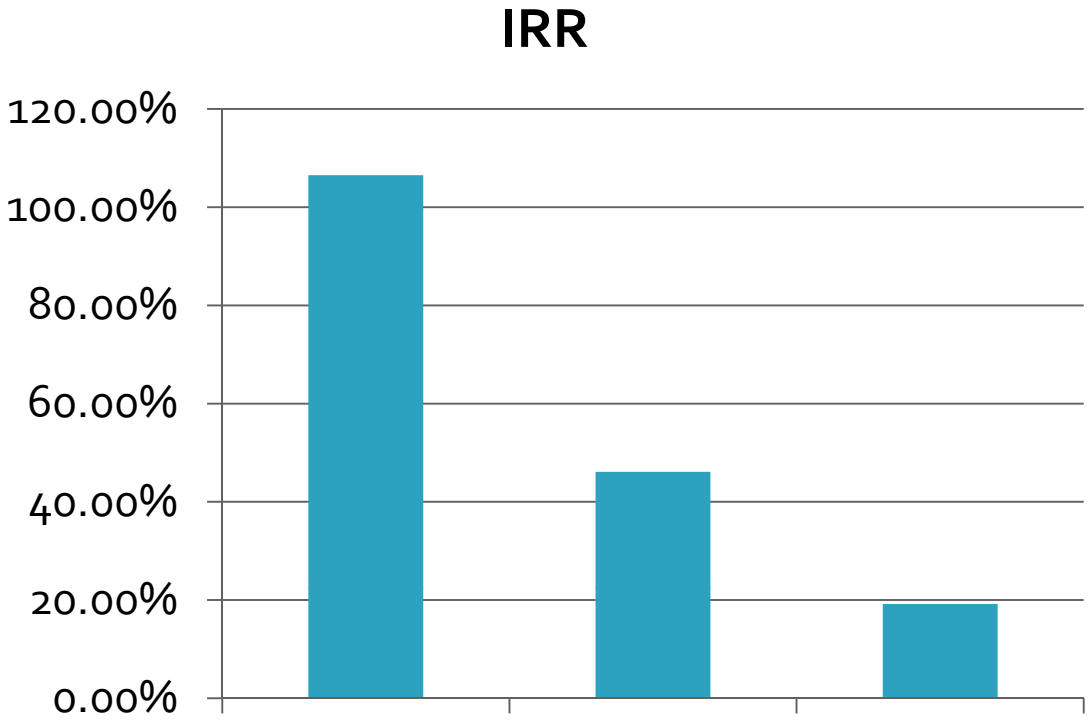
with

Integrated Design

Facts External to the Project	Facts Internal to the Project		Facts Internal to the Team
Market Economic Demographic Regulatory	Inside the owner's control	Outside the owner's control	Team capability Track record

- Holistic Analysis: Assess fit with the business context, project objectives, and the team's capabilities.
- Whole building design
- Collaborative, multidisciplinary team
- 1%-3% cost savings
- More comprehensive problem-solving reduces cost overruns

Select the right ***SOLUTIONS*** with Life Cycle Cost Analysis

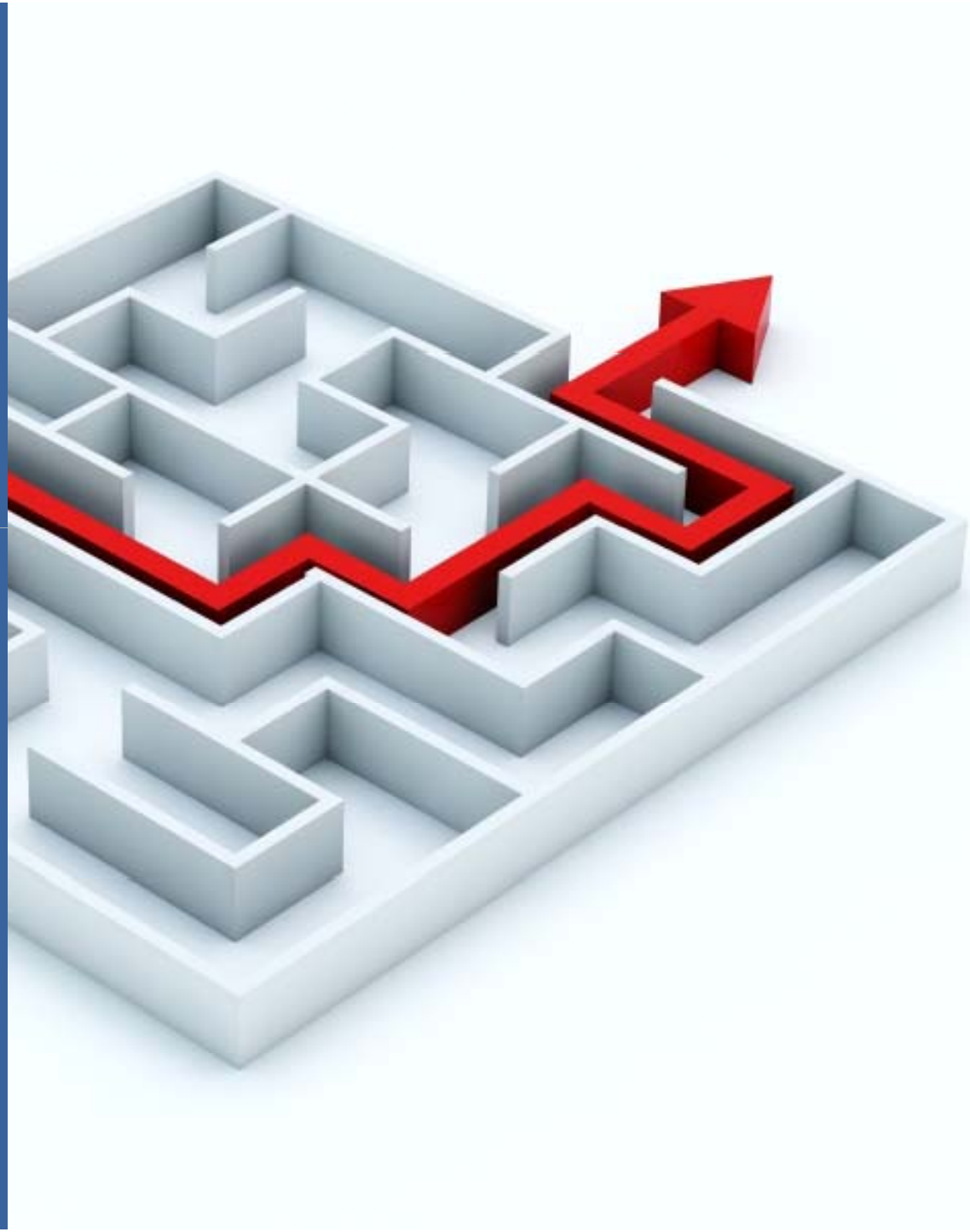


- Lifetime cost-benefit analysis of investments including environmental impacts

Select the right ***SOLUTIONS*** with Life Cycle Cost Analysis

Life Cycle Cost Analysis =		
(PV)	Investment	+
	Energy	+
	Water	+
	Maintenance/Repair	+
	Capital costs	+
	Residual value	

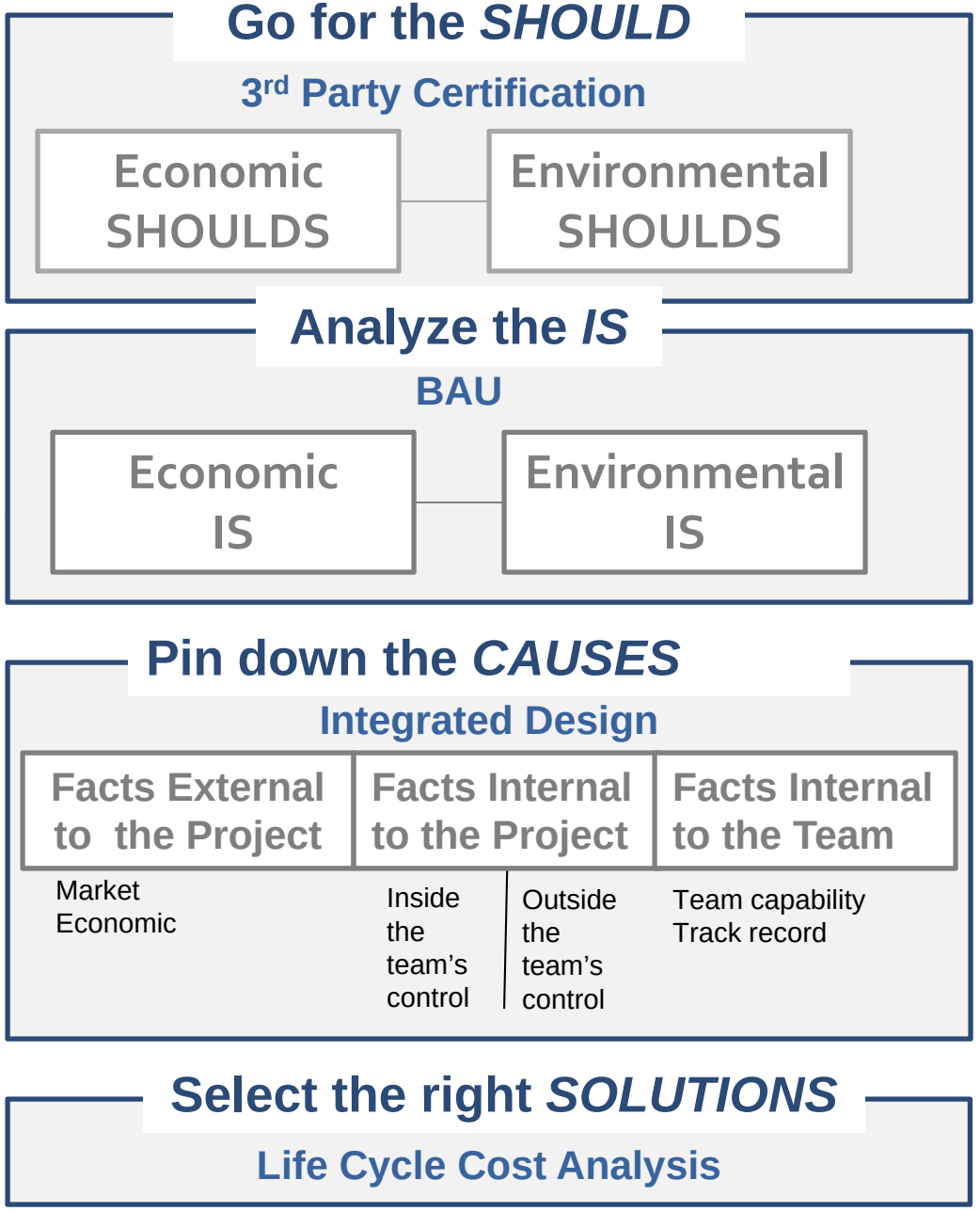
Can we find the right approach to underwriting green multifamily?



Without the hassle of fragmented, confusing information

Apply structure to define, evaluate and communicate the green value-add within your investments.

GAPS frames your green underwriting

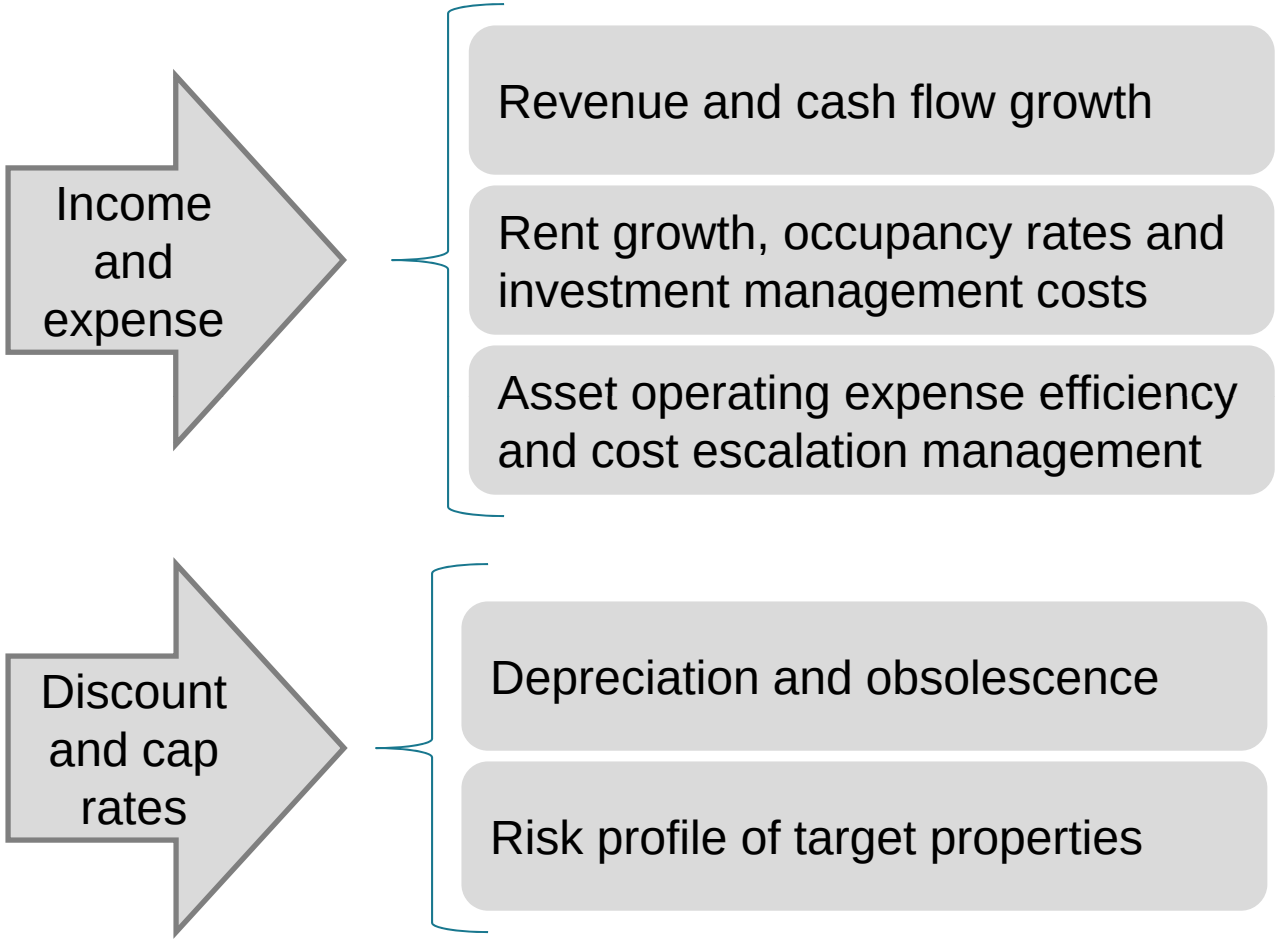


Evaluating LEED-NC’s influence on pro forma operating cash flows

PRIORITIZE GREEN STRATEGIES BY CASH FLOW IMPACT

Success depends on the getting the NOI right.

Green design can affect value in several ways



But what really counts for the pro forma??

Divide and conquer: group and rank rating credits by cash flow impact

- Storm water
- Heat island
- Water efficiency
- Energy performance
- Daylight

Definite

- Commissioning
- Measurement and verification
- Thermal comfort

Indirect, but important

- Alternative transportation
- Increased ventilation
- Low-emitting materials
- Daylight - views

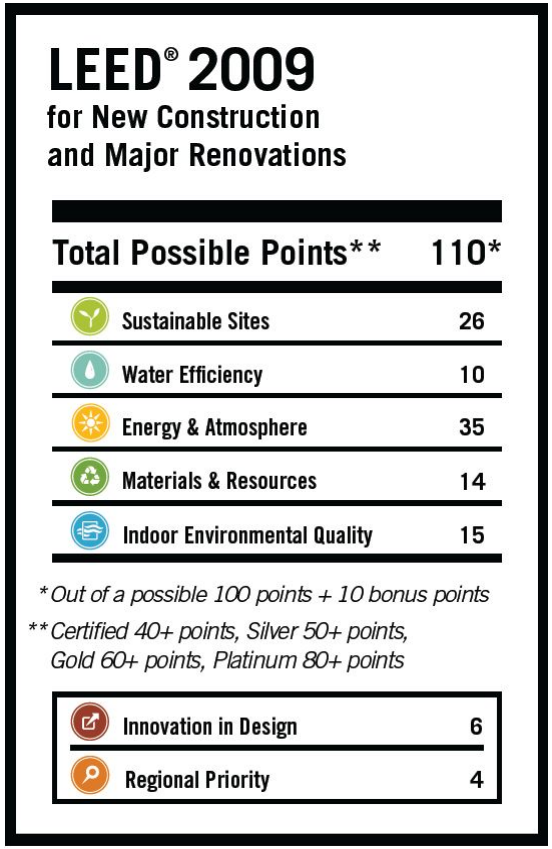
Intangible, “life quality”

Learn how rating criteria affect economic performance

LEED-NC & THE PRO FORMA

LEED-NC Credit Presentation Structure

- 52 possible credits
- Presentation structure
  - Visual examples
  - Credit intent
  - Credit requirements and points
  - Evidence of impact



Energy Performance Optimization

EAp2: Min. Energy Performance
EAc1: Opt. Energy Performance

- Compares a building's proposed annual energy performance versus a pre-determined standard.
- Objective: minimize energy required to operate building efficiently
- Higher reduction versus annual baseline, more points awarded
- Maximize value of energy use reduction relative to costs of low-energy system implementation.

MINIMUM ENERGY PERFORMANCE

	NC	SCHOOLS	CS
Prerequisite	EA Prerequisite 2	EA Prerequisite 2	EA Prerequisite 2
Points	Required	Required	Required

Intent

To establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.

OPTIMIZE ENERGY PERFORMANCE

	NC	SCHOOLS	CS
Credit	EA Credit 1	EA Credit 1	EA Credit 1
Points	1-19 points	1-19 points	3-21 points

Intent

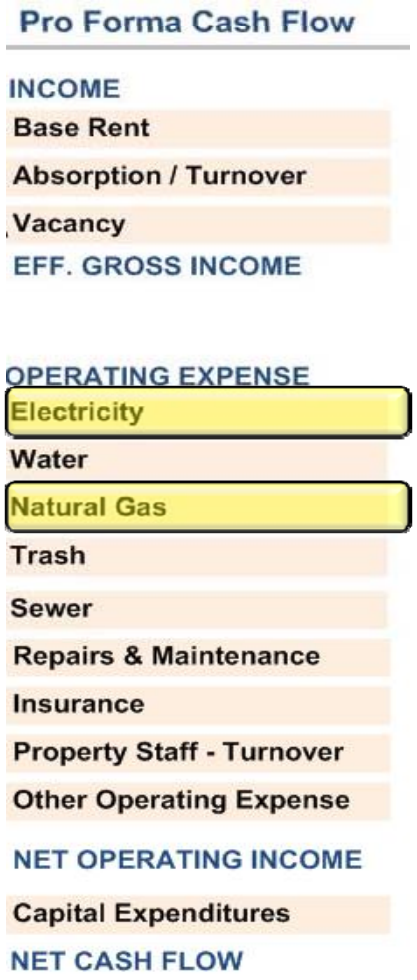
To achieve increasing levels of energy performance beyond the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

EAp2: Min. Energy Performance & EAc1: Opt. Energy Performance

Impacts

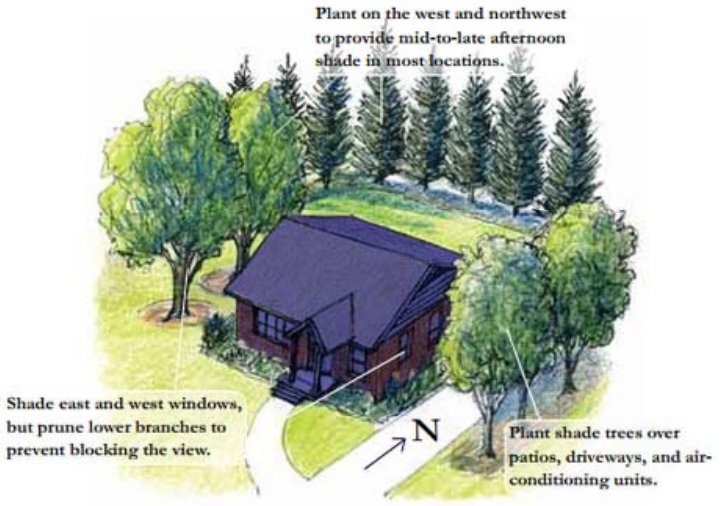
- **Electricity: Reduced Cost**
- **Natural Gas: Reduced Cost**

•Scale of cash flow impact from electricity and natural gas use reductions will be determined by the building's energy model (and subsequently by the building's performance) versus the ASHRAE baseline.



Heat-Island Effect

White Roofs (or cool roofs) can be installed on both new and existing buildings
(Credit: Akira Energy



Using vegetation to shade both the building and site can reduce building energy use and minimize the urban heat island effect.
(Credit: Arbor Day Foundation)

SSc7.1 & 7.2 Heat Island Effect

Requirement

- Roofs and hardscapes with high solar reflectance can reflect sunlight (solar radiation), reducing heat island impact.
  - Vegetation can lower temperatures via evapotranspiration, and by providing shade.
  - Shaded surfaces can be 20–45°F cooler than unshaded surfaces.

HEAT ISLAND EFFECT—ROOF

	NC	SCHOOLS	CS
Credit	SS Credit 7.2	SS Credit 7.2	SS Credit 7.2
Points	1 point	1 point	1 point

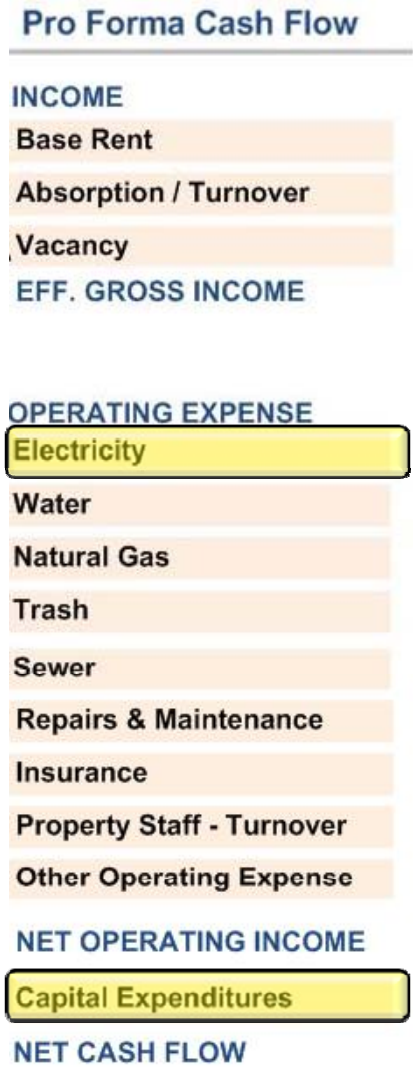
Intent

To reduce heat islands[1] to minimize impacts on microclimates and human and wildlife habitats.

SSc7.1 + SSc7.2: Heat Island Effect

Impacts

- **Electricity: Reduced Cost**
  - High solar reflectance and shading from vegetation reduce bldg cooling load, particularly in hotter climates.
  - Light-colored hardscapes and increased vegetation reduce air temperatures, which also reduces bldg cooling load.
- **Capital Expenditures: Avoided Cost (Roof)**
  - Cool roof coatings extend the useful life of roofing membranes and insulation; reduction in absorbed solar radiation reduces material degradation.



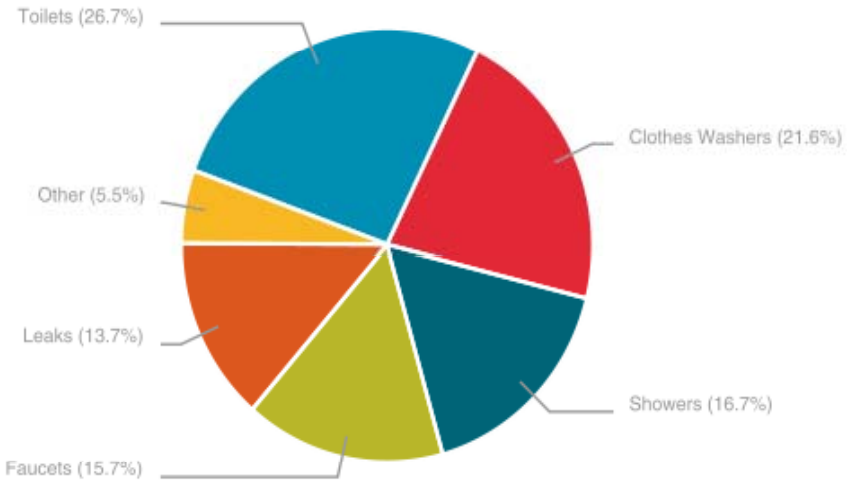
SSc7.1 + SSc7.2: Heat Island Effect: Evidence

"Reducing Urban Heat Islands: Compendium of Cool Roof Strategies " **(EPA)**

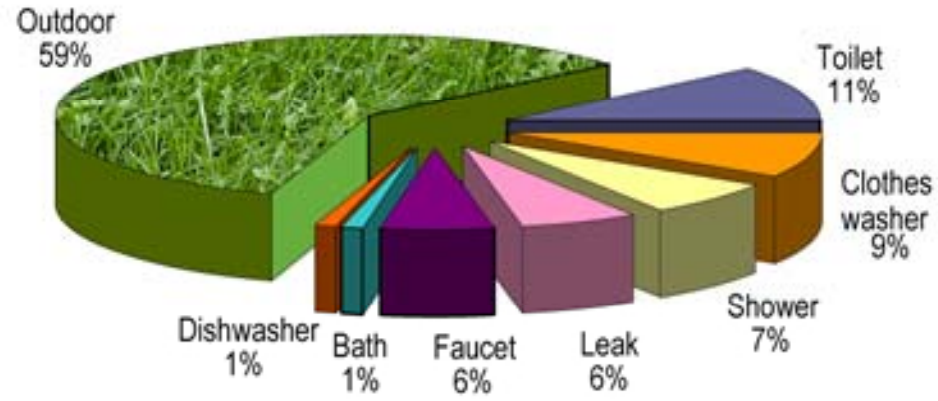
- Cool roofs can reduce cooling load on building, reducing energy use; 20% avg reduction.
- Buildings in hot, sunny climates with cool roofs can reduce bldg energy use by up to 75%.
- Buildings in cold climates will still benefit from cool roof - for most of US, increased heating penalty is minimal.

Building	Location	Citation	Size (ft^2)	Roof Insulation*	Roof Space	Annual Cooling Saved	Peak Demand Savings
Residence	Merritt Island, FL	(Parker, D., S. Barkaszi, et al. 1994)	1,800	R-25	Attic	10%	23%
Convenience Retail	Austin, TX	(Konopacki, S. and H. Akbari 2001)	100,000	R-12	Plenum	11%	14%
Residence	Cocoa Beach, FL	(Parker, D., J. Cummings, et al. 1994)	1,795	R-11	Attic	25%	28%
Residence	Nobleton, FL	(Parker, D., S. Barkaszi, et al. 1994)	900	R-3	Attic	25%	30%
School Trailer	Volusia County, FL	(Callahan, M., D. Parker, et al. 2000)	1,440	R-11	None	33%	37%
School Trailer	Sacramento, CA	(Akbari, H., S. Bretz, et al. 1993)	960	R 19	None	34%	17%
Our Savior's School	Cocoa Beach, FL	(Parker, D., J. Sherwin, et al. 1996)	10,000	R-19	Attic	10%	35%
Residence	Cocoa Beach, FL	(Parker, D., J. Cummings, et al. 1994)	1,809	None	Attic	43%	38%
Residence	Sacramento, CA	(Akbari, H., S. Bretz, et al. 1993)	1,825	R-11	None	69%	32%

Increase Water Efficiency



US residential water consumption, by usage
(Source: AWWAFA)

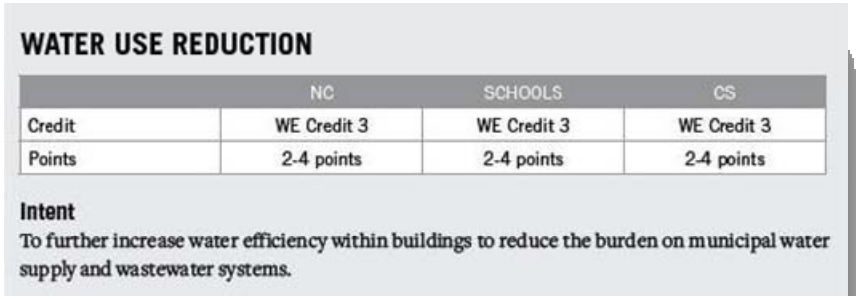


Residential Average Water Use
(Source: AWWARA)

WEp1/c3: Water Use Reduction

Requirements

- Employ strategies that in aggregate use 20% less water than the water use baseline calculated for the building
- 20% = prerequisite baseline;
- Does NOT include irrigation (separate credit).



WATER USE REDUCTION

	NC	SCHOOLS	CS
Credit	WE Credit 3	WE Credit 3	WE Credit 3
Points	2-4 points	2-4 points	2-4 points

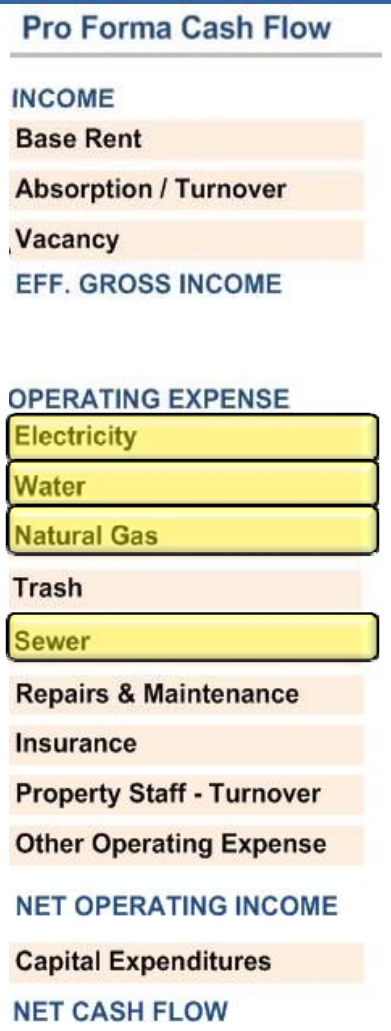
Intent

To further increase water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

WEp1/c3: Water Use Reduction

Impacts

- **Water: Reduced Cost**
- **Electricity: Reduced Cost**
  - Electricity is used to move water around in buildings, and for water heating (electric water heat only)
- **Natural Gas: Reduced Cost**
  - Gas is used to heat water
- **Sewer: Reduced Cost**
  - Water used must be disposed of through municipal or community sewage system



WEp1/c3: Water Use Reduction Evidence

***Marion Oliver McCaw Hall* (Seattle, WA)**

- Completed in 2003, this LEED- Silver building saves more than $100,000 a year in combined sewer/water costs, due to the implementation of a waterless urinal system.
  - Achieved WEc3.1
- Construction costs were reduced from a baseline building, due to the reduction in plumbing costs.

***"Crunching the Numbers"* Study**

- Completed in 2008,tthis study of a 200,000 laboratory facility showed that payback on investing in water efficiency to achieve WEc3 is less than 1 year for 3.1, and less than 3 years for 3.2.

WEc1: Water Efficient Landscaping

- Employ strategies that to reduce potable water consumption for landscaping by 50% (2 points), or eliminate potable water use for landscaping completely (4 points).

WATER EFFICIENT LANDSCAPING

	NC	SCHOOLS	CS
Credit	WE Credit 1	WE Credit 1	WE Credit 1
Points	2-4 points	2-4 points	2-4 points

Intent

To limit or eliminate the use of potable water or other natural surface or subsurface water resources available on or near the project site for landscape irrigation.

WEp1/c3: Water Use Reduction

Impacts

- **Water: Reduced Cost**
  - Reduction in potable water demand, via appropriate landscaping or greywater
- **Electricity: Reduced Cost**
  - Electricity used to pump water for irrigation
- **Sewer: Reduced Cost**
  - Irrigation water not infiltrated on-site is removed via storm water sewer
- **Repairs and Maintenance: Reduced Cost**
  - Native plants require less maintenance
  - Reduced irrigation system size reduces upkeep costs

WEp1+ WEc3: Water Use Reduction: Evidence

Xeriscaping Study (Las Vegas, NV)

- 5 yr study, by the Las Vegas Valley Water Commission; properties that converted conventional landscaping to xeriscaping received a payback of 2 -3 years.
- Both the reduction in water usage and maintenance and repair costs were considered.

Harvard Business School (Cambridge, MA)

- School installed a weather monitoring station to control and water plantings only when necessary.
  - The measure will save the school over $40,000 in annual water costs
  - Measure qualifies for WEc3.1
  - Given cost of capital, payback on investment for device is estimated At less than 5 years

Drip Irrigation System
(Credit: Sustainable Outdoors)

SSc6.1: Storm Water Quantity Control

Requirement

- Sites > 50% impervious: reduce storm water runoff by 25%+.
- Sites <50% impervious: post- development peak runoff must equal pre-development level.

STORMWATER DESIGN—QUANTITY CONTROL

	NC	SCHOOLS	CS
Credit	SS Credit 6.1	SS Credit 6.1	SS Credit 6.1
Points	1 point	1 point	1 point

Intent

To limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from stormwater runoff and eliminating contaminants.

Storm water control

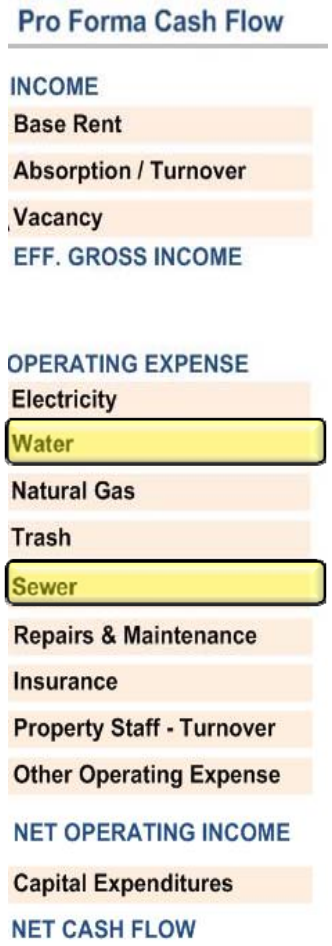
Bioswales reduce storm water runoff, provide passive irrigation, and also serve an aesthetic purpose (Credit: SvR Design Company)

A 20-home development in WA uses pervious concrete for on-site storm water infiltration. This eliminated the need for an on-site storm water catch basin. (Credit: SNOEDC)

SSc6.1: Storm Water Quantity Control

Impacts

- **Sewer: Reduced Cost**
  - Local jurisdiction may charge for storm water runoff
- **Water: Avoided Cost**
  - Controlling storm water for use to passively irrigate landscaping.
  - Using storm water for greywater:
  - Where permitted, can reduce water required for active landscape irrigation, toilets, custodial use, or building process water.



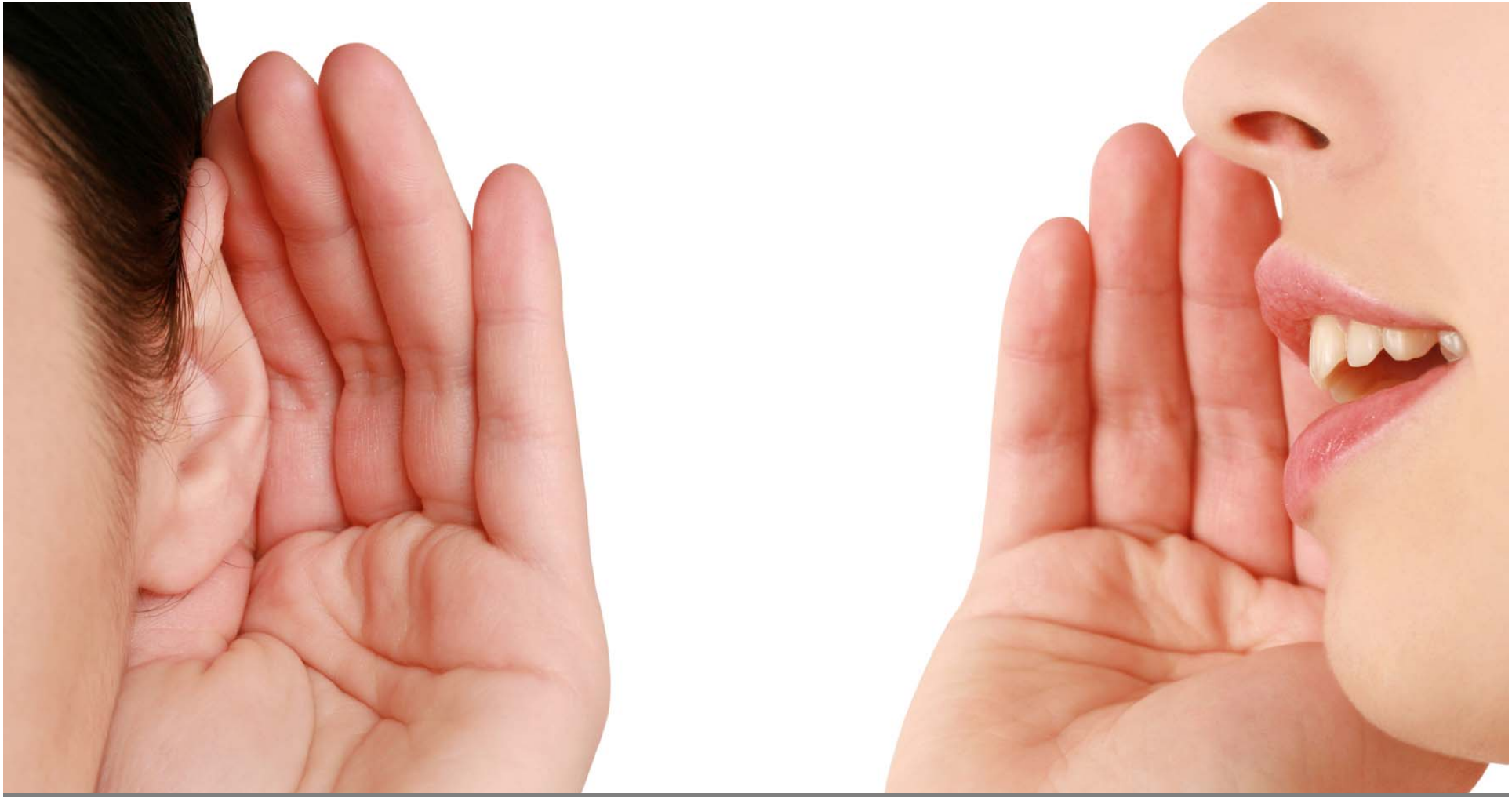
SSc6.1: Storm Water Quantity Control: Evidence

US EPA: *Low Impact Development ("LID") Study*

- Study of site development cost impacts of LID storm water management strategies
  - LID is a storm water management strategy that mitigates the impacts of increased runoff and storm water pollution.
  - Site design approach that promotes natural systems for infiltration, evapotranspiration, and reuse of rainwater.
- Findings: reduced construction costs for storm water management, same maintenance and repair costs, and overall reduced storm water volume.
  - Many LID approaches feature superior aesthetics, leading to potential increase in asset marketability.

Table 1. Cost Comparisons Between Conventional and LID Approaches

Project [a]	Conventional Development Cost	LID Cost	Cost Difference[b]	Percent Differnce[b]
2nd Avenue SEA Street	$868,803	$651,548	$217,255	25%
Auburn Hills	$2,360,385	$1,598,989	$761,396	32%
Bellingham City Hall	$27,600	$5,600	$22,000	80%
Bellingham Bloedel Donovan Park	$52,800	$12,800	$40,000	76%
Gap Creek	$4,620,600	$3,942,100	$678,500	15%
Garden Valley	$324,400	$260,700	$63,700	20%
Kensington Estates	$765,700	$1,502,900	-$737,200	-96%
Laurel Springs	$1,654,021	$1,149,552	$504,469	30%
Mill Creek[c]	$12,510	$9,099	$3,411	27%
Prairie Glen	$1,004,848	$599,536	$405,312	40%
Somerset	$2,456,843	$1,671,461	$785,382	32%
Tellabs Corporate Campus	$3,162,160	$2,700,650	$461,510	15%

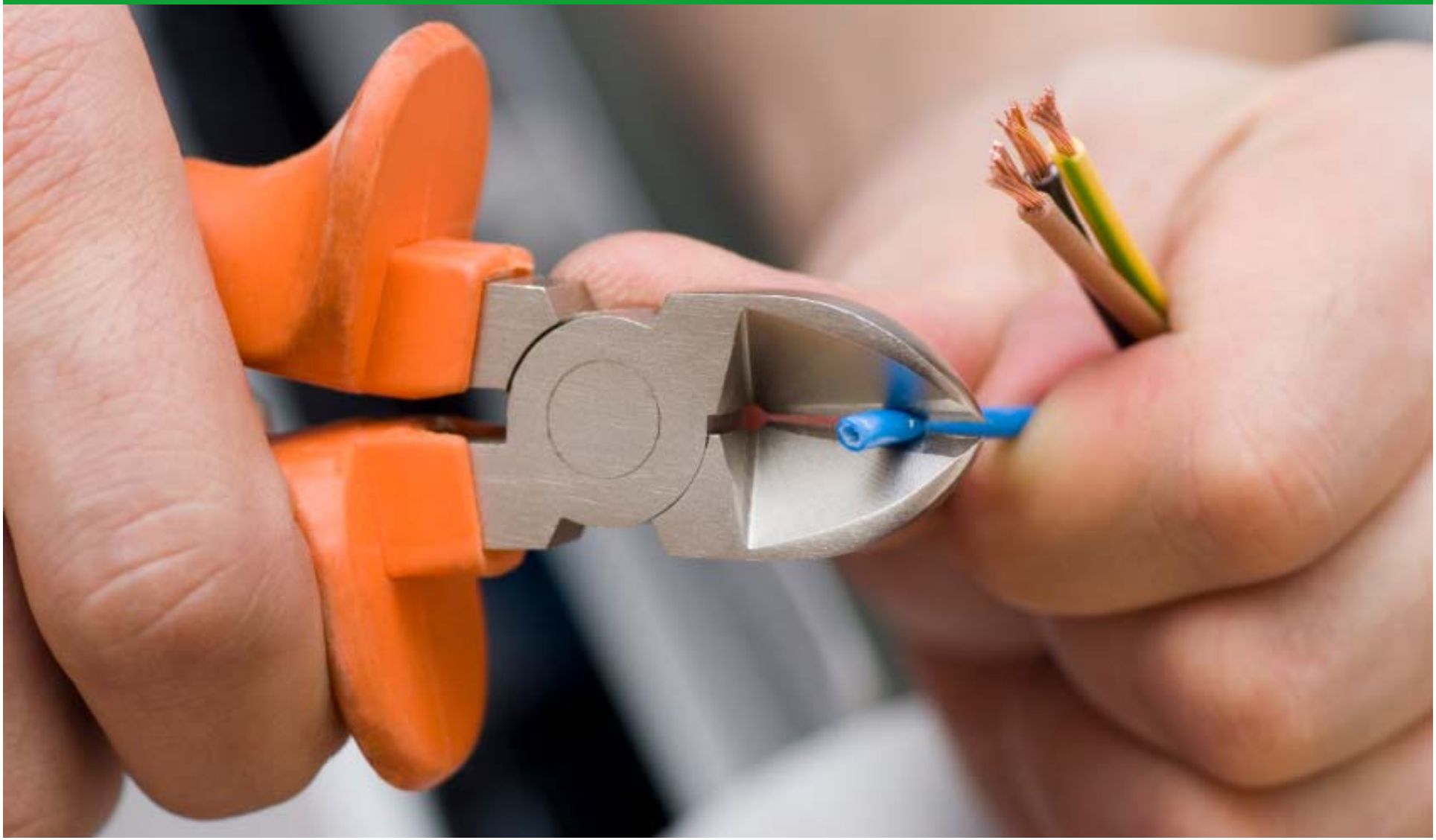


‘Measuring what matters’ reduces risk and preserves value

SECRETS OF VALUE PRESERVATION

A lot happens over an asset's lifetime

We work hard enough trying to preserve value as it is…



…so how do you know if those green strategies deliver what was promised?

You want to assure asset quality during the investment and beyond.

Make sure green strategies include performance measurement and verification

EAp1: Fundamental Commissioning & EAc3: Enhanced Commissioning

Requirements

- Commissioning ensures that building systems perform as they are intended.
  - Systems not commissioned will diminish resource efficiency and reduce useful life.
  - New buildings that do not undergo the commissioning process are likely to underperform their estimated energy performance.

FUNDAMENTAL COMMISSIONING OF BUILDING ENERGY SYSTEMS

	NC	SCHOOLS	CS
Prerequisite	EA Prerequisite 1	EA Prerequisite 1	EA Prerequisite 1
Points	Required	Required	Required

Intent

To verify that the project's energy-related systems are installed, calibrated and perform according to the owner's project requirements, basis of design and construction documents.

Benefits of commissioning include reduced energy use, lower operating costs, reduced contractor callbacks, better building documentation, improved occupant productivity and verification that the systems perform in accordance with the owner's project requirements.

ENHANCED COMMISSIONING

	NC	SCHOOLS	CS
Credit	EA Credit 3	EA Credit 3	EA Credit 3
Points	2 points	2 points	2 points

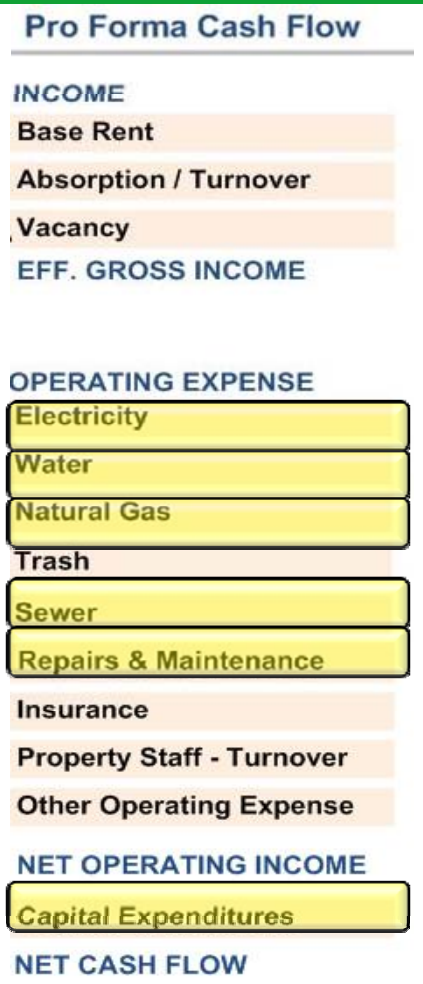
Intent

To begin the commissioning process early in the design process and execute additional activities after systems performance verification is completed.

EAp1: Fundamental Commissioning & EAc3: Enhanced Commissioning

Impacts

- Electricity: Reduced Cost
- Water: Reduced Cost
- Natural Gas: Reduced Cost
- Sewer: Reduced Cost
- Capital Expenditures: Avoided Cost



EAp1/c3: Commissioning Evidence

"The Cost Effectiveness of Commercial Building Commissioning"

- Lawrence Berkeley National Laboratories; 224 new construction building studied
- "Commissioning is the one of the most cost-effective means of improving energy performance in both new and existing buildings "
- For new construction, median commissioning costs were $1.00/ft^2 (0.6% total construction costs), avg payback less than 5 years
- When including one-time non-energy benefits, median commissioning benefits = $1.24/ft^2
- One-time benefits > commissioning cost
- Discovered avg 28 deficiencies/bldg

Credit: Nationwide Building Commissioning Service

Measurement & Verification

An airflow meter is used to measure airflow in a duct (Credit: NLCPR)

Sub-metering can track electricity use by system or building space, making it easier to identify system inefficiencies

EAc5: Measurement and Verification

Requirements

- Measurement and verification (M&V) ensures that systems perform as designed
- Allows building occupants/engineers to evaluate how energy conservation measures are performing.
- Very closely tied to commissioning efforts
- Post-construction: after initial commissioning, M&V process marks the beginning of continuous monitoring and commissioning process

MEASUREMENT AND VERIFICATION

	NC	SCHOOLS	CS
Credit	EA Credit 5	EA Credit 5	NA
Points	3 points	2 points	NA

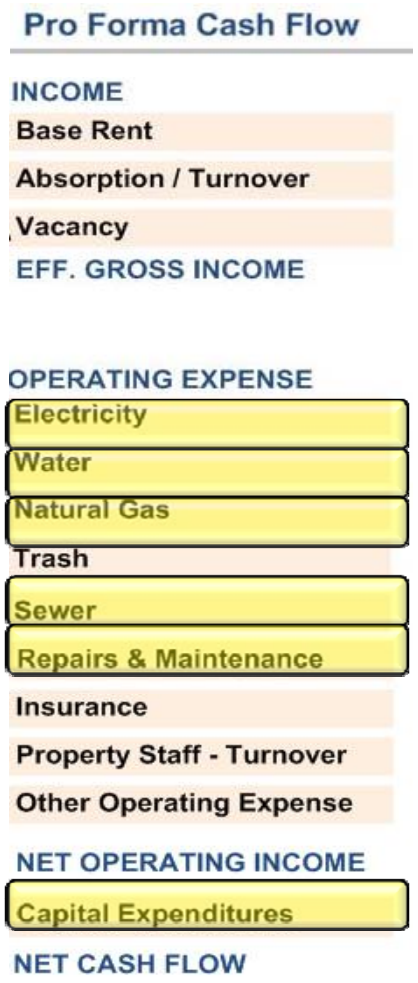
Intent

To provide for the ongoing accountability of building energy consumption over time.

EAc5: Measurement and Verification

Impacts

- **Electricity: Reduced Cost**
- **Water: Reduced Cost**
- **Natural Gas: Reduced Cost**
- **Sewer: Reduced Cost**
- **Repairs and Maintenance: Reduced Cost**
- **Capital Expenditures: Avoided Costs**
- M&V measures identify underperformance of specific bldg systems.
- Adjusting these systems results in lower operating costs, due to reduced energy, water use.
- Long term optimization prolongs the useful life of building systems, reducing capital expenditures

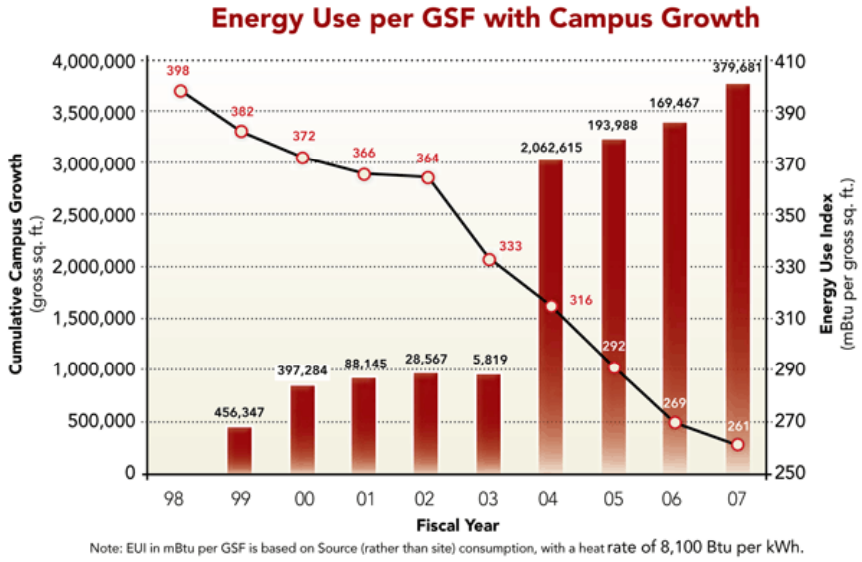


EAc5: Measurement and Verification: Evidence

Effectiveness of Continuous Commissioning: Savings for 10 Buildings at Texas A&M

(Texas A&M Study)

- Performance degradation can add $.50 PSF to annual operation costs
- When Continuous Commissioning was implemented on these 10 campus properties, cost savings of 20% to 30%, along with a payback of less than 3 years, was achieved.



Energy Use per GSF on Texas A&M Campus
(Credit: Song Deng, Energy Systems Laboratory)

LEED-NC & EBOM Synergies

LEED Building Design and Construction (LEED BD+C)		
Sustainable Sites		
	SSc6.1:	Stormwater Quantity Control
	SSc7.1:	Heat Island Effect (Non-Roof)
	SSc7.2:	Heat Island Effect (Roof)
Water Efficiency		
	WEp1:	Water Use Reduction
	WEc1:	Water Efficient Landscaping
	WEc3:	Water Use Reduction
Energy and Atmosphere		
	EAp1:	Fundamental Commissioning of Building Energy Systems
	EAp2:	Minimum Energy Performance
	EAc1:	Optimize Energy Performance
	EAc3:	Enhanced Commissioning
	EAc5:	Measurement and Verification
Indoor Air Quality		
	IEQc7.1	Thermal Comfort- Design
	IEQc8.1	Daylight and View- Daylight

LEED Existing Building Operations and Maintenance (LEED EBOM)		
Sustainable Sites		
	SSc6:	Stormwater Quantity Control
	SSc7.1:	Heat Island Effect (Non-Roof)
	SSc7.2:	Heat Island Effect (Roof)
Water Efficiency		
	WEp1:	Minimum Indoor Plumbing Fixture and Fitting Efficiency
	WEc1:	Water Performance Measurement
	WEc2:	Additional Indoor Plumbing Fixture and Fitting Efficiency
	WEc3:	Water Efficient Landscaping
	WEc4:	Cooling Tower Water Management
Energy and Atmosphere		
	EAp1:	Energy Efficiency Best Management Practices
	EAp2:	Minimum Energy Efficiency Performance
	EAc1:	Optimize Energy Efficiency Performance
	EAc2.1:	Existing Building Commissioning - Investigation and Analysis
	EAc2.2:	Existing Building Commissioning - Implementation
	EAc2.3:	Existing Building Commissioning - Ongoing Commissioning
	EAc3.1:	Performance Measurement: Building Automation System
	EAc3.2:	Performance Measurement: System-Level Metering
Materials and Resources		
	MRp1:	Sustainable Purchasing Policy
	MRp2:	Solid Waste Management Policy
	MRc2.1	Sustainable Purchasing-Durable Goods
	MRc6	Solid Waste Management- Waste Stream Audit
	MRc7	Solid Waste Management- Ongoing Consumables
	MRc8	Solid Waste Management- Durable Goods
	MRc9	Solid Waste Management- Facility Alterations and Additions
Indoor Air Quality		
	IEQc2.2	Controllability of Systems- Lighting
	IEQc2.3	Occupant Comfort- Thermal Comfort Monitoring

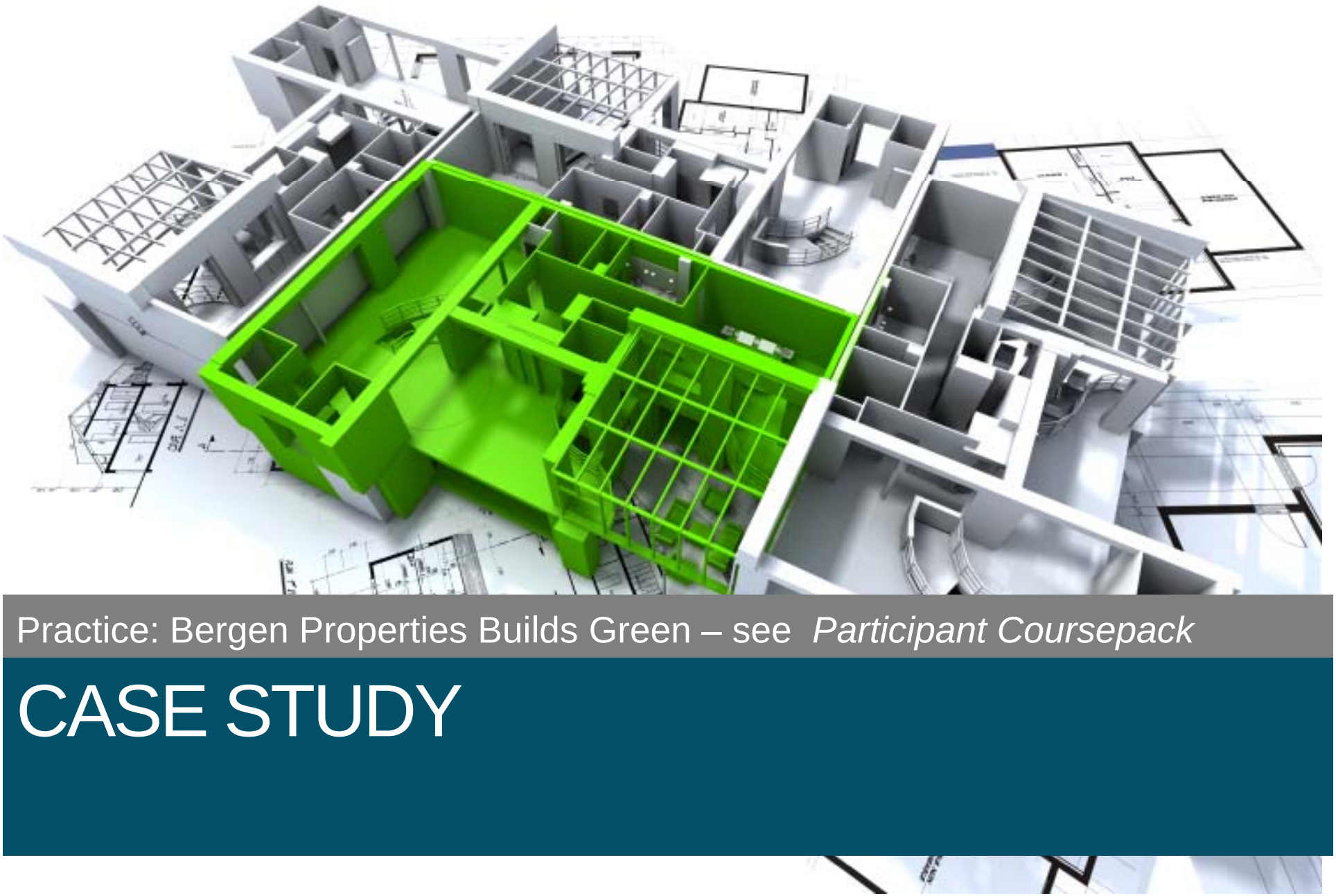
Is it possible to verify that performance checks and O&M procedures happen?

Construction is tough, but underperforming investments are worse.

Make sure green strategies include performance measurement and O&M

Measuring what matters preserves value.

Let’s take a break!



Practice: Bergen Properties Builds Green – see *Participant Coursepack*

CASE STUDY

How you can transform your marketplace

NEXT MOVES FOR PACESETTERS

1

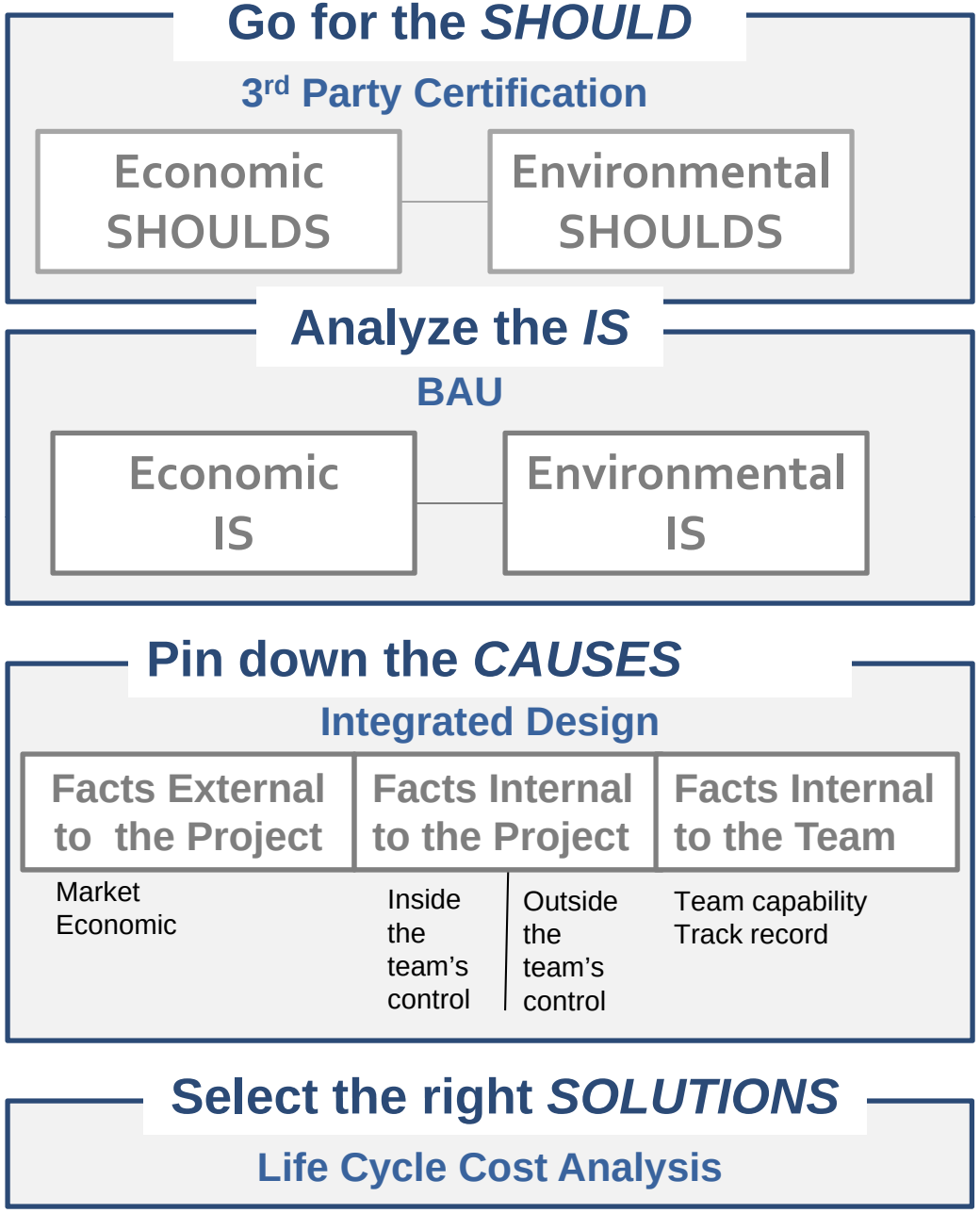
Ally with clients and partners on green value creation

2

Use research to discover the drivers for green investing in your region.

3

Use **GAPS** to structure, evaluate and communicate your green underwriting case.



4

Divide and conquer: group and rank rating criteria according to cash flow impact.

- Storm water
- Heat island
- Water efficiency
- Energy performance
- Daylight

Definite

- Commissioning
- Measurement and verification
- Thermal comfort

Indirect, but important

- Alternative transportation
- Increased ventilation
- Low-emitting materials
- Daylight - views

Intangible, “life quality”

5

Measure what matters to preserve value post-construction

6

Enjoy more successful investments and greater impact!

Galley Eco
CAPITAL

Thank you!