Robust Energy Codes Result in Healthier Buildings and Healthier Residents

Outdated or unenforced energy codes can lead to buildings with poor indoor air quality, dangerous mold growth and rotting structural members, which not only cost the owner more money in higher operating costs, but also impact their health.

Just like all building codes, energy codes are truly life-safety codes. They exist to protect building occupants and communities.

Buildings are Systems – Energy Codes Make Them Work

Buildings are complex, interconnected systems, much in the same way that a car is a system. If an auto manufacturer installs just one faulty component, it is not just a daily annoyance, it can send a ripple effect across the car. A poorly installed suspension negatively impacts ride comfort, tire wear, gas mileage and, most importantly, it effects safety by degrading steering control.

Energy codes are critical to ensuring that buildings operate as intended. They integrate electrical, heating, cooling, ventilation and building envelope components to provide a safe, healthy and comfortable place to live and work.

Indoor Air Quality

Adequate ventilation is necessary to remove indoor pollutants and provide a healthy indoor environment. But not all ventilation is good ventilation. A leaky home allows for air to move uncontrolled through cracks in walls, attics, crawlspaces and other areas where harmful contaminants often freely collect. Just like plumbing codes assure safe drinking water, energy codes help assure the quality of the indoor air. The energy code requires that homes be well sealed to keep pollutants out and properly ventilated to control the source of incoming fresh air, making the home healthier and safer for occupants. As the saying goes: “build tight and ventilate right.”

Moisture Management

Moisture infiltration can lead to rotting construction materials and harmful mold growth. A well-sealed envelope is the first defense, but no moisture barrier is perfect. Understanding this, the energy code also provides options for building materials to dry out. Additionally, by requiring a well-insulated building envelope, the energy code helps keep old outside air from the warm interior, reducing condensation and ice damming.

Resilient Buildings

Homes built to newer energy codes are more resilient. A study conducted after Superstorm Sandy found that homes built to newer energy codes enabled residents to safely stay in their homes longer after a power outage. The ability to shelter in place longer saves lives and provides critical flexibility for deploying first responder resources. This benefit is a direct result of the improvements newer energy codes make to the building envelope.
How the Energy Code Improves a Home

**EFFICIENT LIGHTING**
Installing LEDs or CFLs dramatically lowers electricity usage and reduces unwanted heat in the home.

**HVAC SYSTEM SIZING**
Properly sizing the HVAC system reduces capital costs, prolongs the life of the system, and improves system efficiency. It also improves indoor air quality by guaranteeing source-controlled fresh air is being supplied to the home.

**CEILING INSULATION**
Installing adequate insulation properly reduces heat transfer and prevents destructive ice-damming in the winter.

**EFFICIENT WINDOWS**
It is critical that windows be well insulated and well-sealed to prevent unwanted heat transfer and moisture infiltration.

**MECHANICAL VENTILATION**
Installing a dedicated exhaust, supply, and/or balanced ventilation system improves indoor air quality by providing fresh air and removing contaminants from the living environment.

**DUCT SEALING**
Sealing all components of the HVAC system, and testing to verify, improves indoor air quality, system efficiency, and increases occupant comfort by ensuring air is evenly distributed to all rooms in the home.

**THERMAL BARRIER**
Installing adequate insulation on all sides of the home improves occupant comfort and reduces the heating and cooling load.

**AIR BARRIER**
Sealing all exterior penetrations prevents unwanted air movement and improves indoor air quality by reducing contaminants in the living environment.

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