

Manufacture Homes and Affordable Housing

Around 20 million Americans are living in manufactured homes. This makes up 6% of the US's population. According to the US Census Bureau, a new manufactured home costs less than half per square foot what a new site-built home costs. As a result, manufactured homes have become an important affordable housing option for low-income families. In the 1990s, two thirds of all affordable units added to the U.S. housing stock were manufactured homes. Manufactured homes are a highly diverse and adaptable housing form, and yet they are highly stigmatized and segregated from the conventional housing stock in a way that impacts housing affordability.

Schult Homes Factory

At the Schult Homes factory in Redwood Falls Minnesota, we were able to witness the process of creating a modern manufactured home (See Photos 1-6). Schult is a leader and innovator in the manufactured homes industry, making its homes some of the nicer and more affordable manufactured homes on the market. At the Schult Homes factory, workers build five manufactured homes every five days. For our purposes, this means the factory could have all of our 82 homes ready for transportation in less than one month. The homes move from station to station along somewhat of an assembly line and are constructed with great exactness and efficiency. Factory workers make at least 44,000 dollars a year, but with bonuses and overtime many make up to 70,000. A large variety of people are employed and enjoy the nice facilities and steady work.

Cost Breakdown

Schult Homes are carried by a few different distributors, including the one we visited near the factory in Redwood Falls as well as one called Homes of Harmony in Rochester. With Rochester being only an hour away from Northfield, this distributor would make a great choice in order to cut down on transportation costs. There is significant variety in the types of manufactured homes available, from their square footage, the amount of bedrooms and bathrooms they have, their layout, whether or not they include porch doors, color schemes, and more. Of course, with these variations come variations in price as well. We would have to decide which type, style and amenities we are looking for to get an exact price estimate, but based on the estimates we received from the Schult Homes factory, the homes we'd be looking at (affordable 2-3 bedroom homes) can cost anywhere between \$120,000 and \$170,000 (including the transportation fee). This is remarkably cheap for its size and quality. Additional costs include the pouring of the foundation and all the on-site hookups required, which are estimated to cost about \$20,000 to \$30,000 per house. Any external additions and aesthetic changes would also be an additional cost. Manufactured Schult homes are HUD certified within the factory, eliminating many of the on-site inspection costs later. All in all, it is reasonable to assume that we could build each house for around or under \$200,000. This would be a reasonable and affordable cost for households making around \$50,000 a year.

Environmental Impact

All Schult Homes are made net zero ready, which means that the houses are built with all the infrastructure necessary to become carbon neutral homes if the owners (or City of Northfield) decided to make it so. Schult Homes are built extremely strong, tight, and insulated in order to withstand the stresses of transportation. They are so well insulated that they hold their internal temperature much

better than a conventional stick-built home. In conjunction with high quality modern appliances and heaters, these homes require much less energy to function. In addition to the environmental impact, having these energy efficient homes brings utility bills down by an estimated 40% to 50%, further helping the low income families we hope to support. Additionally, the houses are already equipped with the necessary infrastructure to add solar panels, allowing the already energy efficient homes to become carbon neutral. Even the construction of these homes is more environmentally friendly since less waste is created in the construction of manufactured homes than that of stick built homes. Stick-built homes create dumpsters full of trash and waste during their creation while the construction of a manufactured home creates only a few trashcans worth of waste.

Manufactured v. Modular

For Northfield's purposes, we are looking to develop manufactured homes rather than modular homes. A manufactured home is built to the national HUD code and includes all the major appliances (such as a furnace and hot water heater) necessary to be inspected within the factory. They are also built on a chassis, meaning it is built on a metal frame with wheels that cannot be removed. A modular home, on the other hand, is transported in pieces and then placed on a permanent foundation. Northfield is looking to build manufactured homes in order to cut the costs of more on-site construction and inspections. Additionally, the nature of manufactured homes as portable allows Northfield to explore creative ways of divvying up, renting, or creating a cooperative with the HRA land they have available for this manufactured home park. This way, Northfield can find the most affordable and cost-effective way to provide housing with this space.

Durability and Structure

As previously mentioned, Schult homes are built to be strong and durable because they need to be able to withstand transportation across highways, including the stress of 60-70 miles per hour winds. Additionally, since Schult homes are built inside of a factory, the materials used are much less likely to be damaged by exposure to the climate than materials used in stick-built homes. With proper maintenance, these homes are meant to last. However, despite the durability of these homes, it is required that all manufactured home parks include an emergency shelter for tornado threats. Schult homes are also very adaptable, they are built with the infrastructure necessary to add to and modify these homes later, such as adding solar panels, porches, aesthetic changes, and possibly basements.

Aesthetics

There has been a huge change in how manufactured homes function and look in the last few decades. Inside, the houses are beautifully designed and spacious. You can see pictures and even take 3D tours of the finished and staged homes on Schult's website: To see more finished and furnished Schult homes, check out their website: claytonredwoodfalls.com. Externally, manufactured homes no longer need to be in the shape of long rectangles but rather can be more square shaped (See Figure 1). Since the homes need to be transported down highways, they are built by combining two halves of the house together on site to create the full home (See Photo 5). This effect combined with aesthetic choices like the color of the siding, skirting, roofing pitches, woodwork, and trims have made the houses look very different from a manufactured home of the past. There are lots of ways to upgrade the external aesthetics of these homes such as adding stairs, adding porches, painting, and landscaping. Additionally, manufactured home parks do not have to be designed the way they are most commonly pictured.

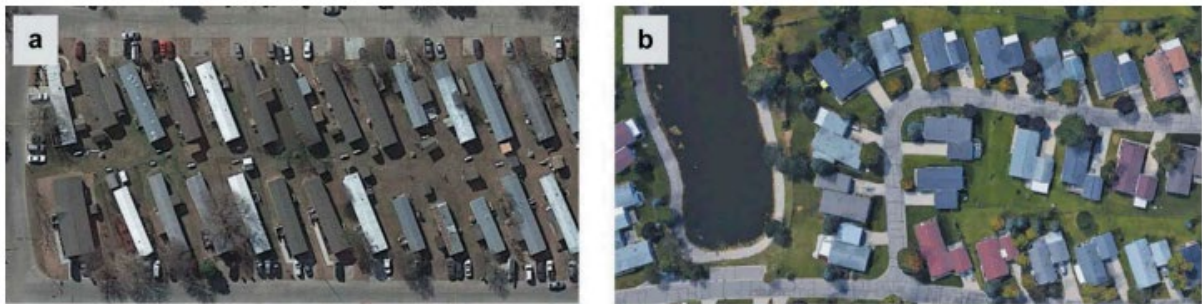
Especially give the more square shape of these homes, there are many new layouts for manufactured home parks that can greatly affect the feel of the spaces (See Figure 1).

Overall Pros and Cons of Using Manufactured Homes

Pros	Cons
More affordable than stick-built or conventional home ownership	Bias and stigma surrounding manufactured homes
Northfield would be able to build more units	Possibly less appreciation value than a more conventional home
More environmentally friendly and energy efficient	Possibly harder to finance
Faster construction	Not putting money into local construction workers and companies??

Photos and Figures

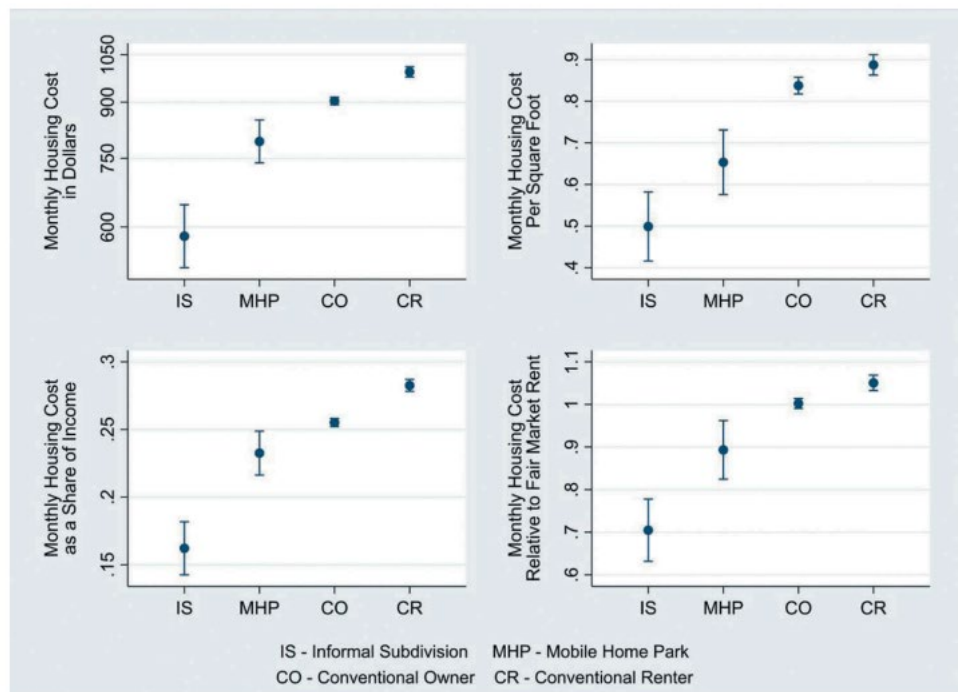
Figure 1:



- a. Older single-section manufactured home park in Austin Texas
- b. High-amenity double section manufactured home park outside Lansing, Michigan

Source: Noah J. Durst & Esther Sullivan (2019): The Contribution of Manufactured Housing to Affordable Housing in the United States: Assessing Variation Among Manufactured Housing Tenures and Community Types, Housing Policy Debate, DOI: 10.1080/10511482.2019.1605534

Figure 2:



Housing cost and affordability: A comparison of informal subdivisions, mobile home parks, and conventional tenures

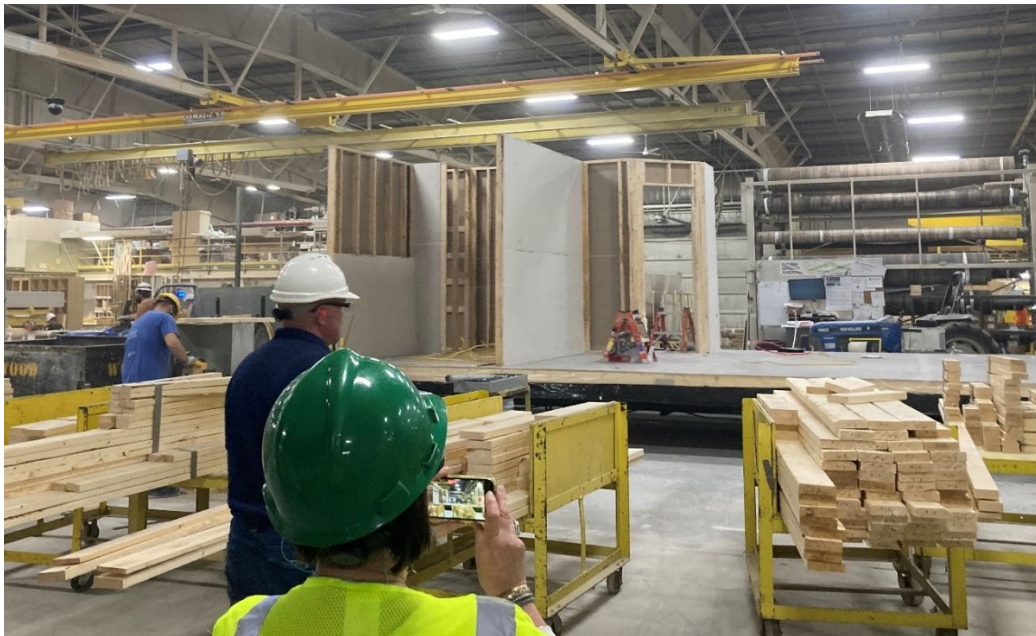
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Photo 1:



Northfield city government visiting the Schult Homes factory in Redwood Falls, Minnesota

Photo 2:



Schult manufactured home in the process of having its walls put in

Photo 3:



Schult manufactured home in the process of being built inside the factory

Photo 4:



A nearly finished Schult manufactured home

Photo 5:



*Two sections of the same Schult manufactured home next to each other
(they will be transported separately and put together on-site)*

Photo 6:



Peak inside a Schult manufactured home's kitchen

To see more finished and furnished Schult homes, check out their website: claytonredwoodfalls.com