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[Un]building the Rural: The Strategic Subtraction of Sidney, Nebraska

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[UN]BUILDING THE RURAL
THE STRATEGIC SUBTRACTION OF SIDNEY, NEBRASKA

by
Caitlin Elise Tangeman

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[UN]BUILDING THE RURAL
THE STRATEGIC SUBTRACTION OF SIDNEY, NEBRASKA
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KEY TERMS:

ACTIVE FORM  
A time-released protocol that generates/manages exchanges with a stream of objects and space, capable of orchestrating the appearance and/or disappearance of buildings (Keller Easterling).

DECLINE  
The worsening of condition or quality; a loss of value; the period in which something is deteriorating or approaching its end.

INDUSTRIALIZATION  
The process by which traditionally nonindustrial sectors become increasingly similar to the manufacturing sector of the economy.

INFRASTRUCTURE  
The basic organizational structures needed to support the operation of a society (including roads, facilities, buildings, structures, etc.).

LOGISTICS LANDSCAPE  
A landscape characterized by new industrial forms based on global supply chains and vast territories given over to accommodating the shipment, staging, and delivery of goods (Charles Waldheim + Alan Berger).

MECHANIZATION  
The process of replacing human or animal labor with machines.

MONOTOWN  
A community whose economy is dominated by a single industry or company.

RURAL  
Of or relating to the country and the people who live there instead of the city [Synonyms: Countryside, Hinterlands].

RURAL DEPOPULATION  
The migration of people from rural areas to larger, urban areas [Synonyms: Rural Flight, Rural Exodus].

SUBTRACTION ECONOMY  
A system of interaction and exchange that is based on a method of “taking away,” rather than “adding to.”

UNBUILD  
To disassemble according to a systematic plan, by a definite process [Synonyms: Deconstruct, Disassemble, Subtract].
**THESIS STATEMENT**

Rural communities around the globe continue to depopulate as employment and opportunities become more and more difficult to find outside of urban areas. In the U.S., this effect is occurring most severely in the region of the Great Plains, primarily due to the mechanization of agriculture and a non-diversified economic base throughout rural areas. Rural communities are often heavily reliant on one primary type of employment. When a major source of employment fails, the community that is dependent on it is faced with decline. As rural communities depopulate, the rural landscape is transformed into a new condition, with new spatial and programmatic relationships.

**THESIS QUESTION**

How should decline in the rural Great Plains be addressed through design?

**ABSTRACT**

This thesis focuses on the decline of rural communities and how rural decline might be addressed through design.

Rural decline is a phenomenon affecting rural territories around the globe, including the Great Plains. Rural decline has been caused by a number of factors, perhaps the most persistent being the reliance on an economy that is not diversified. In the Great Plains, agriculture is typically the main source of economic income, with a significant portion of the region’s counties depending on agriculture. Mechanization of agriculture through increased technology has eliminated many jobs in the agriculture industry, since higher yields can be achieved with much less labor. The decline of rural communities represents a shift toward an increasing supremacy of urban environments through the process of urbanization. Rural areas become increasingly neglected, yet at the same time, they are required to produce greater and greater amounts of agricultural products to support growth in urban areas, effectively becoming “machines” to support urbanization. Ultimately, the mechanization of agriculture will eliminate the need for human labor, creating a condition in which the land is maintained solely by machines. In this scenario, it’s no longer necessary for humans to occupy the rural, and the only interaction humans have with the rural landscape is via logistics networks, such as the interstate or rail, affirming the perception of the land as “flyover territory.”

Communities most at risk for decline are those with a non-diversified economy, or monotowns, that heavily rely on one source of employment. Sidney, Nebraska, is a monotown that relies heavily on the corporation of Cabela’s, World’s Foremost Outfitter,
which employs nearly one third of Sidney’s population of 6,800 via the headquarters, retail store, and distribution center. Cabela’s, a unique retail type that merges shopping, museum, and recreation, creates a Disneyland effect that attracts over 1 million people to Sidney annually. The presence of Cabela’s in the small community of Sidney has spurred a significant amount of development in the town over the last several decades, and has prevented the community from facing the decline that is typical in other rural communities. However, the future of the company, and therefore the town of Sidney, is uncertain after a complete acquisition by Bass Pro Shops in October 2016. Under the assumption that Sidney will lose Cabela’s as both a source of employment and as a tourist destination, the community will undoubtedly be faced with depopulation and decline at a faster pace and larger scale than what most rural communities are currently facing.

This thesis addresses the issue of rural depopulation and decline within the changing rural condition of the Great Plains, focusing specifically on the community of Sidney, Nebraska, after the projected loss of Cabela’s. The question is not how to “save” declining communities. Rather, it is how to appropriately design for the unique condition of decline in the rural landscape. [Un]building the Rural explores the strategic unbuilding of Sidney, Nebraska, as a mechanism of transitioning the community back to the natural landscape through the implementation of a subtraction economy. New hybrid programs, related to the history and culture of Sidney and Cabela’s, as well as the Great Plains, are implemented into the community as it shrinks to ease the transition and take advantage of opportunities that arise through depopulation. Ultimately, after multiple phases of strategic subtraction, the town is allowed to revert back into a natural, agrarian state.
thesis position
Figure 1: Mason White and Lola Sheppard, of Lateral Office (Image from: Lateral Office, Accessed December 07, 2016, http://lateraloffice.com/.)
RESEARCH METHOD AND APPROACH

RESEARCH METHOD

The research method I will be using for this thesis will adopt and build upon the research method of Lateral Office, which analyzes research problems at three scales: Territory, Community and Architecture.

RESEARCH APPROACH

To approach the larger issue of rural depopulation, which is a globally occurring phenomenon, this thesis will concentrate on the territory of the Great Plains, focusing specifically on the state of Nebraska. The scale of territory, often not fully addressed in architectural design, is of particular importance in the design process. The following quotes from Lola Sheppard in her article, “From Site To Territory,” reinforce this concept.

“Territory has become the necessary scale required to register and engage the complexity of networks and information at play in a given physical environment.”

“For architecture to think at the scale of territory does not require an amplification in size, but rather, a conceptual shift; it demands that architecture, regardless of its actual scale or extents, engage its extrinsic environment.”

These quotes emphasize that architecture is not restrained to its own footprint, but affects (and is affected by) everything around it. Therefore, designers must acknowledge the larger territorial environment when designing for a specific site, in order to achieve the most comprehensive, appropriate design in an increasingly complex world.

To further narrow the project’s focus, a method will be created for choosing a specific community for further analysis. After completing analysis on the community, multiple speculative design scenarios will be proposed that respond to the processes of decline occurring within the community. The goal of these speculative proposals is to produce ideas that elicit further conversation and awareness about issues related to rural decline, in a way that might be applicable to other, similar situations of decline in rural communities.

CONTEMPORARY RURAL ISSUES

MECHANIZATION OF AGRICULTURE

Mechanization of agriculture, according to a number of sources including Rural Sociologist Randolph Cantrell, is one of the primary causes of rural depopulation,[1] especially in the Great Plains region, which is globally known for its agriculture production.

This industrialization process of agriculture has eliminated many jobs that previously existed in the agricultural realm. Automated systems are beginning to dominate the landscape. Jobs that used to take multiple people to complete can now be accomplished by only one man. Fewer available agricultural jobs means that rural people must relocate to cities to find other work, since rural areas are often heavily dominated by the agriculture industry, with few other employment opportunities.

RELIANCE ON ONE MAJOR SOURCE OF EMPLOYMENT

The loss of a major employer is another cause of depopulation in both rural and urban instances. It's arguably more difficult for rural communities to bounce back from the loss of a major employer, since such large percentages of these communities' populations can rely on a single employer.

These major employers, which can take the form of industries, companies, or corporations, are often related directly or indirectly to the agriculture industry (e.g. meat-packing plants, ethanol plants, equipment-manufacturing, etc.), however, some are unrelated to the agriculture industry (e.g. retail, manufacturing, education, etc.).

Fareed Zakaria confirms the devastating effects of a loss of employment in rural areas with the following statement:

In the cities, if your company goes bankrupt, you can still get a job in the service sector. In these towns, the towns are constructed around one company, a steel mill, a coal mine. When that company goes under, all the service sector jobs collapse, because there’s not enough density for people to find work.[2]

GROWING RURAL-URBAN DIVIDE

A pressing issue today is the growing cultural divide between rural and urban.

According to Fareed Zakaria, host of CNN's Fareed Zakaria GPS and journalist for The Washington Post, there is a strong existence of the notion of “meritocracy,” or the idea that successful people “rise to the top” and go to cities, while those who do not are somehow inferior.[3] This idealist notion is not accurate, and creates a rift between the rural and urban. Rural individuals are caused to believe that urbanites are “looking down on them,” treating them “not just as flyover country, but as if they don’t even exist.”[4]

This is easily seen by the divided results of most recent presidential elections, namely the 2016 election (Figure 1). By viewing results at a county level, rather than a state level, strong differences manifest themselves between rural and urban voting patterns. The map shows "blue islands in an ocean of red," and exemplifies the fact that U.S. cities occupy "less than 4% of the land mass, but 62% of the population and easily 99% of the popular culture."[5] David Wong, executive editor of Cracked magazine, feels that the

2016 election results exemplified a significant push-back against urban elites by rural areas who truly feel that “their way of life is dying.”[1]

Victor Davis Hanson, a contributing editor of City Journal and senior fellow at Hoover Institution at Stanford University, indicates that rural and urban ideologies are fundamentally different from each other. People of rural areas are often more conservative and value independence, while urban areas are typically more liberal and value equal opportunity. Differences between rural and urban ideologies may not be as significant if not for the fact that “the nation’s urbanites increasingly govern those living in the hinterlands, even as vanishing rural Americans still feed and fuel the nation.”[2]

SUMMARY

All three of these issues (the mechanization of agriculture, rural reliance on one employer, and a growing rural-urban divide) are extremely relevant in contemporary rural society. Addressing these conditions as part of this thesis proposal provides an opportunity to acknowledge and engage these issues through architecture and the built environment.

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CRITIQUE

NEGLECT OF RURAL AREAS BY THE DESIGN PROFESSION

Rural areas are often seen as “flyover” country, with little acknowledgment. The design profession, especially, typically places more attention on urban areas and their issues, in effect neglecting a large portion of the built environment and a significant percentage of the population that occupies rural areas. Neil Brenner questions this phenomenon in the following quote:

Is [the rural, or non-urban world outside of cities] really irrelevant now, due to depopulation? On the contrary, the ‘non-city’ landscapes of the world have actually become quite fundamental, in operational terms, in providing various support for urban life. These territories have been operationalized to support the urbanization of the entire planet, and are being radically, destructively transformed through their role in this process.[1]

According to Brenner, then, rural areas are considered relevant only because of their ability to provide for and support urban areas and urbanization. While I agree with this statement, I would argue that rural areas are not only important for their potential to provide for the urban, but because “the rural” represents a significant portion of the population and an even larger portion of the natural landscape that we often don’t acknowledge. By reducing this landscape to a “production landscape,” we fail to see the importance of the actual people and communities existing in these places, and the value in maintaining and preserving a healthy rural environment.

There is clearly a place for design in the rural environment. Even though most rural communities are not “growing,” they are in need of forward-thinking, creative design strategies that can allow them to decline in population without declining in quality.

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Even for those of us who may be focused on the cities as zones of intervention, we can’t understand what is going on within them unless we look outside them, far outside them.\textsuperscript{[2]} - Neil Brenner

**UNSUSTAINABLE AGRICULTURAL PRACTICES**

Crops in rural areas cover vast amounts of land and generally do not provide goods for local consumption, or even direct human consumption. Agricultural production has been heavily commoditized through government subsidies, to the point where nearly all of the crops grown in the Great Plains are commodity crops (such as corn, soy beans, and grains) used as feed for livestock or in ethanol to supplement fuel. Vast amounts of land have been converted into this type of industrialized farming, drastically altering the landscape, while providing little in return to those who inhabit it. Jobs are lost in order to increase productivity in a system that, in a way, serves urbanization.

More sustainable rural agriculture practices would include locally-grown crops for human consumption, that could also help to reduce rural food deserts, foster community interaction, and create more jobs. To address the harm to the natural environment done by over-conversion to farmland, more land should be reserved for natural land uses and animal habitats (wetlands, grasslands, forests) to preserve natural resources and restore health to the environment. This could be done through the periodic conversion of pieces of degraded farmland back to natural land, as in the Logistical Ecologies proposal by Hinterlands Urbanism and Landscape, and MODUS Collective.\textsuperscript{[3]}

**“PERMANENCE” OF RURAL GROWTH**

Rural communities often rely economically on one major employer, one that is typically “temporary” to some degree. Development in these towns often takes the form of “permanent” infrastructure even though the future of the community is “impermanent.”

Since rural communities are so reliant on one industry in particular, they are especially susceptible to any changes that occur within the industry. “Permanent” infrastructure and development makes it difficult for these communities to respond and adapt easily or effectively to changing conditions. Industries are susceptible to restructuring or relocation, as well as changes in technology or consumption patterns, among countless other factors. Additionally, a town may cycle through several industries throughout its lifetime, generating a need for the community to shrink and grow with shifts in industry. A better approach to rural development, rather than relatively permanent development, would be to create more forward-thinking, flexible, temporary systems of infrastructure and development that could allow for a town to expand and contract as necessary with changes in industry.


ARCHITECTURE’S ROLE IN THE RURAL

The issues that are currently facing the Great Plains are inherently spatial, affecting the appearance and organization of the landscape, as well as the way people interact with and inhabit it. This is extremely relevant to the discipline of architecture. It encompasses the broader issues of landscape, infrastructure, and processes of urbanism, all of which directly affect what happens at an architectural scale. The importance of looking at issues at a territorial scale before moving to scales of community and architecture, according to the Toronto-based design research firm, Lateral Office, is that the architecture is able to “get ahead” of policy by being proactive, instead of simply responding to policy after the issue has happened. I will be adopting and building upon this working method, and also add that one cannot fully understand what is happening at the micro-scale of a building without first understanding the larger systems and processes that are affecting it.

The discipline of architecture has been predominantly focused on the urbanized regions of the world, largely ignoring the ‘leftover’ space, which is primarily rural. Maya Pryzbylski (designer and educator), Neeraj Bhatia (architect and urban designer), and Mason White (designer and educator), in their competition entry titled “Unlocking America’s Core: The New Frontier of White Space” for Life at the Speed of Rail in 2011, acknowledge this phenomenon. They indicate that 75 percent of America’s land area and 25 percent of its population lies outside of one of the 11 megaregions.\[1\] The team calls this vast region the ‘white space,’ hinting at its common portrayal of a space “lacking identity, deprived, and empty,” despite its status as the “central core of the country,” with rich and productive potential.\[2\] As the discipline of architecture continues to focus more and more on issues of the urban, the ‘white space’ becomes increasingly neglected.

Within this neglected region of ‘white space’ lies the Great Plains, a region based on production; production that primarily serves cities (in which the majority of the population exists, but cannot sustain itself). According to Sean Ross (Director of Business Development at Financial Poise) in his 2015 article “The 4 Countries that Produce the Most Food,” the U.S. is the largest exporter of food in the world, due to its increasingly productive farming sector, and the total food production in the U.S. has more than doubled in the post-war period from 1948-present.\[3\] Urban life as we know

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[3] Sean Ross, “The 4 Countries That Produce the Most Food,” Investopedia, October 06, 2015,
it relies heavily on the ‘white space’ for its own existence. So why have we, as members of the discipline of architecture, neglected to acknowledge the value of this space? The issues facing the Great Plains in the near future will not be solely confined within its boundaries. In our extremely globalized society, both rural and urban areas around the world will be affected.

Recently, several members of the design discipline, such as Rem Koolhaas (architect), Mason White and Lola Sheppard of Lateral Office (a design practice that “operates at the intersection of architecture, landscape, and urbanism”), Neil Brenner (urban theorist and founder of the Urban Theory Lab), and Stan Allen (architect and educator), among others, have begun to show interest in rural areas.

Rem Koolhaas indicates in his lecture that the countryside has become the site of a “hyper-cartesian” landscape, operating for maximum production. The countryside exists to serve the urban, and it has been hyper-organized to exploit the land and produce as much as possible.\[4\]

Nikos Katsikis (architect, urban theorist, and member of Neil Brenner’s Urban Theory Lab), defines ‘operational landscapes’ in his 2016 lecture “Terra Urbis,” as “geographies that are connected to land extensive and/or geographically bound and specific operations that are either not susceptible to, or impossible to cluster,” such as “areas of agricultural production, resource extraction, forestry, as well as circulation infrastructures, energy production systems and grids and in general types of equipment of the earth’s surface that are largely point, or area bound.”\[5\] He categorizes these “operational landscapes” as having low population density with high primary production,\[6\] which perfectly describes the Great Plains. The territory of the countryside is rapidly transforming, due to globalization and an increased agricultural demand, providing an enormous potential for architects to provide spatial interventions in the changing landscape. The land has long been shaped by economics and the need to “provide” for those living in cities. It is time for the discipline of architecture to recognize the importance of the rural landscape.


TERRITORY

THE GREAT PLAINS: A REGION IN FLUX
A FABRICATED LANDSCAPE

Ever since America originally acquired the region that is now known as the Great Plains, there seems to have been a pressure placed upon it to “produce”. Originally dubbed “The Great American Desert,” in 1820 by Major Stephen H. Long[1] (who assumed that the arid landscape did not have the potential to produce anything), this region has gone through an enormous amount of manipulation in an attempt to adapt it into a productive landscape.

These manipulations to the landscape can be reduced to a simple need to create “value” out of the land, even though that may be reducing its “value” in many other respects, such as sustainability of natural resources, preservation of natural ecosystems, and even

preservation of the small-town communities that were born out of the system, but have now become outdated. The values created out of this land include agriculture (both crop farming and livestock raising) and energy production. Top-down government policy has played a huge role in the manipulation of the land through crop subsidies and incentives that support corporate farming.

Agriculture has become the dominant economic mainstay of an overwhelming majority of rural counties in the Great Plains. Over the last century, many adaptations and advances in technology have gradually reconstructed the landscape, transforming it into one of the most “successful” agricultural economies in the world.

The Great Plains region has long been a region revered for its potential to "provide." Aside from its current status as "The Great Plains," it’s also been known as the "Great Bison Belt," the "Corn Belt," the "Farm Belt," and the "American Frontier," and "America’s Heartland," with the only exceptions being "The Great American Desert," and "The Dust Bowl."

This land has been hunted, plowed, and manipulated to the point where it is unrecognizable from its original state. It’s a fabricated landscape, imposed by the human, as a way to organize and harvest the productive capacities of the land to the most efficient extent. Is this process of manipulation a sustainable practice? Can any of these superimposed attempts at productivity last more than temporarily, and in a way that is sustainable for the environment and people that inhabit it?

With a growing population and an increased demand for food and energy, it is unlikely that this region will ever be allowed to transform back to its original state. Perhaps, however, there are new ways to fabricate and utilize the landscape in a more sustainable manner than the past, balancing economic interests with environmental sustainability, and introducing ideas of temporality and flexibility at the start of implementation.

The timeline on the following pages illustrates the changes that the Great Plains territory has experienced over the last two hundred years, and projects future changes within the next one hundred years.
1902: Reclamation Act facilitated irrigation.
1913: First highway paved with concrete near Pine Bluff, Arkansas.
1916: Federal Farm Loan Act creates cooperative land banks to provide loans to farmers.
1920s: 42,000 miles of rail track exist within the Great Plains region.
1924: First commercial sale of hybrid seed by Henry A. Wallace.
1929: Agricultural Marketing Act creates the Federal Farm Board to subsidize agricultural cooperatives. Cooperatives stockpile commodities to raise prices and disrupt markets.
1933: Agriculture Adjustment Act (Farm Bill)
1936: Soil Conservation Act and Domestic Allotment Act link farm programs with conservation. Rural Electrification Act initiates extensive rural subsidies.
1937: Agriculture Marketing Agreement Act establishes federal marketing orders, which are designed to limit competition and raise prices.
1940: Center-pivot irrigation is invented by farmer Frank Zybach from Strasburg, CO.
1938: Federal Crop Insurance Corporation is created by the New Agriculture Adjustment Act to provide subsidized insurance for adverse weather, insects, and other farming hazards.
1996: Federal Agriculture Improvement and Reform Act revised farm programs to increase reliance on market signals.

2002: Farm Security and Rural Investment Act - subsidy increase and price supports. Increases subsidy payments by 74% over 10 years.

2008: Food, Conservation, Energy Act (Farm Bill) expands farm subsidies and is enacted over a presidential veto.

2020: 1/4 of the Aquifer projected to be depleted.

2030: Autonomous machines begin to replace human labor in the agricultural industry through the use of GPS and robotic technology.

2040: 1/2 of the Aquifer projected to be depleted.
2060:
2/3 of the Ogallala Aquifer projected to be depleted

2070:
Machines dominate agricultural production, eliminating the need for human labor.

2100+:
Human settlement exists primarily in cities. Human occupation of the rural Great Plains is limited to the I80 corridor.
FACTORS AFFECTING THE GREAT PLAINS

Within the general territory of the Great Plains, there are four major factors that have characterized current and future changes to the landscape.

The first factor is the continued mechanization of agriculture. Over the last century, this mechanization process has reduced the need for human labor in regions like The Great Plains. Future technological innovations will intensify this trend. Autonomous farming methods, which are already in development, may completely eliminate the need for direct human labor in the agriculture industry. One farmer, with the help of a fleet of drones, autonomous tractors and other farm equipment, can operate an entire farming operation from a computer without even being present on site. The title of “farmer” may in fact be evolving into something like an office job, where “farmers” in cities remotely control the actions of farm equipment via computers. The primary occupation of agriculture-based territories like the Great Plains, then, becomes machines, not humans.

The second factor influencing the region is depopulation. Continued mechanization of agriculture will uproot the employment base of the entire territory of the Great Plains. This territory relies heavily on agriculture for employment, of which is the basis for the original settlement of the Great Plains, and still is for nearly every small town within the territory. Without this major employment staple, the population of these communities will collapse.

The third factor, related to the above, is the increasing dominance of logistics networks, such as interstate highways, power lines, and energy harvesting devices, within the Great Plains landscape. As fewer and fewer people live in the Great Plains, the territory becomes the epitome of “flyover territory,” with almost no human inhabitation outside of cities. The only direct interaction that humans have with rural territory is via interstate networks, which are still removed from the actual experience of the landscape.

The last factor is that of climate change, which is expected to impact the Great Plains somewhat significantly in the near future. Global warming is likely to create a drier, warmer climate and more severe weather patterns within the territory. Additionally, as the amount of water in the Ogallala aquifer rapidly decreases, the type of agriculture that occurs on the surface will change in response. More drought-resistant crops will replace water-intensive plants like corn. Ranching, which requires less water, may replace farming. Additionally, new technologies will be utilized to combat the drier, warmer climate. These could take the form of drought-resistant seed hybrids, or machines that can produce water in non-traditional ways. Devices such as the WaterSeer, which can draw hundreds of gallons of drinking water a day from the air through condensation, are already in development. It’s likely that this concept will soon be developed into large-scale commercial water harvesters that can be used for agricultural purposes.
MECHANIZATION OF AGRICULTURE

DEPOPULATION

LOGISTICS NETWORKS

CLIMATE CHANGE
Joel Kotkin, in his essay, “The Rise of the Great Plains,” states that “Farms and ranches of the ten plains states now cover more than 500 million acres, or over 790,000 square miles, an area larger than Mexico,” with over 600,000 farms and ranches.\[1\] This intense agricultural use of the land has taken place in a relatively short timespan, with the majority occurring within the last century. Aerial photographs of Garden City, Kansas, demonstrate the conversion process from native grassland to agricultural uses, in this case irrigated cropland. Common crops (corn, wheat, and sorghum) are shown in red.

GARDEN CITY, KANSAS

1972

1988

2011

ENVIRONMENTAL CONSIDERATIONS

The drastic and ongoing fabrication and exploitation of the Great Plains landscape has led to a number of environmental concerns in the region, including aquifer depletion and climate change. These territorial issues are important to recognize and respond to when designing, as emphasized by Lola Sheppard in her essay From Site to Territory:

If architecture is to engage other spatial disciplines in contemporary terms, it will increasingly need to share their protocols; to be resilient, adaptable and responsive to changing environmental conditions.\[1\]


AQUIFER DEPLETION, 1950-2013
AQUIFER DEPLETION

Water levels in the Ogallala Aquifer have significantly declined over the last half-century. Levels in the northern parts of the aquifer have risen slightly due to natural regeneration, but throughout the southern portion, serious amounts of water have been removed from the aquifer without the ability for natural replenishment. Crop irrigation accounts for around 94% of the water pumped from the aquifer annually, and if current agricultural practices continue, the aquifer will be 70% depleted by as early as 2060, according to a Kansas State University study.

Nebraska fares the best of the states lying above the Ogallala Aquifer, with the least amount of total depletion, but water levels are still declining in parts of the state, especially in recent years. By overlaying groundwater-level changes from 2010-2015 with the location of irrigation wells in Nebraska, it’s clear that there is a strong correlation between the density and placement of irrigation wells with higher levels of depletion. Irrigation accounts for 94 percent of the water withdrawn from the aquifer on a yearly basis.
The 100th Meridian, bisecting the Great Plains region from north to south, coincides with a “rainfall line.” Generally, the area west of the line receives less than 20 inches annually, whereas the area east of the line receives more than 20 inches per year, allowing for higher yields with less irrigation. Projected patterns of climate change indicate that this “rainfall line” will shift farther and farther to the east over time. Climate change is a significant threat to current agricultural practices in the Great Plains. It has been caused, in large part, by industrialized agricultural practices. According to the Consultative Group on International Agricultural Research (CGIAR), a partnership of 15 research centers around the world, over one third of global greenhouse gas emissions come from agriculture practices (from fertilizer manufacturing to storage and packaging). The World Resources Institute anticipates an increase in extreme weather patterns due to climate change in this area, resulting in higher temperatures, droughts, and water stress. Dryland crops are especially susceptible to droughts and major changes in weather.
CLIMATE CHANGE AND LAND USE

The 100th meridian “rainfall line” divides Nebraska into two major land-use types: cropland and rangeland, with a majority of cropland occurring east of the 100th meridian, and a majority of rangeland happening to the west. The region to the west is heavily dependent on irrigation for its cropland, whereas the eastern portion of the state with more rainfall are able to get by without irrigation. An easterly-shifting rainfall line will dramatically affect land use in the state, replacing prime cropland with arid land, similar to the west, that is more suitable for rangeland.

DECLINE IN POPULATION 2000-2010

A majority of Great Plains counties experienced significant depopulation, shown in red, between 2000 and 2010. The percentage of the total population lost in declining counties is especially high within the Great Plains region.

(Data from the U.S. Census Bureau, 2010 Census and 2000 Census).
Agriculture-dependent counties = 25% or more of the county’s average annual labor and proprietors’ earnings were derived from farming, or 16% or more of jobs were in farming, as measured by 2010-2012 Bureau of Economic Analysis, Local Area Personal Income, and Employment data.

DEPOPULATION OF NEBRASKA

Depopulation in Nebraska towns is found in nearly every rural county. Rural towns that are maintaining population, or even growing, typically follow one of these characteristics: 1) they are near a larger community that acts as a “hub” for amenities and jobs, or 2) they are near Interstate-80. Most small towns of less than 5,000 people are sustaining or declining in population and have economies that are heavily based in agriculture. Non-metropolitan communities that are able to achieve enough population to become small “hubs,” of 5,000-10,000 people, are typically dominated by one major industry, putting that community (and surrounding communities) at risk if that industry fails or relocates.
Population change by county, 2000-2010

- 17% - 30%
- 7.4% - 17%
- 0.5% - 7.4%
- -4.5% - 0.5%
- -15% - -14.5%
- -16% - -15%
- -18% - -16%
- < -18%

Other
- Interstate I-80
- Incorporated City
- City Boundaries
- > 10% Loss in population
- < 10% Loss in population
- < 10% Gain in population
- > 10% Gain in population

Active Railroad
Agricultural Production in the Great Plains

A Growing World Population and the Demand for More Food

Currently, the world population is over 7.3 billion, with over 50% living in cities, according to a study by the United Nations Department of Economic and Social Affairs. By 2050, the world population is expected to reach 9.7 billion, with over 2/3 living in urban areas.[1] This dramatic increase in population directly correlates to a significant increase in the demand for goods, namely food and energy.

Kenneth Cassman, an agronomy professor at the University of Nebraska Lincoln, states that this will require “massive increases in the demand for food, energy, and water.”[2] He indicates that the answer is to produce more food with less water. The question is how to nearly double the food supply in less than 40 years[3] with existing cropland and with less water. Cassman says “the easiest way of saving water is not to irrigate, but that’s not the answer because irrigated agriculture contributes 40% of the human food supply.[4] Instead, Cassman says, the answer is to bring together technological advances in both productivity and water efficiency,[5] in order to produce more crops with less water.

According to the FAO (Food Agricultural Organization of the United Nations), agricultural outputs will need to increase by 70% by the time the world population is expected to peak (2050) to meet the demand due to population and income increase.[6]

Globalization

Globalization, defined as the "increased global interconnectedness of social and economic life brought about by rapid changes in information and transportation technologies,"[7] according to Bailey, Jensen, and Ransom in the introduction of their book Rural America in a Globalizing World, has increased the connectivity of world markets and the ability to expand trade and export goods. This places higher demand on areas specialized in one market, since they are responding to a demand that isn’t necessarily in the immediate area the resource is produced in or extracted from. Globalization is also defined as the "compression of time and space" by geographer and social theorist David Harvey, indicating that relations/transactions occur over a greater distance and in less time than in the past. This means that local social relations are increasingly shaped by distant actors and are standardized through the process of market expansion. The total process of food production from farm to table is an example of this, since decisions of local producers and consumers are increasingly shaped by the behavior of global markets.[8]

Rem Koolhaas notes some of the impacts of globalization on the countryside in his lecture, citing examples such as Indian milk farmers bottling milk in an Italian factory, or

Thai laborers working a farm in Switzerland. A similar situation can be found in the Great Plains. How is globalization affecting the patterns and spatial relationships of the Great Plains, and what will its impact be on the future of the area?

NEW TECHNOLOGIES

Different types of technologies have played roles in meeting the demands of both overpopulation and globalization.

Technology is necessary in order to meet the demands placed on the Great Plains region. Pivots and irrigation have allowed crops to be much more resistant to droughts, improving yields and productivity. Mechanization of agriculture has allowed much more land to be cultivated with less labor. Seeds are manipulated to be less water-intensive and resistant to pesticides. These advances in technology have responded directly to the supply-demand being placed on them, but they have largely ignored the spatial effects they have on the landscape.

Alessandro Bonanno indicates the problem with current economic models in his article, Agriculture and Food in the 2010s, He indicates that, from a financial point of view, “a better company is one that can produce more with less labor.” This encourages the development of more technologies to improve yields, but it fails to recognize the negative impacts incurred by the landscape and environment when a significant source of employment is cut.

The maps to the right by William Rankin demonstrate the location of major agricultural uses in the United States, highlighting the concentration of agricultural land use in the Great Plains region.

THE GREAT PLAINS AS A MAJOR FOOD PRODUCER

The United States is the world’s leading agricultural producer, with the Great Plains producing nearly 25% of the nation’s total agricultural exports, and over half of the nation’s total value of agricultural production.

Nebraska, in particular, has a very strong agricultural economy. According to an article by Richard Piersol in the Lincoln Journal Star, Nebraska’s GDP has grown over 3% each year from 2010 to 2014, which is the 6th highest growth in state GDP in the country over that time span. Agriculture was the largest contributor to the growth of GDP in the Plains region, accounting for nearly half of Nebraska’s GDP growth.

According to UNL agricultural economics professor, Wesley Peterson, Nebraska will always be one of America’s top five agricultural producers. The state ranks first in the nation for commercial cattle slaughter, commercial red meat production, total cattle on

[14] Piersol, “GDP Data Show Ag Driving Nebraska’s Growth and Prosperity.”
Livestock, poultry, and their products: $11,690,823,000

Crops, including nursery and greenhouse: $11,377,933,000

- Corn: $6,093,900,000
- Soybeans: $2,613,393,000
- Hay/Haylage/Alfalfa: $1,630,000,000
- Wheat: $213,807,000
- Sorghum: $76,769,000
- Beans: $62,340,000
- Potatoes: $60,085,000
- Sunflower: $17,469,000
- Millet: $9,102,000
- Oats: $6,164,000

Livestock Inventory (Number)

- Layers (For Eggs): 9,351,688
- Cattle and Calves: 6,385,675
- Hogs and Pigs: 2,992,576
- Pullets (For laying flock replacement): 2,579,664
- Broilers (For Meat): 908,962

Total Crop Items (Acres)

- Corn for grain: 9,087,851
- Soybeans for beans: 4,983,253
- Hay/Haylage/Alfalfa: 2,487,312
- Wheat for grain: 1,308,269

Value of Sales by Commodity Group

- Cattle and Calves: $10,098,166,000
- Hogs and Pigs: $1,085,828,000
- Milk from Cows: $219,724,000
- Poultry and Eggs: $216,370,000
- Grains, oilseeds, dry peas, dry beans: $10,698,861,000
- Other Crops and Hay: $527,732,000
- Vegetables, melons, potatoes, sweet potatoes: $101,141,000
- Nursery, Greenhouse, Floriculture, and Sod: $46,016,000
- Other: $74,918,000

Market Value by Crop Type
feed, and total irrigated acres of cropland, second in total number of cattle and calves, and third in corn for grain production and total corn exports. It’s also fifth in the nation for total agricultural exports.\footnote{1}

Since Nebraska is such a large producer of agricultural products, both livestock and crops, we are now in a favorable position (compared with) other states in the country in terms of being able to maintain our economy and our standards of living.\footnote{2}

Similarly, Larry Berger, head of the Department of Animal Science at the University of Nebraska-Lincoln, indicates that Nebraska is already playing an important role in the future of food production because of three main reasons: 1) Nebraska has a large amount of unpopulated land for agricultural production, 2) the Ogallala Aquifer lies below much of the state and supplies water for agriculture, industry, and domestic use, and 3) Nebraska has efficient food processing plants.\footnote{3}

Many of Nebraska’s major industries are related to agriculture, whether directly or indirectly. Major grain companies, seed companies, and ethanol plants have a direct relationship with the crop industry. Likewise, meatpacking plants have a direct relationship with livestock raising in the region (hog farms, feed lots). Manufacturing facilities, such as Valmont, and even retail facilities, like Cabela’s, have a more indirect, but still very strong, relationship with agriculture in the Great Plains. The location of major industries has a strong impact on the communities around it, providing jobs and potentially preventing population decline, even encouraging growth.

Despite a significantly decreasing population in the rural Great Plains, this region still has a successful agricultural economy that continues to produce more and more, giving value and significance to the region at a larger scale.

\footnote{1} Nebraska Department of Agriculture et al., “Nebraska Agriculture Fact Card,” February 2016, \url{http://www.nda.nebraska.gov/facts.pdf}.
\footnote{2} Farooq Baloch, “Increasing Ag Water Productivity,” Strategic Discussions for Nebraska, January 2011, accessed November 6, 2016, \url{http://sdn.unl.edu/ag_water}.
\footnote{3} Gabriel Medina, “Feeding the World from Nebraska’s Research Technology,” Strategic Discussions for Nebraska, February 2011, accessed November 6, 2016, \url{http://sdn.unl.edu/neb_researchtech}. 

ETHANOL PLANTS

INDUSTRY DEPENDENCE

CROPLAND VS. PASTURELAND
[% OF TOTAL FARMLAND ACRES]

LAND USE AND MAJOR AGRICULTURAL INDUSTRIES

MARKET VALUE OF CROPS

MARKET VALUE OF LIVESTOCK

AGRICULTURAL MARKET VALUE
[% CROPS OR LIVESTOCK]


Data from U.S. Census Bureau
COMMUNITY

SIDNEY, NEBRASKA
MONOTOWNS IN NEBRASKA

ALLIANCE POP. 8498

BURLINGTON NORTHERN ~1500 (18%)

SHERIDAN POP. 6829

CABELA'S HQ ~2000 (29%)

COZAD POP. 3934

TENNECO ~461 (11.7%) CLOSED

CHADRON POP. 5787

CHADRON STATE COLLEGE ~347 (6%)

NORTH PLATTE POP. 24,534

BAILY YARDS ~2600 (10.6%)

SIDNEY POP. 6829

SUTHERLAND POP. 1356

LEXINGTON POP. 10,204

AG VALLEY HQ ~81 (62%)

AGRICULTURE-RELATED INDUSTRY

AGRICULTURE-RELATED, GROWING

AGRICULTURE-RELATED, DECLINING

NON-AGRICULTURE-RELATED INDUSTRY

GROWING

NON-AGRICULTURE-RELATED, GROWING

NON-AGRICULTURE-RELATED, DECLINING
SIDNEY, NEBRASKA
Prior to October 3, 2016, the town of Sidney, Nebraska, was growing faster than any other community in western Nebraska. Its population grew 7.6% between 2000 and 2010.[1] Additionally, the city ranks first in the state of Nebraska, and among the top 10 in the United States, for the highest number of jobs per capita.[2] This growth and high employment rate is entirely due to the presence of the sporting goods retailer, Cabela's, located within the community since 1969. The Cabela's headquarters, retail store, and distribution center in Sidney together employ nearly 1/3 of the people living in the community.

The company was sold in its entirety to Bass Pro Shops on October 3 after nearly a year of searching for “strategic alternatives,” an act that was heavily pushed for by an activist investor, Elliot Management, from New York.

The merger means that operations in many of Cabela’s current operations will likely become redundant. Creighton Professor of economics, Ernie Goss, predicts that “It’s very unlikely that those central office facilities functions will be combined. That’s one of the reasons you do this, is to make cost savings.”[3] Additionally, Cabela’s retail location does not fit Bass Pro Shop’s current site selection model, or even Cabela’s own model. The reasoning behind locating Cabela’s headquarters in Sidney is not necessarily based on logistics, but out of convenience for the original founder, who had ties to the area. Richard Cabela moved the family-owned company, founded originally in Chappell in 1961, to Sidney in 1969. Cabela’s has a strong influence on the town of Sidney, which is very near the definition of a “company town.” Cabela’s has even funded large housing developments in the town to provide housing for its employees. City statistics indicate that the town of Sidney has more jobs (8000) than residents (6800) with many of those workers commuting from within 60 miles.[4] According to Dick Jackson, a sales manager at Miller Office Products, Cabela’s has “done the unthinkable” for a small, rural town like Sidney: “luring college-educated professionals to a region typically known for its agriculture.”[5] Cabela’s corporate offices in Sidney, alone, employ over 1500 people. Distribution accounts for around 200 employees, while the retail store employs another 125 people.[6] (Figure 3).

In addition to providing jobs for nearly a third of Sidney’s population (as well as many surrounding communities) the Sidney Cabela's is estimated to attract over 1 million visitors per year.[7] Stores like Cabela's and Bass Pro Shops represent a unique retail model that acts as both a retail store, museum, and tourist destination (Figure 2). In the state of Michigan, for example, Cabela’s is the number one tourist attraction. Bass Pro Shops, similarly, is Missouri’s top tourist attraction. This Disneyland-effect of the stores results in an inflated market in the small communities they occupy, spurring large amounts of development that depends solely on the company’s existence.

It is not likely that Bass Pro Shops would choose to retain the Sidney Cabela’s store.

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Sidney’s store does not fit either Bass Pro Shops’ or Cabela’s typical site selection model, which locates stores in small communities that have close proximity to a major metropolitan area (Figure 6). Sidney is nearly a 3 hour drive away from the closest metropolitan area of Denver, which already has two of its own Cabela’s stores. Therefore, it’s not likely that the Sidney retail store ranks highly in profits when compared to other stores in the company, since it was not strategically located to reap the most rewards.

If Sidney were to lose its Cabela’s, it would not only lose the jobs provided by the company, but it would lose the large number of tourists that are drawn to the area because of Cabela’s. This would have dire effects on the service sector of the town. Development has ballooned in Sidney over the past few decades. Hotels, restaurants, fast food chains, truck stops, and even super-centers have sprung up near the headquarters, parallel to the growth of Cabela’s. With the potential loss of Cabela’s (and the large number of visitors it attracts), that “balloon” of development will pop.

Similarly, the housing market is at risk of a serious collapse. Market rates are inflated because of Cabela’s presence in the town, with rental rates that are competitive with cities like Omaha, which has nearly 64 times the population of Sidney.[8] A housing shortage in Sidney has led Cabela’s to fund large development projects, such as the recently built Lodgepole Creek Apartments, or The Ranch, a 700-home master-planned community that had already begun construction before the Cabela’s and Bass Pro Shops merger was announced. The $350-500 million development project, with several roads and sidewalks complete, four houses nearly built, and grading and utilities complete for another 80 lots, halted construction after the merger was announced.

Signs of decline are already beginning to show in the community. For-sale signs and U-Haul moving trucks have begun to appear around town. Scottsbluff realtor Kevin Ross indicated that “Many people have already abandoned ship and listed their homes, [putting] downward pressure on all real estate prices.”[9] Large development projects have been put on hold, including The Ranch housing development (Figures 4 & 5) and a new 82-unit Holiday Inn Express that was to provide a conference center primarily for corporate use by Cabela’s. Cabela’s already laid off 4% of its workforce (nearly 70 people, including Sidney Mayor Mark Nienhueser), in September of 2015, as a restructuring move,[10] and laid off another several dozen in March of 2017. Additionally, Cabela’s executives recently withdrew major cash bonuses (the largest being nearly $400,000) from the company, despite the fact that they did not meet financial goals that were set ahead of time to qualify for the bonuses.[11]

PAST INDUSTRY

Cabela’s has not always been the largest employer in Sidney, however. In 1942, the Sioux Army Depot was established northeast of Sidney; the site chosen because of the region’s dry climate, proximity to a major rail line, and central national location.[12] This location, with the primary mission of receipt, storage, and issue of all types of ammunition, was the only U.S. Army Ammunition Depot base in Nebraska that operated during World War II, the Korean War, and Vietnam.[13]

“The depot occupied 19,771 acres and included 801 ammunition storage igloos, 22 general supply

warehouses, 392 support buildings, 225 family living quarters, 51 miles of railroad tracks, and 203 miles of roads."[1]

Before construction of the depot, Sidney was a small farming community of around 3,000 people. Civilian employment at the depot peaked at 2,161 in 1960,[2] at the same time that the town of Sidney reached its largest census population of 8,004.[3] The population boom demanded more housing in Sidney. In 1943, the Federal Public Housing Agency constructed a community of 1-story apartments near the depot to provide housing for nearly 1400 people. People of the community were provided with services at the base, including medical services, entertainment (soda fountain and movie theatre), and a grocery store. An elementary school was even operated at the town for a period of time.[4] (Figure 3).

The depot was ultimately deactivated on June 30, 1967, after 25 years of operation. The buildings have been repurposed several times. The Western Nebraska Technical College located itself there for a period of time, using the Ordville community as student housing. The ammunition packing, receiving, and shipping buildings are currently being used by Cabela’s distribution (Figure 1) as well as Adam’s Trucking and Glover Industries, a construction company. Ordville communities are now being rented out as apartments, and many of the ammunition igloos are either rented out as storage or are used by local farmers for grain storage and cattle grazing (Figure 2).[5]
Cabela’s Headquarters and Retail Campus

1. Cabela’s Headquarters with 2016 expansion
2. Cabela’s Retail Store
3. Cabela’s RV Campground

Cabela’s Wholesale Offices

4. Original Cabela’s Downtown Office
5. Cabela’s Wholesale Offices

Cabela’s Distribution Center

6. Cabela’s Distribuion Center
7. Cabela’s Family Home
8. Original Cabela’s Headquarters
9. Cabela’s Wholesale Office
A cross-section of homes recently put up for sale in Sidney, Nebraska.
FUTURE PROJECTIONS

Future projections for Sidney include:

1) The vacancy and decline of buildings and areas currently operated by Cabela’s,

2) A crash of the housing market, putting many of the new developments in the southeast portion of Sidney at risk for vacancies and decline,

3) The failure of certain types of commercial development, such as hotels, that rely heavily on Cabela’s to sustain their business, and

4) The failure of most other remaining commercial development near the interstate.

Based on research findings previously discussed in this thesis, Bass Pro Shops is not likely to keep the Cabela’s Headquarters in Sidney, and will likely eliminate the outdated, semi-isolated distribution center as well, along with the retail store, which does not meet either store’s current site selection model.

Following the loss of employment will be the displacement of a large portion of Sidney’s population that was employed by Cabela’s. Employees may be given opportunities to relocate to other Bass Pro Shops locations, or will need to find new jobs outside of Sidney (since few other similar professional job opportunities exist in the area). This will result in a crash of Sidney’s housing market, which was inflated because of Cabela’s prior to the merger.

The loss of Cabela’s will greatly affect commercial development near the I-80 exchange as well. Since Cabela’s acted as a tourist destination, its loss will result not only in a loss of employment, but a decrease of tourism in the area as well, greatly affecting development that depends on tourist activity. Hotels will likely be the first to go, since much of their business comes directly from Cabela’s. Other businesses, such as fast food restaurants or gas stations, may be able to survive longer due to their proximity to the interstate, but the inflated number of commercial businesses near the interstate is not likely to remain. Those businesses located farther from the interstate or that cater more to “tourists” than brief “interstate-stoppers,” looking for fuel and fast food, will likely be the first to go.
ARCHITECTURE

SUBTRACTION

+ DECONSTRUCTION
SUBTRACTION & DECONSTRUCTION

SUBTRACTION

The idea of subtraction in urbanism and architecture has begun to gain traction within the design discipline as a method of addressing depopulation and decline. Subtraction can create a flexible system that allows for a more fluid transition of population, employment, and economy. Keller Easterling, an architect and urbanist, has studied the logistics of a subtraction economy for nearly two decades. According to Easterling:

"The events of a subtraction economy extend beyond the presence or absence of building to offer other resources and opportunities. Initiating a number of temporal exchanges that can be constructively used, converted, or traded, subtraction opens onto an expanded field of form making. With this expanded artistic repertoire, architecture can design buildings, cities, and landscapes not just as collections of objects, but also as activities - not only object forms but also active forms."[1]

Methods of subtraction can better address issues of urbanism and logistical organizations by utilizing a system of active forms rather than static, inflexible object forms. Easterling defines active forms as "time released protocols that generate or manage a stream of objects and spaces. [...] They interact, evolve, and unfold in dialogue with the world around them. [...] While the making of an object form usually results in the addition of buildings, active forms can direct their removal."[2] Active forms act as a system, rather than a distinct object. Neeraj Bhatia questions how Easterling’s idea of active forms can be applied to territorial space in the following quote:

"As increasingly large swaths of the urban territory are being produced not as acts of spatial design, but as economical and logistical organizations of the landscape, we ask how can design have agency in these discussions?"[3]

Active forms are situated to address issues of urbanism and territory, such as logistical organizations, more effectively, since these often act as systems that require “programming” and flexibility that object forms can’t offer. Easterling addresses this relationship in her book Organization Space:

"[...] networks of land as well as the networks of other carriers, though often segregated, are positioned to operate in parallel with the highway. The highway right-of-way and its adjacent lands are critical sites in adjusting this kind of parallelism."[4]

Additionally, Easterling references the highway as a “tool of land exploitation” and notes that “the origins of the long-distance highway were linked to the development of interurban or continental terrestrial networks.”[5] These networks connect the vast territory of the Great Plains, and the many shrinking cities within them.

DECONSTRUCTION

By applying the active form of subtraction to a shrinking city, an alternative economy can be created by engaging deconstruction and salvage industries. Easterling explains

this notion in the following quote from *Subtraction*:

> When construction debris is treated not as waste, but as a material stream, subtraction can be an economy of rearrangement and reuse. [...] Subtraction is a heavy industry, a source of employment, a material resource, a global environmental protocol, and an alternative market that escapes the dominance of the financial industry. [...] Building subtraction, as a major industry and a design protocol, is a lucrative emergent global enterprise, a source of employment, and a political instrument.

Similarly, urbanists Stephen Cairns and Jane Jacobs note in their book, *Buildings Must Die: A Perverse View of Architecture*, that "the temporality of architectural obsolescence [...] can happen suddenly and emphatically, as when a purpose-built building is left abandoned."[7] Jeremy Till, a notable architect, writer and educator, additionally confirms that "construction and demolition are closer than most architects would dare admit."[8]

Subtraction through deconstruction is a method that has been tested by several shrinking cities, specifically those in the Rust Belt, within the last decade. The Detroit Blight Authority, as well as the Architectural Salvage Warehouse of Detroit, a non-profit deconstruction organization that operates on program revenues and contributions,[9] work to deconstruct abandoned portions of the city in an attempt to centralize the city and reduce blight.

Deconstruction is nearly always more expensive for an owner to pursue than demolition. This is primarily due to increased labor costs and longer timeframe associated with deconstruction. However, according to Ted Reiff, the President of The ReUse People, a nation-wide nonprofit deconstruction company based out of Oakland, California, tax savings can be accrued through the sale of materials in order to offset the cost of deconstruction.[10] A majority of the materials removed from a structure (typically around 80-90%)[11] can be reused or recycled. By donating these materials to a qualified 501(c)3 charity and paying for the appraisal of the donation, the property owner can claim the appraised amount as a deduction on their taxes as a donation at fair market value.[12] The deductions are calculated using the standard tax bracket. According to Patrick Smith, president and chief executive of NoVaStar Appraisals, "A typical taxpayer [...] pays approximately 30 percent between state and federal taxes,"[13] which means the actual cash value of donating the materials for the owner after tax deductions will be 30% of the donated materials' appraised value. So, for example, if the materials salvaged from a deconstructed house are appraised at $10,000, the cash value that the property owner receives is 30% of that, or $3,000. This financial knowledge gained from deconstruction and appraisal experts, as well as research from various studies on the matter, has been used to generate a financial comparison between deconstruction and demolition in the case of Sidney, seen on page 74.

According to Reiff, deconstruction is difficult to apply to situations involving “shrinking cities,” such as Sidney. This is because, according to Reiff, the only way to make deconstruction more feasible for the owner than demolition is through outside funding, since many abandoned properties are city-owned, and tax deductions therefore do not apply.\footnote{1} According to Easterling, however:

\textit{Despite the apparent perversity and expense, obsolescence in large public works produces a harvest of jobs, tax revenue, and campaigning power that are staples of municipal politics.}\footnote{2}

Additionally, funding for deconstruction projects is available at both the state and national level through grants. At the federal level, grants available from organizations such as the United States Department of Housing and Urban Development (HUD) and the United States Environmental Protection Agency (EPA) can help to fund deconstruction projects. Funding is also available at the state level. In Nebraska, the Nebraska Department of Environmental Quality (NDEQ) provides funding through a grant application process that helps aid in the “deconstruction of abandoned buildings for cities of the second class, villages, and counties with a population of 5,000 or less.”\footnote{3} This grant, originally passed by Nebraska Legislature in 2009, was created in order to “further encourage the recycling of building materials and decrease the amount of demolition material that is being disposed of in landfills,” according to David Haldeman, NDEQ Waste Management Division Administrator.\footnote{4}

Deconstruction can be applied to the larger system of subtraction in order to effectively shrink a community through more gradual, deliberate means. The proposed framework for a subtraction economy (page 63) consists of three strategies including disassembly, material harvesting, and adaptive re-use. These strategies each have two tactics, complete or partial disassembly, harvested material for distribution or reconstruction, and complete or partial re-use. These strategies and tactics have the desired outcome of temporary employment through disassembly, re-centralizing the community through disassembly and re-construction, generating revenue from salvaged material, and temporary programs based on current and projected needs supporting the above strategies. Potential sites for unbuilding in Sidney include Cabela’s buildings no longer needed, unused commercial development previously in support of Cabela’s consumers (hotels, restaurants, etc.), and abandoned housing from former Cabela’s employees. These scenarios, tactics, and outcomes are meant to bring awareness as much as they are meant to speculate on Sidney’s future economic and built environment, related to decentralized consumerism.

\footnote{1} Ted Reiff, "Deconstruction and Reuse Interview, The ReUse People."
\footnote{2} Easterling, \textit{Subtraction}, 27.
Figure 1: A financial comparison between demolition and deconstruction, provided by The ReUse People.

<table>
<thead>
<tr>
<th></th>
<th>TRP Deconstruction</th>
<th>Demolition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical lowering of house</td>
<td>$17,228</td>
<td>$6,000</td>
</tr>
<tr>
<td>Disposal of trash &amp; debris</td>
<td>4,109</td>
<td>4,100</td>
</tr>
<tr>
<td>Appraisal of salvaged materials</td>
<td>3,000</td>
<td>0</td>
</tr>
<tr>
<td>Total Costs</td>
<td>24,338</td>
<td>10,100</td>
</tr>
<tr>
<td>Donation Value*</td>
<td>68,000</td>
<td>0</td>
</tr>
<tr>
<td>Tax Savings* (after-tax value of donated materials)</td>
<td>24,640</td>
<td>0</td>
</tr>
<tr>
<td>Total Costs (from above)</td>
<td>24,338</td>
<td>10,100</td>
</tr>
</tbody>
</table>

| After-Tax Benefit / (Out of pocket cost) | $302  | $(10,100) |

The after-tax benefit between the two methods is $10,402; not only does the tax savings completely cover the cost of deconstruction, but the homeowner also saves $10,100 in demolition fees.

*“Total materials (lumber, plywood, cabinets, plumbing and electrical fixtures, doors, windows, etc.) would generally appraise for $77,000 to $112,000 in good reusable condition. Assuming a tax bracket of 25% (federal only – this will be larger in states with an additional income tax), the after-tax cash value, based on a typical appraisal value of $90,000, is $24,640.”

TED REIFF, PRESIDENT
The Reuse People (Oakland, CA)

CRAIG STEWARD, MANAGER
Ecostores Nebraska (Lincoln, NE)
Many precedents exist for approaching decline at a local scale. Common methods include community planning strategies (tax incentives, increasing density, strategic shrinking, new housing developments, community initiatives, regional economic development, etc.), marketing (main street revitalization, cultivating identity, event branding, attracting the creative class, agri-tourism, etc.), and rural-urban partnerships.

**RUST BELT**

Although the depopulation in the Rust Belt occurred because of different factors and happened much more quickly at a different scale, it provides a number of real-world precedents for approaching decline. Some of the more notable approaches include landbanking (in which the city government can hold vacant properties without paying taxes in order to repurpose large portions of land), blotting (in which neighbors absorb adjacent properties as they become vacant for a minimal fee), and strategic shrinking (in which cities “contract” in order to maintain density). Cities like Detroit and Flint in Michigan, as well as Youngstown, Ohio, and Buffalo, New York have implemented the aforementioned strategies.

**RURAL DECLINE**

The four rural decline design projects to the left address rural depopulation and provide future projections for rural areas such as the Great Plains. The Meridian of Fertility by Reid Fellenbaum\(^1\) and the Land Management Tribes by Matthew Spremulli and Fei-Ling Tseng\(^2\) are both similar in that they both address rural issues at a territorial scale, with a strong emphasis on environmental issues, such as aquifer depletion and climate change. The proposals both project depopulation to greatly affect the Great Plains region, with proposals that evoke a “buffalo commons” theme, projecting a future that is relatively void of human life and that prioritizes landscape over human.

The last two proposals, Farmland World by Stewart Hicks and Allison Newmeyer\(^3\) and Design for Decline by Karl Kullman\(^4\), are more human-oriented, addressing issues like community identity, migration patterns, and building community-feel through event spaces. Their proposals, while still speculative, introduce architectural strategies for approaching decline in rural communities.

Kullman’s proposal, especially, reaches a detailed level of architectural resolution since the proposal focuses on a particular community, allowing for a more site-specific solution that still has the potential for application to other rural communities.

**SUBTRACTION**

The four subtraction precedents shown on the right demonstrate scenarios of subtraction for shrinking cities.

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\(^2\) Matthew Spremulli and Fei-Ling Tseng, Land Management Tribes: A New Species of Symbiotic Architectures for The Great Plains, PDF, ACSA.


The first two precedents, Erasing Detroit and 9119 St. Cyril, are projects by Dan Hoffman that address the condition of vacancy in the shrinking city of Detroit. Erasing Detroit is a project that catalogs the locations of vacant properties throughout the city, a method of mapping subtraction throughout the city. The project of 9119 St. Cyril documents the process of physically disassembling a vacant house in Detroit, which addresses the more technical aspect of deconstruction in relation to subtraction.

Free Zoning is a competition entry by Stephanie Davidson and Georg Rafailidis that studies the deconstruction and re-use potentials of a vacant strip mall in Buffalo, New York.[5] The project asks the following questions:

*How can the intrinsic tension between the physical endurance of architecture and the fast-paced rhythm of business models be channelled into productive development? What is a viable way to re-use or re-interpret buildings, such as the strip mall?* [6]

Free Zoning proposes the deconstruction and salvaging of building materials used for construction of the strip mall, which are then reconstructed on the site (utilizing the existing foundation as a seedbed) with no zoning variances. The project demonstrates how the “remaining lifespan of the materials in [. . .] obsolete buildings can be exploited if the economic and political framework for building activity is made less restrictive,” and aims to “create something radically new with what is already at hand.”[7]

Demotown: A Retroactive Arcology for Detroit is a competition entry by Jesse Foster Honsa and Gregory John Mahoney for the 2011 Urban Border Competition by Think Space. The project proposes adaptive re-use strategies that utilize Detroit’s existing production facilities after vacancy. Additionally, it recognizes that “the proliferation of abandoned urban space has created a new frontier, one that possesses existing structural resources that may support further development.”[8]

---

FRAMEWORK FOR SUBTRACTION

OBJECTIVE: to create a flexible system that works from the bottom-up to allow for a fluid transition of population away from a place (a gradual, systematic depopulation), while suspending value as a way to allow for a more graceful decline

<table>
<thead>
<tr>
<th>SYSTEM</th>
<th>MECHANISM</th>
<th>STRATEGIES</th>
<th>TACTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW ECONOMY</td>
<td>INCENTIVIZATION (TOURISM)</td>
<td>ATTRACT TOURISTS</td>
<td>UTILIZE EXISTING COMMUNITY QUALITIES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TRANSFER JOBS FROM FAILED INDUSTRY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>COMPLETE DISASSEMBLY</td>
</tr>
<tr>
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<td></td>
<td>PARTIAL DISASSEMBLY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>COMPLETE RE-USE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PARTIAL RE-USE</td>
</tr>
<tr>
<td>SUBTRACTION (UNBUILDING)</td>
<td>DISASSEMBLY</td>
<td>MATERIAL HARVESTING</td>
<td>DISTRIBUTION</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RECONSTRUCTION</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>COMPLETE RE-USE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>PARTIAL RE-USE</td>
</tr>
</tbody>
</table>
UTILIZE EXISTING COMMUNITY QUALITIES
TRANSFER JOBS FROM FAILED INDUSTRY

OUTDOOR RECREATION
HUNTING/FISHING/TRAPPING
WILDLIFE OBSERVATION
TRAIL SYSTEMS

UNBUILDING
CABELA'S BUILDINGS
UNUSED COMMERCIAL DEV.
ABANDONED HOUSING

SUPPORT LONG-TERM USERS
LOGISTICS NETWORK (I-80)
(TOURISM, TRUCKING INDUSTRY)

EMPLOYMENT (TEMPORARY)

CENTRALIZATION (SHRINKING)

SUSPEND VALUE

NEW PROGRAM (TEMPORARY)

APPLICATION (SIDNEY)

DESIRED OUTCOME

OBJECTIVE:

TO CREATE A FLEXIBLE SYSTEM THAT WORKS FROM THE BOTTOM-UP TO ALLOW FOR A FLUID TRANSITION OF POPULATION AWAY FROM A PLACE (A GRADUAL, SYSTEMATIC DEPOPULATION), WHILE SUSPENDING VALUE AS A WAY TO ALLOW FOR A MORE GRACEFUL DECLINE
## Scenario Set-Up

### Configuration 1

<table>
<thead>
<tr>
<th>Action</th>
<th>Site 1: Single Family Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disassembly</strong></td>
<td>Disassemble entire house</td>
</tr>
<tr>
<td><strong>Material Harvesting</strong></td>
<td>Sell/distribute salvaged materials</td>
</tr>
<tr>
<td><strong>Adaptive Re-Use</strong></td>
<td>Re-purpose land for new use</td>
</tr>
</tbody>
</table>

### Configuration 2

<table>
<thead>
<tr>
<th>Action</th>
<th>Site 1: Single Family Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disassembly</strong></td>
<td>Disassemble entire house</td>
</tr>
<tr>
<td><strong>Material Harvesting</strong></td>
<td>Salvage materials for re-use</td>
</tr>
<tr>
<td><strong>Adaptive Re-Use</strong></td>
<td>Create new structure from salvaged materials</td>
</tr>
</tbody>
</table>

### Configuration 3

<table>
<thead>
<tr>
<th>Action</th>
<th>Site 1: Single Family Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disassembly</strong></td>
<td>Strategically disassemble part of house</td>
</tr>
<tr>
<td><strong>Material Harvesting</strong></td>
<td>Sell/distribute salvaged materials</td>
</tr>
<tr>
<td><strong>Adaptive Re-Use</strong></td>
<td>Re-purpose remaining building structure</td>
</tr>
</tbody>
</table>

### Configuration 4

<table>
<thead>
<tr>
<th>Action</th>
<th>Site 1: Single Family Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disassembly</strong></td>
<td>Strategically disassemble part of house</td>
</tr>
<tr>
<td><strong>Material Harvesting</strong></td>
<td>Salvage materials for re-use</td>
</tr>
<tr>
<td><strong>Adaptive Re-Use</strong></td>
<td>Re-purpose remaining house structure</td>
</tr>
</tbody>
</table>
SITE 02: HOTEL
- DISASSEMBLE ENTIRE HOTEL BUILDING
- SELL / DISTRIBUTE SALVAGED MATERIALS
- RE-PURPOSE LAND FOR NEW USE

SITE 03: CABELA’S RETAIL STORE
- DISASSEMBLE ENTIRE RETAIL BUILDING
- SELL / DISTRIBUTE SALVAGED MATERIALS
- RE-PURPOSE LAND FOR NEW USE

SCENARIO 02
- STRATEGICALLY DISASSEMBLE PART OF HOTEL BUILDING
- SELL / DISTRIBUTE SALVAGED MATERIALS
- RE-PURPOSE REMAINING BUILDING STRUCTURE

SCENARIO 03
- STRATEGICALLY DISASSEMBLE PART OF RETAIL BUILDING
- SALVAGE MATERIALS FOR RE-USE
- RE-PURPOSE REMAINING BUILDING STRUCTURE
BUILDING TYPE 01:
HOUSING
CABELA’S EMPLOYEE HOUSING ———— FIRST TO BE ABANDONED
OTHER AT-RISK HOUSING
OCCUPIED HOUSING

SITE 01

BUILDING TYPE 02:
COMMERCIAL
GAS STATIONS
FAST FOOD
HOTELS ———— FIRST TO BE ABANDONED
RETAIL

SITE 02

BUILDING TYPE 03:
CABELA’S BUILDINGS
CABELA’S HEADQUARTERS
CABELA’S RETAIL STORE ———— GREATEST OPPORTUNITY FOR RE-USE
CABELA’S DISTRIBUTION CENTER
PROXIMITY TO I-80

SITE 03
### Financial Comparison: Demolition + Deconstruction

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Const. Type</th>
<th>Square Footage</th>
<th>C&amp;D Debris (Cubic Yards)</th>
<th>C&amp;D Debris (Tons)</th>
<th>Total Man Hours (150 SF / HR)</th>
<th>Equipment / Labor Cost ($1.70 / SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>01</strong></td>
<td>Home</td>
<td>2,000 SF</td>
<td>293 CY</td>
<td>146 TN</td>
<td>13 HR</td>
<td>2,000 SF X 1.7 = $3480</td>
</tr>
<tr>
<td><strong>02</strong></td>
<td>Hotel</td>
<td>43,800 SF</td>
<td>5377 CY</td>
<td>2689 TN</td>
<td>292 HR</td>
<td>43,800 SF X 1.7 = $74,460</td>
</tr>
<tr>
<td><strong>03</strong></td>
<td>Cabela's Retail Store</td>
<td>102,190 SF</td>
<td>22,608 CY</td>
<td>11,304 TN</td>
<td>681 HR</td>
<td>102,190 SF X 1.7 = $173,723</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Const. Type</th>
<th>Square Footage</th>
<th>C&amp;D Debris (Cubic Yards)</th>
<th>C&amp;D Debris (Tons)</th>
<th>Total Man Hours (5 SF / HR)</th>
<th>Equipment / Labor Cost ($3.90 / SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>01</strong></td>
<td>Home</td>
<td>2,000 SF</td>
<td>293 CY</td>
<td>146 TN</td>
<td>400 HR</td>
<td>2,000 SF X 3.9 = $7800</td>
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<tr>
<td><strong>02</strong></td>
<td>Hotel</td>
<td>43,800 SF</td>
<td>5377 CY</td>
<td>2689 TN</td>
<td>8,760 HR</td>
<td>43,800 SF X 3.9 = $170,820</td>
</tr>
<tr>
<td><strong>03</strong></td>
<td>Cabela's Retail Store</td>
<td>102,190 SF</td>
<td>22,608 CY</td>
<td>11,304 TN</td>
<td>20,438 HR</td>
<td>102,190 SF X 3.9 = $398,541</td>
</tr>
</tbody>
</table>

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### DISPOSAL COST

($50 / TON) ⁴

<table>
<thead>
<tr>
<th>Tons</th>
<th>Cost</th>
<th>Total Cost</th>
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<tr>
<td>146</td>
<td>$7300</td>
<td>$10,780</td>
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<tr>
<td>2689</td>
<td>$134,450</td>
<td>$208,910</td>
</tr>
<tr>
<td>11,304</td>
<td>$565,200</td>
<td>$738,923</td>
</tr>
</tbody>
</table>

### DISPOSAL COST

(80% DIVERSION OF WASTE) ⁵

(TONS X .2) X ($50 / TON) ⁴

<table>
<thead>
<tr>
<th>Tons</th>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>146 x .2</td>
<td>$3,676</td>
<td>$9,464</td>
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<tr>
<td>29 x .5</td>
<td>$1,460</td>
<td>$3,448</td>
</tr>
<tr>
<td>2689 x .2</td>
<td>$41,782</td>
<td>$103,980</td>
</tr>
<tr>
<td>538 x .5</td>
<td>$26,890</td>
<td>$84,670</td>
</tr>
<tr>
<td>11,304 x .2</td>
<td>$147,784</td>
<td>$436,552</td>
</tr>
<tr>
<td>2261 x .5</td>
<td>$113,040</td>
<td>$565,200</td>
</tr>
</tbody>
</table>

### APPRAISAL / STORAGE / TRANSPORT COSTS

<table>
<thead>
<tr>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>146 TONS</td>
<td>$12,936</td>
</tr>
<tr>
<td>2689 TONS</td>
<td>$250,692</td>
</tr>
<tr>
<td>11,304 TONS</td>
<td>$886,707</td>
</tr>
</tbody>
</table>

### MATERIALS DONATION APPRAISAL ($40 / SF - TYPICAL)

<table>
<thead>
<tr>
<th>Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>146 TONS</td>
<td>$80,000</td>
</tr>
<tr>
<td>2689 TONS</td>
<td>$1,752,000</td>
</tr>
<tr>
<td>11,304 TONS</td>
<td>$4,087,600</td>
</tr>
</tbody>
</table>

### TAX SAVINGS (28% TAX RATE)

<table>
<thead>
<tr>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>146 TONS</td>
</tr>
<tr>
<td>2689 TONS</td>
</tr>
<tr>
<td>11,304 TONS</td>
</tr>
</tbody>
</table>

### TOTAL COST BEFORE TAX

<table>
<thead>
<tr>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>146 TONS</td>
</tr>
<tr>
<td>2689 TONS</td>
</tr>
<tr>
<td>11,304 TONS</td>
</tr>
</tbody>
</table>

### TOTAL COST AFTER TAX

<table>
<thead>
<tr>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>146 TONS</td>
</tr>
<tr>
<td>2689 TONS</td>
</tr>
<tr>
<td>11,304 TONS</td>
</tr>
</tbody>
</table>

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SCENARIO NARRATIVES

1. HOUSE
   USER: OUTDOOR RECREATIONIST
   CABELA’S LEAVES SIDNEY

2. HOTEL
   USER: FORMER CABELA’S EMPLOYEE
   CURRENT CABELA’S EMPLOYEES LOSE JOBS
   HOUSING MARKET CRASH
   HOMES ARE FORECLOSED AND ABANDONED

3. CABELA’S RETAIL STORE
   USER: I-80 TRAVELERS, TRUCKERS
   EMPLOYEE MOVES INTO VACANT HOTEL AS TEMPORARY HOUSING
   SALVAGE INDUSTRY DISASSEMBLES HOME PARTS ARE SALVAGED AND RE-USED TO BUILD STRUCTURES THAT SUPPORT OUTDOOR EXPERIENCE
   VISITORS EXPERIENCE SIDNEY FOR THE DIRECT EXPERIENCE OF LANDSCAPE
   DISASSEMBLES HOMES WHILE LOOKING FOR NEW JOB
   FINDS NEW JOB IN ANOTHER CITY AND MOVES
   HOTEL IS DISASSEMBLED IN PHASES AS EMPLOYEES LEAVE SIDNEY
   CABELA’S STORE IS LEFT VACANT

CABELA’S STORE IS LEFT VACANT
CABELA’S STORE IS LEFT VACANT AS BUILDING IS DISASSEMBLED, IT HOSTS HYBRID PROGRAMS THAT CATER TO INTERSTATE TRAVELERS (TRUCKERS + TOURISTS)

EMPLOYEE MOVES INTO VACANT HOTEL AS TEMPORARY HOUSING

HOTEL IS DISASSEMBLED IN PHASES AS EMPLOYEES LEAVE SIDNEY

FINDS NEW JOB IN ANOTHER CITY AND MOVES

DISASSEMBLES HOMES WHILE LOOKING FOR NEW JOB

PARTS ARE SALVAGED AND RE-USED TO BUILD STRUCTURES THAT SUPPORT OUTDOOR EXPERIENCE

VISITORS EXPERIENCE SIDNEY FOR THE DIRECT EXPERIENCE OF LANDSCAPE

SALVAGE INDUSTRY DISASSEMBLES HOME

DISASSEMBLES HOMES PARTS ARE SALVAGED AND RE-USED TO BUILD STRUCTURES THAT SUPPORT OUTDOOR EXPERIENCE
SCENARIO FRAMEWORK

PHASE 0

EXISTING HOME
2,000 SF

DISASSEMBLE HOME
AND CLEAR SITE

RETAIN FOUNDATION WALLS

PHASE 1

EXISTING HOTEL
43,800 SF

TEMPORARY HOUSING
FOR FORMER
CABELA’S EMPLOYEES

DISASSEMBLE BUILDING IN
PHASED SECTIONS AS
FORMER EMPLOYEES LEAVE
SIDNEY

PHASE 2

EXISTING CABELA’S
RETAIL STORE
102,190 SF

RE-PROGRAM BUILDING
TO ACCOMMODATE I-80
PROGRAM

DISASSEMBLE RETAIL
STORE IN PHASES TO
ACCOMMODATE I-80
PROGRAM

PHASE 3

PHASE 4

PHASE 5

DISASSEMBLE RETAIL STORE IN PHASES TO ACCOMMODATE I-80 PROGRAM

DISASSEMBLE BUILDING IN PHASED SECTIONS AS FORMER EMPLOYEES LEAVE SIDNEY

DISASSEMBLE HOME AND CLEAR SITE

RETAIN FOUNDATION WALLS

DISASSEMBLE BUILDING IN PHASED SECTIONS AS FORMER EMPLOYEES LEAVE SIDNEY

DISASSEMBLE HOME AND CLEAR SITE

RETAIN FOUNDATION WALLS

DISASSEMBLE BUILDING IN PHASED SECTIONS AS FORMER EMPLOYEES LEAVE SIDNEY

DISASSEMBLE RETAIL STORE IN PHASES TO ACCOMMODATE I-80 PROGRAM

DISASSEMBLE BUILDING IN PHASED SECTIONS AS FORMER EMPLOYEES LEAVE SIDNEY

DISASSEMBLE HOME AND CLEAR SITE

RETAIN FOUNDATION WALLS

DISASSEMBLE BUILDING IN PHASED SECTIONS AS FORMER EMPLOYEES LEAVE SIDNEY

DISASSEMBLE RETAIL STORE IN PHASES TO ACCOMMODATE I-80 PROGRAM
**PHASE 3**

Salvage materials from home for re-use

**PHASE 4**

Re-use materials

**PHASE 5**

Complete disassembly

Disassemble retail store in phases to accommodate recreation program

Re-use atrium and pad as archery range and hot air balloon dock

Complete disassembly

Disassemble building in phased sections as former employees leave Sidney

Re-use pool and first level structure as livestock resort

Complete disassembly

Recreation center

Archery range

Hot air balloon dock

Former pool

Livestock resort

Animal pens

Disassemble

Temporary affordable housing

Use salvaged materials (plywood, tarp) to "stop" / "close" end of building.

Former pool

Living space

3-car garage

Wood frame structure

Disassemble and salvage materials

Salvage materials from home for re-use

Retain foundation walls

Reuse materials

Scenario 03

Scenario 02

Scenario 01
ARCHITECTURE DESIGN
DESIGN

PHASE 4 | CRITIQUE

Throughout the phased disassembly of Sidney, new programs are implemented that take advantage of the partially deconstructed community to allow for a more gradual, strategic decline. Phase 4, situated 25+ years in the future, aims to target the Interstate 80 user group through the use of a guided theme park tour, called *World’s Foremost Outing* (drawing from the Cabela’s name), that allows users to slow down and experience the “flyover territory” landscape. The tour will engage the natural landscape, indigenous wildlife, agriculture and ranching practices, and “historic” ruins of Sidney. The partially deconstructed town will be transformed into an entertainment opportunity, with an archery range, livestock resort, hot air balloon rides, and more.

Programmatic elements of the tour build upon the culture and history of the Great Plains and more specifically, the former town of Sidney and Cabela’s. Former programs of the site are maintained either directly, altered, or as inversions of their original intent. For example, Cabela’s archery range is maintained, as well as the water tower (which is re-purposed as an observation tower), and the destination effect of the retail store is maintained through the experience of the natural landscape, rather than the experience of shopping. Additionally, Cabela’s taxidermy museum is maintained through the use of giant animal-shaped balloons that additionally reinforce the destination experience, while maintaining the “iconic” presence that Cabela’s once had on the site. The other way of maintaining past program in the new design is through inversion of program. For example, the hunting ideology of Cabela’s is reversed, so that, instead of providing hunting goods, the site becomes a wildlife sanctuary for animals, protecting them from hunting. Additionally, deconstructed materials from former homes are made into viewing stands that act as a means for passive observation rather than active hunting of animals. The viewing stands, constructed on top of former homes, reflect an altered awareness of the program that once inhabited the site. Where bedrooms once provided a place for humans to sleep, a docking station for agricultural drones is provided, and autonomous machines now inhabit the space where a garage previously housed vehicles.

In experiencing the site, visitors would exit the interstate and park their vehicle in the former Wal-Mart parking lot, where they would climb into an autonomous ATV that would guide them through the site. The tour would take them through the wildlife sanctuary to the archery range, where they can learn the basics of archery, and the hot air balloon dock, where eight animal-shaped balloons provide visitors with aerial views of the landscape. From inside the archery range, the inflated balloons mimic the former taxidermy heads mounted on the walls of the former Cabela’s retail store. Visitors can also choose to take the “Ruins Tour” through the former city of Sidney, viewing its “ancient” history. Viewing stands built atop former homes frame specific views of the
Great Plains territory, allowing visitors to interact with the landscape. On their way back to their vehicles, visitors are taken to the Livestock Resort, a resort for animals that allows them to live out their last weeks before slaughter in peace. The Livestock Resort draws from program in the former hotel, inverting program once used for humans into program used for animals. The Livestock Resort houses animals in the former first-floor hotel rooms, has an animal feeding area (the “Pig” Out Trough) where the former breakfast nook was located, utilizes the former pool as a recreational pool for animals, and even includes a “Moo”ssage room that relaxes the animals while tenderizing them for optimal meat quality. Visitors to the Livestock Resort can then choose their own animal as part of the “Mark-Your-Meat” attraction by texting a drone. The drone then herds the animal into a slaughter truck, and fresh meat is delivered to the visitor’s door within the next two weeks.

Ultimately, in Phase 5, the site is allowed to revert back to its natural, agrarian state, with no human population.

The exploration of Phase 4 provides a critique on current territorial trends and on the use of design in solving issues that may be considered outside of its scope.
WORLD’S FOREMOST OUTING!

Located within the former community of Sidney, Nebraska, the World’s Foremost Outing! acknowledges the historical and cultural background of the site through various attractions. Sidney was once home to the sporting goods giant, Cabela’s: The World’s Foremost Outfitter, until the late 2010s, when the company, an integral part of the community, left Sidney. This drastic loss of employment, combined with the many other difficulties that rural communities of the time faced, led to an extreme depopulation of the town. Through the deconstruction of its abandoned buildings, the town was able to create a temporary economy in order to effectively and strategically shrink itself, while creating opportunities for new interventions and program. Through many phases of unbuilding, the community has been nearly completely deconstructed. Sidney’s deconstruction has created the opportunity for the World’s Foremost Outing! to emerge from the city’s ruins! Our attractions are based on key aspects of the former community’s culture and background, bringing them to life in new ways for you and your family to enjoy!

STOP TODAY AND EXPERIENCE THE “FLYING
MOST OUTING!

BOONS, ARCHERY + MORE!

in the ruins of

NEBRASKA

World’s Foremost Outfitter

EXPERIENCE

The World’s Foremost Outing! is perfect for I-80 travelers looking to understand the territory they are passing through. With a variety of activities, including hot air balloon rides, wildlife viewing, archery lessons, and more, the World’s Foremost Outing! is sure to please any and all visitors!

Choose from any of our attractions on the following page for your next adventure! Our theme park has something for everyone. Adults, children, wildlife enthusiasts, historians, and interstate truckers and travelers can all enjoy what we have to offer! Our diverse attractions are great for large groups as well. Whether you’re looking to plan your next family trip, learn more about the territory, take a break from the road, or just have some fun, then the World’s Foremost Outing! is for YOU!

Stop and see us soon at Exit 59 of Interstate 80!

OVER TERRITORY” OF THE GREAT PLAINS!
ATV RIDES
Buckle into one of our autonomous ATVs to guide you through the site! It’s easy to feel like you’re a hunter on a grand hunting expedition in this turn-of-the-century-style hunting vehicle!

WILDLIFE SANCTUARY
Observe wildlife animals in their natural habitat, instead of mounted on a wall! Our sanctuary protects birds and animals native to the plains territory, such as deer, elk, antelope, and bison. Use our selfie station to capture the experience!

LIVESTOCK RESORT
Who says hotels are only for people? When our livestock is ready for slaughter, we send them to our Livestock Resort in the former Fairfield Inn Hotel, where they can live out their last days in comfort, while being pampered and prepped for optimal meat quality! Visit the resort to select your next meal!

VIEWING STANDS
Climb into these stands not to hunt, but to view! Learn about the changing landscape of the plains with screens that allow you to simply point at an object for instant information. Our stands are situated above foundations of former Sidney homes and are constructed of the homes’ materials.

AGRICULTURE
Slow down and step into “flyover territory” to observe modern farming and ranching practices of the western Great Plains! Watch drones and autonomous machines plant, irrigate, and harvest crops!
HOT AIR BALLOON RIDES
Fly away with us! Hop onto one of our hot air balloons at the former Cabela’s retail store and experience the territory from the air! Our animal-shaped balloons provide a playful alternative to a taxidermy museum.

ARCHERY RANGE
Experience hunting methods from the past! Let your arrows fly in our state-of-the-art archery range at the site of the former Cabela’s retail store. Robotic targets create a realistic hunting experience! Safe and fun for ages 12 and up!

MARK-YOUR-MEAT
Ever wondered where your meat really comes from? The hunt is on! Find and select your own cow, pig, or deer from our Livestock Resort for your dinner table! Fresh burgers, bacon, or jerky will be sent to your door in the next two weeks! Our Meat Mail makes a great gift or souvenir!

RUINS TOUR
View the historic ruins of Sidney, once the home of Cabela’s! Foundations of homes and other buildings still remain as a testimony to the deconstructed city of the past. Take a drive through the past on our Ruins Tour through the historic community.

OBSERVATION TOWER
The old Cabela’s water tower has been transformed into a viewing tower! Climb up for panoramic views of the plains!
I think that one looks good! Steaks or burgers?

Let's do both! I'll text the drone.
DRONE.

Electronic unmanned aircraft

Use: Monitoring, herding, and feeding livestock.

Features:
- Camera
- Precision
- Surveillance
- Control
- Safety
AUTONOMOUS TRACTOR

Powerful tractor vehicle with large wheels, operates without human presence inside the vehicle.

Uses: pulling or pushing agricultural machinery and equipment for plowing, tillage, disking, harrowing, planting, etc.

Features:
- Fully autonomous
- GPS-guided
- Sensor equipped
RUINS: SINGLE FAMILY HOME

Foundation of single-story home.

4 BR, 3 Bath. Owned by Cabala’s employee.

CONCLUSION
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In conclusion, there is not a clear solution to the issue of rural decline. In fact, “solving” this issue is likely outside the scope of design. However, it is possible for designers to approach the problem by using architecture as a different kind of tool; not one that provides a practical “solution,” but one of speculation. Architecture can be used to provide a commentary or critique on issues such as rural decline, in order to provoke thought and awareness, while encouraging new perspectives and ideas regarding the issue. More conversation and thought is necessary to further speculate upon and explore the possibilities and opportunities within the changing rural condition.

My experience in completing this thesis was one of growth. I have not only gained knowledge related to the subject matter of this thesis, but have gained new perspectives about what architecture is and can be. This thesis has allowed me to explore a subject that is important to me, while stretching my abilities, enabling me to rethink my expectations of the discipline, and allowing me to push myself as a thinker and designer.
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