

**AGC NYS Construction Industry Conference  
Green Codes Panel**

December 10, 2014

Code development, sustainability,  
implementation, enforcement and  
practical connections to your work!

**Speakers**

- Jodi Smits Anderson – Moderator and LEED update
  - DASNY, the NYS public finance and construction authority
- Dottie Harris – Code Development perspective
  - International Code Council
- Shawn Martin –
  - International Code Council
- Robert Cordell – Enforcement Perspective
  - Consultant and President of the Capital District Building Officials
- Beth DiBattista – Implementation Perspective
  - Turner Construction

## Moderator and LEED update



- Jodi Smits Anderson –
  - Director of Sustainability Programs for DASNY, the Construction and Public Finance Authority of New York State.
  - Architect, LEED Accredited Professional in the Building Design + Construction specialty, GPRO Master Trainer
  - Dedicated volunteer with the NY Upstate Chapter of the USGBC.
  - She has spoken throughout the Upper NE Region on green building and sustainable choices
  - Her work for DASNY and New York state includes
    - setting and achieving aggressive green building goals,
    - assessing and improving DASNY business operations, and
    - collaborating on state policy work related to green procurement, green buildings and climate change.
  - Jodi's goal is to incorporate sustainable practices into as many elements of design, construction and living as possible, and to share whatever she has learned and learn still more from whomever will talk with her.

## LEED v4 SYSTEM GOALS

-  Reduce contribution to **global climate change**
-  Enhance individual **human health**
-  Protect and restore **water resources**
-  Protect and enhance **biodiversity and ecosystem services**
-  Promote **sustainable and regenerative** material cycles
-  Build a **green economy**
-  Enhance **community quality of life**

## LEED v4 SYSTEM GOALS



### **Impressive impacts.**

Increased thresholds in energy, water, waste and indoor environmental quality ensure that LEED v4 projects are driving the goals of green building farther than ever. The new Location and Transportation credit category tackles new territory, enabling LEED v4 buildings to advance sustainable communities and land use.

### **The future is health.**

LEED v4 takes a serious, increased focus on human health that goes beyond any other building system on the planet. Every story about a green building is a story about people.

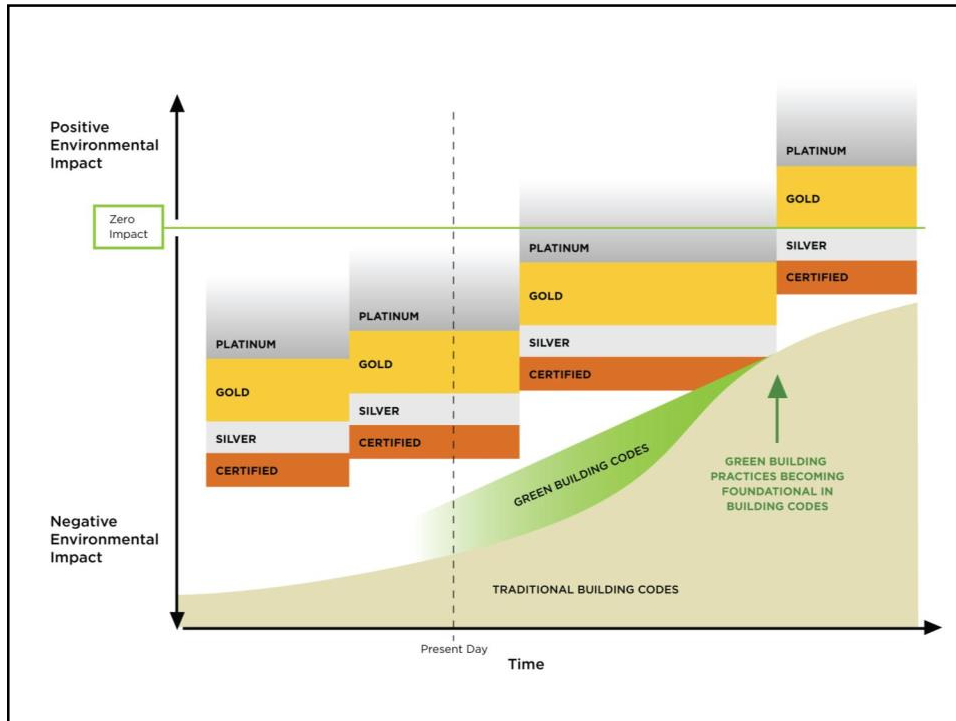
## LEED v4 SYSTEM GOALS

### **Materials matter.**

LEED v4 pushes forward a paradigm shift in how we think about materials. Life cycle assessment, environmental product declarations, and material ingredient reporting bring transparency to the manufacturing and decision-making process behind building materials. Using these mechanisms to make data-driven decisions is absolutely essential to building performance and human health.

### **Bringing it all together.**

The integrative design process is at the heart and soul of LEED v4, and guides project teams toward incorporating LEED v4's new features into their projects from the very beginning. And, with an increased focus on building performance, LEED v4 takes a closer look at the very real impacts that LEED buildings are driving forward. You can only get that experience through LEED.



## LEED V4 TECHNICAL IMPROVEMENTS INTEGRATIVE PROCESS:

To support **high-performance, cost-effective** project outcomes through an early analysis of the interrelationships among systems.

### Key Points:

- Early Systems thinking
- 2 or more options
- Commissioning
  - OPR
  - BOD



Source: A Handbook for Planning and Conducting Charrettes for High-Performance Projects, National Renewable Energy Laboratory, 2009



## LEED v4 TECHNICAL IMPROVEMENTS: LOCATION & TRANSPORTATION

### Highlights:

**New credit category** to improve alignment between commercial rating systems and LEED ND.

Historic and low income now part of High Priority Sites.

More performance-based credits with **improved ties to anticipated outcome.**

bicycle facilities [link to bike network]

quality transit [trip frequency, walking distance]



## LEED v4 TECHNICAL IMPROVEMENTS: SUSTAINABLE SITES



### Highlights:

New credit for **site assessment.**

**Financial support option** in protect or restore habitat.

**Major simplification** to Light Pollution Reduction credit through new option for BUG rated equipment.

### New terminology:

LID - Low Impact Development employs integrated solutions to rainwater management, seeks to reduce piped solutions and extend the life of the infrastructure.

BUG - Backlight-Uplight-Glare rating is a set of three numbers which describe how well a fixture controls and directs the light it emits.



## LEED v4 TECHNICAL IMPROVEMENTS: WATER EFFICIENCY

### Highlights:

Addressing **all water uses** including fixtures & fittings, process, appliance, cooling towers, and outdoor water.

Focus on measuring water use through **fundamental** building metering requirements.



Additional points in credit for **metering of subsystems**.



## LEED v4 TECHNICAL IMPROVEMENTS: ENERGY & ATMOSPHERE

### Highlights:

**Minimum Energy Performance:** five percent above ASHRAE 90.1-2010; minimum ENERGY STAR score now 75.

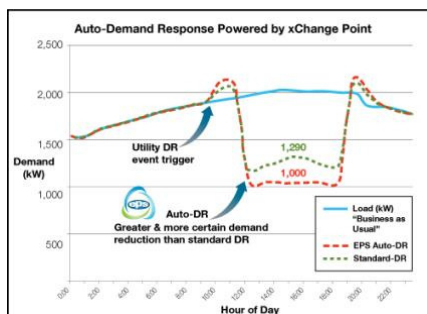
**New credit** for Demand Response.

Building level **energy metering** required for all projects.

### New Terminology:

BECx - Building Envelope Commissioning

"Something like two-thirds of litigation has to do with moisture in buildings. Commissioning helps mitigate the risk"





## LEED v4 TECHNICAL IMPROVEMENTS: MATERIALS & RESOURCES

### Highlights:

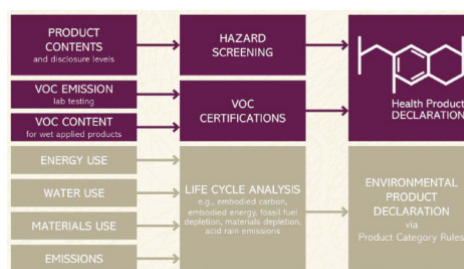
**Life cycle thinking approach** to category.

Optional **whole building life cycle assessment** for new construction.

Focus on product **transparency** and **outcomes** through Building Disclosure & Optimization credits.

### New Terminologies:

HPD – Health Product Declarations  
Whole Building Life-Cycle Assessment



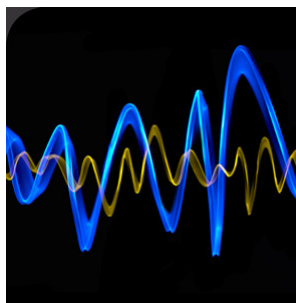
## LEED v4 TECHNICAL IMPROVEMENTS: INDOOR ENVIRONMENTAL QUALITY

### Highlights:

Category focused on key indicators of **air, light, sound, and occupant experience**.

More **performance-based credits** focused on health and wellbeing outcomes.

**Systems approach** to material emissions.



## Code Development

- Dottie Harris –
  - International Code Council
- Shawn Martin –
  - International Code Council



## Objectives

- This presentation is intended to communicate:
  - How the IgCC fits in the context of green building standards and rating systems
  - How and why the IgCC was developed
  - Unique aspects of the IgCC
  - Technical highlights of the IgCC
  - Where the IgCC has been adopted



## What is the IgCC?

- An Adoptable, Useable and Enforceable *code*.
- Intended to reduce the negative impacts of the built environment on the natural environment
- Addresses
  - Conservation of:
    - Natural resources
    - Materials
    - Energy
    - Water
  - Air & indoor environmental quality



## Developed By:



- IgCC developed by **ICC** in association with cooperating sponsors:
  - ✓ **AIA** and
  - ✓ **ASTM**
- References **ASHRAE 189.1-2011** as an *alternative compliance path*, as developed by:
  - ✓ **ASHRAE** and partners
  - ✓ **IES** and
  - ✓ **USGBC**





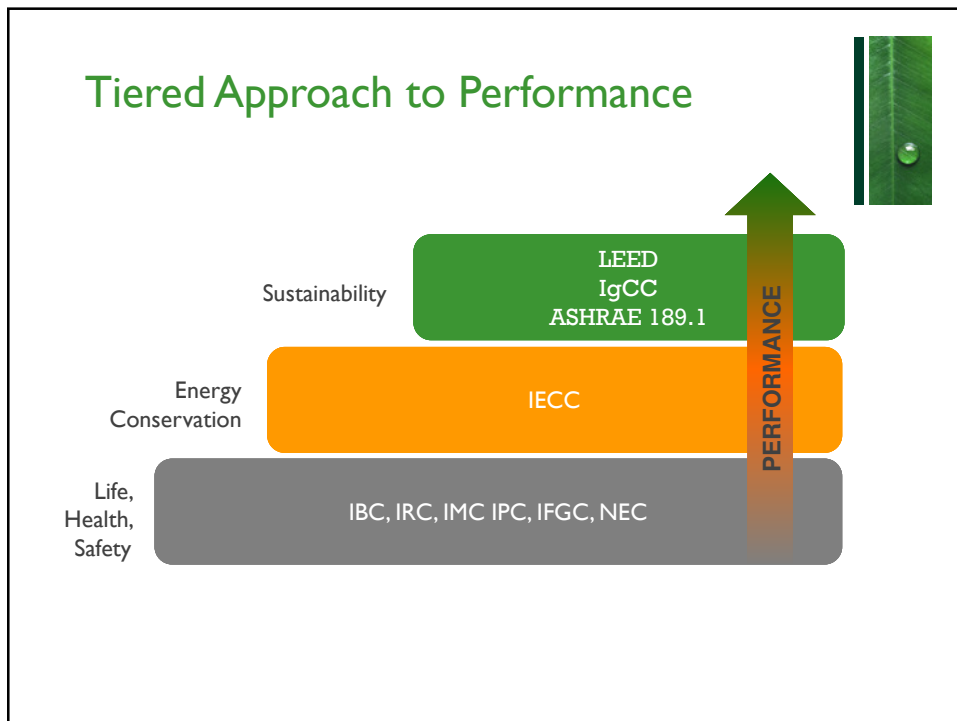
## IgCC Context

- Unlike USGBC's highly successful LEED programs, the IgCC was conceived and written with the intent to be adopted on a mandatory basis.
- Where adopted on a *mandatory* basis, the IgCC raises the floor of sustainability for all buildings – positioning the IGCC to achieve massive environmental benefits.



## IgCC Context

- The IgCC is *not* a rating system, nor is it intended to replace them.
- The IgCC is code which is intended to be adopted on a mandatory basis.
- The IgCC primarily consists of minimum mandatory requirements, just as other I-Codes.
- The IgCC contains a new regulatory framework that facilitates both jurisdictional customization and flexibility for owners and designers.

## IgCC Context

- List chapters and basic **AWESEOMELY IMPROVED** content high points on one or two slides



## Elective Requirements

Elective requirements provide vehicles to customize the code to regional priorities and issues.

- Environmental goals and priorities
- Geographic differences
- Infrastructure
- Local resources
- Local climate
- Site-level considerations



**Project elective allows use of ASHRAE 189.1 as alternate compliance path.**

## The IgCC is currently adopted in:

- Richland, WA
- Keene, NH
- Dallas, TX
- Maplewood, MN
- Ft. Collins, CO
- Boulder, CO
- Carbondale, CO
- Snowmass, CO
- Kayenta Township, AZ
- Boynton Beach, FL
- Phoenix, AZ
- Scottsdale, AZ
- Rhode Island
- Maryland
- Oregon
- Florida
- North Carolina
- Virginia



For more information see:  
[www.iccsafe.org/igcc](http://www.iccsafe.org/igcc)

**INTERNATIONAL CODE COUNCIL**  
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Navigation

- » Codes, Standards & Guidelines » International Green Construction Code

**International Green Construction Code**

The International Code Council (ICC), along with its Cooperating Sponsors, is pleased to announce the availability of the 2012 International Green Construction Code (IgCC).

Cooperating Sponsors:  
 American Institute of Architects (AIA)  
 ASTM International  
 ASHRAE  
 U.S. Green Building Council (USGBC)  
 Illuminating Engineering Society (IES)

**The IgCC is...**  
 The IgCC is the first model code that includes sustainability measures for the entire construction project and its site — from design through construction, certificate of occupancy and beyond. The new code is expected to make buildings more efficient, reduce waste, and have a positive impact on health, safety and community welfare.

**The IgCC provides...**  
 Building Green Requirements  
 The IgCC creates a regulatory framework for new and existing buildings, establishing minimum green requirements for buildings and

**IGCC**  
 SAFE & SUSTAINABLE BY THE BOOK



## The Procedures

- Code edition every 3 years
- 2012/2013/2014 Cycle: Codes in three groups, Group A, B and C, resulting in 3 one year periods of code development: 2015 Editions



## cdp ACCESS

- On line collaboration
  - Opportunity to “discuss” code change and public comment submittals
  - Opportunity to compare notes relative to CAH preparation
- On line code change and public comment submittal
  - Codes compiled in dBase
  - Develop code change/public comment and submit on line



## cdp ACCESS in 2014 - IgCC

- Remote voting
  - On assembly motions made at the Committee Action Hearings. Vote to occur following the hearings. All ICC members.
  - On Public Comment Hearings outcome. Vote to occur following the hearings. Governmental members only.
- For more information on cdp ACCESS go to the following link:  
<http://www.iccsafe.org/cdpACCESS>



## Questions & Answers

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## Enforcement

- Robert Cordell –
  - Consultant and President  
of the Capital District  
Building Officials

## Implementation

- Beth DiBattista –  
– Turner Construction

# SIENA

*THE TRUSTCO BANK CENTER*

*WHY SUSTAINABLE DESIGN IS THE RIGHT CHOICE  
MINI – CASE STUDY*



# Turner



**TRUSTCO BANK CENTER – MINI CASE STUDY**

**PROJECT GOALS:**

- Renovate existing Troop G Headquarters into a comfortable Administrative office building and spaces for Siena's ROTC program.
- Goal of LEED® Certification
- Design/Build Process- Turner/Synthesis

**LEED® GOLD ACCOMPLISHED  
AT NO ADDED COST**





**BEFORE** **AFTER**

**TRUSTCO BANK CENTER – MINI CASE STUDY**

The Trustco Bank Center uses **38% less energy annually**, than a baseline existing building; accomplished by high efficiency lighting and mechanical systems and thermally insulated walls and new windows.

**Bring in the commissioning agent/energy modeling (Novus Engineering)....**

- more than paid for itself
- created synergies – reduced lighting, downsized boiler- lowered operating costs
- NYSERDA incentives (New Construction Program)
- Ensured Owner systems are not only designed but function correctly



**BEFORE** **AFTER**

### TRUSTCO BANK CENTER – MINI CASE STUDY

#### POWER OF THE SOLAR POWER PURCHASE AGREEMENT....

- COMPETITIVE BID PROCESS LOCKED IN ENERGY RATE OF \$0.07/ KWH FOR 20 YEARS
- NO UPFRONT COST
- REDUCED DELIVERY & DEMAND CHARGES
- 50 KWH SYSTEM – ESTIMATED TO PRODUCE 61,326 ANNUALLY (over 11% of the buildings annual energy use) – IS OVER PRODUCING BY OVER 10,000 KWH
- 6 LEED POINTS ACCOMPLISHED



### TRUSTCO BANK CENTER – MINI CASE STUDY

The low flow fixtures used in this building reduce annual water consumption by 30%.

Bottle filler stations installed



BEFORE



AFTER

### TRUSTCO BANK CENTER – MINI CASE STUDY

- Abatement work performed allowed for Brownfield Credit and Regional Priority Point
- Over 95% of the existing exterior walls, floors and roof were re-used to avoid raw material extraction, carbon emissions and landfill waste
- Low emitting materials were used to support occupancy health and performance
- Approximately 75% of the construction waste was sorted and recycled or re-used in lieu of becoming landfill waste
- Materials with recycled content were used (10% of value of materials used) to limit use of raw materials and carbon emissions



### TRUSTCO BANK CENTER – MINI CASE STUDY



- Thank you
- QnA