

A stylized green leaf with a white vein, positioned at the top center of the slide, partially overlapping the dark green background and the top edge of the central image frame.

City of Dallas  
Green Building Program  
Commercial  
**PROVIDER TRAINING**



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# Provider Training Program

## Presenters

Meenal Chauk

Eddie Small



# Provider Training Program

## Agenda

**Module 1:** Green Building Program General & Phase 2 Commercial Code Provisions

**Module 2:** Permitting Process & Provider Program

**Lunch**

**Module 3:** Plan Review and Inspection, Q&A and Discussion

**Module 4:** Exam



# Module 1

## Green Building Program General & Commercial Code Provisions



## Why have an Ordinance?

- Create awareness of the positive benefits of green buildings
- Encourage building owners, design professionals, and builders to incorporate green building design strategies, construction practices, and operations in all proposed projects
- Encourage conservation and efficient use of natural resources, water, and energy
- Reduce heat island effect



# Code Adoption Process?

- Volunteer task force of diverse stakeholders: design professionals, contractors, owners, developers, building organizations, property managers, realtors, third party providers and city staff
- Tasked with researching green building programs, codes and standards and recommending best path for Dallas
- Two work groups: commercial and residential
- Met weekly for 4 months



- **Ordinance 27131**; Resolution 08-1070- adopted April 9, 2008, establishes the Green Building Program and amends Chapter 52 “Administrative Procedures”, Chapter 53 “Dallas Building Code” and Chapter 57 “Dallas One and Two Family Dwelling Code”
  - **Ordinance 27759**; Resolution 09-2986-adopted December 9, 2009 amends water provisions and includes green roofs;
  - **Ordinance 28386**; Resolution 11-2564- adopted September 28, 2011 amends water and energy provisions; delays phase 2 and adds third-party verification;
- **Ordinance 28813**; Resolution 12-2428- Adopted September 26, 2012 updates and delays Phase 2, and adds Chapter 61 “Dallas Green Construction Code”
- **Ordinance 30327**; Resolution 17-0212- Adopted March 01, 2017 adopts the 2015 Edition of International Green Construction code.



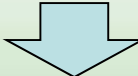


Phase 1

**Green Building Program established by  
Resolution #08-1070 & Ordinance 27131**



**Amendments**  
2009 - Resolution #09-2986 & Ordinance 27759  
2011 - Resolution #11-2564 & Ordinance 28386



Phase 2

**Green Construction Code  
Chapter 61 of Dallas City Code**  
2012- Resolution #12-2428 & Ordinance 28813



**Green Construction Code  
Chapter 61 of Dallas City Code**  
2017- Resolution #17-0212 & Ordinance 30327



## 2008 Task Force Recommendations

- **Two-phase** implementation strategy

**Phase 1**

· effective **October 1, 2009**



**Phase 2**

· effective **October 1, 2013**



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# 2009 Changes to Building Code

## Phase 1 – Three Different Programs

- New and Additions to Single Family and Duplex
- New and Additions to Commercial Buildings under 50,000 Sq. Ft.
- New and Additions to Commercial Buildings over 50,000 Sq. Ft



## 2009 Amendment

- Amends 2008 Ordinance
- Adds water provision options to include:
  - minimum requirements of Green Built Texas or at least 6 points of LEED for Homes
- Allows for green cool roof option:
  - vegetated roof that covers at least 50 percent of the roof area with the remainder of the roof area complying with the cool roof code provision



## 2011 Amendment

- Amends 2008 Ordinance
- Delays **Phase 2** until October 2012
- Recommends modifications to Phase 2
  - Permits LEED v3 or later
  - Requires compliance with IECC 2009 for energy requirements
  - Adds Third Party Provider program



## 2012 Amendment

- Delays **Phase 2** until October 2013
- Expands Dallas City Code by adding new Chapter 61 based on 2012 IgCC
  - Modifies Chapters 52, 53, 57
- Significantly upgrades green building program requirements
- Upgrades compliance to codes, standards cited in effect at the time ordinance passed



# 2012 Changes to Green Building Code

## Phase 2 – Two Different Programs

- New and Additions to Single Family and Duplex
- New and Additions to Commercial Buildings – of any size!



# 2012 Changes to Green Building Code

## Compliance path for Commercial:

- The Dallas Green Construction Code - Chapter 61 -2012, or
- LEED 2009 or later, or
- ASHRAE 189.1 - 2011





# 2015 Changes to Green Building Code

## Compliance path for Commercial:

- The Dallas Green Construction Code - Chapter 61 -2015, or
- LEED Version 4, or
- ASHRAE 189.1 - 2014



# LEED v4 Compliance path:

Meet Min # points for certified level



• certification by USGBC not required

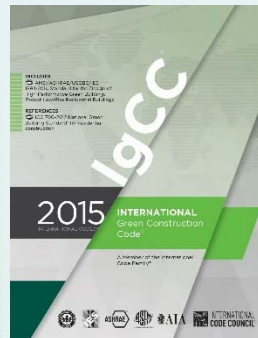
Water

• 20% Water Use Reduction



# Chapter 61

Meet All Min.  
requirements



- Chapters 3, 4, 5, 7 & 8
- Deletes Chapters 2, 6, 9, 10 & 11

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# Who makes final decisions?

Dallas Chief Building Official, or  
designated representative

What is the Building Official's role?

- To establish green building regulations
- To administer the green building program



# Building Codes

Where can Dallas City Code information be found?

- On Dallas website  
[https://dallascityhall.com/departments/sustainabledevelopment/buildinginspection/pages/know\\_code.aspx](https://dallascityhall.com/departments/sustainabledevelopment/buildinginspection/pages/know_code.aspx)
- Contains amendments to the Building Codes, for example:
  - Chapter 53 contains Dallas amendments to the IBC.
  - Chapter 57 contains Dallas amendments to the IRC



# Dallas City Code

- Based on the 2015 I Codes, Electric code (NEC 2017), 2003 Dallas Existing Building Code and fire (2015 IFC)
- Green Building Ordinance modified or expanded certain City Codes
  - Chapter 52 Administrative Procedures
  - Chapter 53 Dallas Building Code
  - Chapter 57 Dallas One- and Two-Family Dwelling Code
  - Added Chapter 61 Dallas Green Building Construction Code



# Dallas City Code

- Chapter 61 Dallas Green Construction Code
  - Overlays City Code Chapters 52, 53, 54, 55, 56, 57, 58, 59, and 60



# Energy Provisions

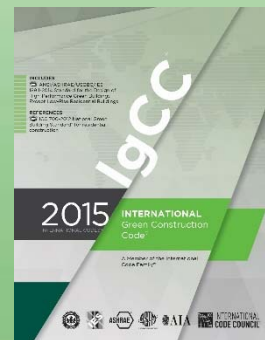
- Compliance with requirements of the current Dallas Energy Code
  - Current: 2015 IECC





## Reminder

- Energy inspections required by the energy code not green building code
- Energy inspections are separate activity from the Green Building plan review and inspections



# Definitions

- Dallas City Code definitions prevail
  - Undefined terms are defined by the Building Official
  - Terms in alternate and residential compliance paths may conflict with code definitions
    - Rating systems, voluntary standards, and trade association definitions may be different
    - Comply with definitions in City Code where conflicts occur
    - City code definitions prevail



## Why is it necessary to know code definitions?

- To understand how a jurisdiction defined terms
- To know definition changes under the 2015 codes
- To know differences between code definition and definitions used by green building rating programs and trade associations
- To know how the City of Dallas has defined terms and the appropriate application
- To be able to interpret building provisions correctly



# Definitions

The provisions of *Dallas One- and Two-Family Dwelling Code* apply to the construction, *alteration*, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one and two family dwellings, townhomes, and townhouses not more than three stories above *grade plane* in height with a separate means of egress and their *accessory structures*

\* IRC R101.2



# Definitions

Residential Group R: The use of a building or structure, or portion thereof, for sleeping purposes when not classified as Institutional Group I or when not regulated by the IRC

- **R-1**: Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:
  - Boarding houses (*transient*) with more than 10 occupants
  - Congregate living facilities (*transient*) with more than 10 occupants
  - Hotels (*transient*)
  - Motels (*transient*)



- **R-2:** Residential occupancies containing *sleeping units* or more than two *dwelling units* where the occupants are primarily permanent in nature including:
  - Apartment houses
  - Boarding houses (nontransient) with more than 16 occupants
  - Congregate living facilities (nontransient) with more than 16 occupants.
  - Convents
  - Dormitories
  - Fraternities and sororities
  - Hotels (nontransient)
  - Live / work units
  - Monasteries
  - Motels (nontransient)
  - Vacation timeshare properties



# Definitions

- **R-3:** Residential occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, or R-4, or I, including:
  - Buildings that do not contain more than two dwelling units
  - Boarding houses (nontransient) with 16 or fewer occupants
  - Boarding houses (transient) with 10 or fewer occupants
  - Care facilities that provide accommodations for 5 or fewer persons receiving care
  - Congregate living facilities (nontransient) with 16 or fewer occupants
  - Congregate living facilities (transient) with 10 or fewer occupants



- **R-4:** Occupancy includes buildings, structures or portions thereof for more than 5 but not more than 16 persons, excluding staff, who reside on a 24 hour basis in a supervised residential environment and receive custodial care. Buildings of Group R-4 shall be classified as one of the occupancy conditions specified in Section 310.6.1 or 310.6.2. This group shall include, but not be limited to, the following:

- Alcohol and drug centers
- Assisted living facilities
- Congregate care facilities
- Convalescent facilities
- Group homes
- Halfway houses
- Residential board and care facilities
- Social rehabilitation facilities

Requirements for construction same as Group R-3, except as otherwise provided in code





- **HERS Index**: Home Energy Rating System. measures residential energy efficiency
  - Exterior walls above and below grade
  - Floors over unconditioned spaces
  - Ceilings and roofs
  - Attic, foundations, crawlspaces
  - Windows and doors, vents, ductwork
  - HVAC system, water heating system, thermostat
- **MERV Filter**: Minimum Efficiency Reporting Value, number relative to air filter efficiency
  - Number between 1 and 16
  - The higher the value, the greater the capability of removing extremely small contaminants
  - Higher values create more resistance to air flow; denser filter media
  - Filter density coordinated with HVAC unit



## Green Building Code:

- A design and construction code
  - Design professionals, contractors, and owners have responsibilities to fulfill
- Commercial and residential programs
- Plan review and inspections for projects requiring permits
- Third Party Green Provider performs plan review and inspections



# Chapter 61 Dallas Green Construction Code:

- Changes Phase 2 from LEED base to Code base program
  - IgCC 2015 Chapters 1, 3, 4, 5, 7, 8, 12 modified for Dallas
  - IgCC 2015 Chapters 2, 6, 9, 10, 11 deleted
  - Does not replace rating systems or certification programs

**\*Note: Project seeking certification under a voluntary rating system must continue to meet the requirements of the rating system for certification in addition to green code requirements**



- Adds to or references complementary codes but does not repeat provisions of other codes (ie: plumbing code, mechanical code, electric code)
- Applies sustainable design and construction provisions to other codes
- Mandatory language
- If a provision pertains to project, it is required



Break

Chapter 61



# Dallas Modified IgCC – Chapter 61

## Intent and Scope

- Will be enforced by Dallas Building Official or his designee
- Five jurisdictional requirements adopted
- Definition provisions deleted
- Applicable to the construction of all **NEW** buildings, or **NEW** portions of buildings, and **FIRST** time tenant finish outs.



## Chapter 1: Scope and Administration

- Overlays other building codes
- Not point based
- Provisions shall apply to:
  - Design, construction, addition, and building site of every new building, or new structure, or any new appurtenances connected or attached to such buildings or structures, and to the site on which the building is located.
  - First time build out of a building or tenant space must comply with green construction code
  - Remodels or renovations do not require compliance



## Chapter 1: Scope and Administration

### Exceptions:

- The code shall not apply to items 1.1, 1.2, and 1.3 except where the City of Dallas, Texas, adopts jurisdictional requirements of Section 302.1, Item 1, for residential buildings.
  - Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height above grade plane with a separate means of egress, their accessory structures, and the site or lot upon which these buildings are located.
  - Group R-3 residential buildings, their accessory structures, and the site or lot upon which these buildings are located.
  - Group R-2 and R-4 residential buildings four stories or less in height above grade plane, their accessory structures, and the site or lot upon which these buildings are located.





## Chapter 1: Scope and Administration

### Exceptions:

- The code shall not apply to equipment or systems that are used primarily for industrial or manufacturing.
- The code shall not apply to temporary structures approved under Section 3103 of the Dallas Building Code.
- Where ASHRAE 189.1 is selected in accordance with Section 301.1.1, ASHRAE 189.1 shall not apply to buildings identified in Exceptions 1 through 3.
- This code shall not apply to additions that are less than 400 square feet in floor area and contain no plumbing fixtures.
- This code shall not apply to structures that are designed, built and inspected in accordance with the Texas Industrialized Building Act.
- This code shall not apply to an addition of a mezzanine in an existing building.



## Chapter 2: Definitions (Deleted)

- Provisions deleted
  - Terms defined as intended by the IgCC and other building codes
  - Code definitions may differ from rating system, general industry, or trade definitions
  - Dallas City Code definitions prevail
  - Discrepancies resolved by Building Official



## Chapter 3: Jurisdictional Requirements

- Chapter amended
- Of significance:
  - Provisions for jurisdictional requirements
  - Enforceable mandatory requirements
  - Jurisdictional requirements identified



# Table 302.1

## Dallas Building Inspection

Jurisdictional Requirements (Mandatory)			
Section	Chapter	Yes	No
<b>Chapter 1 Scope</b>			
<b>101.3 Exception 1.1</b>	Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories in height above grade plane with a separate means of egress, their accessory structures, and the site or lot upon which these buildings are located, may comply with ICC 700	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>101.3 Exception 1.2</b>	Group R-3 residential buildings, their accessory structures, and the site or lot upon which these buildings are located, may comply with ICC 700	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>101.3 Exception 1.3</b>	Group R-2 and R-4 residential buildings four stories or less in height above grade plane, their accessory structures, and the site or lot upon which these buildings are located, may comply with ICC 700	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Chapter 4 Site Development and Land Use</b>			
<b>402.7</b>	Greenfield sites	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>409.1</b>	Light Pollution Control	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Chapter 5 Material Resource Conservation and Efficiency</b>			
<b>503.1</b>	Minimum percentage of waste material diverted from landfills	<input checked="" type="checkbox"/> 50% <input type="checkbox"/> 65% <input type="checkbox"/> 75%	
<b>Chapter 8 Indoor Environmental Quality and Comfort</b>			
<b>804.2</b>	Post-Construction Pre-Occupancy Baseline IAQ Testing	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No



# Chapter 4: Site Development and Land Use -

## Chapter Amended

### ➤ Of Significance:

➤ **Section 402:** Preservation of natural resources.

➤ **Section 402.7:** Greenfield Sites Where this section is indicated to be applicable in Table 302.1, site disturbance or development shall not be permitted on *greenfield* sites specifically identified and pursuant to the authority having jurisdiction.

The City of Dallas has NOT specifically identified any *greenfield sites*

➤ **Section 406:** Building Site Waste Management - Site waste management plan shall be developed and implemented to divert not less than 50% of the land-clearing debris and excavated soils.

➤ **Section 407:** Transportation Impact - Walkways and bike paths

➤ **Section 408:** Heat Island mitigation

➤ **Section 409:** Site lighting



# Chapter 4: Site Development and Land Use - Chapter Amended

- **Deletes Provisions for:**
  - Pre-design site inventory and assessment
  - Designated protection areas
  - Storm water
  - Shower and changing facilities
  - Bicycle parking and storage
  - Preferred vehicle parking



# Chapter 4: Site Development and Land Use -

- **Section 406: Building Site Waste Management** - A building site waste management plan shall be developed and implemented to divert not less than 50 percent of the land clearing debris and excavated soils from disposal. Land clearing debris includes rock, trees, stumps and associated vegetation. The plan shall include provisions that address all of the following:
1. Diverted materials shall not be sent to greenfield sites where development is prohibited by Section 402.1 except where approved by the code official.
  2. The effective destruction and disposal of invasive plant species.
  3. Where contaminated soils are removed, the methods of removal and location where the soils are to be treated and disposed.
  4. The amount of materials to be diverted shall be specified and shall be calculated by weight or volume, but not both.
  5. Where the site is located in a federal or state designated quarantine zone for invasive insect species, building site vegetation management shall comply with the quarantine rules.
  6. Materials to be diverted from disposal by efficient usage, recycling or reuse on the building site shall be specified.
  7. Receipts or other documentation related to diversion shall be maintained through the course of construction. When requested by the code official, evidence of diversion shall be provided.

# Chapter 4: Site Development and Land Use -

## Chapter Amended

### Section 407: Transportation Impact - Walkways and bike paths

- Not less than one independent, paved walkway or bicycle path suitable for bicycles, strollers, pedestrians, and other forms of non-motorized locomotion connecting a street or other path to a building entrance shall be provided.
- Walkways and bicycle paths shall be connected to existing paths or sidewalks, and shall be designed to connect to any planned future paths.
- Paved walkways and bicycle paths shall be designed to minimize storm water runoff. Pervious and permeable pavement shall be designed in accordance with Section 408.2.4

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# Chapter 4: Site Development and Land Use -

## Chapter Amended

- **Section 408: Heat Island mitigation**
- **408.1 General.** The heat island effect of building and building site development shall be mitigated in accordance with Sections 408.2 and 404.3.
- **408.2 Site hardscape.** In climate zones 1 through 6, as established in the International Energy Conservation Code, not less than 50 percent of the site hardscape shall be provided with one or any combination of options described in Sections 408.2.1 through 408.2.4. For the purposes of this section, site hardscape shall not include areas of the site covered by solar photovoltaic arrays or solar thermal collectors.
  - **408.2.1 Site hardscape materials.**
  - **408.2.2 Shading by structures.**
  - **408.2.3 Shading by trees.**
  - **408.2.4 Pervious pavement and permeable unit pavement.**

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# Chapter 4: Site Development and Land Use -

## Chapter Amended

- 408.3 Roof surfaces
  - 408.3.1 Roof coverings – solar reflectance and thermal emittance.
    - 408.3.1.1 Roof products testing
    - 408.3.1.2 Solar reflectance index.

**TABLE 408.3.1  
REFLECTANCE AND EMITTANCE**

ROOF SLOPE	MINIMUM AGED SOLAR REFLECTANCE	MINIMUM AGED THERMAL EMITTANCE	MINIMUM SRI
2:12 or less	0.575	0.75	64
Greater than 2.12	0.3	0.75	25

- 408.3.2 Vegetative roofs.



# Chapter 4: Site Development and Land Use -

## Chapter Amended

### ➤ Section 409: Site lighting

- **409.1 Outdoor lighting restrictions.**
- **409.1.1 Area of Use.** For the lighting of predominately horizontal surfaces such as roadways, areas of vehicular and pedestrian passage, merchandising and storage areas, automotive fuel dispensing facilities, automotive sales areas, loading docks, cul-de-sacs, active and passive recreational areas, building entrances, sidewalks, paths, site entrances, and parking areas, fixtures must be aimed straight down and must be full cutoff or fully shielded, unless the aggregate wattage per fixture does not exceed the output of a standard nondirectional 60 watt incandescent lamp, i.e. 900 lumens, in which case noncutoff fixtures are permitted.
- **409.1.2 Maximum lamp wattage and required luminaire or lamp shielding.** All lighting installation must be designed and installed to be fully shielded (full cutoff). Maximum lamp wattage for commercial lighting is 250 watts. Maximum lamp wattage for residential lighting is 100 watts for incandescent bulbs, and 32 watts for compact fluorescent bulbs.

# Chapter 4: Site Development and Land Use -

## Chapter Amended

### ➤ Section 409: Site lighting

#### Exceptions:

- 1) Luminaries for safety or security reasons.
- 2) Lighting in swimming pools and other water features governed by the *Dallas Electrical Code*.
- 3) Exit signs and other illumination required by the codes.
- 4) Lighting for stairs and ramps, as required by the codes.
- 5) Signs that are regulated by Article VII of the Dallas Development Code, however, all signs are recommended to be fully shielded.
- 6) Holiday and temporary lighting as governed by the *Dallas Electrical Code*.
- 7) Athletic field lighting if steps have been taken to minimize glare and light trespass.
- 8) Low voltage landscape lighting, but such lighting should be shielded to eliminate glare and light trespass.

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# Chapter 5: Material Resource Conservation and Efficiency- Chapter Amended

## ➤ Of Significance:

- **Section 503**: Minimum percentage of waste material diverted from landfills - 50%
- **Section 504**: Waste Management and Recycling
- **Section 505**: Material Selection
  - 45% of materials must be:
    - Recycled,
    - Recyclable,
    - Bio-based, or
    - Indigenous (within 500 miles)
  - (Materials are permitted to have multiple attributes.)
- **Section 506**: Lamps

## ➤ Deletes Provisions for:

- Reference to Whole Building LCA
- Building Envelope Moisture Control



# Chapter 5: Material Resource Conservation and Efficiency- Chapter Amended

- **Section 503.1:** Minimum percentage of waste material diverted from landfills - 50%

## **Exceptions:**

1. For projects that generate not more than 2.5 pounds per square foot of affected project area, divert not less than 25% of the waste; or,
2. For projects that generate not more than 1.5 pounds per square foot and the project area is 2,500 square feet or less, then diversion is not required.

For all of the above, the CMWM plan will need to be able to prove up the criteria.



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# Chapter 5: Material Resource Conservation and Efficiency- Chapter Amended

## ➤ Section 504: WASTE MANAGEMENT AND RECYCLING

### 504.1 Recycling areas for waste generated post certificate of occupancy.

Waste recycling areas for use by building occupants shall be provided in accordance with one of the following:

1. Waste recycling areas shall be designed and constructed in accordance with the jurisdiction's laws or regulations;
2. Where laws or regulations do not exist or where limited recycling services are available, waste recycling areas shall be designed and constructed to accommodate recyclable materials based on the availability of recycling services; or
3. Where recycling services are not available, waste recycling areas shall be designed and constructed to accommodate the future recycling of materials in accordance with an approved design. The approved design shall meet one of the following:
  - 3.1 The approved waste recycling area design shall be based on analysis of other regional recycling services, laws or regulations.
  - 3.2 The approved waste recycling area shall be designed to meet the needs of the occupancy, facilitate efficient pick-up, and shall be available to occupants and haulers.

# Chapter 5: Material Resource Conservation and Efficiency- Chapter Amended

## ➤ Section 505: MATERIAL SELECTION

- **505.1 Material selection and properties.** Building materials shall conform to Section 505.2, 505.3 or 505.4.

**Exception:** Electrical, mechanical, plumbing security and fire detection, and alarm equipment and controls, automatic fire sprinkler systems, elevators and conveying systems shall not be required to comply with Section 505.2.

- **505.2 Material selection.** Not less than 45 percent of the total building materials used in the project, based on mass, volume or cost, shall comply with Section 505.2.1, 505.2.2, 505.2.3, 505.2.4 or 505.2.5. Where a material complies with more than one section, the material value shall be multiplied by the number of sections that it complies with. The value of total building material mass, volume or cost shall remain constant regardless of whether materials are tabulated in more than one section.
  - **505.2.1 Used materials and components**
  - **505.2.2 Recycled content building materials.**
  - **505.2.3 Recyclable building materials and building components.**
  - **505.2.4 Bio-based materials.**
  - **505.2.5 Indigenous materials.**





## IgCC Section 505 Material Selection

- Examples:
  - Recycled and Recyclable: Most concrete and steel, including concrete reinforcing steel is recycled and, therefore, also qualifies as a recyclable building material or building component
  - Water and Rail for Indigenous Materials: If a steel beam is transported by rail for 1,000 miles, that value is multiplied by 0.25, which equals 250 miles, allowing another 250 miles to be devoted to truck transport to fall within the 500 mile dimension from the building site



# Chapter 6: Energy Conservation, Efficiency & CO<sub>2</sub>e Emission Reduction

- Buildings shall be designed and constructed in accordance with the energy provisions of the Dallas Energy Code
- Keeps green code requirements separate from energy code requirements



# Chapter 7: Water Conservation

## Amended Chapter

- **Coordinated with Plumbing Code**
- **Of Significance:**
  - **Section 701.2**: Metering—any source associated with the building or building site “MAY” be individually metered
  - **Section 702**: Regulates Fixtures, Fittings, Equipment and Appliances
  - **Section 703**: HVAC Systems and equipments
  - **Section 704**: Water treatment devices and equipment

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# Chapter 8: Indoor Environmental Quality and Comfort- Amended Chapter

## ➤ Of Significance:

- **Section 801:** Indoor Air Quality Management Plan- **City to provide template**
- **Section 802:** Building construction features, operations, and maintenance facilitation: Air Handling system access to be unobstructed
- **Section 803:** HVAC Systems- MERV 11 Filters- exception for multi-family filtration—MERV 6 for  $\leq 30k$  BTUs; MERV 8 for over
- **Section 804:** Specific Indoor air quality and pollutant control measures
- **Section 805:** Prohibited materials
- **Section 806:** Material emissions and pollutant control

## ➤ Deletes:

- **Table 804.2** and requires total TVOC limits and not individual material /chemical VOC limits
- Acoustic provisions
- Daylighting provisions



# Chapter 8: Indoor Environmental Quality and Comfort- Amended Chapter

- **Section 804:** Specific Indoor air quality and pollutant control measures

## 804.2 Post-construction, pre-occupancy baseline IAQ testing.

Where this section is indicated to be applicable in Table 302.1, and after all interior finishes are installed, the building shall be tested for indoor air quality and the testing results shall indicate that the levels of VOCs do not exceed a total amount of 500 micrograms per cubic meter using testing protocols in accordance with ASTM D 6196, ASTM D 5466, ASTM D 5197, ASTM D 6345, and ISO 7708. Test samples shall be taken in not less than one location in each 25,000 square feet (1860 m<sup>2</sup>) of floor area or in each contiguous floor area.



# Chapter 8: Indoor Environmental Quality and Comfort- Amended Chapter

## 804.2 Post-construction, pre-occupancy baseline IAQ testing.

### Exceptions:

1. Group F, I-2, H, S and U occupancies shall not be required to comply with this section.
2. A building shall not be required to be tested where a similarly designed and constructed building as determined by the code official, for the same owner or tenant, has been tested for indoor air quality and the testing results indicate that the level of VOCs did not exceed 500 micrograms per cubic meter.
3. Where the building indoor environment does not meet the concentration of 500 micrograms per cubic meter and the tenant does not address the air quality issue by mitigation and retesting, the building shall be flushed out by supplying continuous ventilation with all air handling units at their maximum outdoor air rate for at least 14 days while maintaining an internal temperature of at least 60°F (15.6°C), and relative humidity not higher than 60 percent. Occupancy shall be permitted to start 7 days after start of the flush-out, provided that the flush out continues for the full 14 days.



# Deleted Chapters

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**Chapter 9: Commissioning, Operations & Maintenance**

**Chapter 10: Existing Buildings**

**Chapter 11: Existing Building Site Development**

Appendices not adopted



# LEED Version 4





- Alternate compliance path
- Formal certification is not required
- Minimum points to achieve certification is required
  - LEED BD+C and LEED CS: Minimum 40 points
- Clarifications:
  - Under COD program, mandatory LEED prerequisites are additional point options
  - Compliance with the COD LEED path does not ensure certification
  - If LEED project, 3<sup>rd</sup> party provider is NOT the LEED consultant for the project



# Multifamily Provisions



**Residential provisions applicable to:**

- Detached one and two family dwellings defined by Chapter 57
- Townhomes/townhouses, three stories or less, above grade plane in height with separate means of egress and their accessory structures defined by Chapter 57
- Where Dallas Building Codes and IBC -R occupancies permit multifamily residential and mixed use to comply with residential provisions
- **Commercial provisions otherwise!**

# Lunch Break



# Brain Teaser

**What Chapters of Dallas City Code does the green building ordinance affect?**



# Brain Teaser

**What Chapters of Dallas City Code does the green building ordinance affect?**

**Chapters 52, 53, 57**



# Brain Teaser

**Energy and Green are 2 different codes. Is this true or false?**



# Brain Teaser

**Energy and Green are 2 different codes. Is this true or false?**

**True**





# Brain Teaser

**For projects using LEED v4 NC as compliance path how many points are mandatory, and which one?**



# Brain Teaser

**For projects using LEED v4 NC as compliance path how many points are mandatory, and which one?**

**1 point for 20% Water Reduction**



# Brain Teaser

**Dallas falls under which climate zone?**



# Brain Teaser

**Dallas falls under which climate zone?**

**3a**



# Module 2

## Permitting Process & Provider Program



# Permitting Process

## Provider Registration Process


- Contractor number
- Pin Number
  - \$30 charge to reset PIN
- Email



Fee = \$120

NOTE

DATE: \_\_\_\_\_

  
City of Dallas

CONTRACTOR NO. OFFICE USE ONLY

### APPLICATION FOR CONTRACTOR REGISTRATION

PLEASE CHOOSE WHICH OF THE FOLLOWING TRADES YOU ARE REGISTERING FOR. SELECT ALL THAT APPLY.

<input type="checkbox"/> GENERAL RESIDENTIAL	<input type="checkbox"/> DEMOLITION	<input type="checkbox"/> GAS WELL
<input type="checkbox"/> GENERAL COMMERCIAL	<input type="checkbox"/> SWIMMING POOL	<input type="checkbox"/> ENERGY CODE PERMITS
<input type="checkbox"/> ROOFING	<input type="checkbox"/> CONCRETE/ASPHALT/PAVING	<input type="checkbox"/> GREEN BUILDING
<input type="checkbox"/> FOUNDATION	<input type="checkbox"/> LANDSCAPE	<input type="checkbox"/> GAS WELL PROVIDED
<input type="checkbox"/> FENCE	<input type="checkbox"/> TREE SERVICE	

**CONTRACTOR INFORMATION**

CONTRACTOR NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_ PIN: \_\_\_\_\_  
 COMPANY NAME: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_ CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_  
 PHONE NO: \_\_\_\_\_ FAX NO: \_\_\_\_\_ E-MAIL ADDRESS: \_\_\_\_\_  
 LICENSE REQUIRED:  YES  NO

COMPANY PERSONNEL AUTHORIZED BY YOU TO SIGN PERMIT APPLICATIONS FOR YOUR COMPANY. AT THE TIME OF REGISTRATION YOU WILL ASSIGN YOURSELF AND YOUR NUMBERS A PERSONAL IDENTIFICATION NUMBER (PIN). ASSIGNING YOUR PIN NUMBER IS YOUR RESPONSIBILITY. PIN NUMBERS MUST NOT EXCEED 9 DIGITS (NUMBERS ONLY) AND EACH WORKER MUST HAVE A DIFFERENT NUMBER.

NAME	TITLE	PIN

I HAVE CAREFULLY READ THE COMPLETED APPLICATION AND KNOW THE SAME IS TRUE AND CORRECT AND HEREBY AGREE TO COMPLY WITH ALL PROVISIONS OF THE CITY ORDINANCES AND STATE LAWS WILL BE COMPLIED WITH WHETHER HEREIN SPECIFIED OR NOT. I AGREE THAT FAILURE TO COMPLY WILL RESULT IN MY CONTRACTOR REGISTRATION BEING SUSPENDED OR REVOKED IN ACCORDANCE WITH SECTION 11C, SUBCHAPTER 11C, CHAPTER 32, ADMINISTRATIVE PROCEDURES FOR THE CONSTRUCTION CODES.

\_\_\_\_\_  
APPLICANT'S SIGNATURE

\_\_\_\_\_  
DATE

OFFICE OF PERMITS AND INSPECTION FOR CONSTRUCTION - 1 BUILDING DEPARTMENT  
546 CLAY MUNICIPAL CENTER, RM 2, JEFFERSON BLVD., SUITE 140, DALLAS, TX 75202 TEL: (972) 674-2444

REV 01-25-2011

Contractor Number

PIN Number

Don't forget your E-mail



- Provider Responsibility:
  - Plan Review: Submission of Plan Review Compliance Affidavit and checklist
  - Inspection: Submission of Final Inspection Compliance Affidavit
- Design Professional, Contractor, Owner Responsibility:
  - Contacting and engaging provider
  - Maintaining contact with Provider during construction
  - Submission of review documents
  - Submission of necessary submittals and supporting data
  - Making appointment for inspection(s)

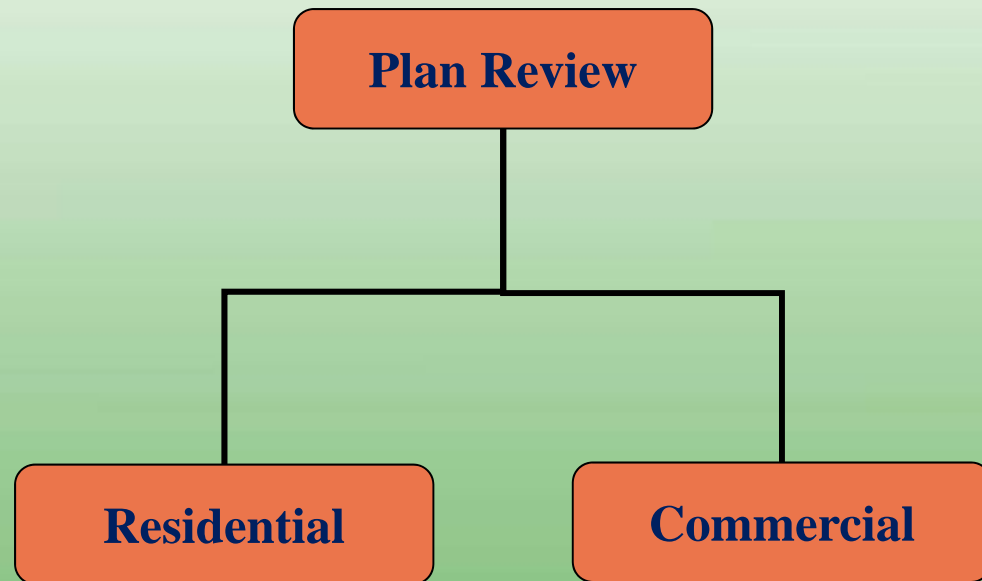




# 3<sup>rd</sup> Party Responsibility

## Plan Review

- Performed by 3<sup>rd</sup> Party Green Provider prior to Building Permit application



# Permit Application

## Plan Review Submittals

- Verify compliance path
- Review drawings, specifications, and other documents necessary to determine compliance
- Submit signed and notarized Plan Review Compliance Affidavit
- Submit Plan Review Checklist



# Permit Application

## NEW CONSTRUCTION FOR COMMERCIAL BUILDINGS AND ADDITIONS



City of Dallas

### APPLICATION CHECKLIST AND REQUIRED DOCUMENTS

By checking each requirement, you are stating that you have supplied correct and complete information. In the event that the required information is not contained in the submitted documents, you will be notified of the deficiency. Failure to supply the additional requested information within five (5) working days after notification may result in your application being delayed and eventually discarded. A new application, the original application, complete plans and a new checklist will be required for re-submittal for plan review. This re-submittal will be treated as a new application and will be processed in the order of receipt. Complete the information sheet attached.

- 1. These plans comply with the Dallas Energy Conservation Code and the Green Building Ordinance (Ord. no 27131).
  - Completed Commercial Green Building Program Plan Review Compliance Affidavit & Application Checklist from a Registered Third Party Green Building Provider.
  - An Energy Code Certificate will be submitted to the electrical inspector prior to final inspection.
- 2. Have you submitted with your application, certified copies of any instrument that contains a restriction on the use of or on construction on the affected property?
  - Yes     No, not applicable
- 3. An asbestos survey has been conducted in accordance with the Texas Asbestos Health Protection Rules and the National Emission Standards for Hazardous Air Pollutants for the area being renovated and/or demolished.
  - Yes     No (Permit cannot be issued prior to notification of survey being conducted.)
- 4. Documented proof that plans and specifications were submitted to the Texas Department of Licensing and Regulation that comply with the Texas Accessibility Standards (TAS) by a Registered Accessibility Specialist (independent contract provider) must be presented along with the building permit application.

Texas Department of Licensing and Regulation (TDLR) Project Number:



# Plan Review Compliance Affidavit

PRINT



### Dallas Green Building Program Plan Review Compliance Affidavit

Date: \_\_\_\_\_

Type of Construction:

- Residential
- Commercial
- New Construction
- Addition
- First Time Finish Out

1. Address of Construction: \_\_\_\_\_ Permit No. \_\_\_\_\_

2. Provider Name: \_\_\_\_\_

3. Provider Registration No. \_\_\_\_\_

Registered as:

- Residential Provider
- Commercial Provider

I, \_\_\_\_\_, have reviewed the project drawings, specifications, and applicable information documents for this project and confirm that it has been designed to meet or exceed the green building requirements of the Dallas Green Building Code for:

- Residential dwellings (one- or two-family dwellings)  
Compliance Path: Dallas Prescriptive, ICC 700, LEED for Homes, Green Built Texas (circle one)
- Commercial  
Compliance Path: Chapter 61, LEED NC, LEED CS, LEED CI, Multifamily, Mixed Use (circle one)
- Seeking certification (Identify certification under \_\_\_\_\_)

Furthermore, I certify that I performed the Green Plan Review in compliance with the Third Party Provider Code of Conduct of the City of Dallas, and I am not a part of a company that provides design services to this client.

\_\_\_\_\_  
Provider Signature

State of Texas

County of \_\_\_\_\_

This affidavit was acknowledged before me on \_\_\_\_\_ by \_\_\_\_\_  
(Date) (Provider Name)

\_\_\_\_\_  
Notary Public

(Notary Public Stamp)

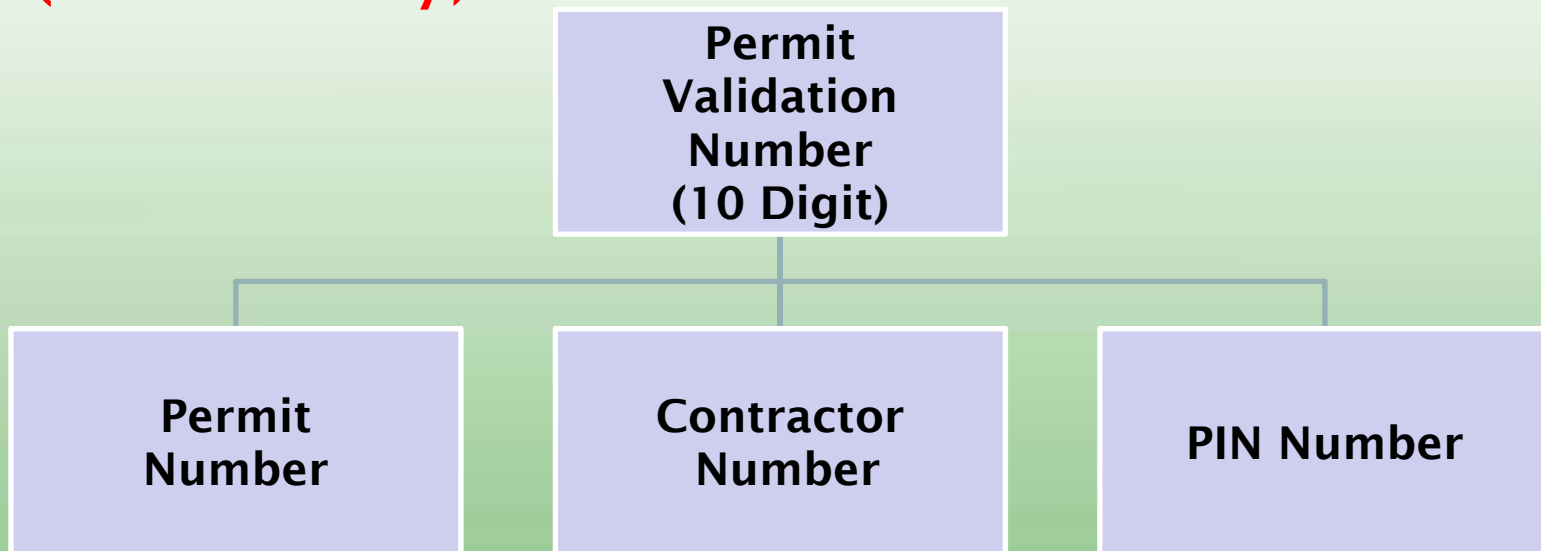
Phase 2  
Issued 8-18-10

SIGN



Validate to Master Permit prior to submitting inspection compliance affidavit

**(Mandatory)**



## Inspection Compliance

- Inspections performed by Third Party Provider
  - **Green building inspections must be completed before Final Inspection by the City is performed**
- Provider required to submit Inspection Compliance Affidavit to City of Dallas prior to final building inspection
- Provider maintains supporting documentation for a minimum of 6 months.



# Inspection Affidavit

PRINT



City of Dallas

## Dallas Green Building Program Final Inspection Compliance Affidavit

Date: \_\_\_\_\_

**Type of Construction:**

- Residential
- Commercial
- New Construction
- Addition
- First Time Finish Out

1. Address of Construction: \_\_\_\_\_ Permit No. \_\_\_\_\_

2. Provider Name: \_\_\_\_\_

3. Provider Registration No. \_\_\_\_\_

**Registered as:**

- Residential Provider
- Commercial Provider

I, \_\_\_\_\_, have made site inspections for the project and have reviewed applicable informational and product submittals to verify that this project meets or exceeds the green building requirements of the Dallas Green Building Code for:

- Residential dwellings (one- or two-family dwellings)  
Compliance Path: Dallas Prescriptive, ICC 700, LEED for Homes, Green Built Texas (circle one)
- Commercial  
Compliance Path: Chapter 81, LEED NC, LEED CS, LEED CI, Multifamily, Mixed Use (circle one)
- Seeking certification (Identify certification under \_\_\_\_\_)
- TCO: The Contractor has made significant progress towards the completion of the required points / requirements. Should a TCO be granted I agree to provide a *Final Compliance Affidavit* upon receipt of all required documentation prior to Final Inspection and Final Certificate of Occupancy.

Furthermore, I certify that I performed the Green Building Inspection in compliance with the Third Party Provider Code of Conduct of the City of Dallas, and I am not a part of a company that provides design services to this client.

\_\_\_\_\_  
Provider Signature

State of Texas

County of \_\_\_\_\_

This affidavit was acknowledged before me on \_\_\_\_\_ by \_\_\_\_\_  
(date) (Provider Name)

\_\_\_\_\_  
Notary Public  
{Notary Public Stamp}

Phase 2  
Issued: 8-16-16

SIGN



## Third Party Information

City of Dallas website  
[www.dallascityhall.com](http://www.dallascityhall.com)



Building Permits and Inspections



Dallas Energy Code and Green Building





### Building Inspection

Oak Cliff Municipal Center  
320 E. Jefferson Blvd.  
Dallas, TX 75203  
Phone: (214) 948-4480  
Fax: (214) 948-4511

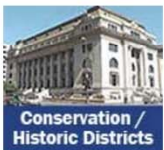
Office hours:  
Monday-Friday 8:00am - 4:30pm



### Top 10 How To's

1. The Permit Center and Introduction to Building Inspection
2. How to Get an Expedited Plan Review
3. How to Get a Certificate of Occupancy
4. How to Obtain a Copy of a CO if You Are a Registered Contractor
5. How to Get an Electrical Permit

## Sustainable Development and Construction Building Inspection



Keep up with the Building Inspection division by reading our [Building Inspection](#) newsletter!



# Quality Control

*Dallas Building Inspection*



- **Ordinance Establishes a Quality Control Program**
- **Minimum 10% of the projects will be audited**



## Review

- Provider Registration: Contractor #, PIN #, E-mail address
- Plan Review: Affidavit, Checklist
- Inspection: Scheduling, Results
- Final/Completion: Send Affidavit to City of Dallas; maintain documents for 6 months minimum



## Contact Information

The Green Building Program is administered by Building Inspection of the Department of Sustainable Development and Construction

- Questions: Contact
- Meenal Chauk 214.948.4091
- Eddie Small 214.948.4035
- [bigreencode@dallascityhall.com](mailto:bigreencode@dallascityhall.com)



# Third Party Provider Program



- Current certification by:
  - Commercial:
    - ICC: IgCC Commercial Inspector /Plans Examiner w/ ASHRAE 189
    - USGBC LEED AP with specialty, except Homes
  - Residential:
    - ICC Green Building Residential Examiner
    - LEED for Homes
    - Green Built Texas Verifier
    - NAHB
  - Other nationally recognized certification approved by Building Official



- Mandatory training by City of Dallas
- Written exam on Dallas Green Building Code
- Payment of registration fee
- Minimum 2 years Green Building experience
  - Design, construction, management, inspections, operations



# Duties and Responsibilities *Dallas Building Inspection*

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- Authority to enforce green building code
- Approved by and registered with Dallas
- Understand that a provider is not an employee of the City of Dallas
- Understand that a provider cannot grant variances or waive requirements
- Understand the scope of authority entrusted to a provider
- Agree to audit of green building plan reviews and inspection





# Duties and Responsibilities *Dallas Building Inspection*

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- Perform green building plan reviews and inspections in a timely and efficient manner
  - Verify compliance path
  - Review and verify submitted data
  - Prepare and submit completed affidavits of compliance
- Notify Sustainable Development and Construction Department of enforcement issues
- Perform duties and responsibilities as determined by the Sustainable Development and Construction department



## Plan Review:

- Verify compliance path
  - Verify application requirements by reviewing drawings, specifications, other data
  - Prepare initial plan review checklist
  - Issue affidavit of plan review compliance
- 
- Note: Multifamily and mixed use project plan review and inspections performed by commercial providers



## Inspection:

- Review supporting documentation during construction
- Conduct site inspection(s)
- Issue affidavit of inspection compliance
- Maintain supporting documentation including checklists, test reports, material data sheets and certifications, photographs, observation reports for **6 months**



## Green building certification recognized for Commercial:

- ICC
  - IgCC Commercial Inspector / Plans Examiner with ASHRAE 189.1
  
- LEED AP with specialty: Commercial
  - BD+C
  - ID+C
  - ND
  - O+M



- **Competency:** Be knowledgeable of and adhere to policies of the City of Dallas Building Inspections, the Code, amendments, and procedures
  - Exercise reasonable judgment and skill in performance of plan reviews, inspections, and related activities
- **Integrity:** Be honest, fair and unbiased, trustworthy in the performance of plan review, inspection, and related activities
  - Misrepresentation or deceit, threats, coercion, or extortion and similar acts are prohibited
- **Accountability:** Ensure compliance with the Dallas Green Building Code



- ***Conflict of Interest:*** Avoid conflicts of interest and the appearance of a conflict of interest.
  - A conflict of interest exists when a Provider performs or agrees to perform a plan review, inspection, or related activity for a project in which the provider has a financial interest, whether direct or indirect.
  - A conflict of interest exists when a Provider 's professional judgment and independence are affected by their own family, business, property, or other personal interests or relationships



# Specific Rules of Conduct *Dallas Building Inspection*

---

Conduct: A Third Party Provider shall not:

- Participate in a plan or arrangement that attempts or is purposed to evade the Dallas Green Building Code
- Knowingly provide inaccurate, deceitful, or misleading information to the City of Dallas, an owner, design professional, contractor/developer, or other person involved with a plan review, inspection, or related activity
- State or imply that the City will approve a variance



# Specific Rules of Conduct *Dallas Building Inspection*

---

Conduct: A Third Party Provider shall not:

- Engage in an activity that constitutes dishonesty, misrepresentation, or fraud while performing a plan review, inspection, or related activity
- Perform a plan review, inspection, or related activity in an incompetent or negligent manner
- Perform a plan review, inspection, or related activity in which the Third party Provider is an owner, in whole or in part, or is an employee of the owner





# Specific Rules of Conduct *Dallas Building Inspection*

---

Conduct: A Third Party Provider shall not:

- Perform a plan review, inspection, or related activity for a building where the Third Party Provider participated in creating the design of the project or is engaged in the construction of the project
- Represent themselves as an employee of the City of Dallas, Building Inspections, or as a provider hired by the City or Building Inspections



- I work for an design firm/contractor/ developer/owner. Can I perform the 3<sup>rd</sup> party review for my company?
  - No, this is considered a conflict of interest under the Code and the interpretation of the Code.
  - The 3<sup>rd</sup> party provider must be independent of the design firm, contractor, developer, owner or other and has no financial, business, or personal interest in the project
  - It does not matter if the provider has no design or construction responsibility or is not involved with the project in its employment; they are employed by an entity that does



- I am an independent consultant and have been contracted to provide engineering or other similar services for a project. Can I perform the 3<sup>rd</sup> party review?
- No, this is a conflict of interest. As a consultant, you now have direct responsibilities to the project and are no longer 3<sup>rd</sup> party to the project



# Necessary Tools

*Dallas Building Inspection*

- Dallas Green Building Ordinances
- Dallas Third Party checklists, and affidavits
- Dallas Green Building Program User Guide
- Commercial:
  - IgCC 2015, preferably the code and commentary version
  - LEED Reference Guides
  - Other rating systems as applicable



# Module 3

## Plan Review & Inspection, Q&A and Discussion



# Performing a Plan Review *Dallas Building Inspection*

---

- Green Building Provider responsibility:
  - Determine if construction documents are complete and in accordance with green building code
  - Perform administrative procedures such as completing checklist and affidavit
  - Verify materials, equipment, components comply with requirements
  - Review supporting documentation such as greenfield site documentation, calculations (ie: energy or water), plans (ie: waste management, landscape)



- Green Building Provider:
  - Does not review zoning, structural, mechanical, electrical, utilities, egress, or other plan reviews required by Dallas
  - Does not provide energy or accessibility reviews as part of a green building review
  - Does not suggest or make design changes



Where do we find the information to determine compliance at plan review?

- Review drawings, schedules, written specifications for performance data, supporting project data
- Verify drawings and specifications provide data showing compliance with code green requirements as appropriate





## IgCC Section 406

- **Section 406.1 Building Site Waste Management plan**
  - Coordinate with Sections 503
  - Verify requirements specified for waste management plan at plan review
    - Must identify applicable requirements on Site Plan
  - Completed waste management plan submitted by contractor prior to commencing work



## IgCC Section 406

- **Section 406.1 Building Site Waste Management Plan: Requires**
  - Minimum 50% diversion of land clearing debris
  - Plan must address disposal by reuse, recycling, effective/efficient material use; destruction and disposal of invasive plants; proper removal of contaminated soils.
  - Require receipts and documentation maintained and available for review
  - Coordinate with Section 503



# Example Templates for Sections 406 and 503

City of Dallas date \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
**MATERIAL DISPOSITION TRACKING CARD**  
 Trucking Co. \_\_\_\_\_  
 Truck Number \_\_\_\_\_  
 Materials \_\_\_\_\_  
 Loaded weight \_\_\_\_\_  
 Empty weight \_\_\_\_\_  
**MATERIAL WEIGHT** \_\_\_\_\_  
 Disposition Location \_\_\_\_\_  
 Signature \_\_\_\_\_

# \_\_\_\_\_

City of Dallas date \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
**MATERIAL DISPOSITION TRACKING CARD**  
 Trucking Co. \_\_\_\_\_  
 Truck Number \_\_\_\_\_  
 Materials \_\_\_\_\_  
 Loaded weight \_\_\_\_\_  
 Empty weight \_\_\_\_\_  
**MATERIAL WEIGHT** \_\_\_\_\_  
 Disposition Location \_\_\_\_\_  
 Signature \_\_\_\_\_

# \_\_\_\_\_

City of Dallas date \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
**MATERIAL DISPOSITION TRACKING CARD**  
 Trucking Co. \_\_\_\_\_  
 Truck Number \_\_\_\_\_  
 Materials \_\_\_\_\_  
 Loaded weight \_\_\_\_\_  
 Empty weight \_\_\_\_\_  
**MATERIAL WEIGHT** \_\_\_\_\_  
 Disposition Location \_\_\_\_\_  
 Signature \_\_\_\_\_

# \_\_\_\_\_

City of Dallas date \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
**MATERIAL DISPOSITION TRACKING CARD**  
 Trucking Co. \_\_\_\_\_  
 Truck Number \_\_\_\_\_  
 Materials \_\_\_\_\_  
 Loaded weight \_\_\_\_\_  
 Empty weight \_\_\_\_\_  
**MATERIAL WEIGHT** \_\_\_\_\_  
 Disposition Location \_\_\_\_\_  
 Signature \_\_\_\_\_

# \_\_\_\_\_

FORM CWM-1: CONSTRUCTION WASTE IDENTIFICATION							
MATERIAL CATEGORY	GENERATION POINT	EST. QUANTITY OF MATERIALS RECEIVED* (A)	EST. WASTE - % (B)	TOTAL EST. QUANTITY OF WASTE* (C = A x B)	EST. VOLUME CY (CM)	EST. WEIGHT TONS (TONNES)	REMARKS AND ASSUMPTIONS
Packaging: Cardboard							
Packaging: Boxes							
Packaging: Plastic Sheet or Film							
Packaging: Polystyrene							
Packaging: Pallets or Skids							
Packaging: Crates							
Packaging: Paint Cans							
Packaging: Plastic Pails							
Site-Clearing Waste							
Masonry or CMU							
Lumber: Cut-Offs							
Lumber: Warped Pieces							
Plywood or OSB (scraps)							
Wood Forms							
Wood Waste Chutes							
Wood Trim (cut-offs)							
Metals							
Insulation							
Roofing							
Joint Sealant Tubes							
Gypsum Board (scraps)							
Carpet and Pad (scraps)							
Piping							
Electrical Conduit							
Other:							

\* Insert units of measure.

## IgCC Section 503.1 Construction Material and Waste Management Plan

- Addresses construction waste of a nonhazardous nature requiring diversion of minimum 50 percent of construction phase waste materials from landfills
- Construction Material and Waste Management Plan (CMWMP) required and included in the construction documents



## IgCC Section 503.1

- **CMWMP details include:**
  - Locations where recycled construction waste is collected indicated on submittal drawings
  - Calculate percentage of materials diverted by weight or volume
  - Diversion documentation available to code official upon request
    - Requirement to document diversion is incorporated in construction documents prepared by designer, the documentation records are the responsibility of the contractor



## IgCC Section 505 Material Selection

- **Plan Review:** Review specifications
  - Architect/Designer to provide a matrix showing that proposed material selection complies with the 45% requirement
- **Inspection Submittals:** Verify contractor documentation; minimum 45% of total building materials complies with required attributes
  - Calculate by mass (weight), volume, or cost.
  - Design matrix with supporting documentation
  - Materials may comply with multiple attributes



## IgCC Section 505 Material Selection

- Material Selection:
  - Used Materials
  - Recycled Content
  - Recyclable Building Materials and Building Components
  - Biobased Materials
  - Indigenous (Regional) Materials



## IgCC Section 505 Material Selection

- Used Materials: Reuse of materials without additional processing
- Recycled Content:
  - Contains minimum 25 percent combined postconsumer and preconsumer recovered material
  - Contains minimum 50 percent combined postconsumer and preconsumer recovered material





## IgCC Section 505 Material Selection

- Recyclable: Materials capable of being recycled with minimum recovery rate of at least 30 percent, or recyclable through manufacturer take back program
- Biobased: Renewable resources including wood and plant materials; minimum content of 75% compliance with ASTM D 6866; compliant with USDA 7CFR Part 2902; wood compliant with SFI Standards, FSC STD-40-004 V2-1EN, or PEFC Council Technical Document
- Indigenous: Resources that are recovered, harvested, extracted, and manufactured with a 500 miles building radius of site



## IgCC Section 801.2

### Indoor Air Quality Management Plan

- Construction IAQ plan required at plan review
- Contractor submits construction IAQ plan prior to commencement of construction and before first site visit;
- Submittal to include completed template
- Verify plan exist at first inspection and was followed at final inspection





### IAQ Management Plan Template

#### I. Summary

Intent of IAQ Management Plan:

Personnel and Responsibilities:

Contractor:

IAQ Representative:

Subcontractors:

Plan Documentation:

Where file maintained:

Documentation Provided to Owner at Closeout:

Meeting minutes

Schedule of temporary use of building mechanical equipment

Schedule of filter change outs by location and filter type

Supporting data including photographs

Work orders

Cut sheets for filtration media used

Test reports

Cleaning reports

Referenced Standards:

SMACNE IAQ Guidelines for Occupied Buildings Under Construction

ASHRAE 55.2 Method of Testing General Ventilation Air Conditioning Devices for Removal

Efficiency by Particle Size

Other: Identify

#### II. HVAC Equipment and Ductwork

Sealing Ductwork and Air Handling Equipment

Use of Mechanical Systems During Construction

Filter Replacement and Tracking

Duct Cleaning

#### III. Source Control

Use of Low Emission Interior Products

Modifying Equipment Operation

Changing Work Practices

Local Temporary Exhaust

Covering or Sealing of Pollutant Sources

Pathway Interruptions

Controlling pollution at entrances

Protection of stored materials

Protection of materials during and after installation

Preventing contamination of completed areas from work under construction

Housekeeping measures during construction

#### IV. Sequencing Finish Applications

Finish Applications

Procedures

#### V. Building Flush Out

Flushout

Air Quality Testing



# Examples IAQ Template

Dallas Building Inspection



## IAQ Management Checklist Template

Building Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

Completed by \_\_\_\_\_

Item	Date Begun or Completed	Responsible Party	Location (NA if not applicable)	Comment
<b>Records</b>				
HVAC Design data, operating manuals, instructions				
HVAC Maintenance and calibration records, testing and balancing reports				
Inventory of Locations where Occupancy, Equipment, or building Use Changed				
Inventory of Compliance Locations				
<b>Walkthrough Inspection</b>				
List of responsible staff and/or contractors, evidence of training, and job descriptions				
Identification of area where positive or negative pressure should be maintained				
Record of locations that need monitoring or correction				
<b>Detailed Information Collected</b>				
Inventory of HVAC system components needing repair, adjustment, or replacement				
Record of control settings and operating schedules				



## **Dallas Green Building Program:**

- Website:  
<http://dallascityhall.com/departments/sustainabledevelopment/buildinginspection/pages/greenBuilding.aspx>
- Ordinance and amendments (on line)
- [http://dallascityhall.com/departments/sustainabledevelopment/buildinginspection/DCH%20documents/pdf/BI\\_2015%20Dallas%20Green%20Construction%20Code.pdf](http://dallascityhall.com/departments/sustainabledevelopment/buildinginspection/DCH%20documents/pdf/BI_2015%20Dallas%20Green%20Construction%20Code.pdf)
- Phase 2 Plan review and inspection checklists
- Phase 2 Affidavits.
- International Green Construction Code 2015  
Website: <http://shop.iccsafe.org/>
- ICC documents available for read only or for purchase



# Module 4

## Commercial Provider Exam

*Good Luck!*

