

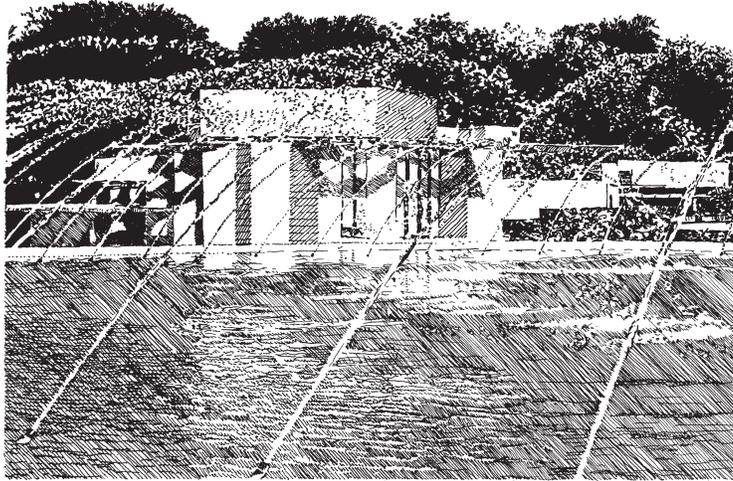


# ARCHITECTURE

EHLINGER & ASSOCIATES

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"Water Dome" and Administration Building, "Child of the Sun" (Florida Southern College), Lakeland, Florida, © 2012 Ladd P. Ehlinger



**"Water Dome" and Administration Building**

The newsletter print of a sketch by Ladd P. Ehlinger, AIA in this issue is of the Administration Building (Watson Fine Building) and the "Water Dome" in the square nearby at Florida Southern College (FSC) in Lakeland, Florida. FSC is a treasure house of Frank Lloyd Wright designed buildings and contains ten Wright designed buildings of the sixty-four on the campus.

Wright began the design of the campus master plan in 1936 when Ludd M. Spivey, FSC President from 1925 to 1957, visited Wright in his Spring Green, Wisconsin Studio and home and commissioned him. Spivey envisioned a "college of tomorrow" as an inspiration to build enrollment at the United Methodist facility. 1936 was the middle of the "great depression" and college enrollments were hard hit as a result. The two visionaries shook hands, Wright began work and ground was broken in 1938.

Wright was at the peak of his career at this time. Many historians have said he was at the peak of his second career due to the somewhat dormant period of the 1920s and early 1930s caused by his divorce from his first wife, the murder of his second wife by a crazed employee, and the notoriety of being the first person prosecuted by the federal government for

a Mann Act violation (transporting a woman across state lines for illicit purposes - his intended third wife at the time), of which he was found innocent. Wright had completed the Johnson's Wax facilities and "Falling Water" in Bear Run, Pennsylvania during this time.

Wright was published on the cover of Time magazine for his design accomplishments in 1938.

Wright characteristically coined phrases as he did on other projects to describe some of his work at the FSC campus, such as "Child of the Sun" for the entire 100 acre campus, and "Water Dome" for the large circular pool with periodic arching fountain streams of water about the perimeter. These arching streams frame both the Administration Building and the Roux Library, also designed by Wright.

Some of the other notable buildings on the Florida Southern campus are the Annie Pfeiffer Chapel, completed 1941; the Roux Library, completed 1946; the Ordway Building (Industrial Arts), completed 1952; the Danforth Chapel, completed 1955; the Polk Science Building (contains a planetarium), completed 1958; and the Esplanades, various completion times, and currently being restored in some areas. These are the distinctive covered walkways that connect most all of the buildings, the roofs of which are razor thin concrete slabs and supported on upside down tetrahedron bulky concrete columns set to one side of the walkway with the roof slab cantilevering to cover the entire walk.

Like most Wright projects, this one is both a blessing and a curse. A blessing

because of its beauty and daring, simplicity, and almost pure art - a delight to the eyes. A curse because of the oft-times experimental components failing by not weathering well, and the sometimes dictatorial personal idiosyncratic nature of some of the spaces. Wright used here what he termed his "Textile blocks". These were concrete blocks designed and fabricated by the architect himself - these cannot be replaced "off-the-shelf" when one cracks or is damaged in any way. One has to manufacture them. The clear head height of the Esplanades is rather short and not suitable for folks over six feet tall as Wright was just barely 5'-2" high himself, and since he was comfortable with it, that was good enough for him.

## On Building Codes Evolution

The original purpose of building codes was to provide a minimal set of rules through which to achieve an acceptable level in construction for public safety, health and general welfare. For decades now, local governments across the United States have adopted into law one form or another of a model building code. While many an architect and owner might complain over a specific code and its applicability to their project, the code itself is generally accepted as achieving its purpose: protecting safety, health, and welfare.

As general expectations for safety increase, changes to the building code that increase base construction cost are introduced incrementally. For example, the types of structures requiring sprinklers has increased over the years. Until recently, apartment complexes of three stories or less weren't required to have sprinkler systems. Now, every structure containing three or more residential units is required to have sprinklers. At a cost increase of about \$3/square foot (about 5% increase of construction cost), most would consider this new requirement within reason, since sprinklers reduce the death rate during fires by nearly 95%.

I expect most codes to soon begin requiring sprinklers in all new homes, not just in multi-unit residential. If the cost reaches the \$1.50/s.f. target that sprinkler manufacturers are

claiming, it will not be an unreasonable requirement, given the additional safety provided. But what if sprinklers cost \$15/square foot? Where's the line?

What happens when the definition of the code is suddenly expanded? Perhaps the first test of this was with the introduction of the ADA (Americans With Disabilities Act), which expanded the definition of public safety, health and general welfare to include special accommodations for people with disabilities. An admirable goal, and many of the requirements are not costly or difficult to implement, like adding Braille to building signs, or providing support bars for restrooms. However, many of the requirements are incredibly expensive in cost, space, aesthetics, and some not even possible in existing structures: ramps, chair lifts, and elevators, just to name a few.

In a new construction project, the ADA costs can generally be absorbed. Entirely different from other building codes, however, the ADA can be applied retroactively by selective enforcement. If someone believes your building is in violation of the ADA, even if built prior to the ADA's enactment, they can force you to retrofit your building through the court system. There were any number of lawsuits during the late 90's illustrating this, but a recent one sums up the conflict, where a restaurant was forced to close down, being financially unable to make required upgrades to comply (<http://www.cjac.org/blog/2011/03/the-ada-struggle/>).

One common quip in the construction industry is that it would have been less expensive to hire a porter for each person in a wheelchair to carry them around for life than it has been to enact the ADA.

What if all codes were selectively retroactive like the ADA? What if, every time the code were upgraded, all buildings were required to have inspections and perform required upgrades? Imagine if every apartment building built prior to sprinkler requirements were forced to install them now. The cost wouldn't be \$3/square foot; it would be closer to \$30, requiring removal of ceilings, relocating of piping and wiring, extensive clean up, and lots of unforeseen complications. Rural California is experimenting with such brutal tactics right now, but it doesn't seem to be for the purposes of public safety: <http://www.laweekly.com/2011-06-23/news/l-a-county-s-private-property-war>

After Katrina, FEMA had an excuse to dig their hands deeper into the building code business, as well, pressuring municipalities across the U.S. to adopt FEMA construction code requirements at the threat of losing funding for local flood control projects. While their requirements are not being enforced retroactively,

a general practice being adopted is to require full flood upgrades on all property in any flood zone, once the cost of work cumulatively exceeds 50% of the value of the structure. If any work is done, it counts towards the 50% value, and the value isn't adjusted over time. Without making very expensive modifications to the property (flood gates, raising the entire structure, etc.), any work on the structure will eventually be prevented. The stated goal is to increase safety during floods (which, to be fair, these codes will achieve) and to lower flood insurance rates (which wouldn't be a problem if flood insurance wasn't a federal mandate and had free market controls).

The unstated goal is to price new construction in flood zones out of the market, and to force owners of property in flood zones to abandon their developments via forced maintenance neglect. While these measures have not been adopted anywhere we know of in Louisiana, readers in our other areas should check with their local government's engineering department before planning any work in property within a flood zone.

The latest redefinition of public safety, health and general welfare is coming with the ICC's (International Code Council) forming of the International Green Construction Code (IGCC). Public safety, health and general welfare will apparently include protections for the environment and provisions for sustainability. This entails a great many requirements that have little to nothing to do with public safety, health, or general welfare

The IGCC has a requirement for a 50% construction waste diversion; meaning half can not go to a landfill and must be recycled. The waste must first be accounted for by weight (before dumping), other uses for the waste must be determined and located, and the waste must be diverted to multiple locations, regardless of the additional time and cost required. Zero relevance to public safety, health, or welfare.

Construction material choices are also limited to a mix of materials with recycled content, biological content, and other specifications. All without regard for intended use, quality, performance, life cycle, or cost of said materials vs. their "unrecycled" counterparts - it's simply percentage requirements to tick off on a form.

Besides enforcing a specific brand of social consciousness, most of the IGCC is geared towards the reduction of energy use and water use, which, while a laudable goal, is questionable as something a government should be mandating as a construction requirement when these issues generally have no concern with public safety, health, or welfare.

Now, in specific regions, the reduction of water use may truly be an issue of general welfare, because the water supply is limited; but what about any community along the Mississippi River? Or the Tennessee River? Do they really need to concern themselves with installing expensive greywater piping systems? Should they be required to harvest rainwater? Such systems and tactics can be inherently expensive and costly to maintain compared to centralized utility services. While many may take the community water and sewer services for granted, there's a reason that people in areas without regular water shortages don't invest in septic, cisterns and other water technologies for small scale use - it's expensive and unnecessary. Purportedly, the IGCC is "customizable" upon adoption, but in areas where ideology often trumps reason, will such requirements truly be lessened where they are not of general concern?

With energy use the argument becomes one of the law of diminishing returns. How much does it cost to improve a building's energy efficiency before you're spending more time and money trying to save energy than the energy costs? With the multitude of requirements for automated equipment, separate metering, and commissioning of systems for monitoring, it's arguable that bureaucratizing a facade of energy conservation with government monitoring will be much more expensive and wasteful than leaving energy decisions and upgrades to the owner.

From the IGCC synopsis: "Section 604, Energy Metering, Monitoring and Reporting, requires all buildings that consume energy, regardless of compliance path, have capabilities for energy measuring, monitoring and **reporting.**" (emphasis mine).

Reporting to who? Will inspection departments where the IGCC may be adopted be responsible for monitoring and enforcing ongoing energy conservation requirements? Is this acceptable and reasonable? Certainly, having the tools to monitor and adjust energy use is a helpful tool for any owner looking to save money, but to what standards will the "reporting" be held to, and how will energy conservation be enforced?

These are questions all building owners and managers, architects and contractors should be asking themselves in areas considering adopting the IGCC. Is it worth the financial cost, and the cost in freedoms of property use and ownership with no commensurate gain of benefit to public safety, health, or general welfare?

More information on the IGCC can be found at: <http://www.iccsafe.org/cs/IGCC>.

*R. Perrin Ehlinger, AIA*