

CITY OF WEST UNIVERSITY PLACE  
Harris County, Texas

**ORDINANCE NUMBER 1963**

**AN ORDINANCE OF THE CITY OF WEST UNIVERSITY PLACE, TEXAS AMENDING CHAPTER 18, BUILDINGS AND DEVELOPMENT; CHAPTER 26, ELECTRICITY AND ALARM SYSTEMS; AND APPENDIX C, TECHNICAL CODES SCHEDULE, OF THE WEST UNIVERSITY PLACE CODE OF ORDINANCES BY ADOPTING THE 2012 EDITION OF THE INTERNATIONAL BUILDING CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL RESIDENTIAL CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL FIRE CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL PLUMBING CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL MECHANICAL CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL PROPERTY MAINTENANCE CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL FUEL GAS CODE; ADOPTING THE 2012 EDITION OF THE INTERNATIONAL SWIMMING POOL AND SPA CODE; ADOPTING THE 2011 EDITION OF THE NATIONAL ELECTRICAL CODE; AND PROVIDING FOR THE ADOPTION OF LOCAL AMENDMENTS THERETO.**

**WHEREAS**, the City Council of the City of West University Place, Texas has previously adopted Ordinance No. 1896, which ordinance, among other things, included the adoption of amendments to the Technical Codes Schedule and the standard codes that are incorporated into the Code of Ordinances by that schedule; and

**WHEREAS**, the building official of the City of West University Place, Texas, has proposed to amend the Technical Codes Schedule by adopting updated editions of the standard codes that are incorporated into the Code of Ordinances, the International Swimming Pool and Spa Code, local amendments to the standard codes and related amendments to Code of Ordinance provisions; and

**WHEREAS**, such updates and amendments were referred to the Building & Standards Commission, which has recommended them for consideration and adoption by the City Council; and

**WHEREAS**, the City Council of the City of West University Place, Texas now finds that it is necessary and proper to update and amend the Technical Codes Schedule, the local amendments thereto, and related Code of Ordinance provisions.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF WEST UNIVERSITY PLACE, TEXAS THAT:**

**Section 1.** The Code of Ordinances of the City of West University Place, Texas is amended as indicated in the chart below and to read as set out in the Exhibits A-C, attached hereto and made a part of this ordinance, as follows:



<b>Code Chapter</b>	<b>Section</b>	<b>Amendment</b>
Chapter 18. Buildings and Development	Section 18-1. Definitions.	Add definition of "deconstruction"
	Section 18-65. Demolition.	Add (c)(3) regarding permit, notice and completion period for deconstruction
	Section 18-169. Swimming Pools. In general.	Revise (a) to replace International Residential Code with 2012 International Swimming Pool and Spa Code.
Chapter 26. Electricity and Alarm Systems	Section 26-27. Certain circuits	Delete provision (a), Independent circuits, and replace with previous provision (b), Window air conditioners, as revised
Appendix C. Technical Codes Schedule	Section C-104	Revise no. 6 to delete all appendices to the IBC
	Section C-106	Revise no. 7 to adopt appendices B-J of the IFC and delete appendix A of the IFC
	Section C-107	Add no. 8 to delete all appendices to the IFGC
	Section C-108	Revise no. 3 regarding installation of air filters; revise no. 4 to delete all appendices to the IMC
	Section C-109	Revise no. 3(a) regarding unapproved materials and air admittance valves; revise no. 3(b), (c) and (d) regarding PEX and CPVC; revise no. 4(a), (b) and (e) related to use of PEX and CPVC; revise no. 5 to remove restriction on wet venting; revise no. 7 to define RPE; add no. 8 to delete all appendices to the IPC
	Section C-110	Revise no. 4 to delete all appendices of the IRC
	Section C-113	Add no. 2 to adopt appendix A to the IPMC
	Section C-114	Add Section for adoption of the ISPSC

**Section 2.** All other portions of the Code of Ordinances not specifically amended hereby remain in full force and effect.

**Section 3.** All ordinances and parts of ordinances in conflict with this Ordinance are repealed to the extent of the conflict only.

**Section 4.** If any word, phrase, clause, sentence, paragraph, section or other part of this Ordinance or the application thereof to any person or circumstance, shall ever be held to be invalid or unconstitutional by any court of competent jurisdiction,



neither the remainder of this Ordinance, nor the application of such word, phrase, clause, sentence, paragraph, section or other part of this Ordinance to any other persons or circumstances, shall be affected thereby.

**Section 5.** The City Council officially finds, determines and declares that a sufficient written notice of the date, hour, place and subject of each meeting at which this Ordinance was discussed, considered or acted upon was given in the manner required by the Texas Open Meetings Act, as amended, and that each such meeting has been open to the public as required by law at all times during such discussion, consideration and action. The City Council ratifies, approves and confirms such notices and the contents and posting thereof.

**Section 6.** This Ordinance takes effect immediately upon its passage and adoption on second reading.

**PASSED, APPROVED AND ADOPTED ON FIRST READING** on the 8<sup>th</sup> day of October, 2012.

**PASSED, APPROVED AND ADOPTED ON SECOND READING, AND SIGNED**, on the 22<sup>nd</sup> day of October, 2012.



Attest:

Helma Cheny  
City Secretary (Seal)

Signed: Robert A. J. [Signature]

Mayor

Recommended:

Michael [Signature]  
City Manager

Approved as to legal form:

[Signature]  
City Attorney

**Exhibit A**  
(Amended Sections 18-1 and 18-169, Code of Ordinances)

**Sec. 18-1. - Definitions.**

Unless the context requires a different meaning, the following terms, when used in this chapter, have the meanings indicated below:

*Deconstruction* means the systematic disassembly of a structure in reverse order of construction in a manner that maximizes the preservation of building materials for reuse and recycle purposes.

**Sec. 18-65. - Demolition.**

- (a) *Duty to remove, restore.* It shall be the duty of each permittee on a demolition permit, at the time required by this section:
  - (1) To remove and properly dispose of each demolished structure and all equipment, slab, beams, porches, rubble, steps and other debris resulting from the work; and
  - (2) Grade the surface of all the ground affected by the work so that water will not accumulate and the ground can be mowed with ordinary lawnmowers.
- (b) *Demolition of principal building.* If a principal building is demolished, the permittee shall also demolish all other structures on or appurtenant to the site (including private driveways, sidewalks, curb cuts, etc. in the adjoining street area) and remove, dispose, grade, etc. as provided above. Exceptions:
  - (1) This subsection does not apply to existing structures that are proposed to be kept as accessory structures for a new principal building, if: (i) they comply with applicable regulations; (ii) a building permit for the new building is issued at or before issuance of the demolition permit; and (iii) the building is completed within the time allowed by that permit. If a swimming pool or similar impoundment is proposed to be kept under this subsection, it must be fenced, covered and maintained so that children cannot enter (and water cannot become stagnant or breed insects).
  - (2) This subsection does not apply to a driveway between the curb and sidewalk in the street area, if the owner of the site: (i) declares an intent to re-use them to begin construction on a new principal building within one year; and (ii) submits a written request for the city to remove them (if not so re-used), together with a cash deposit to cover the estimated cost of removal, plus 50 percent.
- (c) *Notice, completion, etc.* Demolition permittees shall notify the building official before work begins, shall prosecute the work diligently to completion and shall complete the removal, disposal and grading on or before the tenth day following

the day work begins. It is an affirmative defense in any proceeding to enforce this section that:

- (1) Inclement weather prevented completion and that diligence was used to complete the work at the earliest practicable time;
- (2) If work occurred before the start of such ten-day period, it consisted of salvage operations only, it took place completely inside a building (without any outdoor storage, without any exterior changes on the site and without disturbing any window, outside door or other external part of the building), and it occurred during the term of the demolition permit; or
- (3) If the entire structure(s) are to be "deconstructed", any and all items with any possible re-use value will be salvaged and removed from the site. The deconstruction shall be prosecuted diligently and be completed 49 days from the issuance date of the demolition permit. The site shall be completely enclosed with a six (6) foot high chain link fence with any access gates locked when actual deconstruction work is not being performed. The demolition permit shall state, at the time of submittal, that deconstruction is being requested.

#### **Sec. 18-169. - In general.**

- (a) *Standard regulations.* The swimming pool regulations adopted in the standard codes schedule, the 2012 International Swimming Pool and Spa Code, are adopted, ordained and incorporated into this chapter by reference and shall apply to all swimming pools, both residential and nonresidential, but subject to the exceptions and amendments stated in standard codes schedule.
- (b) *Local Government Code.* This article establishes minimum standards for swimming pool fences and enclosures under and pursuant to subchapter C, chapter 214 of V.T.C.A, Local Government Code, to the extent applicable ("subchapter C").
- (c) *Penalty.* The penalty for a violation of this article is a fine not to exceed \$1,000.00, and each day a violation occurs is a separate offense. All city officials, agents and employees are granted authority to enter premises to the extent contemplated by such subchapter C.
- (d) *State law defense.* It shall be an affirmative defense in any proceeding to enforce this Code with respect to construction of a swimming pool enclosure, that:
  - (1) V.T.C.A., Health and Safety Code ch. 757 applies to the enclosure; and
  - (2) Because of V.T.C.A., Health and Safety Code ch. 757, the person charged is not required to construct the enclosure in the manner sought to be enforced.

**Exhibit B**  
(Amended Sections 26-27, Code of Ordinances)

**Sec. 26-27. - Certain circuits, plugs required.**

- (a) *Window air conditioners.* All window air conditioning units, whether to be operated on 110vac or 220vac current, shall be installed with and bonded to a polarized plug, and Number 10 AWG wire minimum for 220vac shall be used in bonding said air conditioning unit to the said polarized plug.

**Exhibit C**  
(Amended Appendix C- Technical Codes Schedule, Code of Ordinances)

**APPENDIX C**  
**TECHNICAL CODES SCHEDULE**

**International Building Code (IBC), 2012 Ed., International Code Council, Inc.**

**International Energy Conservation Code (IECC), 2012 Ed., International Code Council, Inc.**

**International Fire Code (IFC), 2012 Ed., International Code Council, Inc.**

**International Fuel Gas Code (IFGC), 2012 Ed., International Code Council, Inc.**

**International Mechanical Code (IMC), 2012 Ed., International Code Council, Inc.**

**International Plumbing Code (IPC), 2012 Ed., International Code Council, Inc.**

**International Residential Code (IRC), 2012 Ed., International Code Council, Inc.**

**(BOCA) National Building Code, 1996 Ed., Building Officials & Code Administrators International, Inc.**

**National Electrical Code (NEC), 2011 Ed., National Fire Protection Association, ("NEC")**

**International Property Maintenance Code (IPMC), 2012 Ed., International Code Council, Inc.**

**International Swimming Pool and Spa Code (ISPSC), 2012 Ed., International Code Council, Inc.**

## **Sec. C-104. - International Building Code.**

1. The administrative officer is the building official. All hearings, variances etc. are handled by the BSC.
2. On sites primarily used for residential purposes, all roofs must have Class A or better fire residence, as determined under Section 1505.1, except that wooden roofing materials are forbidden.
3. The foundation for each new building (and each new addition to a building) must meet all the criteria in this section, as applicable. Exception. If the building or addition does not contain habitable space (as defined in the IBC), it must meet only the requirements for "nonhabitable space," as indicated below.

a. *Definitions.* In this section:

"A2LA Lab" means a laboratory accredited by the American Association for Laboratory Accreditation on the basis of ISO/IEC 17025:1999 ("general requirements for the competence of testing and calibration laboratories").

"RLPE" means a licensed or registered professional engineer of the State of Texas who is:

- (1) Listed with the State Board of Professional Engineers in the structural branch;
- (2) Employed by a registered engineering firm of the State of Texas; and
- (3) Covered by professional errors and omissions insurance that: (i) has limits of at least \$500,000.00 per claim (and at least \$1,000,000.00 per year, aggregate) and (ii) has effective dates-including any retroactive coverage date-that include the entire period when the person provides services or takes actions regulated by this section.

"RLGE" means a person who is:

- (1) Either: (a) a registered professional geoscientist of the State of Texas, or (b) a licensed or registered professional engineer who is listed with the State Board of Professional Engineers in a relevant branch of engineering (civil, structural or geological) and employed by a registered engineering firm of the State of Texas; and
- (2) Covered by professional errors and omissions insurance that: (i) has limits of at least \$500,000.00 per claim (and at least \$1,000,000.00 per year, aggregate) and (ii) has effective dates-including any retroactive coverage date-that include the entire period when the person provides services or takes actions regulated by this section.

- b. *Engineering.* Foundations must be constructed in accordance with complete plans and specifications prepared, signed and sealed by a RLPE. The plans and specifications must be prepared specifically for the site of the work, and they must meet criteria as to scope, content and form specified by the building official. If there are existing trees (either to remain or to be removed)



within 20 feet of a foundation, the RLPE must acknowledge, in writing, that the trees have been taken into account in the preparation of the plans and specifications.

- c. **Basic standards.** Each foundation must be an approved basic type listed in the following chart. In addition, the design of each foundation must be supported by a geotechnical report and special engineering certification, to the extent indicated in the following chart.

Approved Basic Types. See Note 1.	Geotechnical Report. See Notes 2 and 3.	Special Engineering Certification. See Note 4.
Structural slab with void space and deep foundations	<i>Limited</i>	<i>Not required</i>
Structural floor with crawl space and deep foundations	<i>Limited</i>	<i>Not required</i>
Stiffened structural slab with deep foundations	<i>Full</i>	<i>Required</i>
Stiffened non-structural slab with deep foundations	<i>Full</i>	<i>Required</i>
Mixed-depth system for all new building construction	<i>Full</i>	<i>Required</i>
Mixed-depth system for building additions with deep foundations	<i>Full</i>	<i>Required</i>
Another type approved by special exception issued by the BSC. See "i" below.	<i>As specified in the special exception</i>	<i>As specified in the special exception</i>

**Note 1.** *Approved Basic Types.* Types of foundations are defined and described in "Foundation Design Options For Residential and Other Low-Rise Buildings on Expansive Soils" published by the Structural Committee of the Foundation Performance Association, Houston, Texas (Document # FPA-SC-01-0, Rev #0, 30 Jun 04, marked "For Website Publishing"), a copy of which is on file in the City Secretary's office ("FDO").

**Note 2.** *Geotechnical Report, Standards.* The plans and specifications for each foundation must be based on a written geotechnical report prepared, signed and sealed by a RLGE. The report must cover all testing and site evaluation, and all must meet all applicable criteria in "Recommended Practice for Geotechnical Explorations and Reports" published by the Structural Committee of the Foundation Performance Association, Houston, Texas (Document # FPA-SC-04-0, Rev #0, 11 April 2001, issued for website publishing), a copy of which is on file in the City Secretary's office. The report may be limited as allowed by Note 3 below. The minimum depth of borings is 20 feet in all cases. All required tests and other laboratory work must be performed by an A2LA Lab.

**Note 3.** *Geotechnical Report, Scope.* "Limited" indicates that the geotechnical testing, evaluation and report may be limited to a determination of the appropriate depth for the deep foundations (but the deep foundation components must meet the other criteria applicable to them). "Full" indicates that the geotechnical testing, evaluation and report must cover all foundation components.

**Note 4.** *Special Engineering Certification.* Where indicated as "required," for a particular type of foundation, the RLPE must certify that the plans and specifications were prepared to achieve a soil-caused foundation movement potential of one inch or less, and that the RLPE used the estimated depth of the active zone and at least two of the following methods to prepare the plans and specifications:

- (1) Potential vertical rise (PVR) determined in accordance with Test Method Tex-124-E, Rev. January 1, 1978/December 1982, Texas State Department of Highways and Public Transportation, Materials and Test Division, "Method for Determining the Potential Vertical Rise, PVR" (a copy of which is on file in the office of the City Secretary). For this purpose, the "dry" moisture condition (from which little shrinkage is experienced, but where volumetric swell potential is greatest) shall be used for each sample and test.
- (2) Swell tests performed in accordance with ASTM D4546-03, "Standard Test Methods for One-Dimensional Swell or Settlement Potential of Cohesive Soils" as last revised prior to June 1, 2004.
- (3) Suction and hydrometer swell tests performed in accordance with ASTM D5298-03 "Standard Test Method for Measurement of Soil Potential (Suction) Using Filter Paper" and ASTM D6836-02 "Standard Test Methods for Determination of the Soil Water Characteristic Curve for Desorption Using a Hanging Column, Pressure Extractor, Chilled Mirror Hygrometer, and/or Centrifuge," as such methods were last revised prior to June 1, 2004.

- d. *Foundations, Deep Support Components.* Deep support components must be of an approved type. Approved types are listed below. In this list, types of deep support components are defined and described in FDO.
- (1) Drilled and under-reamed concrete piers.
  - (2) Drilled straight-shaft concrete piers.
  - (3) Auger-cast concrete piles.
  - (4) Another type approved by special exception issued by the BSC. See "i." below.
- e. *Reinforcement.* Reinforcement for each foundation must be of an approved type. Approved types are listed below. In this list, types of reinforcement are defined and described in FDO.
- (1) Deformed bar reinforcing.
  - (2) Another type approved by special exception issued by the BSC. See "i." below.
- f. *Observation and Certification.* Each foundation must be professionally observed and must be certified by an RLPE, as more fully described below:
- (1) Observations must:
    - (i) Be performed either by the certifying RLPE or by one or more persons under that RLPE's direct supervision and control whose professional qualifications are approved by the RLPE (any such person may be an RLGE, with respect to geophysical matters);
    - (ii) Include actual measurement of piers, fill, compaction, reinforcement, forms, materials, dimensions, structural elements, attachments, etc. before the work is covered or concrete is placed (Note: dimensions of an underground element may be measured or estimated from the forms, boring or cavity for the element, before pouring or filling);
    - (iii) Be performed continuously during placement of concrete; and
    - (iv) Be documented in a form and manner approved by the building official (which may include photographs).
  - (2) Certifications must:
    - (i) Refer to and be based upon the professional observations required by this section;
    - (ii) State that the work complies with the plans and specifications last approved by the building official (with any field changes that are ordered by the RLPE and reported to the building official and that comply with applicable regulations);
    - (iii) Comply with criteria as to form and content as may be specified by the building official;
    - (iv) Be signed and sealed by the certifying RLPE; and

- (v) Be filed with the building official.
- (3) Certifications may:
  - (i) Rely in part upon an attached certification by a RLGE, as to geophysical matters;
  - (ii) Rely in part upon an attached certification by an A2LA Lab, as to materials testing; and
  - (iii) Be expressed as a professional opinion based on RLPE's knowledge, information and belief that does not constitute a guarantee or warranty, express or implied.

Before framing or other work commences on top of a foundation (and before the foundation is otherwise covered), the permittee must obtain written acknowledgment from the building official that the certification for the foundation was duly filed as required above. Certifications, plans, specifications and related items must be kept on file by the City, available for public inspection, for the retention period required by public records laws and may be kept longer (for an indefinite period of time).

- g. *Curing concrete.* All concrete piers, footings and foundations must be cured for at least 72 hours before any significant load is placed on them.
- h. *Nonhabitable space.* This paragraph applies to buildings and additions to buildings that do not contain habitable space (as defined in the IBC). Footings, beams and monolithic slabs with integral footings shall be constructed of masonry or reinforced concrete rated at 2,500 psi @ 28 days (except for accessory buildings with only one story and less than 200 feet of gross floor area). Each building must have footings, beams and slabs of reinforced concrete assuming a soil bearing capacity of 1,500 psi; see R-403 of the IRC. All footings and beams shall be at least 24 inches deep and at least 12 inches wide and shall extend at least 12 inches below the undisturbed soil level. Reinforcement for concrete footings and beams must include at least two #5 deformed bars top and bottom, grade 60 (or better). Slabs must be reinforced with #4 deformed bars, grade 60 (or better), spaced no wider than 16-inches on center each way. Post-tensioned slab or cable foundations are not allowed.
- i. *Special Exceptions.* Excluding the requirement for professional errors and omissions insurance, the BSC may issue a special exception from any other requirement in subsection "a" through "h," above, but only upon a showing that:
  - (1) The requirement will not affect life safety or the performance of a structure; or
  - (2) An alternate requirement to be imposed by the special exception will provide equal or better protection for life safety and long-term structural performance.



However: In connection with any special exception, the BSC may require that the applicant provide supporting engineering data and opinion, and the BSC may impose conditions to carry out the purpose and intent of applicable regulations.

4. Sheathing (gypsum board) and trim must comply with this section, as follows:
  - a. All walls and ceilings within a R-1, R-2, R-3 and R-4 type occupancy shall be sheathed with Type X gypsum board at least 5/8-inch (15.9 mm) thick.  
Exception: Where applicable code (IBC, IRC) requires otherwise for moisture protection.
  - b. All exterior trim (e.g., soffit, fascia, window trim, chimney trim, etc.) must be made of treated lumber or noncombustible materials.
5. Structural elements, engineering, etc. must comply with the following section:
  - a. *Scope.*
    - (1) The structural elements for the following must meet the criteria in this section, as applicable:
      - (i) Each new building (and each addition to an existing building) containing habitable space and having either a gross floor area of 485 square feet or more or a finished floor height greater than four feet; and
      - (ii) Each accessible deck, porch, balcony, walkway and similar structure with a finished floor height greater than four feet.
    - (2) This section does not apply to foundation elements observed and certified under another section.
  - b. *Definitions.* In this section:  
*Height* is measured from the "standard base level" as provided in the Zoning Ordinance.  
*A2LA Lab* means a laboratory accredited by the American Association for Laboratory Accreditation on the basis of ISO/IEC 17025:1999 ("general requirements for the competence of testing and calibration laboratories").  
*RLPE* means a registered or licensed professional engineer of the State of Texas who is:
    - (1) Listed with the State Board of Professional Engineers in the structural branch;
    - (2) Employed by a registered engineering firm of the State of Texas; and
    - (3) Covered by professional errors and omissions insurance that: (i) has limits of at least \$500,000.00 per claim (and at least \$1,000,000.00 per year, aggregate) and (ii) has effective dates-including any retroactive coverage date-that include the entire period when the person provides services or takes actions regulated by this section.
  - c. *Engineering; Plans and Specifications.* Structural elements must be constructed in accordance with complete plans and specifications prepared,

signed and sealed by a RLPE. The plans and specifications must be prepared specifically for the structure in question, and they must meet criteria as to scope, content and form specified by the building official.

d. *Specific Requirements.*

- (1) *Framing; Sheathing.* All framing must include full exterior sheathing with structural elements (or blocking) along all joints. The plans must indicate the type, size and spacing of fasteners. All sheathing must be minimum 7/16" structural wood panels. In walls where plumbing, drain, waste or vent lines are located, the framing members must be two inches by six inches or larger.
- (2) *Trusses, Joists, Etc.*
  - (i) The species and grade of all lumber used for trusses, joists, purlins, purlin supports or similar elements must be specified in the plans.
  - (ii) The length, spacing and direction of trusses and joists must be specified in the plans.
  - (iii) Each manufactured wood truss must comply with applicable requirements of the "National Design Standard For Metal Plate Connected Wood Truss Construction" published by Truss Plate Institute (TPI), 1-2000 Ed. The design and specifications of any truss built on the site (and any other truss not already certified as meeting such TPI requirements), must be included in the plans and specifications.
- (3) Utility-grade lumber may not be used for joists, rafters or vertical framing.
- (4) Windspeed clips and straps must meet these minimum requirements:
  - (i) *Clips:* Simpson Strong Tie H2.5 or equal, installed on every other member as follows: rafter to double top plate.
  - (ii) *Straps / rafters:* Simpson Strong Tie LSTA 18 or MSTA 18 or equal installed rafter to rafter over ridge, on every other member.
  - (iii) *Strap / beams for porches, patios, garage doors:* Simpson Strong Tie LSTA15 or MSTA15 or equal, installed two on each end of each beam, strapped to post/support.
  - (iv) *Purlins:* Simpson Strong Tie LSTA 15 or MSTA 15 or equal, installed to rafters and spaced no wider than 48 inches on center, also installed on purlin braces and tied to purlins and brace supporting members.

e. *Observation and Certification.* Structural elements must be professionally observed and must be certified by an RLPE, as more fully described below:

- (1) Observations must:

- (i) Be performed either by the certifying RLPE or by one or more persons under that RLPE's direct supervision and control whose professional qualifications are approved by the RLPE;
  - (ii) Include actual observation of structural elements and attachments in crawl spaces before they are covered by floors or other materials;
  - (iii) Include actual observations of each beam, joist, rafter, truss and similar element, including each related weld and high-strength bolt: (1) after all required plumbing, electrical and mechanical "rough-in" inspections have been passed and all expected "notching," boring and similar work has been done, and (2) before the item is covered; and
  - (iv) Be documented in a form and manner approved by the building official (which may include photographs).
- (2) Certifications must:
- (i) Refer to and be based upon the professional observations required by this section;
  - (ii) State that the portions of the work required to be observed comply with the plans and specifications last approved by the building official (with any field changes that are ordered by the RLPE, reported to the building official and in compliance with applicable regulations);
  - (iii) Comply with criteria as to form and content as may be specified by the building official;
  - (iv) Be signed and sealed by the certifying RLPE; and
  - (v) Be filed with the building official.
- (3) Certifications may:
- (i) Rely in part upon attached certifications by: (1) an A2LALab, as to materials testing, and (2) an inspector certified by the City of Houston, as to welds or high-strength bolts (or meet the provisions of Section 1704.3 of the IBC); and
  - (ii) Be expressed as a professional opinion based on the RLPE's knowledge, information and belief that does not constitute a guarantee or warranty, express or implied.

Before any a beam, joist, rafter, truss, weld, high-strength bolt or similar element is covered: (i) all required city inspections relating to that element must be passed, and (ii) the permittee must obtain written acknowledgment from the building official that the certification for that element was duly filed as required above. For any given building, there may be more than one certification filed.



After a beam, joist, rafter, truss, weld, high-strength bolt or similar element has been observed and certified, as provided above, it may not be notched, bored or structurally altered without: (i) a new or amended permit, if required, and (ii) a new observation and certification, in accordance with this section.

Certifications, plans, specifications and related items must be kept on file by the city, available for public inspection, for the retention period required by public records laws and may be kept longer (for an indefinite period of time).

- f. *Special Exceptions.* Excluding the requirement for professional errors and omissions insurance, the BSC may issue a special exception from any other requirement in subsection "a" through "e", above, but only upon a showing that:

- (1) The requirement will not affect life safety or the performance of a structure (for its estimated useful life); or
- (2) An alternate requirement to be imposed by the special exception will provide equal or better protection for life safety and long-term structural performance.

However: In connection with any such special exception, the BSC may require that the applicant provide supporting engineering data and opinion, and the BSC may impose conditions to carry out the purpose and intent of applicable regulations.

6. Delete: All appendices of the International Building Code.
7. In Section 1612.3, the referenced flood study (with FIRM and FBFM) means the "Flood Insurance Study for Harris County, Texas and Incorporated Areas," dated June 18, 2007 (revision date), with the most effective Flood Insurance Rate Maps and/or Flood Boundary-Floodway Maps (FIRM and/or FBFM) dated June 18, 2007 (map revised date).
8. In Section 3410.2, the blank date shall mean the date of that edition of the IBC, as adopted by the City.
9. If work done on a building within any 12-month period constitutes, cumulatively, a "substantial improvement" (as defined in the City's flood damage prevention ordinances, e.g., Section 18-272 of this Code), the owner shall—to the extent reasonably practicable—make the building comply with current code provisions for new construction regarding: (i) structural components (except foundations) and (ii) life safety features (hand and guard rails, smoke detectors, safety glazing, ground fault circuit interrupters, arc-fault combination breakers, emergency egress from sleeping rooms, locking devices on required egress components, etc.). To determine the "market value" of a pre-existing building, the most current tabulation of square foot construction costs published by the International Code Council (usually as part of "Building Valuation Data." see e.g., [www.iccsafe.org/cs/techservices](http://www.iccsafe.org/cs/techservices)) shall be used.

10. If a building is "substantially damaged" (as defined in the City's flood damage prevention ordinances, e.g., Section 18-272 of this Code), the owner shall cause it to be: (i) secured to prevent entry by unauthorized persons, within 24 hours after all embers are extinguished (or other damaging occurrence has ended) and (ii) either demolished (in accordance with Chapter 18 of this Code) or rebuilt in conformity with applicable technical codes as though it were a new building. Normal permits (including certificate of occupancy) are required. Work to demolish or rebuild must begin within 60 days following the date the occurrence ends and must be completed within a reasonable time, but not longer than the time allowed by the applicable permit(s). To determine the "market value" of a pre-existing building, the most current tabulation of square foot construction costs published by the International Code Council (usually as part of "Building Valuation Data," see, e.g., [www.iccsafe.org/cs/techservices](http://www.iccsafe.org/cs/techservices)) shall be used.
11. All basement construction for each new building (and each new basement for an existing building) shall meet the requirements of this section.
  - a. *Definitions.*

"A2LA Lab", "RLPE" and "RLGE" have the same meaning as stated in [Sub]section 3.a. of this Section C-104 above.
  - b. *Soil Testing and Design.* Soil testing and designs shall meet all the criteria set out in this Section C-104, as well as the following additional mandatory requirements:
    - (1) The minimum depth for test boring holes shall be 30 feet.
    - (2) The RLPE shall certify that the plans and specifications were designed using a 1 inch potential vertical rise. Potential vertical rise (PVR) to be determined in accordance with Test Method Tex-124-E, Rev. January 1, 1978/December 1982, Texas State Department of Highways and Public Transportation, Materials and Test Division, "Method for Determining the Potential Vertical Rise, PVR" (a copy of which is on file in the office of the City Secretary). For this purpose, the "dry" moisture condition (from which little shrinkage is experienced, but where volumetric swell potential is greatest) shall be used for each sample and test.
    - (3) The RLPE shall certify that the plans and specifications were designed assuming water level rises to ground level for all hydrostatic and uplift pressure designs.
  - c. *Foundation, Basement Walls and Floors.* Foundations shall meet all the criteria set out in this Section C-104, as well as the following additional mandatory requirements:
    - (1) The entire foundation of the building and the walls and floor of the basement shall be cast-in-place concrete.

- (2) Shoring shall be required during any and all excavation. All shoring shall be designed based on the recommendations of the RLGE and approved by the RLPE.
  - (3) All foundation walls shall be designed to resist the earth pressures at-rest and to resist full hydrostatic loading to ground surface. If the soil tests indicate the presence of expansive soils, the walls shall be designed to resist lateral swelling pressures also.
  - (4) Minimum wall and floor thickness shall be: Wall = 8 inches, Floor = 8 inches.
  - (5) Minimum reinforcement of all concrete shall be two layers of #4 grade 60 rebar 16 inches on center each way.
  - (6) Minimum concrete testing shall consist of testing each truck with 7 and 28 day test breaks with an approval letter from the RLPE delivered to the office of the building official and acknowledged by the same prior to continuing any further construction.
  - (7) Minimum concrete strength shall be 3000 PSI at 28 days.
  - (8) Monolithic concrete placement is mandatory for all walls, wall to wall connections and in floors. Wall to floor connections may be monolithic or segmented.
- d. *Drainage.* Foundation drainage plans, outside and inside of a basement, shall include the following minimum requirements:
- (1) Drains shall be provided around all concrete foundations that retain earth and enclose habitable or usable spaces located below grade. Gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system. Gravel or crushed stone drains shall extend at least 1 foot (305 mm) beyond the outside edge of the footing and 6 inches (152 mm) above the top of the footing and be covered with a commercial grade filter cloth Type A woven or non-woven, non-bio degradable plastic yarn meeting at a minimum all of the following ASTM Standards: Grab tensile strength (ASTM D 1682 @ 90 lbs. min.; Burst strength (ASTM D 751) @ 100 psi min.; Equivalent opening size (OES) @ 40 min., 100 Max. Perforated pipe shall be covered with the above filter membrane material and placed on a minimum of 2 inches (51 mm) of washed gravel or crushed rock at least one sieve size larger than the pipe opening or perforation and covered with not less than 6 inches (152 mm) of the same material. There must be a granular drainage layer beneath the floor slab.
  - (2) Separate sump pumps for outside and inside the basement which shall be a minimum of ¼-horsepower sump pumps. The sump



pumps shall be rated at four times the estimated seepage rate and shall discharge away from the building to the public storm sewer system. The drainage systems shall be provided with a positive means of preventing backflow. Pumps shall be accessible for removal and maintenance.

- (3) Emergency power supply for sump pumps shall be provided. Natural Gas or LP Gas (10 gallon storage maximum) systems allowed, no battery systems shall be allowed. Systems shall be located outside, not in basement area.
- e. *Waterproofing.* Waterproofing shall include the following minimum requirements:
  - (1) The entire exterior basement walls shall be covered with waterproofing materials designed for below grade/soil contact that will withstand the stated hydraulic pressures per the soil report.
  - (2) The exterior wall waterproofing shall be protected with a protection board of extruded polystyrene or equal non-bio degradable product.
- f. *Mechanical, Electrical or Plumbing.* Mechanical, electrical or plumbing equipment shall meet all the requirements set out in Section 18-67 of the City's Buildings and Development ordinances as well as the following additional requirements:
  - (1) Minimum height above finished floor of the basement for the base of any such equipment shall be eighteen (18) inches.
  - (2) Gas fired appliances shall not be allowed inside any basement.
  - (3) Conditioned space (e.g. air/heat) shall be at the discretion of the owner.
  - (4) Access to basement shall be by stairway. Trap door access shall not be permitted.

#### **Sec. C-105. - International Energy Conservation Code.**

- 1. The administrative officer is the building official. All hearings, variances etc. are handled by the BSC.
- 2. In lieu of inspection by City employees, the building official may require a written certification that a building meets or exceeds minimum requirements, if the certification is: (i) signed by a code-certified inspector (as defined in V.T.C.A., Health & Safety Code § 388.02) not employed by the city, and (ii) accompanied by an approved inspection checklist, properly completed, signed and dated by the inspector. If the fees of the code-certified inspector are paid by the City, the amount shall be added to the building permit fees otherwise payable. With approval from the building official, a permittee may pay such fees directly to an independent inspection firm. Only code-certified inspectors may perform inspections and enforce this code in the City.

## **Sec. C-106. - International Fire Code**

1. The fire official shall be the fire chief or acting fire chief, who may detail other members of the fire department or the building inspection division to act as inspectors. Chapter 18 of this Code shall apply to enforcement and administration of the fire code in the same manner as it applies to the building code (except that the fire official shall have the powers and duties of the building official under such articles).
2. The BSC shall have the same jurisdiction and authority with respect to the fire code as it has with respect to the building code.
3. The limits of the fire district referred to in Section 902.1.1 are coextensive with the City limits.
4. Explosives and fireworks, as defined in Chapter 33, are prohibited within the City limits.
5. Notwithstanding Section 2206.7.6 (relating to service stations), "latch-open" type devices are prohibited.
6. Section 603.8.4 (hours for burning) is amended to read in its entirety as follows: "An incinerator shall not be used or allowed to remain with any combustion inside it: (i) at any time from an hour preceding sunset on one day until sunrise the following day; or (ii) at any time when unattended."
7. Appendices B through J to the International Fire Code are adopted and incorporated herein. Delete: Appendix A.
8. Section 505.1 (address numbers) is amended to read in its entirety as follows: "New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numerals or alphabet numbers. Numbers shall be a minimum of 4 inches high with a minimum stroke of 0.5 inches. Exception: One- and two-family dwellings shall comply with Section 6.409 of the Code of Ordinances."

## **Sec. C-107. - International Fuel Gas Code**

1. The administrative officer is the building official. Chapter 18 of this Code shall apply to enforcement and administration of this code in the same manner as it applies to the building code. The BSC shall have the same jurisdiction and authority with respect to this code as it has with respect to the building code.
2. Delete Sections FG103, FG106 and FG110.
3. Even if otherwise permitted by this code:
  - a. Copper, brass or aluminum tubing or piping shall not be used in the City.

- b. Thermo plastic pipe may be used for gas lines only if it: (i) meets ASTM D2513 (or equivalent, or better), (ii) is identified by proper markings and (iii) is installed with a locator wire (No. 14 gauge copper wire).
  - c. Thermo plastic pipe shall terminate above ground outside of buildings only if installed in pre-manufactured anodeless risers or service head adapter risers, all in accordance with the manufacturer's installation instructions.
4. Amend Section 311.2 to read in its entirety as follows: "Low pressure (not to exceed 0.5 PSI) gas piping shall withstand a pressure of at least 10 inches of mercury for a period of time not less than 10 minutes without showing any drop in pressure, except that the following shall apply in the case of new construction: The newly-constructed system must withstand a pressure of at least 25 PSI for a period of not less than 10 minutes without showing any drop in pressure as an initial pressure test, and the system must also withstand a pressure as a final test. Higher pressure piping must with stand pressure of at least 10 PSI, but never less than twice the maximum pressure to which the piping will be subjected in operation, for a period of at least 10 minutes without showing a drop in pressure, but the higher pressures required for new construction, above, shall be used to test new construction in lieu of the 10-PSI level prescribed by this sentence."
5. There must be a permanently-installed stairway, either fixed or folding, to serve attic space where appliances or equipment are located. The opening must be at least 25.5" x 54", and any folding staircase must be rated for at least 350 pounds capacity and at least 20 minutes fire resistance.
6. Even if otherwise permitted by this code, undiluted liquefied petroleum gas, or "LPG," shall not be used at any fixed location in the City. Exception: This does not prohibit the use of such gas in quantities of 10 gallons or less.
7. Each new or replaced gas meter shall be located on the same building site that it serves.
8. Delete: All appendices to the International Fuel Gas Code.

## **Sec. C-108. - International Mechanical Code**

- 1. The administrative officer is the building official. All hearings, variances etc. are handled by the BSC.
- 2. Add to Section M306.3: "There must be a permanently-installed stairway, either fixed or folding, to serve attic space where appliances or equipment are located. The opening must be at least 25.5" x 54", and any folding staircase must be rated for at least 350 pounds capacity and at least 20 minutes fire resistance."
- 3. Add to Section M605.1: "All return air filters in new residential construction and wherever possible in existing buildings shall be installed within 24 inches of the finished floor or there must be installed a media-type or electrostatic-type air filter at the equipment."

4. Delete: All appendices to the International Mechanical Code.

## **Sec. C-109. - International Plumbing Code**

1. The administrative officer is the building official. Chapter 18 of this Code shall apply to enforcement and administration of this code in the same manner as it applies to the building code. The BSC shall have the same jurisdiction and authority with respect to the code as it has with respect to the building code.
2. Delete: All appendices to and sections P103, P106 and P109 of the International Plumbing Code.
3. Even if otherwise permitted by the IPC;
  - a. Acrylonitrile-Butadiene-Styrene (ABS) pipe and fittings, Type M copper, lead-based pipe, aluminum DWV pipe and components are not approved materials for use. Air admittance valves are only approved for use in an unenclosed structure, i. e. outdoor kitchen.
  - b. Polybutylene, Polyethylene (PB, PE, PEX-AL-PEX, PE-AL-PE) are forbidden to be used for water service or distribution piping in concealed spaces (including attics).
  - c. The jointing procedure approved for PEX-a shall be a procedure utilizing ASTM F 1960 Fittings and PEX Rings, only.
  - d. Should a PEX-a or CPVC manifold system be installed it shall not be located on a wall shared with a garage.
4. Even if otherwise permitted by the IPC:
  - a. PVC type water pipe and fittings are not allowed for use in the City.  
Exceptions: (A) Schedule 40 meeting ASTM D1785 (or better) PVC water pipe may be used where permitted by the IPC, but only if: (i) it is installed underground (but see next paragraph requiring copper lines in some locations) or as pool piping, (ii) all joints are primed and glued as required by the manufacturer's recommendations (and the primer must be purple or another distinctive color, except on above-ground pool piping), and (iii) it is identified by proper markings. (B) This section does not apply to irrigation systems.
  - b. All water lines under a slab on grade must be copper Type L, K or PEX-a. Each water line under, in or through a slab on grade must be sleeved with a continuous piece of tubing at least 0.025 inches thick terminating at least six inches above the finished floor.
  - c. Irrigation systems must meet these criteria: (i) Schedule 40 PVC material meeting ASTM D1785 (or better) must be used for pressure lines. (ii) Class 160 PVC material (or better) must be used for field lines. (iii) All lines shall be buried at least six inches below grade. Note: The City is not responsible for irrigation system components located in street areas or easements (and special permits may be required to install such components in those locations; see, e.g., Chapter 70 of this Code).

- d. Underground water service piping must be buried at least 12 inches below grade.
  - e. PVC drain, waste or vent pipe and fittings must be Schedule 40 meeting ASTM D2665 (or better) and identified by proper markings. Exception; Area drain piping may be SDR 35 PVC.
5. Amend Section 916.3 to read as follows: "The vent located below the flood level rim of the fixture being vented shall be installed below the floor using drainage pattern fittings with a fall of not less than one-quarter inch (1/4") per foot to the drain. The vent shall be sized in accordance with Section 906.2 with 2" diameter pipe being the minimum. The lowest point of the island fixture vent shall connect full size to the drainage system. The vent or branch vent shall extend as high as practicable, but not below the drain board. There shall be a vent loop at the top of the fixture riser. The fittings shall prevent a horizontal segment at the top of the loop. Cleanouts shall be provided in the island fixture drain and vent to permit rodding of all piping located below the flood level rim of the fixtures. Rodding in both directions shall be permitted through a cleanout."
6. Amend Section 1101.2 to read in its entirety as follows: "The provisions of this chapter are applicable to interior leaders, building storm drains, building storm sewers, exterior conductors, downspouts, roof gutters and other storm drainage fixtures and facilities."
7. Maximum water meter size, unless an RPE (Registered Professional Engineer) can clearly and convincingly demonstrate the need for a larger meter in a particular case, is: 3/4th-inch for an irrigation system, or 1-inch for a single-family dwelling.

## **Sec. C-110. - International Residential Code**

1. The administrative officer is the building official. All hearings, variances etc. are handled by the BSC.
2. This code, in lieu of the other "International Codes," applies to all residential structures in the City. "Residential" means having the character of a detached one-family or two-family dwelling that is not more than three stories high with separate means of egress, including the accessory structures of the dwelling. This code does not apply to: (i) any dwelling that has a common means of egress, such as a common hallway, or (ii) any dwelling or structure that has the character of a facility used for accommodation of transient guests or a structure in which medical, rehabilitative, or assisted living services are provided in connection with the occupancy of the structure.
3. All amendments and deletions to the other "International Codes" adopted by this Schedule are also carried forward and adopted as amendments and deletions from the International Residential Code.
4. Delete: All appendices to the International Residential Code.
5. This code does not apply to installation and maintenance of electrical wiring and related components. See National Electrical Code, below.

6. In Section R301.2 insert the following table:

Table R301.2(1). Climatic and Geographical Design Criteria			
Ground snow load:	0	Air freezing index:	50 BF days
Wind speed (mph):	110 (3-second gust)	Mean annual temperature:	68° F
Seismic design category:	A	Subject to damage from weathering:	Negligible
Winter design temperature:	32° F	Frost line:	6"
Ice shield underlayment:	Not required	Termite:	Very heavy
Flood hazards:	Map effective date: June 18, 2007 (map revised date)	Decay:	Mod. to severe

7. In Section P2603.6.1 insert 12 inches for minimum depth cover for a sewer line.

8. In Section P3103.1 insert 12 inches for a minimum height above the roofline for a vent termination.

### **Sec. C-111. - (BOCA) National Building Code**

Only Sections 3108 (Radio And Television Towers) and 3109 (Radio And Television Antennas), together with any necessary definitions or interpretive aids, are adopted. See subchapter G of Chapter 6 of this code.

### **Sec. C-112. - National Electrical Code**

1. The administrative officer is the building official. All hearings, variances etc. are handled by the BSC.

2. See Chapter 26 of this Code for various provisions which override or supplement the NEC.

### **Sec. C-113. - International Property Maintenance Code**

1. The administrative officer is the building official. All hearings, variances, etc. are handled by the BSC.

2. Appendix A to the International Property Maintenance Code is adopted and incorporated herein.



**Sec. C-114. - International Swimming Pool and Spa Code**

1. The administrative officer is the building official. All hearings, variances, etc. are handled by the BSC.