



HOUSTON CONSTRUCTION CODE MODERNIZATION – 2021 BUILDING CODE ADOPTION



**HOUSTON
PUBLIC WORKS**

PRESENTED TO:

Transportation, Technology, and Infrastructure Committee

August 24, 2023

PRESENTED BY:

Carol Haddock, P.E., Director, Houston Public Works

Chris Butler, Deputy Director, Houston Permitting Center, Houston Public Works

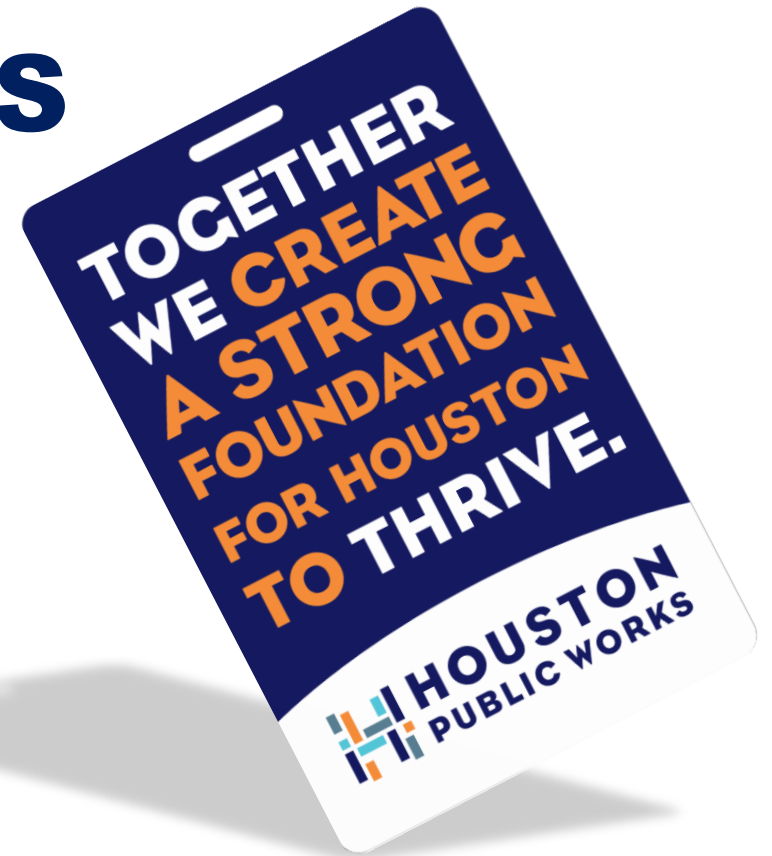
Byron King, Building Official, Houston Permitting Center, Houston Public Works



HOUSTON PUBLIC WORKS

PURPOSE

together we create a strong foundation
for Houston to thrive



5 TO THRIVE VALUES

respect | ownership | communication | integrity | teamwork

CONSTRUCTION CODE MODERNIZATION 2021 CONSTRUCTION CODE ADOPTION PROCESS



CONSTRUCTION CODE MODERNIZATION PROJECT STRUCTURE AND PROCESS



2021 HOUSTON CONSTRUCTION CODE

TIMELINE

2021 Construction Code presentation to TTI Committee
August 24, 2023

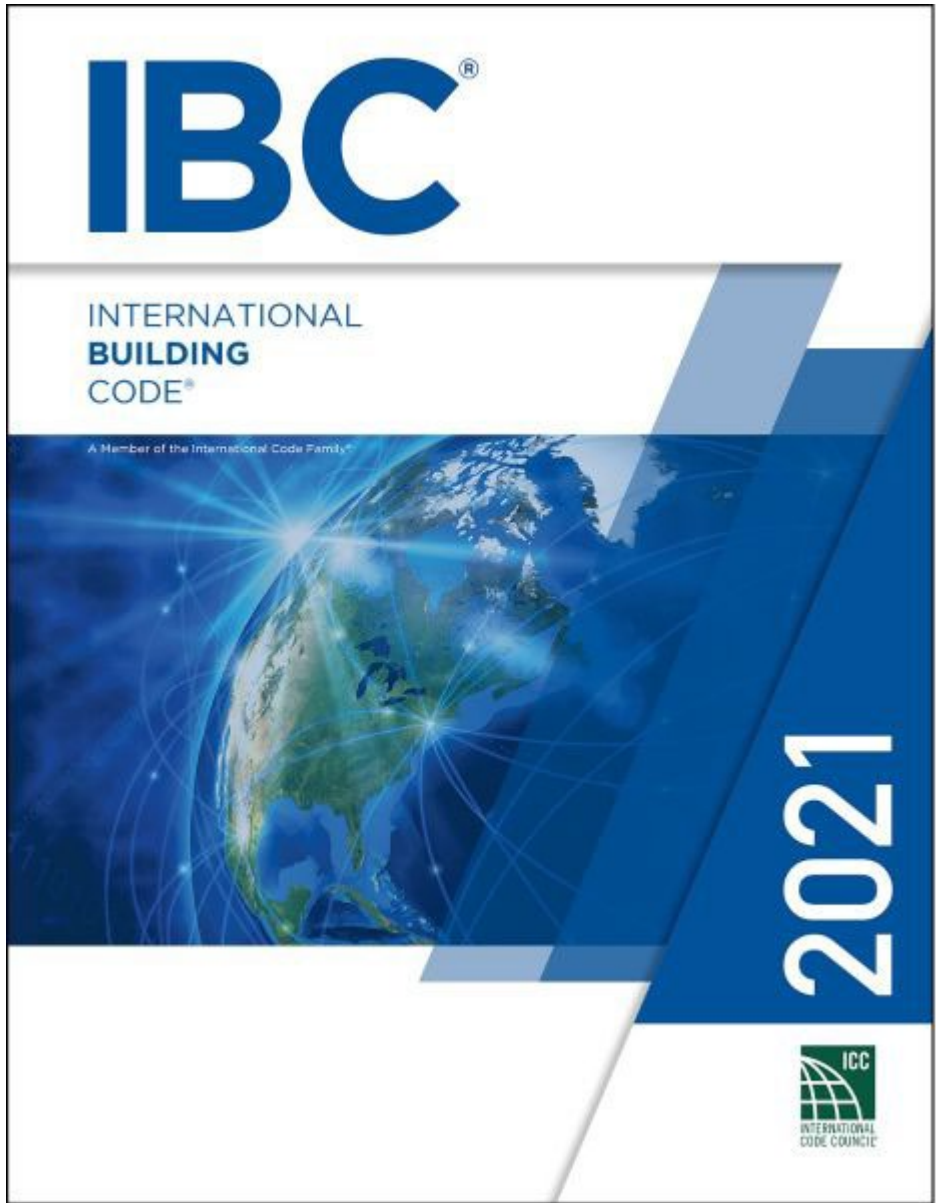
Presentation to City Council for adoption in
October 2023

Construction Code Update Includes:

- 2021 International Building Code (IBC)
- 2021 International Existing Building Code (IEBC)
- 2021 International Fire Code (IFC)
- 2021 International Residential Code (IRC)
- 2021 International Swimming Pool & Spa Code (ISPSC)
- 2021 International Energy Conservation Code (IECC)
- 2021 Uniform Mechanical Code (UMC)
- 2021 Uniform Plumbing Code (UPC)
- 2023 National Electrical Code (NEC)

BUILDING CODES BASE CODE 2015-2021 UPDATES





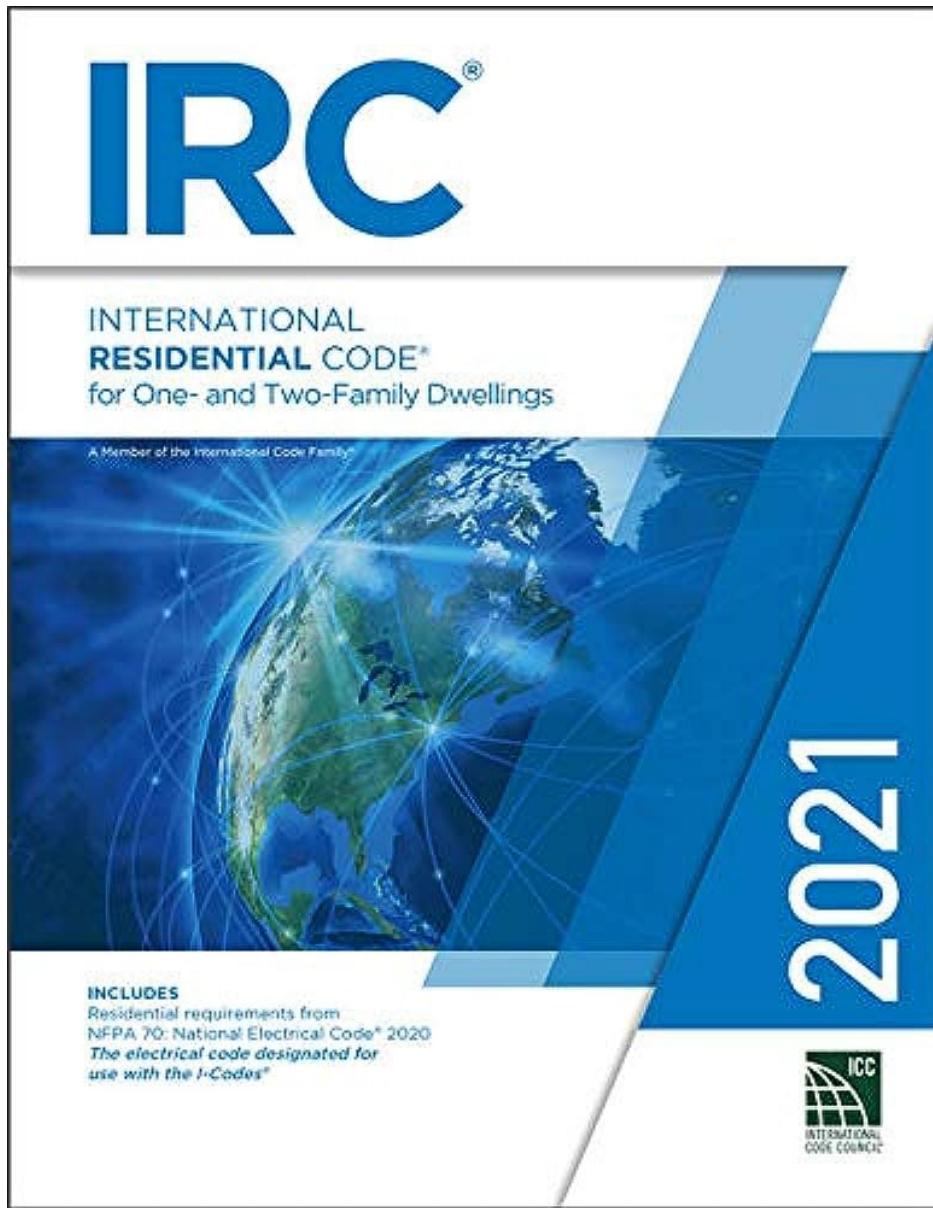
INTERNATIONAL BUILDING CODE (IBC)

- 1 New Construction Type: Mass / Heavy Timber Buildings
- 2 Updates to Atrium Design and Construction
- 3 Shipping Containers Used as Buildings or Structures
- 4 Impact Protection in Windborne Debris Regions



INTERNATIONAL FIRE CODE (IFC)

- 1 Fire Command Centers Required in F-1 and S-1 Occupancies
- 2 Clothes Dryer Exhaust Maintenance Requirements
- 3 Manual Fire Alarms Required in Public-Storage Facilities
- 4 New Portable Generator Regulations



INTERNATIONAL RESIDENTIAL CODE (IRC)

1

Updates to Emergency Escape and Rescue Opening Req's

2

New Requirements for Exterior (Deck) Guards

3

Shipping Containers Used as Buildings or Structures



AFFORDABLE HOUSING BENEFITS IN PERMITTING

1

Continue providing 50% discount on homes 1,800 square feet or less

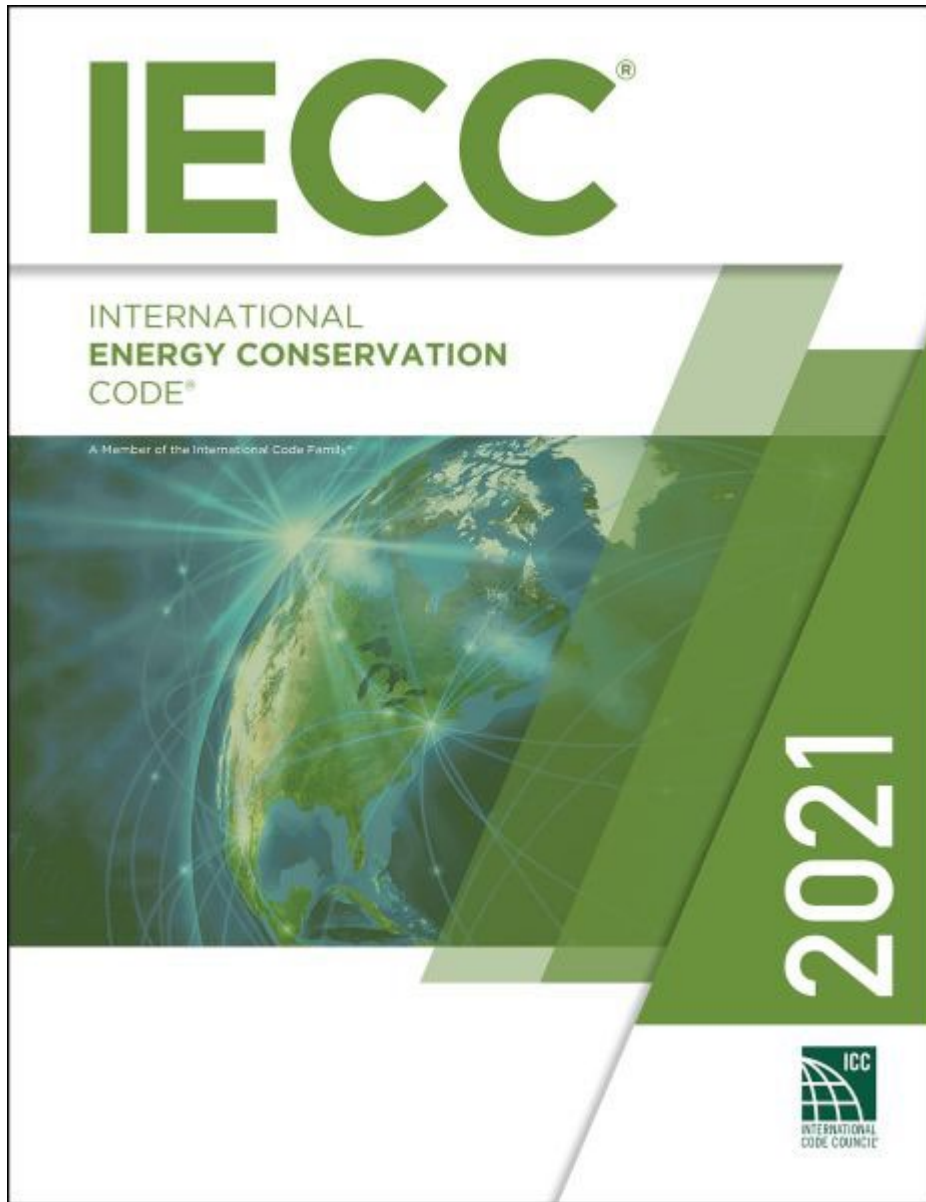
2

Applicable to all new one- and two-family dwellings and townhouses

3

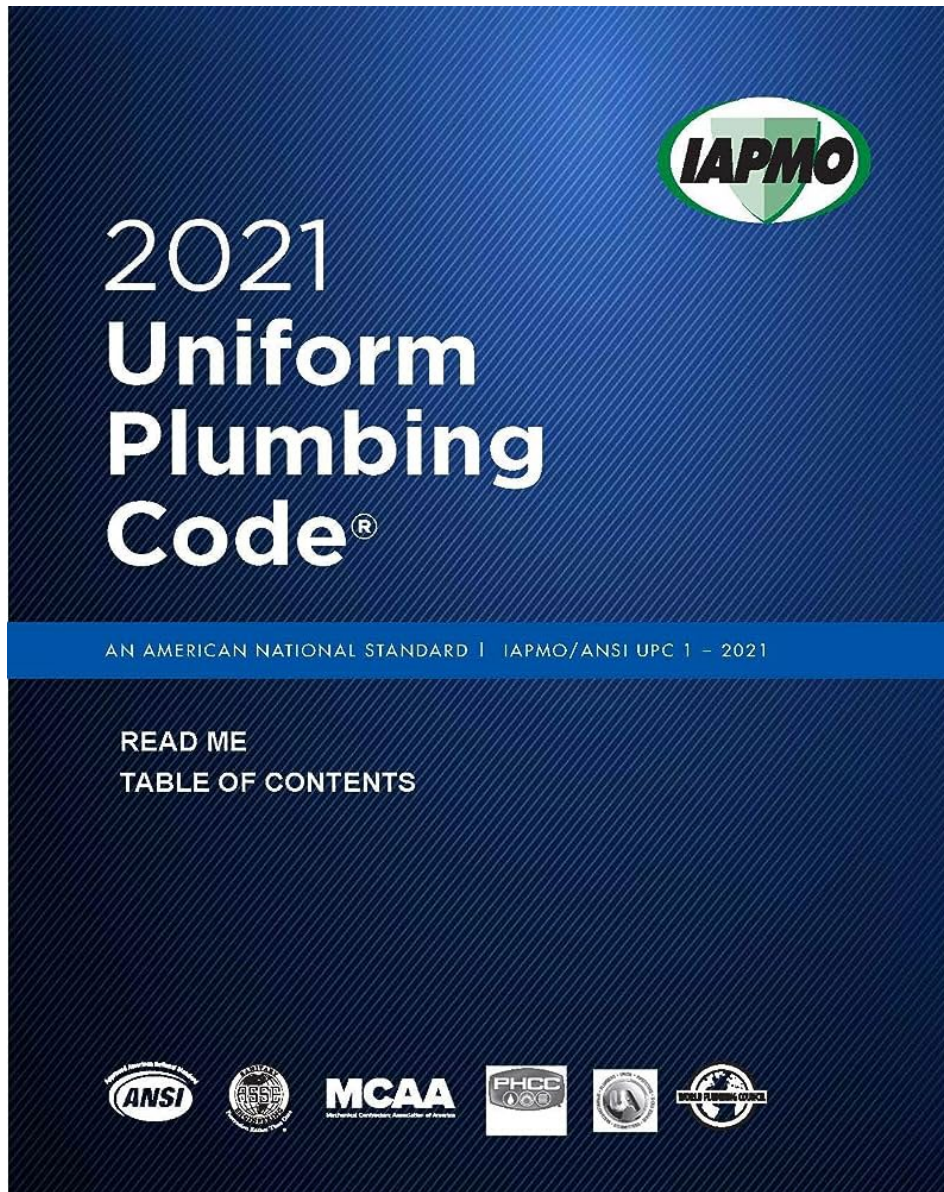
Provides savings of around \$543 for each residential permit

Photo graciously provided by Houston Habitat
During a [KPRC2 / Click2Houston](#) build



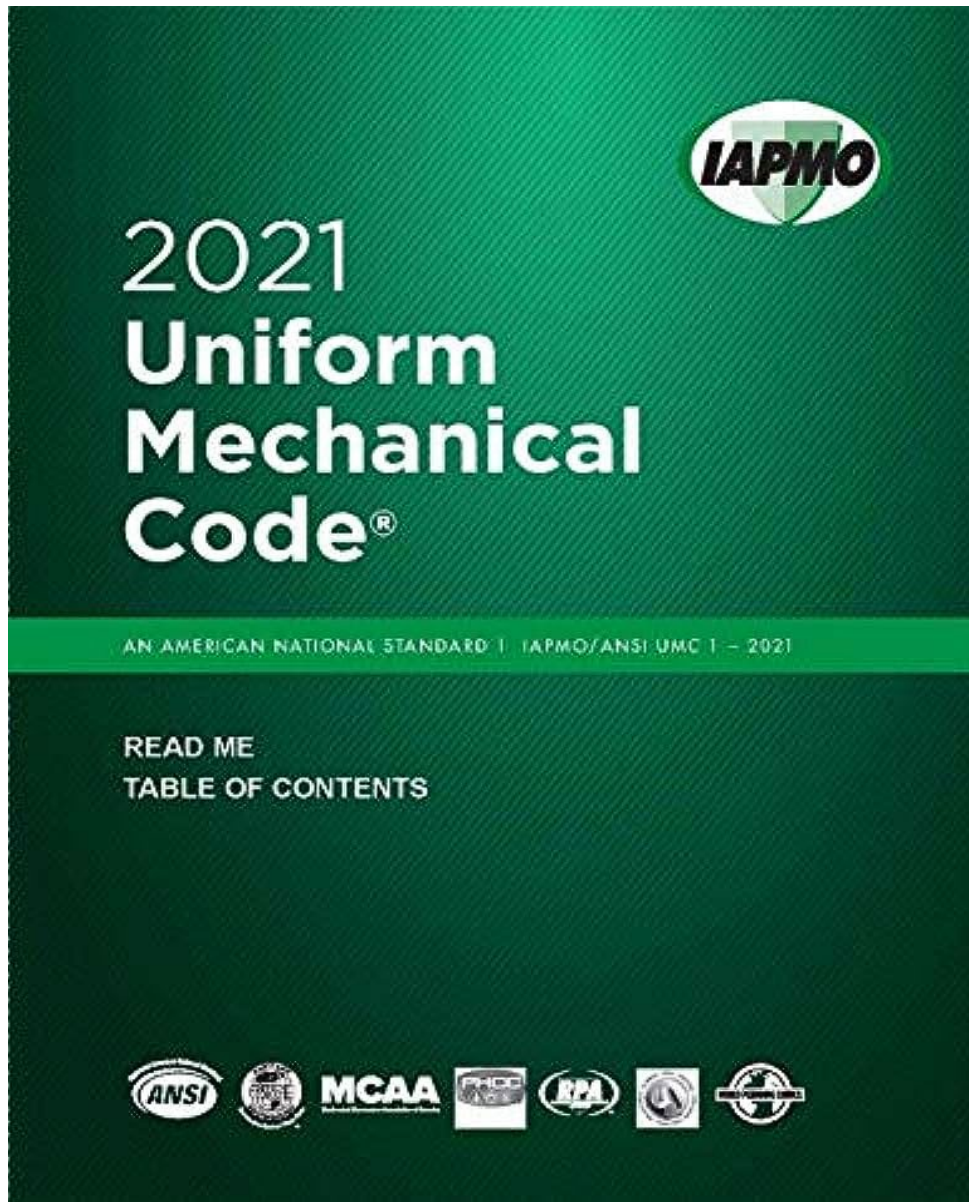
INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

- 1 The avg. savings for a new home built in Texas under this code will save 8.9%
- 2 New Parking Garage Lighting Control Requirements
- 3 New Energy Monitoring Requirements in Commercial
- 4 Additional Efficiency Package Options in Residential



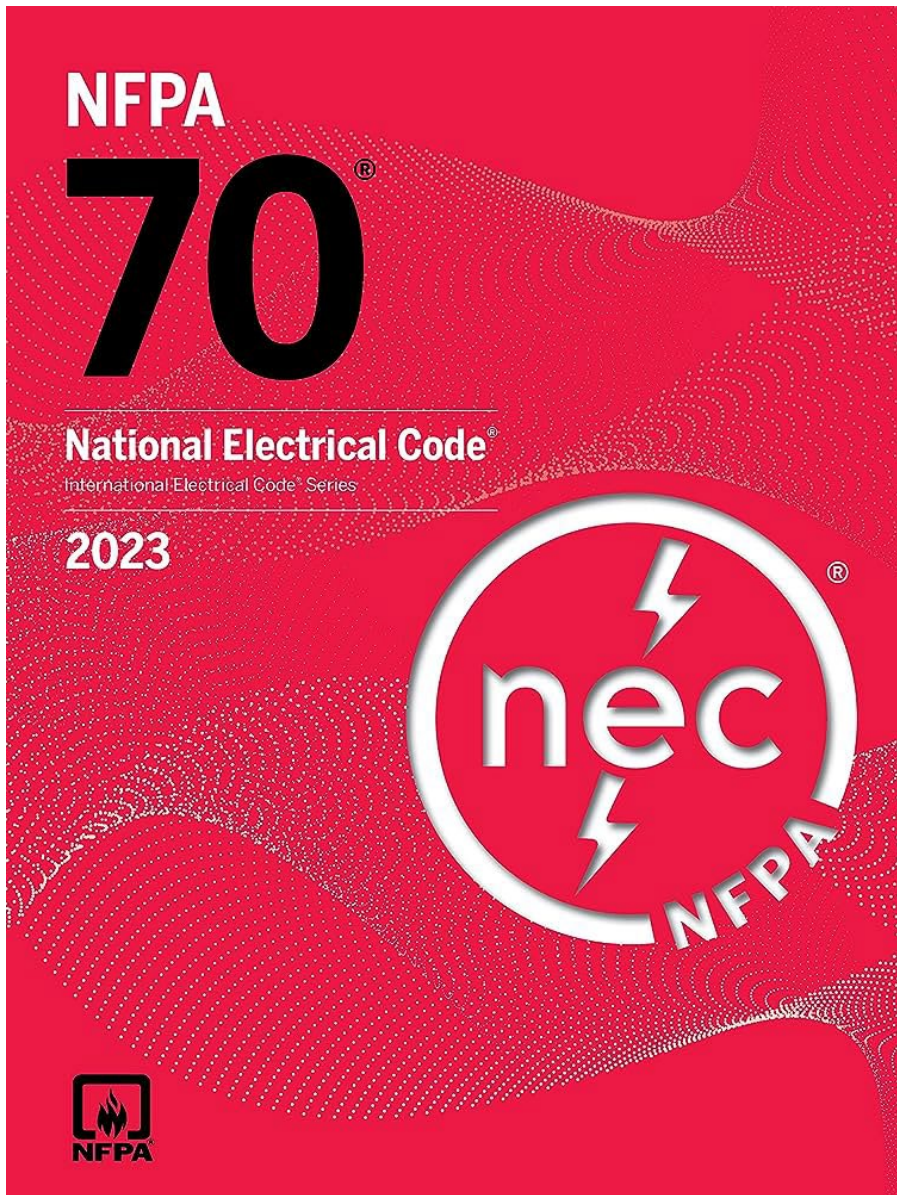
UNIFORM PLUMBING CODE (UPC)

- 1 Updated Fuel and Medical Gas Provisions
- 2 New Provisions for Leak Detection and Backflow Prevention
- 3 New Provisions for Temperature Limiting Devices
- 4 New Standards for Drain, Waste and Vent Piping



UNIFORM MECHANICAL CODE (UMC)

- 1 New Ventilation Requirements
- 2 Updated provisions for refrigeration systems
- 3 New Provisions for Residential CNG fueling systems
- 4 New fire-extinguishing provisions for exhaust systems



NATIONAL ELECTRICAL CODE (NEC)

1

GFCI and AFCI Protection Requirements Has Been Expanded

2

Updates to Kitchen Island/Peninsular Receptacle Requirements

3

New Requirements for Class 1 Power-Limited Circuits

Low Voltage / Power Over Ethernet (P.O.E.) Amendment Proposals



CURRENT EXEMPTIONS, SECTION 301.2

#8 – *“Electrical wiring, devices, appliances, apparatus or equipment operating at less than 50 volts and not capable of supplying or controlling more than 50 watts of power.”*

#9 – *“Sound equipment, private or public telephone system, thermostat wiring or burglar alarm system, provided, however, a permit shall be required to wire any such system to the source of electricity.”*

AMENDMENT NOT APPROVED

1

The amendment proposal falls below base code requirements and would reduce life safety

2

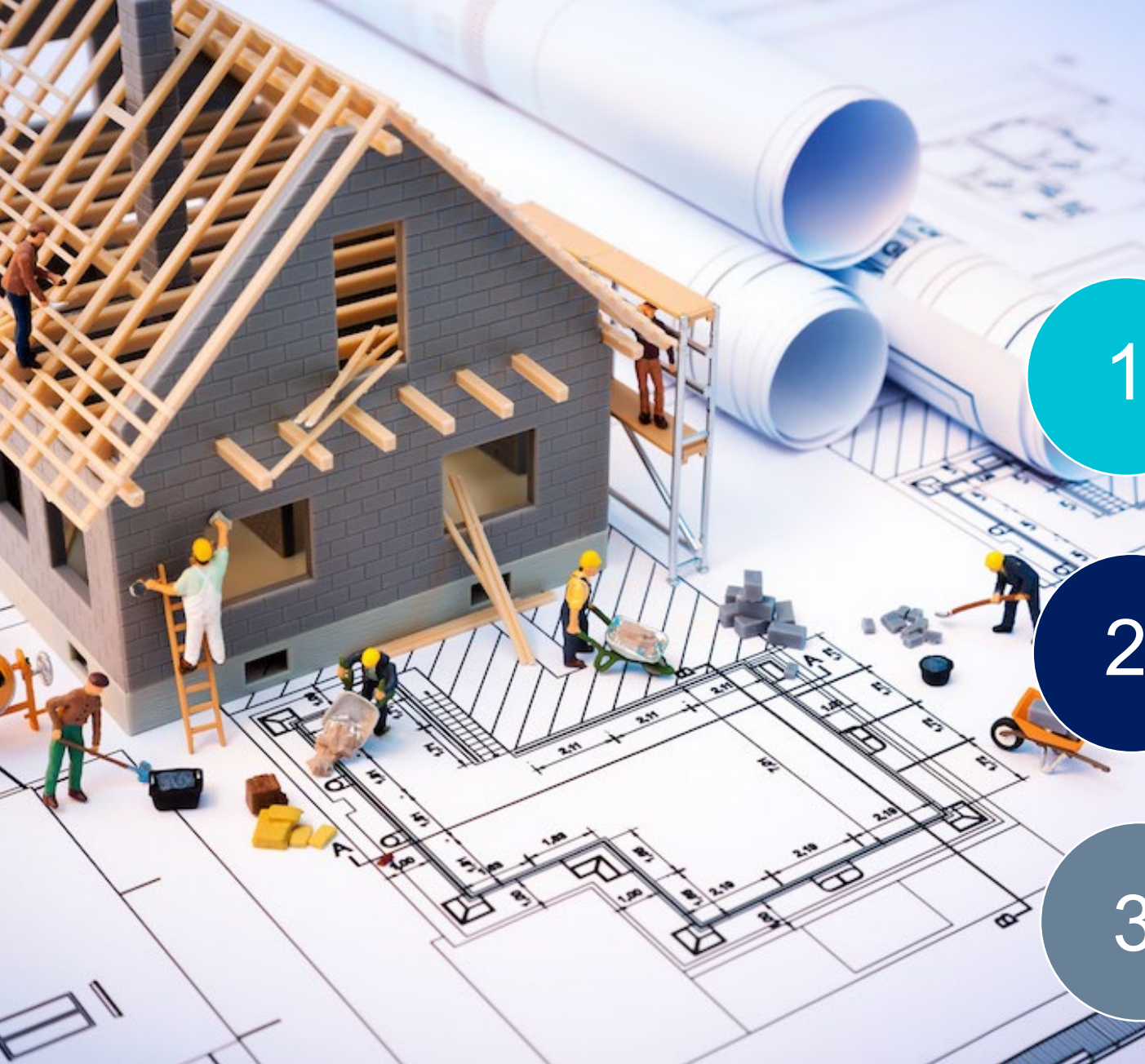
POE proposals would prohibit City from enforcement of state law requirements and the National Electrical Code (NEC)

3

The Texas Electrical and Safety Licensing Act does not exempt Class 2 and 3 wiring from permitting

4

The Low Voltage issue can only be addressed at the state level



“GRANDFATHERING” PROJECTS

1

Will be the same as the current “grandfathering” process for the 2015 amendments

2

Applicable to all projects submitted before 2021 Codes effective date

3

Projects can still be designed or built under 2021 Codes

CONSTRUCTION CODES – APPROVED AMENDMENTS



2021 SIGNIFICANT AMENDMENT CHANGES – BREAK TANKS



1

Previous code required break tanks for any fire pump installation

2

Removes mandatory requirement for a break tank

3

Requires hydraulic calculations to determine if break tank is required



2021 SIGNIFICANT AMENDMENT CHANGES – DRINKING FOUNTAINS



1

Removes outdated drinking fountain exceptions

2

Incorporates 2021 IPC language for drinking fountains

3

Allows for wider range of substitutions

2021 SIGNIFICANT AMENDMENT CHANGES – WATER SOFTENERS



1

Update to Houston amendment for water treatment units

2

Removes mandatory double check valve requirement from Residential

603.5.18.2 Water Treatment Units. Reverse osmosis drinking water treatment units shall meet the requirements of the appropriate standards referenced in Table 1701.1. Waste or discharge from reverse osmosis or other types of water treatment units shall enter the drainage system through an airgap. Water supply for commercial water softeners must be protected by a double check valve assembly.



2021 SIGNIFICANT AMENDMENT CHANGES - UNVENTED HEATERS AND COMPOSTING TOILETS

1

Removes historic Houston amendments that prohibit these installations

2

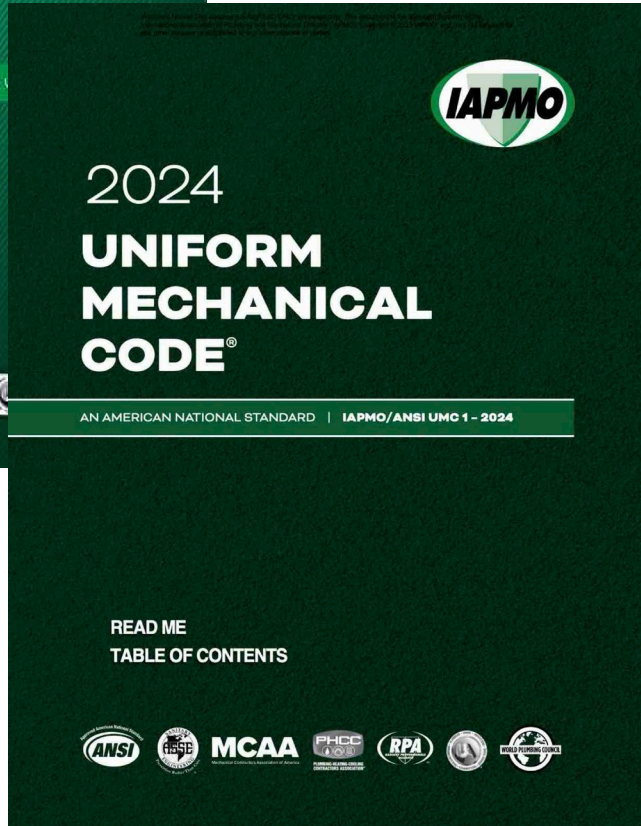
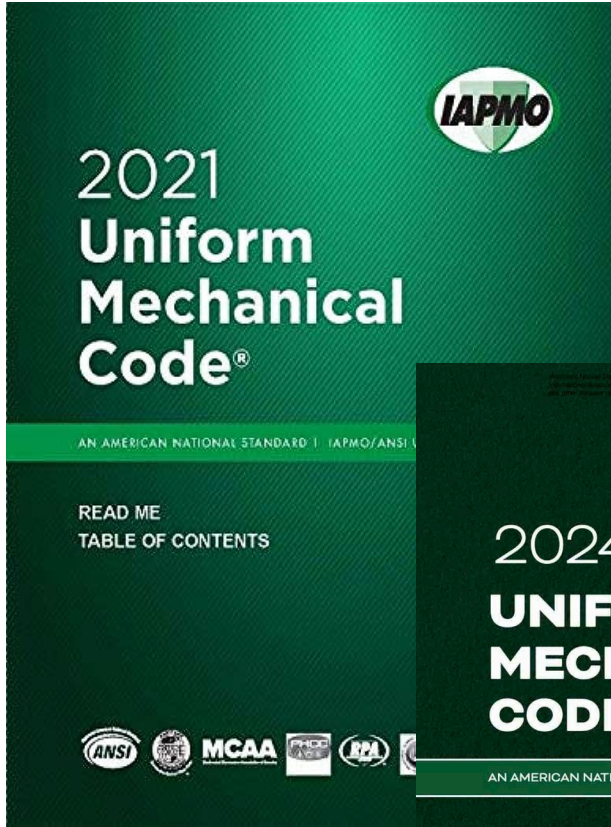
Changes occur in IRC, as well as UMC and UPC

3

Heaters and toilets will need to comply with appropriate referenced standards



2021 SIGNIFICANT AMENDMENT CHANGES – A2L REFRIGERANT



1

Updates A2L Refrigerant language to 2024 UMC

2

Updates ASHRAE Standard 15 and 34 to the latest editions

3

Ensures compliance with Texas state law for substitute refrigerants

2021 SIGNIFICANT AMENDMENT CHANGES – SOLAR-READY



1

Will continue adoption of Residential Solar-Ready appendix (mandatory)

2

Will include Commercial Solar-Ready as new optional appendix

3

Intended to support future solar installs in both commercial and residential

2021 SIGNIFICANT AMENDMENT CHANGES – EV-READY



1

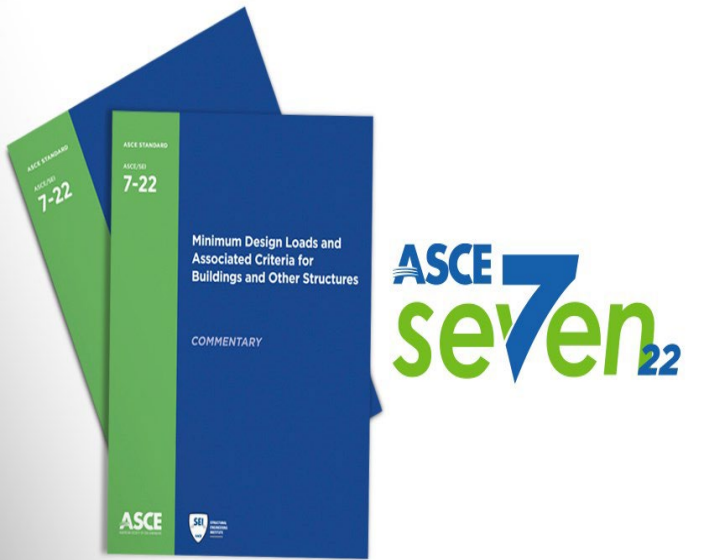
Houston Energy Code will now include optional EV-Ready appendix

2

EV-Ready will be included in both Residential and Commercial Energy Codes

3

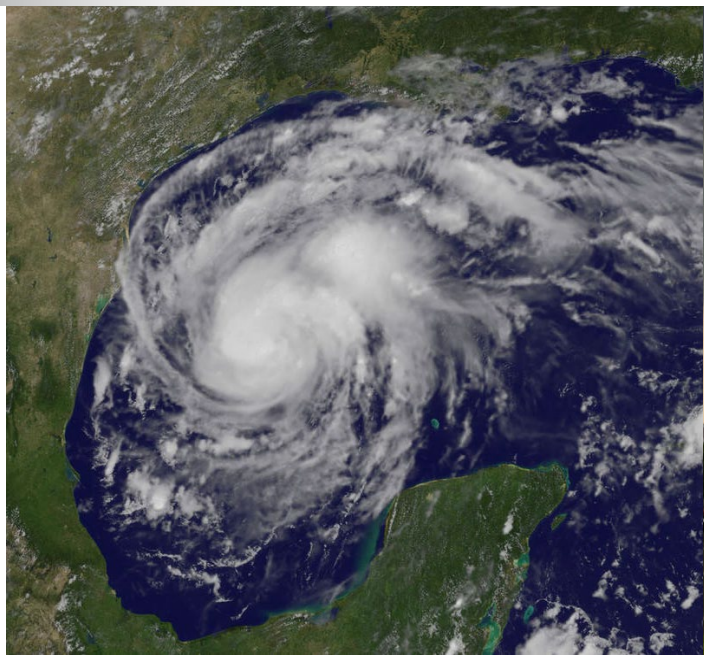
Intended to be used as guidelines for future EV installs



2021 SIGNIFICANT AMENDMENT CHANGES – ASCE 7 - 2022

1

Includes updates to rain, wind, and tornado loads for more resilient construction



2

Expands the Risk Categories for certain Institutional occupancies and other high-risk occupancies

3

Improves roof underlayment in high wind regions and water infiltration in hurricane prone regions

CONSTRUCTION CODE MODERNIZATION

CONTACT US



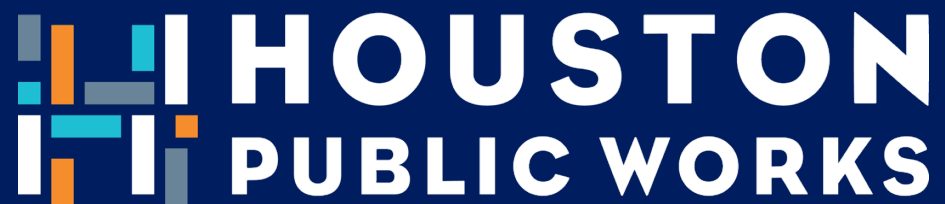
For general information email us at:

Info.CCM@houstontx.gov

For updates on the CCM project:

[www.houstonpermittingcenter.org/
construction-code-modernization](http://www.houstonpermittingcenter.org/construction-code-modernization)

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THANK YOU!



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