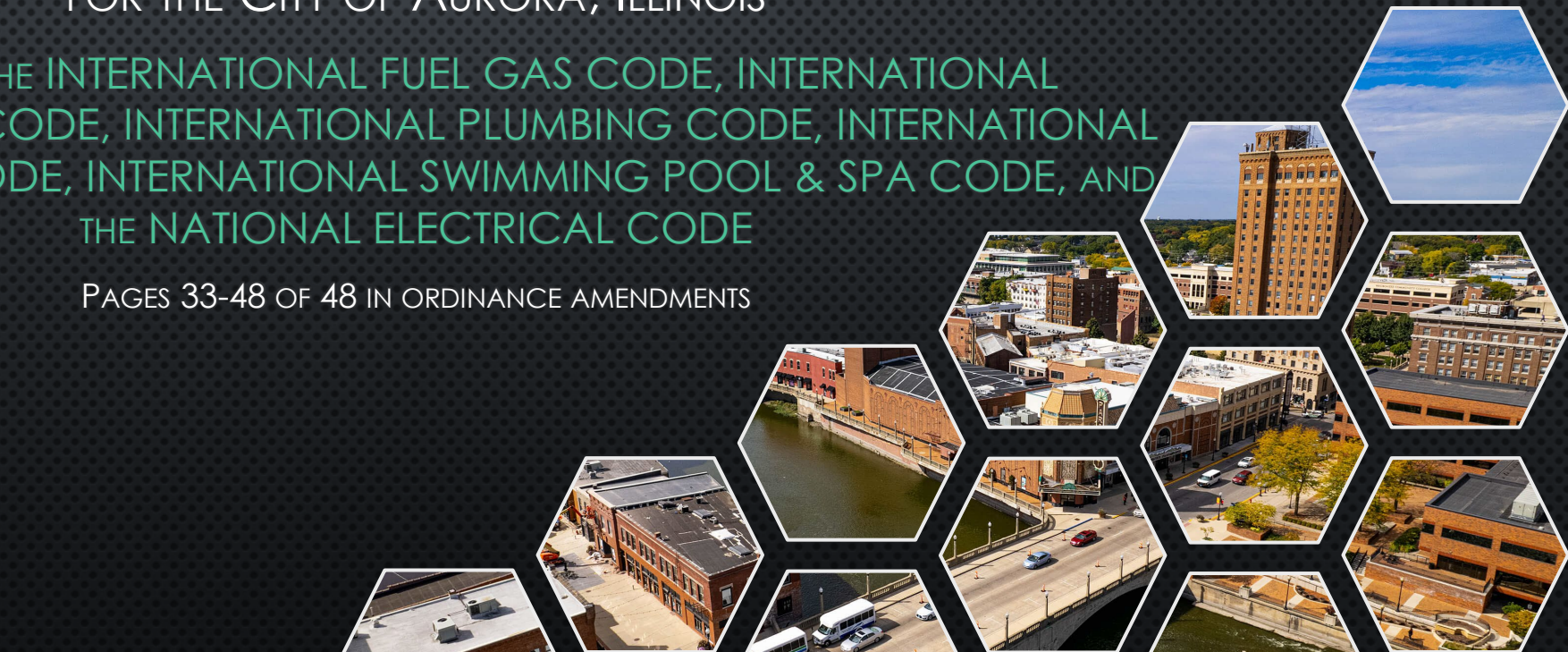
ADOPTION OF THE 2024 INTERNATIONAL CODE COUNCIL SERIES

FOR THE CITY OF AURORA, ILLINOIS

A LOOK AT THE INTERNATIONAL FUEL GAS CODE, INTERNATIONAL MECHANICAL CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL RESIDENTIAL CODE, INTERNATIONAL SWIMMING POOL & SPA CODE, AND THE NATIONAL ELECTRICAL CODE

PAGES 33-48 OF 48 IN ORDINANCE AMENDMENTS



OVERVIEW OF THE:

INTERNATIONAL FUEL GAS CODE (IFGC)
INTERNATIONAL MECHANICAL CODE (IMC)
INTERNATIONAL PLUMBING CODE (IPC)
INTERNATIONAL SWIMMING POOL & SPA CODE (ISPSC)

IFGC

- Strictly a commercial based code for all use groups other than one- and two- family dwelling units and certain townhomes.
- Covers Fuel Gas requirements including but not limited to uses, sizing, materials, venting and connections.

IPC

- Strictly a commercial based code for all use groups other than one- and two- family dwelling units and certain townhomes.
- Covers Plumbing requirements that are not specifically controlled by the Illinois Plumbing Code

IMC

- Strictly a commercial based code for all use groups other than one- and two- family dwelling units and certain townhomes.
- Covers Mechanical requirements including but not limited to duct sizing, makeup air, unit sizing, venting and locations,

ISPSC

- Code that covers both Residential and Commercial pool installations.
- Coverage for this code includes but is not limited to pool equipment, electrical components, heating components, access and protection.

Overview of the:
International Residential Code (IRC)
National Electrical Code (NEC)

IRC

- Code for one- and two- family dwelling units and certain townhomes.
- Provideds complete overview for construction starting at foundation and going up through roof.
- Covers all building systems and their design as well (mechanical, electrical, plumbing, etc.)
- Used for New and Remodel work. Has special section addressing existing conditions.

NEC

- Covers both Commercial and Residential properties
- Covers all components of electrical systems from transformers and services to outlets and switches.
- Does not explicitly deal with existing conditions, so have to start in other codes to limit extent of application.

Reviewers for the ICC Components
(IFGC, IMC, IPC, IRC, & ISPSC)

- City of Aurora Management
  - John Curley – Chief Development Officer
  - Josh Ream – Dir. of Development Services
  - Jesse Kolar – Dir. Of Building and Permits
- Permanent Building & Fire Code Committee
  - Bert Wickam – Fire Alarm Contractor
  - Viral Shah – Architect
  - Mike Kluber – Engineer
  - Steve Verive – Contractor
  - Hank Artlip – Mechanical Contractor
  - Jonathan Bieritz – Architect
  - Matthew Clegg – Sprinkler Contractor
- Outside Consultation
  - Thompson Elevator Company

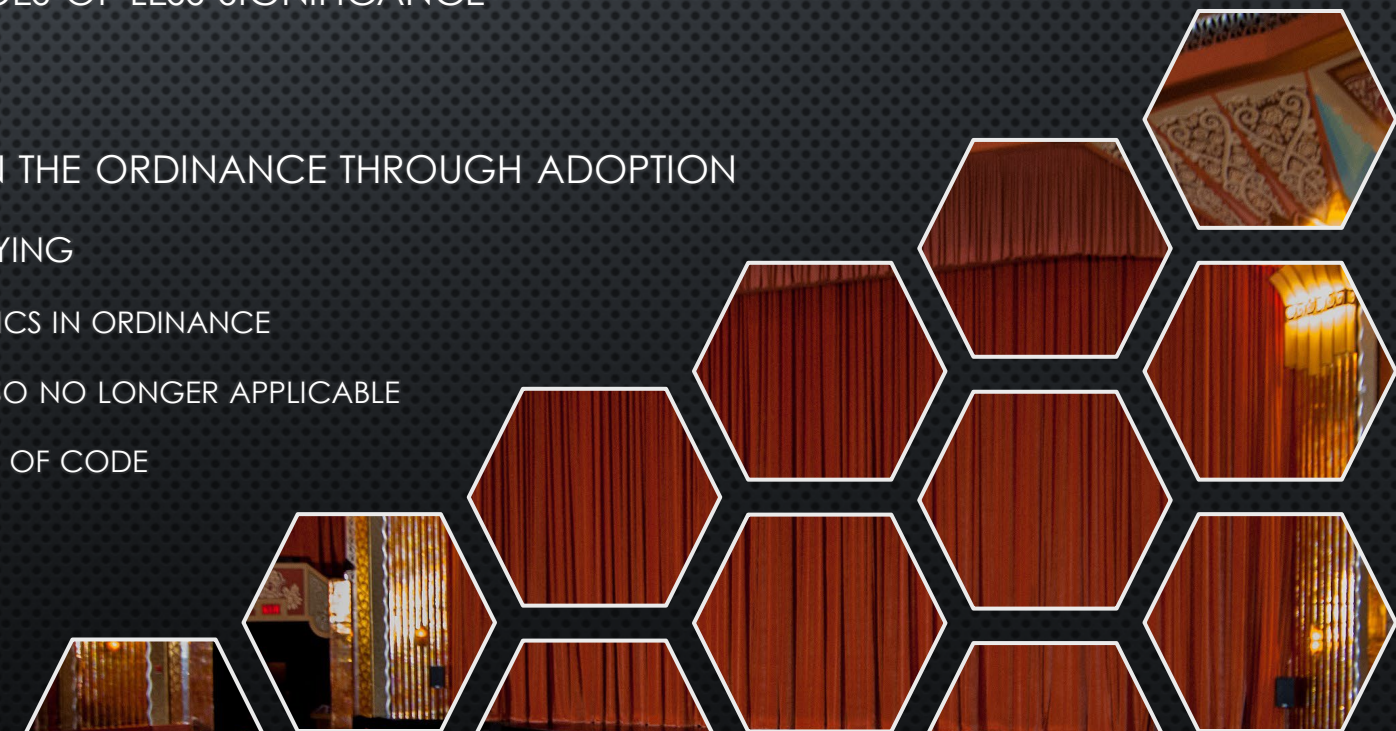
- City of Aurora Staff
  - Cody Lake – Combination Inspector
  - Eric Zimmerman – Combination Inspector
  - Scott Seaberg – Building Inspector
  - Justin Cyr – Building Inspector
  - Murry Brazelton – Building Inspector
  - Brad Berns – Building Inspector
  - Ron Bergstrom – Electrical inspector
  - Jason Elsenbroek – Electrical Inspector
  - Jim French – Fire Inspector
  - Eric Trinidad – Mechanical Inspector
  - Neil Halvorson – Mechanical Inspector
  - Rick Olson – Plumbing Inspector
  - Seth Lockman – Plumbing Inspector

Reviewers for the NFPA components (NEC)

- City of Aurora Management
  - John Curley – Chief Development Officer
  - Josh Ream – Dir. of Development Services
  - Jesse Kolar – Dir. Of Building and Permits
- City of Aurora Staff
  - Cody Lake – Combination Inspector
  - Eric Zimmerman – Combination Inspector
  - Ron Bergstrom – Electrical inspector
  - Jason Elsenbroek – Electrical Inspector
- Electrical Commission
  - Adam Marshall - Contractor
  - David Mertz – Engineer
  - Dave McCabe – Fire Chief
  - Mike Kluber – Engineer
  - Shaun Thomas - Contractor
- Outside Consultation
  - Thompson Elevator Company

Breakdown of Code Review

- Significant Changes
  - Will cover major areas of change (Removal, Addition or Modification)
    - Includes elements that may have changed in 2018 or 2021 code cycles (2017 / 2020 for NEC)
  - Looking at ones with highest cost or change or practice impact
  - Summary provided of other changes of less significance
- Ordinance Modifications
  - Covering items that will change in the ordinance through adoption
    - Factors for that change are varying
      - Updates to base code affect specifics in ordinance
      - Building practices have changed so no longer applicable
      - Covering element in different area of code
      - General cleanup of repetitive text



Significant Changes

- Left Column – Updated Code Section, Year of Inclusion and Information
  - Providing these in sequential order by the code
  - 2018, 2021 or 2024 for ICC and 2017, 2020, or 2023 for NEC
  - This will designate what will be enforced if the 2024 ICC Series is adopted with no modifications
- Right Column – Legacy Code Year and Associated Language
  - This will show what the historic code contained for reference
  - 2015, 2018 or 2021 for ICC and 2014, 2017 or 2020 for NEC

IFGC
409.5.1 SHUTOFF VALVES LOCATED WITHIN SAME ROOM

409.5.1 LOCATED WITHIN SAME ROOM. The shutoff valve shall be located in the same room as the appliance. The shutoff valve shall be within 6 feet (1829 mm) of the appliance, and shall be installed upstream of the union, connector or quick disconnect device it serves. Such shutoff valves shall be provided with access. Shutoff valves serving movable appliances, such as cooking appliances and clothes dryers, shall be considered to be provided with access where installed behind such appliances.

2018 IFGC

- For shutoff valves installed behind movable appliances, the required access is provided by moving the appliance.
- Having the shutoff valve behind an appliance has always been controversial, mainly because many mistakenly believe that the shutoff valve is for emergency purposes. It is not, as is stated in the definition of "Valve, Appliance shutoff." The code has clarified this issue by explicitly stating that shutoff valves behind movable appliances are considered to have the required access.

2015 IFGC

- Had unclear language about what is considered clear access and the necessity to access these in case of emergency.

IMC
607.4 FIRE DAMPER ACCESS AND IDENTIFICATION

607.4.1 ACCESS. Fire and smoke dampers shall be provided with an approved means of access that is large enough to permit inspection and maintenance of the damper and its operating parts. Dampers equipped with fusible links, internal operators or both shall be provided with an access door that is not less than 12 inches (305 mm) square or provided with a removable duct section.

2021 IMC

- Fire and smoke dampers are an important part of a HVAC ductwork system, in the event of a fire they are designed to close and prevent the spread of fire and smoke throughout the building duct work system, giving the building occupants enough time to evacuate and also providing the fire department sufficient time to enter the building and extinguish the fire safely.
- Mandating the minimum size access door shall be no smaller than 12 inch square or you must supply a removable ductwork section, this removable section provides the technician performing the inspection with the unobstructed access needed to properly inspect and maintain the smaller fire and smoke dampers.

2018 IMC

- Smaller single paragraph section was not very specific on all the requirements and had them grouped together. Frequent cause of confusion due to lack of specificity.

IRC
311.5 CARBON MONOXIDE ALARM INTERCONNECTIVITY

R315.5 INTERCONNECTIVITY. Where more than one carbon monoxide alarm is required to be installed within an individual dwelling unit in accordance with Section R315.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of carbon monoxide alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

2018 IRC (RELOCATED 2024)

- REQUIREMENTS FOR CARBON MONOXIDE ALARMS WERE INTRODUCED IN THE 2009 EDITION OF THE IRC TO REDUCE ACCIDENTAL INJURY AND DEATHS FROM CARBON MONOXIDE POISONING BECAUSE CARBON MONOXIDE POISONING DEATHS OFTEN OCCUR WHEN THE OCCUPANTS ARE SLEEPING, THE IRC REQUIRES CARBON MONOXIDE ALARMS TO BE LOCATED IN THE AREAS OUTSIDE OF AND ADJACENT TO BEDROOMS
- INTERCONNECTION PROVIDES NOTIFICATION AT EACH LOCATION OF A DEVICE. WHEN ONE ALARM ACTIVATES, ALL CARBON MONOXIDE ALARMS ARE ACTIVATED TO PROVIDE EARLY NOTIFICATION OF THE PRESENCE OF CARBON MONOXIDE TO ALLOW FOR TIMELY EVACUATION OF THE RESIDENCE AND ENHANCE THE LEVEL OF LIFE SAFETY FOR THE OCCUPANTS.

2015 IRC

- SMALLER SINGLE PARAGRAPH SECTION WAS NOT VERY SPECIFIC ON ALL THE REQUIREMENTS AND HAD THEM GROUPED TOGETHER. FREQUENT CAUSE OF CONFUSION DUE TO LACK OF SPECIFICITY.

NEC
330.10 MC CABLE USES PERMITTED

330.10 USES PERMITTED:

Type MC cable shall only be permitted as follows:

1. When fished into existing walls with not More than (6) six feet exposed.
2. Where included as a factory assembled sub -component of a manufactured system.
3. **For branch circuits when remodeling existing owner- occupied one-and-two family dwellings.**
4. Where approved by the building official.

2023 NEC

- Combining both safety and ease of installation staff and commission felt this was a responsible way to allow home owners to do some of their own work when doing minor remodels to their home.
- Frequently find people who avoid permits so they can do this work. Hoping allowing it increases permit activity and inspections to ensure safety.

2014 NEC

- As adopted did not allow for this use

OTHER CHANGES OF NOTE

- **IFGC**
- **623.2 Prohibited locations** – Update to a section to make it clear that commercial cooking equipment shall not be installed in dwelling units. *(2021 IFGC)*
- **IMC**
- **502.20 Manicure and Pedicure Stations** – Requirement that ventilation for these stations must operate continuously when occupied. *(2021 IMC)*
- **504.4.1 Termination Location** – Dryer exhaust cannot terminate within 3 feet of opening to a building. *(2021 IMC)*
- ***IPC***
- **No SIGNIFICANT CHANGES** based on Illinois requiring the use of the 2014 Illinois Plumbing Code. No known update to this code coming.
- ***ISPSC***
- **No SIGNIFICANT CHANGES**
- **IRC**
- **302.3 Two-Family Dwellings –** Minimum 1 hour separation between units to exterior walls and roof construction. *(2018 IRC)*
- **329.6 BIPV Roof Access and Pathways –** Modified, refined and reduced requirements for access to these solar systems on roof *(2018 IRC relocated in 2024 IRC)*
- **507 Decks –** Restructuring of the deck section to address flow of section, materials, support and structure. *(2018 IRC)*
- ***507.1 Deck Snow Load –*** Decks now have to take in consideration of snow loads in areas where these loads are applicable. *(2021 IRC)*
- ***APPENDIX AO –*** Renamed, expanded and revised former Appendix J to deal with existing conditions in homes. Now breaks down work in homes to Repairs, Alterations and Additions to better tailor code compliances (2024 IRC)

OTHER CHANGES OF NOTE

- **NEC**
- **210.8 (A) GFCI in Dwelling Units –** Now required in all outlets in a basement regardless of finished or not *(NEC 2020)*
- **210.52 (C) Countertops and Work Surfaces –** No longer required to provide to provide outlets below overhang on counters. Can provide at back or on surface. *(NEC 2023)*
- **230.85 Emergency Disconnect –** Now requiring an emergency means of disconnect at the outside by the meter for new construction. Existing only required on full replacement of all components *(NEC 2023)*
- **242 Overvoltage Protection** - Created a full Article for this subject matter. Main protection will now happen at panel to protect all electrical systems *(NEC 2023)*

QUESTIONS ABOUT SIGNIFICANT CHANGES?

CONCERNS, OBSERVATIONS, NEEDS . . .

Ordinance Updates

- Laying out previous ordinance items and intended changes
  - Additions highlighted in Green
  - Deletions highlighted in Red
  - Changes highlighted in Blue
  - Notes regarding the section in Orange
  - All other items with no significant change omitted for brevity
    - Includes the following:
      - Updates to code section numbers or moving locations in code
      - Changes to words or grammar to help clarity
      - Items that were not changed at all

Sec 12-17.4 Additions, Insertions, Deletions And Changes (International Fuel Gas Code or IFGC)

306.5.3. is added to read:
A hose bib shall be provided within 200 feet of any serviceable equipment located on a roof more than 16 feet above grade plane and greater than 5000 square feet in area. Hose bibs shall be installed in accordance with the Illinois Plumbing Code. SIMILAR SECTION ADDED TO MECHANICAL CODE AS WELL.

Sec 12-17.3 Additions, Insertions, Deletions And Changes (International Mechanical Code or IMC)

506.3.2.6 is added to read:
Prior to final inspection of the grease duct installation:

1. **Welded grease ducts - a certified welder shall certify with signature on company letter head that the grease duct: Has been manufactured and installed in a fully code compliant manner under their direct supervision. Has been sealed with code compliant gasketing materials rated at 1500 degrees Fahrenheit. Has been installed with liquid-tight welds made on the external surface of the duct. Has passed a light test as prescribed above, performed by the named certified welder.**
2. **Factory-built grease ducts – The installing contractor shall certify with signature on company letter head that the grease duct: Has been installed in a fully code compliant manner under their direct supervision. Has been sealed with code compliant gasketing materials rated at 1500 degrees Fahrenheit. Has been installed liquid-tight with sealant approved by the manufacturer. Has been installed in accordance with the manufacturer's installation requirements. Has passed any manufacturer suggested tests as prescribed and performed by the contractor listed on permit or an approved third-party. ADDED IN ORDER TO PROVIDE MORE CLARITY ON GREASE DUCT REQUIREMENTS AND SPECIFIC NEEDS OF DIFFERENT INSTALLATIONS.**

Sec 12-17.2 Additions, Insertions, Deletions And Changes (International Plumbing Code or IPC)

NO SIGNICANT CHANGES MADE TO THIS CODE, ONLY ADMINISTRATIVE CLEANUP

Sec 12-17.6 Additions, Insertions, Deletions And Changes (International Residential Code or IRC)

~~R401.1 The provisions of this chapter shall control the design and construction of the foundation and foundation spaces of all buildings. In addition to the provisions of this chapter, the design and construction of foundations in areas prone to flooding as established by Table R301.2 (1) shall meet the provisions of section R322. Wood foundations shall not be allowed.~~ **COVERED ALREADY BY STORM WATER ORDINANCE AND ENGINEERING, DOUBLING EFFORTS THAT DON'T ALWAYS ALIGN**

~~R403.1.1 Minimum sizes for concrete and masonry footings shall be as set forth in Table R403.1 and Figure R403.1(1). The footing width, W, shall be based on the load bearing value of the soil in accordance with Table R402.2. Spread footings Width shall be twice the width of the foundation wall and not less than 16 inches. Spread footing Thickness (depth) shall be equal to the width of the foundation wall and not less than 8 inches. Footing Projections, P, shall be ½ the width of the foundation wall, not less than 4 inches and shall not exceed the thickness of the footing.~~ **THIS SECTION NO LONGER REQUIRED BASED ON UPDATED FOUNDATION SECTIONS IN IRC**

~~Chapter 34 – GENERAL ELECTRICAL REQUIREMENTS~~ **NOW COVERING ALL OF THESE REQUIREMENTS OUT OF THE NEC TO HELP WITH CLARIFICATION**

Sec 12-17.9 Additions, Insertions, Deletions And Changes (International Swimming Pool and Spa Code or ISPSC)

NO SIGNICANT CHANGES MADE TO THIS CODE, ONLY ADMINISTRATIVE CLEANUP

Sec 12-32 Electrical Code Ordinance Adopted (National Electrical Code or NEC)

230.2(F) is added to read:

Buildings with multiple electrical services shall be provided with a shunt trip that simultaneously opens all electrical services including any emergency and standby power systems. Shunt trip shall be of a mushroom style push button provided with a protective cover. Button shall be identified with a sign that reads "EMERGENCY POWER SHUTDOWN SWITCH FOR FIRE DEPT USE ONLY". II. Overhead Service Conductors

QUESTIONS ABOUT ORDINANCE UPDATES?

CONCERNS, OBSERVATIONS, NEEDS . . .

THANK YOU!

QUESTIONS?