

Green Building Codes?



Boulder's green building codes have been some of the most rigorous in the county since the City began their Greenpoints program in 2007, and the County with Buildsmart in 2008. Every few years, each municipality implements a code update and the green building codes have been the most aggressive area of change. The two programs are somewhat different in the way they are organized, but are roughly equally challenging to comply with. There is no question that the codes add to the cost of construction here, and it's going to increase with the next code updates, although that also means lower long-term utility bills. Here's a summary of the latest changes:

City of Boulder

In May 2017 the City replaced its Greenpoints program with a comprehensive new system called the "City of Boulder Energy Conservation Code" (COBECC). Coupled with the City's goal to

34 • July 2019

operate on 100% renewable energy by 2030 and realize an 80% reduction in overall carbon output by 2050, the measures place Boulder on a sustainability path to hit Net Zero Energy by 2031.

Boulder will implement the next round of stricter energy code updates in January 2020.

Meeting the new energy requirements in the City will become increasingly challenging, so home buyers need to be more aware than ever that their home will be shaped by Boulder's codes. Specifically note that: Not all lots have the ability to allow a passive solar house orientation (it will be hard if not impossible to hit the energy rating without it). Narrow (under 60 ft in width) north-south oriented lots will be the most challenging.

Not all lots have the ability to host an active solar photo-voltaic system, due to shading on the lot from mature trees or neighboring

buildings, or the massing constraints imposed by the Compatible Development Ordinance. Without active solar many lots cannot come close to meeting their required HERS score. While the solar garden option (buying into off-site PV) theoretically gives homeowners a way out where on-site solar is infeasible, the program has had difficulty with availability.

Remodels. This is the one that will affect the most people and may be the most difficult to deal with. Boulder's 1980's and older housing stock requires an enormous amount of

work to make it comply with current green building codes. If the construction value of a remodel exceeds 50% of the assessed value of the house (not the property), then it must meet "new home" construction standards. When that happens, the cost to retrofit one of these homes is in many cases the same as rebuilding from scratch. That sticker shock will become increasingly common.

- Currently homes of 5,000 square feet need to be HERS 0 (net zero energy). Beginning in 2020 all new homes over 3,000 square feet will need to hit that benchmark.
- New homes are now required to be "solar ready," meaning that even the City now requires up to 40% of available roof be solar oriented and pre-wired for future panel installation, including pre-sizing your service panel for eventual solar.
- All new homes are required to install dedicated circuits for Electric Vehicle (EV) charging – even if the owner has no electric vehicle.
- Jobsite waste recycling standards became increasingly rigorous.
- You can learn more about the City of Boulder Climate Commitment here: <https://bouldercolorado.gov/climate/climate>

Boulder County (unincorporated)

- The County's Buildsmart program remains fundamentally the same as last year with incremental increases to the requirements. It will continue to increase in rigor with the next update in 2020. The most recent updates in October 2017 include a "menu" of choices homeowners and builders can select from depending on what kind of project you are doing.
- Homes under 3500 square feet (of conditioned space) have it comparatively easy, still only needing to meet an aggressive ERI rating, or "HERS" score.
- Homes over 3500 square feet have additional requirements and certifications that have to be met – such as Energy Star compliance – an EPA program that requires using an Energy Star certified builder, among other things.
- Over 5000 square feet and you really have a challenge...You need to hit a HERS 50 before counting solar PV (which is very hard), Net Zero Energy and obtain either LEED Platinum, Living Building Challenge, DOE Zero Energy Ready Home or Passive House certification, which are extremely difficult, expensive and time-consuming to achieve. Many homes simply won't be able to.

Overall, the two programs share some consistent philosophical points:

The proportion of what you have to comply with is relative to the scope of the work. For example, if you are just finishing out a basement, all you would have to do is an EnergySmart Assessment, hit a HERS 70, and air seal the house, all of which are a good bang for the buck. The City and the County use different systems to determine those thresholds of compliance. In the County they look at the square footage of the remodeled area relative to the size of the house. In the City it's based on the construction value relative to the value of the house.

The bigger the house, the lower the required HERS score (the more challenging the energy requirements).

A variety of mandatory water conservation and waste reduction requirements.

The new green building codes are now right at the bleeding edge of what is physically possible to build even with the help of a knowledgeable design and construction team, so homeowners need to be fully aware of the challenge and constraints they may encounter.

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