

# THE DOLLARS AND SENSE OF SUSTAINABILITY CODES

NEW PARTNERS FOR SMART GROWTH  
CONFERENCE

SEATTLE, WA

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# **RECENT AND FORTHCOMING SUSTAINABILITY CODES**

**LEED-ND** (if coded)

- US Green Building Council

**SUSTAINABLE CODE DEVELOPMENT CODE**

- Rocky Mountain Land Use Institute

**ESSENTIAL SMART GROWTH FIXES FOR URBAN AND  
SUBURBAN ZONING CODES**

- EPA and others

**GREEN BUILDING CODE ASSESSMENT PROJECT**

- EPA and others

# SUSTAINABLE COMMUNITIES



- meet the needs of the present while ensuring that future generations have the same or better opportunities. *Brundtland Commission 1987*
- integrate and balance economic, environmental, and social goals.

# KEY FEATURES OF A SUSTAINABLE CODE?

- ❑ **Covers broader range of topics**
- ❑ **Integrates natural and man-made systems**
- ❑ **Draws on useful features of other code types (design, procedures, etc.)**
- ❑ **Based on a sustainable comprehensive plan and civic engagement vs. charrettes**
- ❑ **Tailored regionally to climate and ecology**



# HOW CAN A DEVELOPMENT CODE SUPPORT SUSTAINABLE?

- **Development codes CAN help**
- **address critical issues:**
  - **– CLIMATE CHANGE**
  - **– ENERGY CONSERVATION**
  - **– FOOD SUPPLY**
  - **– HEALTH**
  - **– WATER CONSERVATION**
  - **– SAFETY**
  - **– HABITAT PROTECTION**
  - **– AND OTHERS**



**RMLUI**  
ROCKY MOUNTAIN  
LAND USE INSTITUTE



# IMPLEMENTING SUSTAINABILITY PRINCIPLES THROUGH ZONING

- **REMOVE OBSTACLES**
  - > Increase height limits (wind turbines)
- **CREATE INCENTIVES**
  - > Density bonuses (green roofs)
- **REGULATE**
  - > Mandatory water-conserving landscaping



# ESSENTIAL SMART GROWTH FIXES FOR URBAN AND SUBURBAN ZONING CODES

- 11 chapters, each focused on a smart growth zoning element including:
  - Mixed-use zones
  - Parking requirements
  - Walkable places
  - Stormwater management
  - Annexation policies



# ESSENTIAL SMART GROWTH FIXES FOR URBAN AND SUBURBAN ZONING CODES

- Introduction
- Response to the Problem
- Expected Benefits
- Steps to Implementation
  - Modest Adjustments
  - Major Modifications
  - Wholesale Changes
- Practice Pointers
- Examples and References



# ESSENTIAL SMART GROWTH FIXES FOR URBAN AND SUBURBAN ZONING CODES



- Expected Benefits
  - Reduction of vehicle miles traveled
  - Efficient use of services and infrastructure
  - Higher-density form that supports transit
  - Increased tax base and tax revenue
  - Healthier people because of more opportunities to walk or bike

# Genesis: Green Building Code Assessment Project



Communities  
striving to “green”  
the built  
environment

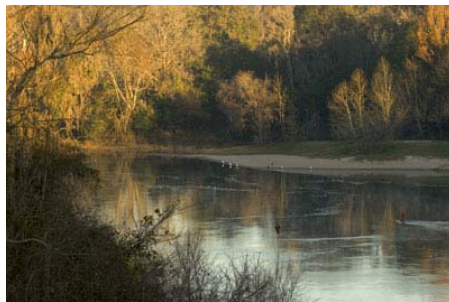


Codes and ordinances to  
these communities don't  
reflect “green” objective

# Genesis: Green Building Code Assessment Project

## City of Roswell, Georgia

- Roswell Green endeavor
- Encountered permitting barriers rooted in city building codes
- Approached EPA for help with codes



# Genesis: Green Building Code Assessment Project

## One-Stop Shop!

- Brings all resources together and connects them to appropriate code barrier
- Eliminates search for credible data in multiple green building areas



# Products of the Project



1. Comprehensive Green Building Code Assessment
2. Resources for Code Officials
3. Lean Event
4. Pilot by City of Roswell, Georgia

The logo consists of two horizontal bars. The left bar is orange and the right bar is green. The text "Green Building Code Assessment Tool" is written in a dark grey, sans-serif font across the green bar.

# Green Building Code Assessment Tool

How do you use it?

# Green Building Code Assessment Tool

- Organization
  - beyond LEED
  - draft IgCC structure as of September 2009



# I. Green Principles or Objectives



**Goal** Stating environmental purpose of subcategory

**Rationale** Explaining why the goal is important to a sustainable built environment

**Question** Relating current permitting process to goal



# II. Technologies and Techniques

## Strategies

Possible strategies for approaching goal in planning, design, or construction phases

## Code Barriers

Sections of building codes where barriers may be



[Image from: buildingcommissioning.wordpress.com/](http://buildingcommissioning.wordpress.com/)

# III. Code Assessment

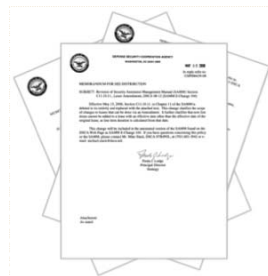
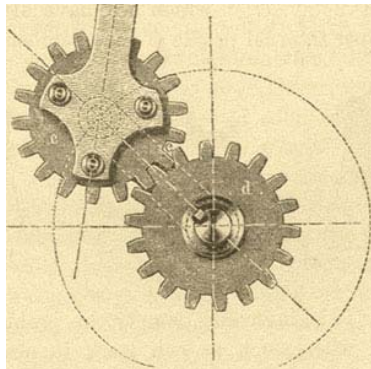


- How does the code address technology/ techniques for approaching goal?
  1. Required by code
  2. Incentivized
  3. Expressly allowed
  4. Code silent, but typically Approved
  5. Code silent, but not typically approved/approved only under certain circumstances
  6. Expressly prohibited

# IV. Resources

## Technical

- Handbooks/Manuals
- Databases specific to barrier category
- Specifications



## Policy

- Model ordinances/regulations
- Government incentive programs
- Innovative city resolutions

# Example

## A. 4. Heat Island Effect

### I. Green Principles or Objectives

**Goal** to reduce heat islands in order to minimize impacts on microclimates and human and wildlife habitats

**Rationale** buildings, roads, and other hard surfaces absorb and retain heat leading to an increase in surface temperatures. These higher temperatures contribute to higher energy costs, compromise human health and comfort, and increase air pollution. A way to mitigate heat islands is by reducing the absorptive capacity of roofs

**Question** how does the permitting process allow or prevent developers from utilizing building technologies or techniques that can reduce the heat absorption of roofs?

# Example

## A. 4. Heat Island Effect

### II. Technologies & Techniques

#### Strategies

ISLAND EFFECT REDUCTION could include vegetated roofs, roofing materials with a high solar reflectance index, or other high-albedo surfaces

#### Code Barriers

Potential areas of code barriers could include:

- + *Fire Prevention*
- + *Rooftop Structure*
- + *Structural Design*
- + *Wall Construction*
- + *Others Identified*

# Example

## A. 4. Heat Island Effect

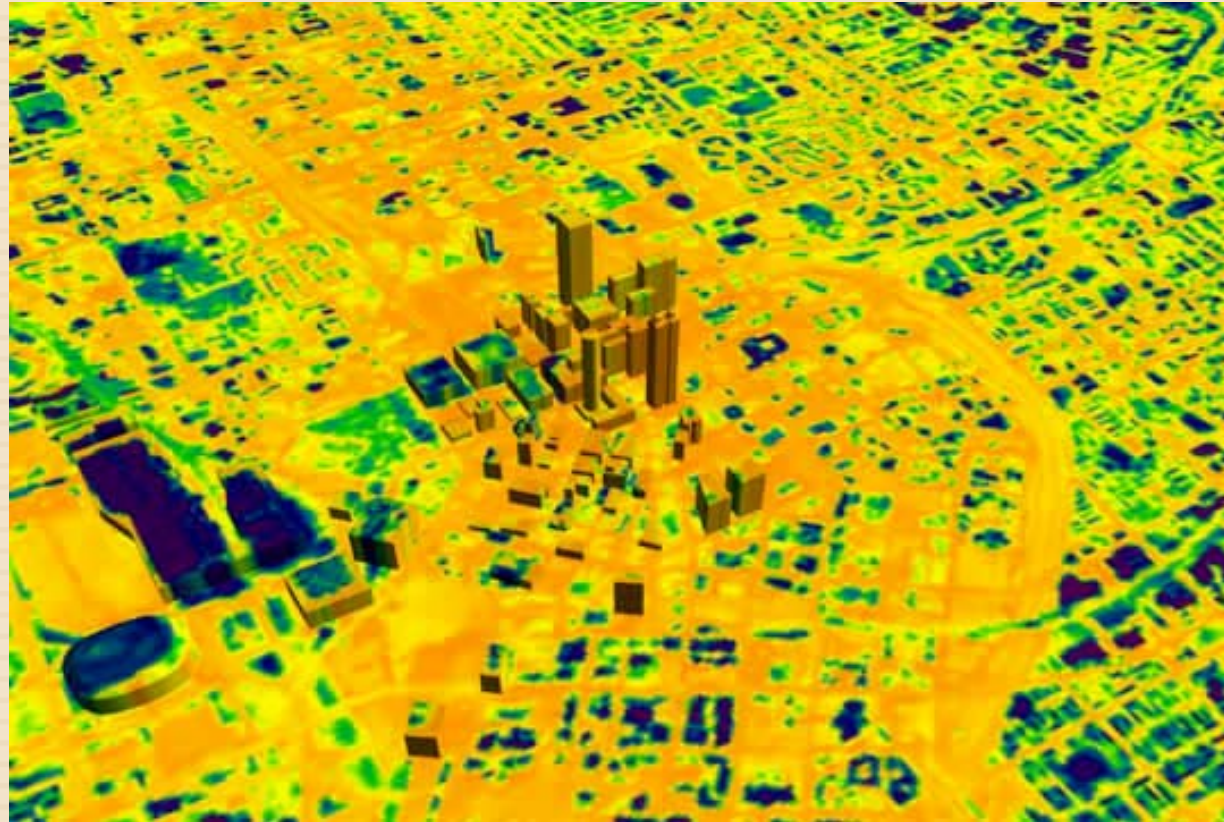
### II. Resources

#### Technical

- US EPA Reducing Heat Islands: Compendium of Strategies
- Heat Island Mitigation Impact Screening Tool (MIST)
- Green Grid Roof Systems guide and system specifications
- Cool Roofs Rating Council

#### Policy

- Chicago Building Code Section 18-13-303 “Urban Heat Islands” prohibits black roofs and establishes progressive SRI requirements
- Portland, OR City Resolution requires all new City-owned facilities to include a 70% coverage ecoroof AND 30% high reflectance materials



## FYI: Heat Island Effect in Atlanta

“Nighttime thermal imaging of Atlanta by NASA”

<http://www.inhabitat.com/2006/07/05/green-building-101-sustainable-sites/>

# Current Actions...



- January 2010 – release for external review & comments
  - Other EPA Regions
  - ICC community
- March 2010 – to be Web-ready

# Resources

- [www.roswellgov.com](http://www.roswellgov.com)
- [www.iccsafe.org/cs/igcc](http://www.iccsafe.org/cs/igcc)
- [www.usgbc.org](http://www.usgbc.org)
  - Info on 5 LEED Rating Systems
- [www.greenbuildexpo.org](http://www.greenbuildexpo.org)
- [www.greenplaybook.org](http://www.greenplaybook.org)
  - Playbook for green buildings, neighborhoods, and infrastructure
- [www.cascadiagbc.org](http://www.cascadiagbc.org)
- <http://libi.org>
- [www.greencommunitiesonline.org](http://www.greencommunitiesonline.org)
- [www.green.dc.gov](http://www.green.dc.gov)
- [www.epa.gov/smartgrowth/](http://www.epa.gov/smartgrowth/)
- [www.southface.org](http://www.southface.org)
- [www.egov.cityofchicago.org](http://www.egov.cityofchicago.org)
  - Search Green Permit Brochure
- <http://law.du.edu/index.php/rmlui>
  - See Rocky Mountain Land Use Institute's "Sustainable Community Development Code" document