

Building Code Updates and Increased Cost of Residential Construction

It is difficult to determine how residential code changes have added to the cost of construction in California over the years. The California Building Standard Codes (CBSC) change every 3 years and are mandated by law to be adopted locally by city and county jurisdictions. For residential construction in California the CBSC includes provisions in the California Residential Code (CRC), the California Energy Code (CEC), and the California Green Building Standards Code (CGBSC). The latest edition of these codes is 2016, with local adoption required and in effect on January 1, 2017. In addition, local ordinances may be adopted by a jurisdiction that could increase the cost of reconstruction. Santa Rosa has adopted a water efficient landscape ordinance requiring landscape plantings and irrigation systems meet certain efficiency standards as an example. Federal laws have also changed over the years adding to the cost of construction. An example is a storage type gas water heater. Federal law required manufactures to make water heaters more energy efficient in 2015, increasing the cost of the water heater by 30% or more. Similar federal standards have required heating and cooling systems to be manufactured to higher energy standards. The increased cost associated with code updates varies by home as each are unique with different house sizes, room configuration, architectural style, lot configuration and lot size.

A home constructed in 2000 would have been built under the 1998 California Building Standards code. Since 2000 there have been 6 complete residential code editions, each making the codes more restrictive and increasing construction costs. For example, the California Energy Commission estimated the 2013 energy code added \$2000 to the cost of an average home and for the 2016 code an additional \$2700. One method to arrive at the increased cost of a new building would be to have your builder estimate the cost of rebuilding the same home using the plans submitted under the code it was constructed and then estimate the cost using current codes.

Overview of Current Code Upgrade Requirements

Based on 2016 California Building Standards Code

Title 24 Energy (2016 Title 24, Part 6 CEC)

1. High efficiency water heating
2. Higher efficiency heating and cooling system equipment
3. Higher R value insulation
4. More efficient windows
5. Possible increase in wall thickness (2x4 to 2x6)
6. Tighter construction to prevent air leakage
7. Radiant Barrier in attic
8. Cool Roof

Cal Green (2016 Title 24, Part 11 CGBSC)

1. Low flow water fixtures
2. Higher efficiency cooking and washing appliances
3. Requirements for storm water drainage and retention
4. Pre-wiring for future electric vehicle charging
5. Pre-wiring for future rooftop solar energy system
6. Construction and waste management
7. Low VOC paints and stains
8. Private inspector to verify requirements
9. Moisture control features
10. Indoor air quality and exhaust requirements

Wildland Urban Interface Code (2016 Title 24, Part 2, Chapter 7A California Building Code) aka: WUI Code (applies to very high fire severity zones)

1. Tempered windows
2. Limited vents in foundation, eaves and soffit
3. Fire resistant exterior siding
4. Limitations on deck materials and construction
5. Fire resistive roofing materials

Residential Building Code (2016 Title 24, Part 2.5, CRC)

1. Soils Report
2. Residential Fire Sprinklers
3. Electrical code requirements for ground fault interrupters and arc fault circuit breakers
4. Seismic and wind design changes
5. Water efficient fixtures
6. Separate electrical circuits for bathrooms and laundry
7. Smoke alarm and carbon monoxide detector
8. Additional hardware required for seismic compliance

Water Efficient Landscape Requirements (Santa Rosa Municipal Code) aka: WELO

1. Landscape architect designed plan
2. Irrigation controls and timers