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## The Study of Pine Bluff Low-Income Housing Opportunities: What is the Cost of Inaction?

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# THE STUDY OF PINE BLUFF LOW-INCOME HOUSING OPPORTUNITIES

WHAT IS THE COST OF INACTION?

Undergraduate Honors Thesis

Fay Jones School of Architecture + Design

Department of Architecture

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Spring 2023

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## ABSTRACT

The impact of stable housing can have the power to shape the overall quality of life. Housing influences various life outcomes, such as education, health, financial stability, emotional well-being, and an overall sense of safety. Studies show that quality of life is linked to housing stability and impacts people of all ages. This thesis looks at the city of Pine Bluff, Arkansas, which has a severe low-income housing shortage which results in many people living in poverty and unstable settings.

This thesis analyzes three low-income housing case studies to evaluate the process and outcomes of various approaches to addressing housing shortages. Each case study focuses on a community with analogous demographics of Pine Bluff, Arkansas. These studies were selected through highly focused parameters to ensure they were comparable. Each case study reviews a population set that qualifies as rural, at or below the national poverty line, a predominantly minority population, and high unemployment rates. By analyzing the processes of the case study's approach to implementing low-income housing, then reviewing outcomes, possible future beneficial housing opportunities for Pine Bluff, Arkansas, are identified.

## GLOSSARY

- **Area Median Income:** Also known as AMI. The midpoint of a region's income distribution. Half of families in the region earn more than the median, and half earn less than the median. <sup>1</sup>
- **Cost Burden:** A family who is cost-burdened is paying more than 30 percent of their gross household income for housing. This includes mortgage, utilities, upkeep, and transportation from home to work or school. <sup>2</sup>
- **Case study:** A compilation of research that generates an in-depth, multi-faceted understanding of a complex issue in its real-life context. The research gives detailed consideration to the development of a particular idea, group, or situation over a period of time. <sup>3</sup>
- **Extremely Low-Income:** Also known as ELI. These households have incomes at or below the poverty line or 30% of their area median income. For Arkansas, ELI constitutes that in a household of 4, the total household income is no more than \$26,500. <sup>4</sup>
- **Low-Income Housing:** Low-income housing helps those who cannot keep up with rising housing costs and marketing changes. A household is considered low-income if it makes below 80% of the median income in the local area. <sup>5</sup>
- **National Crime Index:** Every year, the Federal Bureau of Investigation, or FBI, compiles crime statistics nationwide and publishes the results. The results of this data are known as the crime index or the National Uniform Crime Report. Crime Index measures the likelihood of where crime may occur and provides crime risk scores at the granular block group level. <sup>6</sup>
- **National Crime Rate:** A statistical system of incident-based data on crimes reported to law enforcement. The crime rate is the ratio between the number of felonies and misdemeanors recorded about the population in question. <sup>7</sup>
- **National Poverty Line:** A benchmark used for estimating poverty indicators that are consistent with the country's specific economic and social circumstances. The US national poverty line in 2023 is \$35,801 per household. <sup>8</sup>

- National Unemployment Rate: This rate represents the number of unemployed people as a percentage of the labor force. The labor force is the sum of both the unemployed and the employed. The unemployment rate is calculated by dividing the number of unemployed by the total of the labor force. The US unemployment rate in 2023 is 3.4%.<sup>9</sup>
- Persistently Poor: The USDA defines counties as “persistently poor” if 20 percent or more of the population has lived in poverty for the previous 30 years. 85 percent of persistently poor counties are rural, even though rural America makes up less than 20 percent of the nation’s population.<sup>10</sup>
- Resilience: When referencing resilience in terms of sustainability, it refers to how well a building’s infrastructure can withstand a changing environment and its ability to adapt.<sup>11</sup>
- Rural City: Defined by the USDA as areas with populations ranging from 2,500 to 49,999 that are not part of larger labor market areas (metropolitan areas).<sup>12</sup>
- Sustainability: Sustainable design seeks to reduce negative impacts on the environment, and the health and comfort of building occupants, thereby improving building performance and maintaining upkeep. Sustainable design seeks to consider long-term affordability, such as maintenance and upkeep costs, annual utility costs, and locally available materials.<sup>13</sup>
- Vernacular: In architecture, this is a term used to qualify a style that is designed based on local needs, availability of construction materials, and reflecting local traditions. Vernacular considers the climate of the place and typical design layouts.<sup>14</sup>
- “What is the cost of inaction?”: A recurring question that will be asked throughout the duration of this exploration. While in each case it can be attributed to differing dollar amounts, population declines, rises in poverty, and decreases in quality of life, it is not intended to be a specific number. It is intended to bring attention to the broad impact emotionally, physically, mentally, and financially of the populations in search of stable, affordable housing.

## Glossary References

1. Hamann, J. (2023, February 19). *What is area median income (AMI)?*. HUD Loans.  
<https://www.hud.loans/hud-loans-blog/what-is-area-median-income-ami/>
2. *About*. National Low Income Housing Coalition. (n.d.).  
<https://nlihc.org/gap/about#:~:text=A%20household%20is%20cost%2Dburdened,househ olds%20are%20severely%20cost%2Dburdened.>
3. Merriam-Webster. (n.d.). *Case study definition & meaning*. Merriam-Webster.  
<https://www.merriam-webster.com/dictionary/case%20study>
4. *Hud posts FY2021 income limits*. LeadingAge. (2022, November 16).  
<https://leadingage.org/hud-posts-fy2021-income-limits>
5. Encyclopedia Britannica, inc. (2023, May 2). *Low-income housing*. Encyclopedia Britannica.  
<https://www.britannica.com/topic/low-income-housing>
6. LaMance, K. (2019, February 13). *What is the crime index?*. Legal Match Law Library.  
<https://www.legalmatch.com/law-library/article/what-is-the-crime-index.html>
7. *Crime rate*. Insee. (n.d.).  
<https://www.insee.fr/en/metadonnees/definition/c2048#:~:text=The%20crime%20rate% 20is%20the,and%20the%20population%20in%20question.>
8. Databank. (n.d.). <https://databank.worldbank.org/metadataglossary/gender-statistics/series/SI.POV.NAHC#:~:text=National%20poverty%20lines%20are%20the,neede d%20to%20be%20non%2Dpoor.>
9. U.S. Bureau of Labor Statistics. (n.d.). *Concepts and definitions (CPS)*. U.S. Bureau of Labor Statistics.  
[https://www.bls.gov/cps/definitions.htm#:~:text=The%20unemployment%20rate%20rep resents%20the,%C3%B7%20Labor%20Force\)%20x%20100.](https://www.bls.gov/cps/definitions.htm#:~:text=The%20unemployment%20rate%20rep resents%20the,%C3%B7%20Labor%20Force)%20x%20100.)
10. *Persistent poverty*. tutor2u. (n.d.). <https://www.tutor2u.net/economics/reference/persistent-poverty#:~:text=Persistent%20poverty%20is%20defined%20as,of%20the%20three%20pr eceding%20years.>
11. *Environmental Science & Sustainability*. Drake University. (n.d.).  
<https://www.drake.edu/enss/majorsminors/sandr/>

12. *Overview*. USDA ERS - Rural Classifications. (n.d.). [https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/#:~:text=rural%20towns%20\(places%20with%20fewer,market%20areas%20\(metropolitan%20areas\).](https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/#:~:text=rural%20towns%20(places%20with%20fewer,market%20areas%20(metropolitan%20areas).)
13. Merriam-Webster. (n.d.). *Sustainable definition & meaning*. Merriam-Webster. <https://www.merriam-webster.com/dictionary/sustainable#:~:text=%3A%20capable%20of%20being%20sustained,sustainable%20agriculture>
14. Merriam-Webster. (n.d.-c). *Vernacular definition & meaning*. Merriam-Webster. <https://www.merriam-webster.com/dictionary/vernacular>



# INTRODUCTION

## MOTIVATION

Architecture is about much more than just buildings. Architecture shapes experiences, brings people together, tells stories, and portrays history. Architecture has the ability to improve moods and, more importantly, quality of life. Architects typically strive to positively impact and influence the lives of those inhabiting designed spaces. The power of architecture is evident throughout time, but notably in the design of housing.

Design students are taught about people's theoretical experiences when occupying space and its effect on them. Growing up, I saw firsthand the immense difference stable housing makes in a person's life. Since I was in 7<sup>th</sup> grade, my family has fostered many children. Child after child came to us scared, disheartened, weary, and often traumatized. We saw each child within the first few weeks of being in a stable, safe, and loving home completely bloom and open up. Within the first few months, it seemed as if they were entirely new people.

As children were placed in our home, we were able to build relationships with their families; relationships that have lasted longer than just the time that their children were with us. We saw and continue to see the struggle families have to find not only affordable housing but housing that is stable and safe enough for children to return to. This gave me a perspective on what it is like for those who do not have a stable household and how

that truly puts them at a disadvantage. It is heartbreaking to hear but even more heartbreaking to see.

At a young age, I was introduced to the power architecture has through seeing the effects of housing and the vicious struggle many people have with it. That is why I am studying to become an architect. Housing is a heavily researched topic, and it is proven that stable, quality housing gives individuals an advantage, helps to improve their lives, and on a larger scale, every aspect of a community. As cities across the country suffer more from low-income housing shortages, my desire to help grows. There is currently not a single county in the United States that can fill 100 percent of its low-income population's need for safe and affordable housing.<sup>1</sup> Fifteen million children across the nation are living in poverty, the highest rate in nearly 60 years.<sup>2</sup> This is a wicked problem that requires action now. When sharing my story and experience with foster care, many often remark on how difficult it must be, how much my parents must sacrifice, and how they do not know how we do it. While all these things are true, it is difficult, and many sacrifices have been made; what would be the cost of inaction? To my family, it seems the cost of inaction is much higher than any price we have paid. Everyone, both rich and poor, deserves to live in a safe place, benefitting from stability and the advantages of quality design.

My experience with the foster care system and the children who came through my home from severely impoverished backgrounds was the catalyst for this research. An additional experience with my church serving the underserved community of Pine Bluff, Arkansas, only added fuel to my fire and a focal point for my project. Pine Bluff is a rural city mere minutes from my home in Arkansas, where I began looking at the possibilities. I felt compelled to make a difference in the lives of families like those I regularly intersected with and whose children I had grown to love. The impact of poverty on children demanded my attention. Initially, I believed I knew the significance of

housing to the well-being of children and adults alike. However, I had many unanswered questions about how to help. What is the cost of constructing low-income housing in impoverished neighborhoods? I searched through an overwhelming amount of data and was shocked at the vast amount of information I found that validated the link between safe, affordable housing and variables such as childhood poverty, malnutrition, lack of education, unemployment, criminal activity, physical health, and depression. Eventually, I stopped asking, "What is the cost of constructing low-income housing?" and started asking, "What is the cost of inaction?"

## Introduction References

1. Affordable housing statistics | monroe group. (n.d.). <https://www.monroegroup.com/about-us/affordable-housing-statistics/>
2. Callahan, S. (2022, September 30). *Understanding child poverty: Facts and statistics*. Children Incorporated. <https://childrenincorporated.org/understanding-child-poverty-facts-and-statistics/>

# METHODOLOGY

In the comfortable community where I grew up, we were just a short driving distance from a low-income population that was incredibly deprived and underserved. Although I had previously known of its impoverished environment and extensive crime rate, seeing the conditions firsthand that many lived in was eye-opening. Although Pine Bluff was not far from my hometown, many residents had no safe place to call home. There is a large gap in the mental, physical, and financial benefits that accompany low-income versus high-income housing.<sup>1</sup>

This research revealed the truly apparent affordable housing crisis. Communities all across the country are facing low-income housing shortages. How could I take a focused approach to such a wide problem? I considered many directions, such as looking strictly at cities in Arkansas, looking at urban communities that have multi-family housing and apartments, or looking at rental units versus ownership. My research found home ownership was the most beneficial way to combat poverty.<sup>2</sup> Due to this finding, I chose home ownership as my first narrowing factor. My initial focus was finding case studies that looked at low-income housing designed for ownership. However,

to ensure similarities were comparable, I narrowed further to look for similarly sized communities with equivalent socio-economic status and demographics to Pine Bluff, Arkansas.

After deciding on a standardized set of parameters, I began looking at low-income housing case studies that had already been conducted. Using the U.S. Department of Housing and Urban Development's website for policy development and research, I had access to a wide range of well-documented case studies. Using my parameters to filter the results, I settled on three locations and housing projects that matched the qualities of Pine Bluff, Arkansas.

The following parameters define all four of the decided cities:

- Primarily minority populations of historically underrepresented communities
- A rural city – an area with a population below 50,000 that is not part of a larger metropolitan area
- Average income within \$10,000 of the national poverty line
- The unemployment rate is at least double the national average

## Methodology References

1. Hernández, D. (2016, May). *Affording housing at the expense of Health: Exploring the Housing and neighborhood strategies of Poor Families*. Journal of family issues.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4819250/>
2. *Research series: How does homeownership contribute to wealth building?*. Habitat for Humanity. (n.d.).  
<https://www.habitat.org/our-work/impact/research-series-how-does-homeownership-contribute-to-wealth-building#:~:text=Homeownership%20promotes%20wealth%20building%20by,ability%20to%20build%20home%20equity.>

# BACKGROUND

## UNDERSTANDING THE NEED

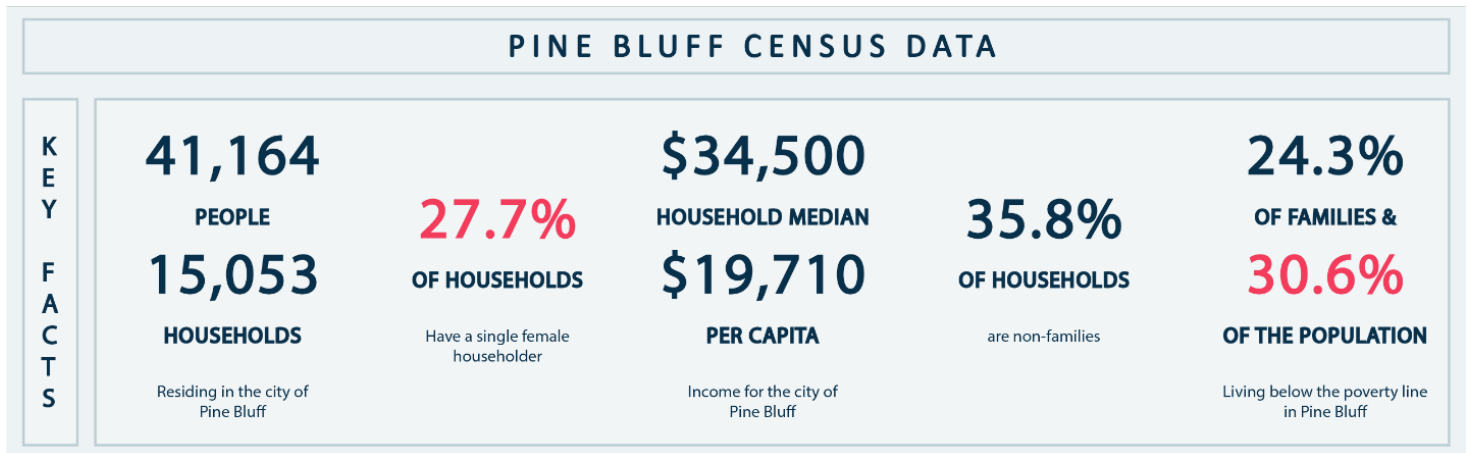


Figure 1

### Pine Bluff Census Data

- There are 41,164 people and 15,043 households residing in the city.<sup>1</sup>
- The average household size was 2.53 people, and the average family size was 3.14.<sup>2</sup>
- The median income for a household in the city is \$36,940. Per capita, the income for the city is \$19,710.<sup>3</sup>
- About 24.3% of families and 30.6% of the population are below the poverty line, including 45.6% of those under 18 and 13.7% of those aged 65 or over.<sup>4</sup>
- There are 15,043 households, out of which 28.8% had children under the age of 18 living with them, 31.3% are married couples living together, 27.7% had a female householder with no husband present, and 35.8% are non-families.<sup>5</sup>

### Pine Bluff Crime Data

- Crime Index of 0 (100 being the safest), meaning Pine Bluff is Safer than 0% of US cities.<sup>6</sup>
- Crime Rate of 78.84 per 1,000 residents.<sup>7</sup>
- The chances of becoming a victim of violent crime in Pine Bluff are 1 in 48 versus 1 in 141 in Arkansas. The chances of becoming a victim of property crime are 1 in 17 versus 1 in 38 in Arkansas.<sup>8</sup>
- Pine Bluff is 8th in the United States for most dangerous cities.<sup>9</sup>



Figure 2. Abandoned buildings in Pine Bluff



Figure 3. Abandoned home in Pine Bluff



Figure 4. Abandoned buildings in Pine Bluff

### History of Pine Bluff

Pine Bluff, Arkansas, was founded in 1819 on a bluff said to be “covered in pines.” Pine Bluff’s long history begins with the displacement of many native tribes due to the Louisiana Purchase. As part of the Trail of Tears, this was the first of many injustices the area would see throughout time.<sup>10</sup>

In July 1834, the federally financed military road from Columbia to Little Rock was constructed through Pine Bluff and significantly increased land

travel. This caused a rapid influx of settlers from east of the Mississippi, including many German immigrants. The city became a large cargo transport point between the river and the rail line, making it the commercial and economic center of the Arkansas Delta. By the time of the Civil War, Pine Bluff was flourishing off the profits of large cotton plantations worked by hundreds of thousands of enslaved Africans. The city had one of the largest cotton plantations in all of Arkansas. Because Union forces set up a contraband camp in Pine Bluff, it became an attraction to many refugees after the Emancipation Proclamation.<sup>11</sup>

After the war, freed slaves started schools to educate African Americans who were previously prohibited from learning to read and write by Southern laws. Arkansas’ first public black college is still there today, The University of Arkansas at Pine Bluff. However, after the war, the economy took a while to recover. But with the construction of more rail lines, and the reactivation of many cotton plantations, Pine Bluff began its repair. Many businesses, like banks, bars, barbershops, and other establishments, began to open. Several were even black-owned.<sup>12</sup>

Due to the cotton production and its location at the mouth of the Arkansas River, Pine Bluff was peaking in the 1880s. By 1890 it was Arkansas’ third largest city. The city’s business district developed and grew very quickly. The Masonic Lodge, the city’s tallest building, was constructed in 1904.<sup>13</sup> Today the building stands vacant with boarded windows (see figure 5-8). The Hotel Pines considered one of Arkansas’ nicest hotels, constructed in 1912, had very expensive

marble interiors and a classic design. The hotel also now stands abandoned (see figure 9-16).<sup>14</sup>

The city's demise began in 1927 with the Mississippi River flood destroying thousands of acres of cotton, followed by the 1930 drought and the Great Depression. Although the population continued to grow, the economy hit a steady decline. This economic decline continued into the 21st century and impeded the architectural decline. The city's infrastructure continued to be impacted by a lack of household income, minimizing taxes, therefore eventually depleting maintenance funding. Without the upkeep of both city buildings and personal property, the city suffered immensely. Homes began to deteriorate, and by 2015 four prominent buildings on the once thriving Main Street had collapsed, causing a partial closing of the city's most significant street.<sup>15</sup>

As the city continued to digress, most of Pine Bluff's wealthy business owners and investors moved to nearby cities. This depleted the circulation of both personal and governmental finances even more. Today, it is one of the most impoverished cities in America, with one of the highest crime rates.<sup>16</sup>

## BEFORE



Figure 5. Grand Masonic Temple Exterior



Figure 6. Grand Masonic Temple Interior

## AFTER



Figure 7. Grand Masonic Temple Exterior

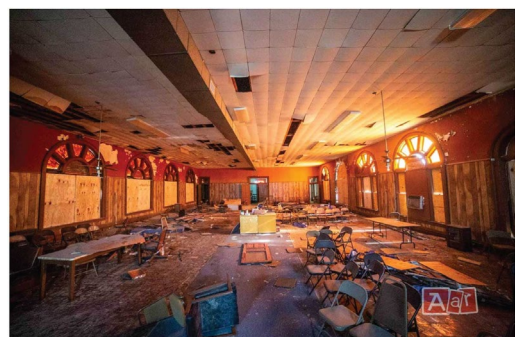


Figure 8. Grand Masonic Temple Interior



BEFORE



Figure 9. Hotel Pines Exterior



Figure 11. Hotel Pines Exterior



Figure 13. Hotel Pines Interior



Figure 15. Hotel Pines Interior

AFTER



Figure 10. Hotel Pines Exterior



Figure 12. Hotel Pines Exterior



Figure 14. Hotel Pines Interior



Figure 16. Hotel Pines Interior

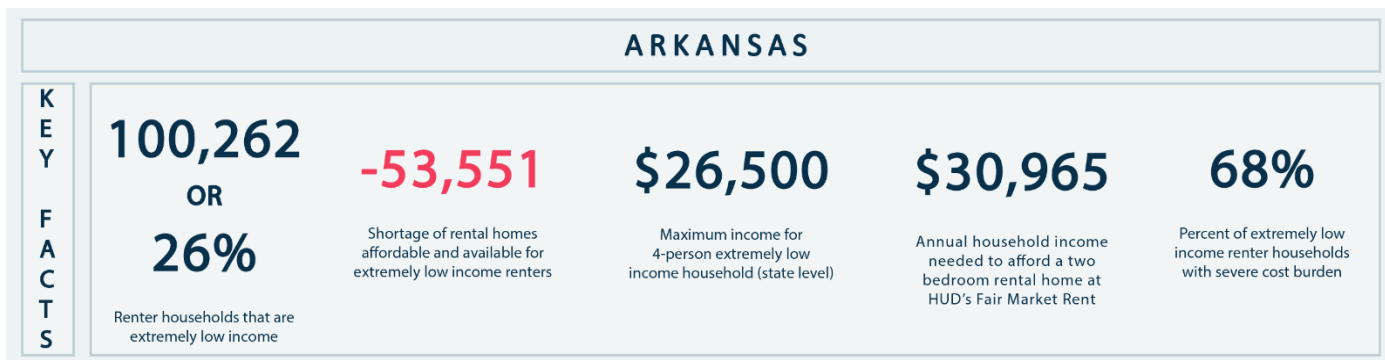


Figure 17

### Lack of Housing

The housing crisis has become a vastly increasing problem across America. There are over 500,000 people in The United States without the stability, protection, and shelter of a home. The leading cause of homelessness in America is the lack of affordable housing.<sup>17</sup>

In Arkansas, there is a shortage of 53,551 available homes for those qualifying as extremely low-income. This shortage is particularly evident in Pine Bluff. In 2009, Pine Bluff was included on the *Forbes* list of America's 10 most impoverished cities.<sup>18</sup> The effects are evident by looking at housing quality and the largely increasing crime rate. In Arkansas, 26 percent of renter households are considered extremely low-income. Extremely low income (ELI) constitutes a household of four with the total income being no more than \$26,500. On average, the annual household income needed to afford a two-bedroom rental home is \$30,965. The conflict between these two statistics is alarming. As a standard, households are expected to allocate no more than 30 percent of their gross yearly income to housing costs. However, many ELI families spend more than half of their income on housing, causing a cost burden that severely impacts quality of life.<sup>19</sup>

Rural communities, in particular, are struggling more severely and with less governmental help than many of their urban counterparts. Options for low-income housing remain inadequate, especially in rural areas, as they are isolated geographically and remote from much of mainstream America. Many rural areas have suffered for decades with high poverty rates and a lack of resources or economic opportunities. While a higher portion of rural residents are homeowners than those in major metropolitan cities, homes in rural areas are often valued lower and typically in much need of repair. Aged homes become more of a burden to their owners as maintenance is costly and utility bills are higher due to poor insulation. These factors all contribute to rural communities' inability to break cyclical and generational trends and to develop economies and resources to the scale of urban centers. With fewer births, increased mortalities, and outmigration of young adults, these small populations are at a severe disadvantage. Economic distress undeniably impacts the housing conditions for both communities and residents.<sup>20</sup>

Impoverished rural households face some of the nation's worst housing conditions, as poverty is regionally concentrated in these areas. Although rural America makes up less than 20 percent of the

nation's population, 85 percent of persistently poor counties are rural. The USDA defines counties as "persistently poor" if 20 percent or more of the population has lived in poverty for the previous 30 years. These communities struggle with a critical lack of well-designed and high performing single-family homes that can be considered as beneficial and valuable property to its owner.<sup>21</sup>

Integrating affordable housing solutions will contribute to a more sustainable and stable community and can create greater opportunities for quality health, wellness, employment, and educational access which will provide a better economic and community life for its residents.

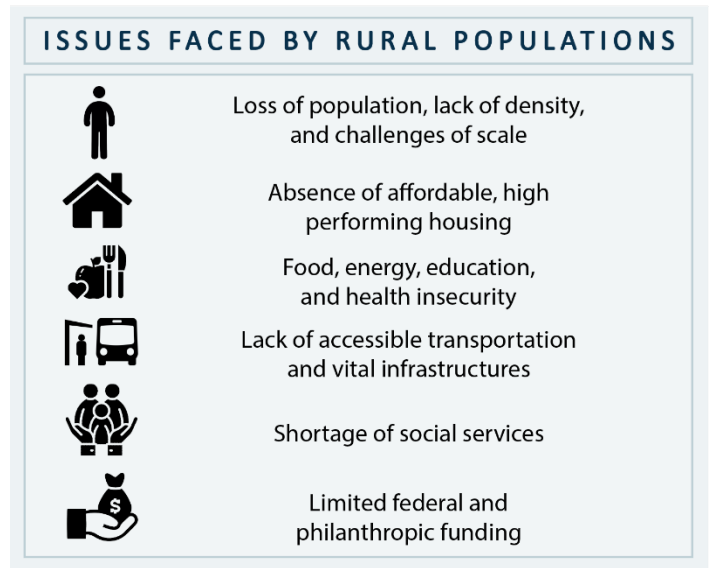


Figure 18

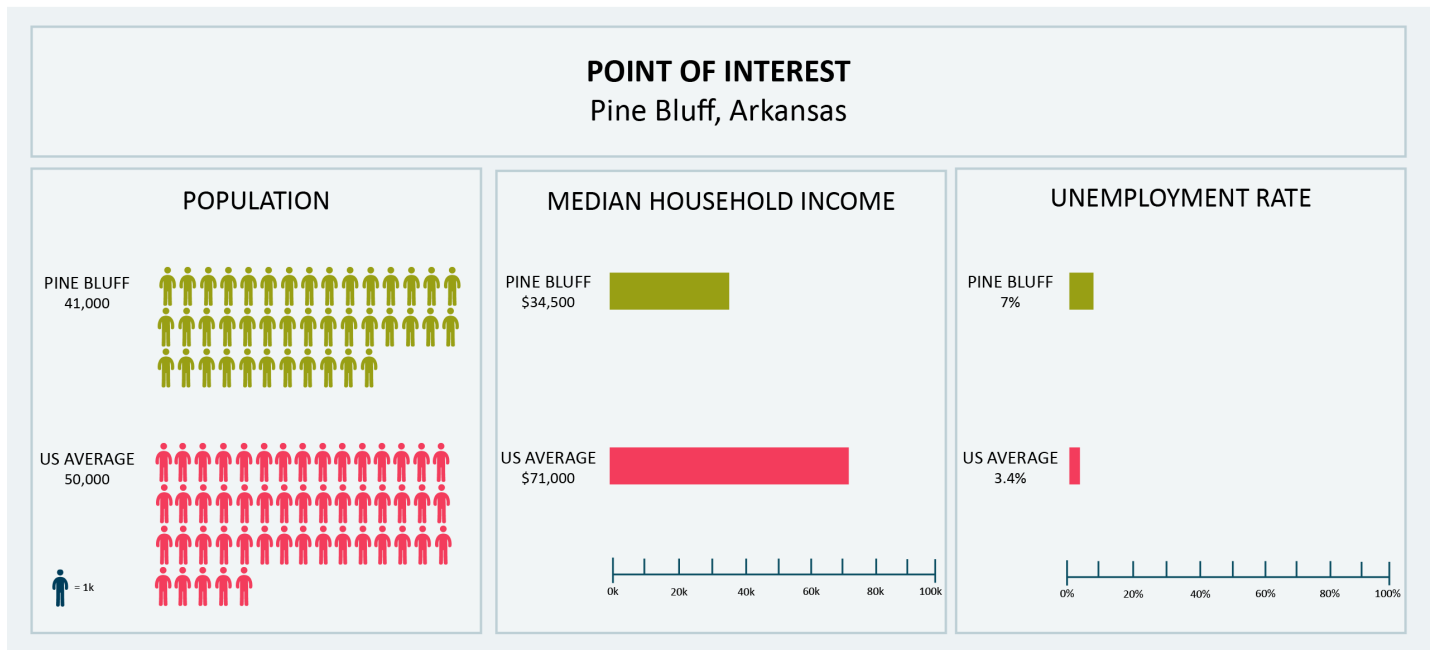


Figure 19

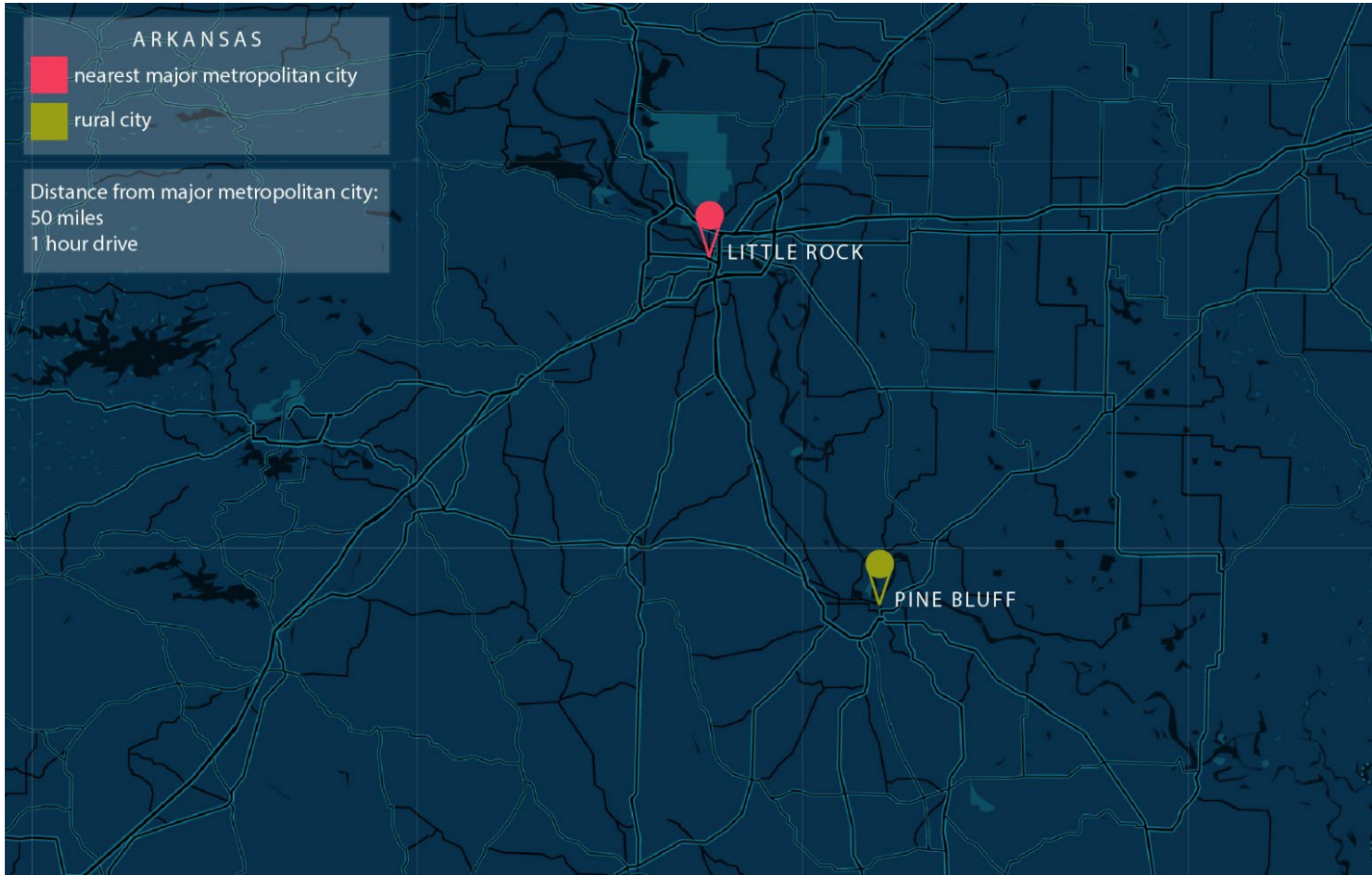


Figure 20

## Background References and Figures

1. U.S. Census Bureau: Pine Bluff City, Arkansas. (n.d.).  
<https://www.census.gov/quickfacts/pinebluffcityarkansas>
2. U.S. Census Bureau: Pine Bluff City, Arkansas. (n.d.).  
<https://www.census.gov/quickfacts/pinebluffcityarkansas>
3. U.S. Census Bureau: Pine Bluff City, Arkansas. (n.d.).  
<https://www.census.gov/quickfacts/pinebluffcityarkansas>
4. U.S. Census Bureau: Pine Bluff City, Arkansas. (n.d.).  
<https://www.census.gov/quickfacts/pinebluffcityarkansas>
5. U.S. Census Bureau: Pine Bluff City, Arkansas. (n.d.).  
<https://www.census.gov/quickfacts/pinebluffcityarkansas>
6. *Pine Bluff, AR crime rates*. NeighborhoodScout. (n.d.). <https://www.neighborhoodscout.com/ar/pine-bluff/crime>
7. *Pine Bluff, AR crime rates*. NeighborhoodScout. (n.d.). <https://www.neighborhoodscout.com/ar/pine-bluff/crime>
8. *Pine Bluff, AR crime rates*. NeighborhoodScout. (n.d.). <https://www.neighborhoodscout.com/ar/pine-bluff/crime>
9. *Neighborhoodscout's most dangerous cities – 2023*. NeighborhoodScout. (2023, January 12).  
<https://www.neighborhoodscout.com/blog/top100dangerous>
10. *Pine Bluff (Jefferson County)*. Encyclopedia of Arkansas. (2023, April 18).  
<https://encyclopediaofarkansas.net/entries/pine-bluff-908/>
11. *Pine Bluff (Jefferson County)*. Encyclopedia of Arkansas. (2023, April 18).  
<https://encyclopediaofarkansas.net/entries/pine-bluff-908/>
12. *Pine Bluff (Jefferson County)*. Encyclopedia of Arkansas. (2023, April 18).  
<https://encyclopediaofarkansas.net/entries/pine-bluff-908/>
13. *Masonic Temple of pine bluff*. Abandoned Arkansas. (2022, February 21).  
<https://abandonedar.com/masonic-temple-of-pine-bluff/#:~:text=When%20it%20was%20completed%2C%20the,the%20state%27s%20black%20Masonic%20order.>
14. *Hotel pines*. Encyclopedia of Arkansas. (2022, August 31). <https://encyclopediaofarkansas.net/entries/hotel-pines-1189/>

15. *Pine Bluff (Jefferson County)*. Encyclopedia of Arkansas. (2023, April 18).  
<https://encyclopediaofarkansas.net/entries/pine-bluff-908/>
16. *Neighborhoodscout's most dangerous cities – 2023*. NeighborhoodScout. (2023, January 12).  
<https://www.neighborhoodscout.com/blog/top100dangerous>
17. Cassaday, K. J. (2020, June 21). *Unaffordable housing and homelessness in the U.S. - 2023 edition*. CAUF Society. <https://caufsociety.com/unaffordable-housing-and-homelessness/#:~:text=More%20than%2018%20million%20families,in%20the%20United%20States%20today.>
18. Forbes Magazine. (2013, June 19). *In depth: America's 10 most impoverished cities*. Forbes.  
[https://www.forbes.com/2009/10/12/most-impoverished-cities-business-beltway-poverty-cities\\_slide.html?sh=507648a3671e](https://www.forbes.com/2009/10/12/most-impoverished-cities-business-beltway-poverty-cities_slide.html?sh=507648a3671e)
19. *Arkansas*. National Low Income Housing Coalition. (n.d.). <https://nlihc.org/housing-needs-by-state/arkansas>
20. *The problem*. Rural Studio. (2019, August 12). <http://ruralstudio.org/front-porch/the-problem/>
21. *The problem*. Rural Studio. (2019b, August 12). <http://ruralstudio.org/front-porch/the-problem/>

Figure 1. Victoria R. Best (2023, April). *Own Graphic*

Figure 2. Independent Digital News and Media. (2013, February 17). *Pine Bluff: On patrol in the most dangerous little town in America*. The Independent. <https://www.independent.co.uk/news/world/americas/pine-bluff-on-patrol-in-the-most-dangerous-little-town-in-america-8498769.html>

Figure 3. Colvin, E. (2022, February 18). *Housing initiative gets more area*. Arkansas Online.  
<https://www.arkansasonline.com/news/2022/feb/18/housing-initiative-gets-more-area/>

Figure 4. Ellis, D. (2020, November 26). *Re-establishing Main Street Business*. Arkansas Online.  
<https://www.arkansasonline.com/news/2020/nov/26/re-establishing-main-street-business/>

Figure 5. *Masonic Temple of pine bluff: 40+ photos*. Abandoned Arkansas. (2022, February 21).  
<https://abandonedar.com/masonic-temple-of-pine-bluff/>

Figure 6. *Masonic Temple of pine bluff: 40+ photos*. Abandoned Arkansas. (2022, February 21).  
<https://abandonedar.com/masonic-temple-of-pine-bluff/>

Figure 7. Commercial, S. to T. (2021, May 24). *Vacant masonic temple has rich, vibrant history*. Arkansas Online.  
<https://www.arkansasonline.com/news/2021/may/24/vacant-masonic-temple-has-rich-vibrant-history/>

Figure 8. *Masonic Temple of pine bluff: 40+ photos*. Abandoned Arkansas. (2022, February 21).  
<https://abandonedar.com/masonic-temple-of-pine-bluff/>

Figure 9. *Hotel pines*. CardCow.com. (n.d.). <https://www.cardcow.com/281794/pine-bluff-arkansas-hotel-pines/>

- Figure 10. Staff, A. B. (2018, April 25). *Hotel Pines could soon be site of new dining spot*. Arkansas Business. <https://www.arkansasbusiness.com/article/121642/big-news-in-pine-bluff>
- Figure 11. *Hotel pines: 40+ photos*. Abandoned Arkansas. (2022, February 21). <https://abandonedar.com/hotel-pines/>
- Figure 12. Staff, A. B. (2020, July 23). *'the dream is still alive' at Pine Bluff's hotel pines*. Arkansas Business. <https://www.arkansasbusiness.com/article/132127/the-dream-is-still-alive-at-pine-bluffs-hotel-pines>
- Figure 13. *Hotel pines: 40+ photos*. Abandoned Arkansas. (2022, February 21). <https://abandonedar.com/hotel-pines/>
- Figure 14. *Pine Bluff's once Grand Hotel Pines*. Hibblen Radio. (n.d.). <https://hibblenradio.com/photography/the-abandoned-hotel-pines/>
- Figure 15. Cormackphotos. (n.d.). *Hotel pines*. Cormackphotos. <http://cormackphotos.blogspot.com/2016/06/hotel-pines.html>
- Figure 16. KUAR | By Michael Hibblen. (2018, March 2). *Hopes of saving Pine Bluff's historic, but Crumbling Hotel Pines*. KUAR. <https://www.ualrpublicradio.org/local-regional-news/2014-06-15/hopes-of-saving-pine-bluffs-historic-but-crumbling-hotel-pines>
- Figure 17. Victoria R. Best (2023, April). *Own Graphic*
- Figure 18. Victoria R. Best (2023, April). *Own Graphic*
- Figure 19. Victoria R. Best (2023, April). *Own Graphic*
- Figure 20. Victoria R. Best (2023, April). *Own Graphic*

# APPROACH

## Overview

This thesis aims to show the impact of stable housing on low-income home buyers and identify potential impactful approaches that may be applicable to Pine Bluff, Arkansas. As low-income housing in destitute neighborhoods is a widely studied topic, using case studies and existing statistical data to establish where past projects have failed and/or succeeded will help to determine results in long-term affordability, innovative design, and economically efficient construction. Architects can design affordable and well-built housing in chronically impoverished environments. This thesis will consider that possibility for Pine Bluff, Arkansas, a city with an average income below the poverty line and insufficient housing.

## Case Study Analysis

Through an in-depth analysis of three low-income housing case studies, a set of strategies will be cataloged and cross-referenced. Conclusions will be drawn from the precedents of these rural, impoverished cities consisting of primarily minority populations of historically underrepresented communities:

- Dallas County, Alabama
- Newburgh, New York
- Pine Ridge Indian Reservation, South Dakota

Using these case studies, an evaluation will be made to gain a thorough understanding of the cities' demographics, the project's architectural features, and outcomes.

## Setting Parameters for Analysis

A set of parameters have been established to ensure an effective and cohesive analysis. Each case study requires a balanced evaluation of city demographics, architectural expression, and overall impact. Each of these categories will be measured through the following unifying standards:

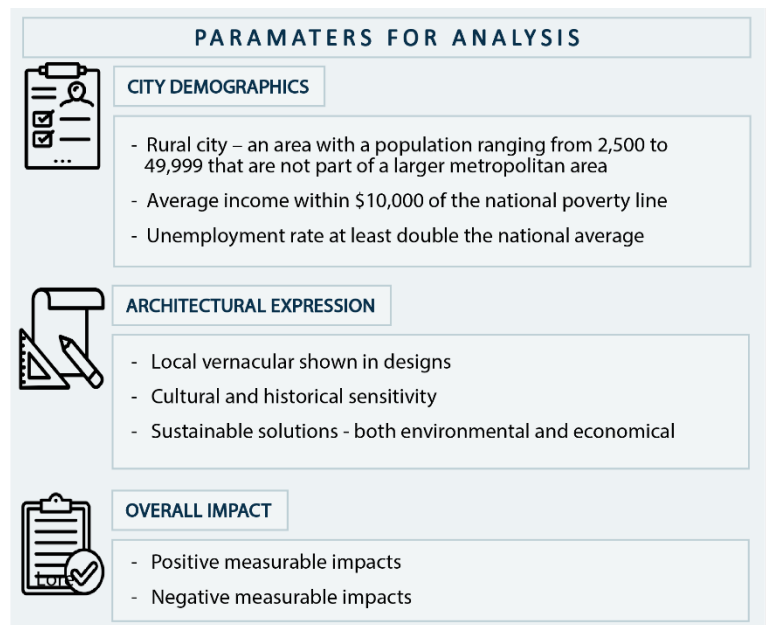


Figure 1.





Figure 2

This framework of examination attempts to provide a complete and even understanding of each case study and allow for a thorough cost-benefit analysis to find impactful future possibilities in the context of Pine Bluff, Arkansas.

## Approach Figures

Figure 1. Victoria R. Best (2023, April). *Own Graphic*

Figure 2. Victoria R. Best (2023, April). *Own Graphic*

# EFFECTS OF THE BUILT ENVIRONMENT

Housing is more than just a building. It impacts physical, mental, emotional health, and social well-being, and can be influenced by multiple economic factors. There is extensive data to support that housing affects not just physical health, but that mental and emotional health is also elevated when families live in stable homes. Studies show that there is significant value to stability in homeowners' minds. Much data exists on the value of neighborhoods based on the quality of homes and home maintenance. Neighborhoods with high enough income levels to support home maintenance tend to have lower crime rates and higher child education indices. Neighborhoods that cannot afford basic home maintenance tend to experience the deterioration of homes. As buildings deteriorate and eventually become abandoned, they become targets of misuse and crime rates increase. This can be minimized through the use of longer-lasting, more affordable materials in building and upkeep.<sup>1</sup>

The lack of low-income and stable housing takes a major mental and physical toll on a large population of people. While homeownership provides numerous financial benefits, the neglect of rural communities goes beyond the broad range of financial challenges. Rural communities see a disproportionate amount of poor health outcomes. As residents of rural communities tend to be older and poorer than those in urban cities, they suffer from the intertwining conditions of poverty: poor

diet, obesity, high blood pressure, and an increased ratio of diabetes and vascular disease. The severe cost burden to many of these households causes them to sacrifice necessities like healthy food and healthcare to pay rent. Because of this, poor housing and poor health are directly related. It is also evident in the children of low-income families that have to compromise on housing, a greater increase of asthma and allergies, and more severe injuries from accidents occur. "Residential instability is associated with health problems among youth, including increased risks of teen pregnancy, early drug use, and depression. A review of twenty-five studies that examined the impact of foreclosure on mental health and health behaviors (including substance abuse) found that all of the studies reported that foreclosure was associated with worsened outcomes, including depression, anxiety, increased alcohol use, psychological distress, and suicide."<sup>2</sup> While stable housing alone cannot be argued as a definitive resolution to all these problems, it is repeatedly shown to be a step in the right direction. Affordable, stable, quality housing gives individuals an advantage over those who experience unstable housing conditions and helps to improve every aspect of a neighborhood, including the level of education, health indices, and overall crime rates.<sup>3</sup>

Homeownership is essential to financial wealth building.

## HOW HOMEOWNERSHIP BUILDS WEALTH



Homeownership provides stability and security



The home is considered an investable asset



Over time, equity increases financial leverage



Local construction increases workforce capacity



Homes titled as real property appreciate in value

Figure 1

Homeownership is the primary mode of wealth building in America. However, because of increasing costs and decreasing availability, ownership is restricted for many. Homeownership is one of the largest deterrents to generational poverty. However, the bulk of available low-income housing is rental units. While rentals are useful in providing efficient housing to those in need, it does not help with intergenerational economics and does not play as significant of a role in neighborhood benefits as homeownership. With ownership comes a sense of pride, confidence in oneself, financial security, and general well-being, boosting the desire to maintain and preserve a certain quality of the home and, in turn, the neighborhood. Research shows that the most cost-effective strategy for reducing childhood poverty is to increase access to affordable, low-income housing.<sup>4</sup> Stanford economist Raj Chetty discovered that “children who moved to lower-poverty neighborhoods saw their earnings as adults

increase by approximately 31 percent, an increased likelihood of living in better neighborhoods as adults, and a lowered likelihood of becoming a single parent. Moreover, children living in stable, affordable homes are more likely to thrive in school and have greater opportunities to learn inside and outside the classroom.”<sup>5</sup>

Increasing access to affordable housing advances personal and, eventually, neighborhood economic growth in an unprecedented way. Research on the shortage of affordable housing in the American economy reveals that the disparity costs the economy about \$2 trillion a year in workforce productivity. The lack of affordable housing is proven to lower opportunities for increased earnings, causing slower GDP growth. In fact, researchers estimate “the growth in GDP between 1964 and 2009 would have been 13.5 percent higher if families had better access to affordable housing. This would have led to a \$1.7 trillion increase in income or \$8,775 in additional wages per worker. Moreover, each dollar invested in affordable housing boosts local economies by leveraging public and private resources to generate income—including resident earnings and additional local tax revenue—and supports job creation and retention.”<sup>6</sup> So, “What is the cost of inaction?” In this case, it is a tangible \$2 trillion a year, yet in many cases, it is the intangible diminishing of quality of life.

## Effects of the Built Environment References and Figures

1. Housing and Health: An overview of the literature. (n.d.).  
<https://www.healthaffairs.org/doi/10.1377/hpb20180313.396577/>
2. Housing and Health: An overview of the literature. (n.d.).  
<https://www.healthaffairs.org/doi/10.1377/hpb20180313.396577/>
3. Housing and Health: An overview of the literature. (n.d.).  
<https://www.healthaffairs.org/doi/10.1377/hpb20180313.396577/>
4. *The problem*. National Low Income Housing Coalition. (n.d.). <https://nlihc.org/explore-issues/why-we-care/problem#:~:text=Housing%20is%20the%20key%20to,mobility%20in%20the%20United%20States.>
5. *Why we care*. National Low Income Housing Coalition. (n.d.). <https://nlihc.org/explore-issues/why-we-care>
6. *The problem*. National Low Income Housing Coalition. (n.d.). <https://nlihc.org/explore-issues/why-we-care/problem#:~:text=Housing%20is%20the%20key%20to,mobility%20in%20the%20United%20States.>

Figure 1. Victoria R. Best (2023, April). *Own Graphic*

# CASE STUDIES

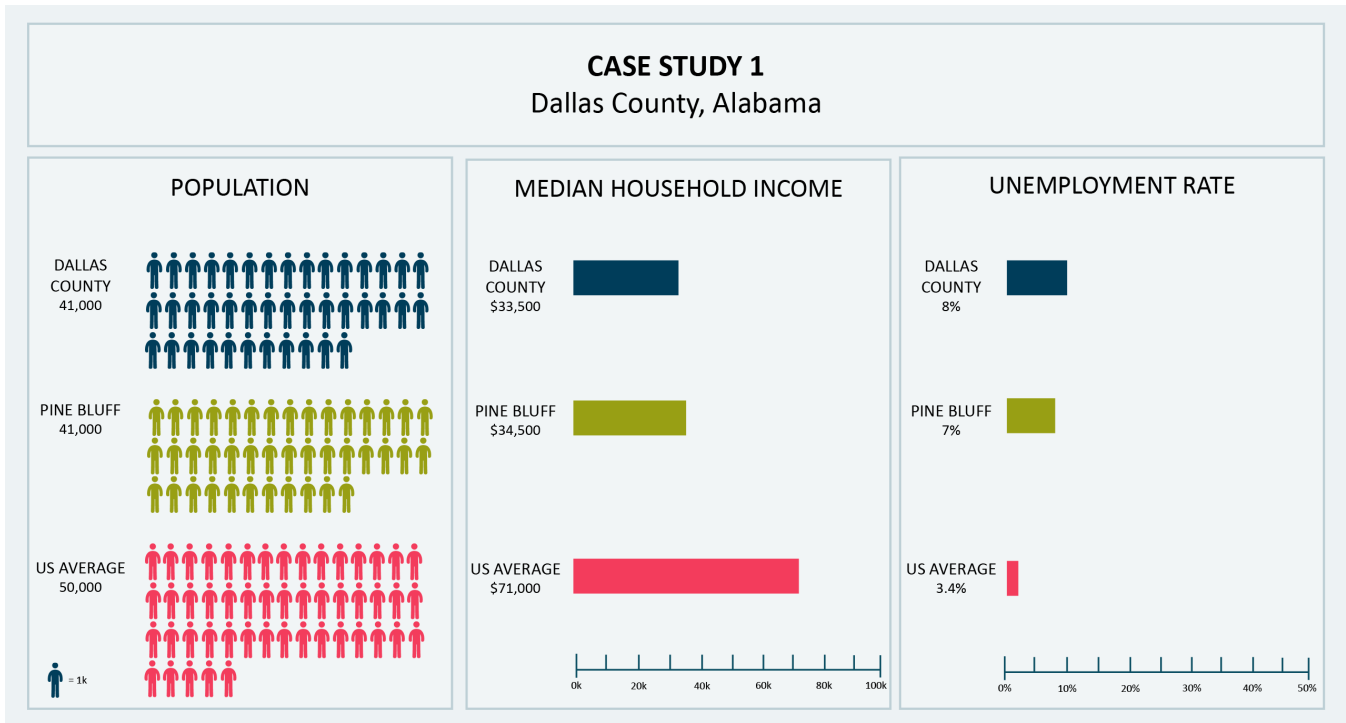


Figure 1

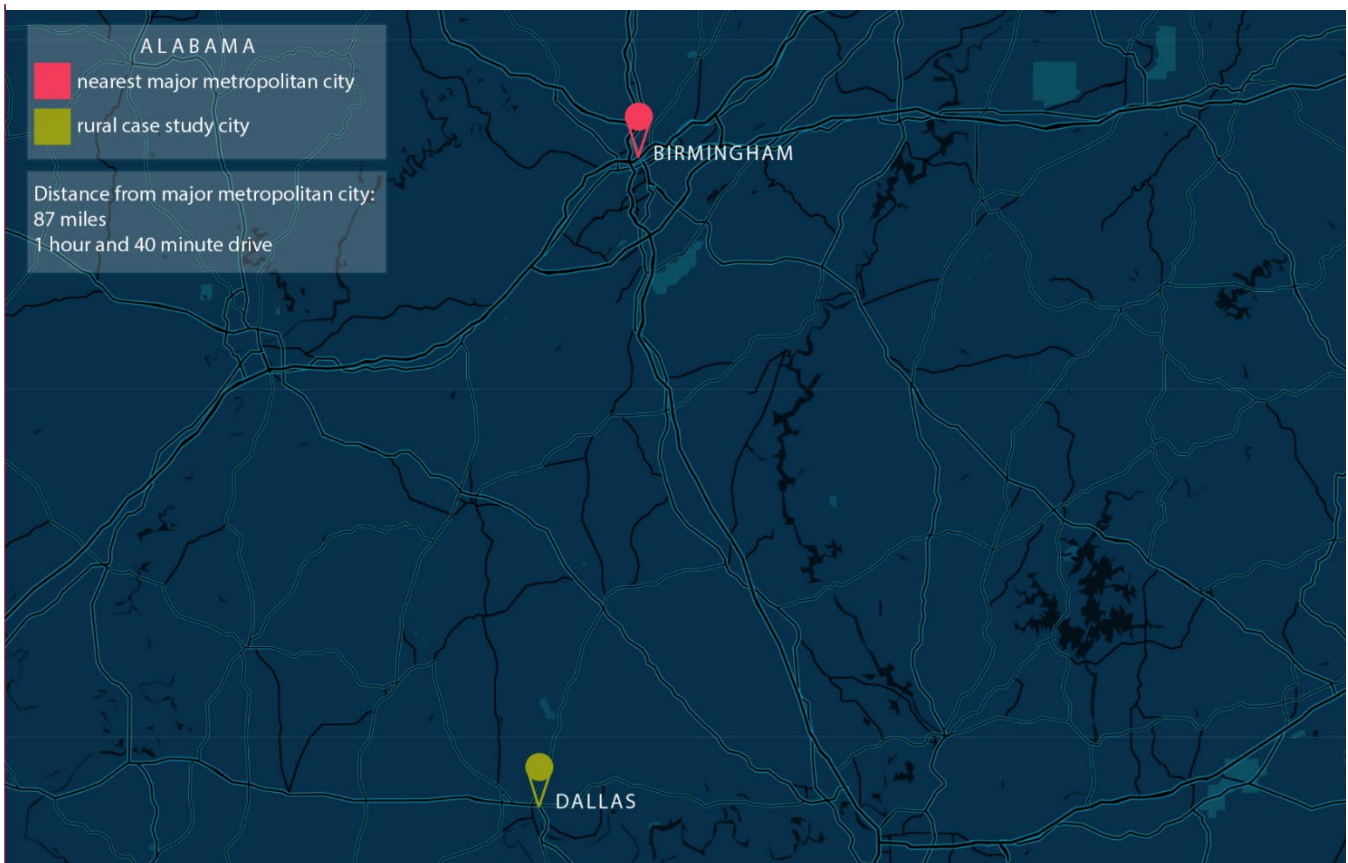


Figure 2

Dallas County, Alabama, is located at the center of West Alabama's Black Belt Region. With a long and rich history dating back to 1818, the city has remained at a steady population of approximately 40,000. Made up largely of cotton plantations worked by slaves in the 1800s, the city is still over 75 percent African American. In the 1850s, the city remained highly involved in the cotton industry but was left practically deserted after the Civil War. Dallas County became extremely important during the Civil War as it was a large hub for military ammunition and equipment. By the war's end, they had employed approximately 10,000 individuals to provide ammunition, cannons, and gunpowder for the Confederate forces. The Union Forces repeatedly targeted this area due to the abundance of resources, causing the eventual fall of the city in the late 1860s.<sup>1</sup>

The city struggled to rebuild, and within a century, it again found its place in history. In the 1960s, Dallas County became integral to the civil rights movement. However, the white community showed much opposition to protests, such as the first voter registration drive that took place in Dallas County. This area was recognized nationally due to what was called "Bloody Sunday," which ultimately led to the signing of the Voting Rights Act of 1965.<sup>2</sup>

Today, the city contains the state's largest historic district, with more than 1,250 Nationally Registered structures. The industrial area in this community is large, with land for development and infrastructure in place for growth. The Black Belt Region is widely known for its fertile soil allowing a

high degree of cultivation. Because of this, the economy is based largely on lumber, cotton, vegetables, and fruit. With the Alabama River running through the city's center, the exportation of farmed goods has always been a significant source of revenue. The city utilizes historic buildings such as the Old Cahawba as tourist destinations to learn about its rich history.<sup>3</sup>



Figure 3. Poor Quality Housing in Dallas County



Figure 4. Poor Quality Housing in Dallas County



Figure 5. Poor Quality Housing in Dallas County

Even with its rich land and history, Dallas County, Alabama, has approximately 35 percent of residents living below the poverty line, which makes it one of the poorest Alabama counties to date. With the teen birth rate at 30.6 percent, which is 10.3 higher than the national average, the town is having difficulty combating poverty.<sup>4</sup> This also plays into the poor health rates in the town. Over 47 percent of the residents living in Dallas County are considered obese, raising the percentage of heart disease, diabetes, and lowering life expectancy. Currently, 30 percent of adults are considered in poor health, with both heart disease and diabetes rates being well over the national averages and residents' average life expectancy at 72 years, 5.5 years below the US median. There are also alarmingly high crime rates. In Alabama, 99 percent of communities are safer than Dallas County. The chances of becoming a violent or property crime victim are 1 in 12. This puts the County at a 0 on the national crime index, meaning they are safer than 0 percent of US cities. These statistics are why we must ask, "What is the cost of inaction?" The following are the steps being taken in Dallas County to combat these dire circumstances.<sup>5</sup>

This case study is of a Dallas, Alabama housing project conducted by Rural Studio, a design-build architectural program at Auburn University's College of Architecture and Design. The school launched Rural Studio in 1993 to encourage students to become "citizen architects"<sup>5</sup> and to educate them on responsible design that elevates communities. Since its creation, the program has completed more than 200 projects in underserved and under-resourced communities in the Black Belt

region. By designing and building small affordable houses, chapels, and civic buildings, they have begun elevating these communities and brought many necessary assets to each town.<sup>6</sup>

"At Rural Studio, architectural design continues to challenge the mainstream understanding of affordability, leverages the strengths inherent to rural living, and maximizes the return on home investment—while accommodating the needs of underserved rural communities."<sup>7</sup> They have termed their project the Front Porch Initiative with the goal of producing community changing research, design, and construction work in rural areas. The studio comprises architecture students with the unifying ambition to utilize their knowledge and design abilities to create impacting home developments in the under-resourced rural Dallas County. Student teams continue to learn from their experience and build on the work from previous students' projects, the objective being construction affordability, durable design, and optimized performance. The studio collaborates with multiple government and industry partners to achieve low-income, high-efficiency homes.<sup>8</sup>

Comparable to other rural cities in the south, Dallas is a persistently impoverished area. In 2004, Rural Studio began its housing initiative to design single-family homes that keeps material and labor costs to an affordable minimum. With \$20,000 as their original target cost for each build, the studio created a scalable solution to the housing affordability problem and, after many refinements and partnerships, were able to provide



financing mechanisms to substantially shift models and practices for low-income housing.<sup>9</sup>

The low-income housing challenge Rural Studio has undertaken is to develop low-cost but still well designed and high performing homes. According to Rusty Smith, associate director at Rural Studio, "efforts to build affordable housing generally adopt one of two strategies: reducing construction costs or subsidizing construction."<sup>10</sup> In this studio, their challenge was to reduce labor costs to allow more funding for value-adding materials. Each house was a research project in which students learned from earlier work to enhance the following home's adaptability and efficiency. A student team studied one of the earlier projects, a shotgun-style, one-bedroom house constructed in 2009. After examining the floor plan and typology of the home, they then changed various aspects of the space to create more room and privacy. They also shortened the build time, making the home more cost-effective and easier to replicate. This design method allows quicker, subsequent home iterations while more closely meeting residents' needs, improving air circulation, using affordable insulation, and creating better foundation techniques.<sup>11</sup>

Reducing the cost of constructing a home to \$20,000 was a good but difficult goal. Instead, the studio shifted focus to "what housing affords people" rather than "what can people afford?" Rural Studio believed that housing "should afford stability, health, and economic security for its occupants."<sup>12</sup> The students realized that building houses using high-quality materials reduces maintenance costs, in turn making a house

affordable over time. In earlier models, when a \$20,000 cost was a high priority, the team used wooden platform foundations. But after looking at affordability versus value over time, the team replaced them with a fully insulated concrete foundation. The slab was more durable long-term and acted as a thermal mass, making the home more energy efficient and consistent. It also adds value to the home, which assists in wealth building, preserves lasting affordability, and allows homeowners to stay in the home as it ages and typically maintenance costs grow.<sup>13</sup>



Figure 6. Rural Studio Built Home

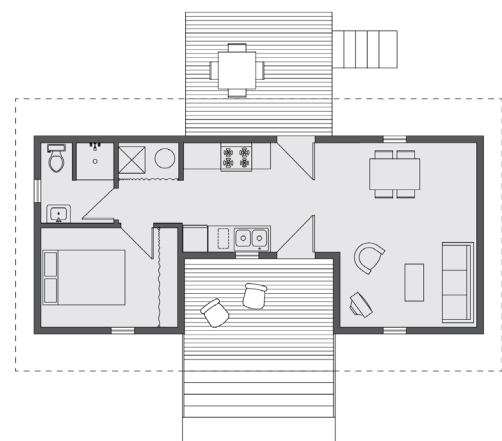


Figure 7. Rural Studio Floor Plan

The studio also investigated how nonresidential buildings dramatically affect people's access to low-income housing. With the nearest firehouse being 15 minutes away from Dallas County, residents were not only endangered but also required to pay higher insurance premiums. As many locals live on a fixed income, reducing insurance costs can be the difference between affording a home and not. With the building of the Dallas Firehouse, more residents could now have access to one of the largest methods of generational wealth building in America - home ownership.<sup>14</sup>

Beginning in 2019, the studio looked into local weather patterns and how homes were affected by the region's severe climate and high wind speeds. This inspired new designs that went beyond the local building codes with new, highly resilient structures and exterior materials. Increasing performance in certain areas translated directly into monthly cost savings for the homeowners, money they can then put back into their mortgages. Rural Studio described it as, if you couple the 'first cost' inputs with the outcomes of the 'second costs' of homeownership, you create a new prototype of how a lender might otherwise consider the 'mortgage carry' of a homeowner. For example, "if a homeowner reduced their energy bill (second cost) by \$25 per month and instead invested that same \$25 in their mortgage payment, they can now afford to finance an additional \$5,000 in energy efficiency construction (first cost) with no increase to their total monthly outlay."<sup>15</sup> Such enhancements will better protect the homeowner's and lender's investments and increase the home's appraised value.



Figure 8. Rural Studio Built Home



Figure 9. Rural Studio Built Home

Rural Studio lists the following as the three key areas to increase performance in order to boost value and reduce risk to stakeholders.<sup>16</sup>

#### HEALTH

Long-term prevention begins with a healthy home.

- Building assemblies address material toxicity and air quality
- Safety, security, and accessibility all impact mental health
- Homes are designed for thermal health and human comfort
- Active design and aging in place are key design factors
- Demonstrated wellness outcomes increase home value

## DURABILITY

Increasing building resilience helps avoid the unexpected.

- Increasing resilience helps to protect the asset
- Reduces cost of annual maintenance and repairs
- Leverages insurance incentives to reduce annual premiums
- Reduces displacement time due to disaster

## EFFICIENCY

Turning monthly expenses into monthly investments.

- Enables homeowners to "afford" a more valuable home
- Efficient homes smooth out monthly energy costs
- Homes are designed to maximize shoulder seasons
- Efficient homes have a higher appraised value

By applying lessons learned, Rural Studio created replicable low-income housing designs that started to "close the gap between knowledge and action."<sup>17</sup> To further understand the effects of their designs and how the houses work in everyday life, Rural Studio gathers qualitative data from residents and project partners to continue to improve solutions. One post occupancy study revealed that occupants tended to have two couches in their living room regardless of square footage or circulation paths. This prompted new layout iterations to resolve space for more furniture.<sup>18</sup>

To summarize Case Study 1, the investment into energy-efficient components will offset the added costs to the homeowner and allow rural homeowners to receive the advantages of sustainable, resilient, and well-built homes without additional monthly costs. "By intentionally integrating advanced design solutions that also utilize local labor, conventional construction techniques, and locally available building materials, the projects directly contribute not only to the reduction of initial costs of construction but also to the enhanced safety, security, health, welfare, education and wealth building opportunities of our neighbors."<sup>19</sup> By focusing on the cost of inaction, Rural Studio was able to transform rural housing in Dallas County, Alabama, and improve the economic, social, and physical well-being of its citizens and the community.<sup>20</sup>

## CASE STUDY 2

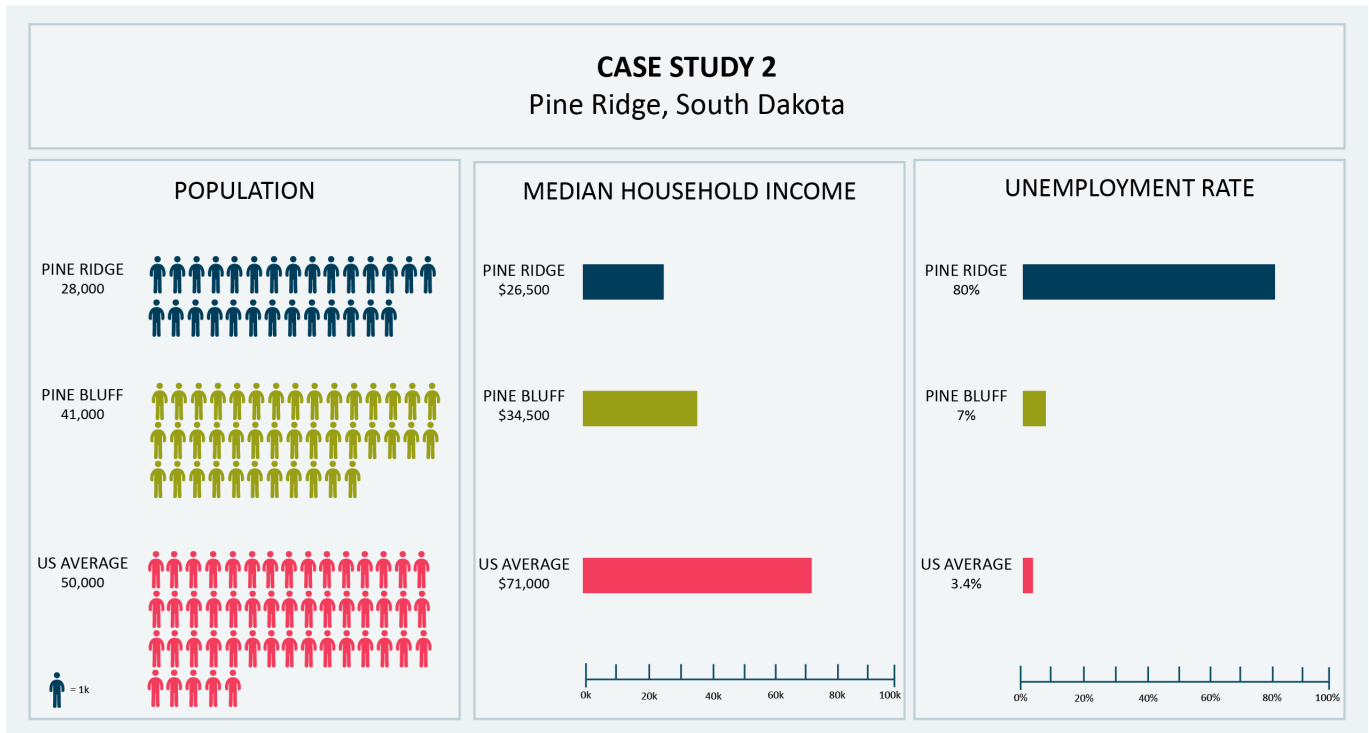


Figure 10

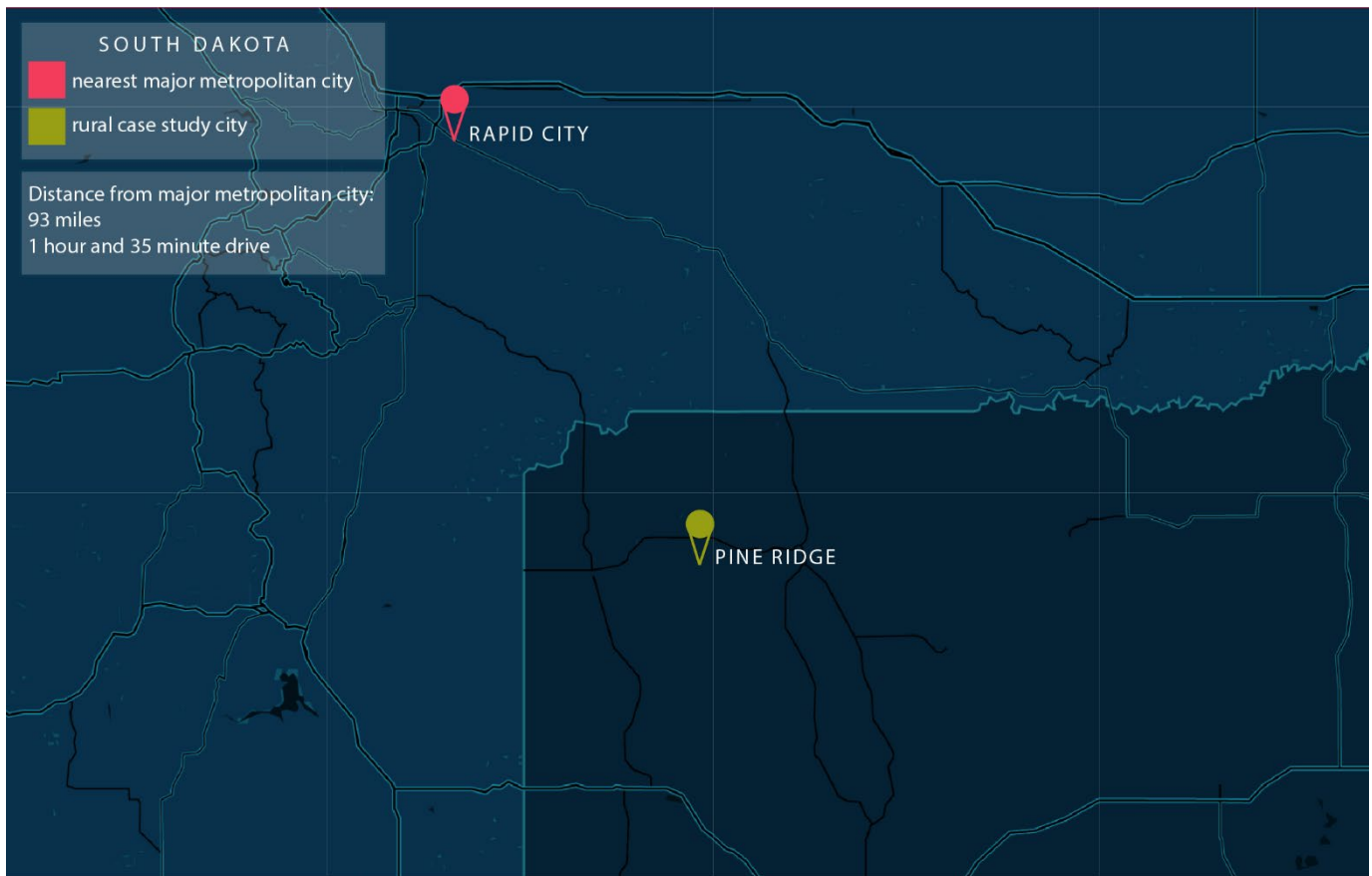


Figure 11

The Pine Ridge Indian Reservation is in the southwest corner of South Dakota, 50 miles east of the Wyoming border. In 1889 this Reservation was originally established as a camp for Indian prisoners of war as white colonists moved West. This area is the site of the last Ghost Dance ritual. Christians thought this was a demonic and atrocious tradition. As the Christians and the U S Government tried to restrain these "savage rituals," the Reservation became the site of a major massacre. What became known as the Wounded Knee Massacre was the last large confrontation between the U S and the Native Americans. In the 1930s, when the Roosevelt administration changed Federal laws to enhance conditions for Native Americans, there was great pressure for Indians to assimilate into American culture. Conflict began between those willing to assimilate and those who wanted to preserve tradition. In 1973, the Second Wounded Knee started as a grassroots movement that escalated into a 71 day armed protest that finally allowed some cultural traditions to be reinstated. Unfortunately, so much damage had already been done. The once free American Indians were now confined to territories, told their religion was demonic, their way of life savage, and many of their children were taken away.<sup>21</sup>

With spirits crushed, any hope of regaining their old way of life was devastated by people who could not understand their culture. Unemployment was rampant, food was scarce, and living conditions deteriorated, so poverty became the way of life. With little or no options available, alcoholism seemed to be an easy way for many on reservations to dull the pain. Their people suffer many health and economic deficiencies, including

alcoholism, drug abuse, malnutrition, and high mortality rates.<sup>22</sup>

Today, the Oglala Sioux Indians call Pine Ridge home. This is one of the largest Reservations in the country at 2.1 million acres and home to 19,950 people. Despite being a historically dominant tribe, the Reservation is now the second poorest county per capita in the United States. Conditions on the Reservation are dire and this causes many ripple effects. According to the Wall Street Journal, the life expectancy on the Reservation is 48 for men and 52 for women. These numbers are the lowest in the Western Hemisphere behind Haiti. Statistics show that Native Americans are four times more likely to have their children removed from their homes, and 58 percent of grandparents are responsible for raising their grandchildren.<sup>23</sup>



Figure 12. Poor Quality Housing in Pine Ridge



Figure 13. Poor Quality Housing in Pine Ridge

The Reservation has very few natural resources that could contribute to a profitable industry. While the tribal and federal governments offer the few jobs available on the Reservation, many residents must travel to Rapid City, over 120 miles, for seasonal employment. Because of this, only one in five on the Reservation is employed. Statistics show that almost 60 percent of the homes on the Reservation have black mold, a major contributing factor in infant, child, and elderly mortality rates. Adding to this dilemma, many residents have no healthcare and clinics are poorly funded or staffed. Many two or three room homes built for six people have an average of 17 people living in them, some as many as 30. More than 39 percent of the homes have no electricity, more than one-third of them have no plumbing or sewage systems, and 60 percent of the families have no telephones. Many residents carry water from the local river for their daily personal use. Thousands are homeless and 95 percent of the population lives below the poverty line.<sup>24</sup>

The executive director of the Reservation's housing authority announced before any housing projects had begun that the Reservation had 1,100 houses but needed 4,000 more. The cost of the additional housing might have felt insurmountable, but what would have been the cost of inaction? The following housing project is conducted by the University of Colorado Boulder (CU) service-learning program launched in 2010 in conjunction with the Native American Sustainable Housing Initiative (NASHI). The Reservation's culture is largely built upon ideas of sustainability and respect for the environment. Because of this, CU

Boulder's main priority is "designing for people and place."<sup>25</sup>



Figure 14. Poor Quality Housing in Pine Ridge



Figure 15. Poor Quality Housing in Pine Ridge

This case study is most interesting in that it addresses more than just housing design. It answers the question of how design-build education can act as an impetus for positive change. Surprisingly, more than 200,000 homes in America are needed for Native Americans as 90,000 families are homeless or under-housed and many of the existing houses are in disrepair. This project had two main objectives: to provide housing for underserved Native Americans and to provide educational opportunities for tribal college students to empower the future generation of designers, builders, and thinkers. This collaborative



Figure 16. CU Boulder's Built Home

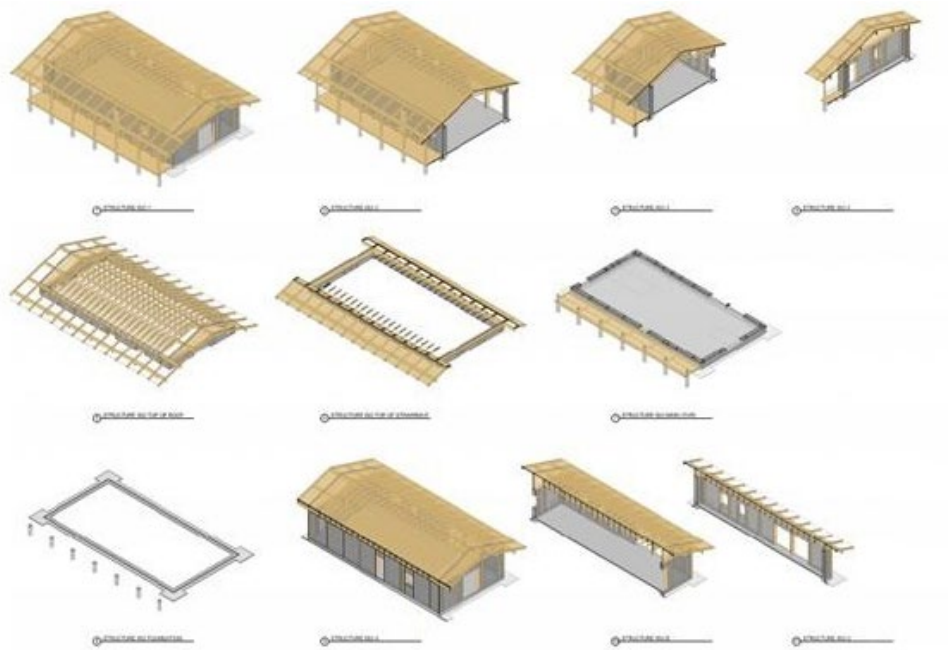


Figure 17. CU Boulder's Axon Drawings

effort has graduated over 80 students, has designed four environmentally sustainable houses, and constructed more than 40 homes on the Reservation.<sup>26</sup>

The program instructor, Rob Pyatt, focuses his students on what he calls the "triple bottom line."<sup>27</sup> Looking at social, environmental, and economic impact, students collaborate with

residents of the Pine Ridge Indian Reservation to design sustainable, affordable, and culturally appropriate housing solutions. One of the positive outcomes of this project was to create more than just designs for the Reservation. The program develops and trains the Pine Ridge Indians in sustainable construction techniques and then employs them to help build the homes. With real world projects as the infrastructure for sharing

knowledge beyond what the traditional classroom teaches, locals acquire critical skills needed for impacting environmental and social changes in their community. This also creates permanent Reservation jobs and improves the community's future low-income housing tax credits. With this initiative, there are now natives who live off the Reservation commuting to the Reservation every day to work on the construction of new homes. They estimate this will cause many to want to move to the Reservation, increasing the population and requiring even more low-income housing.<sup>28</sup>

This studio worked with the Reservation's community to design low-income 1,000-square-foot two bedroom homes considering the local climate and cultural typology. Well-built, low-cost materials were used to achieve net zero energy principles. The design, using insulative properties of SIPs, sealed building envelope, and passive strategies like efficient air recovery ventilation, solar thermal hot water, and passive solar orientation gives the residents sustainable net-zero energy benefits.<sup>29</sup>

Their four cost-efficient local materials and construction techniques used as an alternative to the conventional wood frame houses include: insulating straw bales, compressed earth block, and advanced wood framing. And lastly, the fourth material is structural insulated panels (SIPs) which are composed of an insulated foam core between two rigid boards. They also add solar panels to each roof for extra energy-saving benefits. At the end of any given year, the home's total energy consumption is zero watts or less. This saves residents money in utility and maintenance costs to

be spent on other necessities. After construction, graduate research is done periodically to monitor the performance of indoor air quality and energy use to help learn if the next house construction can be changed or altered for better results. With this expanded scope, and the continuous value of sustainable, low-income, and culturally informed housing, the studio is able to maintain multiple viable models for locals to choose from that all achieve comfort and a U.S.B.C LEED Green criteria rating.<sup>30</sup>



Figure 18. CU Boulder's Home in Construction



Figure 19. CU Boulder's Built Home



In a second phase of construction, a 700-square-foot house design using locally grown agricultural hemp was employed as a new carbon-neutral building material. Using advanced wood frame techniques, which reduced the requirement for lumber, and the added hemp wool insulation in the structural framing, improved energy efficiency and lowered construction costs even more.<sup>31</sup>

To summarize Case Study 2, with very few natural resources, job opportunities, and viable housing options on the Reservation, CU Boulder's studio attempts to address all of these things in the design of a home. Ensuring natives are employed to construct each project, and local materials are used such as straw bale and hemp, construction and labor costs are kept to a minimum, and funds are circulated throughout the community. Providing net zero energy consumption also helps the homeowner manage monthly and long-term affordability.

# CASE STUDY 3

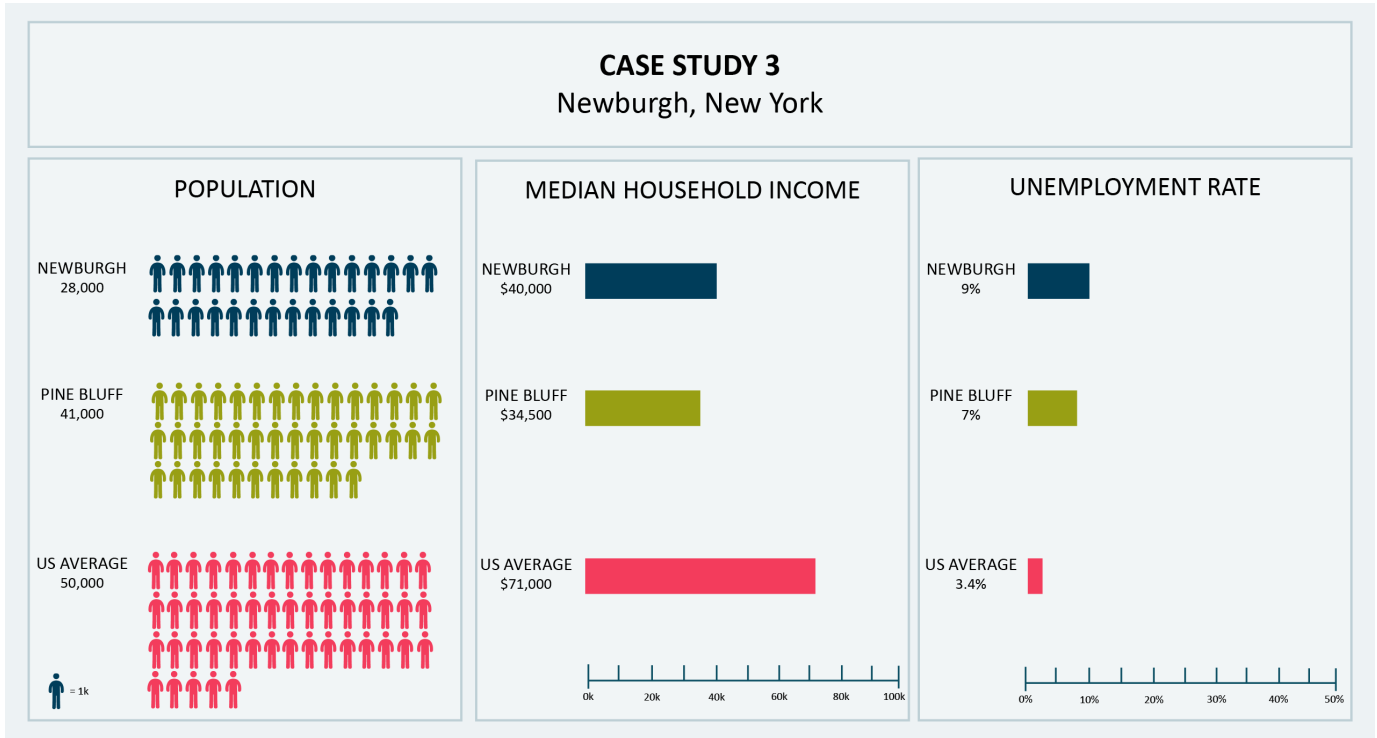


Figure 20

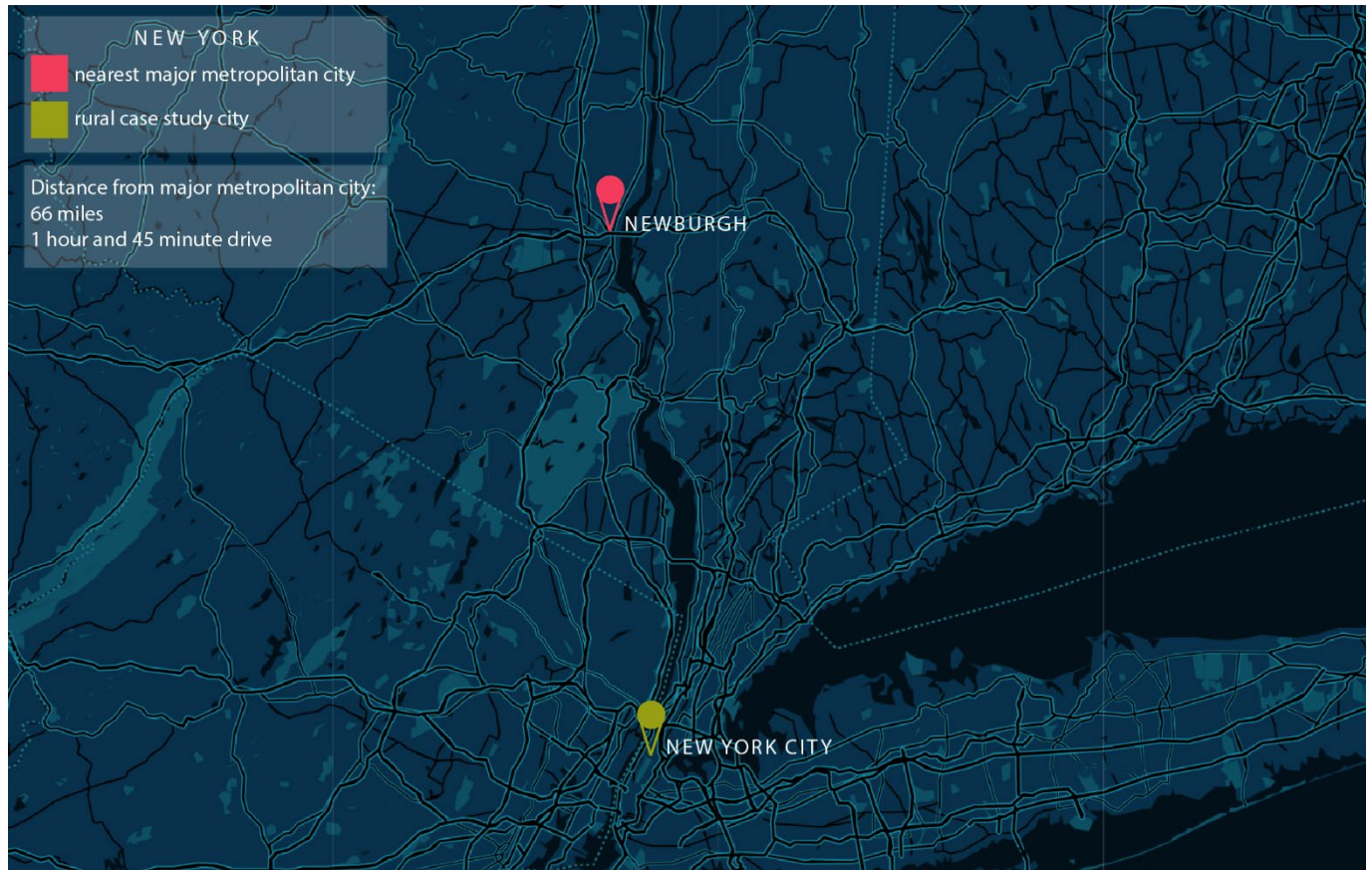


Figure 21

Newburgh is one of the oldest towns in New York State. It was purchased by provincial Governor Dongan in 1684 for 200\$ and some cooking utensils. In 1709 a ship of refugees from England became its first settlers. Shortly after, King George deeded 50 Acres to each inhabitant - man, woman, and child. Newburgh became known as "the birthplace of the Republic during the Revolutionary War." This location was a strategic spot for military defense and during the last year of the war, it became the headquarters for George Washington. Washington quelled a rebellion, refused to become King, was awarded the Badge of Merit (Purple Heart), and declared peace all from the Hasbrouck Home in Newburgh. Notably, this building became the first to be bought for preservation by the New York State's Historic Society in 1850.<sup>32</sup>

Located along the Hudson River, about 65 miles north of the city, Newburgh has many beautiful riverfront parks and cultural attractions. It was once an international trade location and a major industrial center with many mills using waterpower and large factories producing a wide variety of goods. This commerce brought money to the area and many country homes were built here. In the early 1900s, Newburgh had over 100 manufacturing plants and had additionally become a recreational destination. The largest city census was recorded in 1950, with approximately 32,000 residents. Shortly after this boom, the automobile industry changed everything for the worse for this community. People used waterways less for their transportation needs and industry started to decline and move to areas with larger populations.<sup>33</sup>



Figure 22. Early 20<sup>th</sup> Century Newburgh Waterfront

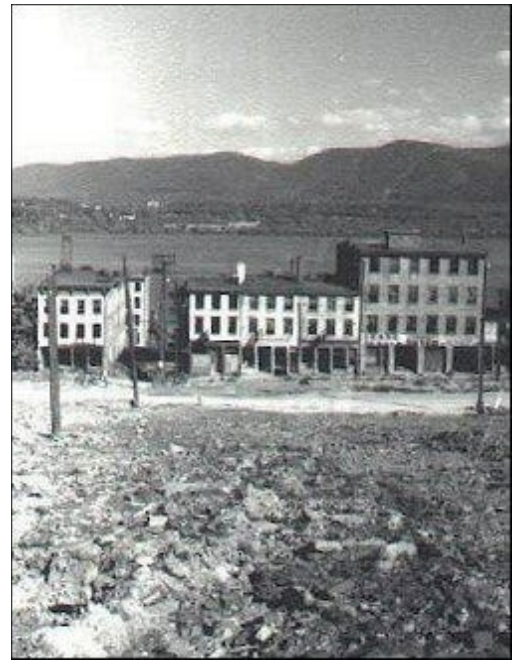


Figure 23. Late 20<sup>th</sup> Century Newburgh Waterfront



Figure 24. 2018 Newburgh Waterfront

In the late 20th century, the city's industrial market began to decline due to the relocation of many businesses to areas with lower taxes and cheaper labor costs. The Hudson began losing most of its shipping traffic because of the trucking industry's growth. For these reasons, residents moved away and buildings became abandoned and slated for demolition. Recently, the city began some much-needed progress, yet poverty remains a significant concern.<sup>34</sup>

The 2000 census shows Newburgh as one of the poorest communities in the state and on a list of the five most "stressed" cities. Factors contributing to this statistic are the number of residents under the poverty line and without a high school diploma, the number of families led by single mothers, the number of abandoned buildings, and the extreme unemployment rates. Of the population, 51.5 percent are below the poverty line and only 30.1 percent own their own home. Again, these statistics are why we must ask, "What is the cost of inaction?" The following are the steps being taken in Newburgh to combat these dire circumstances.<sup>35</sup>

In 1999 volunteers with a shared vision to better the lives of people in underserved low-income communities founded this Habitat for Humanity of Greater Newburgh project. They are committed to eliminating substandard housing by building and renovating homes and providing training and access to resources to help families gain stability, self-reliance, and the strength to improve their lives. Habitat for Humanity requires participation in extensive homeowner education classes, which include aspects of finance,

budgeting, and home repair. Additionally, they require adults to give 250 - 500 hours of what they call "sweat-equity" to constructing their own homes and other homes in the neighborhood. Over 100 families in Newburgh earning between 30 and 80 percent of the median income were willing to commit to work on this project.<sup>36</sup>



Figure 25. Poor Quality Housing in Newburgh



Figure 26. Poor Quality Housing in Newburgh



Figure 27, Habitat For Humanity's project in construction

Habitat for Humanity's goal is to build homes in targeted neighborhoods within a few blocks of each other to help the occupants feel a sense of belonging and community. They believe building homes is a part of building families and a greater potential for the homeowner to feel their important role as a driving force for building the greater community. This greater community ideally includes other organizations, businesses, and local governments with a shared vision and reason to want the project to succeed. They use this neighborhood revitalization model to create a positive community and leverage these assets to respond to community aspirations. Using local products, services, and partnerships, they are able to empower homeowners to change and sustain the quality of life in their neighborhoods.<sup>37</sup>



Figure 28. Map of Habitat for Humanity's Target Neighborhood

Habitat for Humanity understands the deep importance of this work. "Our years of work in this community have taught us the importance of persistence, the power of working together towards a common goal, and the value of believing in the ripple effect of hope. Our work transcends beyond building homes in partnership with

families. We plant and nurture the positive seeds of community that provide a pathway out of the stronghold of blight and despair."<sup>38</sup>



Figure 29. Habitat for Humanity's Built Housing

A major long-term target of this project's approach is to plant seeds that will have a ripple effect into life-changing waves. They focused on two "tracts" within a four-square block area around their offices. (see figure 27) They chose the two streets that are arguably the most distressed in the state to have that compounding effect on the entire town. As of 2022, they have completed 30 homes, with four under construction and an additional 15 being considered. The secondary neighborhood starts to show the ripple effect area. They have built credibility and can now display the progress and benefits of their work to banks and developers and partner with them to build additional healthy blocks. Nine houses have already been constructed in this neighborhood, and an additional six are currently under construction.<sup>39</sup>

As Habitat acts as the general contractor for each project, they can ensure every dollar goes towards material costs. They also decrease labor costs using the 'sweat equity' method. Because they are in a historic neighborhood, whenever possible, Habitat tries to acquire properties that can be renovated instead of removed. They only choose demolition when structural damage is too serious, or things like lead and asbestos cannot be safely or cost-efficiently removed. While they admit that sometimes renovations can be more difficult than new builds, it occasionally comes with a lower price which is important to them. They have also found that people in the community volunteer at a significantly higher rate when there is interest in saving a historic home.<sup>40</sup>

Habitat uses energy efficiency as a major long-term cost saver for homeowners. Because of this, in their renovation projects, they must seriously consider which materials need to be added to or even fully replaced. For example, the typical brick used in most historic homes has no cavity insulation. As a result, Habitat developed a wall detail that would allow them to add rigid insulation and, in turn, increase the R-value of the envelope. This closed-cell rigid foam insulation also resists moisture, protecting itself long-term and ensuring it maintains its R-value even when wet. They cut each piece to fit perfectly around existing joists and rafters, then use metal studs to hold the insulation tightly in place. Lastly, they remove the threat of any air movement behind the insulation by caulking the seams between each board and the perimeters of each wall. Street-side windows were required to stay wood framed by the historical preservation committee. Generally, wood-framed

windows are not very energy efficient. As a solution, Habitat used double-pane, low-emissivity windows and then used vinyl-framed windows on non-street sides. A post-build performance test on one of the earlier homes showed a home energy rating system (HERS) score of 89.7 and a heating and hot water energy savings of almost 38%.<sup>41</sup>



Figure 30. Habitat for Humanity's Home in Construction



Figure 31. Habitat for Humanity's Built Home

Other cost saving measures they take are using volunteer-friendly construction techniques, often having training sessions on-site, and using donated supplies. "We want to provide people with a very efficient home so that it can truly be affordable to live in for the long term."<sup>42</sup> There has been extensive community research in an effort to listen to and understand the challenges and hopes of this community. The Newburgh Police Department crime analyst says, "For me, the most important work that Habitat Newburgh does is not the physical investment that builds home, but the social investment that builds community."<sup>43</sup>

To summarize Case Study 3, Habitat for Humanity uses both new build construction and renovations to revitalize Newburgh. Aiming for the larger scale ripple effect that comes when one neighborhood is restored, they started their scope small and expanded as new partners saw the impact and joined in. Using the "sweat equity" method, Habitat ensures homeowners are willing to buy into the process and do what it takes to reap the benefits. Through careful material choices, they are able to provide low-cost, well-built homes that are sustainable and energy efficient.

## Case Studies References and Figures

1. *Dallas County Alabama Genealogy & History Network*. Dallas County Alabama Genealogy & History Network. (n.d.). <https://alabama.msghn.org/dallas/>
2. *Dallas County Alabama Genealogy & History Network*. Dallas County Alabama Genealogy & History Network. (n.d.). <https://alabama.msghn.org/dallas/>
3. *Dallas County*. Encyclopedia of Alabama. (2023, March 30). <https://encyclopediaofalabama.org/article/dallas-county/>
4. *Dallas County, Alabama*. Explore census data. (n.d.). <https://data.census.gov/all?q=Dallas%2BCounty%2C%2BAlabama>
5. How healthy is Dallas County, Alabama? | US news healthiest communities. (n.d.-b). <https://www.usnews.com/news/healthiest-communities/alabama/dallas-county>
6. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
7. Rural Voices - Cultivating Citizen-led Design by Housing Assistance Council. (2020, December 8). *Rural Studio and the front porch initiative: What good design can afford*. issue. [https://issuu.com/ruralhousing/docs/rural\\_voices\\_fall\\_2020\\_final\\_smaller/s/11459123](https://issuu.com/ruralhousing/docs/rural_voices_fall_2020_final_smaller/s/11459123)
8. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
9. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
10. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
11. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
12. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
13. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
14. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
15. *Our approach*. Rural Studio. (2019, August 20). <http://ruralstudio.org/front-porch/our-approach/>
16. *Our response*. Rural Studio. (2019, August 20). <http://ruralstudio.org/front-porch/our-response/>



17. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
18. *Revolutionizing affordable housing in rural Alabama: HUD USER*. Revolutionizing Affordable Housing in Rural Alabama | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-082720.html>
19. *Our approach*. Rural Studio. (2019, August 20). <http://ruralstudio.org/front-porch/our-approach/>
20. Rural Voices - Cultivating Citizen-led Design by Housing Assistance Council. (2020, December 8). *Rural Studio and the front porch initiative: What good design can afford*. issuu. [https://issuu.com/ruralhousing/docs/rural\\_voices\\_fall\\_2020\\_final\\_smaller/s/11459123](https://issuu.com/ruralhousing/docs/rural_voices_fall_2020_final_smaller/s/11459123)
21. *Pine Ridge Indian Reservation Facts*. Re-member. (n.d.). <https://www.re-member.org/pine-ridge-reservation>
22. Pine Ridge Statistics. (n.d.). <http://www.4aih.org/id40.html>
23. Pine Ridge Statistics. (n.d.). <http://www.4aih.org/id40.html>
24. Pine Ridge Statistics. (n.d.). <http://www.4aih.org/id40.html>
25. *Designing for People and Place: Sustainable & Affordable Housing for the Pine Ridge Indian Reservation*. HUD User. Office of Policy Development and Research (PD&R). (n.d.). [https://www.huduser.gov/portal/elist/2014-Feb\\_12.html](https://www.huduser.gov/portal/elist/2014-Feb_12.html)
26. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD User*. Office of Policy Development and Research (PD&R). (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
27. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD User*. Office of Policy Development and Research (PD&R). (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
28. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD User*. Office of Policy Development and Research (PD&R). (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
29. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD User*. Office of Policy Development and Research (PD&R). (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
30. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD User*. Office of Policy Development and Research (PD&R). (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>

31. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD User*. Office of Policy Development and Research (PD&R). (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
32. *History of Newburgh*. The City of Newburgh, NY. (n.d.). <https://www.cityofnewburgh-ny.gov/376/European-Settlement>
33. *History of Newburgh*. The City of Newburgh, NY. (n.d.). <https://www.cityofnewburgh-ny.gov/376/European-Settlement>
34. *History of Newburgh*. The City of Newburgh, NY. (n.d.). <https://www.cityofnewburgh-ny.gov/376/European-Settlement>
35. *Newburgh, New York*. Census Website. (2023, March 3). <https://www.census.gov/data/>
36. Building America Best Practices Series case study: Habitat for Humanity (n.d.). [https://www1.eere.energy.gov/buildings/publications/pdfs/building\\_america/ba\\_cs\\_retrofit\\_newburgh\\_habitat.pdf](https://www1.eere.energy.gov/buildings/publications/pdfs/building_america/ba_cs_retrofit_newburgh_habitat.pdf)
37. Building America Best Practices Series case study: Habitat for Humanity (n.d.). [https://www1.eere.energy.gov/buildings/publications/pdfs/building\\_america/ba\\_cs\\_retrofit\\_newburgh\\_habitat.pdf](https://www1.eere.energy.gov/buildings/publications/pdfs/building_america/ba_cs_retrofit_newburgh_habitat.pdf)
38. *Revitalize neighborhoods : What we do* . Habitat for Humanity of Greater Newburgh. (n.d.). <https://habitatnewburgh.org/what-we-do/revitalize-neighborhoods.html>
39. *Revitalize neighborhoods : What we do* . Habitat for Humanity of Greater Newburgh. (n.d.). <https://habitatnewburgh.org/what-we-do/revitalize-neighborhoods.html>
40. Building America Best Practices Series case study: Habitat for Humanity (n.d.). [https://www1.eere.energy.gov/buildings/publications/pdfs/building\\_america/ba\\_cs\\_retrofit\\_newburgh\\_habitat.pdf](https://www1.eere.energy.gov/buildings/publications/pdfs/building_america/ba_cs_retrofit_newburgh_habitat.pdf)
41. Building America Best Practices Series case study: Habitat for Humanity (n.d.). [https://www1.eere.energy.gov/buildings/publications/pdfs/building\\_america/ba\\_cs\\_retrofit\\_newburgh\\_habitat.pdf](https://www1.eere.energy.gov/buildings/publications/pdfs/building_america/ba_cs_retrofit_newburgh_habitat.pdf)
42. Building America Best Practices Series case study: Habitat for Humanity (n.d.). [https://www1.eere.energy.gov/buildings/publications/pdfs/building\\_america/ba\\_cs\\_retrofit\\_newburgh\\_habitat.pdf](https://www1.eere.energy.gov/buildings/publications/pdfs/building_america/ba_cs_retrofit_newburgh_habitat.pdf)
43. *Revitalize neighborhoods : What we do* . Habitat for Humanity of Greater Newburgh. (n.d.). <https://habitatnewburgh.org/what-we-do/revitalize-neighborhoods.html>

Figure 1. Victoria R. Best (2023, April). *Own Graphic*

Figure 2. Victoria R. Best (2023, April). *Own Graphic*

Figure 3. Guardian News and Media. (2016, February 4). *'still a city of slaves' – Selma, in the words of those who live there*. The Guardian. <https://www.theguardian.com/us-news/2016/feb/04/still-a-city-of-slaves-selma-in-the-words-who-those-who-live-there>

Figure 4. Guardian News and Media. (2016, February 4). *'still a city of slaves' – Selma, in the words of those who live there*. The Guardian. <https://www.theguardian.com/us-news/2016/feb/04/still-a-city-of-slaves-selma-in-the-words-who-those-who-live-there>

Figure 5. Gabel, P. (2018, April 9). *In wake of Selma anniversary, Town still struggles with poverty and violence*. New York Daily News. <https://www.nydailynews.com/news/national/selma-50th-town-struggles-poverty-article-1.2150807>

Figure 6. *Product line houses*. Rural Studio. (2020, August 3). <http://ruralstudio.org/front-porch/product-line-houses/>

Figure 7. *Product line houses*. Rural Studio. (2020, August 3). <http://ruralstudio.org/front-porch/product-line-houses/>

Figure 8. *20K Idella's home*. Rural Studio. (2019, July 1). <http://ruralstudio.org/project/20k-idellas-home/>

Figure 9. *Rev. Walker's home*. Rural Studio. (2022, August 29). <http://ruralstudio.org/project/rev-walkers-home/>

Figure 10. Victoria R. Best (2023, April). *Own Graphic*

Figure 11. Victoria R. Best (2023, April). *Own Graphic*

Figure 12. Nord, J. (2015, December 20). *Oglala Sioux seek solutions on chronic housing shortage*. Argus Leader. <https://www.argusleader.com/story/news/2015/12/20/ogla-la-sioux-see-k-solutions-chronic-housing-shortage/77668294/>

Figure 13. *Facebook- A Thunder-Being Nation - The Oglala Lakota of Pine Ridge Indian Reservation*. Facebook. (n.d.). <https://www.facebook.com/athunderbeingnation/photos/a.209450639133900/3901925349886392/>

Figure 14. Representative, T. S. H. (2016, March 9). *Housing shortage on Pine Ridge Reservation*. truesiouxhope. <https://www.truesiouxhope.org/single-post/2016/03/09/housing-shortage-on-pine-ridge-reservation>

Figure 15. Press, A. (2019, March 27). *Flooding hits South Dakota Pine Ridge Reservation Hard*. Argus Leader. <https://www.argusleader.com/story/news/2019/03/26/flooding-hits-south-dakota-american-indian-reservation-hard-pine-ridge/3281222002/>

- Figure 16. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD USER*. Sustainable Design and Affordable Housing on Pine Ridge Indian Reservation | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
- Figure 17. *NASHI Prototypes*. Nashi. (n.d.). <https://studionyl.com/nashi.html>
- Figure 18. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD USER*. Sustainable Design and Affordable Housing on Pine Ridge Indian Reservation | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
- Figure 19. *Sustainable design and affordable housing on Pine Ridge Indian Reservation: HUD USER*. Sustainable Design and Affordable Housing on Pine Ridge Indian Reservation | HUD USER. (n.d.). <https://www.huduser.gov/portal/casestudies/study-020321.html>
- Figure 20. Victoria R. Best (2023, April). *Own Graphic*
- Figure 21. Victoria R. Best (2023, April). *Own Graphic*
- Figure 22. *Early 20th century Newburgh*. Early 20th Century | Newburgh, NY. (n.d.). <https://www.cityofnewburgh-ny.gov/382/Early-20th-Century>
- Figure 23. *Later 20th Century*. Later 20th Century | Newburgh, NY. (n.d.). <https://www.cityofnewburgh-ny.gov/385/Later-20th-Century>
- Figure 24. Cher. (2018, January 19). *Lost Newburgh: The Tragedy of Urban Renewal, part 3*. Newburgh Restoration. <https://newburghrestoration.com/blog/2018/01/19/lost-newburgh-the-tragedy-of-urban-renewal-part-3/>
- Figure 25. *Where we work : Who we are : Habitat for humanity of greater newburgh*. Where We Work : Who We Are : Habitat for Humanity of Greater Newburgh. (n.d.). <https://habitatnewburgh.org/who-we-are/where-we-work.html>
- Figure 26. *After the crash, Banks paid billions. where'd it all go?: WNYC: New York Public Radio, podcasts, live streaming radio, news*. WNYC. (n.d.). <https://www.wnyc.org/story/banks-paid-billions-after-financial-crisis-whered-it-go/>
- Figure 27. *Our history: Who we are: Habitat for humanity of greater newburgh*. Our History: Who We Are: Habitat for Humanity of Greater Newburgh. (n.d.). <https://habitatnewburgh.org/who-we-are/our-history.html>
- Figure 28. Victoria R. Best (2023, April). *Own Graphic*
- Figure 29. *Video gallery: Events & blog: Habitat for humanity of greater newburgh*. Video Gallery : Events & Blog : Habitat for Humanity of Greater Newburgh. (n.d.). <https://habitatnewburgh.org/news-events/video-gallery.html>

Figure 30. *Habitat for humanity of greater newburgh*. Facebook. (n.d.).  
<https://www.facebook.com/HabitatNewburgh/>

Figure 31. *Habitat for humanity of greater newburgh*. Facebook. (n.d.).  
<https://www.facebook.com/HabitatNewburgh/>

# SYNTHESIS OF FINDINGS

## CASE STUDY 1 EFFECTS: DALLAS COUNTY, ALABAMA

The assumption that all it takes to build low-income housing is a good design proposal is common but untrue. In this research, there are surprising approaches these case studies have taken to combat low-income housing shortages. Not one of these case studies implemented housing alone. There is a powerful message about developing a means to impact sustainable change. All of the case studies have stated that success does not come from just building houses but from building vibrant communities that encourage residents to want to stay, protect and build their lives there. Each study took a different approach to how they were also helping the community, but much is to be learned from each. Investing in housing, security, education, and health is important reciprocity to these communities.

Because much more than just housing plays into a city's overall well-being, measuring the impacts made can be difficult. These projects were all implemented over a decade ago, but social, environmental, and economic change takes time. Some outcomes can be measured by looking at local statistics, but admittedly, for the residents of these towns, statistics do not capture the full story. There is more to a town than just its numbers. This is evident in seeing these communities' spirits change and grow by working together.

Dallas County, Alabama, historically played a major role in the Civil War and the Civil Rights Movement. However, in the 21st century is riddled with high crime rates, poor health, and insufficient housing. Rural Studio aims to combat all of these things through the foundation housing provides and the advantages it gives. Through 700 to 1000-square-foot homes that focus on well constructed, long lasting materials, the studio offsets the initial costs of a home by providing long term savings through energy efficient methods.

Looking at how Dallas County has been affected after implementing these homes, there is not a significant amount of notable community change. Dallas County is still seen as a persistently impoverished area and many have been leaving the town because of this. In the 2000 census, which was conducted shortly after this project began, the population was 46,000. Since then, it has dropped by over 15 percent and is now at 39,000. Although many who can afford to are leaving, the annual median income, after accounting for inflation, has increased a total of \$5,000 more than what residents were receiving in 2011. This has also positively impacted childhood poverty statistics. In 2011, 51 percent of children lived in poverty and 56 percent lived on food stamps. By 2021, both of these rates had dropped, with only 38 percent of children living in poverty and 49 percent on food stamps.<sup>1</sup>

Dallas County is still one of the most dangerous places in Alabama, and has a crime index of 0. However, since 2000, their crime rate has dropped by over 40 percent. Much work still needs to be done, but this is a step in the right direction. Accompanying the decrease in crime is the increase in total high school graduates. Many argue that these statistics go hand in hand and the decrease in one generally equals the increase in the other. Nonetheless, this shows that the city is advancing and progressing positively.<sup>2</sup>



Figure 1. Tornado Aftermath in Dallas County



Figure 2. Tornado Aftermath in Dallas County

The case study review discussed how Rural Studio's firehouse project for the city decreased insurance premiums, allowing more people to afford to own their homes. There is no published number to look at the specific range of impact or decrease in cost; however, it appears to have made a small difference in the number of homes available. From the 2010 census until 2020, there was a very slight but steady increase in homes in Dallas County.<sup>3</sup> In 2021 there was a series of two devastating tornadoes that ran through the region, hitting parts of Dallas County. At the same time, the census showed a decrease in 1000 housing units. It is not well documented whether the two are related, but it is likely that the tornadoes played a part. Either way, tornadoes have an enormous, long-lasting impact on communities as they must navigate neighborhood cleanup and repair.<sup>4</sup>

After another massive tornado at the beginning of 2023, Dallas County is rebuilding its city yet again. While the impacts of what Rural Studio began seem to not have made a significant difference in terms of numbers, there is hope on the horizon. Rural Studio's work is divided over many small towns and may affect the level of transformation to each town they can generate. In time, with support and determination, the studio has impactful ideas and objectives to make a lasting impact, especially if the work is focused more narrowly on one place.<sup>5</sup>

## CASE STUDY 2 EFFECTS: PINE RIDGE, SOUTH DAKOTA

The Pine Ridge Indian Reservation began with a tragic story and is still fighting to work through the aftermath. With virtually no natural resources and few job opportunities on the Reservation, conditions had been left for the worse until CU Boulder partnered with the Native American Sustainable Housing Initiative. This initiative has brought countless jobs and over 40 houses to the natives giving them net zero energy consumption benefits.

Looking at how the Reservation has been affected after the implementation of these homes, we see the fruits of a community that desires to make a change. There have been many positive outcomes, such as building multiple sustainable homes, using local resources, building of a community center, a children's home, and a small business educational opportunity cafe. Today, this is their motto: "How long are you going to let other people decide the future for your children? Are you not warriors? Don't come from a place of fear, come from a place of hope. Start talking and start doing!"<sup>6</sup>



Figure 3. CU Boulder's Project Renders





Figure 4. CU Boulder's Project Renders

The current statistics surrounding the Pine Ridge Indian Reservation are tangible evidence that work still needs to be done. Approximately 80 percent of families are impacted by alcoholism; over 80% of families live below the poverty rate; 70% of students drop out of high school; the suicide rate is more than double that of the rest of the United States; the infant mortality rate is the highest on the North American Continent; and the crime rate is hard to pin down because it is mostly unreported by the tribal police. Although these numbers are devastating, some positive changes have occurred at Pine Ridge Indian Reservation, South Dakota, over the past ten years. Most notably, at the beginning of this project, there were only 1,100 housing units, yet the 2021 Census shows a total of 3,463 housing units. This is an increase of over three times the original number. The population on the Reservation had increased from 18,834 in 2010 when the project started to 19,950 citizens. Between 2010 and 2014, 15% of the population moved into a single-family home.<sup>7</sup>

Between 2014 and 2017, an additional 16% of the population moved into a single family home (source). Additionally, the per capita income has almost doubled from \$6,067 to \$13,268 during this same time frame. By no means have things become utopian, but the emotional, physical, and environmental devastation of poverty is in decline, and the community is hopeful that this will continue into the future.<sup>8</sup>

## CASE STUDY 3 EFFECTS: NEWBURGH, NEW YORK

Newburgh, New York, flourished during the industrial period, but as time quickly changed, the city was left with very little but abandoned factories and warehouses. This preceded the high poverty and crime rates. In the early 2000s, Habitat for Humanity began revitalizing the town. With hundreds of historical buildings in place, renovations and new builds were crucial. Trying to preserve but use the most cost-efficient and energy effective materials has been the primary goal of their project.

Looking at how Newburgh has been affected since Habitat for Humanity's project started, there are many notable changes. Much growth can be seen throughout the past 20 years, and more is predicted to happen. In 1999, Habitat for Humanity started its project in Newburgh, the historical waterfront was run down with large broken concrete slabs overrun with weeds. Now, it has been redesigned and is a common destination for many. Restaurants and businesses lining the water draw thousands of customers every weekend. The town's spirit and sense of community are coming back as well. Many neighborhood associations have been formed in recent years, and according to locals, block parties are becoming increasingly popular.<sup>9</sup>

When Habitat started in Newburgh, they focused on one small area. After rehabbing old houses and constructing many new ones to sell to the low-income population, the program has begun

to branch out and is working to revitalize much larger areas. Engaging the residents of neighborhood associations and gaining more funding, Habitat has built over 100 houses to date. Habitat is not the only one building houses. According to the US Census Bureau, between 2000 and 2010, there was the addition of 400 housing units. However, between the years 2010 and 2020, there has been an increase of 1000 housing units.<sup>10</sup>

Interestingly enough, although there is such a significant increase in housing, the population has remained steady. This suggests one of two things; there has been an overall increase in community income; thus, the ability to afford housing has increased, or there is a large portion of those housing units that are low-income housing and is cost-effective enough for lower-income families to afford them. When looking back at the census, from 2010 to 2020, accounting for inflation rates, the median income has increased by roughly \$4,000. To create perspective for this number, the national median income, again accounting for inflation, has gone up by \$9,000. Unfortunately, Newburgh's income is still behind. Perhaps the ability to populate the immense increase in housing units means many qualify as low-income housing. This is an exciting and much needed statistic for the city.<sup>11</sup>

The chair of Newburgh's Architectural Review Commission says the organization has been flooded with applications requesting to improve historic buildings. Many people who came and stayed in an Airbnb during the significant outbreak of Covid-19 in New York City are now vying for property to move back out there. As the city



Figure 5. Newburgh Waterfront Before



Figure 6. Newburgh Waterfront Before



Figure 7. Newburgh Waterfront After



Figure 8. Newburgh Waterfront After

expands, the local hospital and community college have also announced expansion plans. Businesses are starting to relocate to Newburgh and things are looking up for the town.<sup>12</sup>

Newburgh is beginning to catch the eyes of investors from New York City and is appealing to the population of those who want to escape large metropolitan life. Investors have taken other cities along the Hudson, including ones just across the river, and turned them into playgrounds and sanctuaries for New Yorkers. This is beginning to happen in Newburgh and residents are saying they are excited seeing the town come back to life. (source). In an interview with a local real estate agent, Mr. Hanson, he recalls, "Several years ago, if

someone came to me and said, 'I want a single-family home in the city of Newburgh,' my response was, 'You have to be more specific. We can't look at several hundred houses.' Now the market has dwindled to a few dozen."<sup>13</sup>

The negative aspects of this growth can be displacement and gentrification. Although the new waterfront shops and restaurants provide much needed employment opportunities, many other areas have been demolished and new waterfront housing has been constructed. The prohibitive costs of these units are now catering to wealthy New York residents looking for vacation homes a short distance from the city. This is slowly

becoming a more prevalent issue that could end up displacing those who were originally living here.

The city has also been addressing the historically high crime rates. Since 2012, the violent crime rate has dropped over 40 percent. There has been a long-term tense relationship between the city's community and the local Newburgh Police. However, in efforts to build better relationships, the Police Department has held many community cookouts and other community programs.<sup>14</sup>

All in all, the city of Newburgh, New York, has made significant progress since 1999, the beginning of Habitat for Humanity's low-income housing project. There have been many who participated in this progress which is still continuing. Housing and Urban Development (HUD), Community Development Block Grant (CDBG), and Orange County Consortium (OCC) are three additional contributors to the success of this community. The Consolidated Plan for 2020-2024 focuses on economic development without displacement, eradicating slums and homelessness, developing community activities for health and safety, safe streets, drinking water protections, and sewer upgrades.<sup>15</sup>

## Synthesis of Findings References and Figures

1. *Dallas County, Alabama*. Explore census data. (n.d.).  
<https://data.census.gov/all?q=Dallas%2BCounty%2C%2BAlabama>
2. Crime in Dallas County, Alabama. (n.d.). <https://www.bestplaces.net/crime/county/alabama/dallas>
3. *Dallas County, Alabama*. Explore census data. (n.d.).  
<https://data.census.gov/all?q=Dallas%2BCounty%2C%2BAlabama>
4. Pietsch, B., & Hauser, C. (2021, March 17). *Severe storms in the south cause tornadoes and power outages*. The New York Times. <https://www.nytimes.com/2021/03/17/us/tornado-south-weather.html>
5. *Place*. Rural Studio. (2019b, August 12). <http://ruralstudio.org/study-with-us/place/>
6. *Pine Ridge Indian Reservation Facts*. Re-member. (n.d.). <https://www.re-member.org/pine-ridge-reservation>
7. Representative, T. S. H. (2015, February 10). *The Lakota Sioux Tribe: A look at the statistics*. truesiouxhope.  
<https://www.truesiouxhope.org/single-post/2015/02/10/the-lakota-sioux-tribe-a-look-at-the-statistics>
8. *Census profile: Pine ridge reservation*. Census Reporter. (n.d.).  
<https://censusreporter.org/profiles/25000US2810-pine-ridge-reservation/>
9. *Restoration*. Restoration | Newburgh, NY. (n.d.). <https://www.cityofnewburgh-ny.gov/386/Restoration>
10. *Newburgh, New York*. Census Website. (2023, March 3). <https://www.census.gov/data/>
11. *Newburgh, New York*. Census Website. (2023, March 3). <https://www.census.gov/data/>
12. Lasky, J. (2020, December 16). *Newburgh, N.Y.: Onetime Jewel of the Hudson River*. The New York Times.  
<https://www.nytimes.com/2020/12/16/realestate/newburgh-ny-real-estate.html>
13. Lasky, J. (2020, December 16). *Newburgh, N.Y.: Onetime Jewel of the Hudson River*. The New York Times.  
<https://www.nytimes.com/2020/12/16/realestate/newburgh-ny-real-estate.html>
14. Crime in Newburgh, New York (NY): crime map. (n.d.). <https://www.city-data.com/crime/crime-Newburgh-New-York.html>
15. Our Partners : Who We Are : Habitat for Humanity of Greater Newburgh. (n.d.).  
<https://habitatnewburgh.org/who-we-are/our-partners/>

Figure 1. Pietsch, B., & Hauser, C. (2021, March 17). *Severe storms in the south cause tornadoes and power outages*. The New York Times. <https://www.nytimes.com/2021/03/17/us/tornado-south-weather.html>

Figure 2. Roney, M. (2021, March 18). *'gone in the blink of an eye': Alabama family escapes minutes before suspected Twister Flattens Home*. Montgomery Advertiser.

<https://www.montgomeryadvertiser.com/story/news/2021/03/18/escaping-alabama-tornado-chilton-county/4745401001/>

Figure 3. *NASHI Prototypes*. Nashi. (n.d.). <https://studionyl.com/nashi.html>

Figure 4. *Thunder Valley Community Center and bunk house*. BNIM. (2022, April 19).  
<https://www.bnim.com/project/thunder-valley-community-center-and-bunk-house>

Figure 5. Facebook. (n.d.). <https://www.facebook.com/newburghhistoryblog/photos/pb.100068588828867.-2207520000./579082622551901/?type=3>

Figure 6. Facebook. (n.d.). <https://www.facebook.com/photo/?fbid=1605066329953520&set=pb.100068588828867.-2207520000.>

Figure 7. *The Best Restaurants on the Newburgh, NY waterfront*. (n.d.).  
<https://www.middletonhonda.com/newburgh-ny-waterfront-restaurants/>

Figure 8. Robert Welber. (2020, July 17). *Newburgh Waterfront Restaurants Closing Tops this Week's news*. Hudson Valley Post. <https://hudsonvalleypost.com/newburgh-waterfront-restaurants-closeing-tops-this-weeks-news/>

# CONCLUSION

## HOW PINE BLUFF CAN BENEFIT FROM THESE IDEAS

After analyzing the outcomes of the three case studies, there are four things that could positively impact Pine Bluff, Arkansas, to implement in the revitalization of their small rural community. Cost-effective low-income housing is one key and the foundation of the revitalization effort. However, there are different options for ways to achieve this goal. And based on different local attributes, some will end up being more beneficial than others.

The first potentially advantageous method is finding and/or creating materials that can be sourced locally. This not only helps keep costs low but potentially employs the local population who might work on the harvesting of those local materials. This is beneficial to the community in many ways. It helps provide wealth circulation throughout the city by buying materials from people who will, in turn, spend their money back into other businesses in the community. The more circulating funds will increase the opportunity for more jobs, not just for the original harvester of materials but for all the businesses benefiting in the area.

Pine Bluff is located in the Timberlands Region of Arkansas, and wood is a readily available resource. The Timberlands is a region in the southernmost portion of Arkansas known for its dense pine and cypress forests covering thousands of acres of hilly terrain. Arkansas is the 9th leading producer of timber in the U.S. and the third most

timber-dependent economy in the nation, with hundreds of millions of dollars worth of wood. As the timber market grows, the region is seeing an increase in jobs created by those companies and benefiting the lives of the families in the area. This wood resource is more cost-effective for Pine Bluff, as it is locally sourced, requires less transportation costs, and employs the local workforce. Wood is a sustainable, renewable resource that will benefit the environment and the economy long term.<sup>1</sup>

Secondly, the concept of net zero energy is that the monthly money saved can be put back directly into the mortgage payment. Considering a slightly higher initial cost to gain a net zero energy consumption rating is incredibly beneficial. Likewise, employing high-quality, long-lasting materials built to last also helps lower the maintenance cost and is more sustainable over time. Using durable materials like insulated concrete foundations allows families to age and grow comfortably in place without worrying about the lifetime endurance of their home. In the long run, these lower utility and home maintenance costs can help offset the mortgage payment cost.

Another extremely advantageous technique is educating and employing the local workforce in building proposed homes. This Habitat for Humanity model has proved invaluable in their effort to build and sustain homes in impoverished neighborhoods. Training the local Pine Bluff workforce in a sustainable trade encourages them

to assist in constructing their homes, gives them a sense of ownership, and proves to be a worthwhile investment in the future of the citizen and their care and upkeep of the home. This technique has a twofold benefit. First, "sweat equity" helps homeowners feel like they have accomplished a large task, and after the hard work they put into the building, they will protect and maintain their work with much more diligence than if a home had been handed to them. Second, these communities have a high unemployment rate, so employing the locals is key to home ownership and wealth building. This on-the-job training will also provide a base for future employment for these residents. There is an overabundance of studies that link mental clarity, emotional well-being, and physical health benefits to employment. The benefits of an employed workforce cannot be overstated.

Lastly, although it is not a direct method of building low-income housing, providing a community with much needed assets and resources aids in boosting neighborhood success. The ratio of people who can afford stable, quality housing directly correlates to neighborhood success. Things like building community centers and libraries in neighborhoods assist in the comradery of the citizens and the stability of children's environments. This stability for children is a leading factor in their future education and employment opportunities. A citizen who is educated and employed can then afford and maintain a home and is able to build wealth.<sup>2</sup>

A vast amount of data validates the link between safe, affordable housing and variables such as childhood poverty, malnutrition, lack of education, unemployment, criminal activity, physical health, and depression. A neighborhood that is well established can then afford community assets such as police and fire stations. These, in turn, provide stability and a sense of security to a neighborhood. High crime rates and abandoned homes are a sign of communities under duress. Communities with stable assets are less likely to fall into this category. The cost of employing these methods is high and success depends on the hard work and determination of those who care about their neighbors, children, and future. But what would be the cost of inaction?

The partnerships were an incredibly important factor in each case study discussed. While some were local and some on a broader, national level, each partnership played a large role in the successes of these projects and was the catalyst for change. It will be crucial for any project in Pine Bluff to utilize community partnerships and grants, such as a historic preservation grant. Fortunately, a community of people care about Pine Bluff and want this rural city to succeed. One such organization is Go Forward Pine Bluff (GFPB). GFPB has facilitated public/private partnerships, school consolidation frameworks, a first responder incentive program, and an asset limited, income restrained, employed (ALICE) initiative. Success will not be instant but comes from existing assets, local resources, and integral partnerships that have a vested relationship to the community and its growth.<sup>3</sup>



All three case studies showed a plan that was established, partially funded, and slowly implemented. The need is so great, and the progress is so slow, but there is progress nonetheless. In a world that believes things are only worth doing if there can be immediate gratification, this work demands hard, slow, deliberate steps. There is no question that these steps, no matter how small, are worth taking. The changing of lives doesn't happen overnight. It

requires doing the right thing repeatedly, making mistakes, learning from those mistakes, and going back and continuing to do the hard work again. It is a process that requires unlearning old and wrong things and learning new and right things. In the process of researching this, eventually, I stopped asking, "What is the cost of constructing low-income housing?" and started asking, "What is the cost of inaction?"

## Conclusion References and Figures

1. *Timber and forest products industry in Arkansas*. Default. (n.d.). <https://www.arkansasedc.com/why-arkansas/key-industries/paper-and-timber>
2. *Housing and Health: An overview of the literature*. (n.d.). <https://www.healthaffairs.org/doi/10.1377/hpb20180313.396577/>
3. *Alice (Asset Limited, income constrained, employed)*. Go Forward – Pine Bluff. (n.d.). <https://goforwardpinebluff.org/alice/>