AN EXPLORATION OF SMALL TOWN SENSIBILTIES

by

Lucas William Winter

A thesis submitted in partial fulfillment
of the requirements for the degree

of

Master of Architecture

in

Architecture

MONTANA STATE UNIVERSITY
Bozeman, Montana

April 2010

©COPYRIGHT

by

Lucas William Winter

2010

All Rights Reserved

APPROVAL

of a thesis submitted by

Lucas William Winter

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citation, bibliographic style, and consistency and is ready for submission to the Division of Graduate Education.

Steven Juroszek

Approved for the Department of Architecture

Faith Rifki

Approved for the Division of Graduate Education

Dr. Carl A. Fox

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a master's degree at Montana State University, I agree that the Library shall make it available to borrowers under rules of the Library.

If I have indicated my intention to copyright this thesis by including a copyright notice page, copying is allowable only for scholarly purposes, consistent with "fair use" as prescribed in the U.S. Copyright Law. Requests for permission for extended quotation from or reproduction of this thesis in whole or in parts may be granted only by the copyright holder.

Lucas William Winter

April 2010

TABLE OF CONTENTS

1. THESIS STATEMENT AND INRO….....1

2. HISTORY….....4

3. INTERVIEW - WARREN AND ELIZABETH RONNING….....14

4. INTERVIEW - BOB BARTHELMESS……..….....20

5. INTERVIEW - RUTH BROWN……..….....27

6. INTERVIEW - VIRGINIA COFFEE …….....31

7. CRITICAL REGIONALISM AS RESPONSE TO GLOBALIZATION…….....38

8. SENSIBILITIES…….……..….....43

9. ELDERLY CARE……..….....48

10. CASE STUDY 1 - TOLO HOUSE…...……..….....56

11. CASE STUDY 2 - FOUR SEASONS HOME ……..….....57

12. CASE STUDY 3 - MAGNEY HOUSE……..….....59

13. CASE STUDY 4 - GREGORY FARMHOUSE……..….....62

14. CASE STUDY 2 - THE INDIAN STEPWELL……..….....64

15. PROGRAM…...……..….....66

16. SPACE ADJACENCIES…...……..….....69

17. SITE ANALYSIS……...…...……..….....70

18. CODE SEARCH…...……..….....84

19. FINAL PROJECT…...……..….....98

BIBLIOGRPAHY…...……..….....108

LIST OF FIGURES

Figure Page

16-1. Space Adjacencies ….....69

17-1. General mapping of Miles City …….....71

17-2. Miles City weather data….....74

17-3. Buildings lost in fire……. …….....75

17-4. Highway 59…….. ….....77

17-5. Main Street…… …….....78

17-6. Site ….....78

17-7. Neighboring Businesses…….. …….....79

17-8. Distances to other amenities..... …….....82

19-1. Ground Floor Plan……. …….....98

19-2. Second Floor Plan …….. ….....99

19-3. Third Floor Plan …… …….....100

19-4. HVAC Diagram..... …….....101

19-5. Sun Shelf Diagram…….. …….....102

19-6. Miniature Plan Diagrams..... …….....103

19-7. Longitudinal Section..... …….....103

19-8. Lateral Section…….....104

19-9.Elevations…….....104

19-10.Exterior Rendering…….....104

19-11.Interior Rendering 1…….....105

LIST OF FIGURES CONTINUED

Figure Page

19-12.Interior Rendering 2…….....105

19-13.Wall Section 1…….....106

19-14.Wall Section 2…….....107

ABSTRACT

This thesis will explore the design process of creating a contextually appropriate building by responding to sensibilities gleaned from a series of local narratives. The resulting architectural exploration is a three story elderly housing project in downtown Miles City, Montana.

CHAPTER 1

THESIS STATEMENT AND INRO

Buildings exert important cultural influence, both through the effect they have on the daily lives of their inhabitants as well as how they engage the local population aesthetically and functionally. When a city has lost prominent downtown buildings, one would hope that these structures are rebuilt with a careful understanding of both the site and the community. Miles City has these very concerns as it recovers from the massive spring 2009 downtown fire. ***This thesis will explore the design process of creating a contextually appropriate building by responding to sensibilities gleaned from a series of local narratives.***

The use of narratives as a vehicle for exploration of design pertains to the unique human characteristic of using stories as a communication of self. Stories are an incredibly powerful representation of our lives. Even such progressive scholarly thought as quantum mechanic entanglement theory is illustrated by the famous analogous story of Schrödinger's cat. It must be recognized that there are many ways to address the design of a contextually appropriate building scheme. However, the hope of this thesis is to provide vision unclouded by the glazed over eyes of lofty abstract theories. Miles City is a traditional small town in the sense that most people earn their keep by the sweat of their brow and the dirt at their feet. They are a people connected more to the earth than the internet. It would be inappropriate to introduce an architecture based on wild theoretical

speculations. Instead, the following pages propose the design of a downtown Miles City building inspired by the anthropology of the local citizens.

Interviews and personal interaction with life long residents of the area will focus on two areas of interest: site and culture. First, questions and conversation specifically addressing the site will collect important information from those who are acutely attuned to the wants and needs of the community. Secondly, life stories provide an engaging way of understanding local culture.

Specifically this thesis will be dealing with an interesting social dynamic unique to the context of small agricultural towns like Miles City. As farmers and ranchers age they are often no longer able work on their land and consequently move into town where they will be closer to hospitals, grocers, and other amenities. This move is a huge interruption to these people's lifestyle. This thesis will be using narratives to design elderly apartments addressing this situation in hopes of easing the transition from independence in an expansive rural landscape to varying degrees of independence within an urban environment.

To provide background on the people and Miles City way of life this book will begin with a short summary of Miles City's vibrant history. Following, four narratives will provide the backbone for exploration. Culled from numerous interviews these four narratives present a variety of people connected to the ideas being explored. From here

the book will begin to conceptualize how to apply these narratives to an architectural design project. Once this driving theory has been laid out the thesis will springboard into studies of elderly care, case studies, program, a code search and finally the design concept.

CHAPTER 2

HISTORY

Just east of the Rockies lies a harsh and lonely landscape. Formally the floor of the Bear Paw sea, it sits as a unique eulogy to a landscape nearly unscathed by man's conquest and propagation. As described by author Jonathan Raban "[the landscape] fattens you with self-importance to be so alone, and so conspicuous a figure, in an arena whose enormous circumference reduces you to a dot. You're very big and very little all at once-and being both, are neither…you walk, a bit unsteadily, back to the car, where the enclosed space and the familiar diameter of the wheel restore you to your usual size."[1] They call this place the badlands.

Yet the landscape is far from empty, and anything but boring. Far and few between, people do take residence in this dry climate. Granted water is such a valuable commodity, what better place for civilization than the confluence of the Tongue and Yellowstone rivers? Welcome to Miles City, the heart of Custer County, suburbia of Eastern Montana.

Our tour shall depart chronologically, with the first true Montanan citizen roaming these lands at least 12,000 years ago[2]. An incomprehensible distant past when nomadic homo sapiens hunted mammoths with stone tipped lances and spears[3]. We have evidence of these people, but it seems most of their knowledge, culture, and wanderings are lost to the lonesome prairie wind. As the Ice Age gave way to a warmer climate, the mammoths

disappeared. Eventually bison populations increased, leading to the culture of the Plains Indians. Within Custer County the most notable tribes are the Northern Cheyenne, Crow, Hunkpapa, and Ogalala Sioux.[4] Then, within a very recent timeframe, the Anglo men arrived. He nearly exterminated both the buffalo and Native Americans in less than a generation.

General Custer was one of these men, sent west to fight in the Indian Wars. After his defeat and death in what is infamously known as Custer's Last Stand the United States government established Post Number 1 along the Tongue River. It was 1876 and the post was put under the command of Colonel Nelson Miles. The following year it was moved two and a half miles up river and officially named Fort Keogh in honor of a captain killed in the Battle of Little Big Horn.[5] The fort secured the lower Yellowstone region from Native American attack thus making way for the cattlemen.

The early roots of ranching in Montana began back in the 1850s with trappers and traders buying trail worn stock from the emigrants of the Oregon Trail. These mountain men would allow the animals to rest and fatten up, exchanging them the following year for another set of trail worn beasts.[6] In these early years there was no demand for any large scale ranching in Montana. However, following the development of the gold rush in the 1860s cattle began to graze the valleys of Western Montana[7]. Slowly, attention turned towards the badlands.

There were three major problems associated with ranching in Eastern Montana. The first was the hostile and violent relationship between Indians and white men. Hence, Fort Keogh was installed to remediate this very issue. The second issue was transporting cattle out of Montana. This was solved by the fall of 1881 when the Northern Pacific Railroad reached Miles City. Finally, there was the issue of the great Northern Herd already in place, the bison. The native bison consumed the grass ranchers would need for their cattle. Furthermore, having free range of the plains the bison would wander and stampede at will. Horses and cattle that got lost in the herd were rarely recovered. However, for better or worse the wasteful actions of hide hunters nearly exterminated the buffalo population. By the summer of 1882 there were very few bison left.[8]

Once the Indians had been vacated from their homeland, the United States government considered this area public domain, free for use. As transportation arrived and the bison were slaughtered, cattle took their place. A wild and interesting era began personified in such phrases as 'before barbed wire'. The first to arrive were established ranchers and businessmen driving their cattle north to graze on the vast plains of free grassland. But it wasn't long before get-rich-quick investors were drawn to the open range. Books such as James Brisbon's 1881 classic *The Beef Bonanza: Or, How to Get Rich on The Plains* attracted public attention[9]. Amongst all these cowboys Miles City became a notoriously hell roaring town. In 1881 with a population of 550 there were 42 saloons and over 1000 bottles of beer consumed per day.[10]

During these early days, there were few laws and little means to enforce them. By the fall roundup of 1883 some ranchers estimated they had lost at least three percent of their cattle to rustling[11]. Rustlers would lead off cattle or horses, and wait until the brands could be worked over, then sell the animals for profit. At a Montana Stockgrowers Association meeting opinions were voiced that ranchers should take matters into their own hands. In the public setting of the meeting hall ranchers denounced the idea, yet in all likelihood they were privately planning an operation at that very moment. Not long after, vigilantes appropriately known as *The Stranglers* took action. The members were secret; they ruthlessly struck rustlers by surprise from a carefully pre-conceived list. Some folks disagreed with the actions and there was rumor that not everyone on the list deserved their place. Others claimed that the group was rough-handed and reckless with innocent people when getting information. None the less, a firm message was sent. They shot or hung around sixty outlaws.[12] Yet rustling didn't stop, the business merely changed. Among the techniques was slaughtering stolen cattle and selling what was known as *slow elk.* Others would lead stolen livestock into Canada. The following story describes how calves could be *sleepered:*

> *Near our home ranch we discovered one rancher whose cows invariably had twin calves and frequent triplets, while the range cows in that vicinity were nearly all barren and would persist in hanging around this man's corral, envying his cows their numerous children and bawling and lamenting their own childless fate. The*

state of affairs continued until we were obliged to call around that way and threaten to hang the man if his cows had any more twins.[13]

However, despite their firm sense of justice, ranchers were known as quiet yet straight-talking, and compassionate hosts. Anyone who happened by was always welcome to dinner and a nights rest. Being in the Wild West you never knew who you might meet. The following is a recollection of rancher A. C. Huidekoper:

We had visitors constantly; they came and went. One day we were branding colts in the corral…As we were finishing, I saw two men ride up, especially well mounted and with pack horses equally good to those they were riding. As was customary, they climbed the corral and watched us work. When we had finished, I said to the strangers as I passed out of the corral, "If you want to turn your horses out with the night herd, you better tell the wrangler." One of the strangers said, "If you don't mind, we will put our horses in the stable. We want to be off early." I was quite surprised the next morning when I went to the corral to commence work, to see the two visitors seated on the corral. After we had been branding for a time, one of the fellows said, "You seem to be a little short-handed. Don't you want us to help out?" I said, "Yes, thanks." They were cracker-jacks and worked like beavers all day. At night I asked them if they wanted their horses to go out with the night herd; again they said, "No." The next morning they left us, swinging their sombreros in farewell…I learned afterward of a sheriff from Belle Fourche that came to our

ranch in search of our visitors, that before they came to us they had stuck up a Black Hills stage and taken $10,000 worth of gold from it, all of which they had in their pack while they visited us.[14]

In the fall work on the ranch would wane, and folks would gather from near and far to dance. Many would travel up to two days and a hundred miles for the event. Rough floors sprinkled with corn meal to make them slippery served as the focal point of excitement. As it was impractical to begin a journey home before morning light the dances would last till dawn. As one old rancher reflects, "modern transportation has spoiled us and has also spoiled a lot of our good times, I think."[15]

Yet the rancher's lifestyle was in for some big changes. The first was the infamous winter of 1886-87.

It was a brutal winter. The ranchers of the area had yet to begin the practice of storing hay for the cattle during winter months. As the story goes "come spring, many ranchers found cattle skeletons six feet above in trees where the animals, then at snow level, had tried to find shelter and feed. It was said that you could walk a creek from end to end on cattle bones, never touching soil."[16] Although Miles City would remain a cattle town, between 1886 and 1900 the number of sheep in Montana would increase eight fold to over six million, as the sheep faired better in the brutal winter environment.[17]

Another drastic change happened in 1909 when Uncle Sam invited settlers to the semi-arid land of Eastern Montana via the Enlarged Homestead Act. Heavy railroad lobbies resulted in the homestead size doubling from 160 acres to 320 acres. 320 acres being a half section, half a square mile. Under the new act you didn't need American citizenship until the five year date when a homestead was "proved-up." The act of proving-up constituted a payment of $16.00 and proof that the land had been under cultivation.[18] Railroad agents across the United States and Europe started distributing pamphlets advertising the virtues of the free and unclaimed territory. Up until this dates maps had labeled the Dakotas, Eastern Montana, and elsewhere as The Great American Desert.

This barrage of homesteaders were mislead and did not appreciate what they were getting themselves into. Upon their arrival, many were aghast at the vast emptiness of the prairie. Following their amazement, the first step was to pay a locator to help find a suitable half-section plot. Many of these locators had previously worked as chainman, helping survey the surrounding land. Experienced in the trade, charges of up to $25 to locate a plot was easy money.[19] Yet their uncanny knowledge of locating the marking stakes hidden in the grass made them appear extraordinary to the unfamiliar and out of place homesteader.

Work began. As the stories go, building fences was more daunting and time consuming than constructing the quaint homes and barns. Every homestead needed five to seven miles of fence, requiring about eleven hundred posts per mile.[20] All of these posts had to be individually cut and hauled, often from distant groves of wood. Ranchers hated to see

the fences, derogatively refereeing to homesteaders as honyockers, spitting the word out slowly as if choking on fleme. The days of open grazing and unobstructed cattle drives from Texas to Eastern Montana were gone forever. So ended an era, an era the world will never see again.

Although the population was on the rise, there were still vast tracks of land between the houses of the homesteaders. Perhaps ironically, the fences between them brought these families together thanks to AT&T's battery operated telephone. The phone would transmit a signal through the fencing wire. The reception was nearly incomprehensible, there was no privacy, and an open gate could break the circuit. Never the less, an intriguing concept and better than the alternative, nothing.

There was some success. In fact the first few years following the Enlarged Homestead Act Eastern Montana received a fair amount of rain and the soil beneath the homesteaders' feet released centuries worth of accumulated nutrients. But drought, insects, and hail would eventually drive most of these homesteaders to abandon their attempts. As a rule of thumb 15 inches was the lowest amount of rain to farm without irrigation. In Miles City 1917 saw 11.96 inches, 1918 - 12.62 inches, 1919 – 11.24 inches, 1920 – 12.83 inches.[21] Each year worse, as the parched ground became dryer and dryer. As one tale goes:

Years later, Percy Wollaston would confide to his son, close to midnight and over whiskey, that his haunting memory of this time was the sight of his mother, on her knees every day, crying and praying for rain.[22]

When congress had debated the Enlarged Homestead Act representative William A. Reeder of Kansas had voiced that settlers could not survive on 320 acres of semi-arid land, nor 640, nor even 1,280 acres. He was accused of being a pawn of the big ranchers. He was right, and by the 1920s it was stated that you would need six sections, 3,840 acres, to make a modest living in the area. [23]

Many of these homesteaders returned to their previous occupation or often continued West on the railroad that had mislead them into their current predicament. Failing in Montana, it is unlikely you would be able to afford returning to the high costs of living on the East. Satirically, the railroads continued distributing their pamphlets, shifting attention to the splendors of the Pacific Northwest. They had little further comment on Eastern Montana. In fact, "in a 1927 double-page spread, advertising the railroad, and published in the *American Magazine*, the large-and otherwise complete-map of the track shows no stations between Aberdeen, South Dakota, and Three Forks in western Montana".[24]

Through all this, Miles City has remained. Its population has fluctuated very little since the early 1900s and the cattle industry remains strong. Yearly, the biggest local event is

the annual Bucking Horse Sale. This spring will be the sixtieth anniversary marking another rowdy weekend of concerts, parades, and top rodeo contractors buying bucking broncos.

1 Raban, Jonathan. Bad Lands: An American Romance. New York:: Vintage Departures, 1996. (page 68)
2 Alwin, John A. Eastern Montana: A Portrait of The Land and Its People. Helena, MT: Montana Magazine, Inc., 1982. (page 44)
3 Alwin, page 46
4 Easton, Patricia. "A Brief Custer County History." MilesCity.com. 1999-2000. Custer County MTGenWeb Project. 1 October 2009. <http://milescity.com/history/stories/bcch/>
5 Easton
6 Brown, Mark H. and Felton, W. R. Before Barbed Wire: L. A. Huffman, Photographer on Horseback. New York: Henry Holt and Company, 1956. (page 95)
7 Brown and Felton, page 95
8 Brown and Felton, page 95
9 Alwin, John A. Eastern Montana: A Portrait of The Land and Its People. Helena, MT: Montana Magazine, Inc., 1982. (page 56)
10 Easton, Patricia. "A Brief Custer County History." MilesCity.com. 1999-2000. Custer County MTGenWeb Project. 1 October 2009. <http://milescity.com/history/stories/bcch/>
11 Mark H. and Felton, W. R. Before Barbed Wire: L. A. Huffman, Photographer on Horseback. New York: Henry Holt and Company, 1956. (page 110)
12 Brown and Felton, page 119
13 Brown and Felton, page 110
14 Brown and Felton, page 67
15 Brown and Felton, page 58-59
16 Easton, Patricia. "A Brief Custer County History." MilesCity.com. 1999-2000. Custer County MTGenWeb Project. 1 October 2009. <http://milescity.com/history/stories/bcch/>
17 Alwin, John A. Eastern Montana: A Portrait of The Land and Its People. Helena, MT: Montana Magazine, Inc., 1982. (page 59)
18 Raban, Jonathan. Bad Lands: An American Romance. New York:: Vintage Departures, 1996. (page 25)
19 Raban, page 60
20 Raban, page 129
21 Raban, page 237
22 Raban, page 236
23 Raban, page 260
24 Raban, page 306

CHAPTER 3

INTERVIEW - WARREN AND ELIZABETH RONNING

The following four narratives were culled from a handful of interviews as the most relevant to the issues being addressed in this thesis. The interviews characterize Miles City citizens from various occupational backgrounds. All interviewees have lived and worked in the Miles City area most, if not all, of their life. All have dealt with the social interruption of having to move into town as they aged. Interviews were conducted in various settings but recorded, transcribed, and put to prose by a single author in an attempt to accurately understand and convey the stories.

A dreary October afternoon teased the countryside with thoughts of rain. As stated minutes later, "one thing about Eastern Montana, you never grumble about rain." The orator of this statement is Warren Ronning, he and his wife Elizabeth are lifelong residence of Miles City happily married for 62 years. They are a people of the earth, farmers.

Warren was born December 2, 1923 in a farmhouse on the land he would eventually cultivate his entire life. He chuckles as he remembers the horrid transportation of this time, the contributing factor to his delivery into the world by a veterinarian. Later in life this would make his application for social security difficult, as there was no record of his birth.

Back in 1912 Warren's mom and dad both homesteaded north of Miles City. They lived a mile and a half apart and within a year of meeting they were married. After this Warren's father let his homestead go in order to join his wife. Here they raised turkeys, chickens, pigs for the winter, and a half dozen milk cows. Along with their garden, this is all they lived on. Due to the dry climate they would often have to pump water from the well and carry it over to water their garden. In the arid climate of Eastern Montana, water is incredibly important. The Ronnings' well was about 20 feet deep and could support 18 to 20 head of livestock and few work horses. They could pump 10-20 gallons at a time but had to wait 10-15 minutes for the well to recover. Luckily, their water had great taste for some of the homesteads in the area had water that tasted terribly alkali. In times of drought Warren's family would drive their cattle to their neighbor's house for the neighbor had an 80 foot well and mechanical pump. You couldn't pump it dry. Elizabeth proudly mentions that nowadays they have water pumped underground all over their ranch.

Elizabeth's mother was born in Missouri to a large family. Her dad was a WWI veteran born in Louisville, Kentucky. He was part of the signal core and while putting up wire a bomb blast injured him with shrapnel and killed his comrade. Upon his return to the states Liz was born in Bellingham, Washington where her dad drove a streetcar. Like so many others, when the depression hit he lost his job. They ventured to join relatives in Kansas but there was no work to be had. So her dad came out to Montana and built a

homestead. In a melancholy ‘luck’, Elizabeth’s dad had a pension due to the injuries he had sustained. This helped the family survive the depression. Liz remembers her father wearing a big ten gallon Stetson. He drove the school bus and raised Alfalfa, rice, cows, and saddle horses. Liz was raised there on the Rosebud Creek homestead.

The stories join when Warren and Elizabeth met at a Rosebud dance. They both loved dancing. As the years passed they kept in touch, writing to one another as Warren served in WWII. At first he built planes in California and latter worked in the field artillery observation battalion, the “eyes and ears of the artillery”. Although he was not the only man Liz kept in touch with during the war, they married. Warren attended the University of Montana majoring in physics. While in Missoula they had their first girl in 1951. Given his major, Warren was set up with a job in Los Alamos. However, he dropped out of college before his schooling was finished. He wanted nothing to do with the white sands of New Mexico and returned to the farm with his wife and child.

As Warren describes the farm: “you might say, [it is] just enough to make a living”. Stunning to those not from the arid badlands, this ‘just enough’ is five and half sections, 3,520 acres. He has acquired more land through the years. He remembers “I didn’t have much time for recreation, but I had plenty of time for work”. It was work all day every day, daylight to dark, sometimes to midnight. Warren can remember planting grain with an eight foot double disk drill pulled by two horses. It would take two and a half days to

drill a 20 acre field. With the last machine he drove, the 60 foot drill could do 20 acres in less than 40 minutes. His lifetime has seen great strides in farming machinery.

There were some rough years. The couple had more zero production years then they would care to remember. In these times you would have to "tighten your belt, you get along without". One particular year they had bought a Pontiac. This was the first year they hailed out. Hail is a farmer's cruel enemy. These icy missiles can hit one field, and leave the neighbor's field untouched. In a matter of minutes it can rip an entire crop to shreds. Warren remembers returning to the Pontiac Garage with the car telling the salesman, Prescott Boutelle, that he could not pay for it. Looking out for a friend in need Prescott told him to forget about it, keep the car and worry about payments another year. From that year on Warren was never found without hail insurance. Subsidized by the government, Federal Crop Insurance would provide minimum coverage at a minimum premium. Crop Insurance would keep Warren and a lot of others in business. The three big risks of farming in Eastern Montana are hail, hoppers, and drought. All risk crop insurance covers all three.

During another slim year the impending winter of 1977-78 encouraged Warren to sell all his cattle. He figured it would be pretty tough to feed the cattle all winter when there was no food to feed them with. When the semi truck came to get the herd the snow had already begun. Not long afterwards the snow was over the corral fence. Fortunately Warren was close to the highway and kept his driveway plowed. Being one of the few

with road access, neighbors began to park at his house and snowmobile over every time they had to go into town. They would travel the whole distance without seeing a fence, snowmobiling over everything, including entire cars completely buried under the snow.

Yet despite the tough times, they were mostly good years. In the early days it was card parties and country dances at the schoolhouse. Later, once the Ronnings had sold their cattle, they had the opportunity to spend the winters traveling. They bought a motor home and loved to take trips to Vegas and beyond. On one return trip from California they brought home an unassembled ultralight aircraft in a box on top of the RV. Warren assembled it and had a great time flying it. From airplanes to combines and RVs, Warren knew his machinery. Amazingly, he has safely conducted three forced landings. Loosing power in his ultralight he would smoothly glide back down to earth. Bad at dissipating heat, the first engine seized up. So did the second but Warren fixed it. In what some might consider the caviler mentality of the area, he flew with this second engine until it seized up a second time. A better engine was installed but ruined after a grandson crashed the craft into a fencepost. In continuing the vibrant life of this craft it has been repaired and the engine replaced with a very powerful engine and three blade prop salvaged off another wrecked ultralight. Having a very short take-off distance to begin with, having installed the new engine it practically jumps off the ground. Warren's health restricts his flying but he hopes to join the birds again. "I'd like to take one more trip around the patch. Maybe someday if I feel good enough I'll get on and ride it, take it around again."

Health issues were the reason for the Ronnings move into town. It was a gradual process as Warren became less fit to work on the farm and due to his COPD[1] needed to be closer to oxygen and closer to a doctor. The Ronnings find that a lot of people move in as they reach retirement but it is not necessarily easy. “When you’ve lived your whole life getting up in the morning and doing something all day long, it’s pretty hard just to sit down. That’s probably the hardest thing to do there is, to sit and do nothing.” But they still visit the farm and the land remains in the family. Warren will often advise his son on how to fix something or manage a problem.

As far as the downtown burn is concerned, the Ronnings had far fewer opinions than most citizens. They merely hope it will be rebuilt. They have seen many changes to Miles City over the years. Warren can remember when the downtown area in which they currently reside was all grass but for a few houses. He remembers the Hatchet house just kitty-corner as he would stop by to swoon their daughter. He never made it in the house, but he made it onto the porch. Gleeful to reminisce the Ronnings remain sharply intelligent and independent. Downtown apartments could easily suit the Ronnings’ needs, may this thesis be designed with Liz and Warren in mind. aeration

1 COPD (Chronic Obstructive Pulmonary Disease) – reference to pulmonary disease having to do with breathing, such as emphysema

CHAPTER 4

INTERVIEW - BOB BARTHELMESS

Bob Barthelmess has deep roots in Miles City, he is the third generation to live there and has been the curator of the local Range Rider Museum for 30 years. The museum is spectacularly comprehensive and is comprised of twelve buildings filled to the brim with artifacts and memorabilia from Miles City. Bob describes his job as keeping a nose to the grindstone to collect any artifacts people may find interesting fifty years from now. This particular year the museum has received two sets of interesting acquisitions, a barbed wire collection and a donation of about 100 relics from Miles City Steam Laundry including items such as vintage irons.

Bob's grandfather from his dad's side, Christian Barthelmess, came to Fort Keogh to be a soldier and musician. He died an appalling death at the Fort in 1906. An artesian well had been drilled to bring water to the commanding officer's home. While Christian was working in the ditch laying tile somebody walking above caused the ditch to cave in and cover Christian above his head. He was dug out to his shoulders and then pulled out by 13 to 14 men. Tragically, the aggregate force of all these men pulling broke his back and he died about 20 minutes later.

Before his death Christian took several thousand pictures of Cheyenne Indians in front of adorned screens, he was the post photographer before the ever famous L.A. Huffman. As

the story goes, after Christian's death Huffman went to the widow and asked to have a look at Christian's photos and glass plates. Upon his departure Huffman took some of the items asserting he would pay for them, which he never did. To add to the drama it is well documented that Huffman would wipe out the background behind Christian's photographs and claim them as his own. With the identity of the photographer erased there are nine photos in Huffman's famous book *Before Barbed Wire* that should have been attributed to Christian Barthelmess. Careless in his credits, there are also misattributed photos that belonged to 'Lady' Evelyn Cameron. *Before Barbed Wire*'s carelessness is a shame, for as Bob explains after something has been printed it does not matter if correctives are published. "After that first impression is out there, then they just consider what you're saying is sour grapes…" Nevertheless the story has been published by the Montana Historical Society and an exhibit in the Range Rider Museum is dedicated to the stolen photos.

Bob's dad was born at Fort Keogh and after Christian's death he and the other oldest son left to find jobs and help make a living. He would end up ranching. There were eight other children and by the age of 16 Bob's father was breaking horses and doing chores at the WL Ranch. Yet despite a very limited education at a rural school in Powderville Bob's father would spend hours upon hours reading and was one of the most well educated men Bob ever knew.

Bob was born in Pacific Beach, Washington in 1924 when his mother left Montana to join her own mother. Just six weeks after his birth Bob was back in Eastern Montana where he would spend the remainder of his life. In a tragic accident at the age of 14 a horse fell on Bob breaking his leg. When Bob stepped on the leg the bones ran past each other and popped out of the skin below the knee and by the ankle. It was a nine day wait for circulation to return before the doctor decided the double compound fracture should be set instead of cutting the leg off. Three wires were used to tie the bone back together and although the leg healed the experience left Bob with a limp, he has been lame most of his life.

Bob met his wife about 65 miles south of Miles City and they've been married 63 years. Continuing the saga of horror stories her dad was killed on Main Street during the first Range Riders Parade in 1941 when a horse fell backwards over him. These very personal examples illustrate how unforgiving the Eastern Montana lifestyle used to be. Both the harshness and romance of this lifestyle is illustrated in the Range Rider Museum.

The museum receives around 10,000-16,000 visitors per year, not a bad number when you consider it is removed from the interstate. The Range Riders was started by a bunch of cowpunchers, men who actually rode the range. It includes everything from fossils, to Native American artifacts, to guns. Of the twelve buildings three were moved onto the site: a homestead, a one room schoolhouse, and an officer's quarters from Fort Keogh. Amazingly, all these items have been donated and the museum has never accepted grant

or tax money as a strategy to avoid the regulations and rules that come attached. There are a couple items of particular value and all together the collection is quite valuable. Bob is thankful that nobody knows the exact value of everything because this could attract unwanted attention. The museum has been pretty lucky over the years but artifacts have been stolen, apparently fire alarms are very popular. The museum has also lost some western tack. The Barthelmess residence is on the same grounds which helps discourage thieves, and there is an alarm system. Yet Bob concludes an alarm system is only as good as the burglar and a "sharpie" could easily get past.

People are amazed at how thorough and interesting the museum is for the size of the town. Yet Bob finds this appropriate as he boasts that Miles City may have the most diversified history of any city in Montana. Bob says that people visiting the museum suggest that they have never met a people as friendly as those from Miles City.

Early in his tenure, Bob found that a lot of his visitors were seniors. Yet in the past 4-5 years he has seen an increase in the number of young families. Bob feels these families are worried about the strength of the younger generation in dealing with the detrimental aspects of society, particularly the immorality of many shows on television. Bob is encouraged that people are realizing that perhaps society has gone too far and needs to resurrect some of the traditional western values.

In the early days of Eastern Montana there was a need to appreciate and help one another, survival depended upon it. Nowadays when there is a traffic accident on the interstate people are afraid to help, not knowing who they might run into. Bob longs for the days when you could pass your banker on the street and say you would need $5000 dollars at the first of the month and the deal was confirmed with a handshake. “Your word has been hurt by the misuse of it down through the years…it’s pitiful.” Bob believes in a strong character, when somebody tells you something you should be able to stand on it forever.

Yet Bob agrees it is a great area and he finds Miles City a generous community, much more so than many surrounding communities. When something goes wrong, Miles City has the type of people who get busy and correct it. He notes that Europeans traveling through the area describe the people as congenial, generous, helpful, and interesting. Nonetheless he still worries about traditional values slipping away from us.

Contrary to many others Bob does not relish an influx of people into Miles City, particularly those that might arrive if the often discussed Tongue River Railroad became reality. The proposed railroad would be a coal line ending in Miles City and is often brought up in local conversation. Bob feels people who come for jobs like this are often transient and seldom have ties to the community. Few ties to a community often end with irresponsibility. He reminisced that when people came through seismographing for oil they would steal pump jacks and might leave all the gates behind them open. They had

little care for the consequences as once the job was complete they would pack up and move on.

Traditionally folks from as far as 100 miles have been very tied to the Miles City community. Ranching was the soul of the country in the early days, and still is to a certain extent. However Bob has seen a boom in agriculture over the years. He feels a lot of this is due to government subsidization. Between the subsidization and the value of the harvest on the open market you can plow up about anything, often land that should never be farmed. There has also been a trend towards computer businesses and government jobs. A lot of citizens are now employed by the BLM, Fort Keogh, and Fish & Game.

However ranching persists and ranchers force unique problems. Bob mentioned that having to move into town as you age has always been the case. Yet he feels that this change in pace is often detrimental. Going from hard manual labor to sitting in front of the television is a hard thing to do, many become patrons of rest homes or get sick and die long before they should. The farmers and ranchers are hard workers, in some odd way dependent on a lifestyle of movement and physical labor.

All in all Bob agrees it is still a good country. As he stands in the crisp autumn sunlight looking out over the buttes and bluffs he proudly proclaims, “you don’t have to worry about contamination in the air here this morning”. Perhaps this statement is analogous to

the museum he curates, a small town museum of the old west uncontaminated by the rules of grant money or the politics of high finance.

CHAPTER 5

INTERVIEW - RUTH BROWN

A church luncheon provided the perfect opportunity for a short interview with Ruth Brown. Her family history in the area starts when Ruth's grandfather arrived on a homestead train with his horses and cows. His three boys, including Ruth's father, rode the train as stow-aways. They were caught somewhere in the Dakotas and kicked off, forcing them to get resourceful in finishing the journey. The grandmother and single daughter would follow.

Upon arrival a surveyor assisted Ruth's grandfather in finding a homestead. The two older boys also claimed land but at the young age of 16 Ruth's father was not old enough, he would stake a claim later. They all lived where Ruth's grandfather homesteaded, in a tent with a stove. Much to everyone's chagrin an October snow caused the tent to collapse. Eyes turned towards the just finished chicken house that had not yet been stocked with fowl. The family lived in this chicken house all winter.

The following summer they raised a house, cutting logs and building a log cabin like so many other homesteaders. Thinking creatively Ruth's grandfather channeled a stream from above the house to a box he had built next to the house, acting much like a refrigerator. After this he channeled the water into the house and ran it through the sink. It was probably the only house in the area with running water, Ruth can remember this

made grandma's house particularly special. The spring was steady the entire time they lived there but has hence gone dry as pumping lowers the water table.

Ruth and a lifelong friend described the old house in detail, recalling the one room downstairs and three rooms, living room, and carpet upstairs. The house was dug into the bank of a hill. You would enter at the ground floor and because of the slope exit at ground level on the second floor. This dual entry and exit played an important role during Christmas time. When Ruth was young and believed in Santa there was a rule that you could not go upstairs until you heard Saint Nick. Big brothers and cousins performing the role of Kriss Kringle would stomp around upstairs, but Ruth laughs as she remembers that they never did catch them.

Ruth can remember loving to go to grandma's house, eating the foods her grandma cooked and playing with the other grandkids. As motion sickness prevented her from enjoying the journey to Miles City she was often dropped off at her grandmother's when everyone else went into town. Ruth's relationship with her grandfather was not as good as that with her grandmother. She described him as a pepper-pot, he would swear terribly and she was scared to death of him. One day her grandma had forgotten to leave the milk pail on the porch for her grandfather to pick up when he came around with the horses. When he came by and the milk pail was not there he started cussing, swearing, and causing all sorts of racket. Ruth's grandmother ran out with the milk and returned with a

smile. From then on Ruth would remember that smile and figured he must not be near as dangerous as she had suspected.

Ruth's own folks did not build a traditional log cabin, they were close to the river and the only trees were cottonwoods. Cottonwood is more difficult to work with than pine and often too large. By this time there was a sawmill in the area, so the house was built of sawed lumber. It was not big house, her parent's bed was in the living room. However the family did not live there long. It was ten miles from school, and to shorten this commute Ruth's father bought part of a horse ranch. His plot started out small, about a half section. Yet he accumulated more and more land as the horse ranch was phased out. This horse ranch had been established by a man from England before barbed wire. At that time the horses had free range and ran all the way to Terry. As the story goes he once ran 2000 broodmare, it was always a big event when he would roundup and brand the foals.

Although Ruth's grandparents never did, almost everyone else in the family eventually moved into town. Ruth and her husband made the move eight or nine years ago. At first Ruth had no interest. She loved the ranch and had been there since she was little. Finally, after three years of suggesting the move her husband said "I can't stand being here where I can't do anything". Ruth promptly decided the time had come and they packed their bags. It was not an unhappy decision because she knew it would be best for him. They built a home in Miles City and spent six more years together. Although Ruth was not optimistic about how well she would like the new house, she found herself quite happy.

Knowing a bit about the thesis presented in this book she concluded that nice apartments can make happy homes.

Ruth is proud of her heritage and in the face of any rough time she asserts that tough times make tough people.

CHAPTER 6

INTERVIEW - VIRGINIA COFFEE

Miles City being a cow town, it was essential to interview some ranchers. C.M. and Virginia Coffee proved to be a wonderfully hospitable example of a lifelong ranching couple who moved into Miles City as they reached their golden years. The afternoon of the interview, C.M. had just returned from heart surgery and was rightfully unprepared to talk much. However, Virginia was more than happy to chat and despite insisting she had no good stories she painted a picture of absolute romance to an interviewer who has ridden more busses and subways than horses.

Virginia is 71 years old and has been in the area since she was five. C.M. is 88 and has been in the area since he was 32 years old. He has been a cowboy his entire life. He grew up on a small place in Texas where his father was dragged to death on a horse when C.M. was about five years old. He was the oldest of three boys and thus responsible for helping his mother. Later in his life, he came up to Montana with some others from Dallas. When everyone else returned south C.M. opted to stay, and he bought a ranch. He liked Montana and had no desire to return to Texas. The Coffees now own several ranches in the area, their son and daughter helping to run them.

In the past, this area of Montana has received a lot of snow. During these times of heavy snow the Coffees would feed their cattle with horse and mule teams. Hay would be

loaded onto a sled, sleigh, or hay wagon and brought to the hungry herd. C.M. always enjoyed working with teams and has done a lot of wagon trains throughout the years. Hooking up a team of animals is a completely lost art, and the process is quite involved. Virginia recons that C.M. and their children are some of few remaining who know how to do it.

Feeding cattle during the winter is commonplace for as stated so many times before, this area is a harsh country. It can get both very cold and quite hot. It experiences temperatures more extreme than Billings. Areas north of the Yellowstone River are known as being particularly cruel, storms can pop up when folks have no idea they are coming. Virginia regaled me with a well-suited illustration. Before their move to town they were getting ready to shear sheep. It was a lovely June day but the sky looked funny. The Coffees had a gigantic shed for the sheep in case of a storm, yet C.M. was still uncomfortable. They had some people from Livingston up to help shear the sheep but C.M. stated “let’s just wait, I don’t know why but I think I’d like to wait till tomorrow.” With vivid detail Virginia recalls the path of the devastating storm as it swept down from Lewistown. Cold wet snow cut off power for several days. Some friends of the Coffees did not have the insight or luck of C.M. and their freshly sheared sheep died in the cold. They lost 5000 sheep.

But there are plenty of festive times as well. Traditionally, branding is a celebration despite the circumstance revolving around preventing cattle rustling. When the calves are

about three months old they are branded to identify their owner if they are ever put out to open range and prevent them from being stolen. It is a fun time with a lot of food. Neighbors will get together and help brand, rotating from one neighbor to the next. Yet anymore the Coffees just do their own, bringing up crews from their other places and alternating from herd to herd. Some neighbors will show up, but perhaps more to make sure none of their own calves have mixed in. Interestingly, the tradition of cattle rustling continues and is actually on the rise. Virginia said it is as easy as driving onto a ranch at night, loading up, and driving back off. In the vast open country of Eastern Montana it happens more than people realize. Branding is still very necessary.

The Coffees are traditional in the sense that they still use horses for most everything, not succumbing to the trend of four wheelers. They own four wheelers and will use them to check fences and wells, when they need to haul materials and tools. Nevertheless livestock work is all done on horses. Virginia explained how dangerous four wheelers can be when gathering cattle. As the cowboy is busy looking at a cow or herd of cattle he is not watching the ground, but a horse will be. A four wheeler can easily hit a hole and flip while attention is distracted. C.M. used to ride several horses each day, now he has just one. When they used to live up at Ingomar C.M. would ride one horse across the ranch and another back so as not to tire them out.

The Coffees own a lot of horses, they never get rid of one. Virginia hates to see horses confined and believes they should always be run out. They have become a fad and

nowadays it seems everyone has a horse, despite how much they eat and how expensive they are. Yet once a horse enters the Coffee's ranch, it will be there forever. Their philosophy is that a horse that works for them, retires with them. As the horses age they will loose teeth and the Coffees will feed them special feed. On one of their ranches near Forsyth they recently had a horse put down that C.M. figured to be over 40 years old. Virginia jokes that they have old horses everywhere.

Akin to their kindness towards horses their dog is a friendly pound pup, Coco. Virginia does not agree with buying dogs when there are so many suitable candidates at the pound. In this particular case somebody had left a litter of pups on the side of a country road. Yet despite being a mutt, Coco has proven to be an expensive dog. Virginia inadvertently attempted poisoning Coco with flower poison. Coco was run over by a car, and has very thin back legs. After one fragile back leg had broken, hobbling on the second lead to a break in that knee. Thanks to a veterinary trip to Billings Coco now has artificial knees.

Similarly the Coffees keep their cattle a long time. They will buy bulls, but not cattle. The ranches are the cattle's home and the animals know where on the land they are supposed to be, especially in the fall when it gets cold. Much like humans they enjoy being fed and merely standing around eating. The Coffee family would often trail cattle, staying overnight, sleeping out, and eating from a chuck wagon. The practice of trailing cattle entails following behind the animals pushing them towards a destination. For

instance the Coffees would lease some land they called “hole in the rock” and with permission they would trail cattle through their neighbors land.

Owning and working in such vast territory there is a lot of wild game. However C.M. does not hunt and Virginia makes it known that she is not big on hunters. She would rather see the animals running around. They have had a lot of bad experiences with people shooting a bunch of animals just to cut off the horns. Virginia despises when hunters do not have the gumption to at least donate the meat to the food bank or fish and game. Yet a lot of people do hunt for the meat and although she admits that some people can cook wild game nicely, Virginia can not and obviously has not had the opportunity to practice.

Appropriately when it comes to meat Virginia is huge beef fan. Although she and C.M. eat everything her favorite meat in the world is hamburger, it is so versatile. Of course they often eat their own beef, but not as much as they used to. The processing fee is quite expensive and when she is not living on the ranch cooking for ranch hands there is a lot of waste. One time the Coffee’s neighbors had inadvertently put a few of the Coffee’s cattle into their feed lot. The neighbors returned the animals insisting the Coffees slaughter them for personal use as they had been fed so beautifully and were some of the most beautiful beef people had seen.

When Virginia had married C.M. she had told him that she was not going to be a ranch cook. Two weeks later, she was a ranch cook and continues to do a lot of cooking for ranch hands. Sometimes nine, fifteen, or twenty. In fact the week before the interview they had been shipping cattle and she had been cooking for between 15 and 18 people. She finds it awful and it is a pain sending the food out to the men in field. Hence she states that her favorite thing in life is eating out.

Although restaurants and entertainment amenities are not in overabundance, Virginia is happy with what Miles City has to offer as there are several good places to eat or have a drink. In the past the 600 Cafe downtown was the place where all the country people would end up. When they came into town the men would typically run errands at the fertilizer store, feed store, and sales yard while the women did their own shopping. They would meet up at the Hole in The Wall Diner or the 600 Cafe for lunch. She joked that although men always whine about woman's gossip, both C.M. and her dad would sit for hours with the other cowboys and ranchers exchanging stories. It was nothing fancy but both of these downtown businesses were a traditional meeting place for people from the small surrounding communities. Virginia believes she knows more people from out of town than she does in town. Yet she agrees that downtown elderly apartments for those moving to the city could be quite fun, being close to all the action and spying on the bar traffic. She anticipates that those who move in from a ranch would want a few flowers but not having to deal with a lawn, sprinkler, and big yard would be great. Personally Virginia would love to see a building reminiscent of the historic downtown architecture,

perhaps with a bit of western flair. Yet she is humble in her requests and most importantly just wants the area rebuilt, nothing fancy, at least a nice facade.

Among a few retail suggestions she thinks it would be nice to have a place to run and pick up a small last minute birthday gift like a bottle of perfume or earrings. She mentions that the Ben Franklin downtown got into selling paper towels, toilet paper, and light bulbs for a similar reason. A quick central place to shop when you only need a few things or do not own a car.

Miles City is a great community and she believes that almost everyone who lives in the town would agree. It is especially good for both the elderly and raising children. Reflecting on choosing ranching as a lifestyle Virginia says it was a good choice. She had always planned on going to the city and getting a job but has no regrets and she would do it all again. Ranching is a way of life, there is no money to be made but people love it. Interestingly she feels her generation has become generic, the area is loosing the interesting people and interesting stories of the past. The older generation had to struggle, and Virginia feels that she is at the beginning of a spoiled age. This is particularly provocative food for thought considering the convenience of the current generation.

CHAPTER 7

CRITICAL REGIONALISM AS RESPONSE TO GLOBALIZATION

Encompassed by great expanses of rolling landscape the natives of Miles City have livelihoods much different than those living in the predominantly urban landscape of modern society. Their stories of storms, cattle rustling, and drought are romantic illustrations of a people still very connected to the natural world. Never the less even Miles City experiences the effect of globalization, a trend that often buffs out specific regional cultural values. In the case of consumer goods a broad pallette of materials and industry from around the world induce a state of regional homogeny. Before improvements in travel and communication shrank the world, each civilization had unique perspectives and vastly different regional character. For example, in his book *The Forest People* Colin Turnbull relates a story about the Pygmy Kenge. The Pygmy are a jungle people, used to the tightly confined spaces of their jungle home. Upon taking Kenge to open grassland he inquired of buffalo far in the distance, “What insects are these?”

> *When I told Kenge that the insect were buffalo, he roared with laughter and told me not to tell such stupid lies. When Henri, who was thoroughly puzzled, told him the same thing, and explained that visitors to the park had to have a guide with them at all times because there were so many dangerous animals, Kenge still did not believe but strained his eyes to see more clearly and asked what kind of buffalo they were*

> *that they were so small. I told him they were sometimes nearly twice the size of forest buffalo, and he shrugged his shoulders and said he would not be standing out there in the open if they were. I tried telling him they were possibly as far away from Epulu to the village of Kopu, beyond Eboyo. He began scraping the mud off his arms and legs, no longer interested in such fantasies.*[1]

Although this example is a misunderstanding of perspective, laughable to most Westerners, it shows a unique difference in regional perception. There are undoubtedly many characteristics of the jungle that the pygmy's recognized and Mr. Turnbull would not. Most of the planet now holds a fairly universal view of the world based on empirical science. There has been a loss of cultures, religions, and unique perspectives. Although the empirical view is arguably most correct, it has paired with communication and manufacturing technology to eliminate many regionally distinctive characteristics. This is not an argument that any culture should be left with an elementary misunderstanding of perspective, Turnbulls's example is used for its humorous ability to portray a huge cultural gap. However, there still remain slight differences in thoughts and perceptions of space according to the natural landscape, social history, and local industry. Architecture needs to straddle the boundary of embracing knowledge and materials developed in a globalized world, but provide buildings that satisfy the need of the end user, responsive to local values.

This thesis suggests that the success of designing a building in downtown Miles City can be gauged by the building's sensitivity to the history and local culture of the area. In a slight departure from architecture, let us first take precedent in another profession of artistic pursuit, the musical works of George Winston. George Winston is an undisputable patriarch of Eastern Montana music. His self described genre of "rural folk piano" captures the rhythm of the rolling plains. Having strong influence from the times he has lived in Montana, his music provides a beauty that is nearly tear jerking, acutely perceptive of the places and phenomena he describes. May this be the goal of this project, to grasp a similar poetic translation of regional specificity.

In the following exploration narratives are explored as the key means of identifying regional specificity. The architect is left to poetically translate these ideas into a building, much as George Winston translates his own sense of locality into the harmonics of piano music. By nature, translating thoughts and ideas into emotionally provocative space is the essential role of an architect. Thus there should be a clear continuity between the sensibilities gleaned from the narratives and the primary goal of the building, providing for the residents. Additionally, being a central downtown fixture the building has a social responsibility to architecturally satisfy the community.

Thus it is cautiously suggested that the narratives in this thesis be translated into architecture via a tailored version of critical regionalism. Using the term critical regionalism is a precarious statement that brings with it the baggage of past

interpretations by other architects. Let us use the general definition as summarized by Kate Nesbitt, “a critical reevaluation of local culture, employing modernist strategies”[2]. Critical regionalism asks the question, “How can one be regionalist in a world that is increasingly becoming one global economically and technologically interdependent whole, where universal mobility is taking architects and users of architecture across borders and through continents at an unprecedented speed?”[3] In answering this question “the poetics of critical regionalism does not include a set of design rules...rather...its general poetics become specific drawing from the regional, circumscribed constraints which have produced places and collective representations in given bound areas”[4].

Although the preceding narratives offer a small sample size there is justification in knowing a few intimately rather than providing pages of generalizations. It is assumed that although everyone has individual preferences, a series of narratives will begin to identify values that are relatively universal to certain regional demographics. These values may encompass anything from material objects, to social groups, or certain character values. Once distilled the designer will exercise freedom in which ideals they chooses to investigate via a critical evaluation of the regional constraints that define the locality.

Using narratives as the vehicle of exploration holds another advantage. In collecting and transcribing these stories there is an innate sense of understanding. Comments, gestures, and seemingly unimportant experiences passed over as insignificant are remembered in

the subconscious and play an important role in forming an inherent understanding. In turn, this innate understanding informs architectural decisions and helps in identifying important values. For example there was a pride in Elizabeth Ronning's voice when she referred to her new ice maker; the remark was more than a passing comment. Coupled with the Ronning's prolonged discussion on rain, wells, and irrigation it is blatant, if not anticipated, that this farming couple has an acute appreciation for controlling water. A value born from the life and region they've lived in.

The narratives may now be described in their truest sense, an attempt to provide an outside designer with local sensibilities. Sensibilities defined as the ideas, values, and perceptions that person holds as important. Combined with the pragmatic understanding of climate, site data, and history a designer should be able to conceive of a building that answers to the end user's needs and reinterprets local sensibilities into a regionalism that is honest to its modern roots.

1 Turnbull, Colin M. The forest people. New York, NY: Simon and Schuster, 1961. (page 228)
2 Nesbitt, Kate. Theorizing A New Agenda For Architecture. New York: Princeton Architectural Press, 1996. (page 483)
3 Tzonis, Alexander and Lefaivre, Liane, Editor: Nesbitt, Kate. Theorizing A New Agenda For Architecture. New York: Princeton Architectural Press, 1996. (page 484)
4 Tzonis, Alexander and Lefaivre, Liane, Editor: Nesbitt, Kate. (page 490)

CHAPTER 8

SENSIBILITIES

Beyond designing with a nuanced personal understanding of local culture, there are numerous sensibilities this thesis has identified as important to explore. In applying critical regionalism these local values will be translated into architecture that addresses the meaning of the sensibility while remaining sincere to contemporary methodology and building practice. The first sensibility is **commitment**.

Historically, homesteaders in the Miles City area had to be completely devoted to their lifestyle and the local community in order to survive. Survival was physically and mentally taxing, even those who gave it their all often failed. From the narratives it is obvious that the necessity of commitment was passed down to the following generations. It is well illustrated that the Ronning's put in terribly long hours tending their crops. The Coffee's are clearly exceptionally devoted to their animals, this commitment exemplified by their care for old horses and pound pups. Ruth Brown's husband had such a strong commitment to his ranching lifestyle that as age prevented him from working, he could no longer stand to live on the ranch. Bob Barthelmess has had his own share of challenges tending to the museum without ever accepting grant or tax money, a commitment to an ideal; the ideal that the Range Rider Museum can operate free of the regulations and rules associated with grant and tax money.

There are many ways architecture can begin to illustrate and functionally express commitment. Materials suggest the longevity of a building and hence inform the community of how long the building intends to remain serviceable. Trailer parks, quonset huts, and modular housing are blatant examples of structures that illustrate impermanence. Their construction and materials indicate they are uncommitted to a particular place or community. They are often erected for temporary use. Even modern glass skyscrapers hint at a certain degree of transience. Glass is placeless and fragile material, it often feels like the sexy sleek glass of an office building could easily be destroyed or its modular panels moved to another city. Stone, concrete, brick, and other similar materials are permanent, heavy, and unmovable. The building design in this thesis will explore noble materials that can last generations, age gracefully, and exhibit a sense of permanence, a commitment to the community.

Designing apartments that are able to conform or reconfigure as their tenants age also demonstrates commitment, the apartment's commitment to housing the tenant even when ageing forces lifestyle changes. It is logically hypothesized that elderly residents of an apartment would appreciate and entertain more pride if they knew their apartment was designed to allow them to age in place. Similar ideas are illustrated in the Four Season's case study. The retirement homes in this case study provides assisted living services if and when needed. Hence the homes associated with Four Seasons are committed to allowing residence to age in place without forcing the resident to relocate.

Another sensibility worthy of exploration is **honesty**. Bob Barthelmess adamantly expressed his disappointment in modern society's lack of moral character. One of his worries was a lack of honesty. "Your word has been hurt by the misuse of it down through the years…it's pitiful."

Honesty in architecture has been heatedly advocated since its appearance as The Lamp of Truth in Ruskin's famous *Seven Lamps of Architecture*[1]. This thesis will not only honestly portray materials and structure it will strive to present an honest interpretation of the primary goal, elderly housing. In Michael Benedikt's book *For an Architecture of Reality* he is disappointed at architecture becoming symbolical representation of abstracted ideas.

> *Behind all this lies the fact that buildings designed on the notion that architecture is a medium of communication cannot hope to create satisfying, if any, direct aesthetic experiences of their own reality. This, because the very nature of the direct aesthetic experience is such as to "see through" allusions and symbolism to what is actually there. And what is there is too often not a reality with integrity of its own, but one at the service of the reality –of-referents the architect would have us see*[2]

Pairing the idea of architectural honesty with the character of self reliance exhibited by those like Warren Ronning may provide an interesting opportunity. Warren was a handy man interested in the mechanics behind an object and well capable of doing his own

maintenance. The character values of self reliant maintenance and mechanical tendencies are indispensible to farmers and ranchers. This thesis will explore how an honest portrayal of building mechanics and structure could produce provocative space that is easily maintained. For example, can elegant exposure of piping such as copper drain lines provide honesty akin to Pompidou Center yet simultaneously entertain easy maintenance?

A further sensibility that cannot be overlooked when examining the lives of the farmers and ranchers living in the arid climate of the badlands is **man's control of water**. Every narrative presented man's control of water as having huge implications in the life story of that person and was often discussed at great length. Controlling water in this area is absolutely key to survival. This thesis will explore man's control of water as being universally significant to all Miles City residents. Water will be translated into a place of congregation as it is unanimously accepted as the inherently important lifeblood of the community. Miles City's very location is based on the confluence of two rivers within an often parched topography.

The people in this parched land are hard workers. Typical of farmers and ranchers the local citizens are accustomed to a very active life. When age changes this course, it is not always an easy circumstance to deal with. As Warren Ronning expressed: "When you've lived your whole life getting up in the morning and doing something all day long, it's pretty hard just to sit down. That's probably the hardest thing to do there is, to sit and do nothing." Bob Barthelmess expressed a similar idea that many farmers and ranchers who

move into town become patrons of rest homes or get sick and die long before they should because they can not adjust to the new inactive lifestyle. As already referenced Ruth Brown's husband announced in his older age that "I can't stand being here where I can't do anything".

Clearly **remaining active** is an issue admirable of exploration. Architecture can not change people's habits but it can provide opportunity and suggest activity. This thesis will investigate opportunity for encouraging an active lifestyle. It is deeply important that architecture not dictate the particular activities to take place but provide some degree of universal space that can be used in many different ways. For instance, instead of providing a room specifically catering to quilt making, space will be manipulable so it can be used for either quilting or fly tying. The space will be finished, lit, and situated in a way that encourages its use. Also, balconies and/or exterior courtyards will encourage residence to actively interact in controlled exterior spaces.

The preceding sensibilities were gleaned from the narratives as architectural opportunities worthy of exploration. This thesis will attempt to provide a cohesive building based on this knowledge.

1 Ruskin, John. The Seven Lamps of Architecture: Sixth English Edition. New York & Boston: Thomas Y. Crowell & Company. 1880.

2 Benedikt, Michael. For an Architecture of Reality. New York, NY: Lumen Books, 1987.

CHAPTER 9

ELDERLY CARE

Granted the apartments in this project are for elderly, there are many cues to learn from studying assisted living. However, the ambulant independent and semi-independent elderly living in these apartments are by nature more self-reliant than most of those in assisted living. Modern publications looking to reform assisted living often provide architects with a checklist of issues they value as important to a successful design. Although these issues provide important insight, they are often case specific depending on the particular programmatic circumstances of the building. Generally speaking, most of these points can be boiled down to a short list of key ideas. By concisely stating a short list of important considerations, the designer can focus on making sure every decision reinforces these issues rather than flounder in a sea of semi-pertinent information. This thesis will express pertinent concerns as six key guidelines.

Encourage independence

It is important for elderly to remain as independent as possible. When residents become dependent on others they loose self-confidence and their ability to care for themselves deteriorates. Observation has shown that in assisted living the elderly are sometimes treated in mass, not accounting for individual levels of independence. It is more difficult to address each resident individually, but it does promote independence. There are

valuable lessons to learn from Victor Regnier, author of numerous books and articles he is "the only person to have achieved fellowship status in both the American Institute of Architects and the Gerontological Society of America"[1]. For those unfamiliar, gerontology is the study of the social, psychological, and genetic aspects of aging. Regnier cites the northern European attitude towards care giving often described as "keeping your hands in your pockets" or "keeping your hands behind your back"[2]. This attitude of observing each resident's behavior from day to day and judging when they need help is more difficult than the provider just performing the task. Yet this is important in allowing residents to remain competently self-reliant.

Given that this project's scope does not encompass the actual care giving of elderly, the idea of encouraging independence will be applied in a slightly different manner. None the less, there are still many opportunities for the design of senior apartments to foster self reliance. One example could be specifying wall detailing such as a continuous plywood nailer along all walls that allows for the future addition of grab bars wherever they may be needed. This would allow the residents to age in place, independently modifying the environment rather than becoming dependent on help from others. Providing accessible entries, turning radii, counter tops, and cabinets could also help in allowing independence if and when residents require a wheelchair.

Address privacy

Privacy has become an important topic of assisted living and nursing home design. In such institutions it is easier for the care givers if the environment is mostly public and exposed. They can keep a watchful eye on everyone. However, this is not necessarily the best option for the residents. Having privacy helps to encourage independence and allows the residents to be treated as respectable individuals, to escape from being under constant monitoring. In living designs with double occupancy rooms, privacy becomes severely limited.

Again, the scope of this project encompasses a different situation where residents will necessarily have privacy granted they rent their own apartments. However, the issue of providing varying degrees of privacy is still important. For instance, it has been suggested that elderly are allowed a chance at *previewing* a group situation before they commit to becoming involved. This could become an important aspect when designing the public space adjoining the five apartments. To allow residents to see who is out there and what is going on before they commit to being involved. Additionally, it would seem appropriate to integrate previewing opportunities into the ground floor public area of the building. Integrating the function of this space with the senior apartments above provides interesting opportunities for social interaction. Also, much like college dormitories where residents will leave their doors open when they wish to socialize, the threshold space between the apartments and public space must provide for change throughout the day addressing the residents' willingness to socialize with others.

Foster family participation

In a survey by NIC *(The National Investment Center for the Seniors Housing Care Industry*) it was determined that moving into an assisted living housing arrangement often lead to a better relationship between the elderly and their family. It is hypothesized that perhaps family members are more comfortable and at ease knowing their elderly relatives are taken care of. By numbers, 69% experienced the same family relationship while 21.6% better and only 2.9% worse[3]. For those with family, having a good family relationship is often extremely important. It is the general consensus that family involvement as a person ages can be the most important effort of support. Of course architecture can not define these social interactions, but it can play its part.

For instance, in many traditional nursing home settings there is an aura of institutional sterility and limited space. The institutional setting discourages the warmth of loitering in light conversation. Limited space forces the family to check residents out of the facility if they wish to socialize. There is no 'quickly stopping in for coffee on the way home from work'.

There is sincere hope that given the apartment sizes and location this will encourage family participation in the residents life. A downtown site should provide a convenient location. The architecture, in both public and private spaces, will need to provide a relaxing atmosphere that encourages socialization. The placement of the elevator,

entrance, vestibule, and parking should provide family and friends with easy access to the apartments and easy pick-up and drop-off of residents. In these ways architecture can begin to encourage important social interactions.

Allow interaction and observation with the surrounding community

Aging leads to loss in physical and mental stamina. Being active and involved becomes more and more difficult as the elderly age. As residents become less ambulatory it is imperative that they can still observe the active lives of others. Granted the apartment's site is located in the heart of downtown Miles City and as such exterior windows will, if nothing else, allow a vicarious experience of the hustle and bustle of the city. Architecturally, balconies or terraces could be incorporated to further accentuate the experience of interaction and observation. Yet this busy experience will disappear at closing of a door or the turn of a blind. Never the less a short trip down the elevator or flight of stairs will drop residents off on the main street of the biggest city in Eastern Montana (granted, main streets of Eastern Montana are rarely 'too busy')

Victor Regnier refers to what is called a 100 Percent Corner[4]. This is an area that provides seating and socializing possibilities with many active view corridors. It is often near a main circulation path and has good views of both exterior and interior activity. By design or circumstance this area can become an important socializing area at the heart of

the building's activity. Amongst other issues Regnier recommends providing comfortable seating, tables, and entertainment such as cards, table games, or puzzles at this location.

Promote physical and intellectual stimulation

It is important for architecture to provide for physical and intellectual stimulation. As a person ages the natural dystrophy of muscle mass often accompanies a loss in cognitive ability. Couple this with the 'use it or loose it' dictum and there is a harsh reality. In very simple ways architecture can suggest physical and intellectual fitness. For instance, having a grand staircase and easily accessible yet understated elevator off to the side can encourage elderly to use the stairs. Having large landings with seats for resting will also encourage stair use. Amazingly, the layout and presentation of the building begins to affect the residents' health.

Intellectual stimulation relates to topics already discussed. Allowing independence will promote self-awareness and intellectually the residents must solve problems on their own. Providing busy view corridors and places to play cards, table games, and solve puzzles also promote metal engagement. The choices about the activities elderly participate in are the most important factor to their intellectual stimulation. These choices are not architectural. However, if spaces in the building do not provide opportunity for these activities they are unlikely to happen.

Provide basic way-finding

Cognitively debilitating diseases like Alzheimer's are a terrible reality. It is important for architects designing for elderly to address the subject of dementia. Dementia is not a disease itself, but generally describes the confusion and memory loss associated with aging diseases such as Alzheimer. In severe states, dementia can lead to trouble in very basic tasks such as using zippers or finding the bathroom.[5] In these progressed states it is assumed that person will need to be under full time supervision. Even such basic things as electrical outlets begin to pose hazard as dementia patients may fondle them in misunderstanding and end up getting shocked.

However, even seniors living independently or seniors who hire part time domestic help may show the beginning signs of dementia. Particularly when one person in a married couple begins to experience dementia the assistance provide by the other can allow for continued independent living. Thus it becomes important for the architect to address basic way-finding. Way-finding is the process of using cues to help those effected by dementia navigate their environment. In large institutions this can pose an important issue as dozens if not hundreds of rooms look very similar and prove to be frustrating navigational challenges to residents. Clustering units and giving visual cues such as photographs, shadowboxes of memorabilia, and painted doors can help residents find their particular room. In the small scale setting of apartments in this project navigational challenges should be minimal. None the less, family photos and/or different door colors

for each apartment begin to provide character and personalization of the apartment's threshold. As these also address basic way-finding issues, they have been incorporated into the design.

1 "Victor Regnier, FAIA ACSA Distinguished Professor" University of Southern California School of Architecture Los Angeles. 2007. USC School of Architecture and The University of Southern California. November 12, 2009 <http://arch.usc.edu/People/Faculty/FacultyDirectory/viewPerson.html;jsessioni=3908E51285F12A9B62A0CA19EE9A3E91?id=123>

2 Regnier, Victor. Design for Assisted Living: Guidelines for Housing the Physically and Mentally Frail. New York: John Wiley & Sons, 2002. (page 98)

3 Regnier, pg 18-19

4 Regnier, pg 77

5 Calkins, Margaret. Designing for Dementia: Planning Environments for the Elderly and the Confused. Owings Mills, Maryland: National Health Publishing, 1988.

CHAPTER 10

CASE STUDY 1 - TOLO HOUSE[1]

Architect:

Alvaro Leite Siza

Location:

Portugal

Program:

Three bedroom holiday home

Less than 2000 square feet

Cited as example of critical regionalism as it provides a modern interpretation of both site and re-interprets traditional regional architecture:

- Fragmented geometry conforms to steep topography of the site
- Paved roofs mimic the threshing floors of hilly northern Portugal
- Attempt to preserve all trees on the site
- Concrete is an interpretation of naturally appearing boulders
- Optimized for views and solar exposure

1 Saieh, Nico. "Tolo House / Alvaro Leite Siza." 15 May 2008. archdaily.com 13 November 2009. <http://www.archdaily.com/893/tolo-house-alvaro-leite-siza/>

CHAPTER 11

CASE STUDY 2 - FOUR SEASONS HOME[1.2]

Architect:

The Architects Collaborative Inc.

Norman C. Fletcher, principle in charge

Location:

Columbus, Indiana

Program:

160 Residence

100 Bed health center

- A retirement community that can offer assisted living services if and when these services may be needed. These services will be available without residence having to move or relocate.
- Close to shopping, groceries, physicians, and other services
- Municipal hospital only one mile away
- Very residential in character
- The complex is centered around a chapel

- Associated health center is located on the grounds
- Poetically this precedent is of limited importance

1 Weiss, Joseph Douglas. Better Buildings for the Aged, New York, NY: Hopkinson and Blake, 1969.

2 "Four Seasons Retirement Center". Four Seasons Retirement Center. 2009. TLS. 26 November 2009. <http://www.fourseasonsretirement.com/index.php>

CHAPTER 12

CASE STUDY 3 - MAGNEY HOUSE

Architect:

Glenn Murcutt

Location:

Bingie Point, Australia

Program:

"The client had previously camped on the site and was interested in maintaining that experience. This was accomplished through the design of a roof that has a quality of lightness analogous to that of a canvas tent, as well as through the approach taken to light, water and air."[1]

The following prose inspired by the work of Haig Beck and Jackie Cooper:

Glenn Murcutt's work is often referred to as incorporating methodologies of cultural regionalism, Murcutt being a leader in defining modern 'Australian' architecture. Particularly Murcutt's use of steel and corrugated iron, a reference to the vernacular tin buildings distinctively associated with the outback. It is thus fascinating to learn that

Murcutt has no interest in defining national identity through architecture. His use of materials is born out of pragmatic economy of materials available and the fact few carpenters could ensure the precision he desires.[2]

Verandas are a classic Australian architectural feature. They offer and intermediate threshold between the interior of the house and the elements outside, "quintessentially 'Australian': experiences which encompass both the relaxed lifestyle and the warm climate".[3] None of Murcatt's work have verandas. However, the entire house expresses ideas of a veranda; openness to the exterior, passive climatic control, and a perfect spot to escape from the sun and enjoy a Fosters.

Magney House[4]

- Capitalizes on natural sunlight
- Roof overhangs accounts for the seasonal change in sun altitude
- Brick and concrete used as thermal mass
- Operable metal blinds
- Designed for cross ventilation
- Rainwater collection for drinking and heating
- Rainwater collection is visually highlighted and the roof and catchment materials offers an interesting auditory experience

1 "nature in buildings | magney house" MIT Architecture. 20 December 2006. architecture.mit.edu. 07 January 2010. <http://architecture.mit.edu/class/nature/student_projects/2006/meelena/urban-nature/template-mainframe-magney-house.html>

2 Beck, Haig and Cooper, Jackie. Glenn Murcutt: A singular architectural practice. Mulgrave, Victoria, Australia: The Images Publishing Group Pty Ltd. 2006. Accessed 7 January 2010 via: <http://books.google.com/> (page 9)

3 Beck, Haig and Cooper, Jackie. Glenn Murcutt: A singular architectural practice. Mulgrave, Victoria, Australia: The Images Publishing Group Pty Ltd. 2006. Accessed 7 January 2010 via: <http://books.google.com/> (page 9)

4 "nature in buildings | magney house" MIT Architecture. 20 December 2006. architecture.mit.edu. 07 January 2010. <http://architecture.mit.edu/class/nature/student_projects/2006/meelena/urban-nature/template-mainframe-magney-house.html>

CHAPTER 13

CASE STUDY 4 - GREGORY FARMHOUSE

Architect:

William Wurster

Location:

Scotts Valley outside of Santa Cruz, California

Program:

Weekend house for Warren and Sadie Gregory

"I like to work on direct, honest solutions, avoiding exotic materials, using indigenous things so that there is no affectation and the best is obtained for the money" - William Wurster[2]

- Wurster was interested in the study of vernacular architecture and the role of site and climate
- Original uncompleted architectural drawings for the house were more formal and complex than the clients' wanted, so they were redone by Wurster[3]
- Finished house very informal
- Construction type was of that common to the area

- Existing rammed earth structure was used as a point of departure
- A courtyard was cut from the sloping site
- Everything designed to a single room width to allow daylight, views, and ventilation
- Building immediately received a lot of press
- Fame helped launch Wurster's career in residential design
- Wurster helped define the regional style of architecture in the Bay Region of Northern California

1 Treib, Marc. An Everyday Modernism: The House of William Wurster. Berkeley and Los Angeles, California: University of California Press, 1999. Accessed 7 January 2010 via: <http://books.google.com/>

2 Treib (page 21)

3 Treib (page 19)

CHAPTER 14

CASE STUDY 5 - THE INDIAN STEPWELL

- Western India is an arid climate, but experiences three months of monsoon
- Monsoon rain percolates through soil until it hits clay, creating underground aquifers
- Groundwater became an important water source for the local communities
- Stepwells were built to get at this groundwater
- Their construction began around the sixth or seventh century AD[1]
- Eventually thousands were built
- Essentially the stepwell is a huge pool of groundwater that fluctuates according to monsoons and the changing size of the aquifer
- Sometimes water is nearly at ground level, at other times you may have to descend up to nine stories[2]
- Excavated and built by hand
- Masonry dry fit to allow water to seep through joinery
- Developed to become very important to the drinking and bathing of the community
- Became architecturally significant
- Mothering goddess Devi believed to live at every stepwell, thus shrines often accompany the water feature[3]
- Sadly lower castes were not allowed at the stepwells

- During the nineteenth century they began to fall out of favor as British rule rightfully feared drinking and bathing in the same water
- Parasite known as ‘guinea worm’ took refuge at the stepwells
- Currently, lower water tables and pollution has contaminated the water at most sites
- Many are still viewed as sacred, and others have become tourist attractions

In addressing Mile City’s sensibility about **man’s control of water** it is interesting to view how the cultures in arid climates of Western India viewed water. Obviously, Miles City and Western India present two very different social and physical landscapes. However, the stepwells present an interesting case study of how architecture can begin to transform the utilitarian necessity of gathering water into celebration and space that becomes sacred and ritualistic.

Modern engineering that can provide clean water of varying temperature at the turn of a knob is a spectacular feat. However, this feat is often taken for granted and has lost most of its romance and celebration. The people of Miles City are still attuned and far more aware of how important water can be. Thus the question is posed, could modern architecture accentuate the magnificent engineering that provides us clean water? Perhaps there are lessons to learn from the sacred spaces of the Indian Stepwells.

1 Livingston, Morna. Temples for water: the stepwells of western India were a magnificent architectural solution to the seasonality of the water supply. Natural History Magazine, Inc., 2003. Accessed 9 January 2010 via: <http://findarticles.com> (page 1)

2 Livingston (page 1)

3 Livingston (page 2)

CHAPTER 15

PROGRAM

Greenhouse - 350 sq ft

Common Activities Area - 350 sq ft

- Task lighting at tables
- Sturdy tables to accommodate variety of activities (puzzles, fly tying, quilting, ect.)
- Storage (for board games, puzzles, fly tying tools, ect)
- Bookshelves
- Television on wheels with optional use of wireless headphones

Common Lounge Area - 500 sq ft

- Task lighting at tables
- Sturdy tables to accommodate variety of activities (puzzles, fly tying, quilting, ect.)
- Storage (for board games, puzzles, fly tying tools, ect)
- Bookshelves
- Television on wheels with optional use of wireless headphones

Electrical/Telecommunications Closet - 40 sq ft

Mechanical Room - 200 sq ft

Senior Apartments - 3 x 1600 sq ft and 2 x 1400 sq ft

- Different entry door colors in order to assist way finding
- Personalized entry with photo and nameplate to assist way finding
- Lever type door handles throughout
- Floor lighting throughout

- High contrast glare-free flooring throughout
- Flush thresholds throughout
- 34”+ wide doors
- Closet bars at or adjustable to 48” max height and 21” max depth
- 42”+ wide hallways
- Light switch and thermostat height between 44”-48”
- Electrical outlets 15” above floor
- Max window sill height 30”
- Lever type faucets in kitchen and bath
- Knee spaces under sinks and stove
- Controls for stove on front side of range
- Kitchen to include both 34” and 25” high work surfaces up to 25” deep
- Pull out shelves in base cabinets
- Adjustable shelving height in wall cabinets
- 30” by 48” area of approach in front of all appliances
- Glare free task lighting
- Lavatory door swings outward
- Lavatory counter height at least 32” high
- Lavatory mirror to extend down to backsplash
- Controls for shower accessible from outside the fixture
- Roll in shower with seating
- Adjustable height shower head
- Grab bars at toilet and shower
- Bedrooms to accommodate three sided access to two twin size beds or one queen size bed
- Incorporate emergency call buttons

Elevator

- All controls located between 35” and 48” high
- 36” minimum door width
- 51” by 68” minimum cab interior

Storage Units - 5 x 150 sq ft

Entry Lobby - 400 sq ft

- Good exterior views from seated area
- Controlled entry at elevator and stairwell
- Adjacent to vehicular pick-up/drop-off location
- Seating that accommodates waiting for the elevator and waiting for vehicular pick-up

Ground Floor Retail Space - 3500 sq ft

- Detailed design of this area is excluded from the primary design intent of this thesis

CHAPTER 16

SPACE ADJACENCIES

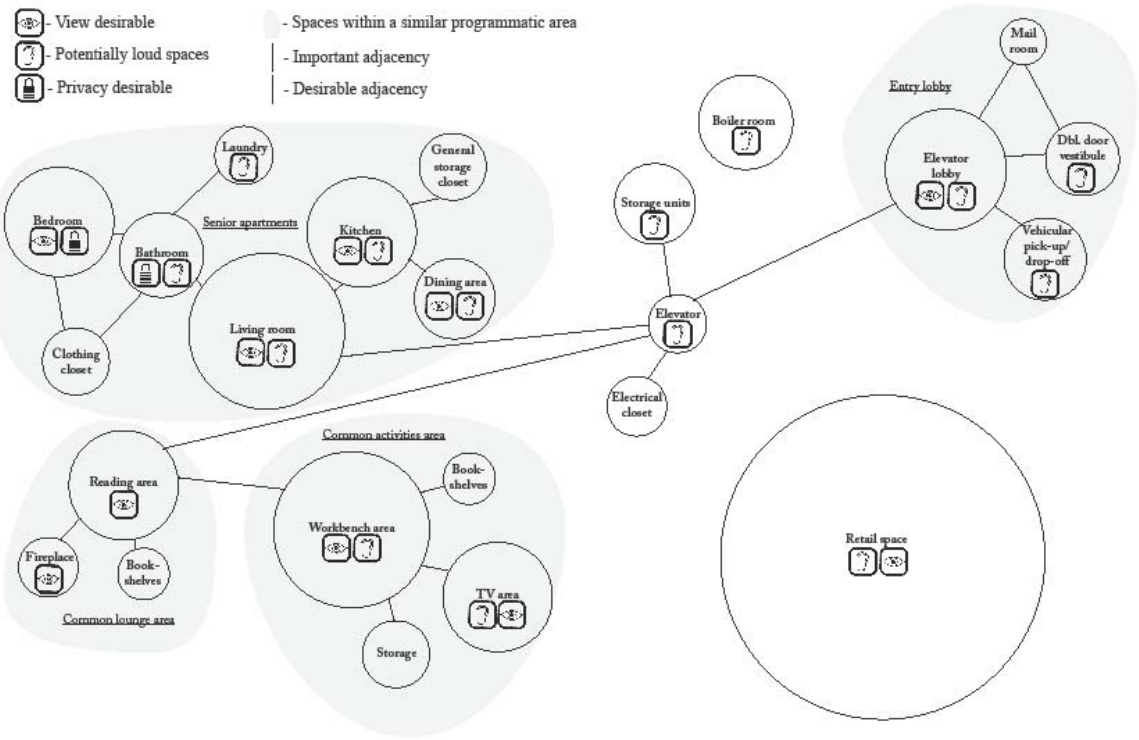


Figure 16-1. Space Adjacencies

CHAPTER 17

SITE ANALYSIS

State Population: 967,440 people

Land Area: 145,552 square miles

Topographically Montana is sharply divided by the mountainous terrain in the western half of the state and plains to the east. This division extends into many social differences, a much smaller population in the east just one example. With a population of 8,200 Miles City is the largest city in the eastern half of Montana and thus a center of commerce and social interaction. Along Interstate 94 Miles City is a two hour drive outside of Billings, the largest city in the state, population 90,000.

Miles City is located in Custer County. With a land area of 3,783 square miles and population of 11,100 Custer county has a very low population density.

Interstate 94 runs along the southern edge of Miles City. This highway Begins in Billings, MT (144 miles away) and ends in Port Huron, MI at the Canadian border. The traffic density along this four lane divided highway is steady but never congested.

Miles City offers numerous parks within city limits ranging from new to well established. The parks were admired fondly during the interviews and host everything from farmers markets and athletic activities to barbeques and weddings.

Located at the confluence of the Tongue and Yellowstone rivers this offers recreation in the form of boating, swimming, and fishing. In fact downtown Miles City has a seasonal swimming hole, the Natural Oasis, that pulls water directly from the Tongue river. In the past ice dams have been known cause trouble and flood the city.

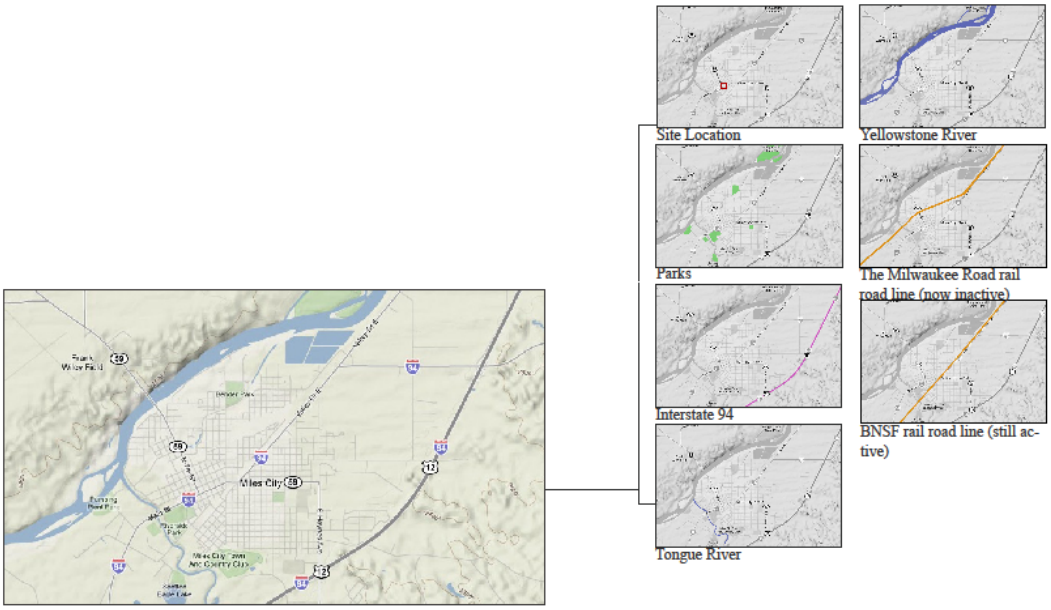


Figure 17-1. General mapping of Miles City

General statistics pertaining to Miles City[1] **(for** comparison, Bozeman's statistics are included in gray)

Median resident age: 38.9 years

25.4 years

Estimated median household income in 2007: $37,961 (it was $29,847 in 2000)

$43,102 (it was $32,156 in 2000)

Estimated per capita income in 2007: $21,109

$22,442

Estimated median house or condo value in 2007: $100,754 (it was $60,100 in 2000)

$294,186 (it was $134,200 in 2000)

Races in Miles City:

- White Non-Hispanic (95.7%) (93.8%)
- American Indian (2.0%) (1.9%)
- Hispanic (1.6%) (1.6%)
- Two or more races (1.0%) (1.5%)

2008 cost of living index in Miles City: 81.5 (low, U.S. average is 100)

101.7 (near average)

For population 25 years and over:

- High school or higher: 84.6% (94.3%)
- Bachelor's degree or higher: 19.8% (49.5%)
- Graduate or professional degree: 7.1% (15.6%)
- Unemployed: 5.4% (9.5%)

- Mean travel time to work: 10.2 minutes (13.9 minutes)

For population 15 years and over:

- Never married: 22.7% (44.9%)
- Now married: 53.1% (42.3%)
- Separated: 1.0% (0.9%)
- Widowed: 10.2% (3.9%)
- Divorced: 13.0% (8.0%)

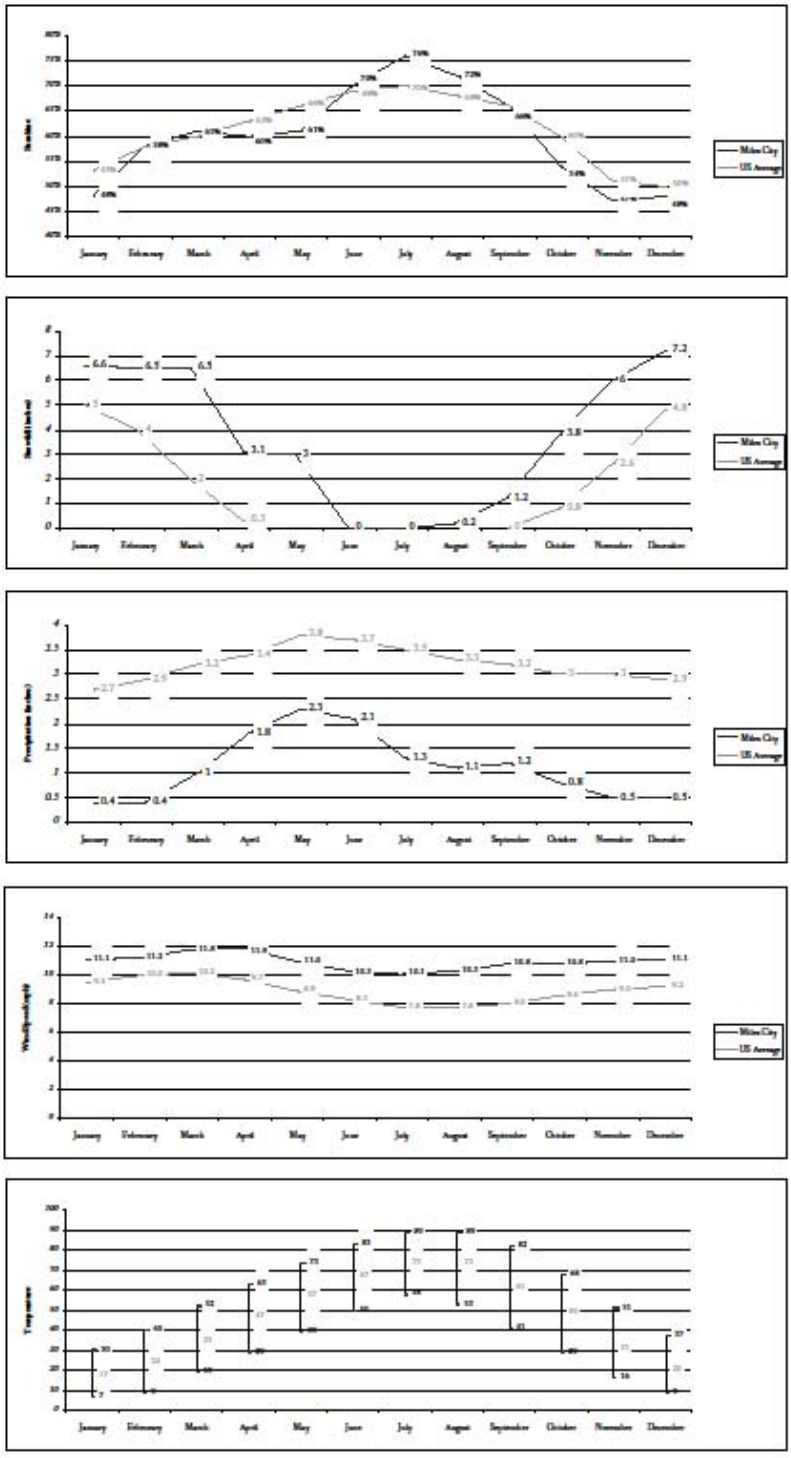


Figure 17-2. Miles City weather data

Known for its harsh climate Miles City has very hot summers and very cold winters. It experiences above average wind speeds and little precipitation. However, Miles City is acknowledged as being quite sunny.

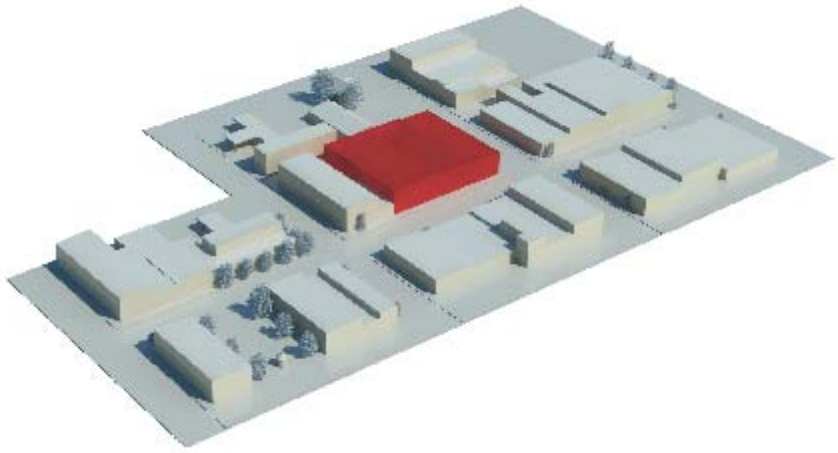


Figure 17-3. Buildings lost in fire

Statistics about the fire damage:[2]

- Corner building dated back to 1886
- All but one of the buildings was on the National Register of Historic Places
- Battle began Monday morning at 9 am
- During the fire winds were 30 mph, with gusts of 38 mph
- Fire trucks arrived from Glendive (75 miles away), Baker (81), Forsyth (45), and Terry (39)

- There was over 25 hours of dousing flames using 1.95 million gallons of water. This water flooded nearby basements.
- According to mayor Joe Whalen, Miles City lost 40-50 jobs

Businesses lost:

- Imagine that
- DG Coins
- Cellar Casino
- Family Floral – family owned, located on main street for 26 years
- Copper Thimble – destroyed in a downtown fire for the second time in 20 years
- Burlap & Lace – vacant at time of fire
- A Fitness Studio
- Good Things – a novelty and house wares store
- The Crème Beauty Salon- In that location since 1929
- Farmers Insurance Group
- Horseshoe Bar – new bar, under construction at time of fire
- Some senior apartments

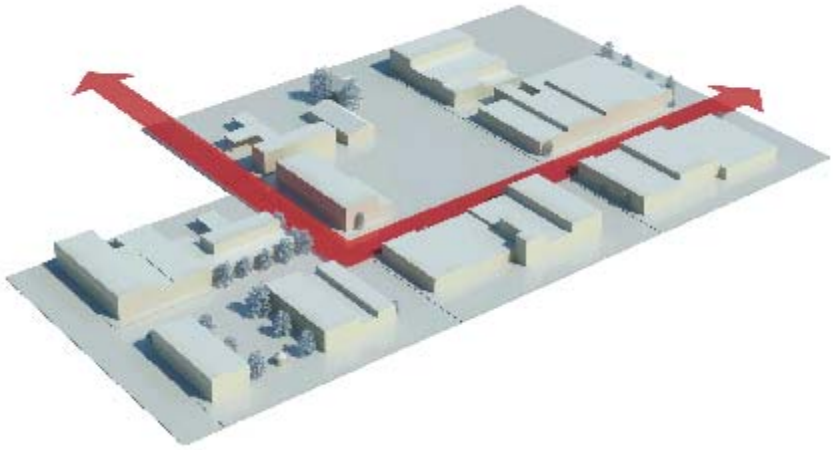


Figure 17-4. Highway 59

-Runs 84 miles North to Jordan, MT

-Runs South to Wyoming border

(turn into Wyoming State Highway

59)

-North route crosses the primary

bridge over the Yellowstone river

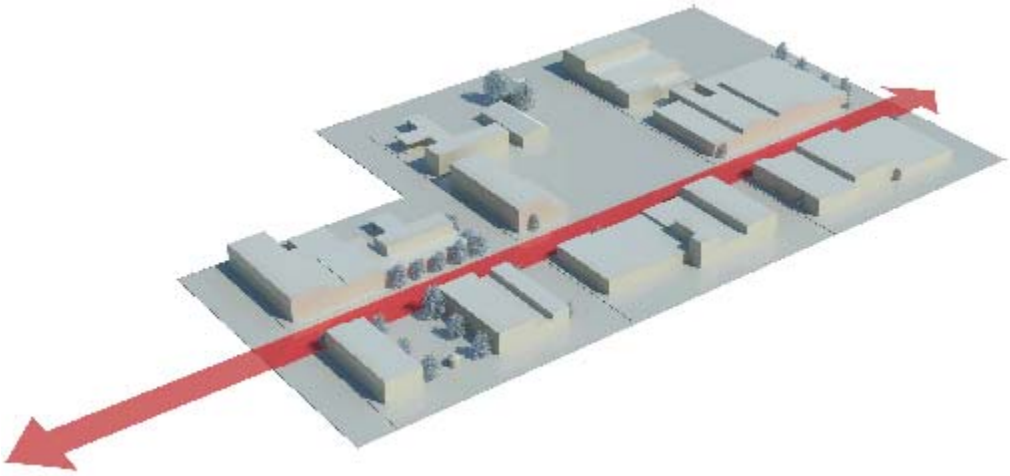


Figure 17-5. Main Street

-Busiest pedestrian thoroughfare

-Busiest vehicular route

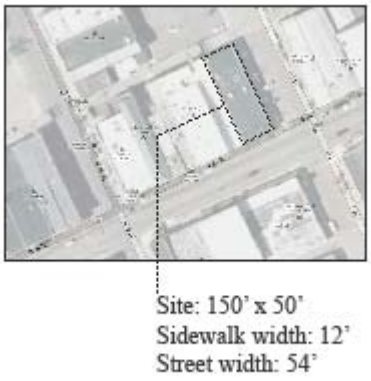


Figure 17-6. Site

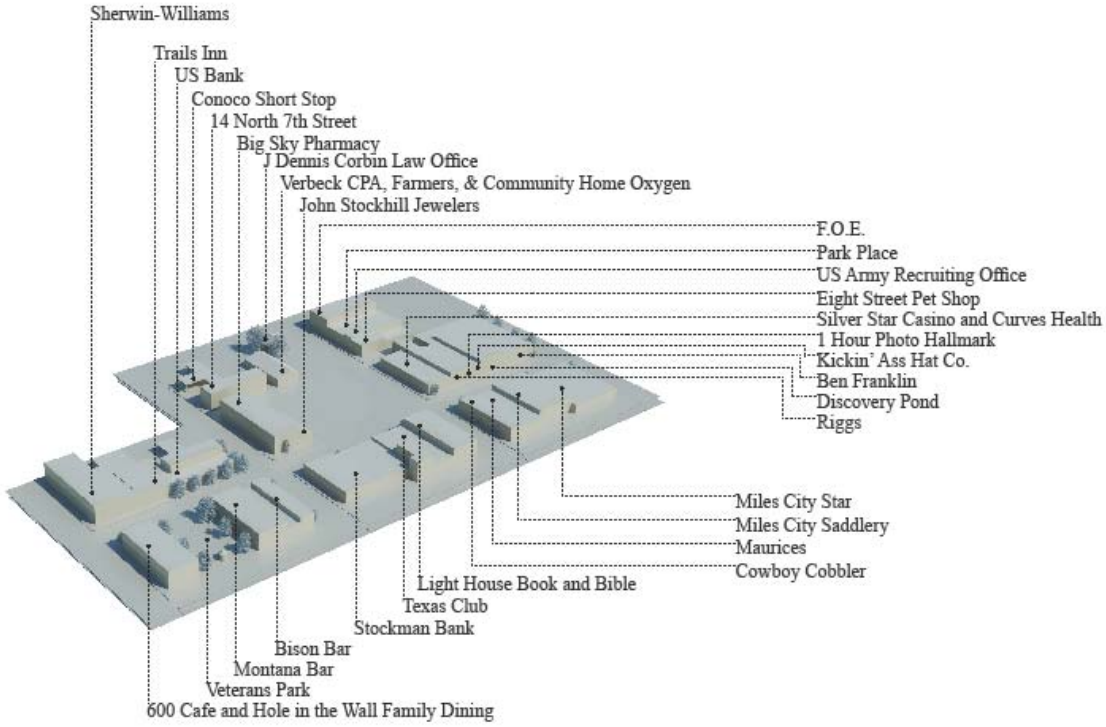


Figure 17-7. Neighboring businesses

600 Cafe and Hole In the Wall Family Dining

These are the eateries that Virginia Coffee mentioned as the places where the country people will meet up when they come into town.

Veterans Park

A small park with gazebo and a memorial dedicated "...to those men and women veterans from this area who served our county..."

Bison Bar

The Bison Bar has a wonderful vintage neon sign that welcomes patrons. Virginia Coffee related that it is most frequented by those from out of town, another popular downtown meeting place.

Sherwin-Williams and the Trails Inn

The Trails Inn is a bar and comedy club that advertises “fine whiskey, friendly folks, good food, great gambling and live entertainment. “

US Bank

As visible in the rendered models of the site US Bank has planted many nice trees along both Main Street and North 7th.

Stockman Bank

This building is one of the 23 branches of Montana’s Stockman Bank.

Big Sky Pharmacy and John Stockhill Jewelers

During the interview process Big Sky pharmacy was a meeting spot for one of the many coffee klatch gatherings that happen in downtown Miles City.

The Lighthouse, Hair Success, Texas Club

Directly across from the building site are these three businesses: a book and bible store, beauty salon, and bar respectively.

F.O.E., Park Place, Army, Eight Street Pet

This side street adjacent to the site includes the Eagle’s Club, Park Place (a banquet hall), the Army Recruiting Office, and Eighth Street Pet.

Miles City Saddlery, Maurices, Cowboy Cobbler

The Miles City Saddlery has been in the area since 1909. Maurices is a national woman's fashion store.

Riggs Camera and Gifts, Inc.

Riggs sells cameras, scanning services, framing, printing, and many other photography related goods. It also offers a hallmarks store, gift area, and even tux rentals.

Miles City Star

The Miles City Star is the local newspaper serving Custer County. The afternoon paper has a circulation of about 4,000 and prints Monday thru Friday.

Ben Franklin

This general store is currently for sale.

Discovery Pond

Advertising children's clothing this store has toys, crafts, and a lunch counter.

Silver Star Casino

This building also contains Curves, an international woman's gym.

Kickin' Ass Hat Company

Kickin' Ass offers handmade hats created in Miles City.

Besides the bars, eateries, casinos, banks, clothing stores, pharmacy, comedy club, gym, gas station, park, and other amenities within the immediate vicinity of the building site the diagram to the left illustrates distances to other services.

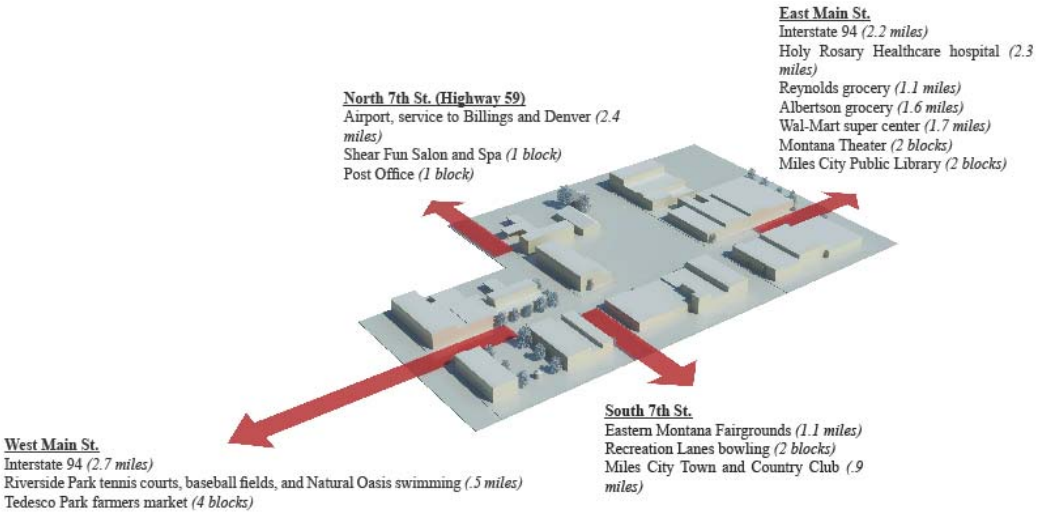


Figure 17-8. Distances to other amenities

Solar Altitudes

Summer Solstice J21

0900 - 47^{o}

1200 - 67^{o}

1500 - 48^{o}

Winter Solstice D21

0900 - 9^{o}

1200 - 20^{o}

1500 - 9^{o}

Equinox M20/S23

0900 - 29^{o}

1200 - 44^{o}

1500 - 30^{o}

1 All statistics and weather data from two sources:

"Bozeman, Montana" City-Data.com 2009. Advameg, Inc. 13 November 2009. <www.city-data.com/city/Bozeman-Montana.html>

"Miles City, Montana" City-Data.com 2009. Advameg, Inc. 13 November 2009. <www.city-data.com/city/Miles-City-Montana.html>

2 All fire data from compiled and combined from the following newspaper articles:

Boushee, Joseph. "Officials assess next steps after fire: Governor visits with pledge of assistance." Miles City Star. [Miles City, MT] 24 March 2009: A1+

Forman, Elaine. "Business owners weigh their options." Miles City Star. [Miles City, MT] 24 March 2009: A1+

Forman, Elaine. "Main Street block ablaze: Many businesses lost in historic district." Miles City Star. [Miles City, MT] 23 March 2009: A1+

Lutey, Tom. "Fire deals blow to Miles City: Historic buildings, dozens of jobs lost, but volunteers help pharmacy." Billings Gazette. [Billings, MT] 25 March 2009: A1+

Prell, Marla. "Gov coming to assess damages: Much of downtown evacuated." Miles City Star. [Miles City, MT] 23 March 2009: A5

Thackeray, Lorna and Lutey, Tom. "Miles City center ablaze: Historic buildings topple as strong winds make firefighters' job harder" Billings Gazette. [Billings, MT] 24 March 2009: A1+

CHAPTER 18

CODE SEARCH

IBC 2009[1]

Chapter 3: Use and Occupancy Classification

SECTION 310 - RESIDENTIAL GROUP R

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the International Residential Code in accordance with Section 101.2. Residential occupancies shall include the following:

Specifically residential group R-2: Residential occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses

Boarding houses (nontransient)

Convents

Dormitories

Fraternities and sororities

Hotels (nontransient)

Live/work units

Monasteries

Motels (nontransient)

Vacation timeshare properties

Chapter 5: General Building Heights and Areas

SECTION 503 - GENERAL BUILDING HEIGHT AND AREA LIMITATIONS

TABLE 503 - ALLOWABLE BUILDING HEIGHTS AND AREAS

SECTION 508 - MIXED USE AND OCCUPANCY

TABLE 508.2.5 - INCIDENTAL ACCESSORY OCCUPANCIES

Chapter 6: Types of Construction

SECTION 602 - CONSTRUCTION CLASSIFICATION

TABLE 601 - FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (hours)

Chapter 7: Fire and Smoke Protection Features

Section 706: Fire Walls

TABLE 706.4 - FIRE WALL FIRE-RESISTANCE RATINGS (PATIAL)

a. In Type II or V construction, walls shall be permitted to have a 2-hour fire-resistance rating.

Chapter 8: Interior Finishes

SECTION 803 -WALL AND CEILING FINISHES

803.1.1 Interior wall and ceiling finish materials. Interior wall and ceiling finish materials shall be classified in accordance with ASTM E 84 or UL 723. Such *interior finish* materials shall be grouped in the following classes in accordance with their flame spread and *smoke-developed indexes*.

Class A: Flame spread index 0-25; smoke-developed index 0-450.

Class B: Flame spread index 26-75; smoke-developed index 0-450.

Class C: Flame spread index 76-200; smoke-developed index 0-450.

TABLE 803.9 - INTERIOR WALL AND CEILING FINISH REQUIREMENTS BY OCCUPANCY[k]

Chapter 10: Means of Egress

SECTION 1003 - GENERAL MEANS OF EGRESS

1003.2 Ceiling height. The means of egress shall have a ceiling height of not less than 7 feet 6 inches (2286 mm).

SECTION 1004 - OCCUPANT LOAD

TABLE 1004.1.1 - MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT

SECTION 1007-ACCESSIBLE MEANS OF EGRESS

1007.6 Areas of refuge. Every required *area of refuge* shall be *accessible* from the space it serves by an *accessible means of egress*. The maximum travel distance from any *accessible* space to an *area of refuge* shall not exceed the travel distance permitted for the occupancy in accordance with Section 1016.1. Every required *area of refuge* shall have direct access to a *stairway* within an *exit enclosure* complying with Sections 1007.3 and 1022 or an elevator complying with Section 1007.4. Where an

elevator lobby is used as an *area of refuge*, the shaft and lobby shall comply with Section 1022.9 for *smokeproof enclosures* except where the elevators are in an *area of refuge* formed by a *horizontal exit* or *smoke barrier*.

1007.6.1 Size. Each *area of refuge* shall be sized to accommodate one *wheelchair space* of 30 inches by 48 inches (762 mm by1219 mm) for each 200 occupants or portion thereof, based on the *occupant load* of the *area of refuge* and areas served by the *area of refuge*. Such *wheelchair spaces* shall not reduce the required *means of egress* width. Access to any of the required *wheelchair spaces* in an *area of refuge* shall not be obstructed by more than one adjoining *wheelchair s*

SECTION 1009 - STAIRWAYS

1009.1 Stairway width. The width of stairways shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm). See Section 1007.3 for accessible means of egress stairways.

Exceptions:

1. Stairways serving an occupant load of less than 50 shall have a width of not less than 36 inches (914 mm)....

1009.7 Vertical rise. A flight of stairs shall not have a vertical rise greater than 12 feet (3658 mm) between floor levels or landings.

SECTION 1010 - RAMPS

1010.2 Slope. Ramps used as part of a means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal (8-percent slope). The slope of other pedestrian ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

1010.4 Vertical rise. The rise for any ramp run shall be 30 inches (762 mm) maximum.

1010.6.3 Length. The landing length shall be 60 inches (1525 mm) minimum.

Exceptions:

1. In Group R-2 and R-3 individual dwelling and sleeping units that are not required to be Accessible units, Type A units or Type B units in accordance with Section 1107, landings are permitted to be 36 inches (914 mm) minimum.
2. Where the ramp is not a part of an accessible route, the length of the landing shall not be required to be more than 48 inches (1220 mm) in the direction of travel....

SECTION 1018 - CORRIDORS

TABLE 1018.1 - CORRIDOR FIRE-RESISTANCE RATING

SECTION 1022 - EXIT ENCLOSURES

1022.1 Enclosures required. Interior exit stairways and interior exit ramps shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both. Exit enclosures shall have a fire-resistance rating of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the exit enclosure shall include any basements but not any mezzanines. Exit enclosures shall have a fire-resistance rating not less than the floor assembly penetrated, but need not exceed 2 hours. Exit enclosures shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An exit enclosure shall not be used for any purpose other than means of egress.

Exceptions:

1. In all occupancies, other than Group H and I occupancies, a stairway is not required to be enclosed when the stairway serves an occupant load of less than 10 and the stairway

complies with either Item 1.1 or 1.2. In all cases, the maximum number of connecting open stories shall not exceed two.

1.1. The stairway is open to not more than one story above its level of exit discharge; or

1.2. The stairway is open to not more than one story below its level of exit discharge..

3. Stairways serving and contained within a single residential dwelling unit or sleeping unit in Group R-1, R-2 or R-3 occupancies are not required to be enclosed.

4. Stairways in open parking structures that serve only the parking structure are not required to be enclosed.

6. Means of egress stairways as required by Sections 410.5.3 and 1015.6.1 are not required to be enclosed.

7. Means of egress stairways from balconies, galleries or press boxes as provided for in Section 1028.5.1 are not required to be enclosed.

Chapter 13: Energy Efficiency

SECTION 130-GENERAL

1301.1.1 Criteria. Buildings shall be designed and constructed in accordance with the *International Energy Conservation Code*.

ADA 2004[2]

Chapter 3: Building Blocks

Section 303: Changes in Level

303.2 Vertical. Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical.

Section 304: Turning Space

304.3.1 Circular Space. The turning space shall be a space of 60 inches (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with 306.

Section 305: Clear Floor or Ground Space

305.3 Size. The clear floor or ground space shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

305.7.1 Forward Approach. Alcoves shall be 36 inches (915 mm)wide minimum where the depth exceeds 24 inches (610 mm).

305.7.2 Parallel Approach. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

Section 306: Knee and Toe Clearance

306.2.2 Maximum Depth. Toe clearance shall extend 25 inches (635 mm) maximum under an element.

306.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

306.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the finish floor or ground.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

Section 307: Protruding Objects

307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.

EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.

Section 308: Reach Ranges

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

Chapter 4: Accessible Routes

Section 404: Doors, Doorways, and Gate

404.2.3 Clear Width. Door openings shall provide a clear width of 32 inches (815 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 mm).

Chapter 6: Plumbing Elements and Facilities

Section 603: Toilet and Bathing Rooms

603.3 Mirrors. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) maximum above the finish floor or ground. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches (890 mm) maximum above the finish floor or ground.

603.4 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in 308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish floor.

Section 608: Shower Compartments

Advisory 608.1 General. Shower stalls that are 60 inches (1525 mm) wide and have no curb may increase the usability of a bathroom because the shower area provides additional maneuvering space.

608.2.2 Standard Roll-In Type Shower Compartments. Standard roll-in type shower compartments shall be 30 inches (760 mm) wide minimum by 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides and shall have a 60 inches (1525 mm) wide minimum entry on the face of the shower compartment.

608.3.2 Standard Roll-In Type Shower Compartments. Where a seat is provided in standard roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall opposite the seat. Grab bars shall not be provided above the seat. Where a seat is not provided in standard roll-in type shower compartments, grab bars shall be provided on three walls. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

International Energy Conservation Code, 2009[3]

Chapter 3: Climate Zones

SECTION 301: CLIMATE ZONES

Miles City, MT. zoned: Dry (B) 6 as per 301.

Chapter 4: Residential Energy Efficiency

SECTION402: BUILDING THERMAL ENVELOPE

TABLE 402.1.1 - INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

SECTION 404 - ELECTRICAL POWER AND LIGHTING SYSTEMS

404.1 Lighting equipment (Prescriptive). A minimum of 50 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

1 International Building Code. Country Cub Hills, IL: InternationalCode Council, 2009.
2 Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines. Washington, DC: United States Access Board, 2004.
3 International Energy Conservation Code, 2009. USA: International Code Council, 2009.

CHAPTER 19

FINAL PROJECT

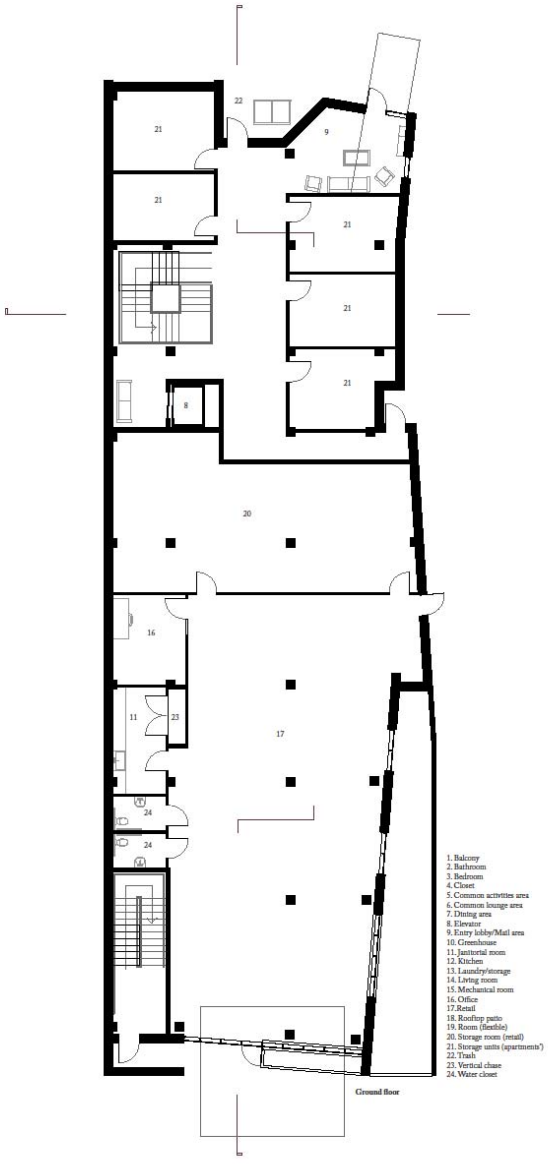


Figure 19-1. Ground Floor Plan

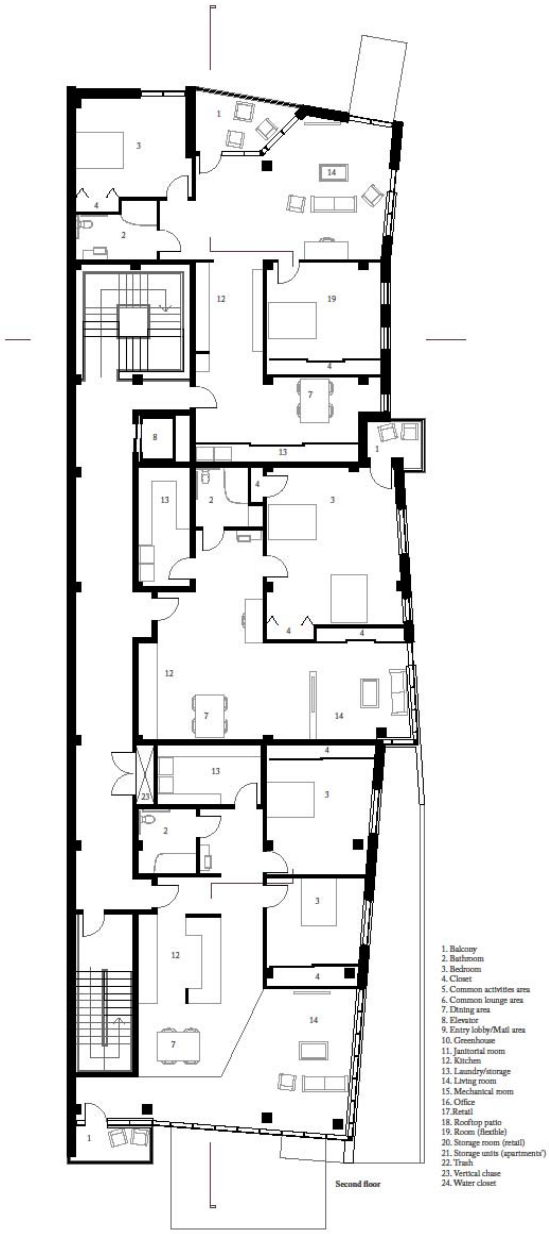


Figure 19-2. Second Floor Plan

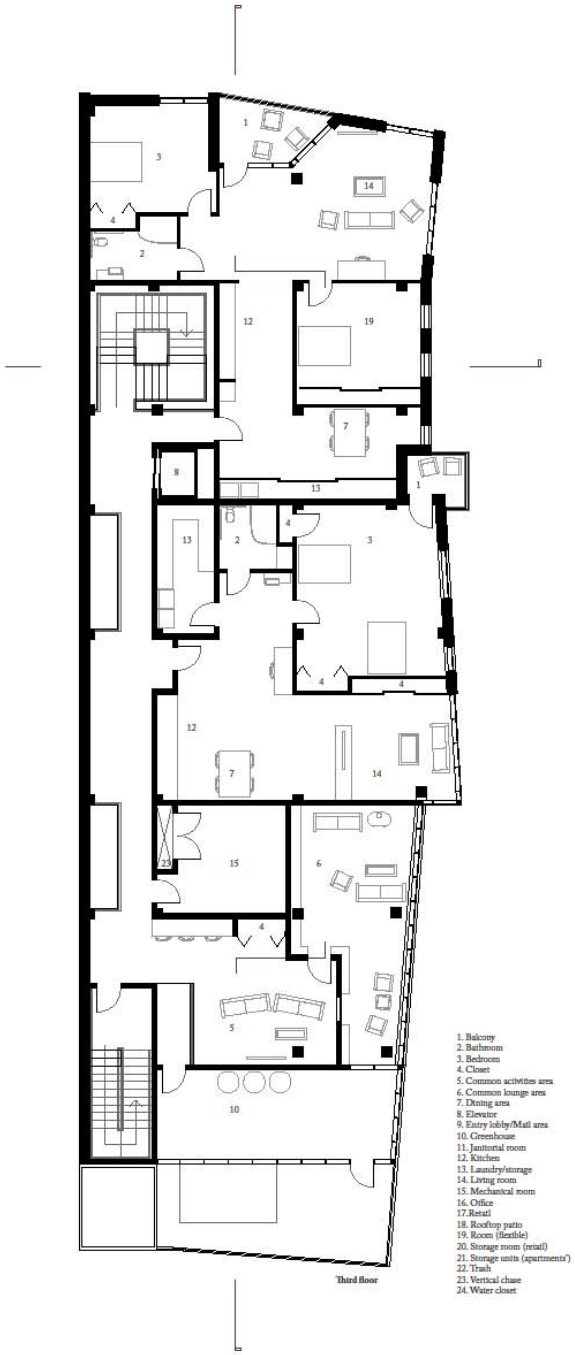


Figure 19-3. Third Floor Plan

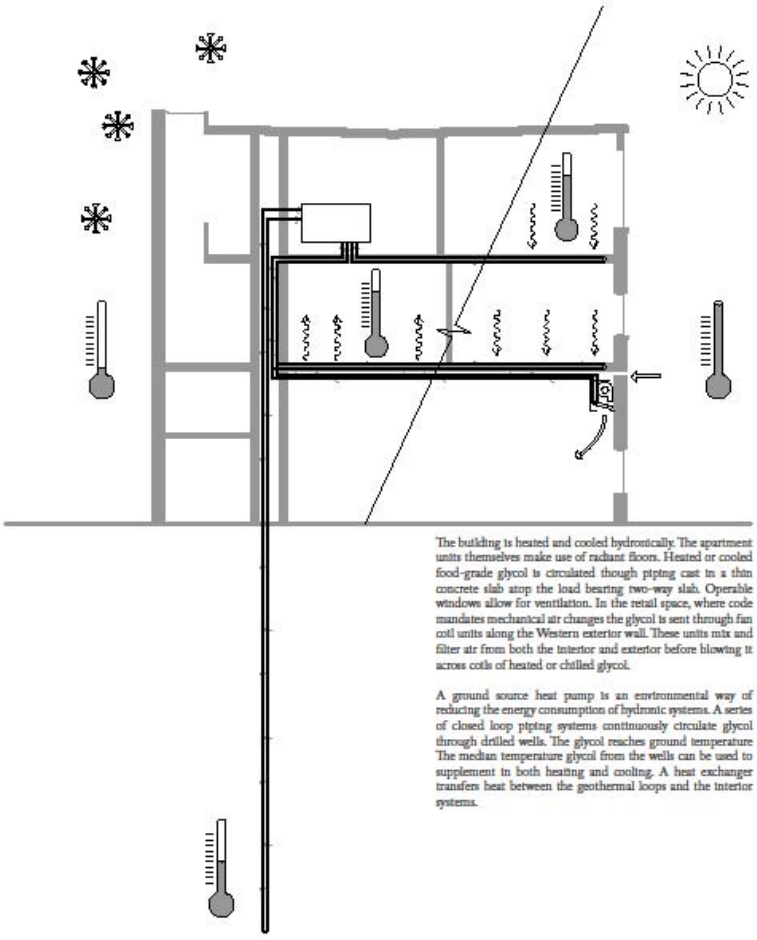


Figure 19-4. HVAC Diagram

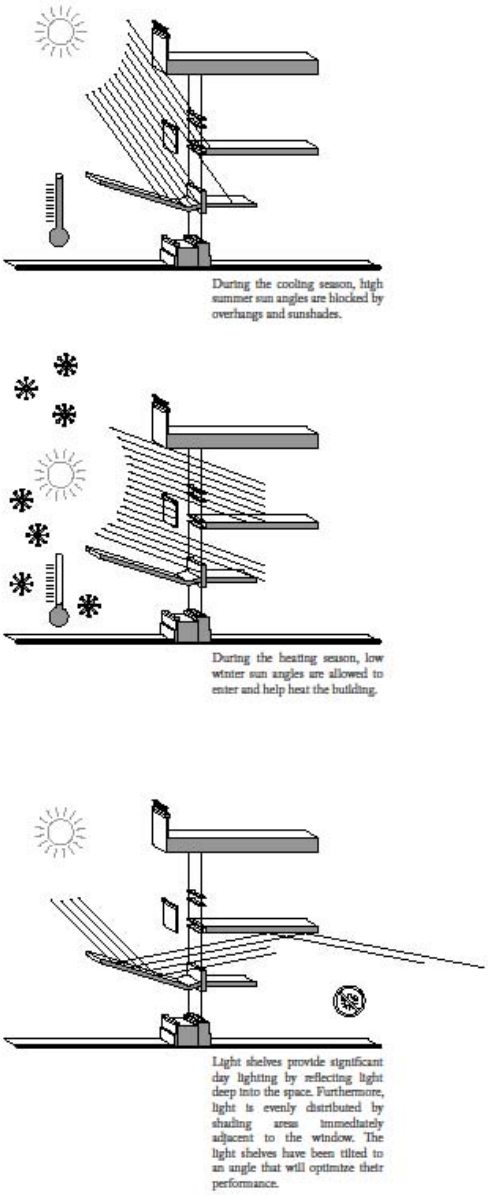


Figure 19-5. Sun Shelf Diagram

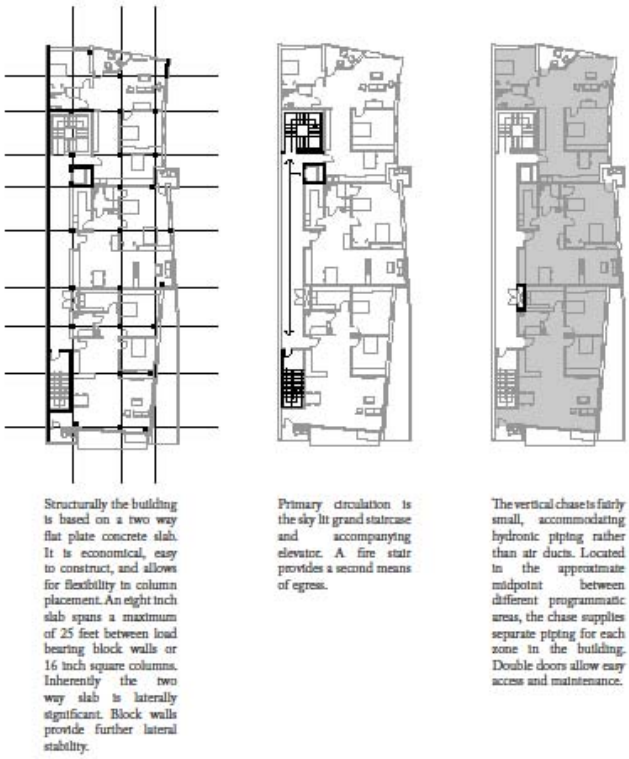


Figure 19-6. Miniature Plan Diagrams

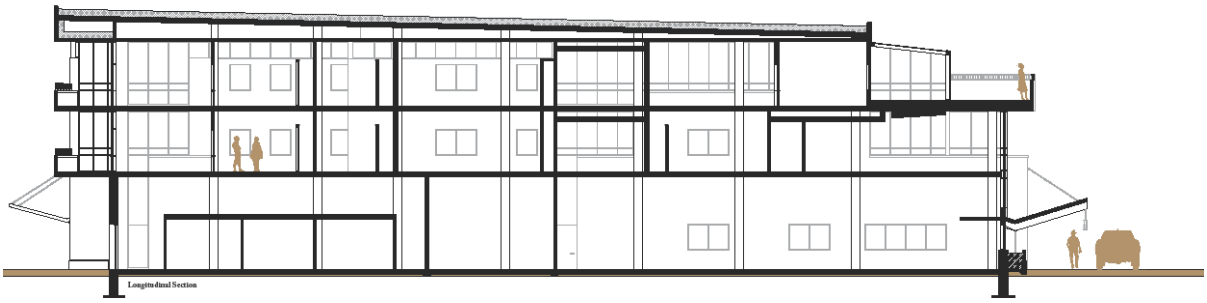


Figure 19-7. Longitudinal Section

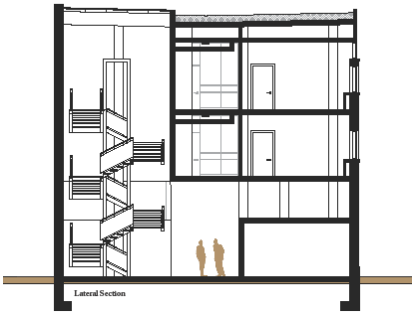


Figure 19-8. Lateral Section

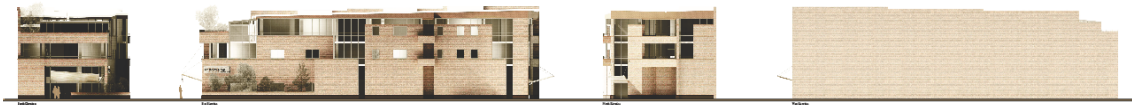


Figure 19-9. Elevations



Figure 19-10. Exterior Rendering



Figure 19-11. Interior Rendering 1



Figure 19-12. Interior Rendering 2

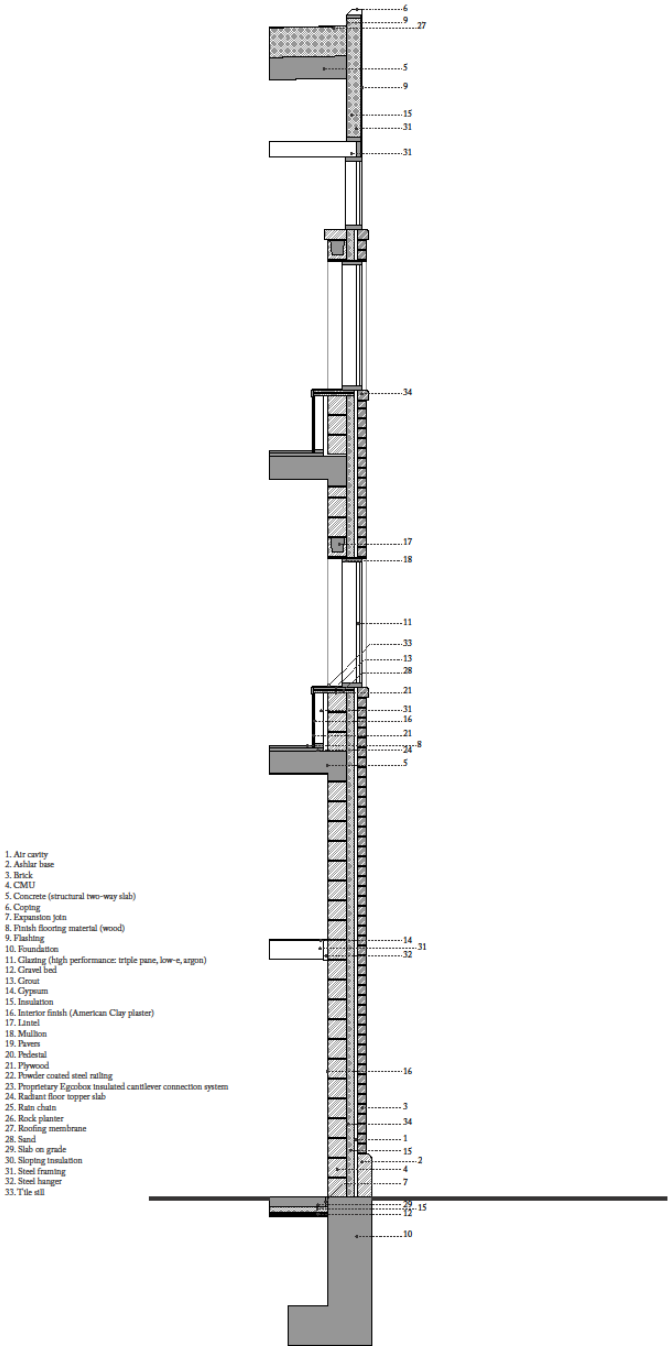


Figure 19-13. Wall Section 1

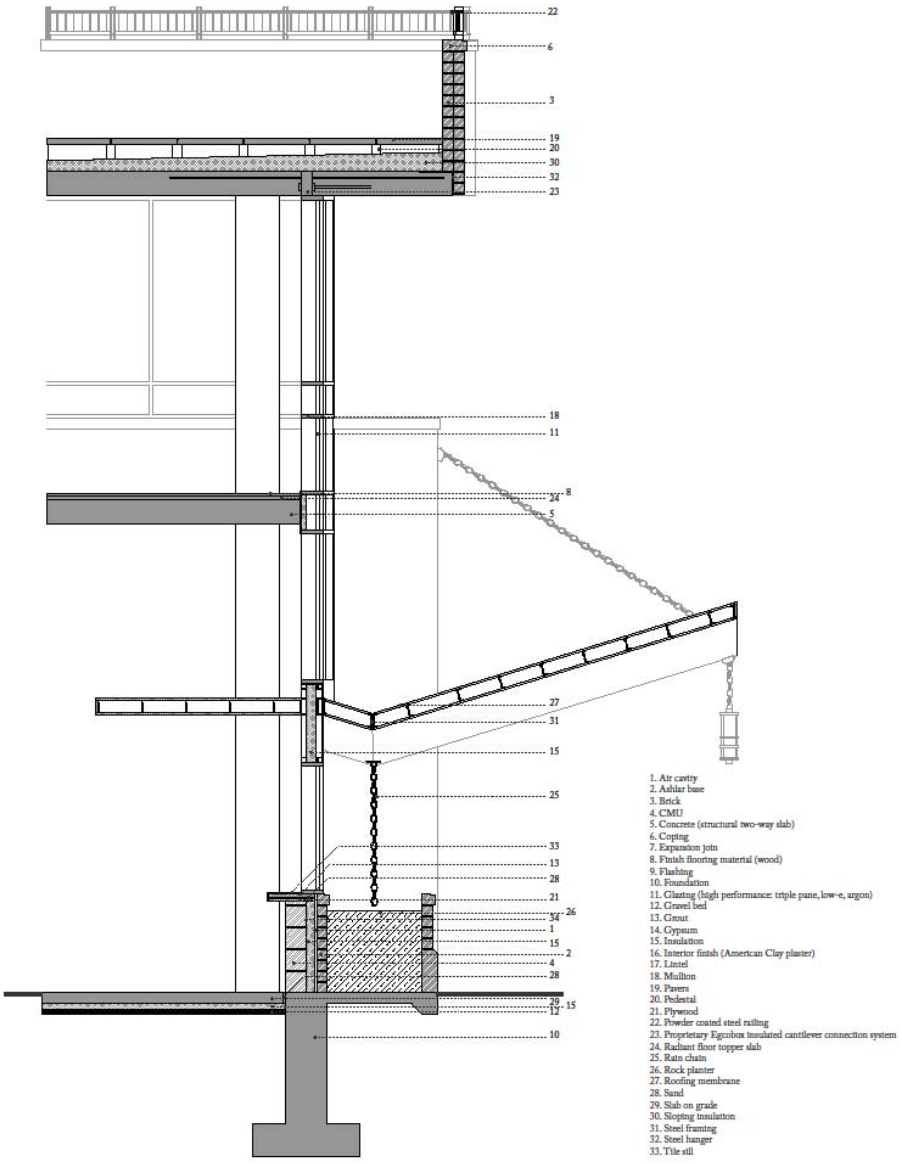


Figure 19-13. Wall Section 2

BIBLIOGRAPHY

Allen, Edward and Iano, Joseph. The Architect's Studio Companion: Rules of Thumb for Prelimiary Design. Hoboken, New Jersey: John Wiley & Sons, Inc. 2007.

Alwin, John A. Eastern Montana: A Portrait of The Land and Its People. Helena, MT: Montana Magazine, Inc., 1982.

Baker, Don. Next Year County: The Story of Eastern Montana. Boulder, CO: Fred Pruett Books, 1992.

Beck, Haig and Cooper, Jackie. Glenn Murcutt: A singular architectural practice. Mulgrave, Victoria, Australia: The Images Publishing Group Pty Ltd. 2006.

Benedikt, Michael. For an Architecture of Reality. New York, NY: Lumen Books, 1987.

Boushee, Joseph. "Officials assess next steps after fire: Governor visits with pledge of assistance." Miles City Star. [Miles City, MT] 24 March 2009: A1+

Brown, Mark H. and Felton, W. R. Before Barbed Wire: L. A. Huffman, Photographer on Horseback. New York: Henry Holt and Company, 1956.

Calkins, Margaret. Designing for Dementia: Planning Environments for the Elderly and the Confused. Owings Mills, Maryland: National Health Publishing, 1988.

Cooper, Clare C. Easter Hill Village. New York: The Free Press, a division of Macmillan Publishing Co., Inc., 1975.

Easton, Patricia. "A Brief Custer County History." MilesCity.com. 1999-2000. Custer County MTGenWeb Project. 1 October 2009 <http://milescity.com/history/stories/bcch/>

Forman, Elaine. "Business owners weigh their options." Miles City Star. [Miles City, MT] 24 March 2009: A1+

Forman, Elaine. “Main Street block ablaze: Many businesses lost in historic district.” Miles City Star. [Miles City, MT] 23 March 2009: A1+

Leibrock, Cynthia and Behar, Susan. Beautiful Barrier Free: A Visual Guide to Accessibility. New York: Van Nostrand Reinhold, 1993.

Livingston, Morna. Temples for water: the stepwells of western India were a magnificent architectural solution to the seasonality of the water supply. Natural History Magazine, Inc., 2003. Accessed 9 January 2010 via: <http://findarticles.com>

Livingston, Morna. Steps to water: the ancient stepwells of India. New York: Princeton Architectural Press, 2002. Accessed 9 January 2010 via: <http://books.google.com>

Lutey, Tom. “Fire deals blow to Miles City: Historic buildings, dozens of jobs lost, but volunteers help pharmacy.” Billings Gazette. [Billings, MT] 25 March 2009: A1+

McRae, Wallace D.. Cowboy Curmudgen and Other Poems. Layton, UT: Gibb Smith, Publisher. 1992.

Nesbitt, Kate. Theorizing A New Agenda For Architecture. New York: Princeton Architectural Press, 1996.

Prell, Marla. “Gov coming to assess damages: Much of downtown evacuated.” Miles City Star. [Miles City, MT] 23 March 2009: A5

Raban, Jonathan. Bad Lands: An American Romance. New York: Vintage Departures, 1996.

Regnier, Victor. Assisted Living Housing For The Elderly: Design Innovations from the United States and Europe. New York: Van Nostrand Reinhold, 1994.

Regnier, Victor. Design for Assisted Living: Guidelines for Housing the Physically and Mentally Frail. New York: John Wiley & Sons, 2002.

Ruskin, John. The Seven Lamps of Architecture: Sixth English Edition. New York & Boston: Thomas Y. Crowell & Company, 1880.

Saieh, Nico. "Tolo House / Alvaro Leite Siza." 15 May 2008. archdaily.com. 13 November 2009. <http://www.archdaily.com/893/tolo-house-alvaro-leite-siza/>

Thackeray, Lorna and Lutey, Tom. "Miles City center ablaze: Historic buildings topple as strong winds make firefighters' job harder" Billings Gazette. [Billings, MT] 24 March 2009: A1+

Treib, Marc. An Everyday Modernism: The House of William Wurster. Berkeley and Los Angeles, California: University of California Press, 1999. Accessed 7 January 2010 via: <http://books.google.com/>

Tuan, Yi-Fu. Topophilia: A study of environmental perception, attitudes, and values. New York: Columbia University Press. 1974.

Tzonis, Alexander and Lefaivre, Liane, Editor: Nesbitt, Kate. Theorizing A New Agenda For Architecture. New York: Princeton Architectural Press, 1996.

Turnbull, Colin M. The forest people. New York, NY: Simon and Schuster, 1961.

Weiss, Joseph Douglas. Better Buildings for the Aged. New York, NY: Hopkinson and Blake, 1969.

Winter Associates, Steven. Accessible Housing by Design. New York, San Francisco, Washington D.C.: McGraw-Hill, 1997.

Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines. Washington, DC: United States Access Board, 2004.

International Building Code. Country Cub Hills, IL: International Code Council, 2009.

International Energy Conservation Code, 2009. USA: International Code Council, 2009.

"Bozeman, Montana" City-Data.com 2009. Advameg, Inc. 13 November 2009. <www.city-data.com/city/Bozeman-Montana.html>

"Four Seasons Retirement Center". Four Seasons Retirement Center. 2009. TLS. 26 November 2009. < http://www.fourseasonsretirement.com/index.php>

"Miles City, Montana" City-Data.com 2009. Advameg, Inc. 13 November 2009. <www.city-data.com/city/Miles-City-Montana.html>

"nature in buildings | magney house" MIT Architecture. 20 December 2006. architecture.mit.edu. 07 January 2010. <http://architecture.mit.edu/class/nature/student_projects/2006/meelena/urban-nature/template-mainframe-magney-house.html>

"Victor Regnier, FAIA ACSA Distinguished Professor." University of Southern California School of Architecture Los Angeles. 2007. USC School of Architecture and The University of Southern California. 12 November 2009 <http://arch.usc.edu/People/Faculty/FacultyDirectory/viewPerson.html;jsessionid=3908E51285F12A9B62A0CA19EE9A3E91?id=123>