Capital Development Board
Building a Better Illinois

ILLINOIS

CAPITAL DEVELOPMENT BOARD

BOARD BOOK

Chicago
Collinsville
Springfield

JB PRITZKER, GOVERNOR

JIM UNDERWOOD, EXECUTIVE DIRECTOR

BOARD MEMBERS

Eileen Rhodes, Chair
Pam McDonough, Vice Chair
Tamakia J. Edwards
Saul Morse
Beverly Potts
Glyn Ramage
Hipolito (Paul) Roldan

CAPITAL DEVELOPMENT BOARD

April 9, 2024

The meeting of the Capital Development Board is being held in

Chicago, 555 W. Monroe Street

Springfield, Wm. G. Stratton Building, 401 S. Spring, 3rd Floor

Collinsville, Il Dept of Transportation, 1102 East Port Plaza

Or via WebEx

LOGIN: https://illinois.webex.com/

Call: 312-535-8110 ACCESS CODE: 2632 662 2499 PASSWORD: CDB424

Public questions for the Board can be submitted through WebEx at the time for Public Comment or submitted by email to Sally.Finney@illinois.gov

Staff Contact: Heather Parks 217-782-8729 or Sally Finney 217-782-8726

Call To Order

1. Roll Call of Members
2. Confirmation of a Quorum

Preliminary Items

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Region 3

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Executive Session

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CAPITAL DEVELOPMENT BOARD

SUBJECT: Meeting minutes for March 12, 2024

The meeting of the Capital Development Board was held in person in Chicago, Collinsville, and Springfield.

The following Board members were present in Chicago:

Pam McDonough, Vice Chair
Tamakia Edwards

The following Board member was present in Collinsville:

Glyn Ramage

The following Board members were present in Springfield:

Saul Morse
Beverly Potts

The following were present in Chicago:

Brent Lance, CDB
Darnita A. Lee, CDB
Karla Springer, CDB
Keith Moore, CDB
Mark Jones, CDB
Micaela Vidana, CDB
Nia Jones, CDB

The following were present in Springfield:

Abigayle Dompke, CDB
Amy Romano, CDB
Chris MacGibbon, CDB
David Ealey, CDB
Jim Underwood, CDB
Joel Meints, CDB
Lisa Hennigh, CDB
Robert Coslow, CDB
Sally Finney, CDB
Shea Votava, CDB
Sherrae Gaston, DOIT
Sherri Sullivan, CDB
Tim Patrick, CDB

The following were present via WebEx:

Amber Dooley, CDB
Amber Evans, CDB
Andrew Caputo, Williams Architects
Andrew Leifel, HBK
Anthony LoBello, Woolpert
Archie Gallup, Clark Construction
Blanca Rivera, CDB
Cate Novak, Mercury
Chris Klein, FW
CJ Anthony, Clark Chicago
Dan Patton, Sargent Lundy
Devon Travous
Dipak Shah, RME
Dreena Jones, CDB

Ed Stuckey, Stuckey Construction
Elpidio Quiballo, CDB
Gerald Burlington, CPO
Heather Parks, CDB
Jared Aldridge, Aldridge Group
Jennifer Boen, CDB
Josh Ammann, RCC
Ken Morris, CPO
Kevin Batke, Sargent Lundy
Lawrence Oertel, HBK
Marcy Joerger, CDB
Matt Johnson, Alberici
Matthew Trewartha, CDB
Nathaniel Cox, Cordogan Clark
Nia Jones, CDB
Nick Verardo, David Mason
Patricia Sklenka, CDB
Phillip Lee, Alberici
Robert Koeller, Williams Architects
Ryan Leodora, Eptein Global
Ted Tiffany, BDC
Yining Dai, Quanta Services
Ryan Cerny, Stuckey Construction
E. Rahman, HBK
Eric Lacey, RECA
Heather Oxley, CDB
Ian Kaminski, SOM
Jesse Hinojosa, HBK
John Wayne, DHS
Kathryn Martin, CDB
Kenneth Watkins, CDB
Lauren Noll, CDB
Linda Arnold, RTM
Maribel Acevedo, CDB
Matt McHenry, CDB
Natashia Ramirez, CDB
Nazih Kafe, CDB
Nicholas Klein, CDB
Noula Frigelis, CDB
Paul Kmett, CDB
Rena Lim, CPO
Sam Bates, CDB
Scott Satterlee, CDB
Tim Weber, Cordogan Clark
J. Neal, Cordogan Clark

The meeting was called to order at 11:00 a.m.

Sally Finney took roll call. Pam McDonough, Tamakia Edwards, Beverly Potts, Saul Morse, and Glyn Ramage were present.

Saul Morse moved, and Tamakia Edwards seconded a motion to approve the agenda. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Beverly Potts moved, and Saul Morse seconded a motion to approve the minutes, as amended. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Mr. Patrick presented the following Proceed Order:

Proceed Order – DHS – Elgin Mental Health Center
CDB Project No. 321-055-138
Replace the Power Plant
Clark Construction Group
Proceed Order…… $960,000

Saul Morse moved, and Tamakia Edwards seconded the motion to approve the Proceed Order. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Mr. Patrick presented the following Change Orders:

Change Order – BHE – Jacoby Dickens Center
CDB Project No. 814-010-083
Repair HVAC and Pool
Canino Electric Company
Change Order……$249,493.09

Tamakia Edwards moved, and Glyn Ramage seconded a motion to approve the Change Order. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Change Order – DJJ – Lincoln Youth Center
CDB Project No. 125-000-005
Construct and Renovate Facilities
Williams Brothers Construction
Change Order……$297,797.68

Saul Morse moved, and Beverly Potts seconded a motion to approve the Change Order.
Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Change Order – DJJ – Lincoln Youth Center
CDB Project No. 125-000-005
Construct and Renovate Facilities
Williams Brothers Construction
Change Order……$450,364.38

Saul Morse moved, and Glyn Ramage seconded a motion to approve the Change Order. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Mr. Patrick presented the following Proceed Order:

Proceed Order – DVA – Illinois Veterans' Home, Quincy
CDB Project No. 040-010-115
Construct Long Term Care, Domiciliary and Campus Upgrades
Veterans United Construction…….. $12,500,000

Saul Morse moved, and Tamakia Edwards seconded amotion to approve the Proceed Order. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Mr. Lance presented the following A/E Selection from PSB 308:

1.	814-010-095	Illinois Board of Higher Education Replace Roofing System Chicago State University 1. Specialty Consulting, Inc. 2. Muller & Muller, Ltd. 3. Legat Architects, Inc.	Appropriation: $4,260,000 Project Cost: $4,260,000

Saul Morse moved, and Tamakia Edwards seconded a motion to approve the A/E Selection from PSB 308. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

Mr. Patrick presented the Change Order for Board Authorized Proceed Order and the Emergency Project Proceed Order/Change Order Report.

Mr. Lance presented Best Interest of the State/Information Item.

Ms. Vidana gave an update on the Diversity Contracting Unit.

Saul Morse moved, and Beverly Potts seconded a motion to adjourn. Vice Chair McDonough called for a vote, and the motion was approved unanimously.

The meeting was adjourned at 11:59 a.m.

Amend the FY24 calendar for the months of May and June of 2024, to add location of 5415 North University Street, Peoria, IL 61614

FY24 CDB BOARD MEETING SCHEDULE

DATE	TIME	LOCATION
July 11, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
August 8, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
September 12, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
October 10, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
November 14, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
December 12, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
January 9, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
February 13, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
March 12, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
April 9, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
May 14, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, Peoria, and Video Conference
June 11, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, Peoria, and Video Conference

TO: **Capital Development Board**

FROM: **Robert Coslow, Professional Services Administrator**

DATE: **March 28, 2024**

RE: **Illinois Energy Conservation Code Rules (71 IAC 600)**

The Capital Development Board ("CDB") is proposing amended administrative rules. Pursuant to 2 Ill. Adm. Code 1650.410, CDB is requesting Board approval for the revised rules summarized below:

The rules before the Board today are required by 20 ILCS 3125/55 (d) which requires the Code be available for adoption by municipalities by June 30, 2024. The Board's adoption of the Stretch Energy Code today would allow CDB to submit the rules to the Joint Committee on Administrative Rules and possibly have the code available for adoption by municipalities by October 31, 2024.

The rules before the Board today are essentially the same as those brought to the Board last month except the "all-electric" appendices have been removed from the Residential and Commercial sections.

Key Items to Consider:

- Adoption of the Illinois Stretch Energy Code is a statutory requirement.
- The Stretch Code is mandatory for buildings authorized or funded by CDB.
- The Stretch Code optional for municipalities.
- The Stretch Code is intended to be "more stringent" than the Illinois Base Energy Code. Removing items from the proposed Stretch Code would not achieve the intent and would result in a Stretch Code that is not much different than the Illinois Base Energy Code.
- The Stretch Code was unanimously approved by the Illinois Energy Conservation Advisory Council in December of 2023.
- The Pacific Northwest National Laboratory completed a cost effective analysis of the Residential Stretch Code and it was found to be cost effective.
- Fossil fuels are not prohibited.

TITLE 71: PUBLIC BUILDINGS, FACILITIES, AND REAL PROPERTY
CHAPTER I: CAPITAL DEVELOPMENT BOARD
SUBCHAPTER d: ENERGY CODES

PART 600
ILLINOIS ENERGY ~~CONSERVATION~~ CODES

SUBPART A: GENERAL

Section
600.100 Definitions
600.110 Adoption and Modification of the Code
600.120 Illinois Energy Conservation Advisory Council
600.125 Illinois Energy Conservation Advisory Council Meetings
600.130 Revisions to the Code

SUBPART B: STATE FUNDED FACILITIES

Section
600.200 Illinois Commercial Stretch Energy Code~~Standards for State Funded Facilities~~
600.210 Exemptions
600.220 Compliance

SUBPART C: PRIVATELY FUNDED COMMERCIAL FACILITIES

Section
600.300 Illinois Energy Conservation Code~~Standards for Privately Funded Commercial Facilities~~
600.305 Illinois Commercial Stretch Energy Code
600.310 Exemptions
600.320 Local Jurisdiction
600.330 Compliance
600.340 Application to Home Rule Units

SUBPART D: RESIDENTIAL BUILDINGS

Section
600.400 Illinois Energy Conservation Code~~Standards for Residential Buildings~~
600.405 Illinois Residential Stretch Energy Code
600.410 Exemptions
600.420 Local Jurisdiction
600.430 Compliance
600.440 Application to Home Rule Units

AUTHORITY: Implementing and authorized by the Capital Development Board Act [20 ILCS 3105] and the Energy Efficient Building Act [20 ILCS 3125].

SOURCE: Adopted by emergency rulemaking at 28 Ill. Reg. 11355, effective July 26, 2004, for a maximum of 150 days; emergency rules expired December 22, 2004; adopted at 29 Ill. Reg. 777, effective January 1, 2005; new Part adopted by emergency rulemaking at 29 Ill. Reg. 5736, effective April 8, 2005, for a maximum of 150 days; emergency expired September 4, 2005; emergency rulemaking repealed at 29 Ill. Reg. 6093, effective April 18, 2005, for a maximum of 150 days; emergency expired September 14, 2005; old Part repealed at 29 Ill. Reg. 16414 and new Part adopted at 29 Ill. Reg. 14790, effective April 8, 2006; amended at 31 Ill. Reg. 14422, effective October 9, 2007; emergency amendment at 33 Ill. Reg. 12407, effective August 18, 2009, for a maximum of 150 days; amended at 33 Ill. Reg. 16702, effective November 23, 2009; emergency rulemaking at 34 Ill. Reg. 2582, effective January 29, 2010, for a maximum of 150 days; emergency expired June 27, 2010; amended at 34 Ill. Reg. 11398, effective July 26, 2010; amended at 37 Ill. Reg. 789, effective January 11, 2013; amended at 37 Ill. Reg. 12822, effective July 23, 2013; amended at 40 Ill. Reg. 2754, effective January 20, 2016; amended at 43 Ill. Reg. 8707, effective August 5, 2019; amended at 47 Ill. Reg. 17974, effective November 27, 2023.

SUBPART A: GENERAL

Section 600.100 Definitions

Definitions of terms in the International Energy Conservation Code, incorporated by reference in Subpart C of this Part, apply, as do the following definitions:

"2024 INTERNATIONAL ENERGY CONSERVATION CODE FINAL DRAFT" means the Public Comments Draft 2 version of the 2024 IECC with approved proposals from the Committee Action Report.

"Act" means the Capital Development Board Act [20 ILCS 3105].

"Authority Having Jurisdiction" or "AHJ" means the organization, office or individual responsible for approving equipment, materials, an installation or procedure.

"CDB" or "Board" means the Illinois Capital Development Board.

"Commercial Facility" means any building except a building that is a residential building as defined in the EEB Act. [20 ILCS 3125/10]

"Council" means the Illinois Energy Conservation Advisory Council appointed under Section 600.120 and whose purpose it is to recommend modifications to the Illinois Energy Conservation Code.

"EEB Act" means the Energy Efficient Building Act [20 ILCS 3125].

"IECC" means the International Energy Conservation Code.

"Illinois Energy Conservation Code"~~ or "Code"~~ means:

~~With respect to the State facilities covered by Subpart B:~~

~~This Part, all additional requirements incorporated within Subpart B (including the 2021 International Energy Conservation Code that encompasses ASHRAE 90.1, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB;~~

With respect to the privately funded commercial facilities covered by Subpart C Section 600.300:

This Part, all additional requirements incorporated within Subpart C (including the 2021 International Energy Conservation Code that encompasses ASHRAE 90.1, including all published errata but excluding published supplements, and any statutorily authorized adaptations to the incorporated standards adopted by CDB; and

With respect to the residential buildings covered by Subpart D Section 600.400:

This Part, all additional requirements incorporated within Subpart D (including the 2021 International Energy Conservation Code, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB.

"Illinois Commercial Stretch Energy Code" or "Commercial Stretch Code" means:

With respect to the State facilities covered by Subpart B and privately funded commercial facilities covered by Subpart C Section 600.305:

This Part, all additional requirements incorporated within Subparts B and C (including the 2024 International Energy Conservation Code Final Draft Commercial Provisions that encompasses ASHRAE 90.1, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB;

"Illinois Residential Stretch Energy Code" or "Residential Stretch Code" means:

With respect to the residential buildings covered by Subpart D Section 600.405:

This Part, all additional requirements incorporated with Subpart D (including the 2021 International Energy Conservation Code Residential Provisions, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB.

"Municipality" means any city, village or incorporated town. [20 ILCS 3125/10]

"Residential Building" means a detached one-family or 2-family dwelling or any building that is 3 stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory, and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "residential building" means a building containing one or more dwelling units, not exceeding 4 stories above grade, where occupants are primarily permanent. [20 ILCS 3125/10]

"State Funded Building" means and includes buildings under the jurisdiction of each officer, department, board, commission, institution and body politic and corporate of the State, including the Illinois Building Authority, and any other person expending or encumbering State or federal funds by virtue of an appropriation or other authorization by the General Assembly or federal authorization or grant. This includes State funded *housing, hospitals,*

penitentiaries, laboratories, educational facilities, administrative facilities, recreational facilities, environmental equipment and parking facilities [20 ILCS 3105/4.01].

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.110 Adoption and Modification of the Illinois Energy Codes

a) The purpose of the Illinois Energy Conservation Code is to implement Section 15 of the Energy Efficient Building Act [20 ILCS 3125] that requires CDB to officially adopt, as a minimum requirement for ~~State and~~ commercial structures and as a minimum and maximum requirement for residential buildings, the 2021 International Energy Conservation Code, including all published errata but excluding any published supplements, to apply that Illinois Energy Conservation Code to all commercial and residential structures in Illinois, and to assist local code officials with enforcing the requirements of the Illinois Energy Conservation Code. The 2021 Illinois Energy Conservation Code will become effective on January 1, 2024~~adoption of this rulemaking~~.

b) The purpose of the Illinois Stretch Energy Code is to implement Section 55 of the Energy Efficient Building Act [20 ILCS 3125] that requires CDB to officially adopt, as a minimum requirement for State facilities, commercial structures and residential buildings in municipalities that have adopted the Illinois Stretch Energy Code, an energy code that meets the site energy indexes as outlined in Section 55 of the Energy Efficient Building Act.

c~~b~~) ~~This Code as described in Subpart B (State facilities) is effective July 26, 2004.~~ The~~This~~ Illinois Energy Conservation Code as described in Subpart C (privately-funded commercial facilities) is effective April 8, 2007. The Illinois Energy Conservation Code as described in Subpart D (residential buildings) is effective January 29, 2010. The Illinois Stretch Energy Code as described in Subparts B, C and D (State facilities, privately-funded commercial facilities and residential buildings) is effective upon adoption.

d~~c~~) Application of the Codes

1) State Facilities. The Illinois Commercial Stretch Energy Code as described in Subpart B of this Part applies to *all projects to which an energy conservation code is applicable that are authorized or funded in any part by the Board after July 1, 2024.* [20 ILCS 3125/55]~~all State facilities for which money has been appropriated or authorized by the General Assembly.~~

2) Privately Funded Commercial Facilities and Residential Buildings. The Illinois Energy Conservation Code or the Illinois Stretch Energy Code if adopted by the local municipality as described in Subparts C and D of this Part applies *to any new building or structure in this State for which a building permit application is received by a municipality or county.* [20 ILCS 3125/20]

A) *Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of the Code as they relate to new construction without requiring the unaltered portion of the existing building or building system to comply with the Code.* [20 ILCS 3125/20(c)]

B) All exceptions listed in the Code related to additions, alterations, renovations or repairs to an existing building are acceptable provided the energy use of the building is not increased.

e~~d~~) This Code, together with the standards incorporated by reference in this Part, has the force of a building code and is administrative law applicable in the State of Illinois.

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.120 Illinois Energy Conservation Advisory Council

a) The Executive Director of the Capital Development Board shall appoint an Advisory Council. The Council shall be composed of the Executive Director or his or her authorized representative, who shall serve as Chairman ex-officio, and 16 additional members appointed by the Executive Director. The appointed members shall consist of 1 person representing the Illinois Environmental Protection Agency; 2 persons representing the residential construction contracting industry; 2 licensed architects; 1 licensed mechanical engineer; 1 licensed electrical engineer; 2 persons representing local code officials; and 2 persons representing the construction contracting industry; 1 representative from a group that represents environmental justice; 1 representative of a nonprofit or professional association advocating for the environment; 1 energy-efficiency advocate with technical expertise in single-family residential buildings; 1 energy-efficiency advocate with technical expertise in commercial buildings; and 1 energy-efficiency advocate with technical expertise in multifamily buildings, such as an affordable housing developer. Members of the Council shall be appointed for 4 year terms. The members appointed by the Executive Director shall serve for the term of their appointments or until their successors are appointed and may

be reappointed upon expiration of the term. Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his or her predecessor was appointed shall be appointed for a full term.

b) Nine members of the Council shall constitute a quorum. The Chairman shall only vote to break a tie or when necessary to establish a quorum.

c) The purpose of the Council shall be to recommend modifications to the Illinois Energy Conservation Code and the Illinois Stretch Energy Code.

d) Members of the Council shall serve without compensation but shall be reimbursed for reasonable travel expenses necessarily incurred in the performance of their duties.

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.125 Illinois Energy Conservation Advisory Council Meetings

a) Public comment will be allowed at the end of each meeting for a period not to exceed 30 minutes or at other times as designated by the Chair. Each person making a public comment will be given up to 3 minutes of uninterrupted time to speak.
b) The Chair may impose other time restrictions as may be necessary to accommodate all persons wishing to make comment.
c) Public comment is not permitted except at designated times unless requested by the Chair.
d) Public comment that is deemed by the Chair to be disruptive to the meeting and prevents the Council from accomplishing its business in an efficient manner, will not be allowed.
e) The council is not required to answer or respond to any public comment.

Section 600.130 Revisions to the Code

This Code may be revised by the Capital Development Board on its own volition or pursuant to recommendations of the Illinois Energy Conservation Advisory Council and in accordance with the Illinois Administrative Procedure Act [5 ILCS 100].

SUBPART B: STATE FUNDED FACILITIES

Section 600.200 Illinois Commercial Stretch Energy Code~~Standards for State Funded Facilities~~

a) The 20242~~21~~ IECC Final Draft, including published errata but excluding published supplements, available from the Capital Development Board, 401 S. Spring St., 3rd Floor, Springfield, IL 62706 (cdb.energycodes@illinois.gov) through copyright agreement with International Code Council at 200 Massachusetts Ave, NW Suite 250, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), www.iccsafe.org, is hereby incorporated into the Illinois Commercial Stretch Energy ~~Conservation~~ Code, as described in this Subpart as applicable to State funded facilities, with the modifications outlined in subsection (c).

b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.

c) Modifications to IECC
Under Section 55~~15~~ of the EEB Act, when applying the Illinois Commercial Stretch Energy Code to State funded facilities, CDB may modify the incorporated standards to meet objectives outlined in the EEB Act.~~respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the EEB Act are maintained.~~ Modifications, additions or omissions to the IECC Final Draft are specified in Appendix B~~A~~ and are rules of the CDB and are not requirements of the IECC.

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.210 Exemptions

a) *The following buildings are exempt from the Code:*

1) *Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space;*

2) *Buildings that do not use either electricity or fossil fuel for comfort conditionings;*

3) *Historic buildings listed on the National Register of Historic Places or the Illinois Register of Historic Places*, and those buildings that are designated by authorized personnel as historically significant;

4) *Other buildings specified as exempt by the IECC.*

b) *For purposes of determining whether an exemption authorized under subsection (a)(2) applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is*

provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical service is necessary for purposes other than providing electric comfort heating. [20 ILCS 3125/20]

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

Section 600.220 Compliance

Compliance with the Illinois Commercial Stretch Energy ~~Conservation~~ Code for State facilities as described by this Subpart B shall be demonstrated by submission of one of the following:

a) Buildings certified in compliance with Passive House Institute (PHI) or Passive House Institute U.S. (PHIUS) programs;~~the compliance forms published in the ASHRAE 90.1 User's Manual;~~

~~b) Compliance Certificates generated by the U.S. Department of Energy's COMCheck code compliance tool; or~~

b~~c~~) the seal of the Architect/Engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

SUBPART C: PRIVATELY FUNDED COMMERCIAL FACILITIES

Section 600.300 Illinois Energy Conservation Code~~Standards for Privately Funded Commercial Facilities~~

a) The 2021 IECC, including published errata but excluding published supplements, available from the International Code Council at 200 Massachusetts Ave, NW Suite 250, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), www.iccsafe.org, is hereby incorporated into the Illinois Energy Conservation Code, as described in this Subpart as applicable to privately funded commercial facilities, with the modifications outlined in subsection (c).

b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.

c) Modifications to IECC

Under Section 15 of the EEB Act, when applying the Illinois Energy Conservation Code to privately funded commercial facilities, CDB may modify the incorporated standards to respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the EEB Act are maintained. Modifications, additions or omissions to IECC are specified in Appendix A and are rules of the CDB and are not requirements of the IECC.

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.305 Illinois Commercial Stretch Energy Code

a) The 2024 IECC Final Draft, including published errata but excluding published supplements, available from the Capital Development Board, 401 S. Spring St., 3rd Floor, Springfield, IL 62706 (cdb.energycodes@illinois.gov) through copyright agreement with International Code Council at 200 Massachusetts Ave, NW Suite 250, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), www.iccsafe.org, is hereby incorporated into the Illinois Commercial Stretch Energy Code, as described in this Subpart as applicable to privately funded commercial facilities, with the modifications outlined in subsection (c).

b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.

c) Modifications to the IECC
Under Section 55 of the EEB Act, when applying the Illinois Commercial Stretch Energy Code to privately funded commercial facilities, CDB may modify the incorporated standards to meet objectives outlined in the EEB Act. Modifications, additions or omissions to the IECC Final Draft are specified in Appendix B and are rules of the CDB and are not requirements of the IECC.

Section 600.310 Exemptions

a) The following buildings are exempt from the Code:

1) *Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space;*

2) *Buildings that do not use either electricity or fossil fuel for comfort conditioning;*

3) *Historic buildings listed on the National Register of Historic Places or the Illinois Register of Historic Places, and those buildings that are designated by authorized personnel as historically significant;*

4) *Other buildings specified as exempt by the IECC.*

b) *For the purposes of determining whether an exemption* authorized under subsection (a)(2) *applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical service is necessary for purposes other than providing electric comfort heating.* [20 ILCS 3125/20]

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

Section 600.320 Local Jurisdiction

a) Construction projects involving privately funded commercial facilities and for which a municipality or county requires a building permit must comply with the Illinois Energy Conservation Code or the Illinois Stretch Energy Code if adopted by the municipality if the project involves new construction, addition, alteration, renovation or repair. *In the case of any addition, alteration, renovation or repair to an existing commercial structure, the Code* as described by this Subpart C *applies only to the portions of that structure that are being added, altered, renovated or repaired*. [20 ILCS 3125/20(a)]

b) The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code and/or the Illinois Commercial Stretch Energy Code. The AHJ is authorized to enforce an energy ~~building~~ code that differs with the Illinois Energy Conservation Code or the Illinois Commercial Stretch Energy Code as described in this Subpart C, but any standards applied by an AHJ must be at least as stringent as the Code as described in this Subpart C.

c) *A unit of local government that does not regulate energy efficient building standards is not required to adopt, enforce or administer the Code; however, any energy efficient building standards adopted by a unit of local government must comply with the Act. If a unit of local government does not regulate energy efficient building standards, any construction, renovation or addition to buildings or structures is* still *subject to the provisions contained in the Act.* [20 ILCS 3125/20(d)]

(Source: Amended at 40 Ill. Reg. 2754, effective January 20, 2016)

Section 600.330 Compliance

a) Compliance with the Illinois Energy Conservation Code as described by this Subpart C (applicable to commercial facilities) shall be determined by the local authority having jurisdiction (AHJ). Minimum compliance shall be demonstrated by submission of one of the following:

~~b) Minimum compliance shall be demonstrated by submission of:~~

1) the compliance forms published in the ASHRAE 90.1 User's Manual; or

2) Compliance Certificates generated by the U.S. Department of Energy's COMcheck code compliance tool; or

3) other comparable compliance materials that meet or exceed, as determined by the authority having jurisdiction, the compliance forms published in the ASHRAE 90.1 User's Manual or the U.S. Department of Energy's COMcheck code compliance tool; or

4) the seal of the Architect/Engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

b) Compliance with the Illinois Commercial Stretch Energy Code as described by this Subpart C (applicable to commercial facilities) shall be determined by the local authority having jurisdiction (AHJ). Minimum compliance shall be demonstrated by submission of one of the following:

1) Buildings certified in compliance with Passive House Institute (PHI) or Passive House Institute U.S. (PHIUS) programs;

2) The code official shall be permitted to approve specific computer software, worksheets, compliance manuals and other similar materials that meet the intent of this code; or

3) the seal of the Architect/Engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

(Source: Amended at 33 Ill. Reg. 16702, effective November 23, 2009)

Section 600.340 Application to Home Rule Units

Section 45(d) of the EEB Act *is a denial and limitation of home rule powers and functions under subsection (i) of Section 6 of Article VII of the Illinois Constitution on the concurrent exercise by home rule units of powers and functions exercised by the State. Nothing in* Section 45(d) of the EEB Act, *however, prevents a unit of local government from adopting an energy efficiency code or standards for commercial buildings that are more stringent than the Code under* the EEB *Act.* [20 ILCS 3125/45(d)]

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

SUBPART D: RESIDENTIAL BUILDINGS

Section 600.400 Illinois Energy Conservation Code~~Standards for Residential Buildings~~

a) The 2021 IECC, including published errata but excluding published supplements, available from the International Code Council at 200 Massachusetts Ave, NW Suite 250, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233), www.iccsafe.org, is hereby incorporated into the Illinois Energy Conservation Code, as described in this Subpart as applicable to residential buildings, with the modifications outlined in subsection (c).

b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.

c) Modifications to IECC
Under Section 15 of the EEB Act, when applying the Illinois Energy Conservation Code to residential buildings, CDB may modify the incorporated standards to respond to the unique economy, population distribution, geography and climate of Illinois, as long as the objectives of the Act are maintained pursuant to that statutory authority. Modifications, additions or omissions to IECC are specified in Appendix A and are rules of the CDB and are not requirements of the IECC.

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.405 Illinois Residential Stretch Energy Code

a) The 2021 IECC, including published errata but excluding published supplements available from the International Code Council at 500 New Jersey Avenue NW, 6th Floor, Washington DC 20001, phone: 1-888-ICC-SAFE (422-7233),

www.iccsafe.org, is hereby incorporated into the Illinois Residential Stretch Energy Code, as described in this Subpart as applicable to residential buildings, with modifications outlined in subsection (c).

b) All incorporations by reference in this Section are of the cited standards as they existed on the date specified. These incorporations include no later editions or amendments.

c) Modifications to the IECC
Under Section 55 of the EEB Act, when applying the Residential Stretch Energy Code to privately funded residential buildings, CDB may modify the incorporated standards to meet objectives outlined in the EEB Act. Modifications, additions or omissions to the IECC are specified in Appendix C and are rules of the CDB and are not requirements of the IECC.

Section 600.410 Exemptions

a) The following buildings are exempt from the Code:

1) *Buildings otherwise exempt from the provisions of a locally adopted building code and buildings that do not contain a conditioned space;*

2) *Buildings that do not use either electricity or fossil fuel for comfort conditioning;*

3) *Historic buildings listed on the National Register of Historic Places or the Illinois Register of Historic Places, and those buildings that are designated by authorized personnel as historically significant;*

4) *Other buildings specified as exempt by the IECC.* [20 ILCS 3125/20]

b) *For the purposes of determining whether an exemption* authorized under subsection (a)(2) *applies, a building will be presumed to be heated by electricity, even in the absence of equipment used for electric comfort heating, whenever the building is provided with electrical service in excess of 100 amps, unless the code enforcement official determines that this electrical service is necessary for purposes other than providing electric comfort heating.* [20 ILCS 3125/20(b)(2)]

(Source: Added at 34 Ill. Reg. 11398, effective July 26, 2010)

Section 600.420 Local Jurisdiction

a) Construction projects involving residential buildings and for which a municipality or county requires a building permit must comply with the Illinois Energy Conservation Code or the Illinois Residential Stretch Energy Code if adopted by the municipality if the project involves new construction, addition, alteration, renovation or repair. *In the case of any addition, alteration, renovation or repair to an existing residential structure, the Code* as described by this Subpart D *applies only to the portions of that structure that are being added, altered, renovated or repaired*. [20 ILCS 3125/20(a)]

b) The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Code.

c) *A unit of local government that does not regulate energy efficient building standards is not required to adopt, enforce or administer the Code; however, any energy efficient building standards adopted by a unit of local government must comply with the Act. If a unit of local government does not regulate energy efficient building standards, any construction, renovation or addition to buildings or structures is still subject to the provisions contained in the Act.* [20 ILCS 3125/20(d)].

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.430 Compliance

a) Compliance with the Illinois Energy Conservation Code as described by this Subpart D (applicable to residential buildings) shall be determined by the local AHJ. Minimum compliance shall be demonstrated by submission of one of the following:

~~b) Minimum compliance shall be demonstrated by submission of:~~

1) Compliance Certificates generated by the U.S. Department of Energy's REScheck code compliance tool; or

2) Other comparable compliance materials that meet or exceed, as determined by the AHJ, U.S. Department of Energy's REScheck code compliance tool; or

3) The seal of the architect/engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

b) Compliance with the Illinois Residential Stretch Energy Code as described by this Subpart D (applicable to residential buildings) shall be determined by the local AHJ. Minimum compliance shall be demonstrated by submission of one of the following:

1) Buildings certified in compliance with Passive House Institute (PHI) or Passive House Institute U.S. (PHIUS) programs;

2) The code official shall be permitted to approve specific computer software, worksheets, compliance manuals and other similar materials that meet the intent of this code; or

3) the seal of the Architect/Engineer as required by Section 14 of the Illinois Architecture Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

(Source: Added at 34 Ill. Reg. 11398, effective July 26, 2010)

Section 600.440 Application to Home Rule Units

a) *No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential buildings in a manner that is either less or more stringent than the* standards established in this Subpart D.

b) *The following entities may regulate energy efficient building standards for residential or commercial buildings in a manner that is more stringent than the provisions contained in this* Subpart D:

1) A~~a~~ *unit of local government, including a home rule unit, that has, on or before May 15, 2009, adopted or incorporated by reference energy efficient building standards for residential or commercial buildings that are equivalent to or more stringent than the 2006 IECC.*~~;~~

2) A~~a~~ *unit of local government, including a home rule unit, that has, on or before May 15, 2009, provided to the Capital Development Board, as required by Section 10.18 of the Capital Development Board Act* [20 ILCS 3105]*, an identification of an energy efficient building code or amendment that is equivalent to or more stringent than the 2006 IECC.*~~; and~~

3) A~~a~~ *municipality with a population of 1,000,000 or more.* ~~[20 ILCS 3125/45(b)]~~

4) A *municipality that has adopted the Illinois Stretch Energy Code* [20 ILCS 3125/45 (b)]

c) *No unit of local government, including any home rule unit or unit of local government that is subject to State regulation under the Code as provided in Section 15 of the EEB may enact any annexation ordinance or resolution, or require or enter into any annexation agreement, that imposes energy efficient building standards for residential or commercial buildings that are either less or more stringent than the energy efficiency standards in effect, at the time of construction, throughout the unit of local government, except for the Illinois Stretch Energy Code*. [20 ILCS 3125/45(c)]

(Source: Amended at 43 Ill. Reg. 8707, effective August 5, 2019)

Section 600.APPENDIX A Supplanted and Additional 2021 International Energy Conservation Code Sections

The following Code sections shall be referenced in place of the corresponding 2021 IECC sections.

CHAPTER 1 [CE]
SCOPE AND ADMINISTRATION

SECTION C101
SCOPE AND GENERAL REQUIREMENTS

C101.1 Title. This Code shall be known as the 2021 Illinois Energy Conservation Code or Code and shall mean:

With respect to the State facilities covered by 71 Ill. Adm. Code 600.Subpart B:

This Part, all additional requirements incorporated within Subpart B (including the 2021 International Energy Conservation Code, including all published errata but excluding published supplements that encompass ASHRAE 90.1-2019), and any statutorily authorized adaptations to the incorporated standards adopted by CDB, are effective January 1, 2024.

With respect to the privately funded commercial facilities covered by 71 Ill. Adm. Code 600.Subpart C:

This Part, all additional requirements incorporated within Subpart C (including the 2021 International Energy Conservation Code, including all published errata and excluding published supplements that encompass ASHRAE 90.1-2019), and any statutorily authorized adaptations to the incorporated standards adopted by CDB, are effective January 1, 2024.

C101.1.12 Adoption. The Board shall adopt amendments to this Code within 12 months after publication of ~~changes to~~ the 2021 International Energy Conservation Code. Any such update in this Code shall take effect within 6 months after it is adopted by the Board and shall apply to any new building or structure in this State for which a building permit application is received by a municipality or county, except as otherwise provided by the EEB Act.

C101.1.23 Adaptation. The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population distribution, geography and climate of the State and construction within the State, consistent with the public policy objectives of the EEB Act.

C101.5 Compliance. Commercial buildings shall meet the provisions of the Illinois Energy Conservation Code covered by 71 Ill. Adm. Code 600.Subpart C. The local authority having

jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

1. Compliance forms published in the ASHRAE 90.1 User's Manual; or

2. Compliance Certificates generated by the U.S. Department of Energy's COMcheck™ Code compliance tool; or

3. Other comparable compliance materials that meet or exceed, as determined by the AHJ, the compliance forms published in the ASHRAE 90.1 User's Manual or the U.S. Department of Energy's COMcheck™ code compliance tool; or

4. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

C102.1.1 Above cCode pPrograms. No unit of local government, including any home rule unit, may apply energy efficient building standards to privately funded commercial facilities in a manner that is less stringent than this Code as described in 71 Ill. Adm. Code 600.Subpart C. However, nothing in the EEB Act or Subpart C prevents a unit of local government from adopting an energy efficiency code or standards that are more stringent than this Code. The requirements identified in Table C407.2 shall be met.

SECTION C110
BOARD OF APPEALS

C110.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this Code, there may be created a board of appeals. The code official shall be an ex officio member of the board of appeals but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.

C110.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training.

CHAPTER 2 [CE]
DEFINITIONS

SECTION C202
GENERAL DEFINITIONS

APPROVED SOURCE. ~~**Approved Source – means**~~ A~~a~~n independent person, firm, or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

AUTHORITY HAVING JURISDICTION ~~**Authority Having Jurisdiction or**~~ **(AHJ).** ~~**– means**~~ T~~t~~he organization, officer or individual responsible for approving equipment, materials, an installation or procedure.

BOARD. ~~**Board – means**~~ T~~t~~he Illinois Capital Development Board.

COUNCIL. ~~**Council – means**~~ T~~t~~he Illinois Energy Conservation Advisory Council whose purpose is to recommend modifications to the Illinois Energy Conservation Code.

DEMAND RESPONSE SIGNAL. ~~**Demand Response Signal – means**~~ A~~a~~ signal that indicates a price or a request to modify electricity consumption for a limited time period.

DEMAND RESPONSIVE CONTROL. ~~**Demand Responsive Control – means**~~ A~~a~~ control capable of receiving and automatically responding to a demand response signal.

EEB ACT. ~~**Act – means**~~ T~~t~~he Energy Efficient Building Act [20 ILCS 3125].

PHOTOSYNTHETIC PHOTON EFFICACY (PPE). ~~**Photosynthetic Photon Efficacy (PPE) – means**~~ A~~a~~ photosynthetic photon flux divided by input electric power in units of micromoles per second per watt, or micromoles per joule as defined by ANSI/ASABE S640.

CHAPTER 4 [CE]
COMMERCIAL ENERGY EFFICIENCY

SECTION C402
BUILDING ENVELOPE REQUIREMENTS

C402.4.1.3 Fenestration o~~O~~rientation
The vertical fenestration shall comply with either equation ~~either (~~a.~~)~~ or ~~(~~b.~~)~~:
a. AW ≤ (AT)/4 and AE ≤ (AT)/4
b. AW × SHGCW ≤ (AT × SHGCC)/5 and AE × SHGCE ≤ (AT × SHGCC)/5

where:

AW~~w~~ = W~~w~~est-oriented vertical fenestration area (oriented within 45 degrees of true west to the south and within 22.5 degrees of true west to the north in the N~~n~~orthern H~~h~~emisphere)

AE~~e~~ = E~~e~~ast-oriented vertical fenestration area (oriented within 45 degrees of true east to the south and within 22.5 degrees of true east to the north in the N~~n~~orthern H~~h~~emisphere)

AT = T~~t~~otal vertical fenestration area

SHGCC = SHGC criteria in Table C402.4

SHGCE = SHGC for east-oriented fenestration

SHGCW = SHGC for west-oriented fenestration

Exceptions:

1. Buildings with shade on 75% of the east-oriented and west-oriented vertical fenestration areas from permanent projections, existing buildings, existing permanent infrastructure, or topography at 9 a.m. and 3 p.m., respectively, on the summer solstice (June 21).

2. Alterations and additions with no increase in vertical fenestration area.

3. Buildings where the eastwest-oriented and westeast-oriented vertical fenestration area does not exceed 20% of the gross wall area for each of those façades, and SHGC on those facades is no greater than 90% of the criteria in Table C402.4.

C402.5.1 Air bBarriers. A continuous air barrier shall be provided throughout the building thermal envelope. The air barriers shall be permitted to be located on the inside or outside of the building envelope, located within the assemblies composing the envelope, or any combination thereof. The air barrier shall comply with Sections C402.5.1.1 and C402.5.1.2. For roof air barriers on existing buildings, refer to Section C503.1 or C504.2.

Exception: Air barriers are not required in buildings located in Climate Zone 2B.

C402.5.1.1 Air bBarrier cConstruction. The continuous air barrier shall be constructed to comply with the following:

1. The air barrier shall be continuous for all assemblies that are the thermal envelope of the building and across the joints and assemblies.

2. Air barrier joints and seams shall be sealed, including sealing transitions at joints between dissimilar materials. The joints and seals shall be securely installed in or on the joint for its entire length so as not to dislodge, loosen or otherwise impair its ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation.

3. Penetrations of the air barrier shall be caulked, gasketed or otherwise sealed in a manner compatible with the construction materials and location. Sealings shall allow for expansion, contraction and mechanical vibration. Paths for air leakage from the building to the space between the roof deck and roof covering used as an air barrier shall be caulked, gasketed or otherwise covered with a moisture vapor-permeable material. Joints and seams associated with penetrations shall be sealed in the same manner or taped. Sealing materials shall be securely installed around the penetration so as not to dislodge, loosen or otherwise impair the penetrations' ability to resist positive and negative pressure from wind, stack effect and mechanical ventilation. Sealing of concealed fire

sprinklers, where required, shall be in a manner that is recommended by the manufacturer. Caulking or other adhesive sealants shall not be used to fill voids between fire sprinkler cover plates and walls or ceilings.

4. Recessed lighting fixtures shall comply with Section C402.5.108. Where similar objects are installed that penetrate the air barrier, provisions shall be made to maintain the integrity of the air barrier.

SECTION C405
ELECTRICAL POWER AND LIGHTING SYSTEMS

C405.4 Lighting for plant growth and maintenance. All permanently installed luminaires used for plant growth and maintenance shall have a photosynthetic photon efficacy, as defined in accordance with ANSI/ASABE S640, of not less than 1.7 μmol/J for greenhouses and not less than 2.2 μmol/J for all other indoor growing spaces.

Exception: The following buildings are exempt:

1. Buildings with no more than 40kW of aggregate horticultural lighting load.

2. Cannabis facilities subject to 410 ILCS 705/10-45,- the Cannabis Regulation and Tax Act.

SECTION C406
ADDITIONAL EFFICIENCY REQUIREMENTS

C406.1 Additional energy efficiency credit requirements. New buildings shall achieve a total of 10 credits from Tables C406.1(1) through C406.1(5) where the table is selected based on the use group of the building and from credit calculations as specified in relevant subsections of Section C406. Where a building contains multiple-use groups, credits from each use group shall be weighted by floor area of each group to determine the weighted average building credit. Credits from the tables or calculation shall be achieved where a building complies with one or more of the following:

1. More efficient HVAC performance in accordance with Section C406.2.

2. Reduced lighting power in accordance with Section C406.3.

3. Enhanced lighting controls in accordance with Section C406.4.

4. On-site supply of renewable energy in accordance with Section C406.5.

5. Provision of a dedicated outdoor air system for certain HVAC equipment in accordance with Section C406.6.

6. High-efficiency service water heating in accordance with Section C406.7.

7. Enhanced envelope performance in accordance with Section C406.8.

8. Reduced air infiltration in accordance with Section C406.9

9. Where not required by Section C405.12, include an energy monitoring system in accordance with Section C406.10.

10. Where not required by Section C403.2.3, include a fault detection and diagnostics (FDD) system in accordance with Section C406.11.

11. Efficient kitchen equipment in accordance with Section C406.12.

12. HVAC demand responsive controls and more efficient HVAC performance in accordance with Sections C406.2 and ~~Section~~ C406.13.

13. Water--heating demand responsive controls and high-efficiency service water heating in accordance with Sections C406.7 and ~~Section~~ C406.14.

Modify Table C406.1(1) as follows:

Table C406.1(1) Additional Energy Efficiency Credits for Group B Occupants

Climate Zone:	**4A**	**5A**
C406.13 HVAC demand responsive controls	2	2
C406.14 Water-heating demand responsive controls	1	1

Modify Table C406.1(2) as follows:

Table C406.1(2) Additional Energy Efficiency Credits for Group R and I Occupancies

Climate Zone:	**4A**	**5A**
C406.13 HVAC demand responsive controls	4	3
C406.14 Water-heating demand responsive controls	1	1

Modify Table C406.1(3) as follows:

Table C406.1(3) Additional Energy Efficiency Credits for Group E Occupancies

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	4	4
C406.14 Water-heating demand responsive controls	1	1

Modify Table C406.1(4) as follows:

Table C406.1(4) Additional Energy Efficiency Credits for Group M Occupancies

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	4	3
C406.14 Water-heating demand responsive controls	NA ~~x~~	NA ~~x~~

Modify Table C406.1(5) as follows:

Table C406.1(5) Additional Energy Efficiency Credits for Other* Occupancies

Climate Zone:	4A	5A
C406.13 HVAC demand responsive controls	3	3
C406.14 Water-heating demand responsive controls	2	2

C406.1.1 Tenant spaces. Tenant spaces shall comply with sufficient options from Tables C406.1(1) through C406.1(5) to achieve a minimum number of 5 credits, where credits are selected from Section C406.2, C406.3, C406.4, C406.6, C406.7 or C406.10. Where the entire building complies using credits from Section C406.5, C406.8, C406.9~~,~~ or C406.13 tenant spaces shall be deemed to comply with this section.

C406.13 HVAC demand responsive controls. Buildings shall be provided with demand responsive controls capable of executing the following actions in response to a demand response signal:

1. Automatically increasing the zone operating cooling set point by the following values: 1°F (0.5°C), 2°F (1°C), 3°F (1.5°C), and 4°F (2°C).

2. Automatically decreasing the zone operating heating set point by the following values: 1°F (0.5°C), 2°F (1°C), 3°F (1.5°C), and 4°F (2°C).

Where a demand response signal is not available, the heating and cooling system controls shall be capable of performing all other functions. Where thermostats are controlled by direct digital control, including~~,~~ but not limited to~~,~~ an energy management system, the system shall be capable of demand responsive control and capable of adjusting all thermal setpoints to comply. The demand responsive controls shall comply with either Section C406.13.1 or ~~Section~~ C406.13.2.

C406.13.1Air conditioners and heat pumps with two or more stages of control and cooling capacity of less than 65,000 Btu/h. Thermostats for air conditioners and heat pumps with two or more stages of control and a cooling capacity less than 65,000 Btu/h (19 kW) shall be provided with a demand responsive control that complies with the communication and performance requirements of AHRI 1380.

C406.13.2 All other HVAC systems. Thermostats for HVAC systems shall be provided with a demand responsive control that complies with one of the following:

1. Certified OpenADR 2.0a VEN, as specified under Clause 11, Conformance.
2. Certified OpenADR 2.0b VEN, as specified under Clause 11, Conformance.
3. Certified by the manufacturer as being capable of responding to a demand response signal from a certified OpenADR 2.0b VEN by automatically implementing the control functions requested by the VEN for the equipment it controls.
4. IEC 62746-10-1.
5. The communication protocol required by a controlling entity, such as a utility or service provider, to participate in an automated demand response program.
6. The physical configuration and communication protocol of CTA 2045-A or CTA 2045-B.

C406.14 Water~~-~~-heating demand responsive controls. Electric storage water heaters with a rated water storage volume of 40 to 120 gallons (150 to 450 L)~~ to 120 gallons (450L)~~ and a nameplate input rating equal to or less than 12kW shall be provided with demand responsive controls in accordance with Table C406.14 or another equivalent approved standard.

TABLE C406.14
DEMAND RESPONSIVE CONTROLS FOR WATER HEATING

Equipment Type	Controls	
Electric storage water heaters	Manufactured before 7/1/2025	Manufactured on or after 7/1/2025
	ANSI/CTA-2045-B Level 1 and also capable of initiating water heating to	ANSI/CTA-2045-B Level 2, except “Price Stream Communication” functionality as defined in the

	meet the temperature set point in response to a demand response signal.	standard.

SECTION C407
TOTAL BUILDING PERFORMANCE

Modify Table C407.2 as follows:

TABLE C407.2
REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE

SECTION[a]	TITLE
Envelope	
C402.4.1.3	Fenestration o~~O~~rientation

Modify Table C407.4.1(1) as follows:

TABLE C407.4.1(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

Vertical fenestration other than opaque doors	Area 1. The proposed vertical fenestration area; where the proposed vertical fenestration area is less than 40 percent of the above-grade wall area. 2. 40 percent of the above grade wall area; where the proposed vertical fenestration area is 40 percent or more of the above grade wall area 3. Fenestration orientation shall comply with Section C402.4.1.3.	As proposed
	U-factor: as specified in Table C402.4	As proposed
	1. SHGC: as specified in Table C402.4, except that for climates with no requirement (NR) SHGC = 0.40 shall be used. 2. Fenestration SHGC shall comply with Section C402.4.1.3	As proposed
	External shading and PF: none	As proposed

CHAPTER 5 [CE]
EXISTING BUILDINGS

SECTION C503
ALTERATIONS

C503.2.1 Roof r~~R~~eplacement. Roof replacements shall comply with Section C402.1.3, C402.1.4, C402.1.5 or C407 where the existing roof assembly is part of the building thermal envelope and contains insulation entirely above the roof deck. In no case shall the R-value of the roof insulation be reduced or the U-factor of the roof assembly be increased as part of the roof replacement.

Exceptions: Where compliance with Section C402.1 cannot be met due to limiting conditions on an existing roof, an approved design shall be submitted with the following:

1. Construction documents that include a report by a registered design professional or an approved source documenting details of the limiting conditions affecting compliance with the insulation requirements.

2. Construction documents that include a roof design by a registered design professional or an approved source that minimizes deviation from the insulation requirements.

Chapter 6 [CE]
Referenced Standards

ASME	ASME Two Park Avenue New York, NY 10016-5990
~~**BPVC**~~	~~Boiler and Pressure Vessel Code~~
AHRI	Air-Conditioning, Heating, & Refrigeration Institute 2111 Wilson Blvd, Suite 500 Arlington, VA 22201
1380-2019	Demand Response through Variable Capacity HVAC Systems in Residential and Small Commercial Applications C406.13.1
ANSI	American National Standards Institute 25 West 43rd Street, 4th Floor New York, NY 10036
ANSI/CTA-2045-A-2018	Modular Communications Interface for Energy Management
ANSI/CTA-2045-B-2019	Modular Communications Interface for Energy Management
CTA	Consumer Technology Association 1919 S. Eads Street Arlington, VA 22202
ANSI/CTA-2045-B	Modular Communications Interface for Energy Management C404.11
IEC	IEC Regional Centre for North America IEC International Electrotechnical Commission 446 Main Street 16th Floor

	Worcester, MA 016808
IEC 62746-10-1 - 2018	Systems Iinterface Bbetween Ccustomer Eenergy Mmanagement Ssystem and the Ppower Mmanagement Ssystem – Part 10-1: Open Aautomated Ddemand Rresponse C406.13.2 (4).

CHAPTER 1 [RE]
SCOPE AND ADMINISTRATION

SECTION R101
SCOPE AND GENERAL REQUIREMENTS

R101.1 Title. This Code shall be known as the 2021 Illinois Energy Conservation Code or ~~this~~ Code~~,~~ and shall mean:

With respect to the residential buildings covered by 71 Ill. Adm. Code 600.Subpart D:

This Part, all additional requirements incorporated within Subpart D (including the 2021 International Energy Conservation Code, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB are effective January 1, 2024.

R101.1.12 Adoption. The Board shall adopt amendments to this Code within 12 months after publication of changes to the International Energy Conservation Code. Any such update in this Code shall take effect within 6 months after it is adopted by the Board and shall apply to any new building or structure in this State for which a building permit application is received by a municipality or county, except as otherwise provided by the EEB Act.

R101.1.23 Adaptation. The Board may appropriately adapt the International Energy Conservation Code to apply to the particular economy, population distribution, geography and climate of the State and construction within the State, consistent with the public policy objectives of the EEB Act.

R101.5 Compliance. Residential buildings shall meet the provisions of the Illinois Energy Conservation Code covered by 71 Ill. Adm. Code 600.Subpart D. The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Energy Conservation Code. Minimum compliance shall be demonstrated by submission of:

1. Compliance Certificates generated by the U.S. Department of Energy's REScheck™ Code compliance tool; or

2. Other comparable compliance materials that meet or exceed, as determined by the AHJ, U.S. Department of Energy's REScheck™ Code compliance tool; or

3. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act

[225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

SECTION R102
ALTERNATIVE MATERIALS DESIGN AND METHODS OF CONSTRUCTION AND EQUIPMENT

R102.1.1 Above cCode pPrograms. No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential buildings in a manner that is either less or more stringent than the standards established pursuant to this Code. Buildings shall be considered to be in compliance with this code where suchwhen those buildings also meet the requirements identified in Table R405.2 and the building thermal envelope is greater than or equal to levels of efficiency and solar heat gain coefficients (SHGC) in Tables 402.1.1 and 402.1.3 of the 2009 International Energy Conservation Code.

However, the following entities may regulate energy efficient building standards for residential buildings in a manner that is more stringent than the provisions contained in this Code:

1i) A unit of local government, including a home rule unit, that has, on or before May 15, 2009, adopted or incorporated by reference energy efficient building standards for residential buildings that are equivalent to or more stringent than the 2006 International Energy Conservation Code.;

2ii) A unit of local government, including a home rule unit, that has, on or before May 15, 2009, provided to the Capital Development Board, as required by Section 10.18 of the Capital Development Board Act, an identification of an energy efficient building code or amendment that is equivalent to or more stringent than the 2006 International Energy Conservation Code.; and

3iii) A municipality with a population of 1,000,000 or more.

4) A municipality that has adopted the Illinois Stretch Energy Code.

SECTION R110
MEANS OF APPEALS

R110.1 General. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this Code, there may be created a board of appeals. The code official shall be an ex officio member of the board of appeals but shall not have a vote on any matter before the board. The board of appeals shall be appointed by the governing body and shall hold office at its pleasure. The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official.

R110.3 Qualifications. The board of appeals shall consist of members who are qualified by experience and training.

CHAPTER 2 [RE]
DEFINITIONS

SECTION R202
GENERAL DEFINITIONS

APPROVED SOURCE. ~~**Approved Source** = means~~ A~~a~~n independent person, firm, or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

AUTHORITY HAVING JURISDICTION ~~**Authority Having Jurisdiction** or~~ (**AHJ**)~~. = means~~ T~~t~~he organization, officer or individual responsible for approving equipment, materials, an installation or procedure.

BOARD. ~~**Board** = means~~ T~~t~~he Illinois Capital Development Board.

COUNCIL. ~~**Council** = means~~ T~~t~~he Illinois Energy Conservation Advisory Council whose purpose is to recommend modifications to the Illinois Energy Conservation Code.

EEB ACT. ~~**Act** = means~~ T~~t~~he Energy Efficient Building Act [20 ILCS 3125].

LOCAL EXHAUST. ~~**Local Exhaust** = means~~ A~~a~~n exhaust system that uses one or more fans to exhaust air from a specific room or rooms within a dwelling.

RESIDENTIAL BUILDING. ~~**Residential Building** = means~~ A~~a~~ detached one-family or two~~2~~-family dwelling or any building that is three~~3~~ stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "residential building" means a building containing one or more dwelling units, not exceeding four~~4~~ stories above grade, where occupants are primarily permanent.

WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM. ~~**Whole House Mechanical Ventilation System** = means~~ A~~a~~n exhaust system, supply system or combination thereof that is designed in accordance with Section R403.6 to mechanically exchange indoor air with outdoor air when operating continuously or through a programmed intermittent schedule to satisfy the whole-~~-~~house ventilation rates. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

CHAPTER 4 [RE]
RESIDENTIAL ENERGY EFFICIENCY

SECTION R401
GENERAL

R401.2 Application. Residential buildings shall comply with Section R401.2.6 and either Sections R401.2.1, R401.2.2, R401.2.3, R401.2.4 or R401.2.5.

Exception: Additions, alterations, repairs and changes of occupancy to existing buildings complying with Chapter 5.

R401.2.5 Phius aAlternative cCompliance oOption. The Phius Alternative Compliance Option requires compliance with Section R409.

R401.2.6 Additional energy efficiency. This Section establishes additional requirements applicable to all compliance approaches to achieve additional energy efficiency.

1. For buildings complying with Section R401.2.1, one of the additional efficiency package options shall be installed according to Section R408.2.

2. For buildings complying with Section R401.2.2, the building shall meet one of the following:
   2.1. One of the additional efficiency package options in Section R408.2 shall be installed without including such measures in the proposed design under Section R405; or
   2.2. The proposed design of the building under Section R405.2~~3~~ shall have an annual energy cost that is less than or equal to 95 percent of the annual energy cost of the standard reference design.

3. For buildings complying with the Energy Rating Index alternative Section R401.2.3, the Energy Rating Index value shall be at least 5 percent less than the Energy Rating Index target specified in Table R406.5.

The option selected for compliance shall be identified in the certificate required by Section R401.3.

SECTION R402
BUILDING THERMAL ENVELOPE

Modify Table R402.1.2 as follows:

TABLE R402.1.2
MAXIMUM ASSEMBLY U-FACTORS[a] ~~INSULATION~~ AND FENESTRATION REQUIREMENTS

CLIMATE ZONE	CEILING *U*-FACTOR
4 except Marine	0.026
5 and Marine 4	0.026

Modify Table R402.1.3 as follows:

TABLE R402.1.3
INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	CEILING *R* -VALUE
4 except Marine	49
5 and Marine 4	49

R402.2.1 Roof/~~C~~ceilings with attics~~. spaces.~~ Where Section R402.1.3 requires R-49 insulation in the ceiling or attic, installing R-38 over 100 percent of the ceiling or attic area requiring insulation shall satisfy the requirement for R-49 insulation wherever the full height of uncompressed R-38 insulation extends over the wall top plate at the eaves. ~~Where Section R402.1.3 requires R-60 insulation in the ceiling, installing R-49 over 100 percent of the ceiling area requiring insulation shall satisfy the requirement for R-60 insulation wherever the full height of uncompressed R-49 insulation extends over the wall top plate at the eaves.~~ This reduction shall not apply to the insulation and fenestration criteria in Section R402.1.2 and the Total UA alternative in Section R402.1.5.

R402.2.2 Roof/c~~C~~eilings w~~W~~ithout a~~A~~ttics~~. Spaces.~~ When Section R402.1.3 requires insulation R-values greater than R-30 in the interstitial space above a ceiling and below the structural roof deck, and the design of the roof/ceiling assembly does not allow sufficient space for the required insulation, the minimum required insulation R-value for those roof/ceiling assemblies shall be R-30. Insulation shall extend over the top of the wall plate to the outer edge of the plate and shall not be compressed. This reduction of insulation from the requirements of Section R402.1.3 shall be limited to 500 square feet (46 m^2) or 20 percent of the total insulated ceiling area, whichever is less. This reduction shall not apply to the Total UA alternative in Section R402.1.5.

R402.2.8.1 Basement wall insulation installation. Where basement walls are insulated, the insulation shall be installed from the top of the basement wall down to 10 feet (3048 mm) below grade or to within 6 inches (152 mm) of the basement floor, whichever is less.

SECTION R403
SYSTEMS

R403.3 Ducts. Ducts and air handlers shall be insulated, sealed, tested and installed in accordance with Sections R403.3.1 through R403.3.7. When required by the code official, duct testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official.

R403.3.5 Duct testing.
Ducts shall be pressure tested in accordance with ANSI/RESNET/ICC 380 or ASTM E1554 to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. Registers shall be taped or otherwise sealed during the test.

2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

   Exception: A duct air-leakage test shall not be required for ducts serving ventilation systems that are not integrated with ducts serving heating or cooling systems.

R403.3.6 Duct ~~L~~eakage.

The total leakage of the ducts, where measured in accordance with Section R403.3.5, shall be as follows:

1. Rough-in test: The total leakage shall be less than or equal to 4.0 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m^2) of conditioned floor area where the air handler is installed at the time of the test. Where the air handler is not installed at the time of the test, the total leakage shall be less than or equal to 3.0 cubic feet per minute (85 L/min) per 100 square feet (9.29 m^2) of conditioned floor area.

   Exception: If the HVAC duct system is serving less than or equal to 1,500 square feet (139.4 m^2) of conditioned floor area, the allowable duct leakage with the air~~-~~ handler installed shall be 60 cubic feet per minute (1700 L/min) or less.

2. Postconstruction ~~5~~test: Total leakage shall be less than or equal to 4.0 cubic feet per minute (113.3 L/min) per 100 square feet (9.29 m^2) of conditioned floor area.

   Exception: If the HVAC duct system is serving less than or equal to 1,500 square feet (139.4 m^2) of conditioned floor area, the allowable duct leakage shall be 60 cubic feet per minute (1700 L/min) or less.

3. Test for ducts within thermal envelope: Where all ducts and air handlers are located entirely within the building thermal envelope, total leakage shall be less than or equal to

8.0 cubic feet per minute (226.6 L/min) per 100 square feet (9.29 m^2) of conditioned floor area.

Exception: If the HVAC duct system is serving less than or equal to 750 square feet (69.7 m^2) of conditioned floor area, the allowable duct leakage with the air- handler installed shall be 60 cubic feet per minute (1700 L/min) or less.

R403.6 -Mechanical v~~V~~entilation. The buildings or dwelling units complying with Section R402.4.1 shall be provided with ventilation that complies with the requirements of this section or the International Mechanical Code, as applicable, or with other approved means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

R403.6.4 -Recirculation of a~~A~~ir. Exhaust air from bathrooms and toilet rooms shall not be recirculated within a residence or circulated to another dwelling unit and shall be exhausted directly to the outdoors. Exhaust air from bathrooms, toilet rooms and kitchens shall not discharge into an attic, crawl space or other areas inside the building. This section shall not prohibit the installation of ductless range hoods when installed in accordance with the manufacturer's instructions, and where mechanical or natural ventilation is otherwise provided, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.

R403.6.5 Exhaust equipment. Exhaust fans and whole-house ventilation fans shall be listed and labeled as providing the minimum required airflow in accordance with ANSI/AMCA 210-ANSI/ASHRAE 51.

R403.6.6 -Whole-house m~~M~~echanical v~~V~~entilation s~~S~~ystem. Whole-house mechanical ventilation systems shall be designed in accordance with Sections R403.6.6.1 through R403.6.6.4.

R403.6.6.1 -System d~~D~~esign. The whole-house ventilation system shall consist of one or more supply or exhaust fans, or a combination of such, and associated ducts and controls. Local exhaust or supply fans are permitted to serve as such a system. Outdoor air ducts connected to the return side of an air handler shall be considered to provide supply ventilation.

R403.6.6.2 -System c~~C~~ontrols. The whole-house mechanical ventilation system shall be provided with controls that enable manual override. Controls shall include text or a symbol indicating their function.

R403.6.6.3- Mechanical v~~V~~entilation r~~R~~ate. The whole house mechanical ventilation system shall provide outdoor air at a continuous rate of not less than that determined in accordance with Table R403.6.6.3(1) or Equation 4-0.

Ventilation rate in cubic feet per minute = (0.01 x total square foot area of house) + [7.5 x (number of bedrooms +1)] Equation 4-0

Exceptions:

1. Ventilation rate credit. The minimum mechanical ventilation rate determined in accordance with Table R403.6.6.3(1) or Equation 4-0 shall be reduced by 30 percent, provided that both of the following conditions apply:

   1.1. A ducted system supplies ventilation air directly to each bedroom and to one or more of the following rooms:
      1.1.1. Living room.
      1.1.2 Dining room.
      1.1.3 Kitchen.
   1.2. The whole-house ventilation system is a balanced ventilation system.

2. Programmed intermittent operation. The whole-house mechanical ventilation system is permitted to operate intermittently where the system has controls that enable operation for not less than 25 percent of each 4-hour segment and the ventilation rate in Table R403.6.6.3(1), ~~by~~ Equation 4-0 or ~~by~~ Exception 1 is multiplied by the factor determined in accordance with Table R403.6.6.3(2).

R403.6.6.3.1 ~~-~~Different o~~O~~ccupant d~~D~~ensity. Table R403.6.6.3(1) assumes 2 persons in a dwelling unit and an additional person for each additional bedroom. When higher occupant densities are known, the airflow rate shall be increased by 7.5 cfm (3.5 L/s) for each additional person. When approved by the authority having jurisdiction, lower occupant densities may be used.

R403.6.6.3.2 ~~-~~Airflow m~~M~~easurement. The airflow rate required is the quantity of outdoor ventilation air supplied and/or indoor air exhausted by the whole-house mechanical ventilation system installed, and shall be measured using a flow hood, flow grid, or other airflow measuring device. Ventilation airflow of systems with multiple operating modes shall be tested in all modes designed to meet Section R403.6.6.3. Where~~When~~ required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test, indicating the verified airflow rate, shall be signed by the party conducting the test and provided to the code official.

R403.6.6.4 ~~-~~Local e~~E~~xhaust r~~R~~ates. Local exhaust systems shall be designed to have the capacity to exhaust the minimum air~~-~~flow rate determined in accordance with Table R403.6.6.4.

TABLE R403.6.6.3(1)
CONTINUOUS WHOLE-HOUSE MECHANICAL
VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0 - 1	2 - 3	4 - 5	6 - 7	> 7
	Airflow in cfm~~CFM~~				
< 1,500	30	45	60	75	90
1,501 - 3,000	45	60	75	90	105
3,001 - 4,500	60	75	90	105	120

4,501 - 6,000	75	90	105	120	135
6,001 - 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

For SI: 1 square foot = 0.0929 m^2, 1 cubic foot per minute = 0.0004719 m^3/s.

TABLE R403.6.6.3(2)
INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS[a, b]

RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT	25%	33%	50%	66%	75%	100%
Factor [a]	4	3	2	1.5	1.3	1.0

[a] For ventilation system run time values between those given, the factors are permitted to be determined by interpolation.

[b] Extrapolation beyond the table is prohibited.

TABLE R403.6.6.4
MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE- AND TWO-FAMILY DWELLINGS

AREA TO BE EXHAUSTED	EXHAUST RATES[a]
Kitchens	100 cfm intermittent or 25 cfm continuous
Bathrooms-Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous

For SI: 1 cubic foot per minute = 0.0004719 m^3/s.

a. The listed exhaust rate for bathrooms-toilet rooms shall equal or exceed the exhaust rate at a minimum static pressure of 0.25 inch water column, in accordance with Section R403.6.5.

Modify Table R405.2 as follows:

TABLE R405.2
REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE

SECTION[a]	TITLE
General	

R401.2.6	Additional energy efficiency

Modify Table R406.2 as follows:

TABLE R406.2
REQUIREMENTS FOR ENERGY RATING INDEX

SECTION[a]	TITLE
General	
R401.2.6	Additional efficiency packages

SECTION R408
ADDITIONAL EFFICIENCY PACKAGE OPTIONS

R408.1 Scope. This section establishes additional efficiency package options to achieve additional energy efficiency in accordance with Section R401.2.6**.**

SECTION R409
PHIUS ALTERNATIVE COMPLIANCE OPTION

R409.1 Scope. This section establishes criteria for compliance via the Phius 2021 Standard**.**

R409.2 -Phius ~~S~~standard compliance. Compliance based on the Phius 2021 Standard will include its United States Department of Energy (USDOE) Energy Star and Zero Energy Ready Home co-requisites, and either performance calculations by Phius-approved software or through the use of the Phius 2021 Prescriptive Path.

R409.2.1 -Phius documentation. Prior to the issuance of a building permit, the following items must be provided to the code official:

1. A list of compliance features.
2. A Phius precertification letter.

R409.2.2 -Project certificate. Prior to the issuance of a certificate of occupancy, a Phius 2021 (or later) project certificate ~~the following item~~ must be provided to the code official.~~:~~

~~1. A Phius 2021 (or later) project certificate.~~

SECTION R503
ALTERATIONS

R503.1.1.2 Roof r~~R~~eplacement. Insulation shall comply with Section R402.1. Alternatively, where limiting conditions prevent compliance with Section R402.1, an approved design that minimizes deviation from Section R402.1 shall be provided for the following alterations:

1. Roof replacements or a roof alteration that includes removing and replacing the roof covering where the roof assembly includes insulation entirely above the roof deck.~~,~~ W~~w~~here limiting conditions require use of an approved design to minimize deviation from Section R402.1 for a Group R-2 building, a registered design professional or other approved source shall provide construction documents that identify the limiting conditions and the means to address them.

(Source: Amended at 47 Ill. Reg. 17974, effective November 27, 2023)

Section 600.APPENDIX B Supplanted and Additional 2024 International Energy Conservation Code Final Draft Sections

The following Code sections shall be referenced in place of the corresponding 2024 IECC Final Draft sections.

CHAPTER 1 [CE] SCOPE AND ADMINISTRATION

User note:

About this chapter: Chapter 1 establishes the limits of applicability of the code and describes how the code is to be applied and enforced. **Chapter 1** is in two parts: Part 1—Scope and Application and Part 2—Administration and Enforcement. **Section C101,** identifies what buildings, systems, appliances and equipment fall under its purview and references other I-Codes as applicable. Standards and codes are scoped to the extent referenced.

The code is intended to be adopted as a legally enforceable document and it cannot be effective without adequate provisions for its administration and enforcement. The provisions of **Chapter 1** establish the authority and duties of the code official appointed by the authority having jurisdiction and also establish the rights and privileges of the design professional, contractor and property owner.

PART 1—SCOPE AND APPLICATION

SECTION C101
SCOPE AND GENERAL REQUIREMENTS

C101.1 Title. This code shall be known as the 2023 Illinois Commercial Stretch Energy Code and shall mean:

With respect to the State facilities covered by 71 Ill. Adm. Code 600.Subpart B:

This Part, all additional requirements incorporated within Subpart B (including the 2024 International Energy Conservation Code Final Draft Commercial Provisions, including all published errata but excluding published supplements that encompass ASHRAE 90.1-2022), and any statutorily authorized adaptations to the incorporated standards adopted by CDB are effective 7/1/24.

With respect to the privately funded commercial facilities covered by 71 Ill. Adm. Code 600.Subpart C:

This Part, all additional requirements incorporated within Subpart C (including the 2024 International Energy Conservation Code Final Draft Commercial Provisions, including all published errata and excluding published supplements that encompass ASHRAE 90.1-2022), and any statutorily authorized adaptations to the incorporated standards adopted by CDB is effective upon adoption by a Municipality and takes the place of the Illinois Energy Conservation Code with respect to commercial buildings.

No unit of local government, including any home rule unit, may regulate energy efficient building standards for commercial buildings in a manner that is less stringent than the standards established pursuant to this Illinois Commercial Stretch Energy Code.

C101.1.1 Adoption. The Board shall adopt amendments to this Code and include site energy index standards as established in the Energy Efficient Building Act [20 ILCS 3125/55] as follows:

By June 30, 2024 with a site energy index no greater than .60 of the 2006 IECC;
By December 31, 2025 with a site energy index no greater than .50 of the 2006 IECC;
By December 31, 2028 with a site energy index no greater than .44 of the 2006 IECC;
By December 31, 2031 with a site energy index no greater than .39 of the 2006 IECC.

C101.2 Scope. This code applies to the design and construction of buildings not covered by the scope of the IECC – Residential Provisions.

C101.2.1 Appendices Provisions in the appendices shall not apply unless specifically adopted.

C101.3 Intent. The International Energy Conservation Code - Commercial Provisions provide market-driven, enforceable requirements for the design and construction of commercial buildings, providing minimum efficiency requirements for buildings that result in the maximum level of energy efficiency that is safe, technologically feasible, and life cycle cost effective, considering economic feasibility, including potential costs and savings for consumers and building owners, and return on investment. Additionally, the code provides jurisdictions with supplemental requirements, including ASHRAE 90.1, and optional requirements that lead to achievement of zero energy buildings, presently, and through glidepaths that achieve zero energy buildings by 2030 and on additional timelines sought by governments, and achievement of additional policy goals as identified by the Energy and Carbon Advisory Council and approved by the Board of Directors. Requirements contained in the code will include, but not be limited to, prescriptive- and performance-based pathways. The code may include non-mandatory appendices incorporating additional energy efficiency and greenhouse gas reduction resources developed by the Code Council and others. The code will aim to simplify code requirements to facilitate the code's use and compliance rate. The code is updated on a three-year cycle with each subsequent edition providing increased energy savings over the prior edition. This code is intended to provide flexibility to permit the use of innovative approaches and techniques to achieve this intent. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

C101.4 Compliance. Commercial buildings shall meet the provisions of the Illinois Commercial Stretch Energy Code covered by 71 Ill. Adm. Code 600 Subpart C. The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Commercial Stretch Energy Code. Minimum compliance shall be demonstrated by submission of:

C101.4.1 Compliance materials. The code official shall be permitted to approve specific computer software, worksheets, compliance manuals and other similar materials that meet the intent of this code; or
C101.4.2 Professional seals. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

SECTION C102
APPLICABILITY

C102.1 Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

C102.1.1 Mixed residential and commercial buildings. Where a building includes both residential building and commercial building portions, each portion shall be separately considered and meet the applicable provisions of Illinois Commercial Stretch Energy Code or the Illinois Residential Stretch Energy Code.

C102.2 Other laws. The provisions of this code shall not be deemed to nullify any provisions of local, state or federal law.

C102.3 Applications of references. References to chapter or section numbers, or to provisions not specifically identified by number, shall be construed to refer to such chapter, section or provision of this code.

C102.4 Referenced codes and standards. The codes and standards referenced in this code shall be those listed in **Chapter 6**, and such codes and standards shall be considered as part of the requirements of this code to the prescribed extent of each such reference and as further regulated in Sections C102.4.1 and C102.4.2.

C102.4.1 Conflicts. Where conflicts occur between provisions of this code and referenced codes and standards, the provisions of this code shall apply.

C102.4.2 Provisions in referenced codes and standards. Where the extent of the reference to a referenced code or standard includes subject matter that is within the scope of this code, the provisions of this code, as applicable, shall take precedence over the provisions in the referenced code or standard.

C102.5 Partial invalidity. If a portion of this code is held to be illegal or void, such a decision shall not affect the validity of the remainder of this code.

PART 2—ADMINISTRATION AND ENFORCEMENT
SECTION C103
ALTERNATIVE MATERIALS, DESIGN AND METHODS OF CONSTRUCTION AND EQUIPMENT

C103.1 General. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. The code official shall have the authority to approve an alternative material, design or method of construction upon the written application of the owner or the owner ’s authorized agent. The code official shall first find that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability, energy conservation and safety. The code official shall respond to the applicant, in writing, stating the reasons why the alternative was approved or was not approved.

C103.1.1 Above code programs. Buildings certified in compliance with Passive House Institute (PHI) or Passive House Institute U.S. (PHIUS) programs, 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).

SECTION C104
CODE COMPLIANCE AGENCY

C104.1 Creation of enforcement agency. The [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the authority having jurisdiction (AHJ). The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.

C104.2 Appointment. The authority having jurisdiction (AHJ) shall be appointed by the chief appointing authority of the jurisdiction.

C104.3 Deputies. In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the authority having jurisdiction (AHJ) shall have the authority to appoint a deputy authority having jurisdiction (AHJ), other related technical officers, inspectors and other employees. Such employees shall have powers as delegated by the authority having jurisdiction (AHJ).

SECTION C105
CONSTRUCTION DOCUMENTS

C105.2.2 Electrification system. The construction documents shall provide details for additional electric infrastructure, including branch circuits, conduit, pre-wiring, panel capacity, and electrical service capacity, as well as interior and exterior spaces designated for future electric equipment, in compliance with the provisions of this code.

SECTION C107
INSPECTIONS

C107.2.5 Electrical system. Inspection shall verify lighting system controls, components, meters, and electric infrastructure as required by the code, approved plans and specifications. Where an electrical energy storage system area is required, inspections shall verify space availability and pathways to electrical service.

SECTION C202
GENERAL DEFINITIONS

2024 INTERNATIONAL ENERGY CONSERVATION CODE FINAL DRAFT. The draft version of the 2024 IECC which includes changes from Public Comment Draft #2 and approved proposals from the Committee Action Report.

COMMERCIAL COOKING APPLIANCE. Appliances used in a commercial food service establishment for heating or cooking food. For the purpose of this definition, a commercial food service establishment is where food is regularly prepared for sale or is prepared on a scale that is by volume and frequency not representative of domestic household cooking.

ELECTRIC VEHICLE CAPABLE SPACE (EV CAPABLE SPACE). An automobile parking space provided with electrical infrastructure including raceway or cable assemblies, electrical capacity, and electrical distribution equipment space, necessary for connection to an EVSE.

REPLACEMENT COST. The cost to construct or replace an entire building with equal quality, construction type, and square footage, at current construction market labor and material rates.

SUBSTANTIAL IMPROVEMENT. Any repair, reconstruction, rehabilitation, alteration, addition or other improvement of a building or structure, the cost of which equals or is more than 50 percent of the market value replacement cost of the structure before the improvement or repair is started. Where the structure has sustained substantial damage, as defined in the International Building Code, any repairs are considered substantial improvement regardless of the actual repair work performed. Substantial improvement does not include the following:

1. Improvement of a building ordered by the code official to correct health, sanitary or safety code violations and that are the minimum necessary to assure safe living conditions.

2. Alteration of a historic building where the alteration will not affect the designation as a historic structure.

SECTION C401
GENERAL

C401.2 Application. Commercial buildings shall comply with Section C401.2.1 or C401.2.2.

C401.2.1 Commercial buildings shall comply with one of the following:

1. Prescriptive Compliance. The Prescriptive Compliance option requires compliance with Sections C402 through C406 and Section C408. Dwelling units and sleeping units in Group R-2 buildings shall be deemed to be in compliance with this chapter, provided that they comply with Section R406.
2. Simulated Building Performance. The Simulated Building Performance option requires compliance with Section C407.

Exception: Additions, alterations, repairs and changes of occupancy to existing buildings complying with Chapter 5.

C401.2.2 ASHRAE 90.1. Commercial buildings shall comply with the requirements of ANSI/ASHRAE/IES 90.1, Appendix CI, and the requirements of the sections indicated within Table C401.2.2

TABLE C401.2.2 REQUIREMENTS FOR ASHRAE 90.1 COMPLIANCE

SECTION[a]	TITLE
New Construction	
C405.4	Horticultural lighting
C405.14	Electric Vehicle Power Transfer Infrastructure
C405.16	Electrical energy storage system
C405.18	Electric infrastructure
Additions and Alterations	
C502.3.7	Additional energy efficiency credits
C503.3.4	Mechanical system acceptance testing
C503.3.5	Duct testing
C503.3.6	Controls
C503.3.7	System sizing
C503.6	Additional energy efficiency credits

C505.1.3	Additional energy efficiency for changes of occupancy

a. Reference to a code section includes all the relative subsections as indicated in the table.

C402.5.1.3 Fenestration orientation.
The vertical fenestration shall comply with either equation (a) or (b):
a. $AW \leq (AT)/4$ and $AE \leq (AT)/4$
b. $AW \times SHGCW \leq (AT \times SHGCC)/5$ and $AE \times SHGCE \leq (AT \times SHGCC)/5$

where:

AW = West-oriented vertical fenestration area (oriented within 45 degrees of true west to the south and within 22.5 degrees of true west to the north in the Northern Hemisphere)

AE = East-oriented vertical fenestration area (oriented within 45 degrees of true east to the south and within 22.5 degrees of true east to the north in the Northern Hemisphere)

AT = Total vertical fenestration area

SHGCC = SHGC criteria in Table C402.5

SHGCE = SHGC for east-oriented fenestration

SHGCW = SHGC for west-oriented fenestration

Exceptions:

1. Buildings with shade on 75% of the east-oriented and west-oriented vertical fenestration areas from permanent projections, existing buildings, existing permanent infrastructure, or topography at 9 a.m. and 3 p.m., respectively, on the summer solstice (June 21).
2. Alterations and additions with no increase in vertical fenestration area.
3. Buildings where the east-oriented and west-oriented vertical fenestration area does not exceed 20% of the gross wall area for each of those façades, and SHGC on those facades is no greater than 90% of the criteria in Table C402.5.

SECTION C405
ELECTRICAL POWER AND LIGHTING SYSTEMS

C405.4 Horticultural lighting. Permanently installed luminaires shall have a photosynthetic photon efficacy of not less than 1.7 μmol/J for horticultural lighting in greenhouses and not less than 2.2_μmol/J for all other horticultural lighting. Luminaires for horticultural lighting in greenhouses shall be controlled by a device that automatically turns off the luminaire when sufficient daylight is available. Luminaires for horticultural lighting shall be controlled by a device that automatically turns off the luminaire at specific programmed times.

Exception: Cannabis facilities subject to 410 ILCS 705/10-45- the Cannabis Regulation and Tax Act.

C405.14.2 EV Capable spaces. Each EV capable space used to meet the requirements of Section C405.14.1 shall comply with the following:

1. A continuous raceway or cable assembly shall be installed between an enclosure or outlet located within 3 feet (914 mm) of the EV capable space and electrical distribution equipment.
2. Installed raceway or cable assembly shall be sized and rated to supply a minimum circuit capacity in accordance with C405.14.5.
3. The electrical distribution equipment to which the raceway or cable assembly connects shall have dedicated overcurrent protection device space and electrical capacity to supply a calculated load in accordance with Section C405.14.5.
4. The enclosure or outlet and the electrical distribution equipment directory shall be marked: "For electric vehicle supply equipment (EVSE)."

C405.14.6 EVSE installation. EVSE shall be installed in accordance with NFPA 70 and shall be listed and labeled in accordance with UL 2202 or UL 2594. EVSE shall be accessible in accordance with the 2024 edition of the International Building Code Section 1107.

C405.16 Electrical energy storage system. Buildings shall comply with Section C405.16.1 or Section C405.16.2. Buildings shall comply with Section C405.16.3.

C405.16.1 Electrical energy storage system (ESS) capacity. Each building shall have one or more ESS with a total rated energy capacity and rated power capacity as follows:

1. ESS rated energy capacity (kWh)≥1.0 x Installed On-site Renewable Electric Energy System Rated Power (kWDC)
2. ESS rated power capacity (kW)≥0.25 x Installed On-Site Renewable Electric Energy System Rated Power (kWDC).

Where installed, DC coupled battery systems shall meet the requirements for rated energy capacity alone.

C405.16.2 Electrical energy storage system ready. Each building shall have one or more reserved ESS-ready areas to accommodate future electrical storage.

C405.16.3 Electrical energy storage installed or ready area. Areas where ESS is installed and ESS-ready areas shall comply with Sections C405.3.1 through C405.3.4.

C405.16.3.1 ESS installed or ready location. Each ESS installed or ready area shall be located in accordance with either Section 1207 of the 2024 International Fire Code or NFPA 855. For the purposes of locating and designing means of egress, ESS-installed or ready areas shall comply with either i) means of egress requirements for H-Occupancies of the 2024 International Fire Code or ii) Sections 7.2.1.4.2(3) and 7.11 of NFPA 101 (2015).

C405.16.3.2 ESS installed or ready minimum area requirements. Each ESS **installed or** ready area shall be sized in accordance with the spacing requirements of (i) either Section 1207 of the 2024 edition of the International Fire Code or NFPA 855 and (ii) the UL9540 or UL9540A designated rating of the planned system. Where rated to UL9540A, the area shall be sized in accordance with the manufacturer's instructions.

C405.16.3.3 Electrical distribution equipment. The onsite electrical distribution equipment shall have sufficient capacity, rating, and space to allow installation of overcurrent devices and circuit wiring in accordance with NFPA 70 for actual or future electrical ESS installation complying with the capacity criteria of Section C405.16. 3.4.

C405.16.3.4 ESS installed or ready minimum system capacity. Compliance with ESS-ready requirements in Sections C405.16.3.1 through C405.16.3.3 shall be based on a minimum total energy capacity and minimum rated power capacity as follows:

1. ESS rated energy capacity (kWh) ≥ gross conditioned floor area of the three largest floors (ft2) x 0.0008 kWh/ft2
2. ESS rated power capacity (kWh) ≥ gross conditioned floor area of the three largest floors (ft2) x 0.0002 kWh/ft^2

C405.18 Electric infrastructure. New group R-2 occupancies that use fossil fuels for space heating, service water heating, cooking, or clothes drying shall install electric infrastructure in accordance with C405.18.1 through C405.18.5 and Section C105.2.2.

C405.18.1 Space heating. Locations with piping for fossil fuel warm-air furnaces and fossil fuel boilers shall comply with Section C405.18.1.1 or C405.18.1.2, as applicable.
Exception to C405.18.1: Where a branch circuit exists for space cooling equipment with the capacity to serve heat pump space heating equipment sized in accordance with the requirements of Section C403.1.1.

C405.18.1.1 Low-capacity space heating. Locations of fossil fuel warm-air furnaces with capacity less than 225,000 Btu/hr (65.9kW) and boilers with a capacity less than 300,000 Btu/hr (88kW) shall be provided with an individual branch circuit in accordance with all of the following:

1. The branch circuit conductors shall terminate within 6 ft (2 m) of the location of the space heating equipment and shall be in a location with ready access.
2. The branch circuit shall be sized to serve heat pump space heating equipment sized in accordance with the requirements of Section C403.1.1, and
3. The branch circuit overcurrent device and the termination of the branch circuit shall be labeled "For future heat pump space heating equipment."

C405.18.1.2 Other space heating equipment. Locations of fossil fuel space heating equipment not covered under C405.18.1.1 shall be provided with a raceway in accordance with all of the following:

1. The raceway shall be continuous from a branch circuit panel to a junction box located within the same space as the equipment or, where the equipment is located on the exterior of the building, within 3 ft (1m) of the equipment.
2. The junction box, raceway, bus bar in the electric panel and conductors serving the electrical panel shall be sized to serve electric space heating equipment sized to serve the same load as the fossil fuel space heating equipment.
3. The electrical panel shall have sufficient reserved physical space for branch circuit overprotection devices sized to serve electric equipment sized to serve the same load as the fossil fuel space heating appliance,

4. The point of origin and the termination of the raceway shall be labeled “For future heat pump space heating equipment.”

C405.18.2 Water heating. Locations with piping for fossil fuel water heaters shall comply with Section C405.18.2.1 or C405.18.2.2, as applicable.

C405.18.2.1 Low-capacity water heating. Locations of fossil fuel water heaters with an input rating of less than 300,000 Btu/hr (88kW) shall comply with all of the following:

1. An individual 30 ampere, 208/240-volt branch circuit shall be provided and terminate within 6 ft (2 m) of the water heater and shall be in a location with ready access.
2. The branch circuit overcurrent protection device and the termination of the branch circuit shall be labeled "For future electric water heater".
3. The space for containing the future water heater shall have a height of not less than 7 ft (2 m), a width of not less than 3 ft (1 m), a depth of not less than 3ft (1 m) and with a volume of not less than 700 ft3 (20 m3).

Exception to C405.18.2.1: Where the space containing the water heater provides for air circulation sufficient for the operation of a heat pump water heater, the minimum room volume shall not be required.

C405.18.2.2 Other water heating. Locations of fossil fuel water heating equipment not covered by Section C405.18.2.1 shall be provided with a raceway in accordance with all of the following:

1. The raceway shall be continuous from an electric panel to a junction box located within the same space as the equipment or, where the equipment is located on the exterior of the building, within 3 ft (1m) of the equipment.
2. The junction box, raceway, and bus bar in the electric panel and conductors serving the electric panel shall be sized to accommodate electric water heating equipment sized to serve the same load as the fossil fuel water heating equipment.
3. The electric panel shall have sufficient reserved physical space for branch circuit overprotection devices sized to serve electric water heating equipment sized to serve the same load as the fossil fuel water heating equipment.
4. The point of origin and termination of the raceway shall be labeled “For future electric water heating appliance”.

C405.18.3 Non-commercial cooking. Locations of fossil fuel ranges, cooktops and ovens that are not commercial cooking appliances shall be provided with a dedicated individual branch circuit in accordance with all of the following:

1. The branch circuit shall be rated for 208/240-volts and not less than 50 amps.
2. The branch circuit shall terminate within 3 ft (1 m) of the appliance and shall be in a location with ready access.
3. The point of origin and termination of the branch circuit shall be labeled “For future electric cooking appliance”.

C405.18.4 Clothes drying. Locations with piping for fossil fuel clothes drying equipment shall comply with C405.18.4.1 or C405.18.4.2, as applicable.

C405.18.4.1 Residential drying. Locations of fossil fuel clothes drying appliances serving individual dwellings units shall be provided with a dedicated individual branch circuit in accordance with all of the following:

1. The branch circuit shall be rated for 208/240-volts and not less than 30 amps.

2. The branch circuit shall terminate within 3 ft (1 m) of the appliance and shall be in a location with ready access.
3. The point of origin and termination of the branch circuit shall be labeled "For future electric clothes drying appliance".

C405.18.4.2 Non-residential drying. Locations of fossil fuel clothes drying appliances not covered by Section C405.18.4.1 shall be provided with a raceway in accordance with all of the following:

1. The raceway shall be continuous from an electric panel to a junction box located within the same space as the appliance.
2. The junction box, raceway, electric panel bus bar and conductors serving the electric panel shall be sized to serve electric clothes drying appliances having the same drying capacity as the fossil fuel appliance.
3. The electric panel shall have sufficient reserved physical space for branch circuit overprotection devices sized to serve electric clothes drying appliances sized to serve the same load as the fossil fuel clothes drying appliances.
4. The point of origin and termination of the raceway shall be labeled "For future electric clothes drying appliance".

C405.18.5 Onsite transformers. Enclosed spaces and underground vaults containing onsite electric transformers on the building side of the electric utility meter shall have sufficient space to accommodate transformers sized to serve the additional electric loads identified in C405.18.1, C405.18.2, C405.18.3 and C405.18.4.

SECTION C406
ADDITIONAL EFFICIENCY, RENEWABLE, AND LOAD MANAGEMENT REQUIREMENTS

C406.1.1 Additional energy efficiency credit requirements. 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 including any energy credit adjustments in accordance with C406.1.1.1. Where a project contains multiple occupancies, the total required energy credits from each building occupancy shall be weighted by the gross conditioned floor area to determine the weighted average project energy credits required. Accessory occupancies shall be included with the primary occupancy group for purposes of Section C406.

Exception:

1. Portions of buildings devoted to manufacturing or industrial use.

SECTION C407
SIMULATED BUILDING PERFORMANCE

C407.2 Mandatory requirements. Compliance based on total building performance requires that a proposed design meet all of the following:

1. The requirements of the sections indicated within Table C407.2(1).
2. A site energy use that is less than or equal to the percent of the site energy use (SEUC) of the standard reference design calculated in Equation 4-32. 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.

PSEUC = 100 x (0.80 +0.25- ECr/1000) (Equation 4-32)

PSEUC-= Percentage of site energy use applied to standard reference design
ECr= Energy efficiency credits required for the building in accordance with Section C406.1 (do not include load management and renewable credits)

Modify Table C407.2(1) as follows:

TABLE C407.2(1)
REQUIREMENTS FOR SIMULATED BUILDING PERFORMANCE

SECTION[a]	TITLE
Envelope	
C402.5.1.3	Fenestration Orientation

a. Reference to a code section includes all the relative subsections except as indicated in the table.

Modify Table C407.4.1(1) as follows:

TABLE C407.4.1(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

Vertical fenestration other than opaque doors	Area 1. The proposed vertical fenestration area; where the proposed vertical fenestration area is less than 40 percent of the above-grade wall area. 2. 40 percent of above grade wall area; where the proposed vertical fenestration area is 40 percent or more of the above grade wall area 3. Fenestration orientation shall comply with Section C402.5.1.3	As proposed
	U-factor: as specified in Table C402.5	As proposed
	1. SHGC: as specified in Table C402.5 except that for climates with no requirement (NR) SHGC = 0.40 shall be used. 2. Fenestration SHGC shall comply with Section C402.5.1.3	As proposed
	External shading and PF: none	As proposed

SECTION C503
ALTERATIONS

C503.6 Additional credit requirements for alterations. Alterations that are substantial improvements shall comply with measures from Sections C402.5 and C405.18 and meet a site EUI by building type in accordance with ASHRAE Standard 100 Table 7-2a. Replacement cost shall be determined by a registered design professional or approved agency and approved by the code official. Where a project contains multiple occupancies, site EUI requirements shall be weighted by the gross conditioned floor area to determine the weighted average site EUI required. Accessory occupancies, other than Groups F or H, shall be included with the primary occupancy group for the purposes of this section.

Exceptions:

1. Alterations that do not contain conditioned space.
2. Portions of buildings devoted to manufacturing or industrial use.
3. Alterations to buildings where the building after the alteration complies with Section C407.
4. Alterations that are permitted with an addition complying with Section C502.3.7.
5. Group R occupancies that achieve an ERI score of 80 or below without on-site renewable energy included in accordance with RESNET/ICC 301, for each dwelling unit.

SECTION C505
CHANGE OF OCCUPANCY OR USE

C505.1.3 Additional energy efficiency for changes of occupancy. Where a space is converted from one occupancy type to another occupancy type, it shall comply with Section C406.1.1.1.

Exception:

1. Alterations complying with Section C503.6.
2. Where no less than 50 percent of the peak space heating and peak water heating load of the building is served by heat pump equipment.

Appendix CD
The 2030 Glide Path

Remove Section CD101.1 Prescriptive compliance and Table CD101.1 in their entirety.

Appendix CG
All-Electric Commercial Building Provisions

This appendix is removed and is not included in the Illinois Commercial Stretch Energy Code.

Appendix CI
Total Building Performance Pathway

CI101 Scope. This section establishes criteria for buildings that demonstrate compliance using total building performance utilizing site energy in accordance with Section 4.2.1.1 of ANSI/ASHRAE/IESNA 90.1.

CI102 Compliance based on site energy. Buildings shall comply with ANSI/ASHRAE/IESNA 90.1 as modified by this section.

CI102.1 Terms. For the purposes of compliance with this appendix, terminology in ANSI/ASHRAE/IESNA 90.1 shall be modified as follows:

1. Replace references to energy cost with references to site energy in Sections G1.2.2, G1.3.2, G2.1, G2.5 and G2.4.2 section heading.
2. Baseline building performance shall be defined as "the annual site energy ~~cost~~ for a building design intended for use as a baseline for rating above-standard design or when using the Performance Rating Method as an alternative path for minimum standard compliance in accordance with Section 4.2.1.1."
3. Proposed building performance shall be defined as **"**the annual site energy calculated for a proposed design."

CI102.2 Section 4.2.1.1. Section 4.2.1.1 shall be replaced with the following:

New buildings shall comply with Section 4.2.2 through 4.2.5 and either the provisions of

a. Sections 5, "Building Envelope"; 6, "Heating, Ventilating, and Air Conditioning"; 7, "Service Water Heating"; 8, "Power"; 9, "Lighting"; 10, "Other Equipment"; and 11, "Additional Efficiency Requirements,"or

b. Normative Appendix G, "Performance Rating Method."

When using Normative Appendix G, the Performance Index (Site Energy) of new buildings, additions to existing buildings, and/or alterations to existing buildings shall be less than or equal to the Performance Index Target (PI_t) when calculated in accordance with the following:

$$PI_t = [BBUE + (BPF_{site} \times BBRE) - PRE] / BBP$$

Where

PI = Performance Index (Site Energy) calculated in accordance with Section G1.2.
BBUE = baseline building unregulated site energy, the portion of the annual site energy of a baseline building design that is due to unregulated energy use.
BBRE = baseline building regulated site energy, the portion of the annual site energy ~~cost~~ of a baseline building design that is due to regulated energy use.
BPF = building performance factor from Table 4.2.1.1. For building area types not listed in Table 4.2.1.1 use "All others." Where a building has multiple building area types, the required BPF shall be equal to the area-weighted average of the building area types based on their gross floor area. Where a project includes an existing building and an addition, the required BPF shall be equal to the area-weighted average, based on the gross floor area, of the existing building BPF determined as described in Section 4.2.1.3 and the addition BPF from Table 4.2.1.1
BBP = baseline building performance.
PBP = proposed building performance, including the reduced, annual site energy associated with all on-site renewable energy generation systems.

PBP_{nre} = proposed building performance without any credit for reduced annual energy from on-site renewable energy generation systems.
PBP_{pre} = proposed building performance, excluding any renewable energy system in the proposed design and including an on-site renewable energy system that meets but does not exceed the requirements of Section 10.5.1.1 modeled following the requirements for a budget building design in Table 12.5.1.
PRE = PBPnre – PBPpre

When (PBPpre – PBP)/BBP > 0.05, new buildings, additions to existing buildings, and/or alterations to existing buildings shall comply with the following:

$$PCSEI + [(PBPnre - PBP)/BBP] - 0.05 < PCSEIt$$

When (PBPpre – PBP)/BBP > 0.05, new buildings, additions to existing buildings, and/or alterations to existing buildings shall comply with the following:

PCI + [(PBPpre – PBP)/BBP] – 0.05 < PCIt

Informative Notes:
1. PBPnre = proposed building performance, no renewable energy
2. PBPpre = proposed building performance, prescriptive renewable energy
3. PRE = prescriptive renewable energy

CI102.3 Building performance factors. Table 4.2.1.1 Building Performance Factor (BPF) shall be replaced with Table CI102.3.

Table CI102.3 Building Performance Factors (BPF), Site Energy

Building Area Type	Climate Zone	
	4A	5A
Multifamily	0.61	0.56
Healthcare/hospital	0.62	0.65
Hotel/motel	0.65	0.63
Office	0.47	0.49
Restaurant	0.66	0.69
Retail	0.47	0.52
School	0.42	0.44
Warehouse	0.38	0.46
All others	0.55	0.57

CI102.4 Section G1.2.2. Section G1.2.2 shall be replaced with the following:

The performance of the proposed design is calculated in accordance with provisions of this appendix using the following formula:
Performance Site Energy Index = Proposed building performance/Baseline building performance

Both the proposed building performance and the baseline building performance shall include all end-use load components within and associated with the building when calculating the Performance Site Energy Index.

CI102.5 Section G1.3.2. Item a. in Section G1.3.2 shall be replaced as follows, and item r. added as follows:

a. The following documentation shall be submitted to the rating authority: The simulation program used, the version of the simulation program, and the results of the energy analysis including the calculated values for the baseline building unregulated site energy (BBUE), baseline building regulated site energy (BBRE), Building Performance Factor (BPF), baseline building performance, the proposed building performance, Performance Site Energy Index (PCSEI), and Performance Site Energy Index Target (PIt).
p. For any exceptional calculation methods employed, document the predicted energy savings by energy type, the site energy savings, a narrative explaining the exceptional calculation method performed, and theoretical or empirical information supporting the accuracy of the method.

CI102.6 Section G2.4.2. Section G2.4.2 shall be renamed "Annual Site Energy." The informative note for sections G2.4.2 and G2.4.2.2 shall be removed. The first sentence in section G2.4.2. shall be replaced with the following:

The baseline building performance and proposed building performance shall be determined using conversion factors in Table CI103.6

Table CI103.6 Units of Fuel to Site Energy Conversion Factors

Building Project Energy Source	Units	Site energy Btu/unit (W-h/unit)
Electricity	kWh	3,412
Natural Gas	Therm (GJ)	100,000 (277,778)
Propane	Therm (GJ)	100,000 (277,778)
Distillate fuel oil	Gallon (L)	137,600 (10,651)

CI102.7 Section G2.5. Section G2.5, item e shall be replaced with the following:

e. The Performance Site Energy Index calculated with and without the exceptional calculation method.

Section 600.APPENDIX C Supplanted and Additional 2021 International Energy Conservation Code Sections

The following Code sections shall be referenced in place of the corresponding 2021 IECC sections.

PART 1—SCOPE AND APPLICATION

SECTION R101
SCOPE AND GENERAL REQUIREMENTS

R101.1 Title. This code shall be known as the 2023 Illinois Residential Stretch Energy Code or Code and shall mean:

With respect to the residential buildings covered by 71 Ill Adm Code 600 Subpart D:

This Part, all additional requirements incorporated within Subpart D (including the 2021 International Energy Conservation Code Residential Provisions, including all published errata but excluding published supplements) and any statutorily authorized adaptations to the incorporated standards adopted by CDB is effective upon adoption by a Municipality and takes the place of the Illinois Energy Conservation Code with respect to residential buildings.

No unit of local government, including any home rule unit, may regulate energy efficient building standards for residential buildings in a manner that is less stringent than the standards established pursuant to this Illinois Residential Stretch Energy Code.

R101.1.1 Adoption. The Board shall adopt amendments to this Code and include site energy index standards as established in the Energy Efficient Building Act [20 ILCS 3125/55] as follows:

By June 30, 2024 with a site energy index no greater than .50 of the 2006 IECC;
By December 31, 2025 with a site energy index no greater than .40 of the 2006 IECC;
By December 31, 2028 with a site energy index no greater than .33 of the 2006 IECC;
By December 31, 2031 with a site energy index no greater than .25 of the 2006 IECC.

R101.2 Scope. This code applies to residential buildings, building sites and associated systems and equipment.

R101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted.

R101.3 Intent. This code shall regulate the design and construction of buildings for the effective use and conservation of energy over the useful life of each building. This code is intended to provide flexibility to permit the use of innovative approaches and techniques to achieve this objective. This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances.

R101.4 Applicability. Where, in any specific case, different sections of this code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

R101.4.1 Mixed residential and commercial buildings. Where a building includes both residential building and commercial building portions, each portion shall be separately considered and meet the applicable provisions of the Illinois Commercial Stretch Code or the Illinois Residential Stretch Code.

R101.5 Compliance. Residential buildings shall meet the provisions of the Illinois Residential Stretch Code covered by 71 Ill Adm. Code 600 Subpart D. The local authority having jurisdiction (AHJ) shall establish its own procedures for enforcement of the Illinois Residential Stretch Code. Minimum compliance shall be demonstrated by submission of:

R101.5.1 Compliance materials. The code official shall be permitted to approve specific computer software, worksheets, compliance manuals and other similar mate- rials that meet the intent of this code; or

R101.5.2 Professional seals. The seal of the architect/engineer as required by Section 14 of the Illinois Architectural Practice Act [225 ILCS 305], Section 12 of the Structural Engineering Licensing Act [225 ILCS 340] and Section 14 of the Illinois Professional Engineering Practice Act [225 ILCS 325].

SECTION R102
ALTERNATIVE MATERIALS, DESIGN AND METHODS OF CONSTRUCTION AND EQUIPMENT

R102.1 General. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. The code official shall have the authority to approve an alternative material, design or method of construction upon the written application of the owner or the owner's authorized agent. The code official shall first find that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, not less than the equivalent of that prescribed in this code for strength, effectiveness, fire resistance, durability, energy conservation and safety. The code official shall respond to the applicant, in writing, stating the reasons why the alternative was approved or was not approved.

R102.1.1 Above code programs.
Buildings certified in compliance with the Passive House Institute (PHI) or Passive House Institute U.S. (PHIUS) Passive Building Standards programs or buildings that comply with Appendix RC shall be deemed to meet the requirements with this code where such buildings also meet the requirements identified in Table R405.2 and the building thermal envelope is greater than or equal to levels of efficiency and solar heat gain coefficients (SHGC) in Tables 402.1.2 and 402.1.3.

PART 2—ADMINISTRATION AND ENFORCEMENT

SECTION R103
SCOPE AND ADMINISTRATION

R103.2 Information on construction documents. Construction documents shall be drawn to scale on suitable material. Electronic media documents are permitted to be submitted where approved by the code official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed, and show in sufficient detail pertinent data and features of the building, systems and equipment as herein governed. Details shall include the following as applicable:

1. Energy compliance path.
2. Insulation materials and their R-values.

3. Fenestration U-factors and solar heat gain coefficients (SHGC).
4. Area-weighted U-factor and solar heat gain coefficients (SHGC) calculations.
5. Mechanical system design criteria.
6. Mechanical and service water-heating systems and equipment types, sizes and efficiencies.
7. Equipment and system controls.
8. Duct sealing, duct and pipe insulation and location.
9. Air sealing details.

R103.2.1 Building thermal envelope depiction. The building thermal envelope shall be represented on the construction documents.

R103.2.2 Solar-ready system. Where a solar-ready zone is provided, the construction documents shall provide details for dedicated roof area, structural design for roof dead and live load, ground snow load, and routing of conduit or pre-wiring from solar-ready zone to electrical service panel or plumbing from solar-ready zone to service water heating system.

SECTION R105
INSPECTIONS

R105.1 General. Construction or work for which a permit is required shall be subject to inspection by the code official or his or her designated agent, and such construction or work shall remain visible and able to be accessed for inspection purposes until approved. It shall be the duty of the permit applicant to cause the work to remain visible and able to be accessed for inspection purposes. Neither the code official nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material, product, system or building component required to allow inspection to validate compliance with this code.

R105.2 Required inspections. The code official or his or her designated agent, upon notification, shall make the inspections set forth in Sections R105.2.1 through R105.2.5.

R105.2.1 Footing and foundation inspection. Inspections associated with footings and foundations shall verify compliance with the code as to R-value, location, thickness, depth of burial and protection of insulation as required by the code and approved plans and specifications.

R105.2.2 Framing and rough-in inspection. Inspections at framing and rough-in shall be made before application of interior finish and shall verify compliance with the code as to: types of insulation and corresponding R-values and their correct location and proper installation; fenestration properties such as U-factor and SHGC and proper installation; air leakage controls as required by the code; and approved plans and specifications.

R105.2.3 Plumbing rough-in inspection. Inspections at plumbing rough-in shall verify compliance as required by the code and approved plans and specifications as to types of insulation and corresponding R-values and protection, and required controls. Where the solar-ready zone is installed for solar water heating, inspections shall verify pathways for routing of plumbing from solar-ready zone to service water heating system.

R105.2.4 Mechanical rough-in inspection. Inspections at mechanical rough-in shall verify compliance as required by the code and approved plans and specifications as to installed HVAC equipment type and size, required controls, system insulation and corresponding R- value, system air leakage control, programmable thermo- stats, dampers, whole-house ventilation, and minimum fan efficiency.

Exception: Systems serving multiple dwelling units shall be inspected in accordance with Section C105.2.4.

R105.2.5 Electrical rough-in inspection. Inspections at electrical rough-in shall verify compliance as required by the code and the approved plans and specifications as to the locations, distribution, and capacity of the electrical system. Where the solar-ready zone is installed for electricity generation, inspections shall verify conduit or pre-wiring from solar-ready zone to electrical panel.

R105.2.6 Final inspection. The building shall have a final inspection and shall not be occupied until approved. The final inspection shall include verification of the installation of all required building systems, equipment and controls and their proper operation and the required number of high-efficacy lamps and fixtures.

R105.3 Reinspection. A building shall be reinspected where determined necessary by the code official.

R105.4 Approved inspection agencies. The code official is authorized to accept reports of third-party inspection agencies not affiliated with the building design or construction,

SECTION R202
GENERAL DEFINITIONS

APPROVED SOURCE. An independent person, firm or corporation, approved by the building official, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

AUTOMOBILE PARKING SPACE. A space within a building or private or public parking lot, exclusive of driveways, ramps, columns, office and work areas, for the parking of an automobile.

DEMAND RESPONSE SIGNAL. A signal that indicates a price or a request to modify electricity consumption for a limited time period.

DEMAND RESPONSIVE CONTROL. A control capable of receiving and automatically responding to a demand response signal.

ELECTRIC VEHICLE (EV). An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, EVSE, a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current.

ELECTRIC VEHICLE READY SPACE (EV READY SPACE). An automobile parking space that is provided with a branch circuit and either an outlet, junction box or receptacle, that will support an installed EVSE.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE). Equipment for plug-in power transfer including the ungrounded, grounded and equipment grounding conductors, and the electric vehicle connectors, attached plugs, personal protection system and all other fittings, devices, power outlets or apparatus installed specifically for the purpose of transferring energy between the premises wiring and the electric vehicle.
SOLAR-READY ZONE. A section or sections of the roof or building overhang designated and reserved for the future installation of a solar photovoltaic or solar thermal system.

GAS HEAT PUMP SPACE HEATING SYSTEM. Gas heat pump space heating systems consist of an outdoor combustion unit and heat exchanger(s) inside the building. The outdoor combustion unit is installed outside the

building envelope and uses the heat of combustion to drive a refrigeration cycle that pumps heat into the building. Annual fuel utilization efficiencies (AFUE) greater than 120% and 140% are achieved by pumping the heat of combustion and additional heat from the ambient air into the building. The heat is then distributed indoors via forced air hydronic air handler(s), via floors and other radiant systems, or through combinations of forced air and radiant systems.

RESIDENTIAL BUILDING. A detached one-family or two-family dwelling or any building that is three stories or less in height above grade that contains multiple dwelling units, in which the occupants reside on a primarily permanent basis, such as a townhouse, a row house, an apartment house, a convent, a monastery, a rectory, a fraternity or sorority house, a dormitory, and a rooming house; provided, however, that when applied to a building located within the boundaries of a municipality having a population of 1,000,000 or more, the term "RESIDENTIAL BUILDING" means a building containing one or more dwelling units, not exceeding four (4) stories above grade, where occupants are primarily permanent.

SECTION R401
GENERAL

R401.1 Scope. This chapter applies to residential buildings.

R401.2 Application. Residential buildings shall comply with either Sections R401.2.1, R401.2.2, or R401.2.3.
Exception: Additions, alterations, repairs and changes of occupancy to existing buildings complying with Chapter 5.

R401.2.1 Prescriptive Compliance Option. The Prescriptive Compliance Option requires compliance with Sections R401 through R404 and R408.

R401.2.2 Total Building Performance Option. The Total Building Performance Option requires compliance with Section R405.

R401.2.3 Energy Rating Index Option. The Energy Rating Index (ERI) Option requires compliance with Section R406.

R401.2.4 Tropical Climate Region Option. The Tropical Climate Region Option requires compliance with Section R407.

R401.3 Certificate. A permanent certificate shall be completed by the builder or other approved party and posted on a wall in the space where the furnace is located, a utility room or an approved location inside the building. Where located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label or other required labels. The certificate shall indicate the following:

1. The predominant R-values of insulation installed in or on ceilings, roofs, walls, foundation components such as slabs, basement walls, crawl space walls and floors and ducts outside conditioned spaces.
2. U-factors of fenestration and the solar heat gain coefficient (SHGC) of fenestration. Where there is more than one value for any component of the building envelope, the certificate shall indicate both the value covering the largest area and the area weighted average value if available.
3. The results from any required duct system and building envelope air leakage testing performed on the building.
4. The types, sizes and efficiencies of heating, cooling and service water-heating equipment. Where a gasfired unvented room heater, electric furnace or baseboard electric heater is installed in the residence, the certificate shall indicate "gas-fired unvented room heater," "electric furnace" or "baseboard electric

heater," as appropriate. An efficiency shall not be indicated for gas-fired unvented room heaters, electric furnaces and electric baseboard heaters.

5. Where on-site photovoltaic panel systems have been installed, the array capacity, inverter efficiency, panel tilt and orientation shall be noted on the certificate.
6. For buildings where an Energy Rating Index score is determined in accordance with Section R406, the Energy Rating Index score, both with and without any on-site generation, shall be listed on the certificate.
7. The code edition under which the structure was permitted, and the compliance path used and where applicable, the additional efficiency measures selected for compliance with R408.

SECTION R403
SYSTEMS

R403.1 Controls. Not less than one thermostat shall be provided for each separate heating and cooling system. The primary heating or cooling system serving the dwelling unit shall comply with Sections R403.1.1, R403.1.2, and R403.1.3.

R403.1.1 Programmable thermostat. The thermostat controlling the primary heating or cooling system of the dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of day and different days of the week. This thermostat shall include the capability to set back or temporarily operate the system to maintain zone temperatures of not less than 55°F (13°C) to not greater than 85°F (29°C). The thermostat shall be programmed initially by the manufacturer with a heating temperature setpoint of not greater than 70°F (21°C) and a cooling temperature setpoint of not less than 78°F (26°C).

R403.1.2 Heat pump supplementary heat. Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

R403.1.3 Demand responsive thermostat. The thermostat shall be provided with a demand responsive control capable of communicating with the Virtual End Node (VEN) using a wired or wireless bi-directional communication pathway that provides the homeowner the ability to voluntarily participate in utility demand response programs, where available. The thermostat shall be capable of executing the following actions in response to a demand response signal:

1. Automatically increasing the zone operating cooling set point by the following values: 1°F (0.5°C), 2°F (1°C), 3°F (1.5°C), and 4°F (2°C).
2. Automatically decreasing the zone operating heating set point by the following values: 1°F (0.5°C), 2°F (1°C), 3°F (1.5°C), and 4°F (2°C).

Thermostats controlling single stage HVAC systems shall comply with Section R403.1.2.1. Thermostats controlling variable capacity systems shall comply with Section R403.1.2.2. Thermostats controlling multi-stage HVAC systems shall comply with either Section R403.1.2.1 or R403.1.2.2. Where a demand response signal is not available the thermostat shall be capable of performing all other functions.
Exception: Assisted living facilities.

R403.1.3.1 Single stage HVAC system controls. Thermostats controlling single stage HVAC systems shall be provided with a demand responsive control that complies with one of the following:

1. Certified OpenADR 2.0a VEN, as specified under Clause 11, Conformance.
2. Certified OpenADR 2.0b VEN, as specified under Clause 11, Conformance.

3. Certified by the manufacturer as being capable of responding to a demand response signal from a certified OpenADR 2.0b VEN by automatically implementing the control functions requested by the VEN for the equipment it controls.
4. IEC 62746-10-1.
5. The communication protocol required by a controlling entity, such as a utility or service provider, to participate in an automated demand response program.
6. The physical configuration and communication protocol of CTA 2045-A or CTA-2045-B.

R403.1.3.2 Variable capacity and two stage HVAC system controls. Thermostats controlling variable capacity and two stage HVAC system shall be provided with a demand responsive control that complies with the communication and performance requirements of AHRI 1380.

R403.5.4 Demand responsive water heating Electric storage water heaters with a rated water storage volume of 40 gallons (150L) to 120 gallons (450L) and a nameplate input rating equal to or less than 12kW shall be provided with demand responsive controls in accordance with Table R403.5.4 or another equivalent approved standard.

Exceptions:

1 Water heaters that are capable of delivering water at a temperature of 180°F (82°C) or greater.
2 Water heaters that comply with Section IV, Part HLW or Section X of the ASME Boiler and Pressure Vessel Code.
3 Water heaters that use 3-phase electric power

TABLE R403.5.4
DEMAND RESPONSIVE CONTROLS FOR WATER HEATING

Equipment Type	Controls	
	Manufactured Before 7/1/2025	Manufactured On or After 7/1/ 2025
Electric storage water heaters	AHRI Standard 1430-2022 (I-P) or ANSI/CTA-2045-B Level 1 and also capable of initiating water heating to meet the temperature set point in response to a demand response signal.	AHRI Standard 1430-2022 (I-P)

SECTION R404
ELECTRICAL POWER AND LIGHTING SYSTEMS

R404.4 Electric vehicle power transfer infrastructure. New automobile parking spaces for one- and two-family dwellings and townhouses shall be provided in accordance with this section. All other new residential parking facilities shall be provided with electric vehicle power transfer infrastructure in accordance with Section C405.14 of the Illinois Commercial Stretch Energy Code.

R404.4.1 Quantity. Each dwelling unit with a designated attached or detached garage or other onsite private parking provided adjacent to the dwelling unit shall be provided with one EV ready space.

R404.4.2 EV ready spaces. Each branch circuit serving EV ready spaces used to comply with Section R404.4 shall comply with all of the following:

1. Terminate at an outlet or enclosure located within 3 feet (914 mm) of each EV ready space it serves.
2. Be sized for a minimum EV charging load of 7.2 kVA.
3. The panelboard or other electrical distribution equipment directory shall designate the branch circuit as “For electric vehicle supply equipment (EVSE)” and the outlet or enclosure shall be marked “For electric vehicle supply equipment (EVSE).”

4. Where a circuit is shared or managed, it shall be in accordance with NFPA 70.

R404.5 Electric readiness. Systems using fossil fuel: water heaters, household clothes dryers, conventional cooking tops, conventional ovens and space heating equipment shall comply with the requirements of Sections R404.5.1 through R404.5.5

R404.5.1 Cooking products. An individual branch circuit outlet with a rating not less than 240-volts, 40-amperes shall be installed, and terminate within three feet of conventional cooking tops, conventional ovens or cooking products combining both.

Exception: Cooking products not installed in an individual dwelling unit.

R404.5.2 Household clothes dryers. An individual branch circuit outlet with a rating not less than 240-volts, 30-amperes shall be installed, and terminate within three feet (304 mm) of each household clothes dryer.

Exception: Clothes dryers that serve more than one dwelling unit and are located outside of a dwelling unit.

R404.5.3 Water heaters. Locations of fossil fuel water heaters shall comply with all of the following:

1. An individual branch circuit outlet with a rating not less than either 240-volts, 30-amperes shall be installed, and terminate within three feet (304 mm) of each fossil fuel water heater.
2. The space for containing the future water heater shall have a height of not less than 7 ft (2 m), a width of not less than 3 ft (1 m), a depth of not less than 3ft (1 m) and with a volume of not less than 700 ft3 (20 m3).

   Exception:

   1. Water heaters in a centralized water heating system serving multiple dwelling units in an R-2 occupancy which comply with Section C405.17.
   2. Where the space containing the water heater provides for air circulation sufficient for the operation of a heat pump water heater, the minimum room volume shall not be required.

R404.5.4 Combustion space heating. A designated exterior location(s) in accordance with the following:

1. Natural drainage for condensate from cooling equipment heat pump operation or a condensate drain located within 3 feet (914 mm), and
2. A dedicated branch circuit in compliance with IRC Section E3702.11 based on heat pump space heating equipment sized in accordance with R403.7 and terminating within 3 feet (914 mm) of the location with no obstructions. Both ends of the branch circuit shall be labeled “For Future Heat Pump Space Heater.”

R404.5.5 Electrification-ready circuits. The unused conductors required by Sections R404.5.1 through R404.5.4 shall be labeled with the word “spare.” Space shall be reserved in the electrical panel in which the branch circuit originates for the installation of an overcurrent device. Capacity for the circuits required by Sections R404.5.1 through R404.5.4 shall be included in the load calculations of the original installation.

R404.6 Renewable energy infrastructure. The building shall comply with the requirements of R404.6.1 or R404.6.2.

R404.6.1 One- and two- family dwellings and townhouses. One- and two-family dwellings and townhouses shall comply with Sections R404.6.1.1 through R404.6.1.4.

Exceptions:

1. A dwelling unit with a permanently installed on-site renewable energy system.

2. A dwelling unit with a solar-ready zone area that is less than 500 square feet (46 m^2) of roof area oriented between 110 degrees and 270 degrees of true north.
3. A dwelling unit with less than 500 square feet (46m^2) of roof area oriented between 110 degrees and 270 degrees of true north.
4. Dwelling units where 50 percent of the solar-ready area is shaded from direct-beam sunlight by natural objects or by structures that are not part of the building for more than 2500 annual hours between 8:00 a.m. and 4:00 p.m.

R404.6.1.1 Solar-ready zone area. The total area of the solar-ready zone shall not be less than 250 square feet (23.2 m^2) and shall be composed of areas not less than 5.5 feet (1676 mm) in one direction and not less than 80 square feet (7.4 m^2) exclusive of access or set back areas as required by the International Residential Code.

Exception: Dwelling units in townhouses three stories or less in height above grade plane and with a total floor area less than or equal to 2,000 square feet (186 m^2) per dwelling shall be permitted to have a solar-ready zone area of not less than 150 square feet (14 m^2).

R404.6.1.2 Obstructions. Solar-ready zones shall be free from obstructions, including but not limited to vents, chimneys, and roof-mounted equipment.

R404.6.1.3 Electrical service reserved space. The main electrical service panel shall have a reserved space for a dual pole circuit breaker and shall be labeled "For Future Solar Electric." The reserved space shall be at the opposite (load) end of the busbar from the primary energy source.

R404.6.1.4 Electrical interconnection. An electrical junction box shall be installed within 24 inches (610 mm) of the main electrical service panel and shall be connected to a capped roof penetration sleeve or a location in the attic that is within 3 feet (914 mm) of the solar-ready zone by a minimum 1 inch (25 mm) nonflexible metallic conduit or permanently installed wire as approved by the code official. Where the interconnection terminates in the attic, location shall be no less than 12 inches (35 mm) above ceiling insulation. Both ends of the interconnection shall be labeled "For Future Solar Electric".

R404.6.2 Group R occupancies. Buildings in Group R-2, R-3 and R-4 shall comply with Section C405.15 of the Illinois Commercial Stretch Energy Code.

SECTION R405
TOTAL BUILDING PERFORMANCE

R405.1 Scope. This section establishes criteria for compliance using total building performance analysis. Such analysis shall include heating, cooling, mechanical ventilation and service water-heating energy only.

R405.2 Performance-based compliance. Compliance based on total building performance requires that a proposed design meets all of the following:

1. The requirements of the sections indicated within Table R405.2.
2. The proposed total building thermal envelope UA, which is the sum of the U-factor times assembly area, shall be less than or equal to the building thermal envelope UA using the prescriptive U-factors from Table R402.1.2 multiplied by 1.10 in accordance with Equation 4-1.
   $UA_{Proposed\ design} \leq 1.10 \times UA_{Prescriptive\ reference\ design}$ (Equation 4-1)
   The site energy use of the proposed design shall be less than or equal to 71 percent of the site energy use of the standard reference design.

TABLE R405.2
REQUIREMENTS FOR TOTAL BUILDING PERFORMANCE

SECTION[a]	TITLE
General	
R401.2.5	Additional energy efficiency
R401.3	Certificate
Building Thermal Envelope	
R402.1.1	Vapor retarder
R402.2.3	Eave baffle
R402.2.4.1	Access hatches and doors
R402.2.10.1	Crawl space wall insulation installations
R402.4.1.1	Installation
R402.4.1.2	Testing
R402.5	Maximum fenestration U-factor and SHGC
Mechanical	
R403.1	Controls
R403.3, including R403.3.1, except Sections R403.3.2, R403.3.3 and R403.3.6	Ducts
R403.4	Mechanical system piping insulation
R403.5.1	Heated water circulation and temperature maintenance systems
R403.5.3	Drain water heat recovery units
R403.6	Mechanical ventilation
R403.7	Equipment sizing and efficiency rating
R403.8	Systems serving multiple dwell- ing units
R403.9	Snow melt and ice systems
R403.10	Energy consumption of pools and spas
R403.11	Portable spas
R403.12	Residential pools and permanent residential spas
Electrical Power and Lighting Systems	
R404.1	Lighting equipment
R404.2	Interior lighting controls
R404.4	Electric Vehicle Power Transfer Infrastructure
R404.5	Electric readiness

R404.6	Renewable energy infrastructure

a. Reference to a code section includes all the relative subsections except as indicated in the table.

SECTION R406
ENERGY RATING INDEX COMPLIANCE ALTERNATIVE

R406.1 Scope. This section establishes criteria for compliance using an Energy Rating Index (ERI) analysis.

R406.2 ERI compliance. Compliance based on the ERI requires that the rated design meets all of the following:

1. The requirements of the sections indicated within Table R406.2.
2. Maximum ERI of Table R406.5.

TABLE R406.2
REQUIREMENTS FOR ENERGY RATING INDEX

SECTION[a]	TITLE
General	
R401.2.5	Additional efficiency packages
R401.3	Certificate
Building Thermal Envelope	
R402.1.1	Vapor retarder
R402.2.3	Eave baffle
R402.2.4.1	Access hatches and doors
R402.2.10.1	Crawl space wall insulation installation
R402.4.1.1	Installation
R402.4.1.2	Testing
Mechanical	
R403.1	Controls
R403.3 except Sections R403.3.2, R403.3.3 and R403.3.6	Ducts
R403.4	Mechanical system piping insulation
R403.5.1	Heated water calculation and temperature maintenance systems
R403.5.3	Drain water heat recovery units
R403.6	Mechanical ventilation
R403.7	Equipment sizing and efficiency rating
R403.8	Systems serving multiple dwelling units

R403.9	Snow melt and ice systems
R403.10	Energy consumption of pools and spas
R403.11	Portable spas
R403.12	Residential pools and permanent resi- dential spas
Electrical Power and Lighting Systems	
R404.1	Lighting equipment
R404.2	Interior lighting controls
R404.4	Electric Vehicle Power Transfer Infrastructure
R404.5	Electric readiness
R404.6	Renewable energy infrastructure

a. Reference to a code section includes all the relative subsections except as indicated in the table.

R406.3Building thermal envelope. The proposed total building thermal envelope UA, which is sum of U- factor times assembly area, shall be less than or equal to the building thermal envelope UA using the prescriptive U-factors from Table R402.1.2 multiplied by 1.10 in accordance with Equation 4-2.
UAProposed design < 1.10 × UAPrescriptive reference design
(Equation 4-2)

R406.4 Energy rating index. The Energy Rating Index (ERI) shall be determined in accordance with ANSI/RESNET/ICC 301 The mechanical ventilation rates used for the purpose of determining the ERI shall not be construed to establish minimum ventilation requirements for compliance with this code.

Energy used to recharge or refuel a vehicle used for transportation on roads that are not on the building site shall not be included in the ERI reference design or the rated design..

R406.5 ERI-based compliance. Compliance based on an ERI analysis requires that the rated proposed design and confirmed built dwelling be shown to have an ERI less than or equal to the appropriate value indicated in Table R406.5 when compared to the ERI reference design.

TABLE R406.5
MAXIMUM ENERGY RATING INDEX

Climate Zone	Energy Rating Index Without Combustion Equipment[a]	Energy Rating Index With Combustion Equipment[b]
4	54	51
5	55	50

a. Any building that contains no combustion equipment.

b. Any building that contains combustion equipment.

SECTION R408
ADDITIONAL EFFICIENCY REQUIREMENTS

R408.1 Scope. This section establishes additional efficiency requirements to achieve additional energy efficiency in accordance with Section R401.2.1. Buildings shall comply with either Section R408.2 or Section R408.3

R408.2. Heat pump equipment and air tightness option. Buildings shall comply with all of the following:

1. Heating and cooling equipment shall be electric heat pump equipment. In Climate Zone 5A, air-source heat pumps shall meet the following requirements for cold climate heat pumps:
   1.1.COP at 5°F (-15°C) ≥ 1.75
   1.2 Percent of heating capacity at 5°F (-15°C) ≥ 70% of that at 47°F (8.34°C)
2. Water heating equipment shall be a heat pump water heater.
3. The measured air leakage shall be less than or equal to 2.0 ACH50 with either an Energy Recovery Ventilator (ERV) or Heat Recovery Ventilator (HRV) with a sensible heat recovery efficiency (SRE) no less than 70 percent at 32°F (0°C) at an airflow greater than or equal to design airflow. The SRE shall be determined from a listed value or from interpolation of listed values. Construction documents shall include documentation of the SRE.

R408.3 Additional energy efficiency credit requirements. Additional efficiency measures shall be selected from Table R408.3 that meet or exceed a total of 30 credits. Five additional credits shall be selected for dwelling units with greater than 5,000 square feet (465 m2) of living space floor area located above grade plane. Each measure selected shall meet the relevant subsections of Section R408 and receive credit as specified in Table R408.3 for the specific Climate Zone. Interpolation of credits between measures shall not be permitted.

TABLE R408.3
CREDITS FOR ADDITIONAL ENERGY EFFICIENCY

Measure Number	Measure Description	Credit Value	
		CZ 4	CZ 5
R408.3.1.1 (1)	≥ 2.5% reduction in total UA	1	1
R408.2.1.1 (2)	≥ 5% reduction in total UA	2	3
R408.3.1.1 (3)	> 7.5% reduction in total UA	2	3
R408.3.1.2	0.22 U-factor windows	3	4
R408.3.2 (1)	High performance cooling system option 1	3	3
R408.3.2 (2)	High performance cooling system option 2	3	2
R408.3.2 (3)	High performance gas furnace option 1	5	7
R408.3.2(4)	High performance gas furnace option 2	4	5
R408.3.2(5)	High performance electric heat pump system option 1	21	31
R408.3.2 (6)	High performance electric heat pump system option 2	22	32
R408.3.2 (7)	Ground source heat pump	23	33
R408.3.2 (8)	High performance gas heat pump space heating system option 1	8	11
R408.3.2 (9)	High performance gas heat pump space heating system option 2	11	16
R408.3.3 (1)	Fossil fuel service water heating system	3	2
R408.3.3 (2)	High performance heat pump water heating system	8	6
R408.3.3 (3)	Solar hot water heating system	6	6
R408.3.3 (4)	Compact hot water distribution	2	2
R408.3.4 (1)	More efficient distribution system	10	12
R408.3.4 (2)	100% of ducts in conditioned space	12	15
R408.3.4 (3)	Reduced total duct leakage	1	1
R408.3.5 (1)	2 ACH50 air leakage rate with ERV or HRV installed	10	13

R408.3.5 (2)	2 ACH50 air leakage rate with balanced ventilation	4	5
R408.3.5 (3)	1.5 ACH50 air leakage rate with ERV or HRV installed	12	15
R408.3.5 (4)	1 ACH50 air leakage rate with ERV or HRV installed	14	17
R408.3.6	Energy Efficient Appliances	1	1

R408.3.1 Enhanced envelope option. The building thermal envelope shall meet the requirements of Section R408.3.1.1 or R408.3.1.2.

R408.3.1.1 Enhanced envelope performance UA. The proposed total building thermal envelope UA shall be calculated in accordance with Section R402.1.5 and shall meet one of the following:

1. Not less than 2.5 percent of the total UA of the building thermal envelope.
2. Not less than 5 percent of the total UA of the building thermal envelope.
3. Not less than 7.5 percent of the total UA of the building thermal envelope.

R408.3.1.2 Improved fenestration. Vertical fenestration shall meet a U-factor equal to or less than 0.22.

R408.3.2 More efficient HVAC equipment performance option. Heating and cooling equipment shall meet one of the following efficiencies:
Options:

1. Greater than or equal to 6.9 SEER2 and 13.4 EER2 air conditioner.
2. Greater than or equal to 15.2 SEER2 and 10 EER2 air conditioner.
3. Greater than or equal to 96 AFUE natural gas furnace.
4. Greater than or equal to 92 AFUE natural gas furnace.
5. Greater than or equal to 8.1HSPF2/16 SEER2 electric air source heat pump.
6. Greater than or equal to 8.5 HSPF2/16.9 SEER2 electric air source heat pump.
7. Greater than or equal to 3.5 COP ground source heat pump.
8. Greater than or equal to 120 AFUE gas heat pump space heating system. The gas heat pump space heating system shall not be configured to provide cooling.
9. Greater than or equal to 140 AFUE gas heat pump space heating system. The gas heat pump space heating system shall not be configured to provide cooling.

For multiple cooling systems, all systems shall meet or exceed the minimum efficiency requirements in this section and shall be sized to serve 100 percent of the cooling design load. For multiple heating systems, all systems shall meet or exceed the minimum efficiency requirements in this section and shall be sized to serve 100 percent of the heating design load. In Climate Zone 5A, air-source heat pumps shall meet the following requirements for cold climate heat pumps:

1. COP at 5°F (-15°C) $\geq$ 1.75
2. Percent of heating capacity at 5°F (-15°C) $\geq$ 70% of that at 47°F (8.34°C)

R408.3.3 Reduced energy use in service water-heating option. The hot water system shall meet one of the following efficiencies:

1. Greater than or equal to 0.82 EF fossil fuel service water-heating system.
2. Greater than or equal to 2.9 UEF electric service water-heating system.
3. Greater than or equal to 0.4 solar fraction solar water-heating system.

4. Compact hot water distribution. For Compact Hot Water Distribution system credit, the volume shall store not more than 16 ounces of water in the nearest source of heated water and the termination of the fixture supply pipe when calculated using section R408.3.3.1 and documented in compliance with Section R408.3.3.2.

R408.3.3.1 Water volume determination. The water volume in the piping shall be calculated in accordance with this section. Water heaters, circulating water systems and heat trace temperature maintenance systems shall be considered to be sources of heated water. The volume shall be the sum of the internal volumes of pipe, fittings, valves, meters and manifolds between the nearest source of heated water and the termination of the fixture supply pipe. The volume in the piping shall be determined from Table R408.3.3.1. The volume contained within fixture shutoff valves, within flexible water supply connectors to a fixture fitting and within a fixture fitting shall not be included in the water volume determination. Where heated water is supplied by a recirculating system or heat-traced piping, the volume shall include the portion of the fitting on the branch pipe that supplies water to the fixture.

TABLE R408.3.3.1
INTERNAL VOLUME OF VARIOUS WATER DISTRIBUTION TUBING
OUNCES OF WATER PER FOOT OF TUBE

NOMINAL SIZE (inches)	COPPER TYPE M	COPPER TYPE L	COPPER TYPE K	CPVC CTS SDR 11	CPVC SCH 40	CPVC SCH 80	PE-RT SDR 9	COMPOSITE ASTM F1281	PEX CTS SDR 9
3/8	1.06	0.97	0.84	N/A	1.17	-	0.64	0.63	0.64
1/2	1.69	1.55	1.45	1.25	1.89	1.46	1.18	1.31	1.18
3/4	3.43	3.22	2.90	2.67	3.38	2.74	2.35	3.39	2.35
1	5.81	5.49	5.19	4.43	5.53	4.57	3.91	5.56	3.91
1 1/4	8.70	8.36	8.09	6.61	9.66	8.24	5.81	8.49	5.81
1 1/2	12.18	11.83	11.45	9.22	13.20	11.38	8.09	13.88	8.09
2	21.08	20.58	20.04	15.79	21.88	19.11	13.86	21.48	13.86

For SI: 1 foot = 304.8 mm, 1 inch = 25.4 mm, 1 liquid ounce = 0.030L, 1 oz/ft^2 = 305.15 g/m^2.
N/A = Not available

R408.3.3.2 Water volume documentation. Where compliance with Section R408.3.3(5) is required, construction documentation or final field inspection shall verify that the compact hot water distribution system meets the prescribed limit in Section R408.3.3(5) with one of the following:

1. Referencing ounces of water per foot of tube on plans as per Table R408.3.3.1.
2. Referencing ounces of water per foot of tube installed as per Table R408.3.3.1.
3. In accordance with Department of Energy's Zero Energy Ready Home National Specification (Rev. 07 or higher) footnote on Hot water delivery systems.

R408.3.4 More efficient duct thermal distribution system option. The thermal distribution system shall meet one of the following efficiencies:

1. 100 percent of ductless thermal distribution system or hydronic thermal distribution system located completely inside the building thermal envelope.
2. 100 percent of duct thermal distribution system located in conditioned space as defined by Section R403.3.2.
3. When ducts are located outside conditioned space, the total leakage of the ducts, measured in accordance with R403.3.5, shall be in accordance with one of the following:
   - 3.1. Where the air handler is installed at the time of testing, 2.0 cubic feet per minute (0.94 L/s) per 100 square feet (9.29 m) of conditioned floor area.
   - 3.2 Where the air handler is not installed at the time of testing, 1.75 cubic feet per minute (0.83 L/s) per 100 square feet (9.29 m) of conditioned floor area.

R408.3.5 Improved air sealing and efficient ventilation system option. The measured air leakage rate shall be one of the following:

1. Less than or equal to 2.0 ACH50, with either an Energy Recovery Ventilator (ERV) or Heat Recovery Ventilator (HRV) installed.
2. Less than or equal to 2.0 ACH50, with balanced ventilation as defined in Section 202 of the 2021 International Mechanical Code.

3. Less than or equal to 1.5 ACH50, with either an ERV or HRV installed.
4. Less than or equal to 1.0 ACH50, with either an ERV or HRV installed.

Minimum HRV and ERV requirements, measured at the lowest tested net supply airflow, shall be greater than or equal to 75 percent Sensible Recovery Efficiency (SRE), greater than or equal to 1.2 cubic feet per minute per watt (0.03 m3/min/watt) and shall not use recirculation as a defrost strategy. In addition, the ERV shall be greater than or equal to 50 percent Latent Recovery/ Moisture Transfer (LRMT).

R408.3.6 Energy efficient appliances. Appliances installed in a dwelling unit shall meet the product energy efficiency specifications listed in Table R408.3.6, or equivalent energy efficiency specifications. The three appliance types from Table R408.3.6 shall be installed for compliance with this section.

TABLE R408.3.6 MINIMUM EFFICIENCY REQUIREMENTS: APPLIANCES

Appliance	Efficiency Improvement	Test Procedure
Refrigerator	Maximum Annual Energy Consumption (AEC) No greater than 620 kWh/yr	10 CFR 430, Subpart B, Appendix A
Dishwasher	Maximum Annual Energy Consumption (AEC) No greater than 270 kWh/yr	10 CFR 430, Subpart B, Appendix C1
Clothes Washer and Clothes Dryer	Maximum Annual Energy Consumption (AEC) for Clothes Washer[a] No greater than 130 kWh/yr Integrated Modified Energy Factor (IMEF) > 1.84 cu.ft/kWh/cycle	10 CFR 430 Subpart B, Appendix J2 and 10 CFR 430, Subpart B, Appendices D1 and D2

a. Credit for Clothes Washer and Clothes Dryer pair is based on Clothes Washer efficiency.

CHAPTER 6[RE]
REFERENCED STANDARDS

ASME	American Society of Mechanical Engineers Two Park Avenue New York, NY 10016-5990
BPVC	Boiler and Pressure Vessel Code
CTA	Consumer Technology Association Technology & Standards Department 1919 S Eads Street Arlington VA 22202
ANSI/CTA-2045-B – 2018	Modular Communications Interface for Energy Management
ANSI/CTA-2045-A – 2018	Modular Communications Interface for Energy Management
IEC	IEC Regional Centre for North America 446 Main Street 16th Floor Worcester MA 01608

IECIEC Regional Centre for North America.	IEC 62746-10-1 - 2018: Systems interface between customer energy management system and the power management system - Part 10-1: Open automated demand response
OpenADR	OpenADR Alliance 111 Deerwood Road, Suite 200 San Ramon CA 94583
OpenADR OpenADR Alliance**.**	OpenADR 2.0a and 2.0b – 2019: Profile Specification Distributed Energy Resources
AHRI	Air-Conditioning, Heating, & Refrigeration Institute 2111 Wilson Blvd, Suite 500 Arlington VA 22201
AHRI 1380-2019 AHRI 1430-2022 (I-P)	Demand Response through Variable Capacity HVAC Systems in Residential and Small Commercial Applications Demand Flexible Electric Storage Water Heaters

SECTION R502
ADDITIONS

R502.3 Prescriptive compliance. Additions shall comply with Sections R502.3.1 through R502.3.5.

R502.3.1 Building envelope. New building envelope assemblies that are part of the addition shall comply with Sections R402.1, R402.2, R402.3.1 through R402.3.5, and R402.4.

Exception: New envelope assemblies are exempt from the requirements of Section R402.4.1.2.

R502.3.2 Heating and cooling systems. HVAC ducts newly installed as part of an addition shall comply with Section R403.

Exception: Where ducts from an existing heating and cooling system are extended to an addition.

R502.3.3 Service hot water systems. New service hot water systems that are part of the addition shall comply with Section R403.5.

R502.3.4 Lighting. New lighting systems that are part of the addition shall comply with Section R404.1.

R502.3.5 Additional Efficiency Requirements. Additions shall comply with sufficient measures from Table R408.3 to achieve not less than 10 credits. Alterations to the existing building that are not part of the addition, but permitted with the addition, shall be permitted to be used to achieve this requirement.

Exceptions:

1. Additions that increase the building's total conditioned floor area by less than 25 percent.
2. Additions that do not include the addition or replacement of equipment covered in Sections R403.5 or R403.7.
3. Additions that do not contain conditioned space.
4. Where the addition alone or the existing building and addition together comply with Section R405 or R406.

SECTION R503
ALTERATIONS

R503.1.1.2 Roof replacement. Insulation shall comply with Section R402.1. Alternatively, where limiting conditions prevent compliance with Section R402.1, an approved design that minimizes deviation from Section R402.1 shall be provided for the following alterations:

1. Roof replacements or a roof alteration that includes removing and replacing the roof covering where the roof assembly includes insulation entirely above the roof deck, where limiting conditions require use of an approved design to minimize deviation from Section R402.1 for a Group R-2 building, a registered design professional or other approved source shall provide construction documents that identify the limiting conditions and the means to address them.

R503.1.2 Heating and cooling systems. New heating and cooling and duct systems that are part of the alteration shall comply with Section R403 and this section. HVAC ducts newly installed as part of an alteration shall comply with **Section R403**. Alterations to heating, cooling and duct systems shall comply with this section.

R503.1.2.1 Ducts. HVAC ducts newly installed as part of an alteration shall comply with Section R403.
Exception: Where ducts from an existing heating and cooling system are extended to an addition.

R503.1.2.2 System sizing. New heating and cooling equipment that is part of an alteration shall be sized in accordance with Section R403.7 based on the existing building features as modified by the alteration.
Exception: Where it has been demonstrated to the code official that compliance with this section would result in heating or cooling equipment that is incompatible with the remaining portions of the existing heating or cooling system.

R503.1.2.3 Duct leakage. Where an alteration includes any of the following, ducts shall be tested in accordance with Section R403.3.5 and shall have a total leakage less than or equal to 12.0 cubic feet per minute (339.9 L/min) per 100 square feet (9.29 m^2) of conditioned floor area:

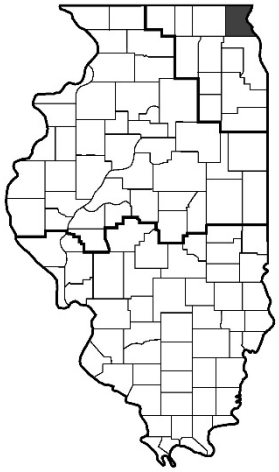
1. Where 25 percent or more of the registers that are part of the duct system are relocated.
2. Where 25 percent or more of the total length of all ducts in the system are relocated.
3. Where the total length of all ducts in the system is increased by 25 percent or more.

Exception: Duct systems located entirely inside a conditioned space in accordance with Section R403.3.2.

R503.1.2.4 Controls New heating and cooling equipment that are part of the alteration shall be provided with controls that comply with Sections R403.1 and R403.2.

State of Illinois

Capital Development Board **Request for Board Approval Single Bid Award**



Project Number: 102-311-102, Phase 1

Description: Repair Swimming Pool
Illinois Beach State Park
Zion, Lake County, Illinois

Subject: Single Bid Award

CDB Project Manager: Mark Jones

Project History:
The Lodge is a 103,435 square foot building established in 1958.

The scope of work provides for the following improvements within and around the indoor pool: partial-depth top surface concrete repair, full-depth concrete slab replacement, vertical and overhead surface concrete repairs, removal of existing and installation of new pool deck coating, rout and seal construction joints and cracks, removal and replacement of several floor drains, removal of joint filler and installation of pre-formed expansion joint seal in expansion joints, replacement of cast iron drainage pipes, replacement of deteriorated concrete masonry unit blocks, repair or replacement of steel beams, columns, and bearing plates, repair PVC pool liner and gutter, as well as a new guardrail around the southeast stairway and exterior wall repairs.

Requested Action:
Bids were received on February 20, 2024, and a single bid was received for the general trade. Nineteen (19) Plan rooms and four (4) contractors held project manuals and drawings for the project.

Architect/Engineer: Wiss, Janney, Elstner Associates, Inc.
330 Pfingsten Road
Northbrook, Illinois, 60062

TRADE	BASE BID	AE ESTIMATE	% DIFFERENCE
General	$650,000.00	$686,787.00	-5.36%

Both the A/E and the CDB Staff recommend that the award be made to:

Berglund Construction Company
8410 S. Chicago Avenue
Chicago, Illinois 60433

General Work: $650,000.00

DATE: March 22, 2024

TO: Tim Patrick – Construction Administrator

FROM: Mark Jones - Project Manager

RE: Request for Board Approval of Single Bid
102-311-102
Repair Swimming Pool
Illinois Beach State Park
Zion, Lake County, Illinois

The Lodge (A5799) is a 103,435 square foot, 4-story building established in 1958. The scope of work provides for the following improvements within and around the indoor pool: Partial-depth top surface concrete repair. Full-depth concrete slab replacement. Vertical and overhead surface concrete repairs. Removal of existing and installation of new pool deck coating. Rout and seal construction joints and cracks. Removal and replacement of several floor drains. Removal of joint filler and installation of pre-formed expansion joint seal in expansion joints. Replacement of cast iron drainage pipes. Replacement of deteriorated CMU blocks. Repair or replacement of steel beams, columns, and bearing plates. Repair PVC pool liner and gutter. New guardrail around the SE stairway.

Bids were received on the above referenced project on 2/20/2024 and a single bid was received for the General trade. To foster a competitive bid environment, the architect-engineer for the project contacted multiple general contractors in the area. The list of contractors included Berglund Construction Company, Chicago, IL, Zera Construction, Niles, IL, Allied Waterproofing, Willow Brook, IL, Design Installation System, Morton Grove, IL, Martin Restoration, Schaumburg, IL, Monson Nicholas, Villa Park, IL and Stuckey Construction, Waukegan, IL. Nineteen (19) Plan rooms and Four (4) Contractors held project manuals and drawings for the project.

Our recommendation is for the approval of the Request for Proposal and Change Order for The Berglund Construction Company in the amount of $650,000.00.

CDB PARTICIPATING PLAN ROOMS

Plan rooms which are within the general project area will usually receive bidding documents directly from the A/E.
A list of participating plan rooms follows:

ALL LISTED PLAN ROOMS ACCEPT ELECTRONIC DRAWINGS

N A T I O N A L

Dodge Data & Analytics
7265 Kenwood Road, Suite 200
Cincinnati, OH 45236
Keith Navale Planning Reporter
PH: (413) 340-0543
Email: keith.navale@construction.com

Construct Connect
30 Technology Parkway South, Suite 100
Norcross, GA 30092
PH: (770) 417-4000
Content (Processing Center)
PH: (513) 645-8004
FAX: (866) 570-8187
Email: content@ConstructConnect.com
Jessica Shipp (secondary)
Content Specialist
3825 Edwards Road, Suite 800
Cincinnati, Oh, 45209
PH: (513) 458-8581
FAX: (866) 570-8187
Email: Jessica.shipp@constructconnect.com

DataBid
433 Penn Street
Newtown, PA 18940
Julie Dustin, Product Development Editor
PH: (630) 338-1460
FAX: (888) 929-9293
Email: julie@databid.com

N O R T H E R N I L L I N O I S

Northern Illinois Building Contractors Association
1111 S. Alpine Rd., Suite 202
Rockford, IL 61108
Pat Lamb
PH: (815) 229-5636
FAX: (815) 226-4856
Email: info@nibca.build

Latin American Chamber of Commerce
3512 West Fullerton Avenue
Chicago, IL 60647
D. Lorenzo Padron, Chairman
PH: (773) 252-5211
FAX: (773) 252-7605
Email: d.lorenzopadron@laccusa.com

Association of Asian Construction Enterprises
712 W. Root St. Chicago, IL 60609
Perry Nakachi
PH: (847) 525-9693
FAX: (773) 891-3090
Email: nakmancorp@aol.com

Federation of Women Contractors
4210 W. Irving Park Rd.
Chicago, IL 606341
Debby Gidley
PH: (312) 360-1122
FAX: (312) 360-0239
Email: fwcchicago@aol.com

Contractors Association of Will & Grundy Counties
233 N. Springfield Ave.
Joliet, IL 60435-6509
Karri Lane
PH: (815) 741-1455
FAX: (815) 741-2165
Email: klane@cawgc.org

Black Contractors United
12000 S. Marshfield Ave.
Calumet Park, Il. 60827
Carole Williams
PH: (708) 389-5730
FAX: (708) 389-5735
Email: carole@blackcontractorsunited.com

IL PTAC at Rock Valley College
605 Fulton Ave.
Rockford, IL 61103
Ann Johns
PH: (815) 921-2091
FAX: (815) 921-2089
Email: ptac@rockvalleycollege.edu

African American Contractors Association
PO Box 19670
Chicago, IL 60619
Michael Sharees
PH: (773) 891-3090
Email: aacanatlassoc@gmail.com

Hispanic American Construction Industry Ent. Assoc

650 West Lake Street, Suite 415
Chicago, IL 60661
PH: (312) 575-0389
FAX: (312) 575-0544-3090
Cell: (630) 501-7448
Email: jcalahorrano@haciaworks.org
Website: www.haciaworks.org

Roseland Community Collaborative

4655 S. King Drive, Suite 203
Chicago, IL 60653
PH: (312) 391-9054
FAX: (773) 928-0528
Email: RoselandCC@yahoo.com

C E N T R A L I L L I N O I S

GREATER PEORIA CONTRACTORS & SUPPLIERS ASSOC.
1811 West Altorfer
Peoria, IL 61615
Ph: (309) 692-5710
Fax: (309) 692-5790
e-mail: info@gpcsa.org
website: www.gpcsa.org

AFRICAN AMERICAN CONTACTORS ASSOCIATION
307 South Western Avenue
Peoria, IL 61605
Ph: (309) 839-2115
Fax: (309) 966-0230
e-mail: danagef@att.net

CENTRAL ILLINOIS PLAN ROOM
1620 South 5th Street
Springfield, IL 62703
Ph: (217) 679-1077
Fax: (217) 544-6570
e-mail: plans@ciplanroom.com
website: www.ciplanroom.com

QUINCY PLAN ROOM
201 Broadway
Quincy, IL 62301
Ph: (217) 222-0558
Fax: (217) 222-0579
e-mail: sandym@michelmann.us

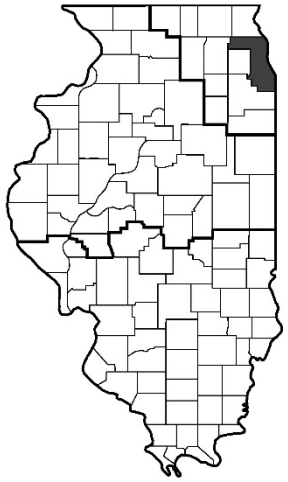
EAST CENTRAL ILLINOIS BUILDING & CONSTRUCTION TRADES COUNCIL
3301 N. Boardwalk
P.O. Box 3932
Champaign, IL 61820
Ph: (217) 621-2225 or Ph: (217) 359-5201
Fax: (217) 359-9875
e-mail: teamclmc@aol.com
website: www.teamclmc.org

S O U T H E R N I L L I N O I S

SOUTHERN ILLINOIS BUILDERS ASSOCIATION
1468 Green Mount Road
P.O. Box 1390
O'Fallon, IL 62223
Ph: (618) 624-9055
Fax: (618) 624-9065
e-mail: dmr@siba-agc.org
website: www.siba-agc.org
504 West Jackson
P.O. Box 803
Marion, IL 62959
Fax: (618) 997-879

Project Number: 546-235-022

Description: North Riverside Training and Maintenance Facility
Construct Vehicle Maintenance Shop
North Riverside Armory
North Riverside, Cook County, IL



Using Agency: Department of Military Affairs (DMA)

Architect/Engineer: Muller & Muller, Ltd.
700 N. Sangamon
Chicago, IL 60642

Total Project Budget: $17,500,000.00
Unobligated Funds: $ 241,065.00
Total Spent to Date: $ 867,275.64
Percent Complete: 50% Design

Project Manager: Charla Travis

PROJECT HISTORY: The National Guard Vehicle Maintenance Shop is a 61,998 square foot building.

The scope of work for this project provides for constructing a specially designed National Guard Vehicle Maintenance Shop (NGVMS). LEED Silver standards will be required, and additional energy efficiencies will be considered. The NGVMS will include a work environment for occupational, safety, and health standards with new general purpose work bays, special purpose work bays, work areas, administrative space, a supply room, a classroom, lockers, and maintenance space for the personnel to complete their duties.

During the 50% design review, DMA voiced concerns regarding bid alternates, outbuilding waste management, and the structures for the cranes.

As design progressed the extremely challenging nature of the site and building type with regard to USGBC sustainability requirements resulted in the need to make significant changes to the HVAC and electrical systems to achieve the required points for LEED Silver.

DMA also requires that 15% of the construction be represented by bid alternates to protect against bids exceeding the budget; this requires fully independent sets of bid documents with unique design for each alternate, and this was not included in the initial project scope as a requirement.

Following the 50% CD submittal, the using agency noted there were separate significant requirements for outbuildings for waste management. Initial expectations for these buildings were that they were fully delegated designs that only required a rudimentary concrete pad. However, the design team later learned there were a number of special requirements for these buildings to accommodate the specialized waste for which they were intended. These structures require significant design from the entire A/E team to account for the architecture, site impact, utility requirements, and specific code review.

Following the 50% CD submittal, the using agency also noted that all maintenance bays needed to be served by the 2 cranes authorized by the 1309 document. Until the using agency noted this, the A/E design team had been showing 2 cranes to be installed at the time of construction with building infrastructure installed to support the future installation of 2 additional cranes. To accommodate this change, the structure for the cranes needs to be revised, as well as associated architecture and MEP designs to allow crane access in each work bay.

The design team needs to enlist specialized consultants to determine the pressure and flow rates of the water main. Existing site surveys are incomplete and locations where the flow could be tested were unknown. The design team will perform extensive coordination with local water agencies and conduct additional site visits to coordinate testing.

PURPOSE OF THIS AGREEMENT MODIFICATION: This modification will compensate the A/E for the additional design work required to revise the scope of this project to allow for the design of the mechanical revisions and rooftop photovoltaic solar system. It will also provide for watermain flow testing to ensure appropriate water pressure has been achieved. The A/E shall also be compensated for the design allowance for bid alternates to maintain the budget.

SUBJECT AGREEMENT AMENDED AS FOLLOWS

Fee Description	Total Obligation per Original Agreement	Total Amount of Previous Modifications	Total Obligation Prior to this Modification	Total Amount of this Modification	Total Agreement Obligation including this Modification
Basic Services Fee	$0.00	$ 755,722.00	$ 755,722.00	$0.00	$755, 722.00
Additional Services	$72,900.00	$128,320.00	$201,220.00	$234,065.00	$435,285.00
Contract Administration Fee	$2,100.00	$26,500.00	$28,600.00	$7,000.00	$35,600.00
Design Testing	$0.00	$208,000.00	$208,000.00	$0.00	$208,000.00
LEED Registration Fee	$0.00	$10,500.00	$10,500.00	$0.00	$10,500.00
TOTALS	$75,000.00	$1,129,042.00	$1,204,042.00	$241,065.00	$1,445,107.00

TO:	Ms. Blanca Rivera, Regional Manager – Region 1 Mr. Tim Patrick, Construction Administrator
FROM:	Ms. Charla Travis, Project Manager – Region 1
DATE:	March 25, 2024
Project #:	546-235-022
Description/Location:	North Riverside National Guard Armory N. Riverside Training & Maintenance Facility Construct Vehicle Maintenance Shop N. Riverside (Cook County), IL
A/E Name:	Muller & Muller, Ltd. 700 N. Sangamon Chicago, IL 60642

Capital Development Board (CDB) has worked with the A/E Mueller & Mueller, Ltd. for the Design of Project 546-235-022: N. Riverside- Construct Vehicle Maintenance Shop. The Project Scope consist of constructing a specially designed National Guard Vehicle Maintenance Shop. The shop shall include general purpose work bays, special purpose work bays, work areas, administrative, supply room, classroom, lockers, latrines/showers and maintenance space.

Muller & Muller, Ltd., completed the required design submittals to 75% Design.

During the design review Mueller & Mueller – Ltd., provided a Modification request for the following:

- Mechanical Revisions and Rooftop PV Solar System
  - During the design progress it was determined the challenging nature of the site and building type with regard to USGBC sustainability requirements resulted in the need to make significant changes to the HVAC and electrical systems to achieve the req. points for LEED Silver.
- Bid Alternates
  - DMA (Department of Military Affairs) / NGB (National Guard Bureau) requires 15% of the construction budget be represented by bid alternate to protect against bids exceeding the budget. As part of each bid alternate, the base bid package is altered by the removal of the scope of each bid alternate and each bid alternate involves creating fully independent sets of bid documents with unique design.
- Waste Outbuildings
  - Following the 50% CD Submittal, the using agency noted, there were separate

significant requirements for outbuildings for waste management. The design team learned there were a number of special requirements for these buildings to accommodate the specialized waste. These structures require significant design from the entire A/E team to architecture, site impact, utility requirements, and specific code review.

- Modify Crane Bays
  - Following the 50% CD Submittal, the using agency noted all maintenance bays needed to be served by the 2 cranes authorized by the 1309 document. To accommodate this change, the structure for the cranes needs to be revised as well as associated architecture and MEP designs.
- Watermain Flow Testing
  - The design team has to determine the pressure and flow rates of the water main and need to enlist specialized consultants. Additional site visits to coordinate testing and extensive coordination with local water agencies.

CDB has created the modification for approval by the board for this project. It is the opinion of CDB PM, Charla Travis, that the Muller & Muller, Ltd, has done their due diligence to analyze the current design and provided acceptable modification fees.

Thank You

Charla Travis
Capital Development Board
Project Manager – Region 1

March 18, 2024

Capital Development Board
555 W Monroe St.
Chicago IL 60661

Attention: Charla Travis
Project Manager

Subject: **North Riverside Construct New Vehicle Maintenance Shop**
CDB Project # 546-235-022
Additional Services Request – MOD 3 – LEED Additional Design Scope and Bid Alternates

Dear Ms. Travis:

Muller & Muller, Ltd. (M2) is pleased to submit the following request for additional services pertaining to the new Vehicle Maintenance Shop, located in North Riverside, Illinois National Guard Site, CDB project # 546-235-022, originally contracted under the Professional Services Agreement CDB Contract No. 20025510.

SCOPE OF WORK / SCOPE OF SERVICES

The following changes to the original scope of work include the following conditions which result in additional services for the design team above and beyond the base scope covered by the original M2 A/E Professional Services Agreement of the above noted subject project.

This project was initially advertised with an Estimated Total Project Cost of $17,500,000. As the project proceeded, The Department of Military Affairs (DMA) and the National Guard Bureau increased the project budget with Total Project Funds now being $24,171,066, a 38% increase.

1. **Mechanical Revisions and Rooftop PV Solar System**
   Per the project advertisement, the project is to be designed to achieve USGBC LEED Silver. Initially, the design team crafted a preliminary plan to achieve this, though many of the LEED points were noted on the scorecard as "maybe", and required considerably further detailed design and investigation to determine if they could be achieved. However, as design progressed the extremely challenging nature of the site and building type with regard to USGBC sustainability requirements resulted in the need to make significant changes to the HVAC and electrical systems to achieve the required points for LEED Silver leading up to and after the 50% CD submittal milestone. Points for categories other than Energy and Atmosphere are determined to be unobtainable and place a greater burden on achieving the required 50 points on MEP systems and the Energy and Atmosphere section of points. These include completely changing the HVAC system to a VRF system and including a Solar PV system for the electrical system. While the project remains within budget, these changes will result in overall construction cost estimate increases over $1M from previously drafted estimates. This dramatically adds to the design scope of work, as these MEP systems require coordination with all disciplines.
   Scope changes include:

   a. Completely redesigning mechanical systems and designing a rooftop solar PV system, including coordination with architecture, structural, and civil disciplines.

b. Reviewing scope changes with A/E team and subsequently with CDB and the Using agency at each design revision as the design evolved to satisfy the requirements of LEED Silver
c. Recalculating LEED points as the project is redesigned to achieve LEED level goals
d. Revise documents, including drawings and specifications to incorporate completely revised systems, affecting architecture, mechanical, electrical, plumbing, structural and civil engineering documents, as well as requiring revisions to the cost estimates.

Refer to Clark Deitz and Graef Proposals for detailed design revisions associated with each change that are implemented throughout the documents, all of which require architectural coordination.

TOTAL FEE: $87,904

2. **Bid Alternates**

The using agency notified the A/E team that DMA/NGB requires 15% of the construction budget be represented by bid alternates to protect against bids exceeding the budget. This is not something that was included in the initial project scope as a requirement. Apart from the extreme difficulty of finding scope that could be identified as alternates without compromising the functionality of the building (such as removing maintenance bays and reducing the scope beyond the limits of that allowed by the NGB 1390 scope document). As part of each bid alternate, the base bid package is altered by the removal of the scope of each bid alternate, and each bid alternate involves creating fully independent sets of bid documents with unique design.
An example of this is Alternate Bid No. G-1 Construct Unheated Storage. Removing this portion of the building requires a unique base bid design for the structure, the architecture, the shared wall and doors, civil design for the hardscape and unique stormwater flow that is required at the location of the storage area, and revised electrical designs.
Another example is Alternate Bid No. G-2, which includes radiant floor heating. The base bid design requires a uniquely designed increased-capacity HVAC systems to account for the lost capacity of the radiant heating system.
At this phase in the bid document process, the A/E team will need to create many new drawings and revised specifications to cover each bid alternate, adding a substantial amount to our scope of work.

The bid alternates include:

G1: Construct Unheated Storage
Minimum sheets required – 42
Minimum specification sections required – 2

G2: Radiant Floor Heating & Concrete Paving at OMS and POV lots
Minimum sheets required – 14
Minimum specification sections required – 4

G3: Glass above OHD's and polished concrete for admin area
Minimum sheets required – 6
Minimum specification sections required – 2

G4: PVC Roof (in lieu of TPO)
Minimum sheets required – 2
Minimum specification required - 1

To summarize the scope of work:
a. Develop options for bid alternates to account for 15% of the construction budget while maintaining the functionality of the building.
b. Review options with using agency and reorganize per NGB requirements.
c. Coordinate with cost estimator to review all scope associated with each bid alternate.

d. Develop clearly biddable documents, including drawings and specifications, for each bid alternate. Each bid alternate requires additional sets of bid documents and unique designs.

TOTAL FEE: $81,092

3. **Waste Outbuildings**

Following the 50% CD submittal, the using agency noted there were separate significant requirements for outbuildings for waste management. Initial expectations for these buildings were that they were fully delegated designs that only required a rudimentary concrete pad. However, the design team later learned there were a number of special requirements for these buildings to accommodate the specialized waste for which they were intended. These structures require significant design from the entire A/E team to account for the architecture, site impact, utility requirements, and specific code review.

Approximate number of sheets affected - 16

To summarize the scope of work:

a. Review code requirements for each of the outbuildings.
b. Revise design and calculations to account for site drainage, required foundations, utilities and impact on LEED for impervious cover and stormwater flows.
c. Review revisions to cost estimates.

TOTAL FEE: $37,194

4. **Modify Crane Bays**

Following the 50% CD submittal, the using agency noted all maintenance bays needed to be served by the 2 cranes authorized by the 1309 document. Until the using agency noted this, the A/E design team had been showing 2 cranes to be installed at the time of construction with building infrastructure installed to support the future installation of 2 additional cranes. To accommodate this change, the structure for the cranes needs to be revised, as well as associated architecture and MEP designs.

Approximate number of sheets affected – 9

a. Revise crane back-up structure.
b. Run new calculations for loading of structure
c. Revise design and calculations to account for revised crane support structure, including bay access, and MEP infrastructure.

TOTAL FEE: $22,825

5. **Watermain flow testing**

The design team needs to enlist specialized consultants to determine the pressure and flow rates of the water main. Existing site surveys are incomplete and locations where the flow could be tested were unknown. The design team will perform extensive coordination with local water agencies and conduct additional site visits to coordinate testing.

a. Coordinate on-site flow testing of the water main.
b. Coordinate with using agency to locate testing locations.

c. Attend two (2) on-site meetings to assist in supervision of the water main testing.

TOTAL FEE: $5,050

The design team will endeavor to perform the proposed additional services with a mutually agreed-upon revision to the project schedule.

COMPENSATION

For the Services requested and outlined above, M2 and its consultants shall be compensated Two-hundred thirty three thousand seven hundred sixty-five dollars and no cents ($234,065.00), as noted below.

A/E Firm	Fee
Muller & Muller, Ltd.	$ 71,300.00
Graef	$ 68,000.00
Clark Dietz	$ 94,765.00
Total	**$ 234,065.00**

To accept these proposed additional services, please sign and date below and return to us. Upon receipt of an executed copy, the A/E team will commence work on these additional services.

Sincerely,
Muller & Muller, Ltd.

Catherine Muller
President

CLIENT
APPROVED AND ACCEPTED
Capital Development Board

By: _____

Title: _____

Date: _____

MODIFICATION

State of Illinois

CAPITAL DEVELOPMENT BOARD

Professional Services Agreement

Modification Number: **3**
Project Number: **546-235-022**
Date: March 25, 2024

Firm Name, Address
Muller & Muller, Ltd.
700 N Sangamon
Chicago, IL 60642

Project Information
Construct Vehicle Maintenance Shop
North Riverside Armory - Cook County
North Riverside, Cook County, Illinois

This Modification Changes the Scope of the Contract

Agreement Date: 2020-08-11 Contract: 20025510

Scope/Purpose of this agreement modification: Provide Additional Services Fee for the following items, which are more clearly defined in Attachment A1 - Appendix A - M3 Clarifications:
1. $87,904 for Mechanical Revisions and Rooftop PV Solar System.
2. $81,092 for Bid Alternates.
3. $37,194 for Waste Outbuildings.
4. $22,825 to Modify Crane Bays.
5. $5,050 for Water Main Flow Testing.

Payment for Additional Services shall be based on actual Time and Material (T&M) required and approved by CDB.
The signature authority levels for modifications referenced in the SDC's are hereby amended to the following:
Executive Director - $100,000 to $199,999; Deputy Director of Construction - $75,000 to $99,999; Construction Administrator - $50,000 to $74,999; Regional Manager - $15,000 to $49,999; Project Manager - $0 to $14,999; CDB Board shall approve all modifications exceeding the Executive Director's authority level.

Subject agreement amended as follows: Replace Appendix A - M2 with Appendix A - M3

AGREEMENT SUMMARY

Fee Description	Total Obligation Per Original Agreement	Total Amount of Previous Modifications	Total Obligation prior to this Modification	Total Amount of this Modification	Total Agreement Obligation including this Modification
Basic Services Fee	$.00	$755,722.00	$755,722.00	$.00	$755,722.00
Additional Services	$72,900.00	$128,320.00	$201,220.00	$234,065.00	$435,285.00
Contract Administration Fee,	$2,100.00	$26,500.00	$28,600.00	$7,000.00	$35,600.00
Design Testing	$.00	$208,000.00	$208,000.00	$.00	$208,000.00
LEED Registration Fee	$.00	$10,500.00	$10,500.00	$.00	$10,500.00
TOTALS	$75,000.00	$1,129,042.00	$1,204,042.00	$241,065.00	$1,445,107.00

Prepared by: David Heydenberk 3/25/24 Date

By: Richard R Neely by Brian Cohen Digitally signed by Richard R Neely by Brian Cohen Date: 2024.03.25 16:25:35 -05'00' Major General Richard R. Neely by Brian Cohen, Deputy CFO Department of Military Affairs
Using Agency approval Date

AE Firm name: Muller & Muller, Ltd.

By: 3.25.24
AE's Authorizing Representative Date

Reviewed: 3/25/24
Contract Executive Date

Print AE name, Title: Catherine E. Muller, President

Approved by: 3/26/2024
Regional Manager Date

By:
Fiscal Date

Approved by: N/A
Legal Date

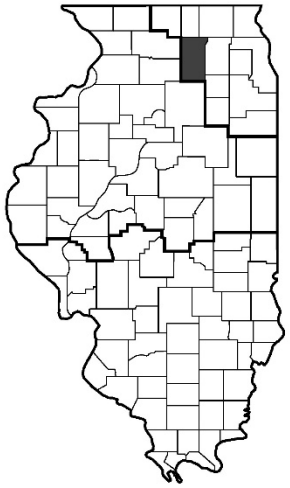
Final CDB authorization
Date

Print name/title

State of Illinois
Capital Development Board **Request for Board Approval of Change Order**

Project Number: 822-010-133

Description: Northern Illinois University – Visual Arts Building
Structural Repairs & Ex. Building Improvements
330 Gilbert Drive
Dekalb, IL



Using Agency: Northern Illinois University

Architect/Engineer: Bauer Latoza Studio
332 South Michigan
Chicago, IL, 60604

Total Project Budget: $4,936,600.00
Unobligated Funds: $ 365,544.56
Total Spent to Date: $4,210,362.87
Percent Complete: 95%

Project Manager: Kenneth Watkins

Project History: Northern Illinois University in DeKalb is a 96-building facility established in 1897. The Visual Arts Building is a 104,104 square foot, 4-story building located near the campus' historic East Lagoon. The modern structure was designed by Thelen Associates Inc. in 1967 to specifically house the art program. The building's exterior walls are composed of 4" face brick over 6" concrete blocks and precast concrete wall panels on the fourth floor. There are reinforced concrete columns and spandrels form a colonnade around the building from the second floor to the fourth floor.

The scope of work provided for structural repairs to the exterior concrete building envelope such as crack, spalling, and corroded steel reinforcing repairs. North and south exterior main entrance stair repair or replacements, multiple elevated concrete balcony and perimeter railing repairs and improvements, as well as tuckpointing and caulking replacement of building expansion/control joints and windows and doors.

After review and analysis of the deterioration of the concrete columns located on the east side of the building it was discovered that repairing the columns in place to match the existing conditions would be insufficient. The columns needed to be reengineered and new design documents need to be developed and issued to address rebuilding the columns.

Description of RFP Change: This change order will be classified as an undiscovered condition and will provide a credit for the original repair scope of work as indicated in the construction documents. This change order will also cover additional costs for the expanded scope of work to address shoring, extensive demolition, and rebuilding of columns at the east side of the building.

Requested Action: We are requesting board approval of change order G-10 in the amount of $210,085.82 to allow the contractor to proceed with this work that is critical to the completion of the project.

Contractor	Trade	Change Order Amount	Original Contract	% Change
CAD Construction	General	$210,085.82	$4,211,575.00	5%
Total All Change Orders		$210,085.82	$4,211,575.00	5%

TO: Blanca Rivera, Regional Manager

FROM: Kenneth Watkins, Project Manager

DATE: March 20th, 2024

RE: RFPCO G-10
822-010-133 Structural Repairs & Exterior Building Improvements
Northern Illinois University – Dekalb, Illinois

Dear Blanca,

The scope of work for this project included prescriptive demolition and rebuild of the (8) concrete columns located at the SW corner and (8) columns at the SE corner of the building. Upon commencement of the prescriptive demolition at the SW corner columns, the Contractor quickly determined that the deteriorated concrete crumbled to the reinforcement bar in sections, beyond the prescribed demolition. Similarly, the spaulding and extremely weathered concrete condition was discovered at the SE columns. In order to complete this project, achieving proper shoring, structural and aesthetic integrity, the columns needed to be reengineered and new design documents developed to address rebuilding the SE columns.

Requested Action: Board approval of RFPCO G-10 in the amount of $210,085.82 to complete this project as described.

Regards,

Kenneth Watkins, Project Manager

CC: Shea Votava
Amber Dooley
Tim Patrick

State of Illinois
CAPITAL DEVELOPMENT BOARD

REQUEST FOR PROPOSAL & CHANGE ORDER

Date: 10/5/2023 RFP Number: G-10

1. (Contractor's Name, Address, Telephone, Fax & Attention)

Cad Construction, Inc.
150 South Baer Road
Tremont, IL 61568

(309)657-1493 Fax ( ) -
Attn: Alex Brenneman e-mail:
alex@cadconstruction.com

CDB Project #: 822-010-133
CDB Project Name: Repair of the Exterior Facade
& Location: Northern Illinois University: Visual Arts Building, DeKalb, IL, 60115

CDB Contract #: 23048381
Contract Work: General Work

2. REQUEST for change by: Contractor

CDB contemplates making certain changes, additions and deletions to the work to be performed under the subject Contract. Unless otherwise indicated in the description of change, accompanying drawings and specifications, all work required shall conform to the contract documents. The Contractor is required to submit within 14 calendar days from the date herein a proposal and a detailed breakdown for this change. The proposal shall be submitted in accordance with CDB's format and the General Conditions.

3. REASON for change:
Discovered Condition. After further review and analysis of the ask built conditions at the exterior columns (8 locations) located on the east side of the building it was discovered that the repair details needed to be revised.

4. DESCRIPTION of change including reference to drawings and specifications revised, new drawings and specifications issued.
Revise detail 6/S2.7, 1/S2.8 with details as indicated on attached SK-1

5. OTHER CONTRACTS affected by this change. List Contractor's name, contract work, RFP number and amount.
None

IMPORTANT NOTICE
Disclosure of this information is mandatory in accordance with the Standard Documents for Construction. Failure to complete this will prevent payment for work completed and/or be a material breach of contract.

6. CONSIDERATION:
Work to be accomplished in ( ) Calendar Days from Approval of RFPCO.
NOTE: Unless specifically indicated above, this does not extend the contract time.

The Contract Sum is Increased by the total sum of……$ 210,085.82

7. The change described above and on accompanying drawings and specifications and the Contractor's proposal (if applicable) are hereby incorporated by reference and made a part hereof. Having reviewed the above and determining the amount to be fair and proper the undersigned:

RECOMMEND issuance of a change order
A/E Firm Name Bauer Latoza Studio
BY Kirk Sippel signature

COORDINATING CONTRACTOR or CONSTRUCT. MANAGER
BY signature

CONTRACTOR DATE 3-4-24
BY Alex Brenneman print name
signature
Vice President title

APPROVE as to form and content:
USING AGENCY name
BY Nanette Anderson signature

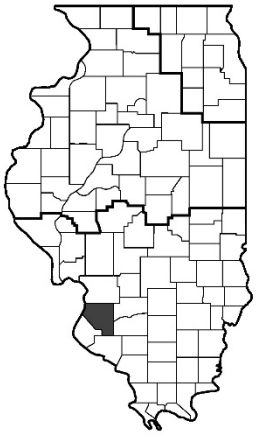
CDB/PM APPROVE K R Watkins signature

CDB APPROVE change order DATE
BY print name
signature
title

8. FOR CDB USE ONLY

Type of Change	% Assess	Package No.	CO Date	CO No.	CO AMOUNT add (deduct)
					$

Revised August 2008



Project Number: 120-021-015, Phase 1

Description: Upgrade Fire Alarm and CCTV Systems
Southwestern Correctional Center
East St. Louis, St. Clair County, Illinois

Subject: Single Bid Award

CDB Project Manager: Robert Stowell

Project History:
PROJECT DESCRIPTION: Southwestern Correctional Center consists of a total of 19 buildings, which comprise more than 195,214 square feet. The living units consist of four dorm-style housing units, the Work Camp, one 8-bed segregation unit and a 6-bed health care unit. The facility sits on a 24-acre site, with 22 acres being enclosed by fencing.

The scope of work for this project provides for the demolition and replacement of the existing fire alarms systems in seven buildings on the project site. Additionally, the scope includes the installation of CCTV systems at the same seven buildings.

Requested Action:
A single bid was received on March 19, 2024. Twelve contractor held drawings for this project.

WRF Engineers, LLC and CDB Project Manager Robert Stowell contacted 16 electrical contractors to promote a prominent bidding pool. Robert and the A/E team kept communication with the potential bidders for three weeks prior to the bid date on March 19, 2024, to ensure all questions were answered.

Architect/Engineer: WRF Engineers, LLC
112 N. Kansas Street
Edwardsville, IL 62025

TRADE	BASE BID + ALT 1	AE ESTIMATE	% DIFFERENCE
Electrical	$1,999,950.00	$1,594,085.00	22.5%

Both the A/E and the CDB Staff recommend that the award be made to:

J. F. Electric, Inc.
Shane Kennedy
100 Lakefront Pkwy
Edwardsville, IL 62025

Electrical Work: $1,999,950.00

To: David Ealey, Regional 3 Manager

From: Robert Stowell, Project Manager

Date: 03/25/2024

Re: 120-021-015 Single Bid Award

This project was bid on March 19, 2024. The Electrical Trade Bid received a single bid from J. F. Electric, Inc., Electrical Contractor in the amount of $1,999,950.00.

The AE estimate = $,594,058.00 vs Bid = $1,999,950.00 , the bid was 22.5% higher than the AE estimate.

The AE and CDB PM contacted multiple contractors, vendors, plan rooms and sent bid documents to interested parties in hopes they would bid the project. The project plan distribution list is attached. (12) twelve contractors and (16) sixteen Plan Rooms held Bid Documents for the project.

The AE contacted all contractors holding plans and additional contractors in Southern IL, Central IL, and Central Eastern IL areas and asked them to submit a bid for the project.

After bid the AE contacted contractors after receiving the single bid and most had indicated complex work rules in a Correctional center, manpower and current project load was a concern and reason for them not bidding.

Plan Holder's List

Project: Southwestern Correctional Center, East St. Louis, IL
Upgrade Fire Alarms and CCTV Systems
CDB Project #120-021-015-01
WRF#: R21-084
Pre-Bid Date: February 20, 2024, 1:30pm
Bid Date: March 19, 2024, 11:00am

Attended Pre-Bid Meeting	Plan Holder Name	Pick up, Delivery Service, Drop off	Date
	Orlando Rosario Sierra Public Safety Group 773-217-5447 orsosario@sierrapublicsafetygroup.com	Email	2/15/24
	Brown Electric Service Goreville, IL 618-955-2870 brown@brownelectric80.com	Emai	2/22/24
	Pyramid Electrical Contractors Fairview Heights, IL 618-632-1180 Scott Korte scott@pyramidelectrical.com	Email	2/22/24
	Pointer Electric Jerseyville, IL 618-498-2333 pointerelectric@gtec.com	Email	2/22/24
	Camp Electric Alton, IL 618-462-9287 nhowell@campelectric.com	Email	2/22/24
	FW Electric Benton, IL 618-438-9191	Email	2/22/24 NOT BIDDING
	JF Electric Robert Siergiej 618-797-6340 robertsiergiej@jfelectric.com	Email	2/29/24
	Patriot X LLC Anthony Anderson	CDB EBuilder	
	Ficek Electric & Communications Systems, Inc.	CDB EBuilder	
	Honeywell International	CDB Ebuilder	

	Michael Weinstein		
	HQE Systems, Inc. Oais Alkurdi	CDB Ebuilder	
	Securitas Technology Mickey Wydick 317-201-3454 Mickey.wydick@securitas.com	Email	3/12/24
	Coltrane Systems Mitch Huisinga 314.244.3842 x 129 mitch@coltranesystems.com	Email	2/22/24

State of Illinois
Capital Development Board

Request for Board Approval of Change Order

Project Number: 750-000-009

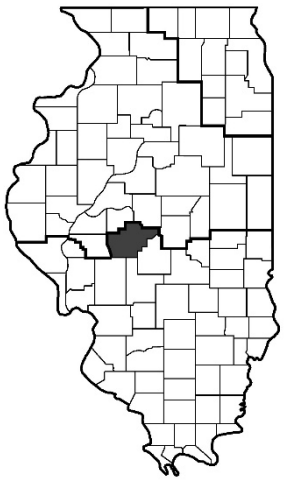
Description: Replace Plumbing
State of Illinois Capitol Complex
Springfield, Sangamon County, IL

Using Agency: Office of the Illinois Secretary of State

Architect/Engineer: RTM Engineering Consultants
521 W. Main Street, Suite 250
Belleville, IL, 62220

Total Project Budget: $27,900,000.00
Unobligated Funds: $ 2,154,659.78
Total Spent to Date: $12,512,020.62
Percent Complete: 50%

Project Manager: Craig Butler



Project History: The scope of work provides for replacement and upgrade of plumbing systems for 15 buildings at the Illinois State Capitol Complex, including domestic water systems and sanitary waste & vent systems. The project includes demolition of the existing plumbing systems and building components to access the plumbing systems and removal of existing asbestos containing materials encountered. The existing restroom facilities within the buildings are being upgraded to meet applicable codes with replacement of plumbing fixtures as needed. Additionally, a water monitoring system, water service entry two-stage cartridge filtration, and domestic hot water softeners will be installed across most of the buildings to assist with maintaining good water quality. General building restoration is required in areas of new plumbing systems. Construction commenced September 2022 with substantial completion scheduled for December 2025.

In the Howlett Building, the original scope included replacement of plumbing systems, fixtures, and toilet accessories in 29 restrooms throughout the building, one in the basement and four on each floor in the rest of the building. The existing 4-inch structural glazed block walls were to be demolished, where necessary to complete the plumbing work, and replaced with new structural glazed block to match the existing. Of the three manufacturers specified for the replacement structural glazed blocks, one has ceased operations, the second one no longer offers a matching product, and the remaining one manufacturer is recovering from a fire at their production facility and is unable to deliver the specified material in accordance with the project schedule.

Description of RFP Change: This change order will be classified as an undiscovered condition and will allow the contractor to substitute metal stud partitions and metal furring with backer board and new ceramic wall tile in lieu of the structural glazed ceramic block.

Requested Action: We are requesting board approval of change order G-29 in the amount of $273,909.51 which will allow the contractor to maintain the schedule.

Contractor	Trade	Change Order Amount	Original Contract	% Change
Henson Robinson Company	General	$273,909.51	$21,382,860.00	1.3%
Total All Change Orders		$273,909.51	$21,382,860.00	1.3%

TO: Tim Patrick, Construction Administrator
David Ealey, Regional Manager – Region 3

FROM: Craig Butler, Senior Project Manager

DATE: March 25, 2024

RE: Project #750-000-009, Replace Plumbing, State Capitol Complex, Springfield, IL
Change Order G-29

The scope includes replacement and upgrade of plumbing systems for 15 buildings at the Illinois State Capitol Complex, including domestic water systems and sanitary waste & vent systems. The project includes demolition of the existing plumbing systems and building components to access the plumbing systems and removal of existing asbestos containing materials encountered. Existing restroom facilities within the buildings are being upgraded to meet applicable codes with replacement of plumbing fixtures as needed. Additionally, a water monitoring system, water service entry 2-stage cartridge filtration, and domestic hot water softeners will be installed across most of the buildings, to assist with maintaining good water quality.

General building restoration is required in areas of new plumbing systems, especially in all restrooms. Where appropriate, coordination with the State Historic Preservation Office (SHPO) is required to preserve and/or historically replace identified materials and finishes.

Construction commenced September 2022 with Substantial Completion scheduled for December 2025. The work is currently 50% complete. Because existing restrooms must be taken out service while renovation work is occurring, maintaining the schedule is extremely critical.

In the Howlett Building, the original scope included replacement of plumbing systems, fixtures and toilet accessories at 29 restrooms throughout the building (one at the basement and 4 on each floor in the rest of the building). Existing 4-inch structural glazed block walls were to be demolished where necessary to complete the work and replaced with new structural glazed block to match the existing.

Of the 3 manufacturers specified for the replacement structural glazed block, one has ceased operations, the second one no longer offers a matching product and the remaining one is recovering from a fire at their production facility and is unable to deliver the specified material in accordance with the project schedule. This change order is to substitute metal stud partitions and metal furring with backer board and new ceramic wall tile in lieu of the structural glazed ceramic block.

State of Illinois
CAPITAL DEVELOPMENT BOARD

REQUEST FOR PROPOSAL & CHANGE ORDER

Date: January 10, 2024 RFP Number: 29

FOR CDB USE ONLY
Name:
Project No.:
Contract No.:
C.F. Locale: **Contractor #2**

1. (Contractor's Name, Address, Telephone, Fax & Attention)

Henson Robinson Company
3550 Great Norther Ave.
Springfield, IL 62791
(217)544-8451 Fax (217)544-0829
Attn: Adam Boelman
e-mail: aboelman@henson-robinson.com

CDB Project #: 750-000-009
CDB Project Name: Replace Plumbing
& Location: Illinois Capitol Complex

CDB Contract #: 23042781
Contract Work: General

2. REQUEST for change by: A/E

CDB contemplates making certain changes, additions and deletions to the work to be performed under the subject Contract. Unless otherwise indicated in the description of change, accompanying drawings and specifications, all work required shall conform to the contract documents. The Contractor is required to submit within 14 calendar days from the date herein a proposal and a detailed breakdown for this change. The proposal shall be submitted in accordance with CDB's format and the General Conditions.

3. REASON for change:
Procurement issues with the specified glazed tile block precipitated changing the drawings to replace the glazed block with tile wall covering.

4. DESCRIPTION of change including reference to drawings and specifications revised, new drawings and specifications issued.
See attached drawings for scope of changes.

5. OTHER CONTRACTS affected by this change. List Contractor's name, contract work, RFP number and amount.
N/A

IMPORTANT NOTICE
Disclosure of this information is mandatory in accordance with the Standard Documents for Construction. Failure to complete this will prevent payment for work completed and/or be a material breach of contract.

6. CONSIDERATION:
Work to be accomplished in of RFPCO. Calendar Days from Approval

The Contract Sum is INCREASED by the total sum of.....$ 273,909.51

NOTE: Unless specifically indicated above, this does not extend the contract time.

7. The change described above and on accompanying drawings and specifications and the Contractor's proposal (if applicable) are hereby incorporated by reference and made a part hereof. Having reviewed the above and determining the amount to be fair and proper the undersigned:

RECOMMEND issuance of a change order
A/E Firm Name RTM ENGINEERING CONSULTANTS
BY signature

APPROVE as to form and content:
USING AGENCY name
BY signature

COORDINATING CONTRACTOR or CONSTRUCT. MANAGER
BY signature

CDB/PM APPROVE
signature

CONTRACTOR DATE ~~2/27/2024~~ 3/21/24 JV
BY Adam Boelman print name
signature
Project Manager title

CDB APPROVE change order DATE
BY print name
signature
title

8.

FOR CDB USE ONLY	Type of Change	% Assess	Package No.	CO Date	CO No.	CO AMOUNT add (deduct)
						$

Revised August 2008

State of Illinois
Capital Development Board **Request for Board Approval of Proceed Order**

Project Number: 750-000-009

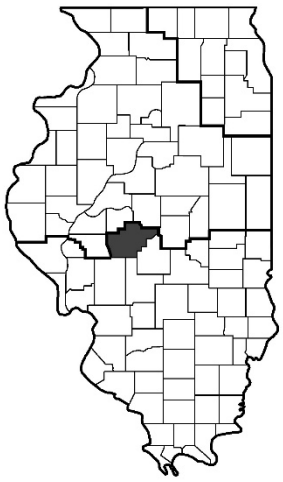
Description: Replace Plumbing
State of Illinois Capitol Complex
Springfield, Sangamon County, IL

Using Agency: Office of the Illinois Secretary of State

Architect/Engineer: RTM Engineering Consultants
521 W. Main Street, Suite 250
Belleville, IL, 62220

Total Project Budget: $27,900,000.00
Unobligated Funds: $ 2,154,659.78
Total Spent to Date: $12,512,020.62
Percent Complete: 50%

Project Manager: Craig Butler



Project History: The scope of work provides for replacement and upgrade of plumbing systems for 15 buildings at the Illinois State Capitol Complex, including domestic water systems and sanitary waste and vent systems. The project includes demolition of the existing plumbing systems and building components to access the plumbing systems and removal of existing asbestos containing materials encountered. The existing restroom facilities within the buildings are being upgraded to meet applicable codes with replacement of plumbing fixtures as needed. Additionally, a water monitoring system, water service entry two-stage cartridge filtration, and domestic hot water softeners will be installed across most of the buildings to assist with maintaining good water quality. General building restoration is required in areas of new plumbing systems. Construction commenced September 2022 with substantial completion scheduled for December 2025.

In the Howlett Building, the scope includes replacement of ceramic floor tile with new tile in 29 restrooms throughout the building, one restroom in the basement and four restrooms on each floor in the rest of the building. As-built drawings indicated the existing floor tile was installed directly on the concrete floor slab and the bidding documents reflected the same information. When demolition of the existing floor tile commenced, it was discovered that the existing restroom floor slabs were depressed, and the existing tile was installed on a sand/mud setting bed. A test of areas in one restroom indicated the setting bed will likely deteriorate when the existing tile is removed and require partial or full removal and replacement on a room-by-room basis.

Description of RFP Change: This proceed order will be classified as an undiscovered condition and will allow the contractor to remove and replace the setting bed for the new tile, as needed.

Requested Action: We are requesting board approval of proceed order G-58 in the amount of $760,500.00 which will allow the contractor to maintain schedule and track the work on a time-and-material basis.

Contractor	Trade	Proceed Order Amount	Original Contract	% Change
Henson Robinson Company	General	$760,500.00	$21,382,860.00	3.6%
Total All Proceed Orders		$760,500.00	$21,382,860.00	3.6%

TO: Tim Patrick, Construction Administrator
David Ealey, Regional Manager – Region 3

FROM: Craig Butler, Senior Project Manager

DATE: March 25, 2024

RE: Project #750-000-009, Replace Plumbing, State Capitol Complex, Springfield, IL
Proceed Order G-58

The scope includes replacement and upgrade of plumbing systems for 15 buildings at the Illinois State Capitol Complex, including domestic water systems and sanitary waste & vent systems. The project includes demolition of the existing plumbing systems and building components to access the plumbing systems and removal of existing asbestos containing materials encountered. Existing restroom facilities within the buildings are being upgraded to meet applicable codes with replacement of plumbing fixtures as needed. Additionally, a water monitoring system, water service entry 2-stage cartridge filtration, and domestic hot water softeners will be installed across most of the buildings, to assist with maintaining good water quality.

General building restoration is required in areas of new plumbing systems, especially in all restrooms. Where appropriate, coordination with the State Historic Preservation Office (SHPO) is required to preserve and/or historically replace identified materials and finishes.

Construction commenced September 2022 with Substantial Completion scheduled for December 2025. The work is currently 50% complete. Because existing restrooms must be taken out service while renovation work is occurring, maintaining the schedule is extremely critical.

This Proceed Order request concerns the replacement of ceramic floor tile in the Howlett Building restrooms with new tile. This is to occur at 29 restrooms throughout the building (one at the basement and 4 on each floor in the rest of the building). Existing as-built drawings indicated the existing floor tile was installed directly on the concrete floor slab. Bidding documents reflected the same information.

When demolition of the existing floor tile commenced, it was discovered that the existing restroom floor slabs were depressed, and the existing tile installed on a sand mud setting bed. A test of areas in one restroom indicated the setting bed will likely deteriorate when the existing tile is removed and require partial or full removal and replacement on a room-by-room basis. This Proceed Order assumes a worst-case scenario where 100% of the setting beds would need removed and replaced with a self-levelling filler.

PROCEED ORDER

State of Illinois Capital Development Board

PO No.: G-58
Date: 2/14/23
Associated RFP No. G-58

1. Contractor: (Name and Address)
Henson Robinson Company
3550 Great Northern Avenue
Springfield, IL 62711

Project No.: 750-000-009
Project Name and Location:
Upgrade Springfield, Sangamon County, Illinois

Contract No.: 23042781
Contract Work: General

2. Request for Change by: pA/E , Contractor

3. Reason for Change and Justification for the Proceed Order:
There was an unforeseen condition where the existing sand mud bed beneath the ceramic floor tiles would be damaged to the point where it would require removal should the existing ceramic mosaic tile be removed. As such, this mud bed needs to be removed and replaced. A proceed order is requested because the difficulty of this removal is unknown and would be best handled on a time and material tracking method. This applies to the restrooms in the south and west stack of the Howlett Building, that was revised pursuant to RFP-29.

4. Description Of Change In Work:
Contractor to remove the existing mud bed and replace with new, poured in place mud bed for new tile floor installation.

5. Total Value Of This Order Not To Exceed: **$** 760,500.00

6. Other Associated Proceed Orders (Number and Amount): none

Costs for work involved and change in Sum and Time (if any) will be submitted for inclusion in a RFP/CO adjusting the Contract Sum and/or Contract Time subject to the CDB procedures for processing contract changes as outlined in the Capital Development Board's Standard Documents for Construction. Approval and issuance of this document does not eliminate the requirement for the subsequent RFP/CO to be reviewed and approved by CDB to determine it to be fair and reasonable.

7. Authorization to Proceed by:

My review of this change order has determined that: the circumstances which have necessitated this change order were not reasonably foreseeable at the time the contract was signed, or the change is germane to the original contract as signed, or the change order is in the best interest of the State and authorized by law, as described. (Applicable only to a change order or a series of change orders increasing or decreasing the contract amount more than $10,000.00 or the contract time by more than 30 days.)

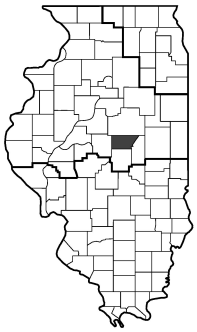
Initial				
		Contractor Representative	2/27/2024 Date	
CAB	(Up to $9,999)	Project Manager	3/6/24 Date	205 Probable Classification
03-07-2024 DE	(Up to $24,999)	Regional Manager	03-07-2024 Date	
	(Up to $49,999)	Construction Administrator	3-20-2024 Date	
	(Up to $74,999)	Deputy Director - Construction	03/22/2024 Date	
	(Up to $100,000)	Executive Director	Date	

If Board Level insert Agenda Item No. _____ **and Board Meeting Date** _____

SUBJECT: ***Staff Recommendations for Board Selection of Architect/Engineers***

Project Number	Firm/Job Description	Estimated Total Project Cost
630-497-002	Renovate Farmland Safety Rest Areas Department of Transportation District 5: Farmland Rest Area - DeWitt County *RECOMMENDED FIRMS IN ALPHA ORDER:* Design Mavens Architecture PLLC Farnsworth Group, Inc. Hurst-Rosche, Inc.	$8,650,000

A/E SELECTION COMMITTEE RECOMMENDATIONS
4/9/2024



CDB PROJECT NO: 630-497-002

PROJECT DESCRIPTION: Renovate Farmland Safety Rest Areas

PROJECT LOCATION: Department of Transportation
District 5: Farmland Rest Area - DeWitt County

APPROPRIATION AMOUNT: $8,650,000

ESTIMATED TOTAL PROJECT COST: $8,650,000

PROJECT SCOPE OF WORK:

The Farmland Rest Area-East (A5095) is a 4,820 square foot, one-story building constructed in 1995. The Farmland Rest Area-West (A5096) is a 4,820 square foot, one-story building constructed in 1995. The rest areas are located along I-74 at milepost 156 on the eastbound and westbound lanes.

The scope of work provides for renovating the restrooms, public common areas, and display kiosks, including plumbing, electrical, HVAC and lighting, and the construction of new interior functional spaces. The existing skylights will be removed, and the roof openings repaired. The potable water system shall be upgraded to improve water quality, including removal of the inoperative water pressure tank. The sanitary sewer systems shall be repaired or replaced back to the connection with the municipal collection system. The electrical generator systems and controls will be removed and not replaced.

The scope of work for the exterior renovations includes upgrading all site sidewalks to include ADA access and pathway lighting, new exercise and play areas, grading for improved site drainage, flagpoles and overall site lighting including parking lots. The new sidewalks and grading shall be sited to preserve existing mature trees where possible. Access sidewalks shall meet IDOT Bureau of Design and Environment Manual and construction and materials standards as identified in the Standard Specifications for Road and Bridge Construction.

This work may include, but is not limited to, architectural, interior design, geotechnical, civil, structural, electrical, plumbing, mechanical, and landscape design. An IDOT prequalified lighting consultant and environmental consultant must be included on the project team, https://idot.illinois.gov/doing-business/procurements/engineering-architectural-professional-services/prequalification.html

The A/E will be responsible and must utilize or be a qualified environmental firm for preparing/submitting plans and reports in accordance with Section 669 of IDOT's Standard Specifications for Road and Bridge Construction. The A/E will also be responsible for monitoring all soil excavation, ensuring contractor compliance and measurement for payment in construction.

If hazardous materials are encountered, they will be addressed outside of this contract.

This project qualifies for inclusion in the Art-in-Architecture Program.

The A/E will need to determine if any components of this project are eligible for a utility company or other grant/rebate and will be responsible for preparing and submitting the grant application in the project qualifies for the rebate.

The A/E is encouraged to include independent cost estimators on their teams to verify estimates are in line with current market conditions to avoid project bids that exceed the available funding for the project. A/E estimates should be updated and verified at each stage of the project in accordance with the Design and Construction Manual. Designers are reminded that their professional services agreements make them responsible for providing a design that is within budget and they can be held responsible for redesigning the project should bids received exceed project funding.

A combined MBE/WBE goal of 18 percent is applicable to the A/E team. Some level of participation from both MBE and WBE firms is required to satisfy this goal (this requires including one or more MBE AND one or more WBE firms on the team).

A VBE/PBE goal of 2 percent is applicable to the A/E team.

PROFESSIONAL SERVICES BULLETIN VOLUME: 309

CHANGE ORDER FOR BOARD AUTHORIZED PROCEED ORDER

Project Number	Project Description	Proceed Order Number	Total Amount of Proceed Order	Board Date Approved	Total Amount of Associated Change Order(s) & Date Executed	Value of Change Order Work Completed
120-135-069	Illinois Department of Corrections - Logan Correctional Center – Renovate Shower Rooms – Lincoln, Logan County, IL	G-07	$1,999,260.00	4/11/2023	G-007.1 $366,509.41 10/20/2023 G-007.2 $182,674.06 1/11/2024 G-007.3 $378,179.73 2/7/2024 **G-007.4** **$98,772.09** **3/11/2024** Total to Date: $1,026,135.29	18.33% 9.14% 18.92% **4.94%** Total to Date: 51.33%
120-135-069	Illinois Department of Corrections - Logan Correctional Center – Renovate Shower Rooms – Lincoln, Logan County, IL	G-8	$875,000.00	7/11/2023	G-8.1 $255,702.60 10/24/2023 **G-8.2** **$301,202.25** **3/14/2024** **Total to Date:** **$556,904.85**	29.22% **34.42%** **Total to Date:** **63.64%**
250-000-022 Phase 2	Illinois Department of Central Management Services – Renovate Building - Springfield, Sangamon County, IL	G-14	$163,414.38	1/10/2023	G-14R $128,263.51 3/14/2024	78.49%
321-015-098	Illinois Department of Human Services – Choate Mental Health & Developmental Center – Anna, Union County, IL	G-14	$500,000.00	12/12/2023	G-14A $238,400.00 2/8/2024 **G-14B** **$68,773.16** **3/4/2024** **Total to Date:** **$307,173.16**	47.7% 13.75% **Total to Date:** **61.43%**
814-010-083	Chicago State University - Jacoby Dickens Center – Repair HVAC and Pool – Chicago, Cook County, IL	G-10	$11,000,000.00	4/11/2023	G-10.1 $577,797.86 7/20/2023 **G-10.2** **$75,710.81** **3/19/2024** G-10.3 $2,225,073.54 8/3/2023	5.25% **0.69%** 20.23%

					G-10.4 $697,545.80 10/12/2023	6.34%
					G-10.5 $31,114.16 1/22/2024	0.28%
					G-10.6 $872,130.80 10/2/2023	7.93%
					G-10.7 $1,781,077.65 11/3/2023	16.19%
					G-10.8 $511,736.73 11/28/2023	4.65%
					G-10.9 $137,345.40 9/19/2023	1.25%
					G-10.10 $240,825.66 11/9/2023	2.19%
					G-10.11 $119,543.06 11/21/2023	1.09%
					G-10.12 $76,048.89 8/9/2023	0.69%
					G-10.13 $112,067.06 8/15/2023	1.02%
					G-10.14 $1,422,957.81 8/17/2023	12.94%
					G-10.15 $699,062.17 11/28/2023	6.36%
					G-10.17 $272,172.49 2/17/2024	2.47%
					Total to Date: $9,198,701.22	**Total to Date: 83.62%**
830-010-346	University of Illinois Urbana/Champaign – Masonry Reconstruction – Champaign, Champaign County, IL	G-11	$422,000.00	7/11/2023	G-11A $29,045.97 10/5/2023	6.8%
					G-11B $125,696.59 4/2/2024	**29.8%**
					Total to Date: $154,742.56	Total to Date: 36.6%

EMERGENCY PROJECT PROCEED ORDER/CHANGE ORDER REPORT

Project Number	Project Description	Proceed Order or Change Order Number	Total Amount of this Proceed Order, RFP or Mod & Date Executed	Total Amount of Associated RFPs/Mods & Date Executed	Percentage of RFP/Mod Work Completed
120-050-062	Illinois Department of Corrections – East Moline Correctional Center – Repair/Replace Tunnels – East Moline, Rock Island County, IL	PO G-1	$500,000.00 10/24/2023	G-1A $165,117.47 2/5/2024 G-1B $143,768.57 2/21/2024 **G-1C** **$2,789.09** **2/23/2024** **G-1D** **$152,814.41** **3/11/2024**	99%
120-050-062	Illinois Department of Corrections – East Moline Correctional Center – Repair/Replace Tunnels – East Moline, Rock Island County, IL	PO G-2	$1,100,000.00 12/12/2023	G-2 $247,743.79 3/11/2024	50%

Illinois Capital Development Board

Art-in-Architecture Program

Fact Sheet

WHAT IS ART-IN-ARCHITECTURE?

The Art-in-Architecture program, administered by the Capital Development Board, enriches communities and provides "for the promotion and preservation of the arts by securing suitable works of art for the adornment of public buildings constructed or subjected to major renovation by the State or which utilize State funds, and thereby reflecting the diverse cultural heritage of Illinois, with emphasis on the works of Illinois artists." 20 ILCS 3105/14

WHAT IS PUBLIC ART?

The Art-in-Architecture legislation defines art as:

- Paintings
- Prints
- Sculptures
- Graphics
- Mural decorations
- Stained glass
- Statues
- Bas reliefs
- Ornaments
- Fountains
- Ornamental gateways
- or other creative works that reflect form, beauty, and aesthetic perceptions.

HOW IS THE PROGRAM FUNDED?

The Art-in-Architecture (AIA) enabling legislation directs that "the Capital Development Board (CDB) shall set aside 1/2 of 1 percent of the amount authorized and appropriated for construction or reconstruction of each public building financed in whole or in part by State funds."

WHO IS ELIGIBLE TO APPLY FOR A COMMISSION?

All professional artists living and working in Illinois are eligible to apply for commission opportunities. The staff, faculty, or employees of the using agency are not eligible to apply.

HOW ARE COMMISSIONS ANNOUNCED?

AIA commissions are announced on the Commission Opportunities section of the CDB website.

HOW IS WORK SELECTED?

Artists are selected and commissions are awarded based upon the recommendations of a Fine Art Review Committee made up of representatives of the Illinois Arts Council and Illinois State Museum, the project architect, and a representative of the using agency where the artwork will be located.

WHAT IS A FINE ART REVIEW COMMITTEE (FARC)

The FARC is appointed on a project-by-project basis to review and recommend artists and/or works of art for final selection. This group is subject to the Open Meetings Act. Its members are unpaid and must complete State of Illinois Ethics Training requirements. It is made up of the

- designing architect
- Illinois Arts Council designee
- Illinois State Museum designee
- using agency designee
- AIA Coordinator (non-voting)

The final selection is made by the Chair of the Illinois Arts Council.

WHERE CAN I FIND MORE INFORMATION?

The AIA Policy and Procedure Manual, contracts, contact information and other details can be found on the Capital Development Board website.

www.illinois.gov/cdb/professionalgrowth/art

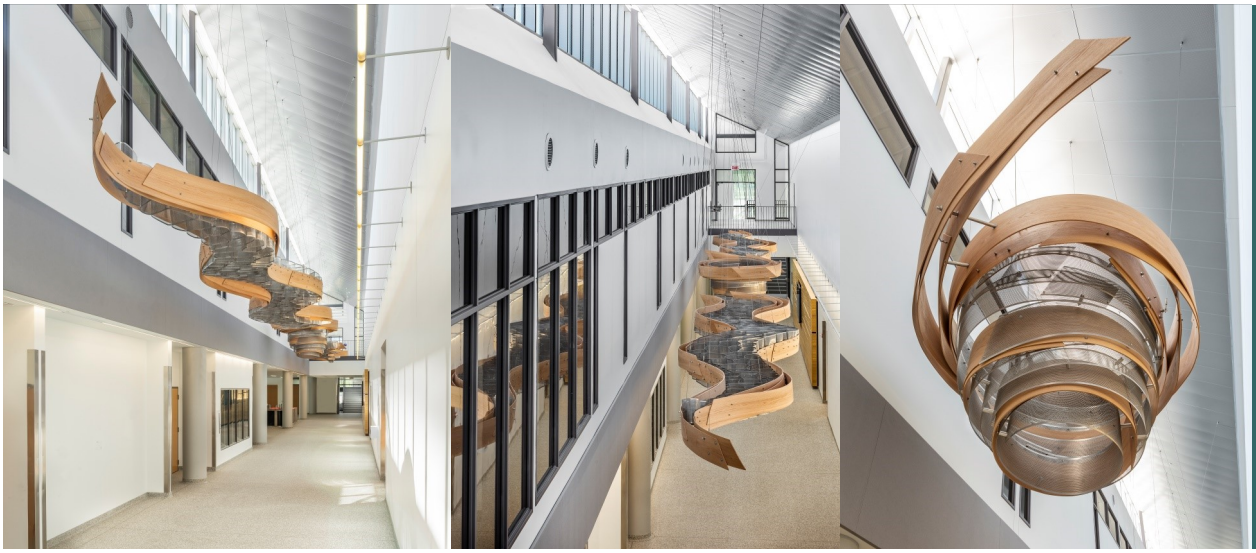
Art-in-Architecture Completed Projects

User: Chicago Veterans Home
Location: Chicago
Title: *Hand to Hand*
Artist: Indira Johnson
Budget: $281,000.00
Description: Sculpted and hand-painted fiberglass panels. Each panel marks the entrance to a group living area within the Veterans Home.
Size: each panel is ~15' x 5.5'

User: Lincoln's Challenge Academy
Location: Tuscola
Title: *Course Correction*
Artist: Krivanek + Breaux Art + Design
Budget: $120,000.00
Description: Hinged aluminum powder-coated panels with words evoking the Academy mission
Size: 40' x 7' x 1.5'

Art-in-Architecture Completed Projects

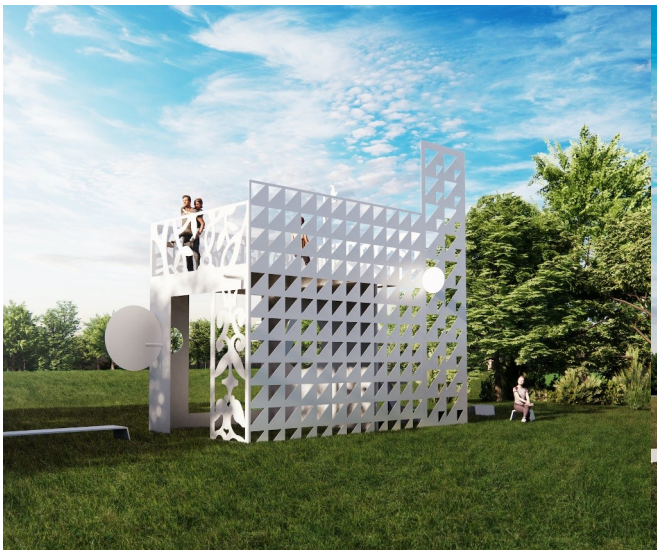
User: Southern Illinois University
Location: Murphysboro
Title: *Velocity*
Artist: John Medwedeff
Budget: $178,250.00
Description: Welded and painted stainless steel
Size: 27' x 22' x 10'



User: Olive-Harvey College/ City Colleges of Chicago
Location: Chicago
Title: *Conveyor*
Artist: Barbara Cooper
Budget: $194,715.00
Description: White oak veneer and perforated steel
Size: 122' x 5' x 7'

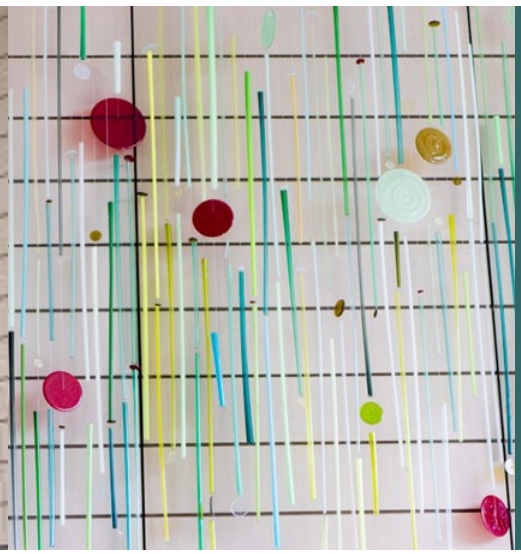
User: College of Lake County
Location: Grayslake
Title: *Mystery Molecules*
Artist: Lynn Basa
Budget: $81,800.00
Description: Fiberglass spheres and printed vinyl mural affixed to CMU substrate
Size: 25' x 18' x 1'

Art-in-Architecture Completed Projects



User: Governors State University/Nathan Manilow Sculpture Park
Location: University Park
Title: *Avian Station*
Artist: Bernard Williams
Budget: $54,000.00
Description: In progress. Painted steel sculpture/bird watching platform
Size: 22' x 12' x 22'

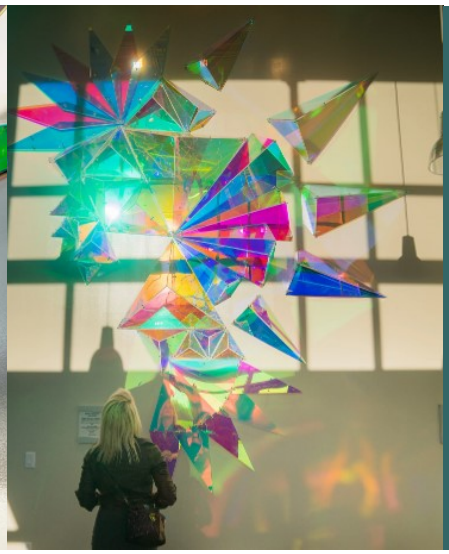
User: Parkland College Student Services Center
Location: Champaign
Title: *Taking Flight*
Artist: Ann Coddington
Budget: $72,710.00
Description: 505 slip-cast, glazed, ceramic birds hung from atrium ceiling with steel cable. The 12 species of birds were cast from woven string bird forms
Size: 35' x 20' x 8'



User: University of Illinois Electrical & Computer Engineering Building
Location: Urbana
Title: *Rhythm & Measure*
Artist: Holly Wolf-Mattick
Budget: $54,970.00
Description: Hand-blown glass tubes and hot-worked discs hanging on cables that are suspended from metal panels on a terracotta wall
Size: 14' x 36' x .75'

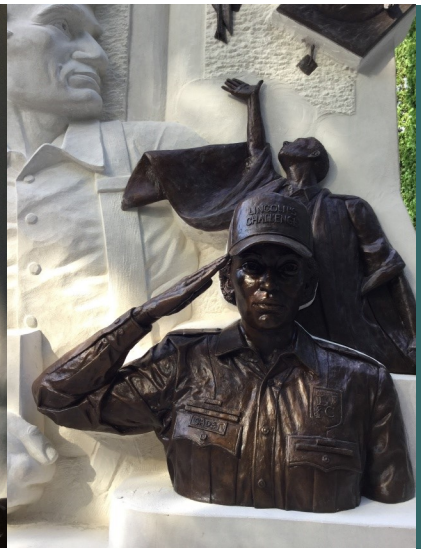
Art-in-Architecture Completed Projects





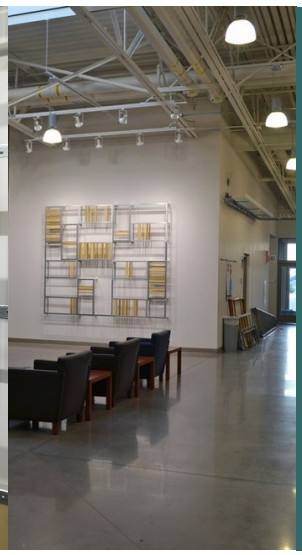
User: Spoon River College
Location: Canton
Title: *Emergence*
Artist: Davis McCarty
Budget: $17,500.00
Description: Three-dimensional acrylic and dichroic film forms with fractal shapes routed into the acrylic
Size: 35' x 14' x .75'





User: Lincoln's Challenge Academy
Location: Tuscola
Title: *E Pluribus Unum*
Artist: David Seagraves
Budget: $58,000.00
Description: Carved Indiana limestone bust of Abraham Lincoln and cast bronze images of LCA cadets
Size: 8' x 5' x 1'





User: Parkland College Applied Technology Center
Location: Champaign
Title: *Composite: 12*
Artist: Jason Peot
Budget: $41,000.00
Description: Aluminum, wood, and light sculpture that represents the 12 counties and their populations that make up the College District
Size: 8' x 9.5' x .33'

Art-in-Architecture Completed Projects

User: University of Illinois Integrated Bioprocessing Research Lab
Location: Urbana
Title: *Poetics of Process*
Artist: Lynn Basa
Budget: $100,000.00
Description: 3/8" epoxy terrazzo floor of leaf forms in yellow, blue, and green that coalesce and transform from organic to geometric shapes
Size: ~1200 square feet

User: University of Illinois Lincoln Hall
Location: Urbana
Title: *City Rain*
Artist: Suzanne Keith Loechl
Budget: $10,000.00
Description: A five-part, oil-on-board painting series
Size: Various. Total installation is 4' x 12'

User: University of Illinois Lincoln Hall
Location: Urbana
Title: *LifeSaver Movement in e*
Artist: Yvette Kaiser Smith
Budget: $30,000.00
Description: Crocheted fiber-glass roving panels coated with hard finish polyester resin. Each panel +contains five binary numbers.
Size: Thirty panels. Each panel is ~30" x 29" x 3"

Art-in-Architecture Completed Projects

User: Abraham Lincoln Presidential Museum
Location: Springfield
Title: *Beacon of Endurance*
Artist: Krivanek + Breaux Art + Design
Budget: $210,000.00
Description: A beacon that both symbolizes and articulates Lincoln's significance to American life and culture in his own words and words chosen by the community.
Size: 24'x15'x16'

FY24 CDB BOARD MEETING SCHEDULE

DATE	TIME	LOCATION
July 11, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
August 8, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
September 12, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
October 10, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
November 14, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
December 12, 2023	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
January 9, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
February 13, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
March 12, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
April 9, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, and Video Conference
May 14, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, Peoria, and Video Conference
June 11, 2024	11:00 a.m.	Chicago, Springfield, Collinsville, Peoria, and Video Conference