

a dramatic difference in what we're required to do to protect the environment today. These regulations also affect the cost of the project—more time equates to additional cost.

The time spent managing projects has increased dramatically with the additional paperwork that's now required and the need to acquire permits that were unnecessary in the past.

"The lead time it takes before a job gets kicked off in the field has doubled or tripled in the last 10 years," explains Mike Ghilotti, president and third-generation owner (with his brother, Dante) of San Rafael-based Ghilotti Bros., Inc., which started in 1914. "While most of the changes [over the last several decades] have had a positive influence in how we do business, the downside has been the increase in the number of people needed to run a project due to all the bureaucracy. It's taken a lot of the fun out of construction, because nobody can get out in the field and actually build anything anymore. All our time is spent in the office!"



DECADES OF DESIGN

Over the years, building booms and busts have dramatically affected the construction and real estate industries and how they do business. These same fluctuations have also affected the ancillary businesses that serve these industries. No exception is Napa-based Craiker Associates, Architects and Planners Inc., which has been responsible for more than 200,000 housing units across the United States and in Japan since 1972.

The firm specializes in designing, planning and renovating multi-family, high-density housing, historic buildings, custom homes and recreational facilities. In more than 30 years of work, architect and company President Chris d Craiker, AIA, NCARB, says the biggest changes in the architectural industry have come from the extensive use of electronic information technology, including the advent of the Internet as well as the now widespread use of computer technology for design and design documentation.

"The number one change is the Internet connecting everyone and everything for immediate responses and instant information," says Craiker. "Number two is CADD, or 'computer aided design and drafting.' In reality, it's computer drafting—there's no 'aided.' However, the best designs almost always start with a pencil or pen."

Another major change has been the astronomically long time it takes to get a project approved and built. Unfortunately, this has coincided with clients' increasing demand for speed.

"Clients want an answer now, not next week," explains Craiker. "And yet the necessary documentation for construction and municipal approvals has become enormous. At the beginning of the 20th century, building might only take three drawing sheets. Today, it'll take 30 drawings and assorted documents to get a permit for a simple remodel."

Because of the many hoops to jump through today, Craiker estimates he now spends approximately 20 percent of his time on actual design, 40 percent on administration and 40 percent seeking approvals. Sometimes, the process can take so long that market conditions change while the approval process is in progress.

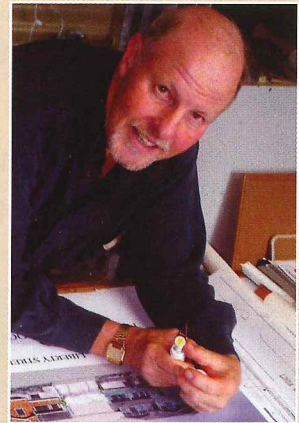
"Documentation for approvals and construction becomes longer, while the market for the product may change," says Craiker. "For example, a client sees the need for more retail space, starts the design process and, by the time it's built—say, three to five years later—the retail market is saturated. Same with housing and apartments."

As one to turn lemons into lemonade, Craiker has used the difficulty in getting approvals to differentiate his business and better serve his customers.

"We've built a business and reputation on getting things approved," says Craiker. "This requires long-range forecasts, astute market perceptions and the return of the crystal ball."

Craiker predicts holographic presentations are coming, plans will be in color and two-sided sheets, and 3D printing will be common not only for drawings but also for product samples and to build models and computerized construction. "The latter isn't new," says Craiker. "Manufactured homes and components have been around for more than a century, dating back to Sears Catalog homes. What's on the horizon will be totally manufactured, plumbed, electrically circuited and finished structures.

"The home is an obvious candidate," he continues, "but consider high rises and dense urban sites, where today's archaic construction process won't shelter the next billion people. That's the real future of architecture and construction."



Chris d Craiker, president of Craiker Associates

