

## **Opening Statement**

I have been through this process recently with the renovation of the Westport Town Hall, which some members of the town board believed couldn't be saved. The town worked with a small group of volunteers, who formed an Advisory Committee. The Advisory Committee included the town's Code Officer, George Hainer; Alan Hipps of the Housing Assistance Program of Essex County; Nancy Page, town board member; Bill Johnston, retired County Planning Director; John MacWilliam, resident; Jim Dougan of Essex County DPW; and the man who ended up being the contractor for the renovation project, Schell McKinley of High Peak Carpentry. I have asked some of the same people to help me to present the case for the renovation of the CCE building. They are the "WE" referred to in the attached Proposal and Cost Documents.

## **PowerPoint Presentation**

### **Folder with the following:**

- **Proposal**
- **Cost estimate**
- **Code report**
- **Schoder Rivers report**
- **PowerPoint**

## **Closing Statement**

The loss or retention of a building can have a profound effect on a place. Westport experienced this in the mid-1960s when a 19<sup>th</sup> century hotel in the heart of the Village was demolished. Community life centered around the hotel, and when it was gone the loss was keenly felt and a period of decline followed in the business center. I'm sure that some of you have faced this in your own community. Think of what Port Henry would be like without the Lee House. Former Mayor Bob Brown said that if the Lee House were gone "I wouldn't want to live here anymore." The loss of the CCE building would cripple the Fairgrounds both physically for what it adds to the character of the fairgrounds and functionally for what it provides for the agricultural community that is linked to the fairgrounds. The CCE building and the fairgrounds are the agricultural hub of Essex County. Don't forget that the fair's full name is Agricultural Fair. We have shown that the building can be renovated for far less than the cost of new construction. I urge you to halt the wheels that are turning in the direction of demolition and reverse course. Start the wheels turning in the direction of renovation.

**Ike Tyler, May 3, 2021**

## **Proposal to Renovate the Cornell Cooperative Extension Building At the Essex County Fairgrounds**

The 1924, National Register-listed, Cornell Cooperative Extension Building at the Essex County Fairgrounds is in need of extensive renovation. An estimate of \$2.3 million to renovate the building is being used to justify its demolition. But by eliminating unnecessary project options and modifying the approach to its renovation, we will show that the entire building can be renovated for less than \$1.5 million, and that renovation has greater economic and community value than new construction.

**Our Proposal:** The Cornell Cooperative Extension Building is an historic building that is structurally sound and adaptable for a host of modern uses. Our proposed Scope of Work, based on the 2008 Crawford & Stearns, Architects plans, will safely renovate the entire building for less than \$1.5 million - far less than the frequently cited \$2.3 million price tag. At \$255/square foot this compares favorably to a typical \$370/square foot cost for new public construction projects. Renovation, therefore, is the most cost effective option and will provide more space for less cost. A recent illustration of this compares the Westport Town Hall renovation (\$150/square foot) to the construction of the new Nutrition Building (\$370/square foot, excluding the expense of the commercial kitchen appliances).

**Community Value:** Besides being less expensive, renovation will enhance the Essex County Fairgrounds' most unique feature and its biggest asset: the beauty and picturesque character of its late 19th and early 20th century buildings. Along with its setting overlooking Lake Champlain and the Green Mountains, this rare collection of buildings is the fairgrounds' greatest asset as a potential location for events.

Renovation of the entire CCE building will help restore the fairgrounds as the center of agricultural activity for Essex County. It will provide space to house offices for the new fairgrounds Manager, the Fair Board and the Cornell Cooperative Extension Service. The CCE building and adjacent grounds will come alive again with activity: meetings and training programs, and events enjoyed by many users. CCE will have space for its staff and programs at a location that is in keeping with the organization's roots in agriculture, nutrition, environmental education, and youth services. The building's year round operations, commercial kitchen and large meeting space can act as a springboard for fairground events throughout the year.

**Our Process:** We used reports by Crawford & Stearns (2005 and 2008) and Schoder Rivers Associates (2008) to form the basis for the Scope of Work. An experienced local contractor inspected the building and offered suggestions as to how to reduce the cost for renovation through alternative, cost-saving actions. Several contractors provided estimates for components of the renovation. We used the experience and costs from the recent renovation of the Westport Town Hall, a building of similar size, age, and renovation needs as the Cornell Cooperative Extension Building. We based the amount for the commercial kitchen on two new commercial kitchens in the area at the HUB on the Hill in Essex and the Whallonsburg Grange.

**Cost Consultants:** (1) Schell McKinley, a building contractor (High Peak Carpentry) in the Elizabethtown, Westport, Essex, Willsboro area with 47+ years experience in new construction, additions, and building renovation. Schell was the contractor for the Westport Town Hall renovation. Schell has managed a number of Habitat for Humanity home-building projects; has extensive experience coordinating contractors and volunteers; and is skilled in economically producing a high-value product. (2) George Hainer, Town of Westport Code Enforcement Officer with 27 years of building code training

and building code administration experience. (3) Kevin Boyle, owner of Linear Art Studio, a highly skilled woodworker specializing in window restoration and fine carpentry. (4) Ethan French, owner of Boquet Thermal Solutions, a local business specializing in geothermal and air sourced heating and cooling.

### **Cost Saving Measures:**

- Use code flexibility for historic structures: As a National Register of Historic Places-listed building, the CCE building qualifies for greater flexibility in respect to the building code and the energy code. This flexibility can reduce the cost of renovation by not holding the building to the same standards as new construction.
- Leave exterior walls intact: One of the significant cost components for renovation was the recommendation by Crawford and Stearns to remove the siding, insulate, install sheathing, and replace the siding. In a much less expensive option, the walls can be insulated from the inside, vapor barrier installed, and built-out to increase thickness of insulation. If needed, shear-bracing can be added. Schoder Rivers in their Structural Review noted: *“The first and second floor framing appeared to be sound with minimal deflections noted.”*
- Eliminate the full basement and reconstruction of existing foundation piers: A second significant cost component concerns the building foundation – (i) whether or not the existing system of piers is adequate; and (ii) whether or not to provide a full basement. Eliminating the inessential full basement is a major cost savings. Spray foam insulation can be applied from under the building. The existing piers are adequate and do not need to be reconstructed. Schoder Rivers stated: *“The foundation wall in the partial basement and the isolated concrete piers at the crawl space appeared to be in good condition with no indication of significant settlement or other displacement.”* Schell McKinley checked the floor’s trueness with a transit, and found it to be level. The pier system has been deemed sound by the county’s structural engineer, and the absence of movement over the past 100 years has been verified by visual inspection. In an existing building, the building code does not require that the piers be rebuilt to current standards. Schoder Rivers did discover damage to sills in several locations, which could be attributed to roof runoff and poor drainage away from the building. The county repaired the damaged sills in 2008.
- No need for remedial work to roof framing. Schoder Rivers stated: *“Roof framing consists of field-fabricated timber trusses.”* The report gives no indication that the roof framing is inadequate. Schell McKinley looked into the attic and observed that the roof was supported with trusses constructed from 2 x 6 lumber. Schoder Rivers further stated: *“No rotting of the structural framing in the attic was evident as a result of prior roof leaks.”*
- Provide accessibility to the second floor by a lift instead of elevator. A lift was installed in the Westport Town Hall. The cost of carpentry and equipment is approximately \$40,000, a huge savings as compared to installing an elevator.
- Provide heating and cooling with a high efficiency, cold climate heat pump system, powered by solar electric panels paid for in part with state incentives, as at the Westport Town Hall.
- Eliminate the expensive north porch conversion.

## COST ESTIMATE FOR RENOVATION

<b>Total Base Contractor Cost (Items 1 – 11 below)</b>	<b>\$ 740,000</b>
<b>Additional Cost for a Public Works Project</b>	<b>\$ 400,000</b>
<b>Overhead and Profit (20%)</b>	<b><u>\$ 228,000</u></b>
<b>Sub-Total Construction</b>	<b>\$1,368,000</b>
<b>Architectural Planning</b>	<b>\$ 100,000</b>
<b>TOTAL</b>	<b>\$1,468,000</b>
<b>Cost per Square Foot \$255</b>	

The following detailed cost estimate was prepared by Schell McKinley. He approached the cost estimate preparation as he would if he were bidding on a construction job. He estimated materials and man-hours for general construction, and obtained estimates from vendors and sub-contractors.

### **1. Porch and Portico; New Roof on North Portico.**

Remove old roof and replace with screw down roof similar to the north porch. Scrape all trim and replace any rotten or damaged trim. Replace column bases to match existing where needed. Replace damaged flooring but simply scrape and paint existing flooring unless damaged.

**Total Porch and Portico: \$50,000**

### **2. Basement:**

Insulate basement walls with 3" closed cell foam with framed wall and drywall finish taped but no paint.

Foam insulation 900 sf @\$4	\$3,600
Wall frame 90 ft @\$12	\$1,080
Drywall 900 ft @\$2	\$1,800

**Total Basement: \$6,480**

### **3. Crawlspace:**

Remove fiberglass insulation and perimeter foam and dispose. Dig access channels. Spray 4" closed cell foam, build insulated chase if needed. Install painted lattice if desired.

Demolition	\$ 2,000
Excavating channels—14-2ft x20ft trenches @\$600	\$ 8,400
Closed cell foam- 2250x4x1.25	\$11,250
Insulated chase 50 ft @20	\$ 1,000
Lattice 50ft@20	\$ 1,000

**Total Crawlspace: \$23,650**

### **4. Façade restoration and Energy Conservation:**

Scrape all loose paint and replace all severely damaged siding and trim, epoxy consolidant and filler should be used where possible to preserve existing trim. Prime bare wood and paint with two coats of good quality paint. Prime all knots with two coats of shellac before priming. Use recommended lead containment procedures. Any replacement siding or trim should closely match existing. Replace all windows except arched windows. Build storm windows for arched windows and replace window and door assemblies at porticos.

Wood repair and replacement	\$40,000
Paint with preparation	\$60,000
Replacement windows (\$47,000 cost of replacements)	\$70,000
Portico assemblies	\$60,000

**Total Façade and Energy Conservation: \$230,000**

### 5. Accessibility:

Installation of lift. Expansion of back stair. Handicap bathroom upstairs. Widen corridor on second floor for access to rooms.

Lift and associated frame	\$40,000
Back stairs	\$20,000
Handicap bathroom upstairs	\$10,000
Widen corridor	\$10,000

**Total Accessibility: \$80,000**

### 6. Sitework:

Lower grade as needed. Plantings or grass as needed.

Lower grade	\$1,000
Plantings	\$9,000

**Total Sitework: \$10,000**

### 7. Interior work:

Remove dropped ceilings and any damaged original ceiling surfaces. Install new drywall, taped and painted, in all ceilings except beadboard ceilings.

Insulate all exterior walls with 2" foam, 3/4" furring and drywall, taped and painted. Interior wall finish removed where necessary for utilities.

New wiring for electrical and alarm systems to be run in new walls. Repair or replace all ceilings. Remove trim, preserving if possible and reinstall over new jamb extensions. Repair or replace interior doors.

Insulating exterior walls	\$16,000
Insulating ceiling	\$10,000
Drywall on ceiling and walls	\$25,000
Doors 12@1,400	\$16,800
Interior trim	\$25,000
Interior contingency	\$22,070

**Total Interior: \$114,870**

### 8. Electric and Fire Alarm System:

Install 400 amp service (or an additional 200 amp service). Replace all ungrounded wiring, bring system up to code, replace lighting fixtures as necessary. Increase in amperage to accommodate heat pump heating and air conditioning.

**Total Electrical: \$70,000**

### 9. Heating and Air Conditioning System:

Install new system utilizing heat pumps to heat and cool building

**Total Heating and Cooling: \$90,000**

### 10. Plumbing:

**Budget amount for system upgrades if needed: \$15,000**

### 11. Commercial Kitchen

**Allowance for commercial kitchen: \$50,000**

**Other Cost Saving Options Not Included in Above Estimates:** (i) Use of Force Account. This is not an all-or-nothing decision. The project could be divided into phases, where preliminary work is undertaken by Force Account; or divided into discrete components, where some work is undertaken by Force Account and some work is undertaken by private contractors. (ii) Use of in-mate labor. (iii) Use of community volunteers for tasks such as interior painting, for example.



## CODE REVIEW SUMMARY

Under the Building Code of New York State, the Agricultural Center Building qualifies under the definition of an historic building. This means that it can take advantage of the provisions allowed for historic buildings in addition to the allowances specified for the rehabilitation of existing buildings, which are not necessarily historic. The chapter applicable to historic buildings is K10, the others are K4 Repairs, K5 Renovations, K6 Alterations, K7 Reconstruction, K8 Change of Occupancy, and K9 Additions. In short, the set of master plan drawings contained herein show proposed project components, which include repairs, renovations and alterations. The proposed work does not meet the definitions of reconstruction, change of occupancy, nor additions.

To set the stage for this code review summary, the Agricultural Center Building contains A3 (Assembly) and some B (Business) occupancy classification on the first floor and B on the second floor with a small meeting room as an ancillary use. The type of construction is Type V, called light wooden framing in previous New York State Building codes. The subcategory is B, unprotected, as the bearing walls and partitions, first floor ceiling beams and the roof assembly are all unrated/unprotected.

**Chapter K10:** See attached appendix.

The building has been designated as historic because it is a contributing resource in the National Register listed under the Essex County Fairgrounds Historic District. As such, a written report can be filed with the Code Enforcement Officer identifying “each required safety feature in compliance with this chapter and where compliance with other chapters of this appendix would be damaging to the contributing historic features.”

**Accessibility:** “Site arrival” and “access to public spaces” have already been substantially provided. One main assembly space entrance will be made accessible via the north portico. Accessible toilet rooms will be installed and an enclosed lift will serve the second floor level. See attached brochure in the appendix.

**Repairs and replacements** are permitted with like materials.

**Means of egress:** The second floor exit way has dimensions sufficient for that level’s occupancy.

**Door swings:** Exit doors swing outward now.

**Interior finishes:** Historic finishes are accepted except for occupancy 3A, for which exits must have Class C flame spread classification or better. The assembly space has an historic bead board finish.

**Stairway enclosures:** “May be omitted in a historic building where such stairway serves only one adjacent floor.” The stairs are already enclosed and, according to this, can be opened up.

**One-hour rated construction:** Granted for lath and plaster. Second floor has already been sheet-rocked.

**Sprinkler alternative:** “If building does not conform to construction requirements specified in other chapters of this appendix...”.

**Door hardware:** Must meet intent of ICC/ANSI117.1 and “not create a life safety hazard.”

APPLICABLE OTHER CHAPTERS:

**Chapter K4 • REPAIRS:** Mostly plumbing, glazing, electrical, and mechanical/heating requirements. See attached appendix.

**Chapter K5 • RENOVATIONS:** New finishes other than paint, mechanical, and plumbing requirements. See attached appendix.

**Chapter K6 • ALTERATIONS:** Structural, electrical, accessibility, plumbing, and mechanical requirements. See attached appendix.



## CHAPTER 12

# HISTORIC BUILDINGS

### SECTION 1201 GENERAL

**1201.1 Scope.** This chapter is intended to provide means for the preservation of *historic buildings*. *Historic buildings* shall comply with the provisions of this chapter relating to their *repair, alteration, relocation and change of occupancy*.

[BS] **1201.2 Report.** A *historic building* undergoing *alteration or change of occupancy* shall be investigated and evaluated. If it is intended that the building meet the requirements of this chapter, a written report shall be prepared and filed with the *building official* by a *registered design professional* where such a report is necessary in the opinion of the *building official*. Such report shall be in accordance with Chapter 1 and shall identify each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be prepared. Additionally, the report shall describe each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.

**1201.3 Special occupancy exceptions—museums.** Where a building in Group R-3 is used for Group A, B or M purposes such as museum tours, exhibits, and other public assembly activities, or for museums less than 3,000 square feet (279 m<sup>2</sup>), the *building official* may determine that the occupancy is Group B where life safety conditions can be demonstrated in accordance with Section 1201.2. Adequate means of egress in such buildings, which may include a means of maintaining doors in an open position to permit egress, a limit on building occupancy to an occupant load permitted by the means of egress capacity, a limit on occupancy of certain areas or floors, or supervision by a person knowledgeable in the emergency exiting procedures, shall be provided.

[NY] **1201.4 Flood hazard areas.** In *flood hazard areas*, if all proposed work, including *repairs*, work required because of a *change of occupancy*, and *alterations*, constitutes *substantial improvement*, then the *existing building* shall comply with Section 1612 of the *Building Code of New York State*, or Section R322 of the *Residential Code of New York State*, as applicable.

**Exception:** If a *historic building* will continue to be a *historic building* after the proposed work is completed, then the proposed work is not considered a *substantial improvement*. For the purposes of this exception, a *historic building* is any of the following:

1. Listed or certified as eligible for listing by the State Historic Preservation Officer or the Keeper of the

National Register of Historic Places, in the National Register of Historic Places.

2. Designated as historic under an applicable state or local law.
3. Certified as a contributing resource within a National Register, state designated or locally designated historic district.

**1201.5 Unsafe conditions.** Conditions determined by the *building official* to be *unsafe* shall be remedied. Work shall not be required beyond what is required to remedy the *unsafe* conditions. \*\*

### SECTION 1202 REPAIRS

**1202.1 General.** Repairs to any portion of a *historic building* or structure shall be permitted with original or like materials and original methods of construction, subject to the provisions of this chapter. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location. \*

**1202.2 Replacement.** Replacement of existing or missing features using original materials shall be permitted. Partial replacement for *repairs* that match the original in configuration, height, and size shall be permitted.

Replacement glazing in hazardous locations shall comply with the safety glazing requirements of Chapter 24 of the *Building Code of New York State*.

**Exception:** Glass block walls, louvered windows, and jalousies repaired with like materials. \*

### SECTION 1203 FIRE SAFETY

**1203.1 Scope.** *Historic buildings* undergoing *alterations, changes of occupancy*, or that are moved shall comply with Section 1203.

**1203.2 General.** Every *historic building* that does not conform to the construction requirements specified in this code for the occupancy or use and that constitutes a distinct fire hazard as defined herein shall be provided with an *approved* automatic fire-extinguishing system as determined appropriate by the *building official*. However, an automatic fire-extinguishing system shall not be used to substitute for, or act as an alternative to, the required number of exits from any *facility*.

**1203.3 Means of egress.** Existing door openings and corridor and stairway widths less than those specified elsewhere in this code may be *approved*, provided that, in the opinion of the *building official*, there is sufficient width and height for a person to pass through the opening or traverse the means of



## HISTORIC BUILDINGS

egress. Where *approved* by the *building official*, the front or main exit doors need not swing in the direction of the path of exit travel, provided that other *approved* means of egress having sufficient capacity to serve the total occupant load are provided.

**1203.4 Transoms.** In fully sprinklered buildings of Group R-1, R-2 or R-3 occupancy, existing transoms in corridors and other fire-resistance-rated walls may be maintained if fixed in the closed position. A sprinkler shall be installed on each side of the transom.

**1203.5 Interior finishes.** The existing interior finishes shall be accepted where it is demonstrated that they are the historic finishes.

**1203.6 Stairway enclosure.** In buildings of three stories or less, exit enclosure construction shall limit the spread of smoke by the use of tight-fitting doors and solid elements. Such elements are not required to have a fire-resistance rating.

**1203.7 One-hour fire-resistant assemblies.** Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood or metal lath and plaster.

**1203.8 Glazing in fire-resistance-rated systems.** Historic glazing materials are permitted in interior walls required to have a 1-hour fire-resistance rating where the opening is provided with *approved* smoke seals and the area affected is provided with an automatic sprinkler system.

**1203.9 Stairway railings.** Grand stairways shall be accepted without complying with the handrail and guard requirements. Existing handrails and guards at all stairways shall be permitted to remain, provided they are not structurally *dangerous*.

**1203.10 Guards.** Guards shall comply with Sections 1203.10.1 and 1203.10.2.

**1203.10.1 Height.** Existing guards shall comply with the requirements of Section 404.

**1203.10.2 Guard openings.** The spacing between existing intermediate railings or openings in existing ornamental patterns shall be accepted. Missing elements or members of a guard may be replaced in a manner that will preserve the historic appearance of the building or structure.

**1203.11 Exit signs.** Where exit sign or egress path marking location would damage the historic character of the building, alternative exit signs are permitted with approval of the *building official*. Alternative signs shall identify the exits and egress path.

**1203.12 Automatic fire-extinguishing systems.** Every *historic building* that cannot be made to conform to the construction requirements specified in the *Building Code of New York State* for the occupancy or use and that constitutes a distinct fire hazard shall be deemed to be in compliance if provided with an *approved* automatic fire-extinguishing system.

**Exception:** Where the *building official* approves an alternative life-safety system: *FIRE ALARM SMOKE DETECTION SYSTEM*

SECTION 1204  
CHANGE OF OCCUPANCY

**1204.1 General.** *Historic buildings* undergoing a *change of occupancy* shall comply with the applicable provisions of Chapter 10, except as specifically permitted in this chapter. Where Chapter 10 requires compliance with specific requirements of Chapter 7, Chapter 8 or Chapter 9 and where those requirements are subject to the exceptions in Section 1202, the same exceptions shall apply to this section.

**1204.2 Building area.** The allowable floor area for *historic buildings* undergoing a *change of occupancy* shall be permitted to exceed by 20 percent the allowable areas specified in Chapter 5 of the *Building Code of New York State*.

**1204.3 Location on property.** Historic structures undergoing a change of use to a higher-hazard category in accordance with Section 1011.6 may use alternative methods to comply with the fire-resistance and exterior opening protective requirements. Such alternatives shall comply with Section 1201.2.

**1204.4 Occupancy separation.** Required occupancy separations of 1 hour may be omitted where the building is provided with an *approved* automatic sprinkler system throughout.

**1204.5 Roof covering.** Regardless of occupancy or use group, roof-covering materials not less than Class C, where tested in accordance with ASTM E108 or UL 790, shall be permitted where a fire-retardant roof covering is required.

**1204.6 Means of egress.** Existing door openings and corridor and stairway widths less than those that would be acceptable for nonhistoric buildings under these provisions shall be *approved*, provided that, in the opinion of the *building official*, there is sufficient width and height for a person to pass through the opening or traverse the exit and that the capacity of the exit system is adequate for the occupant load, or where other operational controls to limit occupancy are *approved* by the *building official*.

**1204.7 Door swing.** Where *approved* by the *building official*, existing front doors need not swing in the direction of exit travel, provided that other *approved* exits having sufficient capacity to serve the total occupant load are provided.

**1204.8 Transoms.** In corridor walls required by these provisions to be fire-resistance rated, existing transoms may be maintained if fixed in the closed position, and fixed wired glass set in a steel frame or other *approved* glazing shall be installed on one side of the transom.

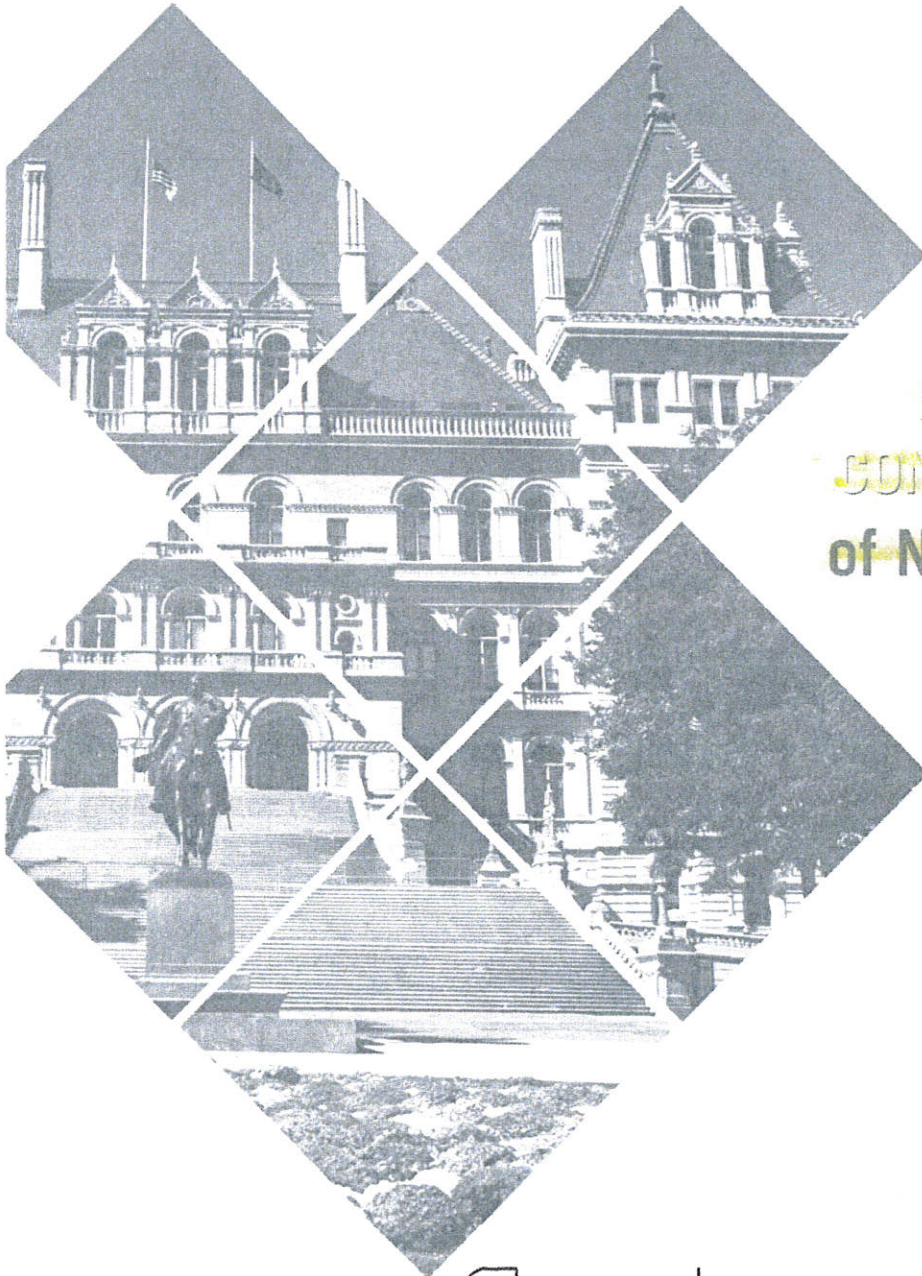
**Exception:** Transoms conforming to Section 1203.4 shall be accepted.

**1204.9 Finishes.** Where interior finish materials are required to have a flame spread index of Class C or better, when tested in accordance with ASTM E84 or UL 723, existing nonconforming materials shall be surfaced with *approved* fire-retardant paint or finish.

**Exception:** Existing nonconforming materials need not be surfaced with an *approved* fire-retardant paint or finish where the building is equipped throughout with an automatic sprinkler system installed in accordance with the *Building Code of New York State* and the



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Guidance regarding tense, gender and plurality of defined terms as well as guidance regarding terms not defined in this code is provided.

**Chapter 3 General Requirements.** Chapter 3 specifies the climate zones that will serve to establish the exterior design conditions. In addition, Chapter 3 provides interior design conditions that are used as a basis for assumptions in heating and cooling load calculations, and provides basic material requirements for insulation materials and fenestration materials.

Climate has a major impact on the energy use of most buildings. The code establishes many requirements such as wall and roof insulation *R*-values, window and door thermal transmittance (*U*-factors) and provisions that affect the mechanical systems based on the climate where the building is located. This chapter contains information that will be used to properly assign the building location into the correct climate zone and is used as the basis for establishing or eliminating requirements.

**Chapter 4 Energy Efficiency.** Chapter 4 of each set of provisions contains the technical requirements for energy efficiency.

**Commercial Energy Efficiency.** Chapter 4 of the ECCCNYS—Commercial Provisions contains the energy-efficiency-related requirements for the design and construction of most types of commercial buildings and residential buildings greater than three stories in height above grade. This chapter defines requirements for the portions of the building and building systems that impact energy use in new commercial construction and new residential construction greater than three stories in height, and promotes the effective use of energy. In addition to energy conservation requirements for the building envelope, this chapter contains requirements that impact energy efficiency for the HVAC systems, the electrical systems and the plumbing systems. It should be noted, however, that requirements are contained in other codes that have an impact on energy conservation. For instance, requirements for water flow rates are regulated by the *Plumbing Code of New York State*.

**Residential Energy Efficiency.** Chapter 4 of the ECCCNYS—Residential Provisions contains the energy-efficiency-related requirements for the design and construction of residential buildings regulated under this code. It should be noted that the definition of a *residential building* in this code is unique for this code. In this code, a *residential building* is a detached one- and two-family dwelling and multiple single-family dwellings as well as R-2, R-3 or R-4 buildings three stories or less in height. All other buildings, including residential buildings greater than three stories in height, are regulated by the energy conservation requirements in the ECCCNYS—Commercial Provisions. The applicable portions of a residential building must comply with the provisions within this chapter for energy efficiency. This chapter defines requirements for the portions of the building and building systems that impact energy use in new residential construction and promotes the effective use of energy. The provisions within the chapter promote energy efficiency in the building envelope, the heating and cooling system and the service water heating system of the building.

**Chapter 5 Existing Buildings.** Chapter 5 of each set of provisions contains the technical energy efficiency requirements for existing buildings. Chapter 5 provisions address the maintenance of buildings in compliance with the code as well as how additions, alterations, repairs and changes of occupancy need to be addressed from the standpoint of energy efficiency. Specific provisions are provided for historic buildings.

**Chapter 6 Referenced Standards.** The code contains numerous references to standards that are used to regulate materials and methods of construction. Chapter 6 contains a comprehensive list of all standards that are referenced in the code. The standards are part of the code to the extent of the reference to the standard. Compliance with the referenced standard is necessary for compliance with this code. By providing specifically adopted standards, the construction and installation requirements necessary for compliance with the code can be readily determined. The basis for code compliance is, therefore, established and available on an equal basis to the building official, contractor, designer and owner.



## DEFINITIONS

**HEATED SLAB.** Slab-on-grade construction in which the heating elements, hydronic tubing, or hot air distribution system is in contact with, or placed within or under, the slab.

**HIGH-EFFICACY LAMPS.** Compact fluorescent lamps, light-emitting diode (LED) lamps, T-8 or smaller diameter linear fluorescent lamps, or other lamps with an efficacy of not less than the following:

1. 60 lumens per watt for lamps over 40 watts.
2. 50 lumens per watt for lamps over 15 watts to 40 watts.
3. 40 lumens per watt for lamps 15 watts or less.

**[NY] HISTORIC BUILDING.** The term *historic building* means an existing building or structure that:

1. is listed in the New York State Register of Historic Places, either individually or as a contributing building to a historic district; or
2. is listed in the National Register of Historic Places, either individually or as a contributing building to a historic district; or
3. has been determined to be eligible for listing in either the New York State or National Register of Historic Places, either individually or as a contributing building to a historic district, by the New York State Commissioner of Parks, Recreation and Historic Preservation; or
4. has been determined to be eligible for listing in the National Register of Historic Places, either individually or as a contributing building to a historic district, by the U.S. Secretary of the Interior.

**INFILTRATION.** The uncontrolled inward air leakage into a *building* caused by the pressure effects of wind or the effect of differences in the indoor and outdoor air density or both.

**[NY] INSULATED SIDING.** A type of *continuous insulation* with manufacturer-installed insulating material as an integral part of the cladding product having an *R-value* of not less than R-2.

**LABELED.** Equipment, materials or products to which have been affixed a label, seal, symbol or other identifying mark of a nationally recognized testing laboratory, *approved* agency or other organization concerned with product evaluation that maintains periodic inspection of the production of such *labeled* items and whose labeling indicates either that the equipment, material or product meets identified standards or has been tested and found suitable for a specified purpose.

**LISTED.** Equipment, materials, products or services included in a list published by an organization acceptable to the *building official* and concerned with evaluation of products or services that maintains periodic inspection of production of *listed* equipment or materials or periodic evaluation of services and whose listing states either that the equipment, material, product or service meets identified standards or has been tested and found suitable for a specified purpose.

**LOW-VOLTAGE LIGHTING.** Lighting equipment powered through a transformer such as a cable conductor, a rail conductor and track lighting.

**MANUAL.** Capable of being operated by personal intervention (see "Automatic").

**[NY] MECHANICAL CODE OF NEW YORK STATE.** The 2020 edition of the publication entitled "Mechanical Code of New York State," published by the International Code Council, Inc. (publication date November 2019).

**OPAQUE DOOR.** A door that is not less than 50-percent opaque in surface area.

**[NY] PLUMBING CODE OF NEW YORK STATE.** The 2020 edition of the publication entitled "Plumbing Code of New York State," published by the International Code Council, Inc. (publication date November 2019).

**PROPOSED DESIGN.** A description of the proposed *building* used to estimate annual energy use for determining compliance based on total building performance.

**RATED DESIGN.** A description of the proposed *building* used to determine the energy rating index.

**READILY ACCESSIBLE.** Capable of being reached quickly for operation, renewal or inspection without requiring those to whom ready access is requisite to climb over or remove obstacles or to resort to portable ladders or access equipment (see "Accessible").

**[NY] REGISTERED DESIGN PROFESSIONAL.** An individual who is a licensed and registered architect (RA) in accordance with Article 147 of the New York State Education Law or a licensed and registered professional engineer (PE) in accordance with Article 145 of the New York State Education Law.

**REPAIR.** The reconstruction or renewal of any part of an existing *building* for the purpose of its maintenance or to correct damage.

**REROOFING.** The process of recovering or replacing an existing roof covering. See "Roof recover" and "Roof replacement."

**[NY] RESIDENTIAL BUILDING.** For this code, includes the following:

1. Detached one-family dwellings having not more than three stories above grade plane;
2. Detached two-family dwellings having not more than three stories above grade plane;
3. Buildings that (i) consist of three or more attached *townhouse* units and (ii) have not more than three stories above grade plane;
4. Buildings that (i) are classified in accordance with Chapter 3 of the *Building Code of New York State* in Group R-2, R-3 or R-4 and (ii) have not more than three stories above grade plane;
5. Factory manufactured homes (as defined in Section 372(8) of the New York State Executive Law); and
6. Mobile homes (as defined in Section 372(13) of the New York State Executive Law).

For the purposes of this definition of the term "*Residential building*," the term "*Townhouse unit*" means a single-family *dwelling unit* constructed in a group of three or more attached



## CHAPTER 5 [RE]

## EXISTING BUILDINGS

SECTION R501  
GENERAL

**R501.1 Scope.** The provisions of this chapter shall control the *alteration, repair, addition and change of occupancy* of existing buildings and structures.

**R501.1.1 Additions, alterations, or repairs: General.** Additions, alterations, or repairs to an existing building, building system or portion thereof shall comply with Section R502, R503 or R504. Unaltered portions of the existing building or building supply system shall not be required to comply with this code.

**R501.2 Existing buildings.** Except as specified in this chapter, this code shall not be used to require the removal, alteration or abandonment of, nor prevent the continued use and maintenance of, an existing building or building system lawfully in existence at the time of adoption of this code.

**R501.3 Maintenance.** Buildings and structures, and parts thereof, shall be maintained in a safe and sanitary condition. Devices and systems that are required by this code shall be maintained in conformance to the code edition under which installed. The owner or the owner's authorized agent shall be responsible for the maintenance of buildings and structures. The requirements of this chapter shall not provide the basis for removal or abrogation of energy conservation, fire protection and safety systems and devices in existing structures.

**[NY] R501.4 Compliance.** Alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in this code and the *Residential Code of New York State, Building Code of New York State, Existing Building Code of New York State, Fire Code of New York State, Fuel Gas Code of New York State, Mechanical Code of New York State, Plumbing Code of New York State, Property Maintenance Code of New York State* and NFPA 70.

**Exception:** In the case of a building that is subject to the New York City Construction Codes, alterations, repairs, additions and changes of occupancy to, or relocation of, existing buildings and structures shall comply with (i) all applicable provisions of the *Residential Code of New York State* (ii) the provisions for alterations, repairs, additions and changes of occupancy or relocation, respectively, in the New York City Construction Codes, and (iii) the *New York City Electrical Code*.

**R501.5 New and replacement materials.** Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs, provided that hazards to life, health or property are not created. Hazardous materials shall not be used where the code for new construction would not allow their use in buildings of similar occupancy, purpose and location.

**[NY] R501.6 Historic buildings.** Provisions of this code relating to the construction, repair, alteration, restoration and change of occupancy shall not be mandatory for historic buildings.

SECTION R502  
ADDITIONS

**R502.1 General.** Additions to an existing building, building system or portion thereof shall conform to the provisions of this code as those provisions relate to new construction without requiring the unaltered portion of the existing building or building system to comply with this code. Additions shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code where the addition alone complies, where the existing building and addition comply with this code as a single building, or where the building with the addition does not use more energy than the existing building. Additions shall be in accordance with Section R502.1.1 or R502.1.2.

**R502.1.1 Prescriptive compliance.** Additions shall comply with Sections R502.1.1.1 through R502.1.1.4.

**[NY] R502.1.1.1 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.

**Exception:** Where unconditioned space is changed to conditioned space, the building envelope of the addition shall comply where the Total UA, as determined in Section R402.1.5, of the existing building and the addition, and any alterations that are part of the project, is less than or equal to the Total UA generated for the existing building.

**R502.1.1.2 Heating and cooling systems.** New heating, cooling and duct systems that are part of the addition shall comply with Section R403.

**Exception:** Where ducts from an existing heating and cooling system are extended to an addition, duct systems with less than 40 linear feet (12.19 m) in unconditioned spaces shall not be required to be tested in accordance with Section R403.3.3.

**R502.1.1.3 Service hot water systems.** New service hot water systems that are part of the addition shall comply with Section R403.5.

**R502.1.1.4 Lighting.** New lighting systems that are part of the addition shall comply with Section R404.1.

**R502.1.2 Existing plus addition compliance (Simulated Performance Alternative).** Where unconditioned space is changed to conditioned space, the addition shall comply where the annual energy cost or energy use of the addition and the existing building, and any alterations that are part of the project, is less than or equal to the annual energy



## EXISTING BUILDINGS

cost of the existing *building* when modeled in accordance with Section R405. The *addition* and any *alterations* that are part of the project shall comply with Section R405 in its entirety.

### SECTION R503 ALTERATIONS

**R503.1 General.** *Alterations* to any *building* or structure shall comply with the requirements of the code for new construction. *Alterations* shall be such that the existing *building* or structure is not less conforming to the provisions of this code than the existing *building* or structure was prior to the *alteration*.

*Alterations* to an existing *building*, *building* system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portions of the existing *building* or *building* system to comply with this code. *Alterations* shall not create an unsafe or hazardous condition or overload existing *building* systems. *Alterations* shall be such that the existing *building* or structure does not use more energy than the existing *building* or structure prior to the *alteration*. *Alterations* to existing *buildings* shall comply with Sections R503.1.1 through R503.2.

[NY] **R503.1.1 Building envelope.** *Building* envelope assemblies that are part of the *alteration* shall comply with Section R402.1.2 or R402.1.4, Sections R402.2.1 through R402.2.13, R402.3.1, R402.3.2, R402.4.3 and R402.4.5.

**Exception:** The following *alterations* shall not be required to comply with the requirements for new construction provided that the energy use of the *building* is not increased:

1. Storm windows installed over existing fenestration.
2. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation.
3. Construction where the existing roof, wall or floor cavity is not exposed.
4. Roof re-cover.
5. Roofs without insulation in the cavity and where the sheathing or insulation is exposed during reroofing shall be insulated either above or below the sheathing.
6. Surface-applied window film installed on existing single pane fenestration assemblies to reduce solar heat gain provided that the code does not require the glazing or fenestration assembly to be replaced.
7. Alterations which replace less than 50 percent of the luminaires within a space, provided that such alterations do not increase the installed interior lighting power.

**R503.1.1.1 Replacement fenestration.** Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing,

the replacement fenestration unit shall meet the applicable requirements for *U-factor* and SHGC as specified in Table R402.1.2. Where more than one replacement *fenestration* unit is to be installed, an area-weighted average of the *U-factor*, SHGC or both of all replacement *fenestration* units shall be an alternative that can be used to show compliance.

**R503.1.2 Heating and cooling systems.** New heating, cooling and duct systems that are part of the *alteration* shall comply with Section R403.

**Exception:** Where ducts from an existing heating and cooling system are extended, duct systems with less than 40 linear feet (12.19 m) in unconditioned spaces shall not be required to be tested in accordance with Section R403.3.3.

**R503.1.3 Service hot water systems.** New service hot water systems that are part of the *alteration* shall comply with Section R403.5.

**R503.1.4 Lighting.** New lighting systems that are part of the *alteration* shall comply with Section R404.1.

**Exception:** *Alterations* that replace less than 50 percent of the luminaires in a space, provided that such *alterations* do not increase the installed interior lighting power.

**R503.2 Change in space conditioning.** Any nonconditioned or low-energy space that is altered to become *conditioned space* shall be required to be brought into full compliance with this code.

**Exception:** Where the simulated performance option in Section R405 is used to comply with this section, the annual energy cost of the *proposed design* is permitted to be 110 percent of the annual energy cost otherwise allowed by Section R405.3.

### SECTION R504 REPAIRS

**R504.1 General.** *Buildings*, structures and parts thereof shall be repaired in compliance with Section R501.3 and this section. Work on nondamaged components necessary for the required *repair* of damaged components shall be considered to be part of the *repair* and shall not be subject to the requirements for *alterations* in this chapter. Routine maintenance required by Section R501.3, ordinary *repairs* exempt from *permit*, and abatement of wear due to normal service conditions shall not be subject to the requirements for *repairs* in this section.

[NY] **R504.2 Application.** For the purposes of this code, the following shall be considered to be *repairs*:

1. Glass-only replacements in an existing sash and frame.
2. Roof *repairs*.
3. *Repairs* where only the bulb, ballast or both within the existing luminaires in a space are replaced provided that the replacement does not increase the installed interior lighting power.

## EXISTING BUILDINGS

4. Replacement of existing doors that separate conditioned space from the exterior shall not require the installation of a vestibule provided, however, that an existing vestibule that separates conditioned space from the exterior shall not be removed.

### SECTION R505 CHANGE OF OCCUPANCY OR USE

**R505.1 General.** Spaces undergoing a change in occupancy that would result in an increase in demand for either fossil fuel or electrical energy shall comply with this code.

**R505.2 General.** Any space that is converted to a *dwelling unit* or portion thereof from another use or occupancy shall comply with this code.

**Exception:** Where the simulated performance option in Section R405 is used to comply with this section, the annual *energy cost* of the *proposed design* is permitted to be 110 percent of the annual *energy cost* allowed by Section R405.3.