

Chapter Three

The Impact of CAD: *The Theft of Architectural Design Capital*

In the forties and fifties, a “cad” was a derogatory name for a man who was a womanizer. Today, “CAD” has a completely different connotation and is now associated with the field of architecture and engineering. When President John F. Kennedy called for America to land a man on the moon and return him safely to earth prior to the end of the decade (in 1969), it set the stage for computer aided design (“CAD”). Computer miniaturization and the quantum leap in the amount of data that could be stored on a computer chip led to the CAD revolution.

When I started my practice in 1980, everyone drew by hand. That is, architects or their draftsmen prepared all drawings by hand necessary to compile a set of construction drawings. *Drafting* as mine and previous generations knew it, is becoming a lost art, much as the expert building crafts in the gothic period became a lost art during and after the Renaissance. CAD operators have replaced draftsmen. Those of us who were architects with draftsmen in the nineteen sixties, seventies, and even eighties risk becoming obsolete, unless we become technologically proficient at CAD, or at least are able to manage those producing drawings with CAD.

I do not think many architects have really stopped to contemplate the impact CAD has had on the profession, particularly the art of architecture. Certainly CAD has enabled the profession to produce a set of working drawings in an unheard of amount of time. In the sixties, it could take 40 to 80 man-hours to produce just one sheet in a working drawing set. Today it takes perhaps less than eight. Architects today can import standard details, wall sections, floor plans, etc. from a CAD file. Architectural offices can therefore standardize the working drawing style of all projects across the board. Each company can then achieve a consistency between different projects that incorporate the best information transfer techniques available. CAD adds speed, efficiency, and standardization which are very American attributes.

CAD was born in America, but is now available internationally due to its proliferation across the internet. CAD files can be e-mailed to exotic, far off places. Some architects, including myself, utilize low wage CAD operations in places such as India and Thailand by e-mailing CAD files back and forth. We have been able to substantially reduce the cost of production labor necessary to produce construction drawings by doing this.

Think about how CAD dovetails with the tendency toward *brands* that I alluded to in the prior chapter. Architects (or companies) can now e-mail CAD files of their *brand* stores to the far reaches of the globe. Obviously, the effect is that a Wal-Mart CAD file can permeate into such disparate markets as California, New York, Texas, and even the countries most resistant to conformity in Europe. CAD and architectural brands go well together. If you are a layman, the connection may not be readily comprehensible to you. However, how many times have you asked, “Why does this suburb here look just like the

one I saw across the country?” Déjà vu? Not really.

We have now been synthesized by the CAD-Brand built environment transformation. Undoubtedly, there are major economic benefits. As unabashed capitalists, how can we not rejoice in this great technological advance that improves our efficiency in distributing goods and services?



Seaside, FL

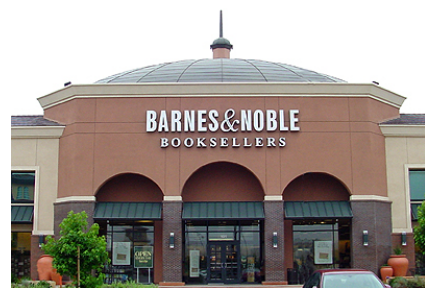


Celebration, FL

However, what is the downside of being able to quickly fabricate a non-authentic facsimile of some other place and time? It is clear that certain consumers have opted out of the *brand* syndrome in architecture. There is, in fact, a counter-revolution occurring. Some architects are now touting the “new urbanism”! The new urbanism is really the old urbanism. Architects and new urbanites yearn for the sort of old town/village look. Quaint settings appeal to these groups. These new urbanistic groups are designing places like Disney’s “Celebration” community or “Seaside” in Florida’s panhandle. If you saw the movie, “The Truman Show,” starring Jim Carrey, you have seen images of Seaside. There’s something wrong with Celebration and Seaside though. They are surrealistic.

In the movie, Jim Carrey’s character is driven slightly mad by this environment as he is watched all the time. These places are like giant scrubbed down movie sets. What has happened, I think, is that these character villages are but a low cost imitation of the rich urban fabric present in America at the turn of the century (1900’s to the 20th century). CAD has been instrumental in sanitizing these settings. CAD details of these movie settings can now permeate the profession through the media and internet. New urbanists now jaunt from community to community selling this prescription like snake oil salesmen. Their models, however, are being resisted as sometimes economically unfeasible. The houses with front porches, garages in the backyard and artificial neo-classic details made out of Styrofoam are as much of a *brand* as the ‘McDonalds’ franchise utilizes.

CAD empowers the herd effect in architecture. Real estate developers are often quite susceptible to the herd effect. They are opportunists by nature. “If this particular architectural style is selling now, let’s access it quickly and incorporate it into our next building project” as the thinking goes. The problem is that styles now are changing rapidly; so rapidly that one can lose track of what the latest varieties are, or what period of architecture the designs are supposed to represent. Many of my clients have demanded that I give them



Barnes & Noble Bookstore

modern designs that have lasting value. I ask what they mean by “modern.” They point to the Barnes and Noble bookstores with its arches and cornices; all interpretations of historical styles. If anything, I suppose they are neo-classical. To me, modernism still means the sleek international style. The architectural writer, Gideon, made the concept of time-space architecture understandable. Sparse use of embellishment and dramatic sculptural shapes typified this style. This style is passé now. However, CAD makes any style immediately available.

So far, I really haven’t stated that CAD is a bad thing. I’ve implied it though. CAD in the hands of a designer lacking talent is a bad thing. Unfortunately, CAD has enabled this design challenged group of architects to foster their mediocre goods nationwide. CAD is a powerful instrument and, like a gun in a child’s hand, it can be dangerous – if you consider ‘ugly’ dangerous.

In summary, I don’t like going to places that are the result of the CAD-brand approach. If I go to the *burbs* and remain there too long, I feel brain damage. Likewise, I resist patronizing the big brand stores. I also resist shopping at large sanitized shopping centers. Many generation ‘X-ers’ and ‘Y-ers’ and ‘Milleniums’ are opting out of *brands* and *burbs* as well. I believe they are looking for authenticity, value, and diversity. Those three things are hard to achieve overnight. They’re not in an architect’s CAD files. Although in the hands of an artist, CAD can be a wonderful instrument. In the 1800’s, something called the ‘arts and crafts’ movement took place. This movement was initiated as a reaction against industrialization. I think that something similar may happen again, but this time as a reaction against the architectural products fostered by brand architecture and CAD.

You may have noticed that I used the word “product” to describe architecture. Yes, architecture can be a product. There can be good products and bad products. Ultimately the market will differentiate between good and bad products. My guess is that if American society diverges into the overeducated and the undereducated, that the undereducated will be conditioned by the media to accept the CAD-brand product architecture. The well educated with discretionary funds will opt out and look for authenticity, value, and diversity in the built environment.

One problem associated with CAD is the ability of non-clients to access ‘design capital’ by those with easy access to CAD files via the internet. Movie producers and recording artists complain bitterly about, and then take action against, theft of their artistic property via the internet. In particular they want to prosecute those who illegally download movies and music. Architects have been ineffective at thwarting the wholesale plagerism of their original designs for years.

Having evolved such a wonderful product as the expansive hotel atrium with all of the kinetic elements contained within, what do you think the architect John Portman’s posture was towards imitation of his designs by potential competitors? The word “guarded” comes to mind. All employees at John Portman and Associates were warned not to send drawings of the Atlanta Hyatt Regency Hotel to outsiders indiscriminately. Any employee so doing would have been disciplined. In my view termination would have

been appropriate. In today's world of CAD and the internet, wherein drawings are emailed to engineers, clients, printers, etc. on a regular basis, such control is difficult or impossible to achieve. In today's world Portman would have been subjected to the ultimate flattery, which is imitation; or should we call it copyright infringement or plagiarism.

Today a few architects attempt to copyright their design, but that exercise is mostly ineffective. As a forensic architect I have actually reviewed copyrighted material relative to infringement litigation. It is easy to imagine how one could change just enough of the design to evade copyright infringement laws. Homebuilders are always attempting to copy home features that they believe will enhance value and price points. Little is really new in architecture, as most honest architects will tell you. Therefore, the less imaginative can resort to pilfering design features when it suits them. Copyright law does not present much of an obstacle.