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Guidelines for Sustainable Practices in the Rural Built Environment

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Initial Statement

According to the World Health Organization (WHO), climate change will have direct and significant health impacts (1), which the Lancet Countdown identifies as disproportionately affecting at-risk populations.(2) The challenges of geographic isolation and lack of population density in rural and remote areas limits adequate access to basic healthcare services, such as primary care, emergency care, and mental health services. Additionally, the health deficit experienced by these populations is at a greater risk from the health impacts of climate change. This study examines climate resilient and sustainable design's potential for addressing the health impacts of climate change on remote and rural populations.

Methodology

We used three questions to come to our identified solutions. These questions directly come from our research topic of leveraging the built environment to impact rural communities in a positive, specifically healthy, direction, in light of our ever-changing climate.

Question 1: Does the solution require a change in the built environment?

We know there exists a near infinite amount of ways to improve health and resilience or mitigate the effects of climate change outside of architecture. However, by focusing on the impact of structures in the built environment, we hope to rely on our background as architecture students, as well as investigate the tremendous potential for improvement in what is constructed today.

Question 2: Does the solution result in healthier people or a stronger community?

This question effectively discards the solutions that, although impacting the built environment, do not explicitly address the health and well-being of its users and the greater community. For example, building a fast food restaurant certainly fulfills the "built environment" requirement, but is unlikely to result in healthier people or a stronger community.

Question 3: Does the solution acknowledge and address its impact on the environment?

The built environment is responsible for a large amount of global energy consumption. If there is a silver lining, it is that there are more and more sustainable solutions to architectural problems. This question ensures that not only is the solution "green", but also, in many ways, is actually better for the environment than if it hadn't been built at all!

Community Gardens

Community Gardens, at first glance, seem to be a fairly innocuous solution to a problem as complex as: environmentally friendly solution to improve the health and well-being of rural Nebraska. And, in many cases, that is correct. Community gardens are far from the latest or greatest technology, and therein lies one of its biggest strengths: it's simple.

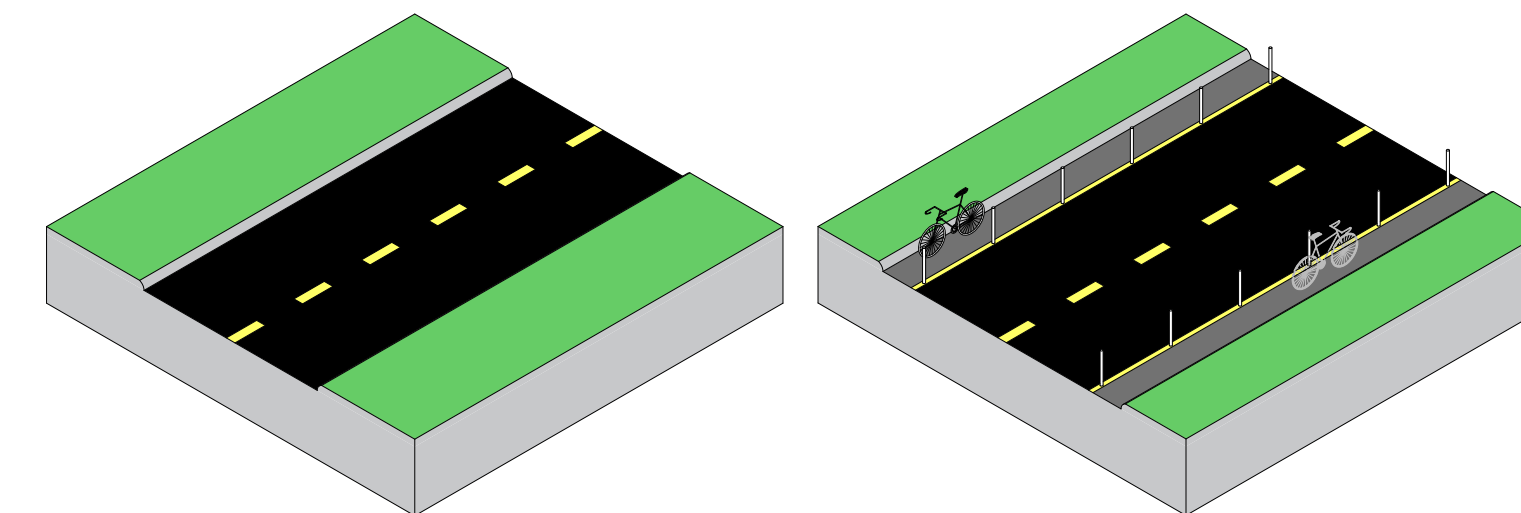
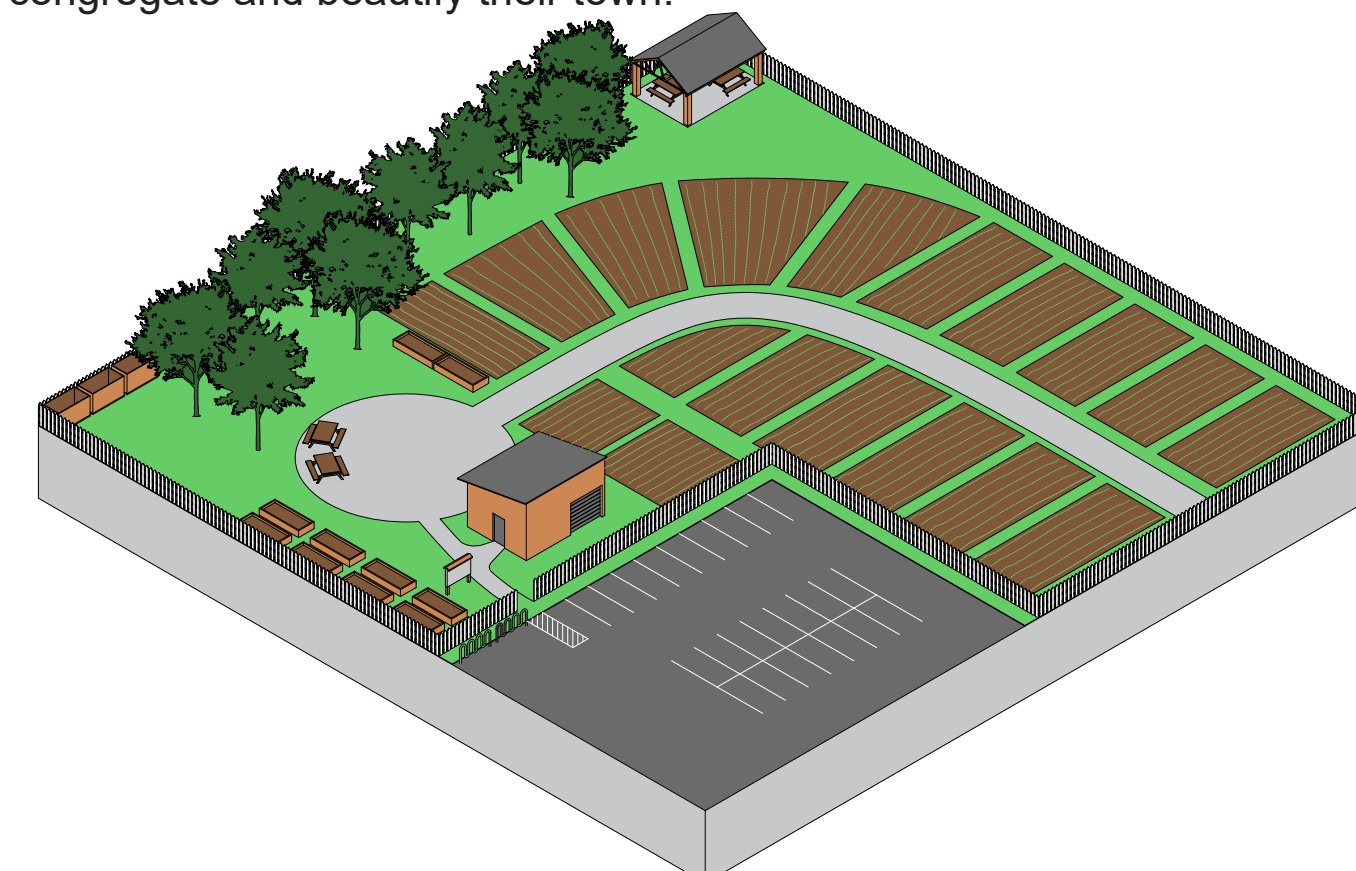
The first primary benefit is that community gardens are a clever way to increase the fruit and vegetable intake of its members. While research is limited and rarely confined to the Midwest, what work has been done confirms that community gardens, and gardening in general, seems to be an effective way of getting people to eat their fruits and veggies.

Related to the previous reason, community gardens present great opportunities to integrate with local schools. Not only does this solve the question of "where?", but it also offers a valuable teaching tool for teachers. And besides explicit instruction, a consistent reminder like a garden works subtly to shape attitudes and behaviors surrounding vegetables and overall health.

Perhaps the most underreported benefit of community gardens is the physical health component. While it is fair to say that people do not build community gardens to get in shape, it is certainly fair to say that a lot of people get in shape while doing community gardening. What few studies have attempted to understand gardening as exercising show that gardening truly is a legitimate form of exercise. It is particularly good for the elderly and those who struggle to move well, because gardening is a significant amount of moving; bending, planting, raking, digging, lifting, etc.

While the aforementioned reasons are all great consequences of a community garden, perhaps the best reason to build one in the first place is for the more 'social' reasons. The reasons that are hard to observe and measure, yet, undeniably exist. These are reasons related to notions of 'beauty', 'place', 'community', etc. They are just as critical, if not more, than the aforementioned reasons.

To briefly summarize, we may understand community gardens as providing four main benefits. Roughly speaking, these look like: An increase in fruit/vegetable intake, promising chances to integrate with a community school or place of worship, promotes an active lifestyle and light to moderate physical activity, and is a place for communities to congregate and beautify their town.



The addition of bike infrastructure offers an alternative to driving that isn't detrimental to the environment.

Pedestrian Access

Increasing a community's "walkability", or access to pedestrian routes is a great solution that checks all of our criteria with ease. Loosely defined, we have come to understand "Pedestrian Access" as a broad term to describe people moving between two places, however they choose to go about it; walking, biking, skateboarding, etc.

A large part of the appeal of "walkability" is in regards to the environment. Researchers and climate advocates take great interest in it because not only can most people easily perform it on their own (they have a high degree of agency over how they commute, get groceries, etc.), but it also works. Some of the predicted effects of more people ditching cars shows walkability as an extremely promising environmental solution.

Another reason to like pedestrian access is the economics of it. Not only does car ownership cost the owner a significant share of their income, but it also costs a lot of money to accommodate them in cities. Trails and sidewalks, on the other hand, may just be one of the most financially sound investments a community can make. Less driving means less purchasing gas, as well as less wear and tear on cars and roads, which all keeps more money in your pocket.

Walkability and trails, as a means to get more people walking, is another potential reason to invest in them. Research shows time and time again that walking counts as great exercise, particularly for those with mobility issues. And while research is skeptical about the ability of trails to get people walking, we count sidewalks and walkability as a necessary first step.

Lastly, creative class and city planners recognize that the growing creative class in society, that is, young, educated, creatives, tend to favor cities and townships with access to the outdoors. The retention and attraction of young citizens is one of rural America's largest issues faced. By emphasizing their connection to the outdoors, and the potential for pedestrians in their city, we claim that rural America can better add to and retain their current populace.

A focus on the pedestrian, and not the car, then, ought to be a major focus for small towns across America. At its best, a thorough pedestrian network and outdoor access may attract young graduates and encourage its citizens to walk. At its worst, a focus on pedestrian safety and comfort will only keep more cars off the road while saving american citizens and towns money.

Building Certification

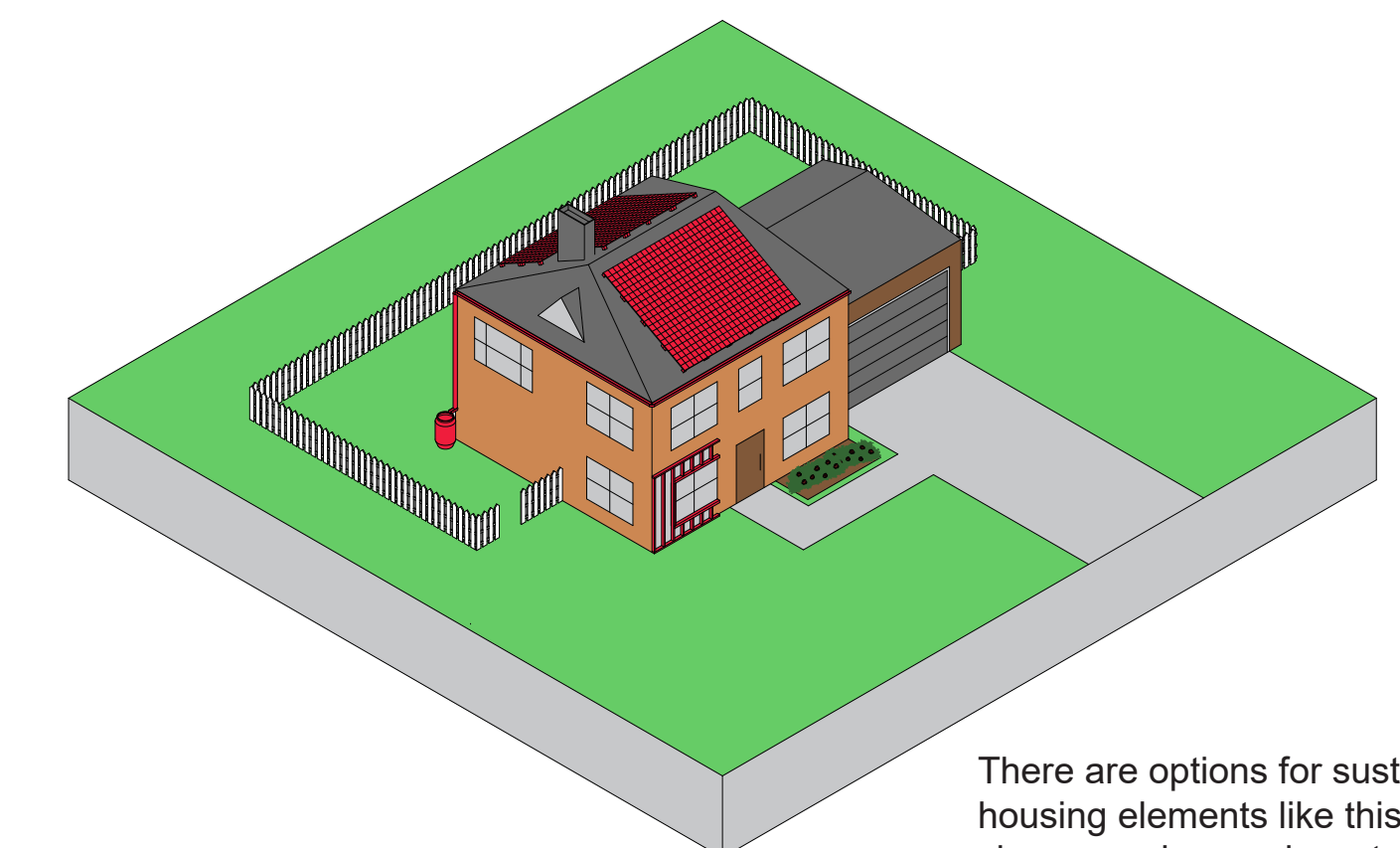
Because the built environment has a lot of work to do to make itself sustainable, a number of organizations and certifications have been created. These processes often focus on different things, yet still overlap on several critical aspects of architecture, such as energy usage, material palette, and waste.

By far the first reason people turn to building certifications is their environmental considerations. Many of these certifications have certain benchmarks and performance tests to ensure the building is working to reduce its footprint. Examples of prescribed techniques and systems include: smart glass, better insulation, passive design, daylighting, LED's, sustainable appliances, etc. The list of sustainable architecture is growing every day, and continues to fuel environmental change.

However, despite the long list of solutions, many of these certifications are associated with an increase of cost or some sort of additional hassle. While we wouldn't go as far as to say they are as easy as building without, we would like to point out that communities often find reason to rally behind their green buildings, and sustainable practices in general. The best example of this is the rural community of Greensburg, Kansas. After a devastating tornado destroyed much of their infrastructure, the city came together to support green buildings and practices moving forward. Today, Greensburg stands as a prime example of how a city can come together, and rebuild behind environmentally friendly policies.

Lastly, and related to previous points, young, educated, "creative class" types tend to favor environmental attitudes. Therefore, it is in a city's best interest, no matter the size, to encourage the development of green construction in hopes of attracting new residents.

Rural communities, then, may approach the challenge of building sustainably not only as a direct way to help the environment, but also as a way to socially bring the community closer, as well as attract new people. Building certifications have the impressive potential to "modernize" an area, without stripping it of the beloved small town feel that brings so many to it initially.



There are options for sustainable housing elements like this house shows, such as: rain water collection, locally sourced wood for framing, a garden, and solar panels (all in red).