

# Lowering Building Emissions with Traditional Florida Cracker Architecture Language

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Ignoring the climate crisis and the impacts of it is no longer a luxury that humans can afford to do let alone architects. As the climate continues to warm, it is important to look at the breakdown of energy use and emissions to understand where the problem can be fixed. Buildings and their construction account for 36% of the global energy use and 39% of the energy related carbon dioxide emissions according to the United Nations Environmental Program. It is embarrassing to be connected to an industry that is contributing so heavily to the most pressing issue of the 21st century; however, the silver lining falls into the hands of the next generation of designers, and planners to be the ones to develop new techniques to lower the emissions.

Many architects have already taken up the challenge to lower the emissions that buildings create with the New Buildings Institute verifying almost 700 commercial buildings in North America with net zero energy use as of 2020. While it is imperative to recognize the shift in thinking, it is important to maintain perspective, as of 2018 through the Energy Information Agency it was found that of the 5.9 million commercial buildings in the United States, they consumed 6.8 quadrillion British thermal units of energy and spent 141 billion US dollars on energy in 2018 alone.

Seven hundred buildings proved that buildings could require zero energy and leave no carbon footprint, therefore making buildings that continue to require energy and do nothing to lower the demands and emissions is fundamentally inexcusable. Buildings that attempt to be net zero require much more consideration to the local climate of the site, traditionally this resulted in building techniques varying between climates throughout the globe. With the advancements in technologies and building techniques the careful consideration of the local climate seemingly vanished.

Buildings used to be forced with the question of how to keep their occupants comfortable throughout the seasons. Specifically early settlers of Florida derived the Florida cracker style of architecture being characterized with deep porches and shotgun hallways as ways of cooling homes and other buildings before air conditioning. Currently Florida homes spend just shy of two thousand dollars per year on electricity (almost five hundred dollars more than the United States average), with 85 percent of homes having central air conditioning resulting in 27 percent of overall energy consumption being air conditioning, on average the rest of the US spends about 6 percent on air conditioning (EIA 2009).

Currently, the implementation of solar panels on buildings is helping to lower and reduce emissions; however, often the demands to cool the building exceed the clean energy captured in the building. The implementation of traditional local building practices in Florida could be a resource to architects that help lower the overall demand crossing the threshold for cleaner buildings or even net zero buildings.

I propose to modernize the techniques of traditional Florida cracker architecture and show the differences in energy demands for several types of buildings, as a way of promoting going back to traditional building techniques to offset the carbon footprint of buildings. With consultation through weather programs such as Climate Consultant, I will create three proposals of different existing buildings in Gainesville, Florida with varying occupancy, to compare what sized structures are best suited to bridge the energy demands using Florida cracker characteristics. I intend to use tools like cove.tool which is a building software that estimates the energy demands of buildings and promotes further optimization of offsetting carbon emissions specifically for architects. I plan to compare this data to prove that the solution to the climate crisis is not a universal fix and requires careful consideration and a complete shift in ideology. The responsibility to lower emissions from buildings should no longer be diffused, it is time for architects to be environmentally conscious in their decisions which could be found through looking at traditional solutions of the local climate.

## Work Referenced

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