BUILDING TYPES

Residential
- **SFD (ADU)**
- **Multi-family**
  - **Apartments (Duplex-triplex-fourplex-5-units and up**
  - **Group Housing (Senior**

Commercial (retail, public buildings-hospitals-government)
Industrial (manufacturing-warehousing)
Agriculture (silos)
Special Use (churches, resorts, gas stations, utility facilities, infrastructure facilities)

Residential

SFD – With over 85 million detach single family home this is by far the largest building type in the U.S. There are about a dozen classic designs that are very popular with the suburban Rancher still the most popular design. Others include the modern farmhouse, the craftsman, mid-century, post-modern, Tudor and -post-Eichler. (See: **RESOURCES – The HBC Contemporary Home Collection**)

Manufactured & Modular Homes - Manufactured and modular - are commonly referred to as factory-built housing, but they are not identical. Modular homes are built to IRC code. Modular homes can be transported on flatbed trucks rather than being towed, and can lack axles and an automotive-type frame. The house is usually in two pieces and is hauled by two separate trucks. Each frame has five or more axles, depending on the size of the house. Once the house has reached its location, the axles and the tongue of the frame are then removed, and the house is set on a concrete foundation by a large crane. Some modern modular homes, once fully assembled, are indistinguishable from site-built homes. In addition, modular homes: must conform to the same local, state and regional building codes as homes built on-site; are treated the same by banks as homes built on-site. They are easily refinanced, for example; must be structurally approved by inspectors; can be of

any size, although the block sections from which they are assembled are uniformly sized. (See: **RESOURCES – The HBC Contemporary Home Collection**)

ICF Homes - Due to the rapid advance of climate change fires, tornados and hurricanes over the past decade, there now exists a growing demand for durable, energy-efficient concrete homes built using the system of pre-assembled, interlocking insulated concrete forms (ICF). Features include solidity, durability, and design flexibility which allows for the accommodation of unique footprints, angles, curves, and arches at competitive costs to traditional wood-framed construction pairing functionality and beauty. (See: **REFERENCES – ICF & 3D Printed Homes**)

3D Printed Homes - Concrete layered extrusion 3D printing involves a numerically controlled nozzle that precisely extrudes a cementitious paste layer by layer. Layers are generally between 5 mm and a few centimeters in thickness. The extrusion nozzle is sometimes accompanied by an automatic troweling tool that flattens the 3D-printed layers and covers the grooves at the interlayer interfaces, resulting in a smooth concrete surface. The computer-controlled device is a gantry-style 3D printer with robot arms. (See: **REFERENCES – ICF & 3D Printed Homes**)

ADU – Accessory Dwelling Units are small structures that are usually detach (although they are occasionally designed as part of the interior of a home) and found in the backyard of a SFD. They normally range in size from 35 to 600 sf and can be studios or one bedroom. Some are quite large and be another additional home on the lot. (See: **RESOURCES – The NBD Contemporary Home Collection**)

Multi-family – multi-family buildings range from 2-unit apartment building to hundreds of units.

2–4-unit building

The 2-4 unit building financing structure is the same as the SFD is the building is owner occupied. With the current housing shortage many municipalities all 2–4-unit buildings to be built on R-1 lots. (See: **Reference – 2-4 Unit Designs**)

5+ unit multi-family buildings

5+ unit multi-family buildings have higher density zoning requirements and can range from five to hundreds of apartments. Since the 2008 recession more multifamily building have been built in California than SFD. The quality of construction materials and amenities can range from luxurious to modest and accommodate the upper-end to the affordable rental market. The primary apartment types are the two-bedroom unit. Three- and four-bedroom units dominate the affordable apartment buildings to accommodate larger, low to moderate income families. Many include such amenities as a swimming pool, jacuzzi, sauna/steam, gym, club house and laundry facility. (See: **RESOURCES – Multi-family Designs**)

Multi-family Conversions

Multi-family conversions are multi-family buildings that have been converted from decommissioned commercial, manufacturing and retail properties. The conversion of large urban commercial, manufacturing and industrial properties to residential apartments has been ongoing since the mid-nineteen sixties. Using the features of the properties, many of which were built in the late nineteenth and early twentieth centuries, such as brick walls and metal walls have become very fashionable by today's consumers. More recently, the phenomenon of online retail consumption has rendered many of the suburban enclosed retail malls have become obsolete. Because of that many of these properties are being considered for conversion to multi-family apartment. (See: **RESOURCES – Multi-family Designs**)

Hospitality

Hospitality multi-units include hotels, motels, and inns.

Group Housing

Another type of multi-family is group housing. These properties can be senior, age restricted apartment building, university housing and memory care/skilled nursing facilities.

Commercial

Retail

Retail properties include town center stores, neighborhood shops, stand-alone box-stores, suburban strip-centers, gas-station retail, and regional enclosed malls.

Public Buildings

Government building, libraries, hospitals,

Industrial Construction

Industrial construction includes offshore construction (mainly of energy installations: oil and gas platforms, wind power), mining and quarrying, refineries, breweries, distilleries and other processing plants, power stations, steel mills, warehouses and manufacturing factories.

Agriculture

Barns, silos, processing facilities

Special Use

Churches, resorts, gas stations, Utility facilities, and infrastructure support facilities,

Infrastructure Construction

Civil engineering covers the design, construction, and maintenance of the physical and naturally built environment, including public works such as roads, bridges, canals, dams, tunnels, airports, water and sewerage systems, pipelines, and railways. Some general contractors have expertise in civil engineering; civil engineering contractors are firms dedicated to work in this sector, and may specialize in particular types of infrastructure.