CITY OF REDDING
CARR FIRE BUILDING CODE UPGRADES RESIDENTIAL PROPERTIES
REBUILDING TOGETHER
BUILDING CODE UPGRADES
In an effort to assist designers and architects in planning for the design of the Carr Fire rebuilds, we have prepared the following list of major code upgrades since the 1998 building codes. 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. For example, the City of Redding has adopted an ordinance requiring a 15 MM vapor barrier under a slab and a concrete design mix to address local conditions that often led to excessive moisture migration.

Federal laws have also changed over the years. An example is a storage type gas water heater. Federal law required manufacturers 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 Standard Codes. Since 2000 there have been 4 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 of these upgrades.
POTENTIAL CODE UPGRADE REQUIREMENTS
FOR ANY HOME BASED ON 2016 CALIFORNIA BUILDING STANDARDS CODE

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
6. Tighter construction to prevent air leakage
7. Radiant barrier in attic
8. Cool roof
9. LED lighting and lighting controls
10. HERS rating with private inspector verification
**WUI CODE**

Wildland Urban Interface Code (2016 Title 24, Part 2, Chapter 7A California Building Code)

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

**CAL GREEN**

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. Moisture control features
9. Indoor air quality and exhaust requirements
Water Efficient Landscape Requirements

1. Reduced use of spray irrigation
2. Irrigation controls and timers

Note: This is not a complete list. This is an overview of probable requirements based on current codes.

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 design changes
5. Water efficient fixtures
6. Separate circuits for bathrooms and laundry
7. Smoke alarm and carbon monoxide detector
8. Additional hardware required for seismic compliance
9. Tamper resistant receptacles