



DEPARTMENT OF COMMUNITY DEVELOPMENT SERVICES

Building Safety Division

m e m o r a n d u m

TO: Building Safety Code Board of Appeals

FROM: John A. Schneider, Manager

DATE: June 2, 2011

SUBJECT: Adoption of the 2009 International Code Series

Description

The Building Safety Code Board of Appeals is asked to review a proposed ordinance for the City of Urbana's adoption of the 2009 International Code Series. This code series will supersede and replace the 2003 International Code Series, which was adopted by the City in 2006. Copies of the 2009 International Code series are available for review in the Community Development Office.

Following review of the code series by the Building Safety Code Board of Appeals and of the Property Maintenance Code section (Article IX) by the Property Maintenance Code Board of Appeals, City staff will make suggested changes (if any) and will present an Ordinance to adopt the 2009 International Code Series to the City Council for their review and approval. Final approval of the Ordinance by the City Council is anticipated to take place in July 2011.

Issues

The International Code Series adopting ordinance follows the same format as that was used in 2006. It will comprise Chapter 5 of the Urbana Code of Ordinances and contain the following Articles:

- Article I: General
- Article II: Director of Community Development Services
- Article III: Building Code
- Article IV: Residential Code
- Article V: Reserved
- Article VI: Electrical Code
- Article VII: Plumbing Code
- Article VIII: Mechanical Code
- Article IX: Property Maintenance Code
- Article X: Reserved
- Article XI: Flood Hazard Areas
- Article XII: Mobile Home Parks and Mobile Homes
- Article XIII: Fire Prevention Code

Each of the Articles references, amends, and adds to the base code language published by the International Code Council. Copies of these base code documents will be made available to Board members to use in reviewing the adopting ordinance.

Attached to this memorandum are two versions of the proposed Adopting Ordinance, one showing tracking of the proposed changes and one showing a “clean” copy of the Ordinance as it is proposed to read.

Background

Since the International Code Council (ICC) developed and published its initial code in 2000, it issued updates in 2003, 2006 and 2009. Builders and designers have been using the ICC code for a number of years and are now experienced with its requirements. The City of Urbana has been utilizing the 2003 ICC Codes since 2006. The City of Champaign has also been utilizing the International Series for a number of years and recently updated to the 2009 ICC series. This update will bring us into alignment with Champaign codes.

Other than the Illinois Plumbing Code which is promulgated by the State of Illinois as required minimum standards, the ICC construction codes are developed through a national level consensus process. In 2010, the State of Illinois also passed legislation adopting the 2009 International Energy Conservation Code (IECC) as the required minimum energy efficiency standard for all newly constructed buildings in Illinois, including one and two family dwellings. The adoption of the Model Codes Ordinance by the City does not negate any state statute on the same subject. The locally adopted code would only be applied when it imposes a more stringent requirement than that of the state code.

Discussion

Major changes to each of the Adopting Ordinance articles are summarized and discussed below.

Article I, General - There are no proposed changes to this article.

Article II, Building Official – There are no proposed changes to this article.

Article III, Building Code

The Building Code deals with both structural issues and fire protection. Fire protection provisions are addressed by means of building type classification and allowances according to size, or “allowable area”. This system helps to ensure fire protection based upon the containment and separation of areas through fire walls, separation assemblies, and requirements for sprinkling. Changes in the 2009 International Building Code, as compared to the 2003 International Building Code include the following:

- The 2009 Code reduces, by one story, the allowable building height for construction types Type IIB and IIIB (unprotected construction) for the following use Groups: B (Business), M (Mercantile), S1 (Moderate Hazard Storage) and S2 (Low Hazard Storage).
- The 2009 Code clarifies that accessory uses do not qualify for area increases or for height increases.
- The 2009 Code addresses several fire protection building issues including:
 - Increases required fire resistance ratings between uses in buildings with mixed-occupancy. A two hour fire separation rating is the required minimum between a Group I-2 (Hospital) use and all neighboring occupancies.
 - Increases sprinkler protection requirements across varying use groups.
 - Adds Emergency Responder Safety Features section to provide correlation to the current requirements in the International Fire Code (IFC) for the identification of shaft-way hazards and the location of fire protection systems.
 - Reduces the occupant threshold requiring panic and fire exit hardware from 100 to 50 occupants in Group A (Assembly) or Group E (Educational) occupancies.
 - Adds Luminous Egress Path Markings section to identify exit path in specified high-rise buildings.

Article IV, Residential Code

The Residential Code establishes minimum regulations for one- and two-family dwellings and townhouses using prescriptive provisions. The 2009 International Residential Code (IRC) is compatible with all of the International Codes. Some highlights of the notable changes to the 2009 IRC from the previous code are:

- Specific wall bracing detail is required on construction documents Section R 106.1.1.
- Section R 302 has been renamed *Fire Resistant Construction* and includes provisions from other sections related to penetrations, penetrations and other fire-resistance requirements so that they can be more easily located in one section of the code.
- Habitable attics have been added to the locations that are required to have emergency escape and rescue opening in Section 310.1.
- The technical provisions for concrete foundation walls have been separated (Section R404.1) and revised to provide more comprehensive prescriptive provisions for concrete foundation walls.
- Section R 404.5 has been added to clarify requirements for design of pre-cast concrete foundation wall systems in addition to requiring submittal of design drawings for approval of the building official.
- Sections R 405.1 and 406.4 have been added to address requirements for foundation drainage and damproofing for pre-cast concrete foundation system.

Notable changes to the 2009 IRC that are included in the Urbana adopting ordinance are:

- Section R 302.2 ENTITLED: Townhouses is recommended to be modified by staff to read as follows:

“ Section R 302.2 Townhouses: Each *townhouse* shall be considered a separate building and shall be separated by a 2-hour fire resistance rated wall assembly tested in accordance with ASTM E 119 or UL 263 if such wall assemblies do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall.

Exception: A common 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 is permitted for townhouses if the townhouse is protected by a sprinkler system in conformance with section R 302 and R 313 and if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Chapters 34 through 43. Penetrations of electrical outlet boxes shall be in accordance with Section R 302.4.”

- Section R 313.1 ENTITLED: Townhouse Automatic Fire Sprinkler Systems has been modified to read as follows: “*If an automatic residential fire sprinkler system is installed it shall comply with sections 303 and 313 of the IRC.*” This modification is in conjunction with the modification in Section 302.2 to allow some flexibility in choosing to either install an automatic sprinkler system or a two-hour fire-resistance-rated wall assembly.
- Section R 313.2 of the 2009 IRC, if unmodified, would require all new one- and two-family dwellings to have an automatic fire system. However, staff recommends removing the requirement for sprinklers in one- and two- family dwellings by modifying section 313.2 to provide requirements *IF* the owner chooses to install sprinklers. Therefore the Section 312.2 is recommended to be modified to read as follows.

“*If an automatic residential fire sprinkler system is installed in one- and two-family dwellings it shall comply with sections R302 and 313 of the 2009 IRC.*”

The attached Adopting Ordinance has been modified to reflect these recommended changes.

Article V, Reserved - This Article is reserved for future code additions.

Article VI, Electrical Code

The Adopting Ordinance will bring Urbana current with the 2008 National Electric Code (NEC) and will be consistent with the City of Champaign. Although there are no recommended to the Adopting Ordinance from 2006, it is important to note that the Adopting Ordinance continues to allow the City to utilize a uniform electrical contractor examination/licensing system to be administered by ICC, rather than by the City of Urbana. This helps to ensure more uniform licensing of contractors in the area and reduces the burden on staff resources.

Notable changes in the 2008 National Electrical Code (NEC) include the following:

- The code now requires tamper resistant receptacles in all locations for new and renovated dwelling.
- The 2008 NEC expands the requirements for GFCI protection of receptacles for garages and grade level portions of accessory buildings used for storage and unfinished basements.
- The 2008 NEC has expanded the requirements in dwelling units for arc fault protection to family rooms, living rooms, dens, recreation rooms, parlors, libraries, parlors, closets and hallways; kitchens and bathrooms are exempt.

Article VII, Plumbing Code

By State law, the Illinois Plumbing Code must be adopted and used in Urbana. However, the International Plumbing Code is also adopted for administrative purposes and is used when the International Code is more stringent than the Illinois Plumbing Code. Because the Illinois Plumbing Code is enforced as the required code in Urbana, it is the governing document.

Article VIII, Mechanical Code

The 2009 International Mechanical Code (IMC) IMC continues to provide criteria for the initial design of mechanical systems through the installation and construction of these systems.

There are a few notable areas of change from the 2003 IMC to the 2009 IMC including:

- Specific requirements for sealing of the joints in fiberboard ducts to prevent leakage.
- Reducing the maximum clothes dryer vent size to four inches unless otherwise addressed by the manufacturer.
- Adds unconditioned attic and crawlspaces to the list of prohibited sources of outdoor combustion air to prevent introduction of mold or odors into conditioned space.

Most mechanical designers have been using the International Code Series for several years and adoption of the 2009 IMC will allow future designs to use the most modern technology available.

The City Council goal of Environmental Sustainability included promotion of green construction through various strategies such as seeking code changes to allow waterless urinals and energy efficient plumbing vents. However, neither these provisions are allowed by the 2004 Illinois Plumbing Code. Staff research found that the waterless urinals are not recommended because they require extensive maintenance and can cause an excessive urine odor problem. Also, mechanical venting is not practical because mechanical vents must be installed in an easily accessible location and every plumbing draining system would require venting to the open air. In most cases, a properly designed venting system to meet the requirements of the 2004 Illinois Plumbing Code can be achieved with only one vent to the outside air. For these reasons, no modifications to the code regarding these provisions are being recommended at this time.

Article IX, Property Maintenance Code

The following Sections have been added to the 2009 IPMC. The adoption of the new sections does not change the purpose or intent of the code. The new sections help to better define conditions or defects that may cause a building to be identified as dangerous or unsafe for both the interior and exterior components of the building.

- **Section 108.1.5** entitled “Dangerous structure or premises” has been added.
- **Section 304.1.1** entitled “Unsafe conditions (exterior)” has been added.
- **Section 305.1.1** entitled “Unsafe conditions (interior)” has been added.
- **Section 306** entitled “Component Serviceability” has been added.
- **Section 604.3.1** entitled “Abatement of electrical hazards associated with water exposure” has been added.

Other changes being proposed to reflect current practice and public input are:

- **Section 108.2.2 entitled Registration of Vacant Structures** has been amended to better address vacant structure problems.
- **Section 108.2.3 entitled Vacant Structure Plan** has been amended to better address vacant problem properties.
- **Section 302.3.1 entitled Snow Removal** has been added to better address snow removal requirements.

The attached Adopting Ordinance has been modified to reflect these recommended changes.

Article X, Reserved - *This article is reserved for future code additions.*

Article XI, Flood Hazard Areas - There are no proposed changes to this article.

In 2006, Article XI, Flood Hazard Areas was revised to bring it into conformity with the Illinois Model Ordinance Regulating Development in Floodplain Areas developed by the Illinois Department of Natural Resources Office of Water Resources. The model ordinance was developed in accordance with the Federal Emergency Management Agency (FEMA) to help communities protect public health and safety.

New Floodplain maps for Champaign County, which would include the new floodplain boundaries that United States Geological Survey (USGS) modeled for the Boneyard Creek, are anticipated to be issued by FEMA within the next few years.

Article XII, Mobile Home Parks and Mobile Homes - There are no proposed changes to this article.

Article XIII, Fire Prevention Code

This updates the adopted code from the 2003 International Fire Code (IFC) to the 2009 IFC and would incorporate the National Fire Protection Association (NFPA) 2009 Life Safety Code. A memorandum dated March 31, 2011 from Fire Inspector Mike Phillips that describes the recommended significant changes to the International Fire Code is attached. Following is a summary of the changes recommended by the Urbana Fire Department.

The proposed changes to the 2009 International Fire Code include:

- Adopt Appendices B, C, D, E and F of the 2009 International Fire Code.
- Section 408.12 is added to provide requirements for property owners and business operators to ensure that all required egress components are operational.
- Changes to Section 506.1.1 are proposed to minimize delays and property damage. The Fire Code Official can require a specific type of lock to be used on non-motorized gates where fire department access is needed which will be the same key as the Knox Box® system currently required by the City.
- Section 506.1.2 Knox box will be required on all new construction (except Single family and Duplex residential).

The Adopting Ordinance includes the following proposed changes:

- Add Section 5-262 entitled “Effect of State Law.” This is similar to other areas in the Adopting Ordinance where a specific code is cited as state statute instead of the ICC series.
- Section F-506.4 entitled “Motorized Gates” is added. All new motorized gates in the city will be required to have a siren activated system for opening. All existing electric motorized gates will be required to have a siren activated system in place by July 2012 to eliminate the life safety issues involved.
- Section F-901.8.1.1 entitled “Connection to Public Water System” is added. This incorporates the system approved by Illinois American Water that allows required water meters for fire protection systems to be installed in secured vaults, with the valve locked open using Knox® keyed padlock. The vault key must be available to the Fire Department in the building’s required key box.
- Eliminates exceptions to panic hardware requirements in assembly occupancies of less than 300 in Section F-1008.1.9.3.
- All high-rise buildings have been identified as “Target Hazard Occupancies” by the Urbana and Champaign Fire Departments. Section F-1022.8.1 Signage requirements are amended to require egress stairways in high-rise buildings to have specific signage allowing for a more understandable system for the occupants and the Fire Department.
- This revised definition of Fireworks in Section F-3302.1 is recommended in order to be the same as the State of Illinois definition.

The attached Adopting Ordinance has been modified to reflect these recommended changes.

Fiscal Impacts

The Adopting Ordinance to move from the current 2003 International Code series to the 2009 International Code series will have negligible financial impact upon the City. Most designers and builders are already familiar with and using the updated International Code series. City staff has already completed the necessary training and certification requirements to use the code. There are extensive benefits and reduction of risk in adopting a code that is consistent with that used by nearby communities.

Options

The Building Safety Code Board of Appeals has the following options in this case:

1. The Board may recommend approval of the Adopting Ordinance to City Council without any changes.
2. The Board may recommend approval of the Adopting Ordinance to City Council, along with certain specified modifications.
3. The Board may not recommend approval of the Adopting Ordinance. In this case, the Board should articulate its findings to Council.

Recommendation

City staff recommends that Building Safety Code Board of Appeals review the proposed Adopting Ordinance, hear from any individuals who have comments on the ordinance, and make recommendations for any necessary revisions. Staff recommends that the Board recommend APPROVAL of the proposed Adopting Ordinance, along with any necessary changes, to the City Council for final adoption.

Attachments: Adopting Ordinance “Clean Copy”
 Adopting Ordinance with “Tracked Changes”
 Memorandum from Mike Phillips, Fire Inspector dated March 31, 2011