

A green leaf graphic with a white vein, positioned at the top center of the slide, partially overlapping the green background and the top edge of the cityscape image.

# Green Ordinance Implementation City of Dallas, TX



City of Dallas  
BUILDING INSPECTION DEPARTMENT

# Phase 1 Effective Date

- **October 1, 2009**
  - Applications for building permits



# Structure

- One ordinance amending Chapter 52, Chapter 53 and Chapter 57 of the Dallas City Code
  - Ordinance 27131
- Resolution 08-1070, Green Building Program
- Available online at [www.greendallas.net](http://www.greendallas.net)



# Green Building Compliance Official

- The City's Building Official
- May establish regulations to administer the green building program



# Phased Program

Phase 1 — **effective October 1, 2009**

Energy efficiency and water conservation requirements for all new residential and commercial developments

Phase 2 — **effective October 1, 2011**

Comprehensive green building standard requirement for all new construction





# PHASE 1



City of Dallas  
BUILDING INSPECTION DEPARTMENT

## Mandatory Measures Effective **Oct. 1, 2009**


- **15%** higher energy efficiency than the 2006 International Energy Conservation Code (IECC)
- Meet at least **four** of the following water reduction requirements:
  1. The average flow rate for all lavatory faucets must be **2.0** gallons per minute
  2. The average flow rate for all showerheads must be **2.0** gallons per minute
  3. The average flow rate for all toilets must:
    - 3.1. be **1.3** gallons per flush;
    - 3.2. be dual-flush and meet the requirements of ASME A112.19.14; or
    - 3.3. meet the United States Environmental Protection Agency WaterSense specification and be certified and labeled accordingly.
  4. ENERGY STAR labeled dishwasher that uses **6.0** gallons or less per cycle
  5. ENERGY STAR labeled clothes washers with modified energy factor (MEF)  $\geq$  **2.0** and water factor (WF)  $<$  **5.5**
  6. Utilize drip irrigation emitters for all bedding areas of the landscape plan



- Requires submittal of a checklist from a selected green building standard
  - LEED, GreenBuilt north Texas or approved equivalent
  - Minimum number of points or certification not required
- 15% energy efficiency as proven by:
  - IC3 – Energy Systems Lab, Inc. certificate
  - HERS index of 85, or
  - Alternatively, to prove that the 15% requirement has been met, builders can use the following standards for compliance:
    - ENERGY STAR
    - Green Built North Texas
    - LEED H ,or
    - Approved equivalent standard



# Example: Certificate of Compliance



## Energy Certificate

for Single Family House

3 Dallas, TX 75251  
Dallas County

Owner: C  
Builder: C  
Date: 12/12/2007

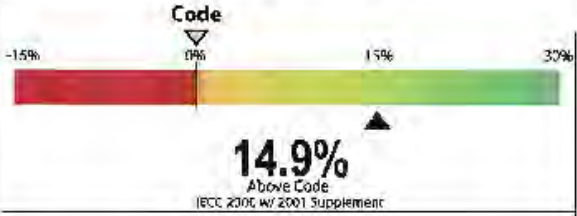
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**Emissions Reduction**

NOx:	6.71 lbs
SOx:	3.76 lbs
CO <sub>2</sub> :	52869 lbs

This house could save as much as 201.36 lbs NOx, 112.72 lbs SOx, and 158606.98 lbs CO<sub>2</sub> over the typical 30 year mortgage.


If only 10% of all new homes in Texas were like this home, Texas would save 53.7 tons NOx, 30.06 tons SOx and 42295.2 tons CO<sub>2</sub> a year!




**14.9%**  
Above Code  
IECC 2006 w/ 2001 Supplement

Floor Area:	50 x 60 = 3000 sq ft
Wall Height:	9 ft
Window Area:	263 sq ft
Orientation:	South
Wall Insulation:	80% R-15, 20% R-15
Ceiling Insulation:	R-38
Window Type:	J-CAS; SHGC-0.30
Heating:	Natural Gas AFUE-0.92
Cooling:	SEER 14
Water Heater:	EF-0.80

Inspector: \_\_\_\_\_



© 2007 Energy Systems Laboratory  
Texas Engineering Experiment Station  
The Engineering Agency of the State of Texas  
v2.0.8.1  
an e2Calc system





## New Commercial $\leq$ 50,000 sf

### Mandatory Measures Effective **Oct. 1, 2009**

- **15%** higher energy efficiency than Energy Code (2006 IECC)
  - **14%** if using LEED for compliance
- Water use **20%** reduction over EPA 1992 baseline
- Cool Roofs for slopes **2:12** or less to meet EPA ENERGY STAR
- Outdoor Lighting restriction



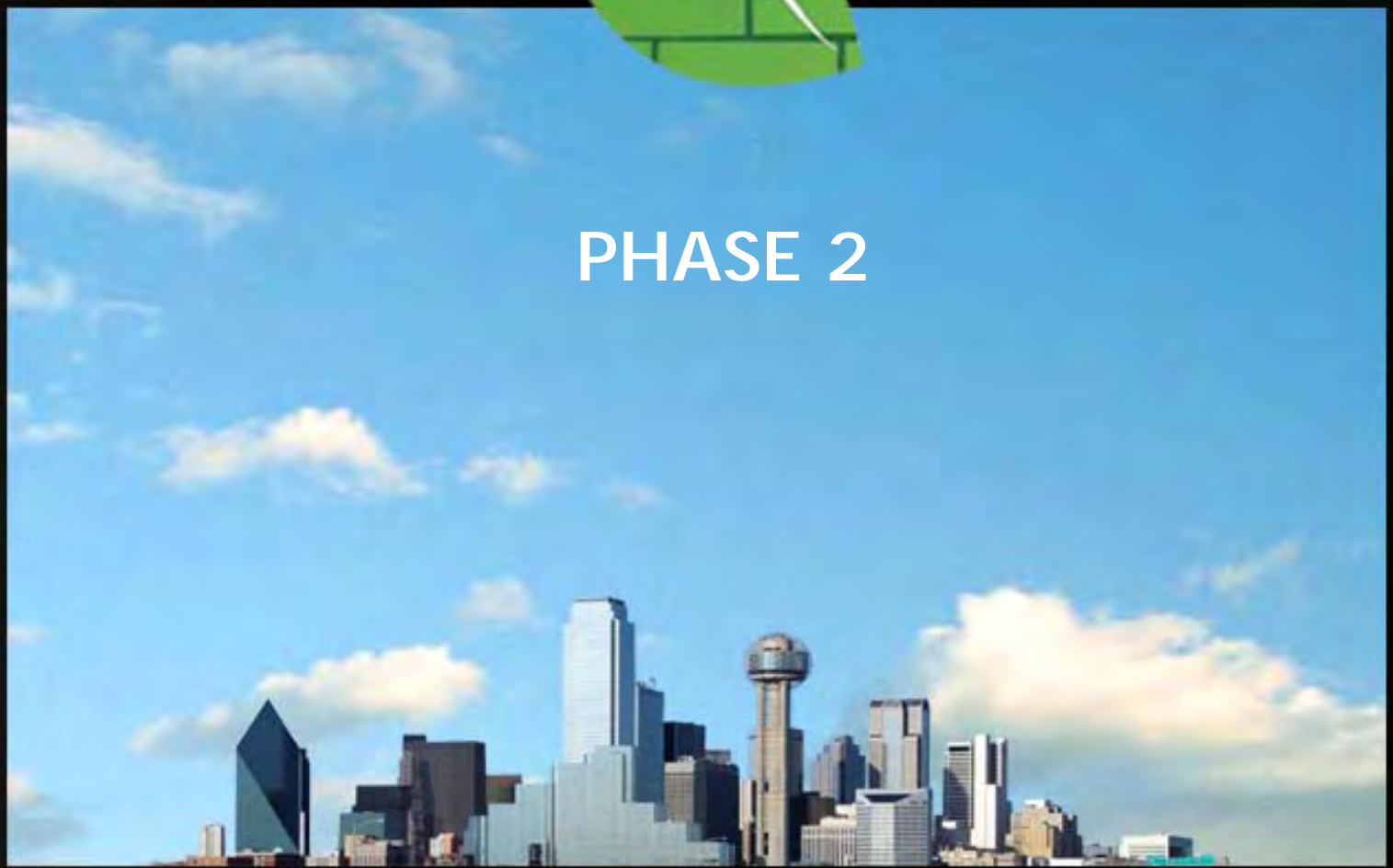
## New Commercial > 50,000 sf

- **85%** LEED certified level compliance under any of the applicable LEED rating systems or equivalent (ex. must achieve at least **22** LEED NC v2.2 points, **20** LEED CS, **22** LEED for Retail, **25** LEED for Healthcare, **25** LEED for Schools, or **38** LEED for Homes points)
- Points required must include:
  - **1** point under the water efficiency credit titled "Water Use Reduction (**20%** Reduction)"
  - A minimum of **2** points (**14%** better than ASHRAE 90.1-2004) under the energy and atmosphere credit titled "Optimize Energy Performance"
- Requires building owners to agree to utility companies releasing annual consumption data to City





# PHASE 2



City of Dallas  
BUILDING INSPECTION DEPARTMENT

# Mandatory Measures Effective Oct. 1, 2011

- **All New Residential Construction**

- All proposed projects must be **LEED H-certifiable**, **Green Built North Texas-certifiable**, or meet an equivalent minimum green building standard certified level
- **Points required for LEED H-certifiable must include:**
  - **1** point under the water efficiency credit titled "Indoor Water Use"
  - A minimum of **4** points (performance of ENERGY STAR for homes with a HERS rating of **83** or less) under the energy and atmosphere credit titled "Optimize Energy Performance"



- **All New Commercial Construction**
  - All proposed projects must be **LEED-certifiable** or certifiable under an equivalent green building standard at the minimum certification level
  - **Points required for LEED certifiable must include:**
    - **1** point under the water efficiency credit titled "Water Use Reduction (**20%** Reduction)"
    - A minimum of **3** points (**17.5%** better than ASHRAE 90.1-2004) under the energy and atmosphere credit titled "Optimize Energy Performance"



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Program Implementation  
*Building Dallas ~ Safe and Green*



# Implementation Strategy

- **Branding** of Program
  - “*Building Dallas ~ Safe and Green*” logo
  - General Green Building Information Brochure
- **Greening** of City Staff
  - Establish green team:
    - Green Building Code Program Manager
    - 3 Senior Green Building inspectors
    - 1 Senior Green Building Plans Examiner
  - Integrate green code into all aspects of building inspection operations
  - Train all plan reviewers and inspectors in green building



# Program Implementation

- **Developed** point system/checklist and review process for adopted standard
  - All checklists and scorecards based on LEED, incorporating City of Dallas pre-requisites
  - Posted on [www.greendallas.net](http://www.greendallas.net)
- **Created** a reference guide for the new program
  - Companion guidebook for scorecard
  - Step by step information to comply, submittal templates
  - Intent and strategy information for individual credits
  - Contact information
- **Provide** Tool Information online
  - EPA water sense
  - HERS index
  - LEED
  - Green Built Texas



# Program Components

- Checklists/Scorecards
  - Developed a project checklist and credit scorecard for each of the program areas:
    - New Residential Construction
    - New Commercial Construction less than 50,000 sf
    - New Commercial Construction over 50,000 sf
  - Streamlined, integrated in-house process for plan review and inspections
- Companion guidebook for commercial building program > 50,000 sf



# Program Implementation

- **Ongoing** measurement and verification
  - Use robust data and metrics
  - Easy to measure, report and track progress
- **Integrate** with existing management system
  - EMS - ISO 14001 Environmental management system
- Process of continuous improvement
  - Drive cultural change toward sustainability
  - Achieve Vision "Dallas Greenest City in the US"



# Training and Awareness

- Use of local USGBC chapter and partners to train
  - City Staff "Green Office" and Building Inspection
    - In turn train industry and public
    - Industry groups
- Ongoing taskforce groups
  - Monitoring program & continuous improvement



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# IMPLEMENTATION: Reference Standards



# Strategies for Implementation



**Stands for:  
Leadership in Energy &  
Environmental Design**

A system for designing, constructing, operating and certifying green buildings.

A product of the US Green Building Council



# LEED address the complete lifecycle of buildings:



BUILDING LIFECYCLE

DESIGN

CONSTRUCTION

OPERATIONS



# Green Built North Texas

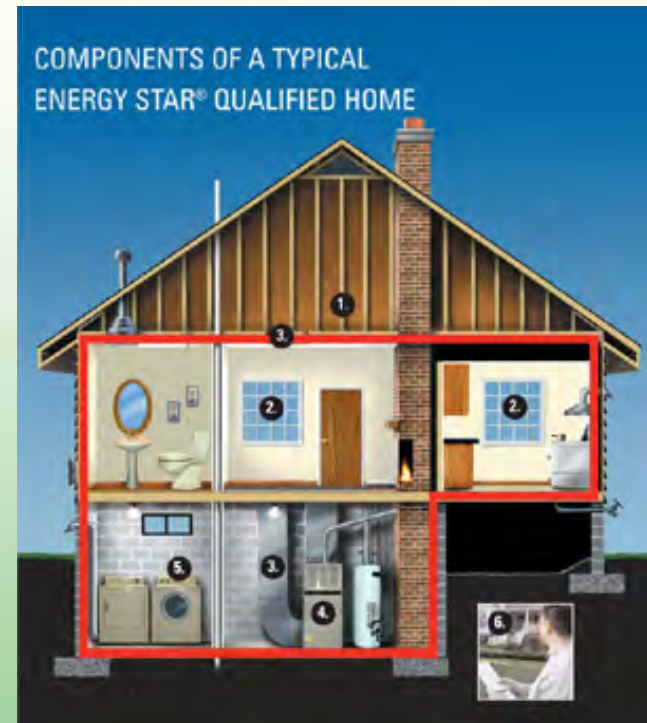


- **Greenbuilt's** resource-efficient, green homes follow guidelines set forth by the Home Builders Association's Green Built North Texas program.
- These guidelines address strategies for improving energy efficiency, water efficiency, indoor air quality, material usage, site management, waste recycling and cleaner electricity.



# Energy Star

- Features of a Qualified Homes
  - Effective Insulation
  - High-performance windows
  - Tight construction and ducts
  - Efficient Cooling and Heating Equipment
  - Lighting and Appliances
  - Third Party Verification





# Program Implementation:



# Permitting Documentation

- Application form provided by the City
- Must be filled out by Owner, Consultant, LEED AP or Developer
- Additional templates/worksheets/contracts may be necessary to provide supporting information for credits attempted



# Permitting Documentation

- Applicant must submit applicable green building program checklist and green building standard checklist, if applicable, with building permit application
- Design documentation must be approved by the **Senior Green Building Plans Examiner** prior to release of building permit



# Submit Application for Building Permit

- Detailed green building review will take place during the normal building permit plan check process
- **No additional fees** are required for green building plan review or inspections



# Information on the Plans

- Notes and specifications as required to meet the credits attempted or as required by the **Senior Green Building Plans Examiner**
- Other documentation as required to meet the credits attempted



# Permit issuance

- Building permit will be issued upon successful completion of plan review process
- Applicant must adhere to green building requirements during construction phase



# Permit issuance

- Changes in scope of green building measures by the applicant must be brought to the attention of the **Senior Green Building Plans Examiner** for review and approval
- If, as a result of any inspection, the City determines that the covered project does not comply with the approved plans, a stop order shall be issued if the **Senior Green Building Inspector** determines that continuation of the project will jeopardize the project's ability to meet the green code.



# Final Determination of Compliance

- Required prior to final inspection of the project
- Owners, Architects, LEED AP's, Engineers must have any and all required documentation submitted to the Green Building Team representative for approval prior to final green building inspection



# Unable to Meet “Final Determination of Compliance”?

- Requires request in writing to the Building Official
  - Applicable if waiting certification by US Green Building Council
- Non-compliant Project
  - Subject to fine
  - No final inspection until resolved
  - **No Certificate of Occupancy (CO) Issued!**



# Inspection – Build It Green

- City will provide inspections
- Applicants shall contact district office directly
- Green Building inspection requests may require advance notice
- Required inspections will vary based on construction credits attempted



# Inspection – LEED registered

- Must follow all certifying and procedural requirements of the USGBC for registered projects
- Must submit proof of USGBC registration to **Green Building Plans Examiner or Program Manager** at time of permit application
- Must meet Dallas Green Ordinance pre-requirements



# Inspection – LEED registered

- Applicant must provide **Green Building Program Manager** with online access
- City will make periodic inspections (non-complying projects shall be issued a Stop Work order)
- Applicant must submit proof of LEED certification to **Green Building Program Manager** within one year of receiving temporary CO to receive final CO



# Inspection – LEED city-certified

- LEED registration not required
- Applicants are *given the option* to register their project with the USGBC
- For projects over 50,000 sf of floor area, project documentation is substantially the same as for LEED
- **Green Building Program Manager** will be the repository for all green program documents
- All actions documented in **POSSE**



# Inspection – LEED city-certified

- Architect/engineer of record shall certify applicable credits (using City form)
- Building Commissioning or other credits that are a “prerequisite” for LEED projects are not required for city-certified projects



# Inspection – LEED city-certified

- Documentation for building commissioning or any other pre-requisite is required when these measures are included as a part of the designated points in the checklist



# Recognition

- Projects built to the standards specified in the City's Green Building Ordinance will be issued certificates of occupancy indicating that *"Building Dallas ~ Safe and Green program"* has been met, together with the applicable green building standard used for construction and the achieved rating and/or point total





#### Did you know?

All phases of buildings—building design, construction, materials and operation—consume more energy than any other part of the economy.

That's why green buildings are so important! Green buildings save energy and water while lowering greenhouse gas emissions and waste output.

#### From the beginning . . .

The City of Dallas recognized that ensuring a clean and healthy environment for people was a critical goal.

#### ...that led to committed action . . .

In January 2003, Dallas adopted a formal green building program for its own facilities which states that all new City-owned buildings over 10,000 square feet be built to Leadership in Energy and Environmental Design (LEED) Silver standards. The adoption made Dallas a national leader in actively working toward a healthier environment.

In 2008, Dallas went a step further to include private sector buildings. Dallas became one of the first major U.S. cities to pass a comprehensive building standard for both residential and commercial construction.



City of Dallas  
Building Inspection Department  
320 E. Jefferson Blvd., Room 204  
Dallas, Texas 75203



**Building Green**  
**Is Great**  
**for Dallas**

City of Dallas  
BUILDING INSPECTION DEPARTMENT

### Green building is . . .

In a nutshell, building a green Dallas charges us to preserve, conserve, reduce and improve environmental elements for healthier living. The Green Building Ordinance (ordinance #27131) phases in higher quality standards for new residential and commercial buildings. The ordinance specifies minimum building methods and materials that help Dallas:

- Improve air quality indoors and out
- Conserve energy and water usage
- Minimize waste of materials and in landfills
- Preserve natural resources
- Reduce storm water impacts on the environment
- Enhance human health



### What's in it for you . . .

The fact is – everyone benefits from building a green Dallas.

Research shows that builders and developers who build green are in demand. That's a market differentiator or competitive advantage. Newsworthy green development makes headlines and generates free publicity. Building permits are often fast-tracked for green buildings. Construction costs are minimized or offset when fewer materials are used and there is less waste to discard. The durability of green materials helps reduce client questions before and after the job is complete – and limits warranty callbacks.



Homeowners and office building owners gain advantages, too. Utility bills are lower due to energy and water conservation measures. Inside space is more comfortable because temperatures remain even throughout rooms and result in fewer drafts and better humidity control. Green materials are durable, so you spend less time maintaining the structure and doing repairs. Green materials also have a longer useful life. Cleaner inside air enhances your health.

Dallas and our entire region also benefit. Being environmentally conscious and at the forefront of building green attracts new people and businesses to our area. That translates into a stronger economy and area growth. In 2003, Dallas began building city structures green – saving tax dollars, conserving energy, preserving resources and setting a positive example.

Overall, green building can reduce:

- Energy use by 24 to 50 percent
- CO<sub>2</sub> emissions by 33 to 39 percent
- Water use up to 40 percent
- Solid waste up to 70 percent.

*That's powerful!*



### Moving forward . . .

The first phase of Dallas' Green Building Ordinance #27131 goes into effect on October 1, 2009. The second phase initiates on October 1, 2011. This schedule allows appropriate time for planning and resourcing to build green in Dallas.

Whether you are a builder, developer, architect, construction materials provider, business or a citizen planning new construction, everyone shares responsibility in making Dallas the cleanest, greenest city in the nation. The City of Dallas is committed to building green and hopes you'll build green too.

*"Using an eclectic mix of actions, technological improvements, policies and educational outreach, the City of Dallas is boldly committing itself to a future in which a strong environmental ethic fosters both healthy urban lifestyle and an economy unhampered by preventable environmental impacts. We ask you to be part of the change."*

- Mary Suhm, City Manager, Dallas



For more information . . .

Visit online at [GreenDallas.net](http://GreenDallas.net)  
click on *Green Buildings*  
or call 214-948-4480.