

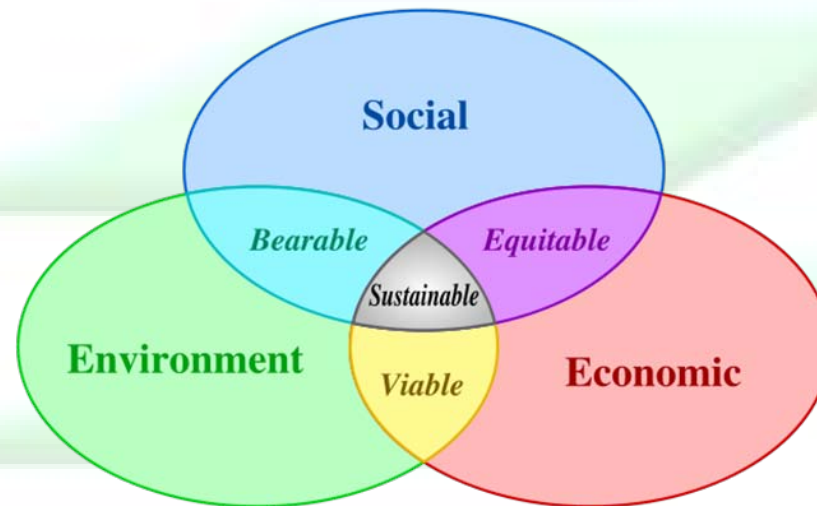
# Sustainability of Existing Buildings

Northern Virginia NAIOP

November 6, 2008

# SUSTAINABILITY

*Meeting the needs of the present without compromising the ability of future generations to meet their own needs*



# CARBON FOOTPRINT



# BUILDING CARBON FOOTPRINT

*A measure of the amount of carbon dioxide emissions directly or indirectly caused by a building*



Measure



Reduce



Offset

# Environmental Impact of Buildings

**In the United States, buildings account for:**

- 72% of electricity consumption
- 39% of energy use
- 38% of all CO<sub>2</sub> emissions
- 40% of raw materials use
- 30% of waste output
- 14% of potable water consumption

**Nearly 40% of global primary energy is used in buildings**



# Existing Building Impacts

Northern Virginia RSF Office/Industrial

Square Feet	250MSF
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Buildings	3,900
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**Premise: Upgrade from Energy Star 50 to 70**

Estimated Annual Savings/Reductions

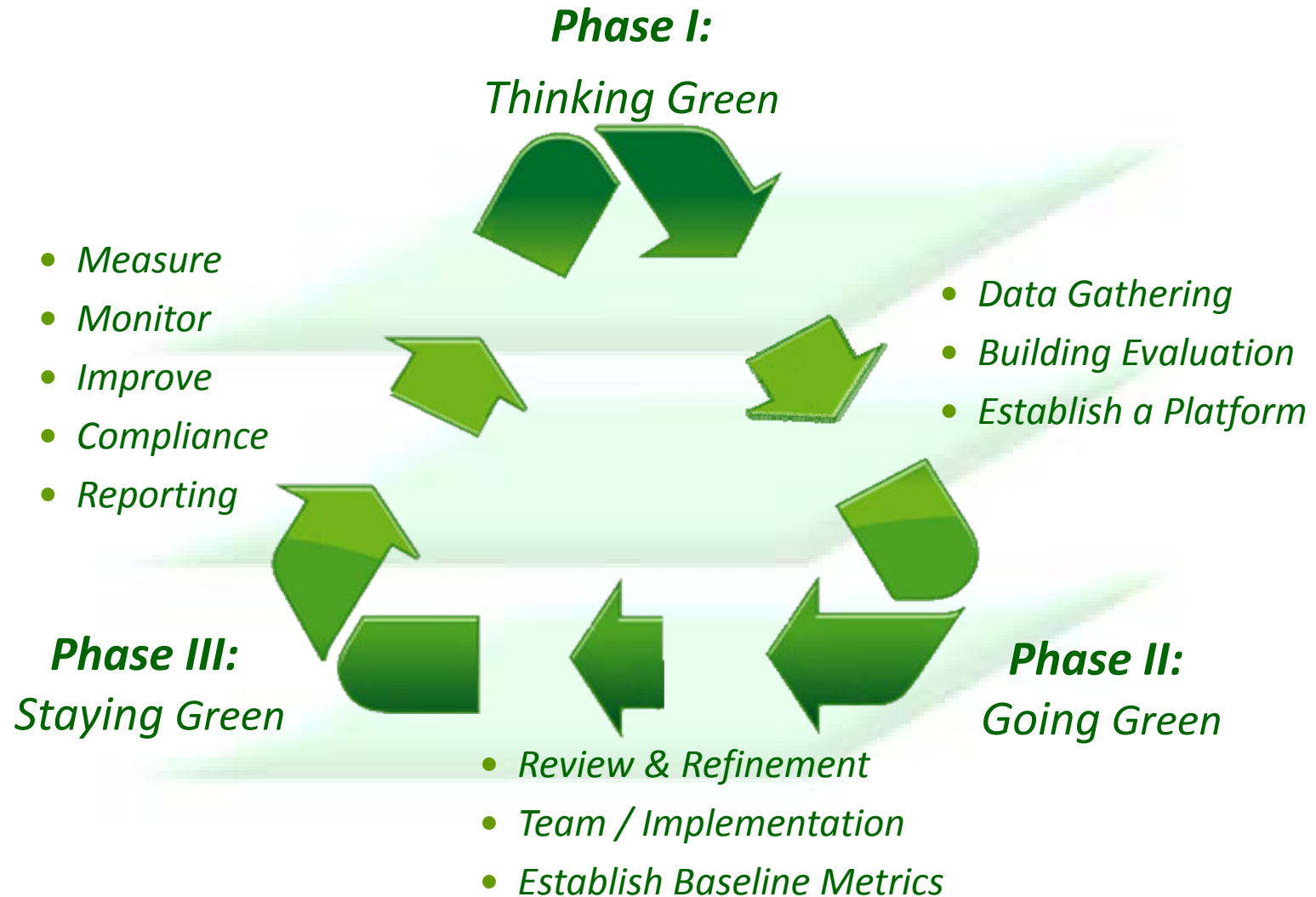
Energy Savings (megawatt hours)	1,180,851
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Energy Cost Savings	\$165.3M
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CO2 (Metric Tons)	587,340
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CO2 Reduction	21%
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# Sustainable Building Platform



# Phase I: Sustainable Bldg Assessment

## *Phase I:*

### *Thinking Green*



- Evaluate
- Identify
- Quantify
- Analyze
- Prioritize
- Sustainable Building Platform





# Typical Existing Building Conditions

- 10% to 30% higher resource use
- High equipment life-cycling rates
- Poor indoor air quality
- High materials consumption
- Poor operating policies
- Lower occupant productivity

ENERGY USE FOR  
OFFICE BUILDINGS



30% Lighting
25% Space Heating
16% Office Equipment
9% Water Heating
9% Space Cooling
11% Other

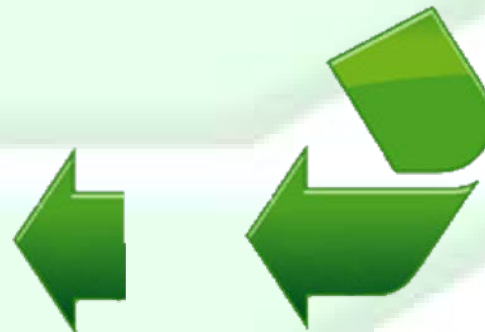
# READY SUSTAINABLE INITIATIVES

- Obtain Energy Star Rating
- Reduce resource consumption
- Increase efficiency
- Manage waste stream
- Implement policies
- Communication



# Phase II: Implementation

- Review/optimize
- Benchmarks
- Assemble team
- Prepare plans
- Policies/Guidelines
- Do It!
- QC
- Certify



- *Review & Refinement*
- *Team / Implementation*
- *Establish Baseline Metrics*

***Phase II:***  
***Going Green***

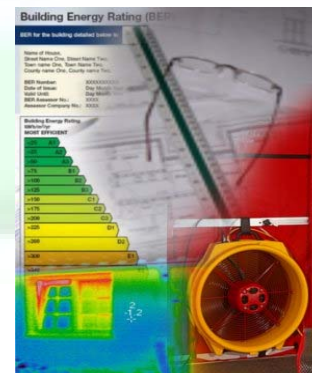
# Phase III: Monitor

- *Measure*
- *Monitor*
- *Improve*
- *Compliance*
- *Reporting*

***Phase III:***  
***Staying Green***



- Refine
- Measure
- Monitor
- Improve
- Comply
- Go to Phase I



# Sustainable Building Platform

