The Energy Code for Existing Commercial Buildings

Implementing provisions of the energy code for new construction is an easy task by incorporating them during the design phase. When the building is already constructed it becomes more difficult to obtain the amount of energy compliance found in new construction, but our existing building stock is where we can make a more significant affect for energy efficiency. The first thing to keep in mind when dealing with existing building is it isn't an all or nothing situation, but more of a if you touch it, you have an opportunity to bring it up current adopted energy code, or as close as permitted by existing circumstances.

Historic Buildings C501.5

Historic building have a unique situation that on occasion there may be portions of the energy code that can not be adhered to by strict letter of the code due to the historic nature of the building. If the building meets one of the following conditions it is considered a historic building and is given some leeway.

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-listed, state-designated or locally designated historic district.

If a historic building has a component of the alteration, repair, or change of occupancy that could threaten, degrade, or destroy the historic form, fabric or function of the building that component would be exempt if a letter is presented to the code official and signed by an approved authority on the historic nature of the building. That does not mean that the entire scope of work is exempt from the energy code only that component.

For example:

Installing windows that meet the energy code does not meet the historic look of the building. They could be exempt, but the insulation in the thermal envelope would still be required.

Additions C502

Additions are probably the easiest type of construction for existing buildings to get energy compliance with. You are starting form scratch. The addition would need to comply with the energy code as it is new construction. Because this is an existing building there are a few details that have to be taken into consideration.

- Can not make the building or the building systems unsafe or hazardous conditions, or overload the existing system.
- Any nonconditioned or low-energy space the becomes conditioned space will be required to comply with the code as new construction
- Adding vertical fenestration may require the addition to comply with COMcheck or the Performance path.
- Adding skylights may require the addition to comply with COMcheck or the Performance Path.
- Any new mechanical, service water heating or lighting will need to comply with the code as new construction.
- New pools or inground permanently installed spas will need to comply with the code as new construction.

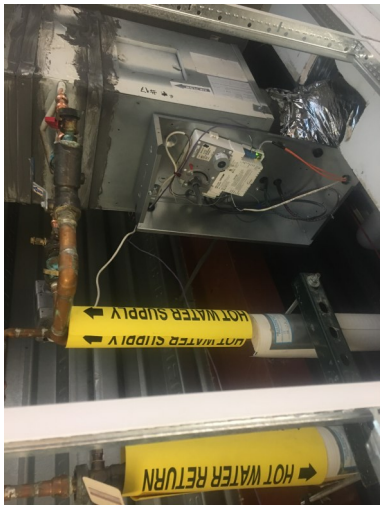
Alterations C503

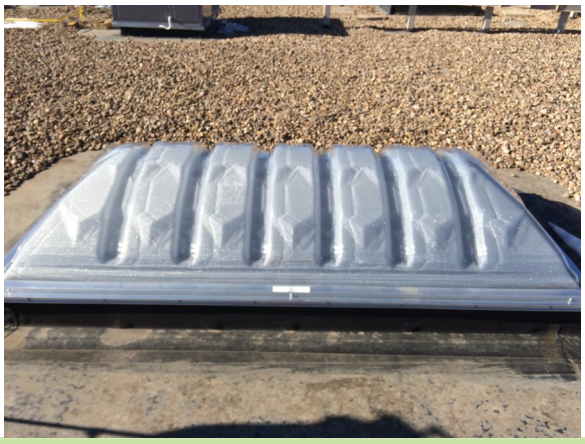
Alterations to a building can not make the existing building ~~a~~ny less conforming to the code than when it was constructed. Energy requirements for alterations apply to the work that is being performed, without requiring the unaltered portions of the existing building or building system to comply with the code. Basically if you touch it the energy code is required with a few exceptions if the energy use is not increased.

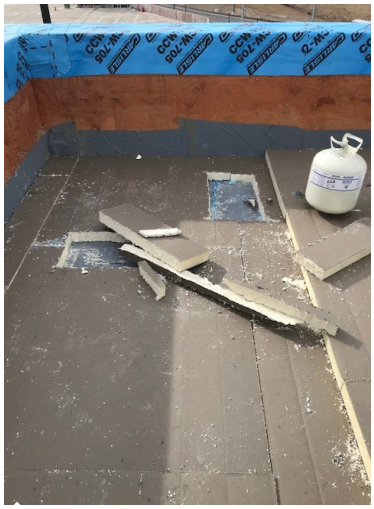
- Storm windows over existing windows
- Applied film on existing single pane windows to reduce SHGC when not being replaced **(Explanation: This helps with reducing the amount of cooling needed)**
- Existing ceiling, wall, or floor cavities if exposed in construction provided they are filled with insulation. **(Example: If the insulation exists in the cavity and the cavity is filled no further requirements. If the existing cavity does not have insulation or a reduced amount of insulation as long as the cavity is filled with insulation even if the amount of insulation does not meet the minimum R-value in the current code is acceptable.)**
- Existing roof, wall or floor cavity is not exposed **(Explanation: Any part of the building that is not part of the alteration is not required to comply with the energy code.)**
- Roof recover **(Explanation: Adding another layer of roofing is exempt)**
- Air barriers are not required for roof recovers and roof replacements if the alteration does not include work on the rest of the thermal envelope. **(Explanation: Air barriers are an important component for energy efficiency, but they are typically located at the base of an assembly, so unless you are doing work at that level it is not required to install an air barrier.)**

Alterations C503

- Components of the thermal envelope would need to comply with section C402
- Insulation in a roof replacement can not be reduced in R-value
- Adding vertical fenestration may need to comply with COMcheck or the Performance path.
- Adding skylights may require the addition to comply with COMcheck or the Performance Path.
- Any new mechanical will need to comply with the code as new construction.
    - New cooling systems will be required to have economizers, if applicable.
- Any new service water heating comply with the code as new construction.
- Any new lighting systems will need to comply with the code as new construction.
    - The exception is if you replace less than 10% of the luminaires in a space as long as it doesn't increate the energy use.







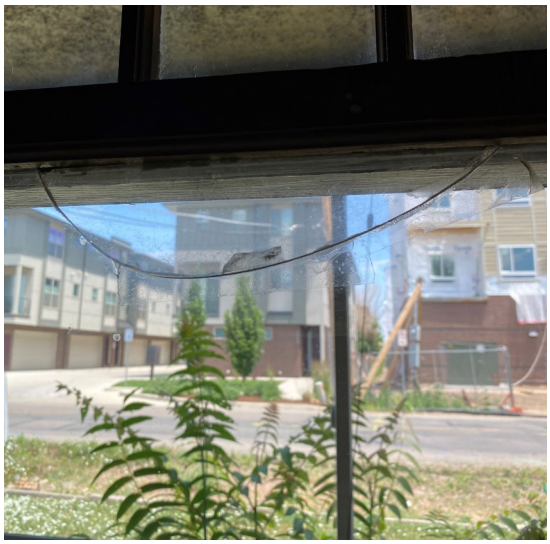
Maintenance and Repairs C501.3 and C504

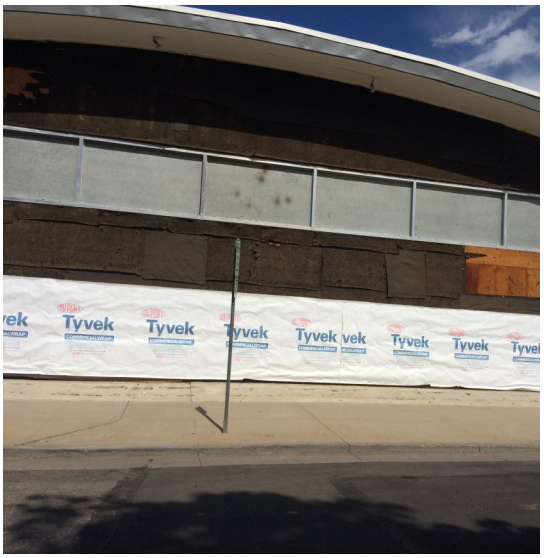
Buildings should be maintained to perform as intended and under the code they were built to.

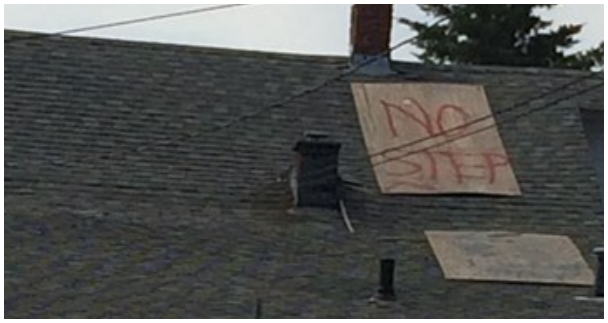
When there is damage to a building the repairs are not required to comply with the latest adopted energy code.

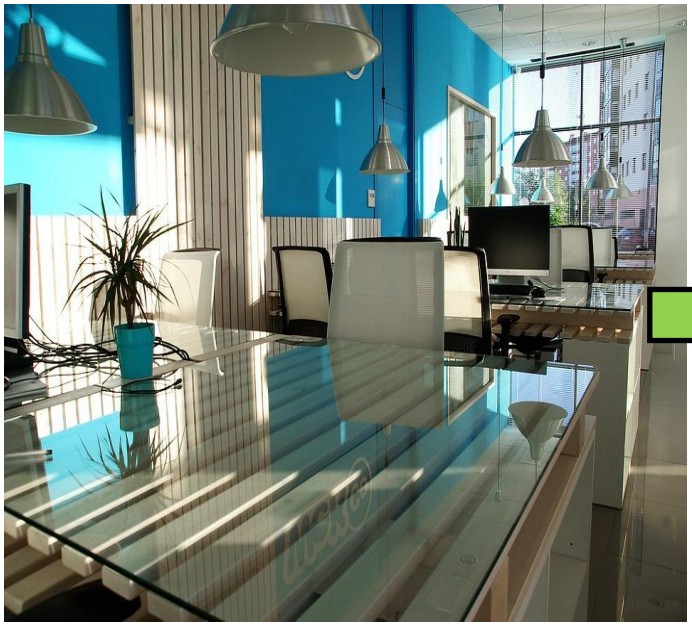
Examples listed in code as repairs

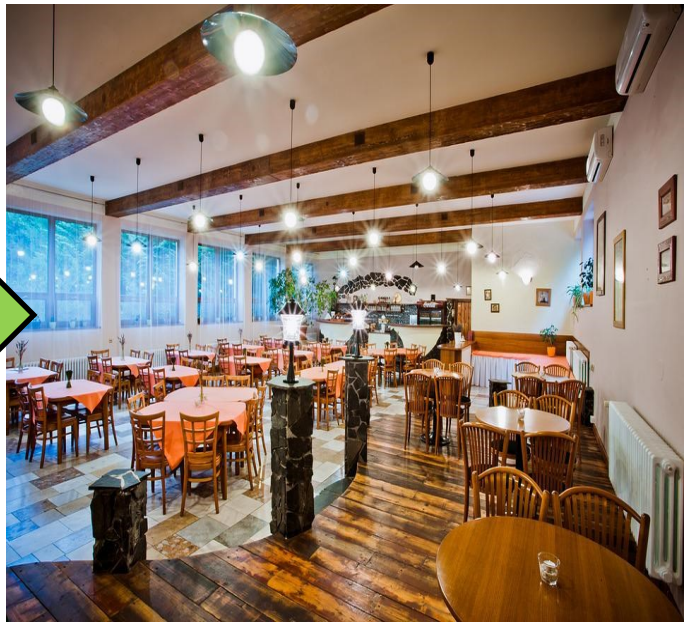
- Glass replacement in existing sash and frame **(Window breaks ,fix it)**
- Roof repairs **(Roof leaks, fix it)**
- Air barriers are not required for roof repairs if the alteration does not include work on the rest of the thermal envelope.
- Replacement of existing doors to the exterior shall not require the installation of a vestibule if one does not exist
- Repairs to only the bulb, ballast, or both in a luminaire being replaced











OFFICE

RESTAURANT

Change of Occupancy or Use C505

If a change in occupancy will increase the energy use of the space or building from the previous occupancy or use it will require the building to comply with the code as new construction.

Where the space use changes in the lighting power density tables the lighting wattage will need to comply with the code as new construction.

Where the building already exceed the allowable percentage of fenestration allowed this limitation is exempt as long as no new fenestration is installed.

There are some exemptions to this.

- If utilizing COMcheck and demonstrates the proposed UA is 110% or less
- If utilizing performance the annual energy cost of the proposed design is 110% or less of the annual energy cost permitted.