

The Design of Tiny Homes and Their Significance Within Our Environment and Communities

Submitted by

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## **Abstract**

This research examined the design of tiny homes and the significant impact they have on the people within in our communities and the environment around us through the works of a creative visual project using collage. The research focused on The Tiny House Movement through the creation of an informational magazine, social media campaign, and posters while highlighting the overall benefits and disadvantages. Tiny houses are typically less than 400 square feet which make them a much more sustainable option compared to a regular-sized home as they require fewer materials to construct and use less energy. They are also considered to be more affordable and can be constructed within a couple months, allowing people to save money. They have also been of use as a quick solution to help solve the issue of homelessness in many high poverty neighborhoods. While tiny houses have become increasingly popular, it is still a foreign concept to many, as most people are generally unaware of the tiny house movement. Also, many don't have access to the opportunity of owning one due to zoning restrictions and building codes. The hopes for this project were to present the advantages and disadvantages of owning a tiny home in order to promote further growth of The Tiny House Movement, and to help spark legalization of tiny homes nationwide. The main goal was to create a work of graphic design that would communicate what I learned from the research in a visually appealing and informative manner.

## **Introduction/Background**

The tiny house movement is a social movement that has become more popular in the past decade that advocates for living a more simplistic lifestyle by downsizing living spaces. Thousands of people have been adopting this more minimalistic and sustainable way of living. They represent a revolutionary idea in architecture; to accommodate the requirements of domestic life into a small area of space (Zeiger). Tiny houses are typically less than 400 square

feet and primarily a full-time dwelling that is either permanent or mobile, on wheels or a skid (Crawford 1). The average size house in the United States today is just over 2,000 square feet. With the average size of houses seen to be increasing while the average number of people living in a household is decreasing, the way modern houses are built has started to become a significant concern with regard to issues of sustainability (Harris). Larger houses are often associated with environmental burdens such as increased land use, greater demand for energy, and use of environmentally harmful building materials.

Tiny homes have also been looked at as a possible solution for those who are housing insecure. This is because they can serve as a dedicated safe and personal space, while being a size that allows for scaling to the local need quickly and cost effectively. A growing number of towns and cities have started to build tiny house villages, which typically are comprised of ten to thirty houses that tenants either rent or stay in free of charge. Overall, the main message of the tiny house movement is to live better with less through achieving a more secure and independent lifestyle that emphasizes environmental, social, and economic considerations (Harris). It is also found that those who live in tiny houses tend to work less, spend less, and find their lives to be more meaningful and fulfilled. People may consider living in a tiny house for numerous reasons, such as interest in environmentalism, minimizing consumption, personal growth, or wanting to live closer to nature, to name just a few.

People are often influenced by everyday graphics whether it's through the books they read, the social media on their phone or a poster that they simply pass by. Using the principles of graphic design and collage, the message of the tiny house movement may be effectively communicated to encourage people to rethink the way they live in the space around them. It is important to investigate this topic on the architectural design of tiny houses in order to determine

how they can improve the way people live, the various ways in which they can be sustainable, and how they have the potential to create housing stability. It is relevant because it is a unique conscious-living lifestyle that provides many lasting benefits not only for the greater community but also for the environment.

## **Discussion**

When most people think of tiny houses, they may think of futuristic, life-sized dollhouses that would be too impractical to live in. Or they may think it would be a cool concept to live in one but may think it's too unrealistic to where they may never consider living in one. However, there are numerous reasons as to why people decide to go "tiny." For most, it is to reduce consumption and to pursue a simpler way of life. Tiny-home living can contribute towards a higher quality of life by better utilizing one's time, energy, and finances. In a study conducted at University of North Georgia, researchers looked at the many reasons and motivations for people wanting to live in a tiny house (Mangold). For twenty-three out of the thirty interviewees, their interest in the tiny house lifestyle began with the turmoil of an existential crisis or a challenge that they were facing from a major life event. Others expressed that financial and economic stressors were major reasons for looking into the tiny house lifestyle. Many interviewees expressed that tiny living offered a "way out" of situations that they felt stuck in. It seems that the true appeal of the lifestyle comes from the search for the "good life" as many of the interviewees described their search as wanting to "live well" and to "be happy." For many, tiny houses are a blueprint for how to achieve financial freedom, retake control of their lives, develop meaningful relationships, embrace a simpler life, and to have new experiences (Mangold).

Moving into a tiny house often involves significant lifestyle changes, the majority of which are beneficial to those who are willing to join the movement. One main benefit is

economical (Jones). It is quite inexpensive to build a tiny house compared to a regular sized house as less housing materials like lumber, roofing, and insulation are needed for construction (Stephens). Living in a tiny house can also drastically reduce the amount spent on maintenance, utilities, and repairs. This is because of less water and electricity usage than the average homeowner. Extra money saved can instead go towards pursuing personal passions and interests, such as traveling or starting a business. For their size, tiny homes are surprisingly customizable. Those who choose to design, and build have much more control over what features they want to include and the kind of layout they want. Tiny living also encourages minimalism as it helps simplify your life (Jones). With limited space, one will just have enough space to have everything needed to live a satisfying and decluttered life. This will create extra free time and encourage one to get out more and spend time on enjoyable activities of one's choosing.

However, any lifestyle change does come with difficulties as tiny living does have some challenges that one may encounter when making the transition. One big challenge is you have less storage place. Making the transition from a larger home to a tiny home, one may struggle with sorting through possessions or parting with certain things. Another challenge is the lack of privacy. Especially for couples or families, limited privacy will be an everyday experience. It is important to keep this in mind during the design process as a downstairs bedroom with a closing door opposite the living area, for example, might be ideal. Also with limited space, it may be difficult to accommodate visitors if one plans on entertaining numerous guests. Lastly, zoning rules and building codes can lead to a big roadblock on determining how and where the house is built. It is recommended to research the Residential Building codes and local building requirements for your area (Stephens). These challenges are important to keep in mind when deciding if a tiny house is the right choice.

Furthermore, architecture and planning have a direct effect on humankind's impact on the natural environment. This is because our buildings consume resources and create pollution in their construction and demolition as well as in their operation (Stein,283). Due to this, many people have turned to tiny houses as a more sustainable option of housing. Going tiny reduces ecological impact by cutting down energy usage and waste. Architecture directly affects more than forty percent of all energy consumed in the United States. Building operations such as heating, cooling, and lighting require nearly one third of all energy used (Stein, 25). A 2019 study, “The Ecological Footprints of Tiny Home Downsizers,” found that most tiny-home dwellers reduced their energy consumption by forty-five percent after downsizing. Many further reduce their carbon footprint through the use of solar power (Stephens, 7). Most tiny houses are able to be powered by alternative means such as solar panels or wind power because they don’t require as much energy. The main reason for this energy use reduction is simply because there is less space to heat and cool. In 2013, the average house size was 2,598 sq feet, forty-one percent larger than the average sized house in 1973 when those homes were filled with more family members. In 2021, the average square footage of a single-family home fell to 2,273 square feet. Tiny homes, which typically range from 100-400 square feet, produce about 2,000 pounds of CO<sub>2</sub> emissions each year as compared to the 28,000 pounds produced by an average-sized home (Hardie). In a study by the University of Melbourne in Parkville, Australia, researchers looked at the amount of CO<sub>2</sub> that is produced by a tiny house compared to a traditional house over time. Their results found that the tiny house observed in the study led to at least a 70% reduction in life cycle greenhouse gas emissions compared to a traditional house (Crawford 4). Traditional houses also contribute to a greater amount of non-recyclable waste since they need to be filled with more belongings such as furniture and decorations. With a tiny house, homeowners require fewer

items to furnish their homes while having lower household expenses such as mortgages, property taxes, and maintenance (Harris).

Unlike a pre-built house, tiny homes give the buyer full control over what eco-friendly systems to put in place. Some sustainable building materials that can be used in a tiny house include cork, bamboo, straw, brick, reclaimed wood, and recycled glass tile. Some other ways to make a tiny house more environmentally friendly is to install a greywater system, which basically recycles water that has already been used in places like the laundry, shower, or sink, and repurposing that water for uses like irrigation and watering gardens and crops (Mitchell). Furthermore, investing in low-flow shower and sink options and installing a composting toilet helps to cut down on water usage. Composting toilets also use a completely natural process of decomposition and evaporation that is free of harmful chemicals. It is entirely clean and safe to use indoors and easy to handle and dispose of with very little odor. It also saves a lot of water as according to the EPA; toilet flushing can account for thirty percent of a home's water usage. Older toilets use up to six gallons per flush whereas most composting toilets use just a pint while others don't use water at all. Not only is it good for the environment, but also for the household bill. For lighting, switching to LED lighting as opposed to incandescent lighting uses seventy-five percent less energy. Eco-friendly insulation such as denim cotton or natural wool batt instead of the standard fiberglass insulation used in most homes is another sensible choice. Denim cotton is made of recycled cloth while natural wool batt is made a high-quality option where sheep's wool is processed, cleaned, combed, and washed several times and then molded into batts (Mitchell).

When it comes to thinking about cost, it only requires about a ten percent increase in cost per square foot to go from building a traditional, non-sustainable tiny house to an entirely eco-

friendly tiny home. However, installation of solar power can get costly as running an entire tiny house on solar can end up costing \$20,000 to \$25,000 though these added costs are only on the front end of the process. Installation of solar systems can end up saving thousands on utility bills down the line.

Furthermore, the tiny house movement has become a growing method to combat homelessness. They can serve as a dedicated safe and personal space, while being a size that allows for scaling to the local need quickly and cost effectively. A growing number of towns and cities have started to build tiny house villages, which typically are comprised of 10 to 30 houses that tenants either rent or stay in free of charge. Depending on the community, residents are able to stay for a certain length of time until they are able to get back on their feet and reintegrate into society after receiving the aid they need (Fowler). Tiny homes tend to offer more services than other shelters by providing programs that offer one-on-one access to case managers, which assist in helping to find housing (Kendall). But as a result, this can be much more expensive to operate. The biggest benefit is that they are able to provide the unsheltered population with a sense of independence since the residents have their own private space to themselves. Several psychological studies have shown that having a place to call our own gives us a sense of belonging, safety, security, and personhood. They also naturally foster a sense of community and camaraderie, which is helpful for those who are going through difficult times as it is important to be surrounded by people who share similar experiences in the day to day.

To conclude, studies have also shown that tiny house owners have greater awareness of their interdependence with nature since they spend less time indoors, and in some cases depend on nature directly for things such as wood for heat, the sun for electricity, or even a nearby spring or well for water (Mithcell). While many people find the layouts and features of a tiny



home to be comfortable, their small size encourages an outdoor lifestyle that promotes people to get outside and spend more of their time at parks, museums, cafes, or just focusing on personal goals outside the home. Many families will choose to build their tiny house in a community that has additional communal space set aside to allow individuals to focus on their houses as private space. Tiny houses may be just one answer to living a more environmentally friendly way, but they can also serve as inspiration to many. Although this lifestyle isn't practical for everyone, people are still able to be inspired by the tiny house movement and can apply a few lessons to their own regular-sized home. They can consider reducing their energy usage, purchasing less stuff, choosing eco-friendly options for appliances and building materials, and even getting outside more.

## **Process**

In order to perform the investigation, I first had to conduct research on the topic of tiny houses by reading scholarly articles and journals. I met with a librarian to aid in my research to ensure I obtained the information from credible sources. Getting help from a professional pointed me in the right direction on where I should look for information on my topic so I could ensure I was getting the correct materials. This research included information on every aspect of tiny homes such as the different types and the advantages and disadvantages of going tiny. Next, I went to Detroit with my faculty mentor to visit the Cass Community Social Services Tiny Homes, which is a community of homes with low square footage that are built to offer housing to people who have been homeless at one point in their lives and are struggling to make ends meet. They have worked with Detroit's homeless since 2002 and cares for 300 people per night in its regular shelters (Fowler). By visiting, I was able to take photos and experience the size of an

actual tiny house in person and see all the different architectural designs along with the effect they have within my own community.

After obtaining all the necessary information, I then was able to start designing the project using my graphic design skills. I started off with basic sketches of the general layout of the magazine and different design ideas for the social media posts using pencil and paper. I was able to edit and manipulate the images I took of the tiny homes at the Cass Community Social Services community using the program Adobe Photoshop. I was then able to play around with placement of images to create different collages in Adobe Illustrator that were used throughout the magazine, social media posts, and poster. I created and edited the page layout of the magazine using Adobe InDesign. Color, space, and value were all kept in mind throughout the design process to ensure that the project ended up being visually cohesive. The last step of this process was to properly package all the necessary files and to upload it to Blurb, a self-publishing platform, to the magazine.

## **Much Appreciation To**

This project would not have been possible without the help and guidance of faculty mentor, Professor Donna Voronovich, who I worked closely to throughout the semester and supported me in my research on tiny houses. She also serves as an inspiration for me and my future career in the field of architecture.

## **Outcomes**

The main outcome of this creative project is the informational magazine, social media campaign, and posters that highlight the tiny house movement and the benefits and challenges of

owning one. The magazine covers topics on the tiny house movement, why you should consider going “tiny,” minimalism, sustainability, a living small success story, tiny houses for the homeless, and lastly Cass Community Social Services. This research is important because it contributes towards advocating for the tiny house movement to influence more homeowners to consider downsizing and to also get cities across the country to start proposing tiny house communities. A personal outcome of this project was to obtain more knowledge on the architecture of tiny houses and the multiple purposes they can serve and how I can use graphic design to inform others. It was also learned how everything that an individual needs to live comfortably can be condensed and designed in such a small space and how space can have such an impact on one’s lifestyle.

## **Artist Statement**

This project was a new endeavor of mine that I wanted to take on to challenge myself. What influenced me to research tiny houses for this project was that I wanted to do something that combined both architecture and sustainability. I have an interest in architecture as after graduation from Oakland University, I plan on pursuing a master’s degree in the field of architecture. I have always had a passion for design and the arts but never thought of doing it as a career when I was younger. Initially coming to Oakland, I was a Clinical and Diagnostic Science (CDS) major, and I thought my dream was to go to PA school. After being introduced to a family member of a close friend of mine who is an architect, I was immediately inspired and interested in the field. After doing research on architecture, I decided to switch my major to graphic design and plan on getting my master’s in architecture. This has been a scary transition since I went from having my whole future mapped out to not really having a solid plan, especially during the time of Covid where

many things were unknown with switching to virtual classes. Sustainability has also always been an interest of mine. Growing up, I remember doing research on the concept of zero-waste and learning about the harmful effects of greenhouse gasses. Through this project, I was able to use my graphic design skills to highlight the benefits of the architectural movement of tiny houses that advocates for simplifying the way people live and its impact on the communities and environment around us.

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## Project











