# Memorandum

**TO:** Kevin J. Jackson, Village Manager

**FROM:** Craig Failor, Development Services Director

**FOR:** Village Board of Trustees

**DATE:** September 17, 2025

**SUBJECT:** Stretch Code Overview

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**Purpose:**
At the June 17, 2025, board meeting, the Village Board asked staff to return with a Stretch Code analysis for discussion. This memorandum outlines staff's reasoning regarding our position not to adopt the Stretch Code at this time.

**Background:**

Oak Park has been a regional leader in climate-conscious policy, notably through the adoption of the electrification code. This local policy already requires new construction and major renovations to implement all-electric systems, significantly reducing carbon emissions and aligning with the Village's Climate Action Plan. Recently, the State of Illinois has encouraged municipalities to consider adopting the Stretch Energy Code- a more stringent overlay to the baseline energy code intended to accelerate decarbonization. However, Oak Park's electrification requirements for new construction are more stringent than the proposed Stretch Energy Code. The Stretch Code impacts only new commercial construction. New residential construction refers to the Energy Code. Adopting the Stretch Code may not provide meaningful additional benefit to Oak Park and could introduce new challenges. It is our understanding that the State will be looking to update the current Stretch Code which is based on 2021 codes.

1. *Redundancy with existing electrification code.*

Oak Park's electrification requirements already advance energy efficiencies and decarbonization goals. The Stretch Code may duplicate these efforts without producing

greater sustainability outcomes. The current electrification code exceeds the requirements of the Stretch Code.

2. *Financial Impact on Housing and Development*

Increased design and construction costs driven by the Stretch Code could make housing less affordable. Typically, any rents are determined by the cost of construction per square footage. This would impact directly the residents. Higher design and construction costs could also discourage redevelopment and rehabilitation in the community. It would place an additional burden on property owners and homeowners. This could contradict the Village Board goals related to housing equity and affordability.

**Potential Alternatives:**

1. Given that most of the construction in Oak Park is centered on remodeling existing properties, the Building Code Advisory Commission is working on creating an alternative stretch/energy code for the Village Board to consider.

   *Advantages*: This would allow the commission to draft a code tailored to Oak Park, while taking components of the Stretch Code and the Energy Code.

   *Disadvantage*: This is a part of the commission's 2026 work plan. The potential code would return to the Village next year for consideration.

2. The Village Board can direct staff to research different methods to target specific carbon reduction to help meet the Climate Ready Oak Park goals.

   *Advantage*: Staff will be able to conduct further research on potential retrofit rebates or solar incentives.

**Conclusion:**

Oak Park's leadership on electrification demonstrates our commitment to sustainability. Staff believe that at this time, layering the Stretch Energy Code on top of the Village's electrification ordinance may offer limited benefits while introducing unintended consequences in cost and equity since the current electrification code exceeds the Stretch Code requirements. It would be best to receive the updated Stretch Code from the State and determine how it may relate to our 2024 codes.

For any questions or concerns, please contact Craig Failor at cfailor@oak-park.us or 708.358.5422

**Attachment(s):**

1. Stretch Code Comparisons

**Cc:** Lisa Shelley, Deputy Village Manager
Ahmad Zayyad, Deputy Village Manager
Jack Malec, Assistant to the Village Manager
Christina M. Waters, Village Clerk
Gregory Smith, Village Attorney
All Department Directors
Sean Lintow Sr., Chief Building Official / Permit & Development Manager
Noemy Diaz, Administrative Officer

# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code

**HOW TO USE:** For use as a technical reference to assist municipal buildings and codes staff, as well as sustainability staff in advising policy makers on the feasibility and comparative impact of three residential energy code options.

The Illinois Capital Development Board has developed a stretch energy code for municipalities to adopt beginning January 1, 2025. To support the Village of Oak Park in informing their next code adoption cycle, the following tables summarize the differences between the model 2024 residential IECC (which may be the model code used for the next update to the Illinois residential base energy code), the Illinois residential stretch code (2021 IECC with strengthening amendments), and Oak Park's residential energy code (Illinois base code—developed using 2021 IECC, with electrification requirements). Residential energy codes apply to detached one- and two-family dwellings and townhouses, as well as to Group R-2, R-3 and R-4[1] buildings three stories or less in height.

[1] Group R-1, R-2, R-3, and R-4 are categories of residential building types, as defined in the International Building Code Section 310

# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code



*Table 1* shows the compliance paths defined by the codes and compares the requirements of each path among the three codes.

*Table 1. Residential compliance paths*

| COMPLIANCE PATH OPTIONS (Meet all Overall Requirements, then choose ONE Compliance Path) | | | |
|---|---|---|---|
| **COMPLIANCE PATH** | **2024 IECC** | **IL RESIDENTIAL STRETCH CODE** (amended 2021 IECC) | **OAK PARK ENERGY CODE** (2021 IECC/IL Base Energy Code) |
| **Prescriptive Path** | Compliance with Sections R401 through R404 and R408 | Compliance with Sections R401–R404 and R408 of the 2021 IECC; strengthened to meet CEJA targets | Requires compliance with Section R401 through R404 and R408 of 2021 IECC (slightly weakened) |
| **Simulated Total Building Performance (Total UA) Path** | Compliance with Section R405. Based on annual energy **cost** | Compliance with Section R405 of 2021 IECC; revised to be based on a **Site Energy metric instead of utility cost** to align with CEJA targets | Compliance with Section R405 of 2021 IECC based on annual energy **cost** |
| **Energy Rating Index (ERI) Path** | Compliance with Section R406 | Compliance with Section R406 of 2021 IECC; aligned ERI ventilation calculation and ERI metric with CEJA targets | Compliance with Section 406 of 2021 IECC |
| **Passive House Path** | Can be used as an alternative compliance path if allowed by local jurisdiction | Automatically allows certification to PHIUS or PHI as permitted by Section R102.1.1 of the 2021 IECC as a compliance path | Not Applicable |
| **Residential Zero Energy Path** | Compliance with Appendix RC if adopted by a municipality<br>ERI values of 42 for no on-site renewable energy, requires adding on-site power to meet ERI of 0 | Enables compliance by meeting requirements of Appendix RC of 2021 IECC<br>ERI values of 46 for no on-site power, requires adding on-site power to meet ERI of 0. Minimum backstop determined in accordance Section R406.3 | Not Applicable |

# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code



***Table 2*** compares requirements that apply to every compliance path under all three residential energy codes. The provisions for blower-door testing, duct testing, duct insulation, use of cavities as ducts, piping insulation, ventilation rates, ventilation-fan efficacy, and high-efficacy interior lighting are the same across all three codes and therefore are excluded from ***Table 2.***

The stretch code adds requirements for EV-readiness, solar-readiness, electric-readiness, and demand response measures. The Oak Park energy code is unique in that it requires full electrification in new buildings. ***Tables 3, 4, and 5*** include comparison for each path available in the three codes: prescriptive path, simulated total building performance path, and ERI path.

***Table 2. Requirements that apply to all compliance paths***

| CODE COMPONENT | 2024 IECC | IL RESIDENTIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC/IL Base Energy Code) |
|---|---|---|---|
| **Duct Tightness** | **Conditioned Spaces**<br>**< 3 ducted returns:** must not exceed 8 cfm/100 sq ft<br>**≥ 3 ducted returns:** must not exceed 12 cfm/100 sq ft<br>**Unconditioned Spaces**<br>**< 3 ducted returns:** must not exceed 3 cfm/100 sq ft<br>**≥ 3 ducted returns:** must not exceed 4 cfm/100 sq ft | **Conditioned Spaces:** Must not exceed 8 cfm/100 sq ft<br>**Unconditioned Spaces:** Must not exceed 4 cfm/100 sq ft | |
| **Duct Insulation** | >= R-8 for duct diameter 3 inches and larger<br>>= R-6 for duct diameter smaller than 3 inches | | |
| **EV-readiness** | Permitted by Appendix RE. Not required unless specifically referenced in the adopting ordinance | Single family (SF) homes are required to be EV-ready or EV Charger-installed; Multifamily (MF) buildings must comply w/ commercial stretch code EV infrastructure requirements | Buildings with a parking space or garage must contain at least one level 2 electric vehicle charging station at one parking location |
| **Solar-readiness** | Permitted by Appendix RB. Not required unless specifically referenced in the adopting ordinance | SF homes are required to be solar-ready; MF buildings must comply w/ commercial stretch code solar readiness and installation requirements | Not required |

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# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code



*Table 2. Requirements that apply to all compliance paths—continued*

| CODE COMPONENT | 2024 IECC | IL RESIDENTIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC/IL Base Energy Code) |
|---|---|---|---|
| **Electric-readiness** | Permitted by Appendix RD. Not required unless specifically referenced in the adopting ordinance | Mixed-fuel residential buildings are required to be electric-ready for water heating, space heating, cooking and clothes drying | Full electrification required<br>All heating and air conditioning must be provided by cold climate air source or ground source heat pumps; energy for clothes dryers must come from an electric heat pump<br>All refrigerators, dishwashers and clothes washers must be ENERGY STAR Certified<br>Buildings should be equipped with an energy recovery ventilation system |
| **Demand Response** | Permitted by Appendix RJ. Not required unless specifically referenced in the adopting ordinance | Demand-response-capable thermostats and water heaters are required | Not required |

# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code



***Table 3*** compares the prescriptive-path requirements in the three codes. Maximum envelope air infiltration, wood frame wall and floor U-factors, minimum foundation wall R-value, and maximum fenestration U-factor are excluded from ***Table 3*** because the requirements in the three codes are identical. The main differences are the stretch code requires higher roof/ceiling insulation, and it provides the option to either achieve 30 energy credits from the 2024 IECC **or** to install an electric heat pumps for space heating and water heating in combination with a tight envelope.

***Table 3. Prescriptive Path (R401-R404, R408) requirements***

| REQUIREMENT | 2024 IECC | IL RESIDENTIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC/IL Base Energy Code) |
|---|---|---|---|
| **Minimum Wood Frame Wall R-Value** | 30 or 20+5 continuous insulation (ci) or 13&10ci or 20ci | 20+5ci or 13+10ci or 20ci | |
| **Minimum Floor R-Value** | CZ 4: R-19 or 13+5ci or 15ci<br>CZ 5: R-30 or 19+7.5ci or 20ci | CZ 4: R-19<br>CZ 5: R-30 | |
| **Maximum Basement Wall U-Factor** | CZ 4: 0.059<br>CZ 5: 0.050 | 0.050 | |
| **Minimum Roof/ Ceiling R-Value** | R49 | R60 | R49 |
| **Maximum Roof/ Ceiling U-Factor** | 0.026 | 0.024 | 0.026 |
| **Additional Compliance Package** | Achieve at least **10 energy credits** from not less than two measures specified in Table R408.2 | Achieve **30 energy credits** from modified Section R408 (taken from 2024 IECC) OR Install electric heat pump space heating and water heating with a tight envelope (2 ACH50 + ERV/HRV) | Must choose one 5% additional efficiency package from Section R408 (2021 IECC) |

# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code



*Table 4* provides a side-by-side comparison of the performance-path requirements across all three residential energy codes

*Table 4 Simulated/Total Building Performance Path (R405)*

| REQUIREMENT | 2024 IECC | IL RESIDENTIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC/IL Base Energy Code) |
|---|---|---|---|
| **Total Performance Requirement** | For each dwelling unit with 1+ fuel-burning appliances for space heating, water heating, or both, the annual energy **cost** of the unit shall be less than or equal to 80% of the annual energy **cost** of the standard reference design<br>For all other dwelling units, annual energy cost of the proposed design shall be less than or equal to 85% of the annual energy cost of the standard reference design | Performance compliance based on site *energy* **use**, rather than energy costs. The site energy use of the *proposed design* shall be less than or equal to 71% of the site energy use of the *standard reference design* | Annual energy cost must be less than or equal to *standard reference design* |
| **Max Air Infiltration** | 4 ACH50—Improved air tightness can be traded | 5 ACH50—Improved air tightness can be traded | 5 ACH50—Improved air tightness can be traded, or counted for R408 |
| **Maximum Backstop levels** | Prescriptive U-Factors and F-Factors from Table R402.1.2 multiplied by 1.15 in accordance with Equation 4-2 and Section R402.1.5 | Prescriptive U-factors from Table R402.1.2 multiplied by 1.10 in accordance with Equation 4-1[2] | 2009 IECC Prescriptive levels |
| **Maximum Ceiling U-Factor backstop** | Varies (Prescriptive maximum U-factors and F-factors in Table R402.1.2 are increased by 15% in accordance with Equation 4-2). When trade-offs are applied, the combined window and door U-factor, averaged over the total fenestration area, must not exceed 0.48 | Varies (Prescriptive maximum U-factors and F-factors from Table R402.1.2 are increased by 10% in accordance with Equation 4-1). Ventilation airflow included in the UA calculation does not establish a minimum ventilation rate for this code | 0.026 |
| **Maximum Wood Frame Wall U-Factor backstop** | | | 0.057 |
| **Maximum Basement Wall U-Factor backstop** | | | 0.050 |
| **Maximum Fenestration U-Factor backstop** | | | 0.350 |

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[2] Equation 4-1 in the Illinois residential stretch code is functionally equivalent to Equation 4-2 in the 2024 residential IECC.

# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code



*Table 4 Simulated/Total Building Performance Path (R405)—continued*

| REQUIREMENT | 2024 IECC | IL RESIDENTIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC/IL Base Energy Code) |
|---|---|---|---|
| **Additional Compliance Package** | Not applicable in this path. *According to the deletion of R401.2.5, the Whole Building Performance path has no additional requirements for efficiency (beyond changing the metrics for calculations)* | | Must choose one 5% additional efficiency package from R408 (without including it in proposed design) OR proposed design must achieve 95% of annual energy cost of reference design |
| **Reference Design** | In accordance with Table R405.4.2(1)<br>Air leakage at 2.5 ACH(50)<br>Heating and cooling system efficiencies: use federal minimum standards (10 CFR §430.32). Capacity: as proposed | In accordance with Table R405.4.2(1)<br>Air leakage at 3 ACH50<br>Heating and cooling system efficiencies: as proposed. Capacity: follow Manual S/Manual J calculations | Air leakage at 3 ACH50 |

# Comparison of 2024 Residential IECC, Illinois Residential Stretch Energy Code, and Oak Park Residential Energy Code



*Table 5* compares the ERI path requirements across all three residential energy codes.

*Table 5. ERI Path (R406)*

| REQUIREMENT | 2024 IECC | | IL RESIDENTIAL STRETCH CODE | | OAK PARK ENERGY CODE (2021 IECC/IL Base Energy Code) |
|---|---|---|---|---|---|
| **Maximum Envelope Air Infiltration** | 4 ACH50—Improved air tightness can be traded | | 5 ACH50—Improved air tightness can be traded | | |
| **Home Energy Rating System (HERS) Index Minimum** | **Without on-site power production:**<br>CZ 4: 53<br>CZ 5: 54 | **With on-site power production:**<br>CZ 4: 40<br>CZ 5: 43 | **Without combustion equipment:**<br>CZ 4: 54<br>CZ 5: 55 | **With combustion equipment:**<br>CZ 4: 51<br>CZ 5: 50 | CZ 4: 54<br>CZ 5: 55 |
| **Building Thermal Envelope Backstop** | Proposed total building thermal envelope thermal conductance (TC) must be less than or equal to the required total building thermal envelope TC using the prescriptive U-factors and F-factors from Table 402.1.2 multiplied by 1.15, in accordance with Equation 4-2 and Section R402.1.5<br>The area-weighted average maximum fenestration U-factor permitted using tradeoffs from Section R402.1.5 shall be 0.48 | | Proposed total building thermal envelope UA must be less than or equal to total building thermal envelope UA using prescriptive U-factors from Table R402.1.2 multiplied by 1.15 in accordance with Equation 4-2 | | **With on-site renewables:** Proposed thermal envelope must be less than/equal to UA; Maximum 5% of EE tradeoff; RECs allowed<br>**Without on-site renewables:** Proposed thermal envelope must be less than/equal to UA x 1.15 |
| **Calculation Standard** | ERI calculated in accordance with ANSI/RESNET/ICC 301; EV's not included in building consumption. The mechanical ventilation rates used for the purpose of determining the ERI should not be construed to establish minimum ventilation requirements for compliance with this code | | | | RESNET/ICC 300; EV's not included |
| **Additional Compliance Package** | Not applicable for this compliance path. According to the deletion of R401.2.5, the ERI path has no additional requirements for efficiency (beyond changing the metrics for calculations) | | | | Must achieve 5% higher energy efficiency than ERI listed above |

# Comparison of the 2024 Commercial International Energy Conservation Code (IECC), Illinois Commercial Stretch Energy Code, and Oak Park Commercial Energy Code

**HOW TO USE:** For use as a technical reference to assist municipal buildings and codes staff, as well as sustainability staff in advising policy makers on the feasibility and comparative impact of three commercial energy code options.

The Illinois Capital Development Board has approved language for a stretch energy code to be available for adoption by municipalities. To support the Village of Oak Park in their next code adoption cycle, the following tables summarize the differences between the model 2024 commercial IECC (which may be the model code used for the next update to the Illinois commercial base energy code), the Illinois commercial stretch code (2024 IECC with strengthening amendments), and Oak Park's commercial energy code (2021 IECC/Illinois base commercial code with electrification provisions).

***Table 1*** compares the compliance path options under each of the three energy codes. The Commercial Zero Energy Path is not an available compliance option under Oak Park's commercial energy code. While the ASHRAE, PHIUS, and Commercial Zero Energy pathways are included in Table 1, they are not compared in further detail in the rest of the document as these pathways are directly adopted from the 2024 commercial IECC with minimal amendments. In the cases of the PHIUS and Commercial Zero Energy pathways, PHIUS certification or compliance with Appendix CC are determined to meet the requirements of the stretch code as permitted by Section 103.1.1.[1]

While the ASHRAE, PHIUS, and Commercial Zero Energy pathways are included in Table 1, they are not compared in further detail in the rest of the document. This is because these pathways are directly adopted from the 2024 commercial IECC with minimal amendments. In the cases of the PHIUS and Commercial Zero Energy pathways, PHIUS certification or compliance with Appendix CC are determined to meet the requirements of the stretch code as permitted by Section 103.1.1.[2]

[1] 2023 Illinois Stretch Energy Code: "Buildings certified in compliance with Passive House Institute (PHI) or Passive House Institute US (PHIUS) or buildings that comply with Appendix CC shall be deemed to meet the requirements of this code where such buildings also meet the requirements identified in Table C407.2(1).

[2] 2023 Ibid.



**CREATED BY** Slipstream, MEEA, and Metropolitan Mayors Caucus

# Comparison of the 2024 Commercial International Energy Conservation Code (IECC), Illinois Commercial Stretch Energy Code, and Oak Park Commercial Energy Code



*Table 1. Comparison of commercial compliance paths*

| COMPLIANCE PATH OPTIONS (Meet all Overall Requirements, then choose ONE Compliance Path) | | | |
|---|---|---|---|
| **COMPLIANCE PATH** | **2024 IECC** | **IL COMMERCIAL STRETCH CODE** | **OAK PARK ENERGY CODE (2021 IECC)** |
| **IECC** | Prescriptive and performance options are available<br>Prescriptive Path—includes backstop that sets glazing limits and envelope requirements<br>Simulated Total Building Performance Path—allows trade-off of envelope components with better HVAC | Comply with 2024 IECC prescriptive or performance pathways; strengthened to meet Climate and Equitable Jobs Act (CEJA) efficiency targets | 2021 IECC (slightly weakened)<br>Prescriptive and performance options are available |
| **ASHRAE** | Comply with ASHRAE 90.1-2022 | Buildings must comply with ASHRAE 90.1-2022. Revises the performance pathway to align with CEJA targets using a site EUI metric rather than utility cost | Comply with ASHRAE 90.1-2019 |
| **PHIUS** | The code official or other authority having jurisdiction is permitted to deem a national, state, or local energy efficiency program as exceeding the energy efficiency required by the code. Buildings must still meet requirements identified in Table C407.2(1). **Applies only if adopted by a jurisdiction** | Allows PHIUS certification as a compliance pathway. Projects must also comply with measures from C407.2 (requirements for total building performance) and meet stretch code mandatory requirements | Certify to PHIUS 2021 Standard, including US DOE ENERGY STAR and Zero Energy Ready Home co-requisites |

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# Comparison of the 2024 Commercial International Energy Conservation Code (IECC), Illinois Commercial Stretch Energy Code, and Oak Park Commercial Energy Code



*Table 1. Comparison of commercial compliance paths—continued*

| COMPLIANCE PATH OPTIONS (Meet all Overall Requirements, then choose ONE Compliance Path) | | | |
|---|---|---|---|
| **COMPLIANCE PATH** | **2024 IECC** | **IL COMMERCIAL STRETCH CODE** | **OAK PARK ENERGY CODE (2021 IECC)** |
| **Commercial Zero Energy** | Allows language from Appendix CC as a compliance pathway only if adopted by a jurisdiction | Automatically adopts language from Appendix CC as a compliance path<br>**With On-Site Renewable Energy:** On-site renewable energy systems or RECs required by building type to generate specified amount of energy. The minimum renewable energy requirement shall be determined by multiplying the gross conditioned floor area plus the semi-heated gross floor area of the proposed building by the prescriptive renewable energy requirement from Table CC103.1<br>**Without On-Site Renewable Energy:** Offsite renewable energy shall comply with sections CC103.3.1 and CC103.3.2, which set minimum renewable energy procurement thresholds based on building energy use and the method of renewable energy procurement | Not Applicable |

***Table 2*** compares the key requirements that apply to all compliance pathways across the three commercial energy codes. The requirements for duct testing, duct tightness, use of cavities as ducts, piping insulation, ventilation, ventilation-fan efficiency, and high-efficacy lighting are identical in all three codes and are not shown in ***Table 2***. Oak Park's energy code is unique in that it also mandates full electrification of new buildings.

# Comparison of the 2024 Commercial International Energy Conservation Code (IECC), Illinois Commercial Stretch Energy Code, and Oak Park Commercial Energy Code



*Table 2. Requirements applicable to all compliance paths (Sections C402, C403)*

| REQUIREMENT | 2024 IECC | IL COMMERCIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC) |
|---|---|---|---|
| **Blower Door Test** | A blower door test is required for all buildings. Certain testing exemptions are available for buildings less than 10,000 sq ft or over 50,000 sq ft, per Section C402.6.2.1 | | Blower door test required<br>Units shall be tested separately with an unguarded blower door test as follows:<br>1. Where buildings have fewer than eight testing units, each testing unit shall be tested<br>2. For buildings with eight or more testing units, the greater of seven units or 20% of the testing unit shall be tested |
| **Duct Insulation** | **Unconditioned spaces:** >= R-6 | **Conditioned spaces:**<br>CZ 4: >=R-8<br>CZ 5: >=R-12 | |
| **EV-readiness** | Not required unless specifically referenced in the adopting ordinance | EV-Readiness is required. Minimum standards for installation of EV infrastructure and/or the minimum numbers of EV-ready spaces[3] are set based on building use<br>The number of required **EV spaces**, **EV capable spaces**, and **EV-ready spaces** shall be determined in accordance with Section C405.14.1 and Table C405.14.1 based on the total number of automobile parking spaces and shall be rounded up to the nearest whole number<br>For R-2 buildings, Table C405.14.1 requirements shall be based on the total number of dwelling units or the total number of automobile parking spaces, whichever is less | EV-Readiness is required<br>A minimum of one Level 2 electric vehicle charging station shall be installed for every five parking spaces in each onsite parking area. One station may serve an adjacent pair of spaces<br>*Exceptions:* Group R-3 and R-4 occupancies |

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[3]An EV-ready space is defined as an automobile parking space provided with electrical infrastructure, including raceway or cable assemblies, electrical capacity, an electrical distribution equipment space, necessary for connection to EV supply equipment.

# Comparison of the 2024 Commercial International Energy Conservation Code (IECC), Illinois Commercial Stretch Energy Code, and Oak Park Commercial Energy Code



*Table 2. Requirements applicable to all compliance paths (Sections C402, C403)—continued*

| REQUIREMENT | 2024 IECC | IL COMMERCIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC) |
|---|---|---|---|
| **Solar-readiness** | Not required unless specifically referenced in the adopting ordinance | Must meet solar-readiness standards based on building size. For commercial buildings five stories or less above the grade plane and with low-slope roofs, the solar-ready zone should be on the roof<br>The orientation of the solar-ready zone should be between 110 degrees and 270 degrees of true north | Not required |
| **Electric-readiness** | Not required unless specifically referenced in the adopting ordinance | Full electrification is not required. Fossil fuels can be used, but commercial buildings are required to be electric-ready for water heating, space heating, cooking and clothes drying<br>New R-2 occupancy commercial buildings to include electric infrastructure that would be required for electric appliance installation at time of combustion appliance replacement | Full electrification required. Cold climate air source or ground source heat pumps required for all heating and cooling; electric heat pumps required for clothes drying<br>Cooktops and cooking ovens must be electric<br>Building must have an energy recovery ventilation system |
| **Demand Response** | Not required | Demand-response-capable thermostats and water heaters required | Not required |

*Table 3* compares the prescriptive-path building-component requirements across all three commercial energy codes. The performance values for wood frame walls, floors, below grade walls, basement walls, roof/ceiling insulation, attic/other assemblies, and operable-fenestration are identical in the three codes. This section also highlights the differences in the requirement to achieve energy credits from 2024 IECC. Additional energy credits are required for buildings without heat pumps for main space heating and cooling.

# Comparison of the 2024 Commercial International Energy Conservation Code (IECC), Illinois Commercial Stretch Energy Code, and Oak Park Commercial Energy Code



The primary difference between the prescriptive compliance paths in the 2024 IECC and the Illinois commercial stretch code is the additional compliance packages that the Illinois commercial stretch code requires. In both codes, proposed designs must comply with additional efficiency measures from Table C406.2 to achieve at least the number of required efficiency credits from Table C406.1.1(1) based on building occupancy group and climate zone[4]. In the Illinois commercial stretch code, if a building does not use heat pumps for main space heating and cooling, the energy credits from Table C406.1.1(1) shall be multiplied by 1.25 to meet a higher credit threshold. The prescriptive path of Oak Park's commercial energy code simply requires that buildings achieve 10 credits from Tables C406.1(1) through C406.1(5) based on building occupancy type.

*Table 3. Prescriptive Path (Sections C402-C406) requirements*

| REQUIREMENT | 2024 IECC | IL COMMERCIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC) |
|---|---|---|---|
| **Maximum Envelope Air Infiltration** | The measured air leakage shall not be greater than 0.35 cfm/ft² of the building thermal envelope area at a pressure differential of 0.3-inch water gauge (75pa)<br>Exception: buildings larger than 25,000 sq ft in CZ 4 | | The measured air leakage shall not exceed 0.4 cfm/ft² of the building thermal envelope at a pressure differential of 0.3-inch water gauge (75pa) |
| **Wood Frame Wall** | CZ 4: >= R-0 + R-12ci or >= R-13 + R-3.8ci or >= R-20<br>CZ 5: >= R-0 + R-16ci or >= R-13 + R-7.5ci pr >= R-20 + R3.8ci or >= R-27 | | CZ 4: >= R-13 + R-3.8ci or >= R-20<br>CZ 5: >= R-13 + R-7.5ci or >= R-20 +R-3.8ci |
| **Fixed Fenestration** | 0.34 | | 0.36 |
| **Additional Compliance Package** | **Buildings with and without heat pumps:** Comply with additional efficiency measures from Table C406.2 to achieve at least the number of required efficiency credits from Table C406.1.1(1) based on building occupancy group and climate zone | **Buildings with heat pumps:** Comply with additional efficiency measures from Table C406.2 to achieve at least the number of required efficiency credits from Table C406.1.1(1) based on building occupancy group and climate zone<br>**Buildings without heat pumps:** If a building does not use heat pumps for main space heating and cooling, the energy credits from Table C406.1.1(1) shall be multiplied by 1.25 to meet a higher credit threshold | New buildings shall achieve 10 credits from Tables C406.1(1) through C406.1(5), where the table is selected based on the building's use group |

[4]Exceptions: Portions of buildings devoted to manufacturing or industrial use, and/or where a building achieves more renewables and load management credits than required.

# Comparison of the 2024 Commercial International Energy Conservation Code (IECC), Illinois Commercial Stretch Energy Code, and Oak Park Commercial Energy Code



Table 4 compares the simulated total building performance paths across the three commercial energy codes. Each code sets the maximum envelope air-infiltration limit at 0.25 cfm/ft² measured at 75 Pa, with an exception for buildings larger than 25,000 ft² of conditioned floor area.

***Table 4. Simulated Total Building Performance Path (Sections C406-C407) requirements***

| REQUIREMENT | 2024 IECC | IL COMMERCIAL STRETCH CODE | OAK PARK ENERGY CODE (2021 IECC) |
|---|---|---|---|
| **Total Performance Requirement** | An annual energy **cost** that is less than or equal to the percent of the *site energy use of the standard reference design* calculated in Equation 4-33 | A **site energy use** that is less than or equal to the percentage of the site energy use (SEUC) of the standard reference design calculated in Equation 4-34. The reduction in site energy use of the proposed design associated with on-site and off-site renewable energy shall not be included in the total site energy use<br>As opposed to Equation 4-33 in the 2024 IECC, 4-34 does not allow for efficiency trade-offs, maintaining efficiency levels defined in CEJA | An annual energy **cost** that is less than or equal to 80% of the annual *energy cost of the standard reference design* |
| **Additional Compliance Package** | Buildings shall comply with measures from C406.2 to achieve not less than the number of required efficiency credits from table C406.1.1(1) based on *building* occupancy group and *climate zone* | Same as 2024 IECC, with the addition of any energy credit adjustments in accordance with C406.1.1.1 | Must choose one 5% additional efficiency package from C406 (without including it in proposed design) OR proposed design must achieve 95% of annual energy cost of reference design |