Community Pillars: The Grain Elevator as Active Monument

by

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We are all Treaty people.

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For the farm and ranch families of Saskatchewan, who have perservered through environmental, economic, and social hardship to help feed the world and continue to inspire the next generation.

Contents

Abstract

Rural life promotes community and resilience, but also isolation necessitating commonality among generations. True memory in sharing skills and traditions, incentivises gathering. The wooden grain elevator in Whitewood, Saskatchewan as a historical space of community and a critical piece of the regional narrative, will act as a framework for the creation of a new multi-demographic space of social and cultural programs while contributing to the future of the town. Physically the design highlights the landmark in form and existing craftsmanship with the addition of a steel and wood hybrid structure and separate VIA Rail stop, therefore representing the site's transitory nature. Programmatically the project draws on the historical mixed-use nature of the elevator while providing supplemental spaces for gathering, education, and business to foster growth. The result will be a contributory monument for a growing, closely knit community where each individual is part of a larger continuity.

Acknowledgements

I would like to thank those faculty members that helped make this thesis a reality. First to my supervisor Cristina Verissimo and advisor Sarah Bonnemaison for their guidance, wisdom, and encouragement during this process. Secondly, for his engineering advice regarding the structural feasibility of this project, I thank Kyle Tousignant. Lastly, I thank staff members Ken Kam for his expertise in helping me 3D print my model, and Regan Southcott for his help in the wood shop.

For the support during the research and planning phases, I thank the many residents of rural Saskatchewan who I spoke to and shared stories with me about the grain elevator past and present. It is this admiration and dedication to these structures that first inspired this thesis idea. I also thank Beutler Farms for touring me through the existing elevator and explaining its workings.

I thank all my friends (especially Eric and Bryan) who journeyed through their own theses alongside me. Our little support group was vital to the success of this project.

I thank my family (Mom, Dad, Kendall, and Normann) for their continued support through this thesis journey, for this project would not be possible without your prayers, wisdom, and encouragement. I especially thank Mom for proofing this thesis, and every other academic paper I have ever written. Finally, I thank God for this wonderful experience of being able to contribute to a profession and field I admire and write about a subject I love.

Chapter 1: Introduction

1.1. Family Memory

I grew up in a very intergenerationally connected family. Mine is also an agricultural family where both sides were involved in grain or livestock. The piece of land I grew up on was homesteaded by my great-grandfather in 1918 and in 2018 my parents were awarded the Information Services Corporation (ISC) Century Family Farm Award recognising a hundred years of family farming. History and memory thrive in my family and as a consequence, the passing on of traditions and skills was and continues to be a large part of my life. I have fond memories of learning how to make wine and jam, shoot a gun, garden, and sew from my parents and grandparents, and these are traditions I look forward to passing on one day.

Likewise, I grew up surrounded by aging agricultural buildings, the grain elevator being one of them. I was told the stories of the golden age of these buildings and how their importance to identity remains. Like many Saskatchewanians, I developed a kinship with the grain elevator.

As my family ages, the importance of sharing traditions becomes more evident. I see it in the elderly, isolated in their homes, especially during the COVID-19 pandemic. I see it in the retired farmers who can no longer farm due to aging health and as a consequence feel isolated as they give up both their work and lifestyle.

This thesis seeks to combat this growing isolation felt, by adapting monuments of living history into places of

community gathering. In this way, other young people will have the privilege of learning from their elders.

1.2. Hypothesis

1.2.1. Main Issue

Social isolation amongst rural seniors is a growing issue which can be combatted by providing a common thread of knowledge and memory between generations. As Dr. Carrie Henning-Smith states “some of the most successful programs [that address rural isolation] are those that give everyone an opportunity to contribute and provide a sense of self-worth and belonging” (Franklin and Henning-Smith 2020).

1.2.2. Thesis Statement

In rural, agricultural communities, the wooden grain elevator is the physical embodiment of the skills and traditions that will knit generations together. Through an analysis of the regional identity and memories associated with the elevator in Whitewood, Saskatchewan, it, and its surrounding site will be inhabited with social and cultural spaces of tradition, skill transfer, and gathering. Programmatically this will manifest as a cross-programmed site of commercial spaces that complement, but do not take away from, the existing downtown such as a farmers’ market, restaurant, hair salon and gym, outdoor activities like a garden and skating rink, and the addition of a new VIA Rail stop for the community. Architecturally, it will be designed with the elevator of memory, not as a static resemblance of history, therefore representing the building living today as part of the community collective memory. As a result, urban and rural residents of all ages will become less isolated from each

other, more likely to fulfill their potential, and once again have a contributing landmark to their town.

1.3. The Site's Story

1.3.1. Addressing Rural Isolation

Rural communities face a higher degree of isolation than their urban counterparts. Residents of these towns and villages have values of pride and resilience (Franklin and Henning-Smith 2020) which contributed to the settlement and success of these places but can also lead to a lack of social connection as they age and feel increasingly dependent on others for mobility. Studies have shown the lower quality of life that comes from being socially isolated (British Columbia Ministry of Health, Children's, Women's and Senior's Health Branch 2004). Therefore, the program of this thesis seeks to create a place that supports the intergenerational gathering of the young and old demographic islands in Philippe Aries' theory (Franklin and Henning-Smith 2020). Older people need each other, but they also need young people (Alexander et al. 1977, 216), therefore this thesis will draw on the collective memory of a place being best translated between generations through skill and tradition (Nora 1989, 13). In this way the mutual benefits of intergenerational relationships will be felt by young and old.

1.3.2. Grain Elevator as Cultural Icon

The wooden grain elevator is widely recognised as a symbol of the Canadian prairies having been displayed as an icon of the region on postage stamps, dollar bills, and at international fairs (Catherwood 2018, 7). This is due to their crucial role in the development of the west and their consequential lasting impression in the collective memory

of the towns where they once stood numbering around 3300 in Saskatchewan alone (Ministry of Tourism, Parks, Culture and Sport, Saskatchewan Heritage Foundation and Canada's Historic Places 2010).

Serving a functional role in town planning, economic success and connectivity, communities that have retained their elevators are those most likely to still be incorporated today (Anonymous 2022b; Catherwood 2018, 49). Symbolically, it was a landmark, giving community residents a sense of identity and place when they would see their town name painted on the side of the large wooden structures (Catherwood 2018, 7).

Initially built for the storage and circulation of grain, the elevator became an unintentionally cross-programmed space where farmers would socialise over a pot of coffee (Anonymous 2022a), children would get haircuts, and shoes would be fixed (Lemire 2010) within the office portion of the building seen in Figure 1. As the agriculture industry became more industrialised and wooden elevators were decommissioned in favour of centralised concrete terminals, it is these symbolic and programmatic memories that reside in community members and draw people into a relationship with the old structures long after they have been active. This is the primary driver of current elevator preservation efforts. However, as a physical embodiment of the collective memory, the building becomes the ideal site for skills and traditions to re-knit the generations of a community together therefore, creating a new preservation typology that maintains the building's narrative while allowing it to become transitory and have a future life instead of becoming a static fossil.

Figure 1: The grain elevator agent would double as children's hairdresser, and cobbler for the community (Why I Miss the Local Elevator 2014).

1.3.3. Design Goals and Methods

This thesis has four design goals encompassing the program, site, building, and detail scales. They are the following:

1. Create spaces to support intergenerational gathering
2. Create an active site that engages its current neighbours and contributes to future growth
3. Connect the elevator's contemporary program with its historic use and symbolism
4. Preserve the existing vernacular cribbed construction

Goal 1: Contemporary Intergenerational Program

The choice of programs in this thesis are directly linked to those retained in the collective memory of the cross-programmed elevator of history and those that address current cultural spaces and activities that are lacking in the community. In this way the design proposal will complement the needs of a growing town that seeks to welcome more visitors without taking attention and purpose away from its existing downtown. Together these programs foster education, tradition, and gathering while being spaces where the older generation is able to feel kinship, familiarity, and purpose in passing along knowledge and skills. As a result, the elevator and its site are filled with life year-round and remains active throughout the day.

Goal 2: The Active Site

In the planning and designing of the site components the ideas of multi-directional engagement and procession are pivotal. By using the extension of the current South Railway Avenue and north boundary of the railroad, the site is given organisation for services, parking, and outdoor programs

while the placement of these new features anticipates the town's growth and supports it with a procession that does not end with the site but looks onward. Visitor procession is equally important within the site. With the addition of a pedestrian route that begins with a footbridge over the #9 highway, it connects to a new landmark train stop, proceeds past new store and workshop fronts, greenhouse, and central landscaped public space, similar to the approach of the zwei+plus intergenerational housing project (Aulinger and Gilbert 2018), lastly culminating at the grain elevator complex.

Goal 3: A Transitory Building

Purposely built to store and handle grain, the interior of the elevator was not meant for human occupation. As such a pivotal piece of the building's narrative, the addition of contemporary programmatic spaces will not eliminate this history but work with it to create moments for patrons to appreciate it. From the exterior, the elevator sits on the border between urban and rural, making it ideally located to orient views to both landscapes. Interiorly the complex will retain some of the grain bin voids as moments for patrons to experience the scale of the building and appreciate its dominant form. Lastly, the design will incorporate a viewing deck at its pinnacle with exhibition space for elevator history and artifact.

Goal 4: Wooden Cribbed Construction

To preserve the vernacular architecture of the landmark, the existing silhouette and wooden cribbed construction will be retained as much as possible due to the new primary steel structure. Not only will this allow for interesting sculptural features but will provide an additional organising device

for the different programmatic spaces. The idea of material importance will also extend to the preservation and exhibition of the patina of the cribbed construction in such a way that the history of the material can be lived in (Pallasmaa 2005, 32) while revealing the building's age.

1.3.4. The Proposal

The town of Whitewood, located in the southeastern part of Saskatchewan was chosen as the ideal site for this thesis due to the case study grain elevator residing within a town, as defined as a centre of at least 500 people (Government of Saskatchewan 2021b), being extremely well connected via the #1 Trans-Canada Highway and #9 Saskota Flyway as well as the still active Canadian Pacific Railroad. The town

Figure 2: The Qu'Appelle Valley located north of Whitewood, SK (Karpan and Karpan 2021).

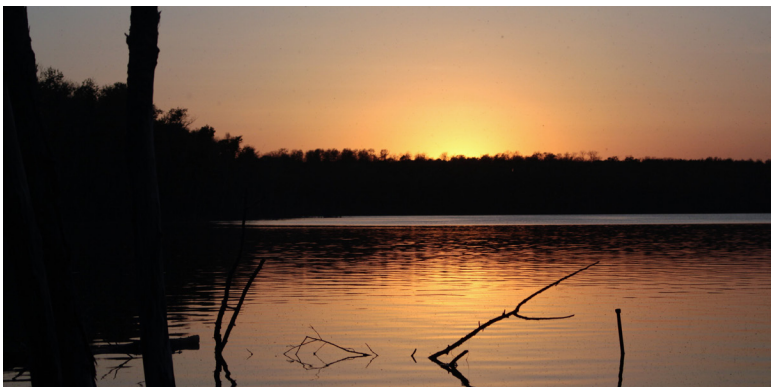


Figure 3: Kenosee Lake and the Moose Mountains located south of Whitewood, SK.

is also located between two river valleys which contribute to the landscape identity and uniqueness of the region, seen in Figures 2 and 3.

Chapter 2: Addressing Rural Isolation

Rural communities, by nature, are geographically isolated compared to their urban counterparts. However, by introducing more opportunity for gathering, social isolation can be combatted, and communities made stronger.

2.1. Social Isolation in Rural Communities

2.1.1. Contributing Factors

In rural residents, values of pride and resilience are deeply embedded (Franklin and Henning-Smith 2020). While contributing to the formation of rural settlements, these values also manifest themselves in the want to age in place, the dependence on a personal vehicle, and the feeling of needing less people to rely on in a time of smaller families and an earlier retirement age (British Columbia Ministry of Health, Children's, Women's and Senior's Health Branch 2004, 3). Coupled with predominantly single-family homes far from one another, poor road conditions and weather that are characteristic of Saskatchewan, and a lack of public programming and resources (Franklin and Henning-Smith 2020), social gathering is seldom.

Theorist Philippe Aries describes the island effect, in which he identifies demographic clusters within society, typically based on age, routine, and mobility (Franklin and Henning-Smith 2020). Following this theory, the oldest and the youngest become islands of people within society. It can be noted that these parameters correspond to isolation obstacles mentioned previously such as available public programming and use of a personal vehicle. Therefore, not only are islands separated by physical means, such an

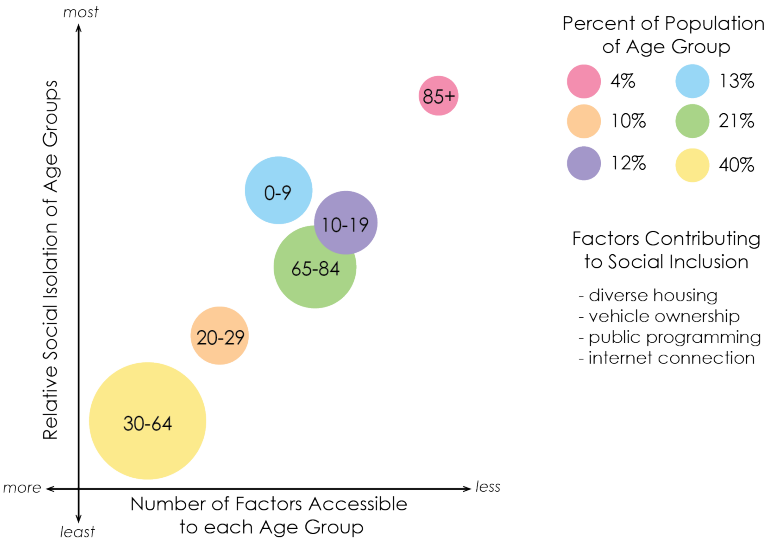


Figure 4: The youngest and oldest demographic island in Whitewood, SK are those most isolated due to them having the least access to the factors enabling social encounter. Population data (Statistics Canada 2022e).

elderly person's inability to walk or commute long distances, but also by mental means such as the child not understanding the adult perspective (Hagestad and Uhlenberg 2006, 642). When the factors are linked with the age groups, it is revealed that islands with less obstacles are also less isolated. This relationship is seen in Figure 4, where it is shown that the working age population, which is the most mobile, has the largest amount of public programming catered to them, and the best access to internet communication, is the least isolated.

Additionally, this island effect is exaggerated with the aging rural population. With the industrialisation of agriculture, the number of farms in Saskatchewan is decreasing, and with young people facing the high initial financial investment in the industry, average farmer age is increasing (Statistics Canada 2021). This relationship is illustrated in Figure 5. Therefore, the physical and cultural division between the younger and older generations continues to grow.

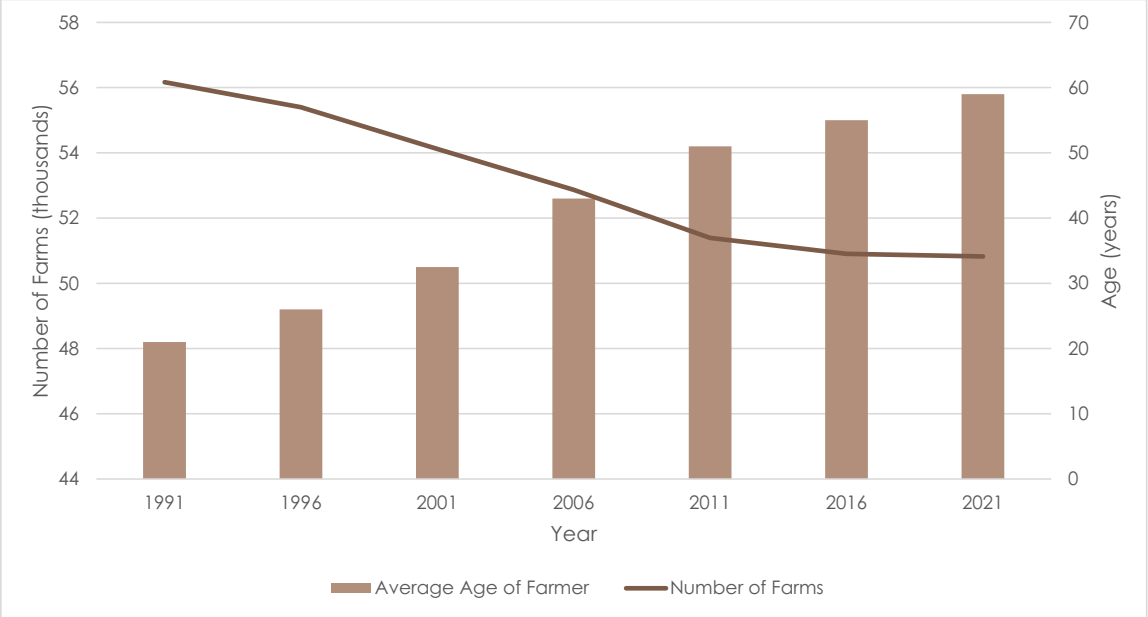


Figure 5: Relationship between average farmer age and number of farms in Saskatchewan. (Statistics Canada 2022a; Statistics Canada 2022b).

2.1.2. A Lower Quality of Life

Social isolation has both physical and mental consequences that contribute to a lower quality of life. As found by one study, isolation leads to an increased rate of premature death, disability, and chronic illness (British Columbia Ministry of Health, Children's, Women's and Senior's Health Branch 2004, 3). It also leads to a higher rate of depression (British Columbia Ministry of Health, Children's, Women's and Senior's Health Branch 2004, 3) and the lower self-esteem brought on by ageism, which is the perceived expectation of a person based on their age taking precedence over their abilities, wants, or goals (Hagestad and Uhlenberg 2006, 641-643).

2.2. Intergenerational Gathering as Solution

In order to bring the demographic islands of Whitewood, Saskatchewan together, there must be incentive such as the want to learn, gather, and teach, as well as mutual benefit such as increased family and friend relationships,

mentorships for young people, and communities of active members.

2.2.1. True Memory

The collective memory of the town, which is communal among each island (Nora 1989, 9) will act as the foundation for a cultural program of gathering. By adopting Nora's definition of true memory (Nora 1989, 13), the passing on of skills and traditions embodied in the older population will not only allow the young person to claim the collective memory as their own, but will also help compensate for the "pain of survivorship" (Hagestad and Uhlenberg 2006, 645) felt by many older people.

2.2.2. Mutual Benefit

Though present society tends to isolate older people together, it is recognised that the old need a young generation who appreciates them (Alexander et al. 1977, 216). When the older and younger generations meet and begin to share knowledge, skills, and traditions, both groups benefit. For the young person, they gain a mentor who has a wisdom of societal tradition and stability, that will help them navigate the world as an adult (Hagestad and Uhlenberg 2006, 646). These mentorships have also shown to reduce the likelihood of addictions in young people, while also contributing to an increased rate of finishing school and respect for the elderly (Freedman 2019).

For the older person, relationships with young people improve cognitive function and physical health (Freedman 2019). The young person can also offer knowledge as they have become the masters of evolving skills quickly in the technological age (Hagestad and Uhlenberg 2006,

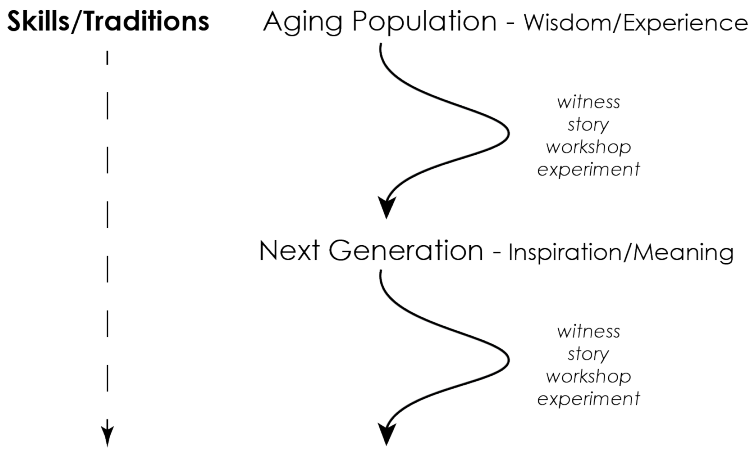


Figure 6: Without the intentional transfer between generations, skills and traditions will not continue to live.

646). Above all, by passing on their wisdom, experience, and tradition, the older generation will be contributing to a continuity beyond their own lives and inspiring a legacy that will continue to be passed from generation to generation (Hagestad and Uhlenberg 2006, 647). Seen in Figure 6, this intentional transfer is necessary for skills and traditions to survive, for they do not exist on their own.

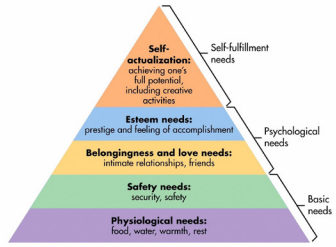


Figure 7: Maslow's Hierarchy of Needs (McLeod 2022).

Lastly, when each group of people feels included and contributory to the new community program, according to Maslow's Hierarchy of Needs seen in Figure 7, individuals will be more likely to reach their full potential. Subsequently, a town of promising indivduals will result in them investing in their own community (Hagestad and Uhlenberg 2006, 648), thus generating a cycle of positive engagement.

However following a theory of connectivity, generations can only be socially connected once they occupy a shared physical space (Alexander et al. 1977, 217), which is what this thesis aims to accomplish.

2.2.3. Case Study: The Post & Office

In the town of Harrington, Washington, owners Justin and Heather Slack (2019) recognised a need for community gathering and a revival of culture and tradition. An adaptive reuse effort, which made use of materials from heritage properties past the point of repair, the old Post Office building, seen in Figure 8, was turned into a coffee shop, co-working space, and place of community gathering (Slack and Slack 2019). The owners speak of the positive response they have had from both local residents and people travelling through the area (Slack and Slack 2019). The project has created opportunity for people to share stories, connect with community, contribute mementos to the interior and baked goods to the café, while addressing a need for a business space with reliable internet (Slack and Slack 2019). Additionally, Justin Slack who is also Mayor of the town, stresses that these types of projects do not just contribute socially and culturally, but by inhabiting the built heritage, towns gain the municipal income of an active business once again (Slack and Slack 2019).

Figure 8: The Post & Office makes use of town memory and the existing historic details to make a cozy, vibrant, and familiar atmosphere (Scott 2018).

The Post and Office project is an example of the positive impact that gathering as an intergenerational community can have on the revival and continued life of rural towns. It also exhibits the importance of the built cultural landscape and how these buildings that are physical representations are the best sites to house such a program. For the town of Whitewood, Saskatchewan, the remaining wooden grain elevator is such a place, the physical embodiment of the skills and traditions to be passed on between the gathered community and the new visitors arriving through the proposed VIA extension.

Chapter 3: Grain Elevator as Cultural Icon

The wooden grain elevator is recognised by rural residents as a pivotal piece of heritage, a landmark worth protecting. This becomes evident when the structures are faced with demolition. Tearful crowds will gather to witness the destruction and speak of the loss to the community. An example of this situation can be seen in Figure 9 which describes the burning of the Rouleau, Saskatchewan elevator. From the anecdotes given by residents, the sense of identity associated with the grain elevator and the subsequent loss can be felt.

3.1. The Elevator as Museum

3.1.1. Current Museum Approach

Recognising the importance of wooden grain elevators to communities, the idea of maintaining the building for a future use is not new. However, in the instances of a reuse approach, preservation has been favoured over adaptability, manifesting itself in the buildings being converted into museums to house history and artifact. Driven by either a sense of urgency when faced with the building's immediate fate, or the farmer using personal funds to maintain an elevator on private property, both result in a shallow approach to memory, instead only acknowledging the need to save the building (Anonymous 2022b).

The museum projects in Val Marie and Hepburn, Saskatchewan as well as in Dawson Creek, British Columbia are examples of the previously mentioned approach. Commonalities between these three are a focus on providing educational tours of the elevator workings and

Rouleau, Sask. grain elevator seen on 'Corner Gas' destroyed by fire

One of the most recognizable landmarks on the Saskatchewan prairies has burned to the ground.

The grain elevator in Rouleau, Sask., — made famous in the Canadian comedy show *Corner Gas* — was engulfed in flames early Friday morning.

"Dog River," the name of the fictional town in the show, was painted across the iconic elevator.

Wayne Rumford, fire chief of the Rouleau and District Fire Department, said they received a call about the incident at about 2:40 a.m.

Within an hour to hour and a half, the fire brought the elevator down.

"With embers being carried through the air, we were worried about them landing on roofs and potentially starting more fires," stated Rumford.

> **"It was basically a landmark to the town. It's a tough day for the town."**

The cause of the fire has not yet been determined.

Rouleau is approximately 50 kilometres southwest of Regina.

'Hate to see something like this disappear'

Grant Clarke, who has served as the mayor of Rouleau for the past 10 years, said the fire likely started at around 2 a.m. on Friday.

According to Clarke, the structure was fully involved by the time fire trucks from the town and nearby communities arrived to the burning building.

All firefighters could do was contain the fire.

"At one time we had seven elevators here, but this was the last remaining elevator," mentioned Clarke when speaking to Global News on Friday. "It was built in 1973, and then a local farmer owned it."

Clarke said there are not many buildings associated with *Corner Gas* left in the community.

He suggested that the grain elevator was the most significant of them all.

"It was easily visible from the highway. Some people would think they were in 'Dog River,' but they didn't realize they were actually in Rouleau," shared Clarke as he smiled.

> **"Any time you lose something like this — it's a loss."**
>
> TWEET THIS

Despite the empty feeling being felt by residents of Rouleau and the surrounding area, Clarke said it was a community effort when the elevator went up in flames.

"We're very fortunate here in town. We have a really good fire department, local farmers hauled in water so they could fight it, an excavator was here to look for hot spots. Many people pitched in," Clarke added.

Co-owner speaks about loss

Lance Bean, a co-owner of the elevator, said an opportunity came up for his family to purchase the structure when the Saskatchewan Wheat Pool began closing small elevators in the 1990s.

Bean's family bought the Rouleau elevator in the mid-90s to store and clean grain for many years. However, they didn't use the elevator as much in recent years.

"We were actually in the process of trying to sell it, but I think that process is over now," said Bean on Friday.

(Canales-Lavigne 2021)

Figure 9: Excerpt from the news article covering the community responses to the loss of the grain elevator in Rouleau, SK (Canales-Lavigne 2021)

agricultural lifestyle of the early to mid 20th century as well as providing a space for seasonal community activities (Anonymous 2022b). The one variation in programmatic approach is Dawson Creek's inclusion of a community art gallery alongside its museum (Anonymous 2022b). Though a valiant attempt at adding to the historical narrative of the building, this thesis seeks to prove how the elevator can support even more diverse programming.

3.1.2. The Active Monument

The purpose of these museums is to display artifacts which subsequently deliver a specific version of history. Otherwise put, they are selective (usually in favour of the more positive angle) in the stories that are told (Hayden 1995, 11, 53; Stone 2019, 74, 80-81). Historic buildings that are used as museums become an artifact themselves in this way, telling one version of history and so it becomes difficult to decide how to tell one of a building's many stories.

Therefore, a better use of heritage buildings is to think of them as transitory objects, telling a story of past but also future. As seen in Figure 10, if a museum is thought of like a petrified tree, this fossil can just as easily remind us that a living tree was once there as its stump. Therefore the narrative of the building would be able to be retained and taught alongside a contemporary and contributory program

Figure 10: Petrified trees contribute equally as much as a stump. Elevator images (Crandall n.d.; The Hepburn Museum of Wheat n.d.; Val Marie Heritage Grain Elevator n.d.)

that would allow the building to become a transitional entity beyond its built purpose and remain active throughout the year while still providing interpretive program. Through the reintroduction of community, tradition, and skill embodied in the building itself, an active memorial typology is created.

3.2. A Cross-Programmed Entity

The wooden grain elevator has the ability to combine contemporary program with historical narrative due to its unique and rich history as an economic and social hub in western communities. By encompassing memory of user, material, product, and nature (Masuda and Johnson 1999) it represents a pivotal piece of the cultural landscape (Hayden 1995, 11), therefore making it the ideal site for a space of intergenerational skill and tradition sharing while contributing to the future of the community it represents.

3.2.1. The Elevator and the Economy

Western Settlement

At the height of their construction in Saskatchewan during the early to mid 20th century, the wooden grain elevator numbered approximately 3300 (Ministry of Tourism, Parks, Culture and Sport, Saskatchewan Heritage Foundation and Canada's Historic Places 2010). As seen in Figure 11, numerous communities had at least one elevator, Whitewood had six, as seen in Figure 12. Presently, as seen in Figure 13, there are approximately 273 wooden elevators remaining (Anonymous 2022b). As Western Canada was settled and the Dominion Lands Act and Canadian Pacific Railroad incentivised the settlement of the prairie region, rural agricultural communities began appearing. The Saskatchewan landscape was created from the tension

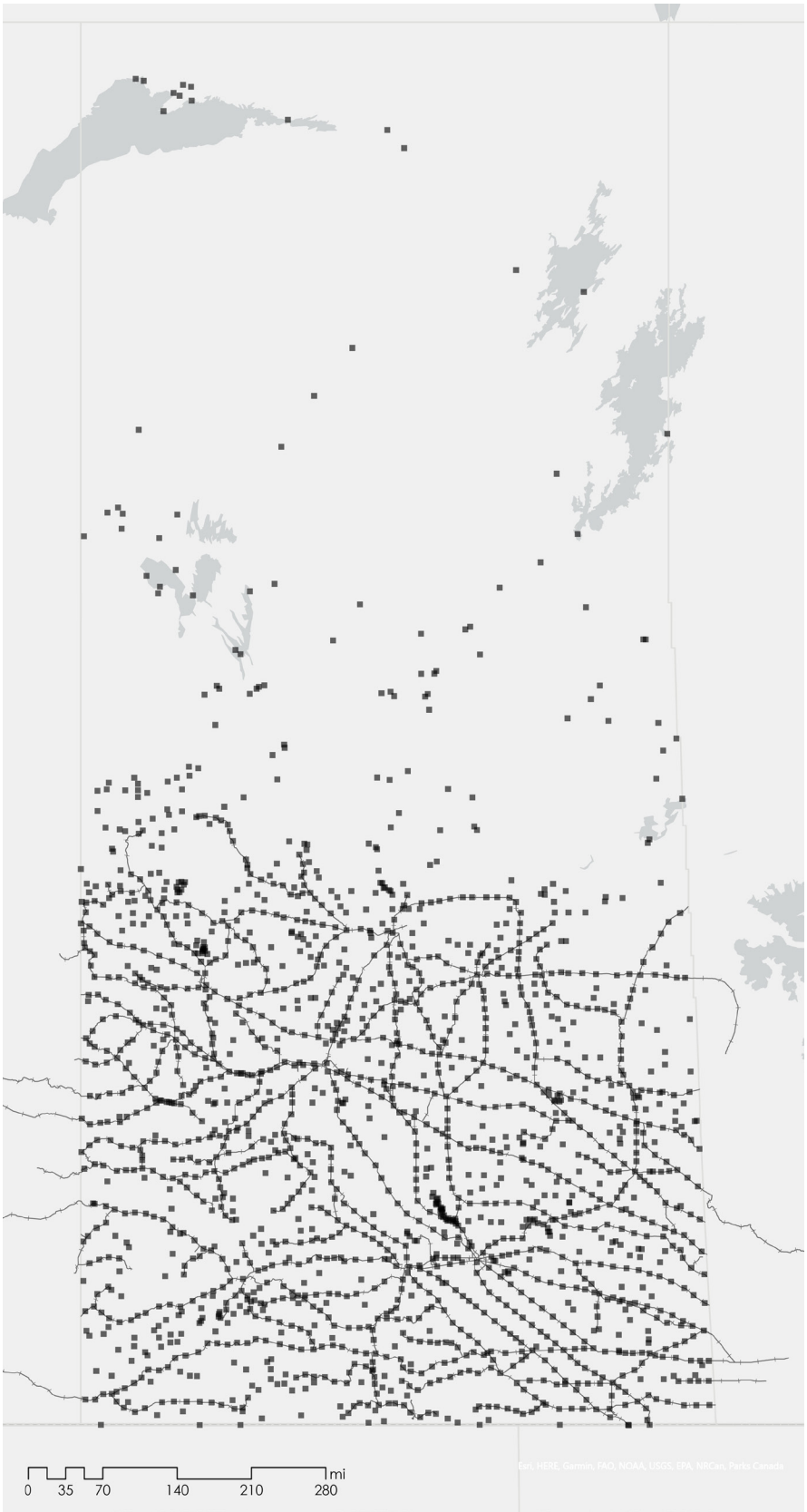


Figure 11: Map of the communities that had at least one wooden grain elevator during the mid 20th century (Anonymous 2022b; Government of Saskatchewan 2021a).

Figure 12: Painting capturing Whitewood's six wooden grain elevators along the CP railroad (Whitewood, Town of n.d.).

between fertile ground and human controlled objects (Cosgrove 1998, 177-178) resulting in the patchwork of fields and pastures veined with railroads and now highways that is symbolic of a province so proud of its landscape. The grain elevator evolved as the link between these entities as seen in Figure 14, the storage of landscape yield oriented along the manmade object.

The grain elevator became a landmark and representation of community and regional identity (Catherwood 2018, 7). Most of these structures displayed not just the grain company's name but also the town's, a physical manifestation of a community's success and claim on the land. The wooden elevator evolved to become a symbol not just of Saskatchewan, but of Canada as well. The building has been featured on dollar bills seen in Figure 15, postage stamps, and in international exhibition (Catherwood 2018, 7).

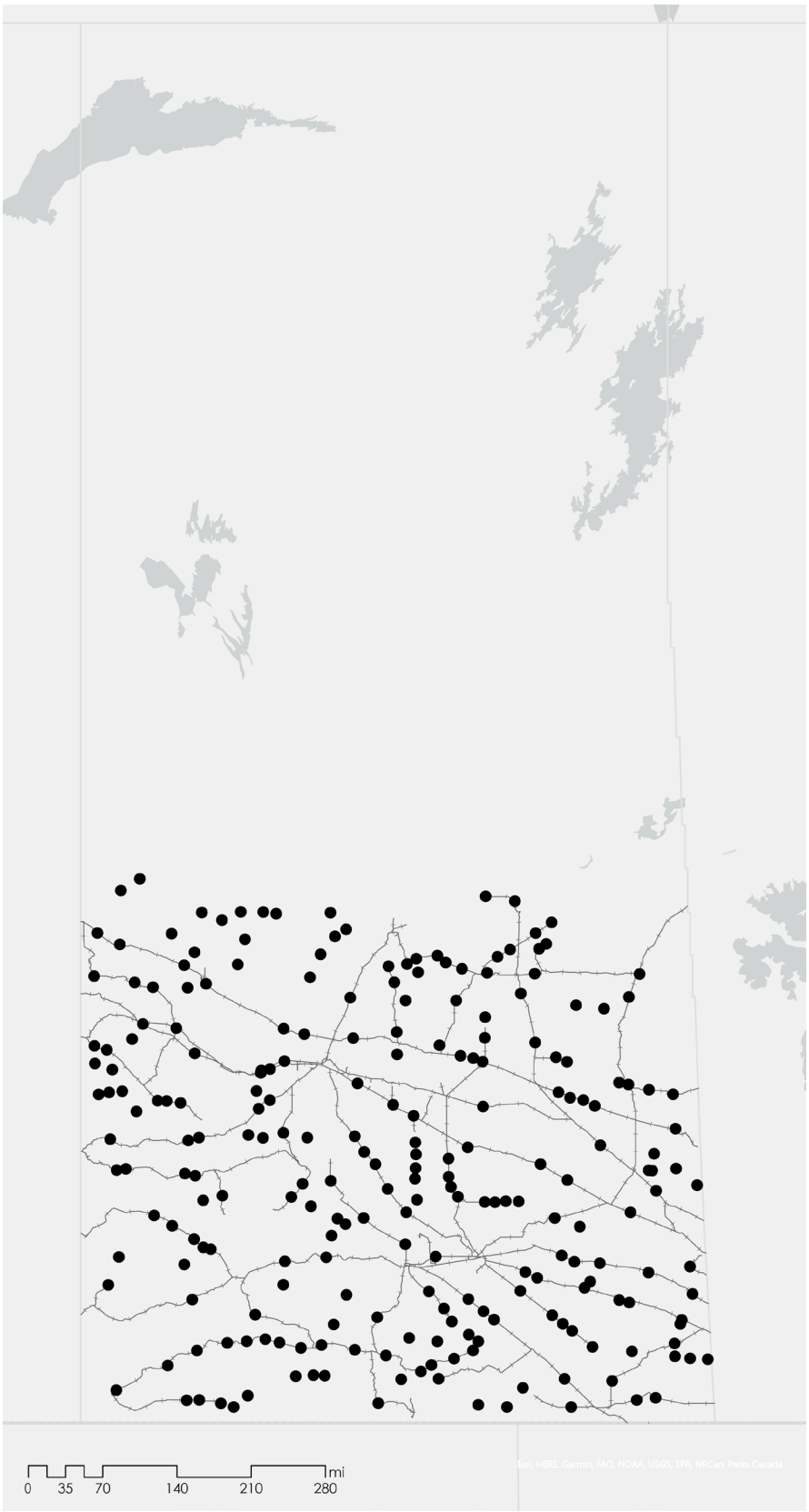


Figure 13: Map showing the locations of the 273 remaining wooden grain elevators in Saskatchewan (Anonymous 2022b; Government of Saskatchewan 2021a).

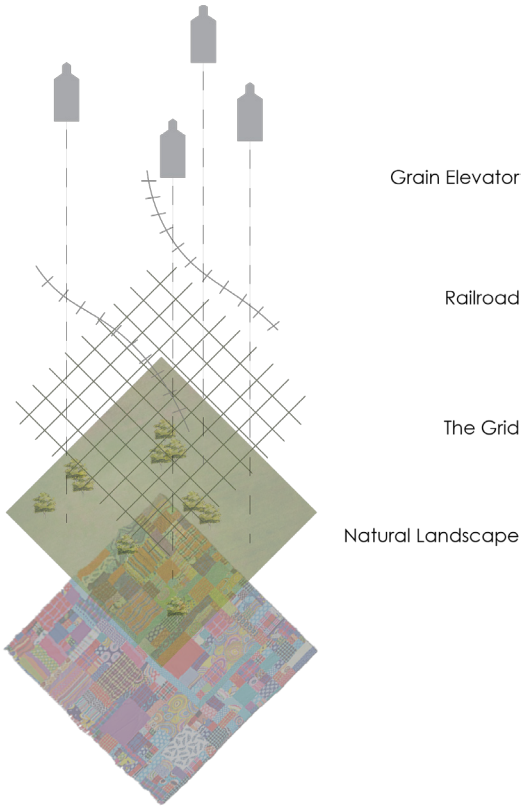


Figure 14: Elevator as the ties on the landscape quilt

Figure 15: Fleming elevator on 1954's $1 bill (Canadian Coin & Currency 2022).

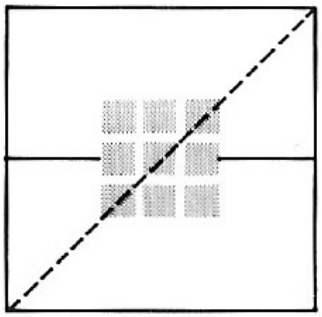


Figure 16: Diagram of Whitewood aligned to the grid then railroad (Mahar-Keplinger 1993, 48).

In rural communities, the grain elevator was one of the first buildings built. It was the backbone of the economic and social activities and regulated urban planning (Mahar-Keplinger 1993, 13). While always associated with the railroad, one is able to tell the age of a town by whether it and its elevator are aligned to the railroad or colonial grid. Figure 16 is a representation of Whitewood; a town founded prior to the railroad and therefore is aligned to the grid first and later built its elevators along the new railroad. This phenomenon is seen further in Figure 17, where Whitewood's T-town planning is demonstrated with elevators and railroad perpendicular to the commercial axis.

The wooden grain elevator was a symbol of progress. The more elevators a community had, the more agricultural production in the area, this relationship is seen in Figure

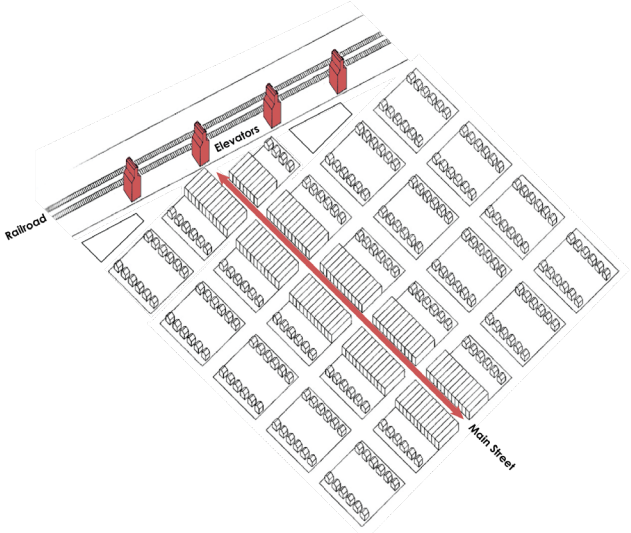


Figure 17: Whitewood's T-town planning of elevator and railroad perpendicular to commercial axis. Base diagram (Mahar-Keplinger 1993, 53).

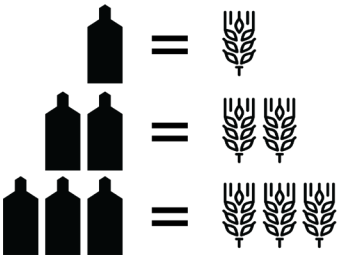


Figure 18: Elevator number was proportional to amount of productive farmland.

18 (Mahar-Keplinger 1993, 46). However, like all progress, it continued to evolve, and the wooden grain elevator was considered obsolete by late 20th century and replaced by concrete, centralised terminals (Catherwood 2018, 8). Presently there are about 204 active elevators in the province consisting of a combination of concrete terminals and retrofitted wooden elevators with concrete or wood annex additions, the locations of which can be seen in Figure 19 (Agriculture Canada 2021).

Functional and Symbolic

Rising above the predominantly flat landscape of the prairies, the grain elevator's height is among its most notable characteristics. From this observation their comparison to churches or sentinels began. Aldo Rossi once said, "to those who travel the great highways of the Midwest, [grain elevators] appear like cathedrals, and in fact they are the cathedrals of our times" (Mahar-Keplinger 1993, 7). The form of the Christian church evolved from both functional and symbolic purpose. Elements such as the nave and chancel

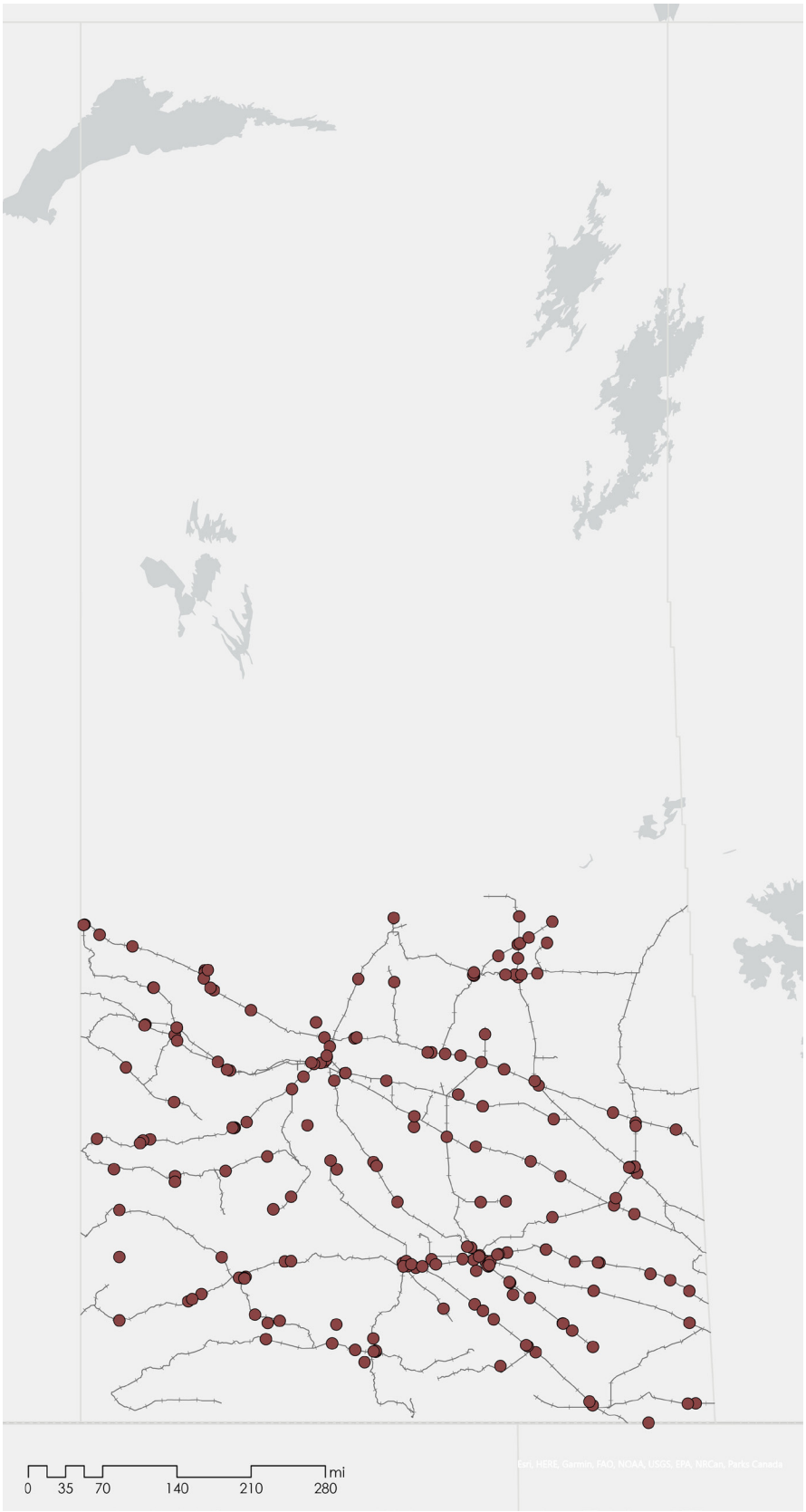


Figure 19: The locations of the grain elevators presently active in Saskatchewan (Agriculture Canada 2021; Government of Saskatchewan 2021a).

are functional in designating spaces for the congregation and altar. Proportional cruciform plans, high ceilings, and ornamentation are symbolic elements of the faith and glory of heaven. The steeple serves as a functional landmark and axis mundi. Therefore, the church is a typology of its own.

Similarly, the grain elevator was designed for function, and later evolved into symbolic means. As seen in Figure 20, the elevator's orientation was dependent on the railroad, while its height was means of both grain storage in the bins and circulation in the leg. The proportional shouldered design designated the headhouse from storage bins and gave rise to the recognisable silhouette set against the prairie horizon.

The wooden grain elevator, similar to rural churches made use of regional skill and material. Cribbed construction was innovative in its use of dimensional lumber interlocking to

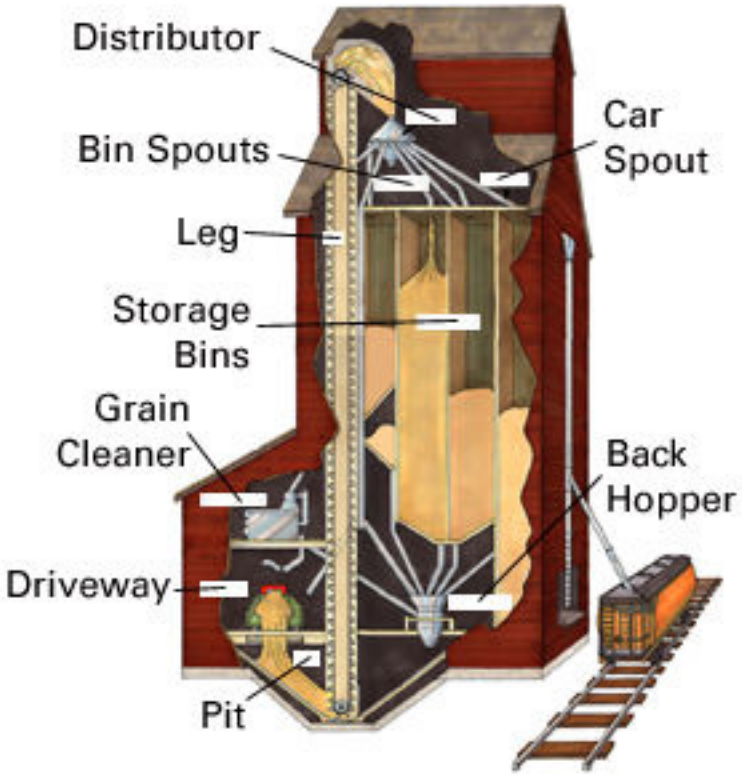


Figure 20: Diagram of the interior workings of a wooden grain elevator (Nohr 2021, 9)

both protect the grain inside from adverse weather while able to withstand the outward pressure on the structure (Catherwood 2018, 8; Mahar-Keplinger 1993, 10). This feat of engineering continues to be admired in these structures.

Community Survival

Between 2016 and 2021, the rural population of Saskatchewan decreased by 1.7% which equates to a decline of 6132 people (Statistics Canada 2022f) which is significant when a city constitutes an centre of at least 5000 people (Government of Saskatchewan 2021b). Around 1993 when the Saskatchewan Wheat Pool along with other companies began contracting out the construction of inland concrete terminals, the decline of the small community grain elevator truly took root (Catherwood 2018, 8).

It was this decline that illustrated the close connection between rural community survival and the presence of the grain elevator. The elevator represented a community's connection to the larger economic network (Catherwood 2018, 3). As seen in Figure 21, the building's relationship with the railroad historically brought in goods, mail, and people, while exporting agricultural product. Due to this economic flow, the elevator evolved to be the catalyst for schools, churches, and businesses. In this way, when a community loses its elevator, the people, economic, and social program that were its results leave and the town begins to die slowly (Anonymous 2022b; Catherwood 2018, 49).

3.2.2. The Elevator as Social Hub

With the grain elevator occupying a predominant place in the economic planning of a town, it evolved to contribute to the social program as well. The grain elevator built purposely

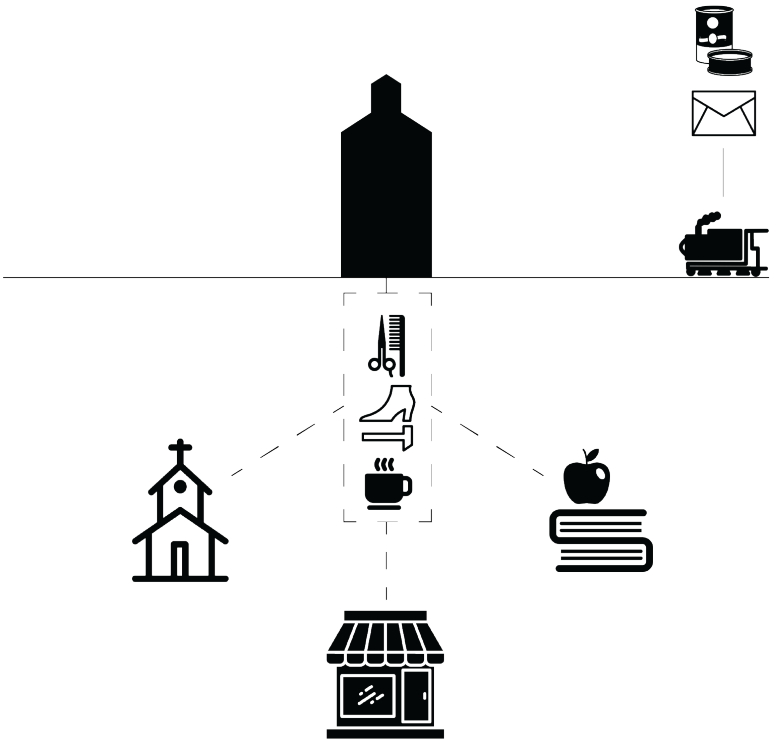


Figure 21: The elevator was the catalyst for diverse activity and community.

for the storage and circulation of grain as a small part of the larger agricultural network, became unintentionally socially and economically cross-programmed. Distance, and weather meant that urban and rural residents did not see each other frequently, therefore when the train came in, families who otherwise would not see each other would come to town. As one resident said of the excitement that would ensue,

> “When the train came in with empty grain cars, whoever saw it come in would make the first phone call to another farmer and the party line would be abuzz with excited farmers all eager to start loading out grain and get in the lineup. Often too, there was lots of discussion regarding the sneakiest way to town with an overweight load when the road bans were on so that the traffic cops did not catch you”. (Anonymous 2023)

Residents would witness farmers with their loads of grain lined up for a quarter of a mile at the elevator while wives would do the household shopping (Lemire 2010).

Nonetheless, the elevator instigated a day of family and friends socialising.

Fellowship

While formally similar to churches, grain elevators are socially similar as well. As places of fellowship for parishioners, likewise, the elevator adopted a social program amongst farmers and the community. This is especially true between neighbours that continue to help each other in agricultural communities where new people settle in the area that have never farmed or raised livestock before (Catherwood 2018, 34). Support amongst family and friends is shown through the exchange of advice, knowledge, and skills, further cementing the elevator as a social space of sharing. These values, promoted through this thesis' program will draw on the elevator's social history, especially in a time where agriculture continues to be less community oriented with farmers relying more on hired truck drivers (Anonymous 2022a) therefore, losing the camaraderie shared between neighbours.

Family Connection

The agriculture profession is predominantly learned in families and passed down from generation to generation, resulting in family farming companies (Catherwood 2018, 44). For many rural residents, when reflecting on their experience with the grain elevator, memories of riding along with dad or grandpa are among those remembered. Sensations of excitement, wonder, and pride were not taught, but realised by children (Catherwood 2018, 1). The younger generation came to witness the economic network of agriculture and participate in the industry.

Diverse Activity

The unintentional cross-programming of the building manifested itself in a variety of ways. Children's haircuts would be done in the office, shoes would be fixed for the price of a cigarette (Lemire 2010), and you would be able to have a beer at the elevator office after the bar closed (Anonymous 2022b). While grain was weighed and moved, farmers would socialise and exchange news while partaking in a cup of coffee from the pot that was always on (Anonymous 2022a). Originally built to move and house grain, the elevator took on a life of its own, and seldomly do the memories of the elevators actually stem from the grain.

Chapter 4: Design Goals and Methods

Explored in this chapter are the four design goals of this thesis and the methods used to achieve them. These goals are:

1. Create spaces to support intergenerational gathering
2. Create an active site that engages its current neighbours and contributes to future growth
3. Connect the elevator's contemporary program with its historic use and symbolism
4. Preserve the existing vernacular cribbed construction

4.1. Goal 1: Contemporary Intergenerational Program

4.1.1. Program Reflective of Memory and Community Growth

As this project began with the recognition that the grain elevator was a built representation of the rural collective memory, the programs that will support its mission of bringing generations together to share knowledge, skills, and traditions should also draw from these memories and the lifestyle that remains alive in the older population. As a result, Pierre Nora's Lieux de Memoire (Nora 1989, 13) is created. As seen in Figure 22, programs that are drawn out of the collective memory are a bar, coffee shop, train stop, and hair salon, alongside interpretive and exhibition space for the historical narrative of the elevator (Catherwood 2018, 44). Alongside the programs drawn out of the elevator memory are cultural spaces and activites that are lacking in the growing town, especially as it seeks

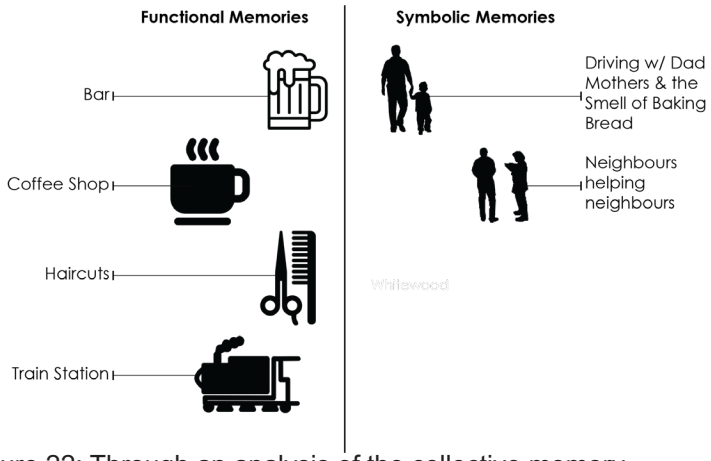


Figure 22: Through an analysis of the collective memory, programs, and physical characteristics important to the design intervention of the elevator are drawn out. Memories (Anonymous 2022a; Anonymous 2022b; Catherwood 2018).

to welcome more visitors with the addition of a VIA Rail stop. A dedicated space for Whitewood's farmer's market instead of the current situation of only being able to hold a market seasonally in the rink's parking lot, small shops and the elevator cafe will complement this space and ensure it remains active. A butcher shop will provide local hunters and farmers with an abattoir who do not have a suitable space themselves to process their game, while providing the region with a store that showcases locally raised and harvested meat. A black box performance space will benefit school and community groups who will now have a space to hold events and showcase their talents to their family and neighbours. For those residents who do not have space to grow their own food or would like to learn this skill, a garden and greenhouse are proposed. This space can be easily converted into a skating rink as an additional outdoor winter activity for the community. A gym and flexible studio with exhibition room are cultural spaces needed in the town that will benefit both the youngest and oldest community members. The derivation of these programs is reflects the needs of the town and the historical cross-programming of

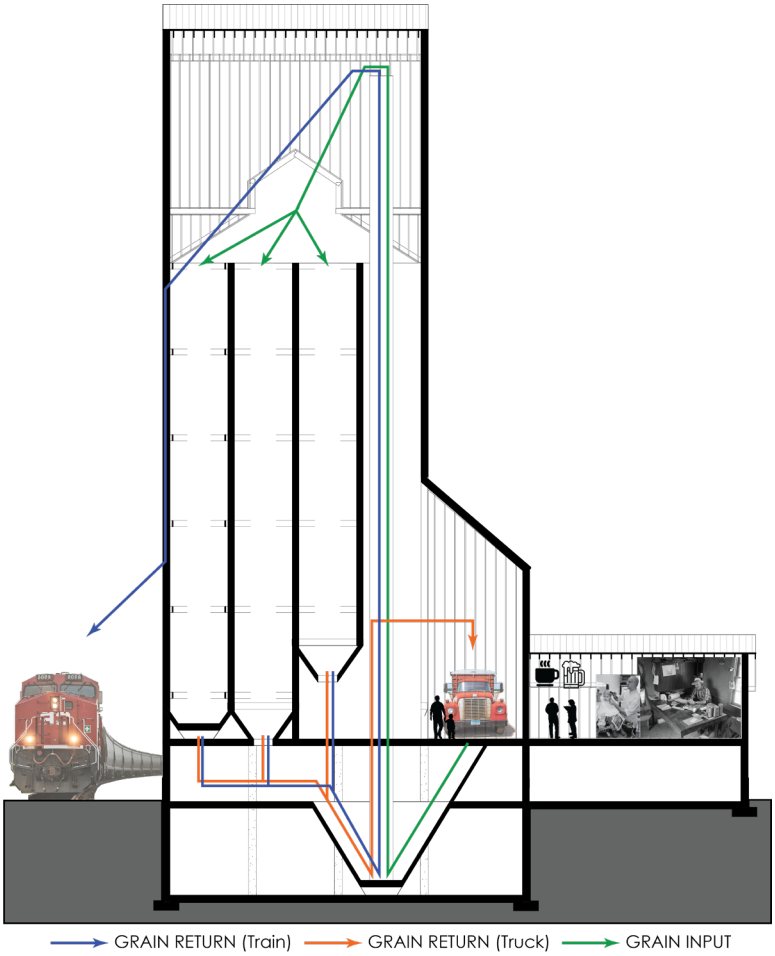


Figure 23: The elevator in addition to grain storage, also served as a space of fellowship. Photo credits (Big Iron Auctions 2020; Bogle n.d.; CP 2023; Why I Miss the Local Elevator 2014)

the elevator seen in Figure 23. Together this collection of programs creates a place for the entire community where the older population especially can contribute in a way that is familiar to them and provides a kinship within their own generation. Therefore, the community driven design proposal complements the existing commercial and cultural activites while not subtracting from the downtown corridor that remains as the political, social, and commericial heart of Whitewood.

4.1.2. Spatial Organisation Based on Time and Activity

In order to achieve a continuously active site, the collection of programs achieve open hours throughout the day. As seen in Figure 24, the business hours between 9 am and 5 pm represent when the majority of the programs will operate, while the black box theatre and bar programs will entice later patrons, and the gym represents a continuously operating space. Subsequently, the spaces themselves were assigned desired adjacencies in Figure 25 in order to begin to group programs on the site. As seen in Figure 26, from these adjacencies, groups of programs that will do best together based on operating hours, time of year, or complementary activity are identified. These preliminary programmatic studies provided the basis for organising site elements and spaces within the existing elevator and surrounding buildings seen in site goal two.

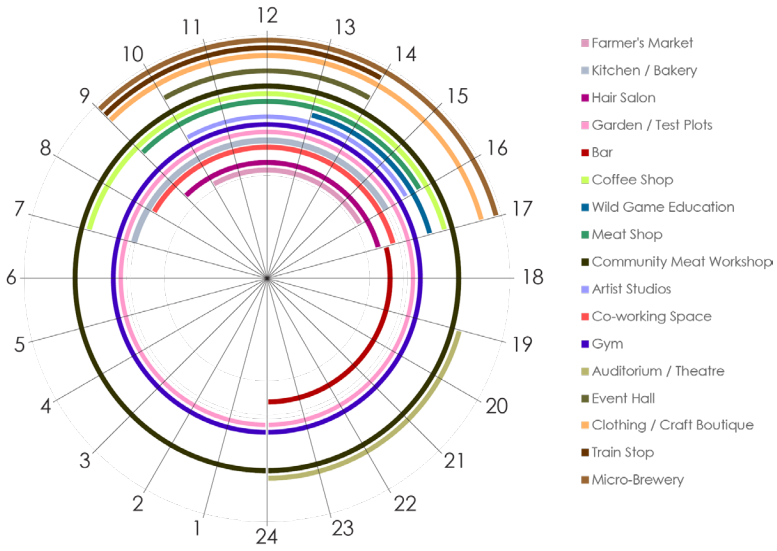


Figure 24: Operating hours of the collection of programs for the site exhibit that the site will be continuously active.

	Farmers' Market	Café	Hair Salon	Outdoor Rink	Garden	Elevator Exhibit	Bar	Restaurant	Meat Education	Meat Shop	Workshop	Flexible Studio	Administration	Co-working	Gym	Theatre	Boutique Store	Greenhouse	Train Stop
Farmers' Market		1	2	3	1	3	3	1	3	3	3	2	3	3	3	3	1	1	1
Café			1	1	2	2	1	1	3	3	3	1	2	2	2	2	1	3	1
Hair Salon				3	3	3	3	2	3	3	3	2	3	3	2	2	2	3	2
Outdoor Rink					1	2	1	1	3	3	3	2	3	3	3	3	2	1	1
Garden						3	3	2	2	2	2	3	3	3	3	3	3	1	1
Elevator Exhibit							2	1	3	3	3	2	3	3	3	3	1	3	2
Bar								1	3	3	3	2	3	3	3	2	2	3	1
Restaurant									3	3	3	2	2	2	2	2	2	2	1
Meat Education										1	1	3	3	3	3	3	3	2	2
Meat Shop											1	3	3	3	3	3	2	2	2
Workshop												3	3	3	3	3	3	2	3
Flexible Studio													3	2	2	1	2	3	2
Administration														1	3	3	3	3	3
Co-working															3	3	3	3	3
Gym																3	3	3	3
Theatre																	2	3	3
Boutique Store																		2	1
Greenhouse																			2
Train Stop																			

Most Desirable	1
Somewhat Desirable	2
Not Desirable	3

Figure 25: Programs were assessed against each other to determine desired adjacencies as part of preliminary design.

Figure 26: Groups of adjacent programs derived as a preliminary step to placing programs on the site and in the existing buildings.

4.2. Goal 2: The Active Site

The site for this thesis occupies a large space on the current eastern edge of Whitewood. By existing on the interface between the urban and rural identities of the Saskatchewan prairie, the design of the site will relate to its present urban and rural neighbours while contributing to the future growth of the town. By incorporating the current highway, railroad, and streets into the organisation of site elements

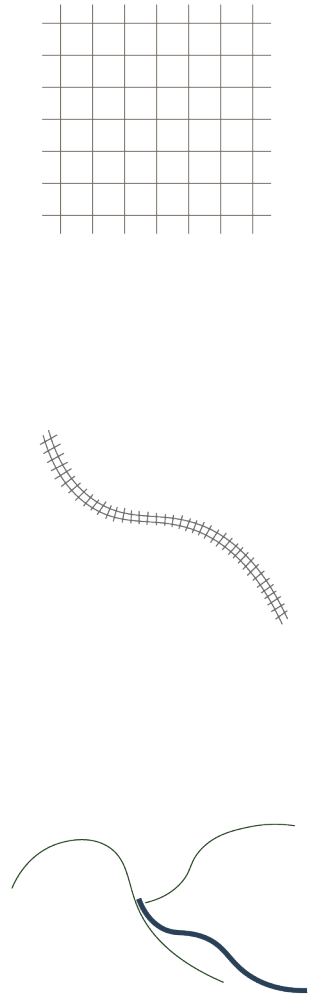


Figure 27: Top to Bottom, the colonial grid, railroad, and river valleys are regional patterns that will influence the site design in this thesis.

while extending out into the rural realm and connecting to existing roads, the site extends activity in all directions and therefore reinvigorates its current dead-end nature into one of engagement and procession.

4.2.1. Engagement with Settlement Patterns

The prairies of Saskatchewan are a landscape that is made up of human and natural patterns. The quilted landscape as a result of the colonial grid is laced with railroads, highways, rivers, and valleys, seen in Figure 27, each of which marks the terrain and contributes to the history and meaning of the region (Hayden 1995, 17-18, 22). The site for this thesis encompasses the existing highways, town and rural roads, and railroad as seen in Figure 28 which make the town the ideal case study by being situated to bring people into the community and having the elevator as a proposed extension of the downtown. Therefore, the organisation of vehicular and pedestrian traffic routes will connect the currently broken urban/rural interface. By establishing the east/west engagement, the railroad as active import of goods and people with the addition of the VIA rail stop, transforms the north face of the site into the ideal service corridor while creating a prototype that could be mirrored across the railroad with a future development of town land. These multi-directional engagements are seen in Figure 29.

4.2.2. Procession and Narrative

As one approaches the site, either by foot or vehicle, and subsequently progresses through it towards the elevator complex at the east end, there must be a continuous building of narrative encompassed of new and existing construction, organisation of program and site services. This will be accomplished by the new vehicular corridor and service road,

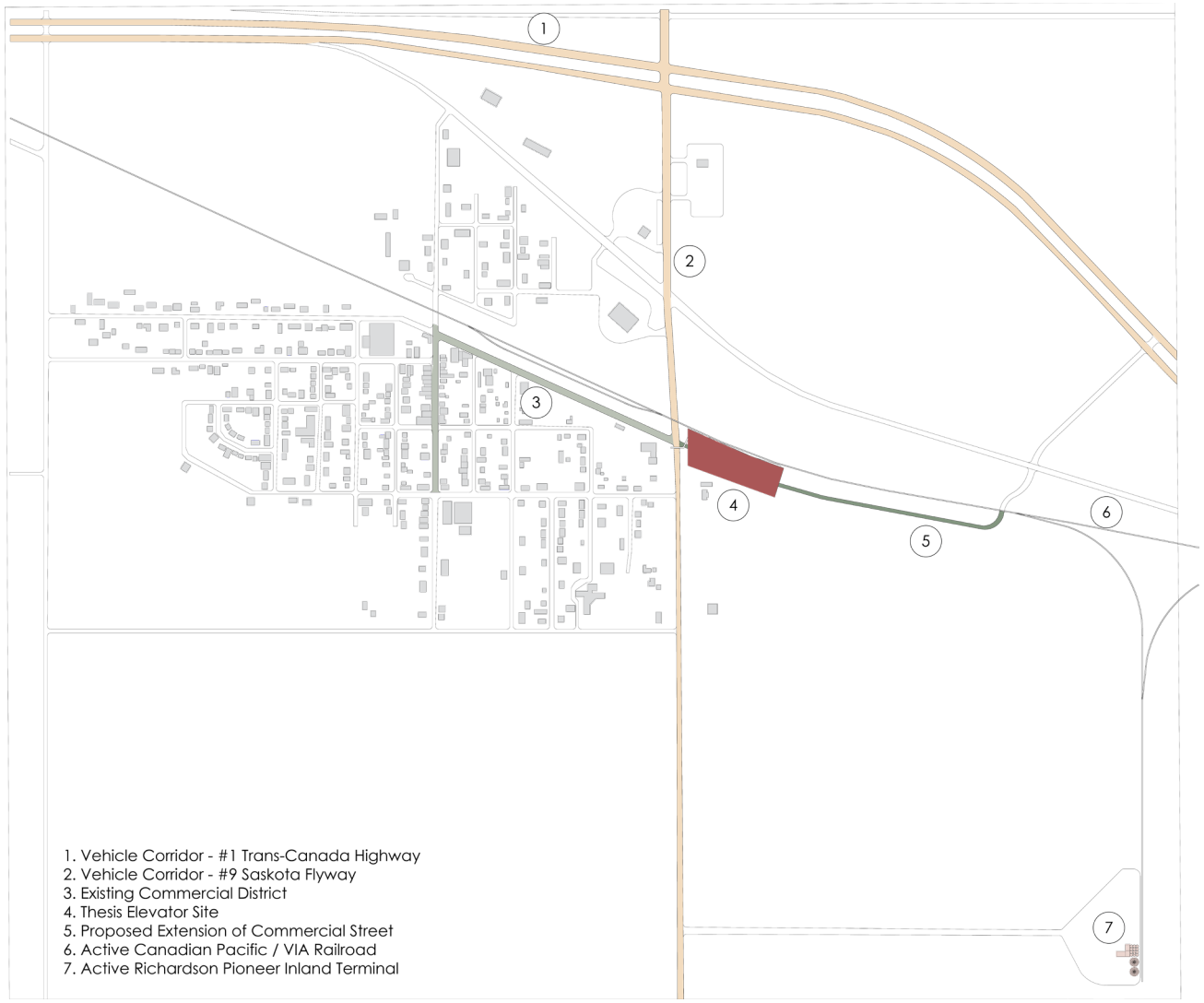


Figure 28: The grain elevator in Whitewood is the ideal case study due to the connectivity of the town, while being ideally located to extend the downtown core.

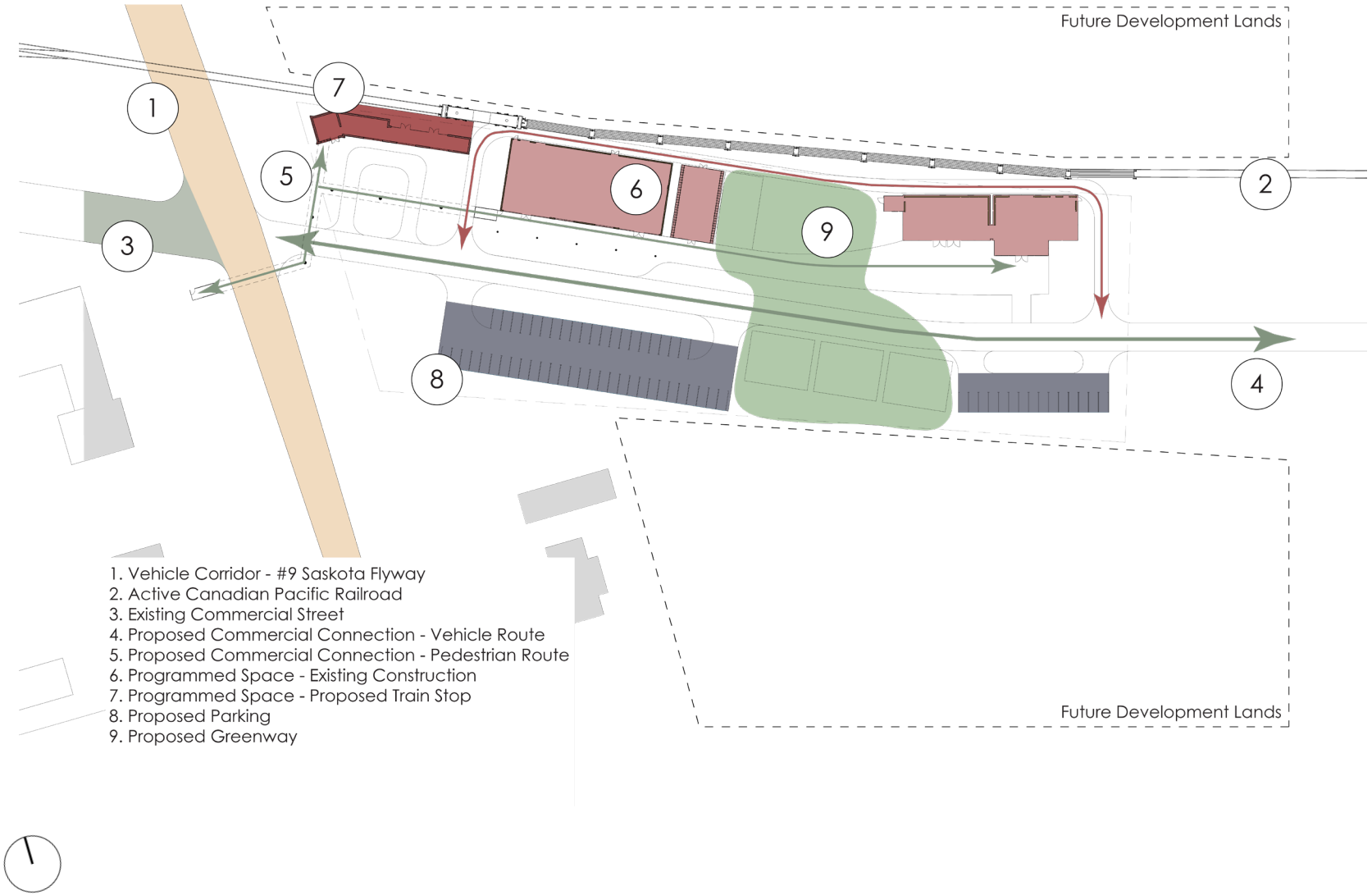


Figure 29: The new proposed vehicle, pedestrian, landscape, and service routes act as organising devices for the design while engaging future development.

which is crossed by the added pedestrian footbridge that connects to the current downtown. Together these elements will create a new spine for the site design and divide the site into service spaces to the north and south, while the east/west axis of the site remains publicly engaged and active. A new landmark building on the prominent northwest corner denotes the redevelopment of the site. Lastly, transparent store fronts and landscaped public space create an active pedestrian processional and supporting narrative which ends with the adapted elevator building.

Connection to green space and openness is important for every generation, but especially the older and younger person (Verma n.d.). As a result, the landscaped public space encompassing the garden/outdoor rink area and crop test plots will act as a central space for the site and immediately proceed the elevator in narrative, similar to how the zwei+plus project employs a central green space as organising device.

Case Study: Zwei+plus Intergenerational Housing

The zwei+plus intergenerational housing project is one that employs an active garden as a design feature in spatial layout, while promoting connectivity and play (Aulinger and Gilbert 2018). As seen in Figure 30, ground floor programming is a mix of public amenities, gathering spaces, private kindergarten, and assisted living connected by productive green space. As a result, there exists places for privacy and encounter while continually being connected to nature.

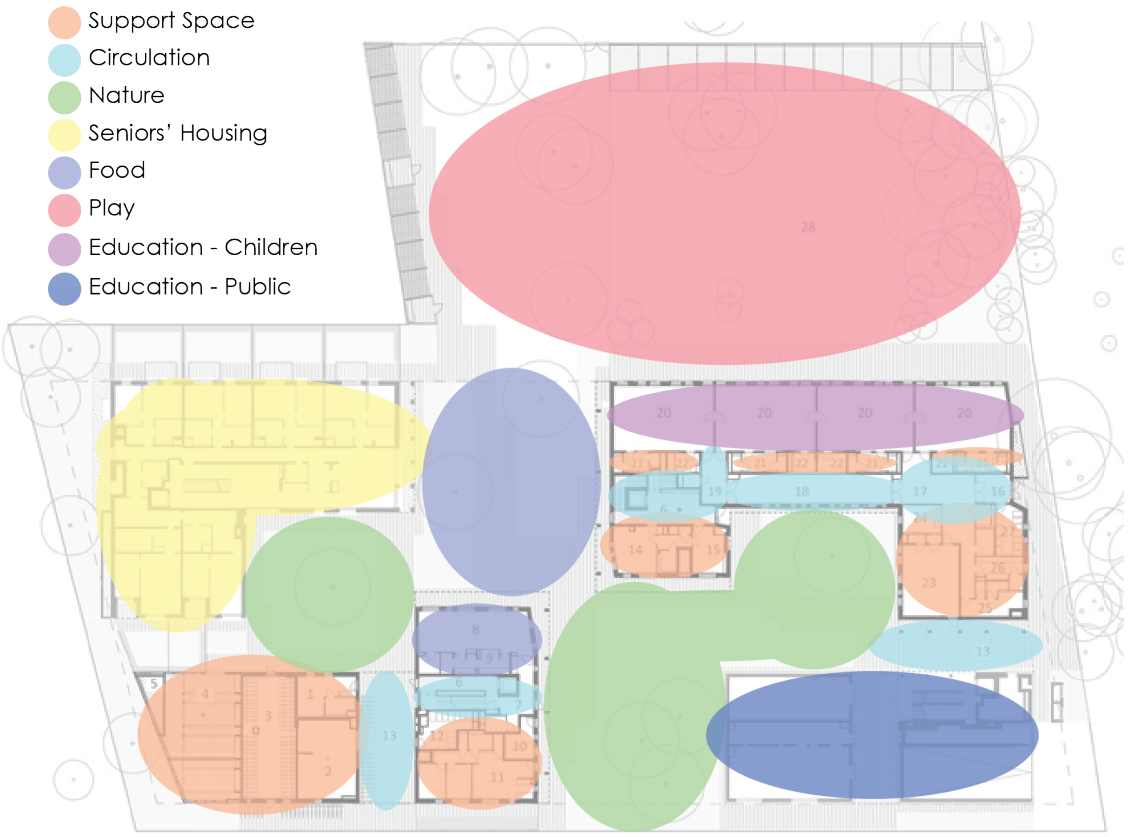


Figure 30: In the zwei+plus intergenerational housing project, green space is used as a productive and beautiful material, while serving as an organisation device for program spaces. Base diagram (Aulinger and Gilbert 2018).

4.3. Goal 3: A Transitory Building

As a large, windowless, industrial building, the design intervention is important in how it relates to the historical narrative of the elevator while allowing human occupation and a contemporary program. Most importantly is the window placement as it changes the recognisable outward appearance of the building as seen in Figure 31, and how moments of the original building are kept interiorly for patrons to appreciate the historical industrial purpose.

Figure 31: The elevator's recognisable outer appearance encompasses its height, silhouette, painted letters, and windowless cladding.

4.3.1. Fenestration

Framing Landscape Pictures

The existing building has a homogeneous façade of aluminum cladding. In order to allow light in without overpowering the building with glass, windows will be strategically placed to relate to the new program and highlight the existing structural grid and circulation core.

From the elevator, patrons gain a unique perspective and connection to their home given the elevator's place between urban and rural, while strengthening the bond that residents have with the landscape. As one resident said "it's the love of the land that needs to be instilled in you" (Anonymous 2022a). In identifying the important views seen from the elevator such as the active Richardson Pioneer inland terminal, town, transportation corridors, and surrounding prairie seen in Figure 32, these views are used to orient window placement of programmatic spaces that require fenestration such as the offices, hair salon, gym, flexible studio space, and viewing deck.

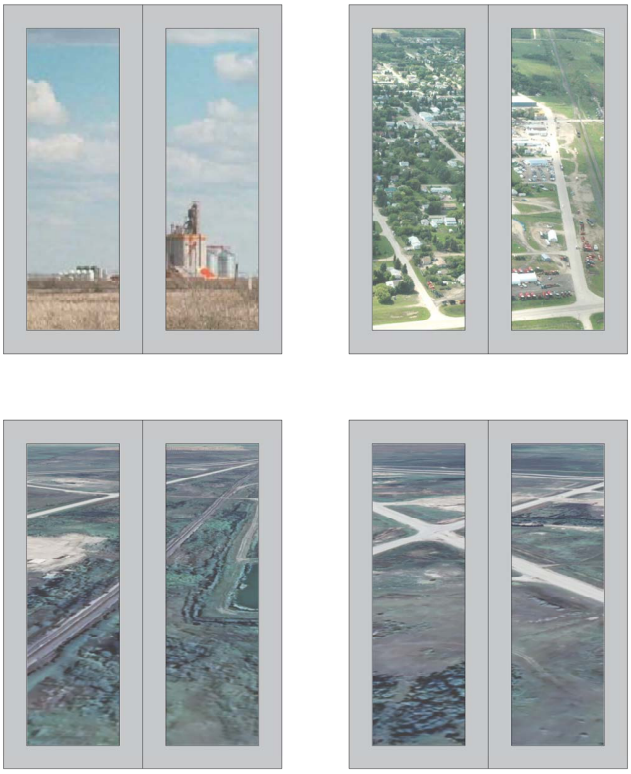


Figure 32: The framing of key views will be important to maintain connection to the landscape. Photo credits (Bouvier 2017; Google Maps 2022; Whitewood Growing 2011).

Prairie Light

Saskatchewan's slogan is "Land of the Living Skies", reflective of the great horizon, skies, sunsets, and prairie light. The province is also Canada's sunniest (Wittrock 2014), so naturally the quality of light in the elevator as it mixed with the grain dust was a recurring memory in the community (Catherwood 2018, 1).

Not only reflective of the province, and collective memory, it plays a crucial role in providing sensory rich environments for children (Verma n.d.) and the elderly (Foyatier 2021). Therefore, large, bright windows, that are oriented towards the east and west to capture the stunning sunrise and sunset will be incorporated into the design.

Additionally, by retaining the historic circulation core of the elevator in the design proposal, therein lies the opportunity to highlight this space culminating in the viewing deck with large bright windows. By doing so this will create a bright, vast space of circulation by day, and allow the building to shine as a landmark to the region during the night or in Saskatchewan's adverse weather, subsequently retaining its landmark status no matter the hour.

Case Study: MAE-AN-GEO Village Community Center

The MAE-AN-GEO Village Community Center in Dangjin, South Korea is a project that through its use of orientation towards the Catholic Church and agricultural land, connects those within it to their home (Studio Zozo 2022). Likewise, the architect's use of light in the interior courtyards creates well-lit, sensory rich environments for the elderly patrons and acts as a lit, transparent beacon for the community on village feast days (Studio Zozo 2022). The building lit as a community beacon is seen in Figure 33. These aspects acted as inspiration for both the orientation focused design of the elevator complex, but also in the placement of new windows to create a beacon for the town's skyline.

Figure 33: Through its use of transparency and light, the building creates a beacon and landmark for its community (Studio Zozo 2022).

4.3.2. Memory Moments

For this project to become a true transitory entity, there must be moments of new, as discussed previously, but also moments of old. Therefore, the DNA of the elevator will be retained in various ways. Firstly, the circulation core of the elevator where the leg and vertical conveyor belts reside will be retained and repurposed into the circulation of people around the unique conveyors. Secondly, while the horizontal conveyor belts that span the four-foot gap between the main and annex buildings will be removed, glass bridges that retain the transparency while allowing patrons to experience the movement between buildings will be added. Thirdly, though most of the grain bins will have to be removed to allow space for the new programs, some of them will be retained in place to allow for patrons to gain an appreciation of the scale of the voids that make up the existing structure. Additionally, the hopper structure that encompasses the bottom of the bins will be retained as sculptural elements. Lastly, recognising that the existing structure will need reinforcement once the cribbing begins to be removed, this new intervention will make use of the historic 11' by 11' by 11' grid therefore allowing pieces of the old structure to fuse with the new.

Figure 34: Cribbed construction employs a log cabin technique of laying dimensional lumber flat on top of each other that interlock at corners.

4.4. Goal 4: Wooden Cribbed Construction

The existing building makes use of wooden cribbed construction seen in Figure 34. This style of construction made use of the available dimensional lumber and the community based skilled labour. By employing a log cabin technique, these 2"x10" boards were stacked flat, interlocked, and nailed together at the bin corners in accordance with the 11' grid. This construction is a feat of engineering in

its ability to withstand the weight of the building and the lateral forces of the grain and exterior conditions. However, the solidity of the structure is only retained as it remains intact, therefore once parts of it are removed, it requires reinforcement to withstand itself and the added loads of the design proposal. This relationship is seen in Figure 35. Therefore, the added structure of the proposed intervention will recognise the craftsmanship and patina of the cribbing while being distinctly new to allow for visual layers of the construction sequence.

4.4.1. Maintaining the Silhouette

The elevator's iconic silhouette and height is a key component of the collective memory and is instantly recognised as a landmark (Catherwood 2018, 7). Therefore, the design intervention of this thesis retains the importance of the tall and seemingly light verticality by not disrupting the geometry of the roof or protruding from the silhouette so as to take attention away from it, employing glass separation between the existing buildings and any additions made, while retaining the aspect of lettering on the façade.

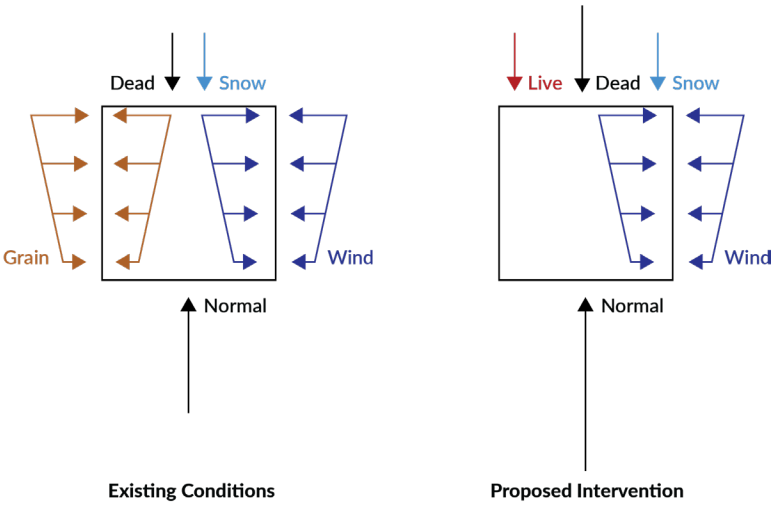


Figure 35: The design proposal requires structural intervention to replace the lateral stability of the grain and uphold the added live loads of occupancy.

4.4.2. Working with the Bin Plan

The structural grid is evident in the existing plan of both the original elevator and its annex seen in Figure 36. The 11'x11' structural grid makes up the grain bin voids where the sloped bottom of the bins (hoppers) can be seen below. The hopper structure is also evident in the longitudinal section in Figure 37 of the existing building which corresponds to the ceiling of the proposed ground floor. In the section it is also evident that the lateral bracing within the bins follows the vertical 11' grid.

Case Study: Erlenmatt Silo, Basel, CH

The Erlenmatt Silo project in Basel, Switzerland is an excellent example of working within the bin plan of this building typology. Not only is it representative of the program intentions of this thesis by being a diverse cross-programmed space for different demographics, but the organisation of these spaces also highlights the unique features of the

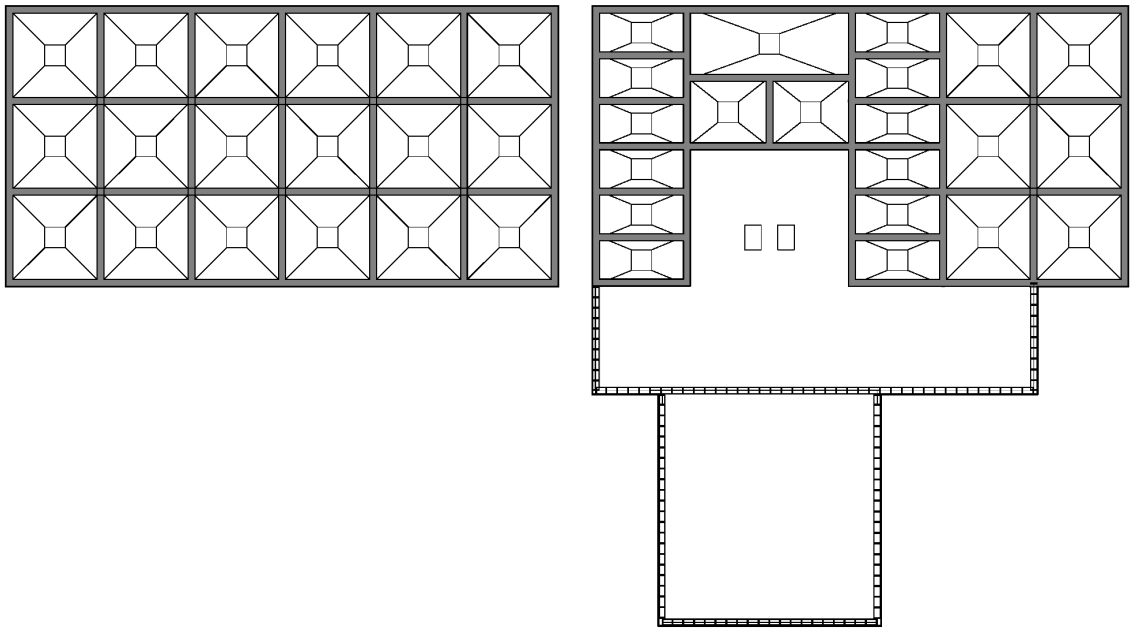


Figure 36: The existing first floor plan of the elevator shows the 11'x11' grid that makes up the grain bins and the hopper structure below.

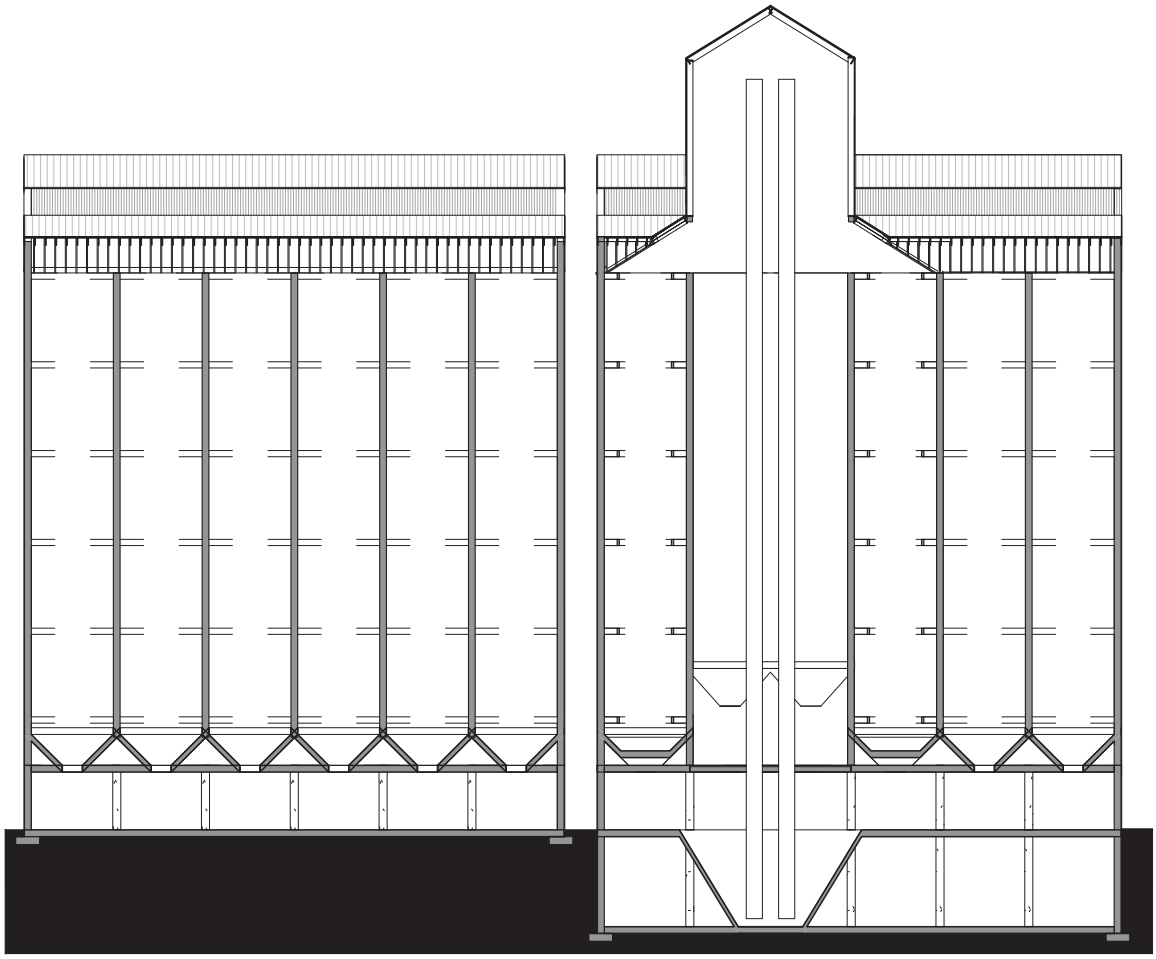


Figure 37: The existing longitudinal section reveals the 11’ grid is continued vertically with the lateral bracing as well as the bin hoppers corresponding to the ceiling of the proposed ground floor.

original building (Harry Gugger Studio 2020). As seen in Figure 38, the respect paid to the existing structure features the bin hoppers as an installation in the hallways and atrium. This design principle of addressing the existing will inform the architectural intervention in this thesis.

Figure 38: The bin hoppers of the Erlenmatt Silo feature as an architectural feature reminiscent of the building's past life (Harry Gugger Studio 2020).

Chapter 5: The Proposal

5.1. Choosing the Site

The town of Whitewood, located in the southeastern part of Saskatchewan was determined to be the ideal site for this thesis through an analysis of the southern part of the province. After mapping the wooden grain elevators still standing in Saskatchewan seen in Figure 39 (a number of about 273 (Anonymous 2022b)), those that were not standing within the boundaries of a town (at least 500 people (Government of Saskatchewan 2021b)) were disregarded, seen in Figure 40. As this thesis project aims to produce an active monument to create a better quality of life for people, it had to have a population base to serve. Next, three possible sites were identified, seen in Figure 41, as being connected via vehicle and train so as to be accessible to the urban

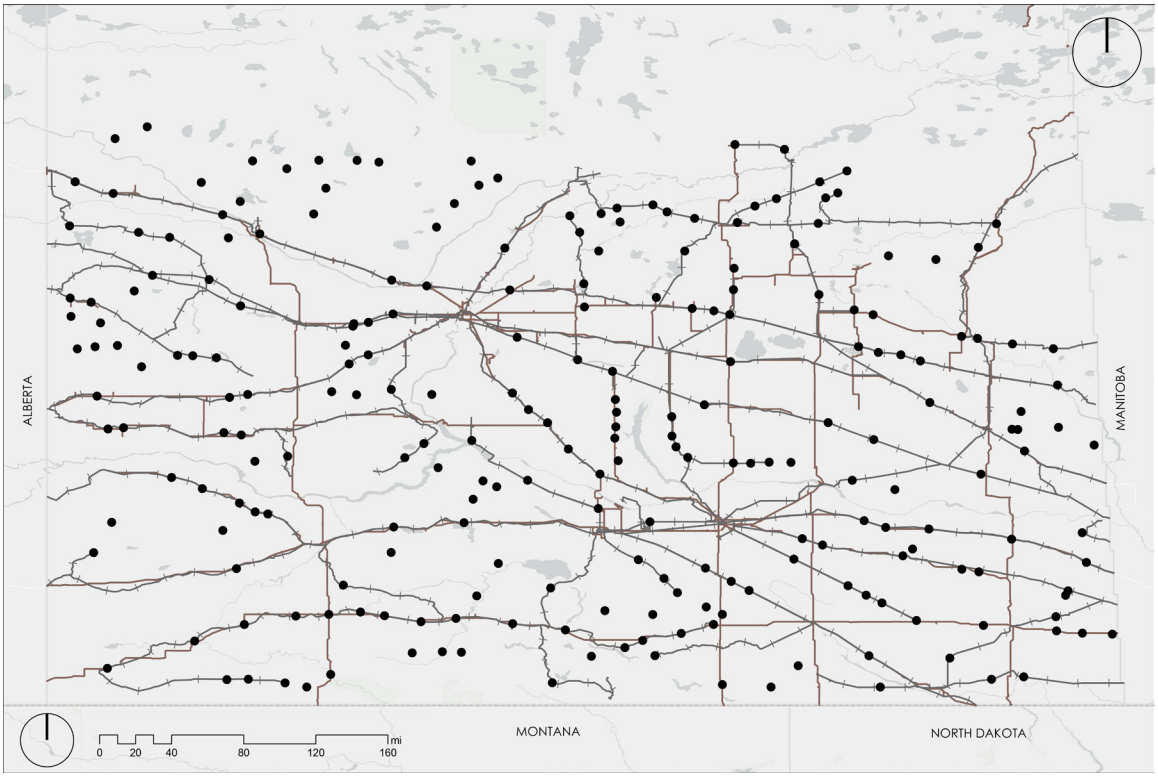


Figure 39: Map of the remaining wooden grain elevators in Saskatchewan (Anonymous 2022b; Government of Saskatchewan 2021a).

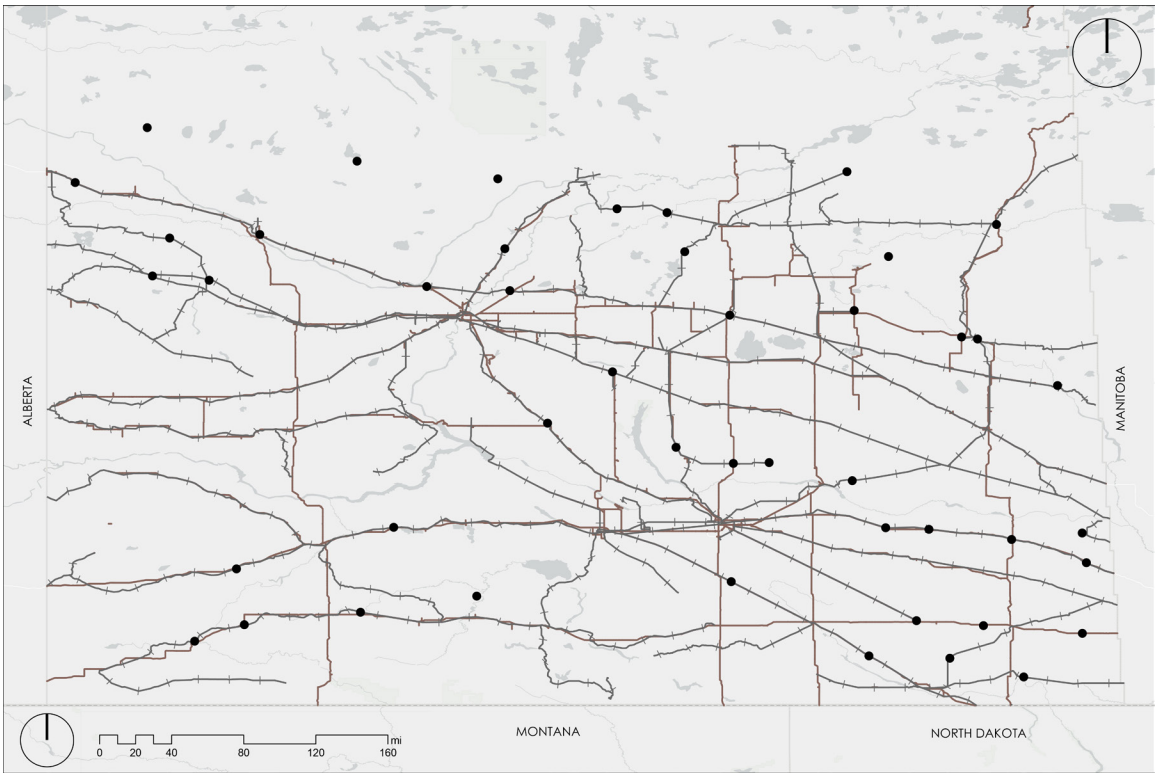


Figure 40: Map of those remaining elevators that reside in a town >500 people (Anonymous 2022b; Government of Saskatchewan 2021a).

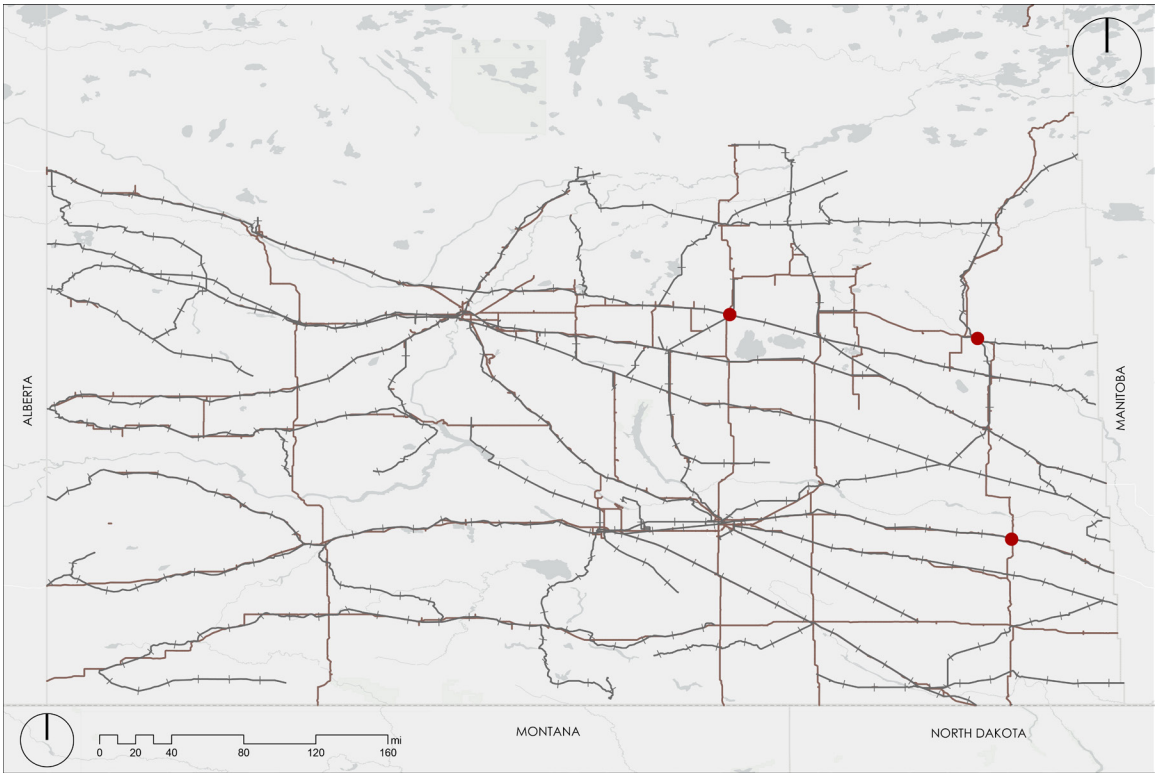


Figure 41: Three towns were chosen as possible case studies for this project. Map data: (Anonymous 2022b; Government of Saskatchewan 2021a).

and rural person easily and close to regional landmarks that were representative of the landscape and culture is important to the site selection. The towns of Whitewood, Sturgis, and Watson, Saskatchewan were then assessed against each other based on population, the percent of the population that is older than 65, connectivity, and regional hotspots, which can be found in Figure 42. Finally the town of Whitewood was chosen due to its population size, connectivity, and being situated between two river valleys important to the region's tourism and landscape uniqueness thus increasing the number of prospective patrons beyond the immediate community. At the time of this thesis, there are no plans to either demolish or adapt the elevators in the other towns of Sturgis and Watson.

5.2. Intervening on the Site

The architectural intervention of this thesis will encompass a site strategy for anticipated community growth, diverse programming targeting a variety of age groups and interests, and a contemporary adaptation of the Saskatchewan Wheat Pool "C" grain elevator.

Parameter / Town	Population	% Population > 65	Connected via:	Regional Hotspots
Whitewood	944	26.50%	Trans-Canada #1 Saskota Flyway #9 Canadian Pacific Rail	Qu'Appelle Valley Moose Mountains
Sturgis	646	27.90%	Saskota Flyway #9 VIA Rail Canadian National Rail	Good Spirit Lake
Watson	707	30.40%	Canam Highway #6 Highway #5 Canadian National Rail	Quill Lakes

Figure 42: A relative assessment of the three potential thesis sites Statistic data (Statistics Canada 2022c; Statistics Canada 2022d; Statistics Canada 2022e).

5.2.1. Site Procession

The primary entrance of the site exists as an extension of South Railway Avenue, off the #9 highway by vehicle, or across the vehicle routes via the new pedestrian overpass. This entrance is marked by a proposed tower acting as circulation space for pedestrian traffic to/from the site and proposed train stop as well as additional administration offices. These new elements can be seen in Figure 43 where the tower's geometry aligns itself with both highway and railroad and material choices reflect their kinship with the elevator building while being a contemporary addition. The transparency of the footbridge allows it to remain light in the air while patrons gain a climate controlled, yet scenic walk. For the tower, cribbing removed from the elevator adaptation is reused here as clapboard siding and the town's name is marked on the faces oriented toward the railroad and highway, an extension of the elevator facade's historic signage.

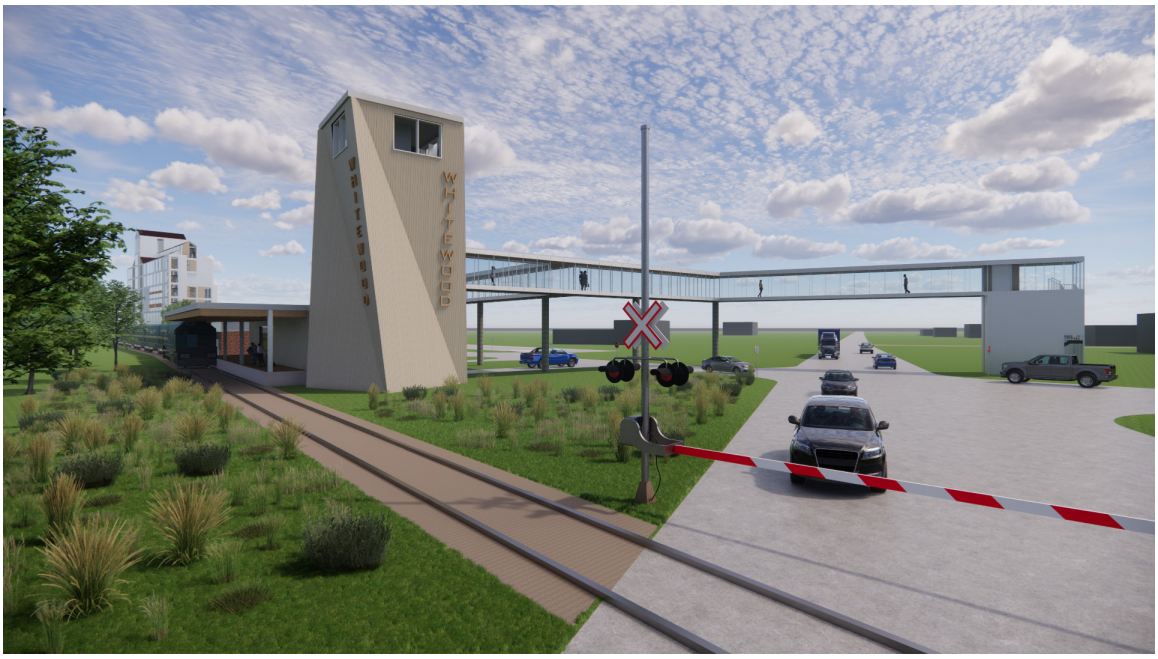


Figure 43: Proposed tower and pedestrian overpass mark the primary entrance of the design site.

Upon entering the site, pedestrians can progress to either the train station or onward to the adapted existing site buildings. Previously acting as vehicle storage space for the rural municipality, the brick building has been adapted to house the meat related programs of this project. As such, the additional loading bays, waste disposal, and hygiene requirements of these spaces are kept separate from the grain elevator programs and occupy a ground floor space close to the proposed service road. Most eastward in the building exists an abattoir and related spaces for use by hunters, local skilled people, and as a place for the art of butchery, especially on the game animals of the area, to be taught. The west part of the building houses a meat shop for local producers and hunters to sell to the community and for visitors to gain an appreciation for the yield of the region. By orienting the reception of both the abattoir and shop, as well as the related kitchen along the south face, it creates an active façade as part of the procession seen in Figure 44.

Figure 44: The active facade showcases the display counter of the abbattoir and meat shop along with the processing kitchen through large windows.

Figure 45: Landscaped garden and outdoor space occupy the place between the existing buildings.

The roof line is extended to become a part of the protected pedestrian route.

The second existing building, a metal enclosed quonset structure, will be retained and adapted to become a greenhouse that will relate to the adjacent garden space and provide greenery to the site in the growing off-season.

Prior to arriving at the grain elevator, patrons encounter a landscaped garden and outdoor space, represented in Figure 45, that will double as an outdoor rink in the winter months. Together with the greenhouse, these spaces will provide growing space to those who may not have such a place in their homes as well as a space to expose people to the art and love of gardening. This space for growing vegetables will relate to the growing space across the proposed road that will act as crop test plots for farmer's and companies in the region. Together these growing spaces represent the variety of food that the Whitewood area can grow while

ensuring that alongside the park space, it remains active and educational year-round.

The site model, seen in Figure 46, represents the existing buildings in grey while the proposed buildings, pedestrian bridge and circulation elements can be seen in white. The organisation of these programs on the site and their related schematic floor plans can be seen in Figure 47.

5.2.2. Elevator Adaptation

Exterior Moves

The design proposal for the existing elevator building begins with addressing the proportions of the driveway and office components. As part of the original elevator structure built around 1971 and not the annex (around 1984) they will function as an entrance and canopy for the proposal. Initially the driveway massing is shortened and aligned with

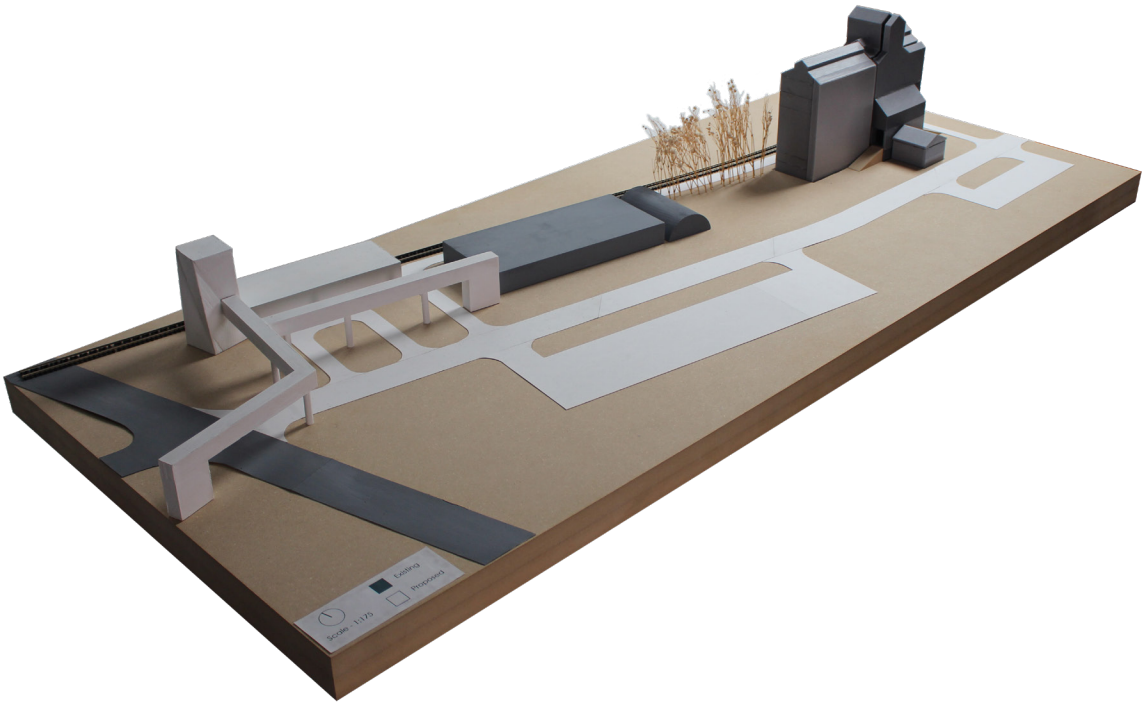


Figure 46: The site model represents existing buildings and conditions in grey, while proposed additions are shown in white.

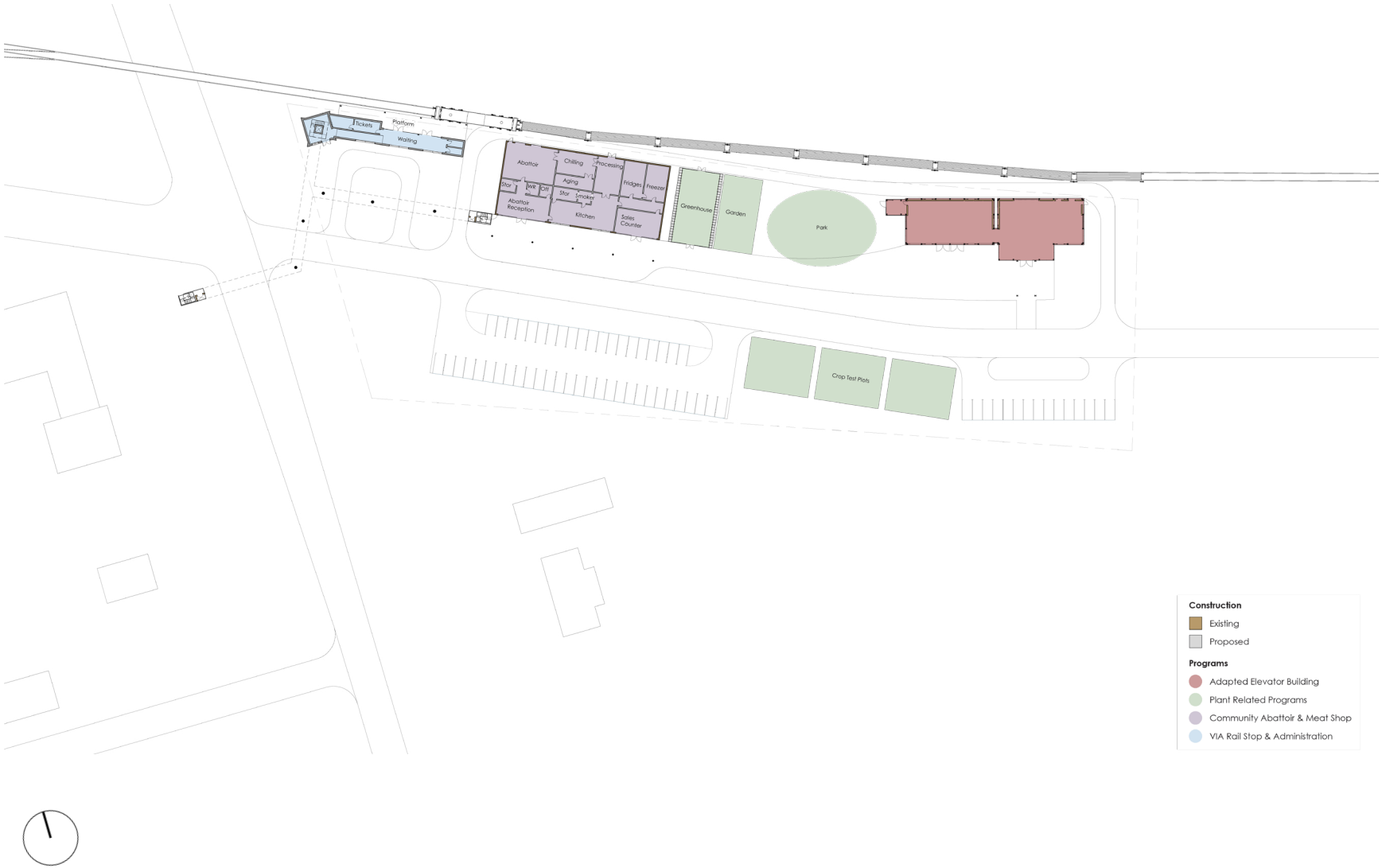


Figure 47: Plan of the design site showing the diverse types of programs and their component parts.

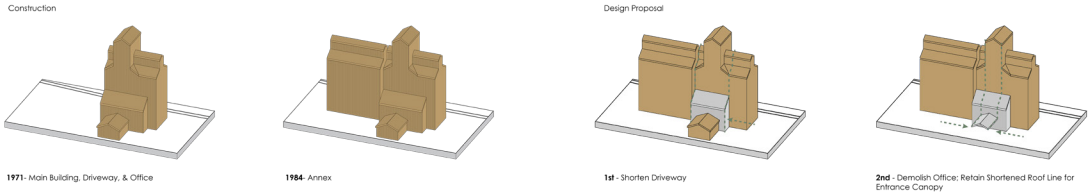


Figure 48: The proportions of the driveway and office buildings are modified to align with the headhouse of the main building.

the circulation core of the main building. Secondly the office building is removed and replaced with a canopy reminiscent of the office form. This sequence is shown in Figure 48. Both these interventions will make use of a new steel and wood hybrid structure to denote it as new from the existing cribbed construction.

Figure 49: The existing aluminum cladding that inspired the proposed metal panelling.

Figure 50: The existing red metal roofing, retained in the design proposal.

The façade design of the elevator makes use of materials that relate to the existing aluminum panels and red metal roofing. These existing materials can be seen in Figures 49 and 50. Beginning with contemporary aluminum panels, the grid spacing is a combination of small and large dimensions that create a quilted look. The smaller, darker panels denote where the new reinforcing structure is placed in the building and create a subtle contrast with the larger, lighter panels. Together the light, metal tones of these panels reflect not just the retained red, metal roofing, but the countryside and sky as well, embedding the building within the landscape. Detail panels will make use of wood veneers highlighting the importance of wood in the narrative of the building while relating to the reused dimensional lumber in the facades of the proposed new construction and the entrance of the site. Additionally, digital screens that relate to the elevator façade's role of communicating information will be used in place of some panels. Lastly, the façade will retain the provincial and town names on the north side of the annex structure. To

add additional interest to the built form without distracting from the iconic silhouette, the cladding and floor plates are extruded two feet to highlight important volumes proposed in the design such as the black box theatre, restaurant, and flexible studio. These exterior moves can be seen in Figures 51-54 where the proposed addition of a metal fire escape and service elevator on the northwest corner of the annex building is shown as well. Windows are placed to denote the large circulation atrium that highlights the retained vertical conveyor belts, as well as programmatic spaces such as the offices, gym, and restaurant. The addition of windows at the ground floor level, allows light to enter the market hall while revealing the retained bin hopper construction and adding to the large building's perceived lightweight form. The activation of the elevator facades while paying homage to the existing materials and tactility can be seen in the comparison of before and after represented in Figures 55 and 56.

Interior Procession

Arriving at the elevator plaza, one proceeds under the new entrance canopy. Once inside, patrons enter the bright atrium featuring the elevator 'leg' or vertical conveyor belts once carrying grain through the structure in the centre seen in Figure 57, with café to the right and access to the farmer's market hall on the left seen in Figure 58. At this level the bin hopper construction shown in Figure 59, is featured as a sculptural element on the ceiling and begins to reveal the historic construction of the building.

Vertical circulation can be by stair or by one of the two elevators located on the north face of the building and put in place of two of the existing 11' x 7.5' bins. Located at the

Figure 51: Adapted Elevator, South Elevation

Figure 52: Adapted Elevator, North Elevation

Figure 53: Adapted Elevator, West Elevation

Figure 54: Adapted Elevator, East Elevation

Figure 55: The proposed North facade (bottom) shows material similarities to the existing (top) while reflecting the light of its human occupants.

Figure 56: The proposed Southwest view (right) has material similarities to the existing (left) while having transparency for the new programs..

Figure 57: The atrium showcases the vertical conveyor belts at its centre.

first-floor level are the hair salon and black box performance space. As seen in Figure 60, the black box reveals the various tactile experiences of the design proposal. In this space patrons emerge from a bridge that takes them through the existing structure into the performance room created by the existing cribbed wall meeting a new gypsum finished one. The new white walls are offset from the proposed primary steel structure that emerges from the concrete floor. Thus, this space reveals the relationship between the tectonic exoskeleton and the seemingly solid nature of the cribbing. As seen in the first-floor plan of Figure 61, the annex proposal has retained three of the historic bins as a remnant of memory. Patrons will pass through this structure on a bridge to access the performance space and in doing so will gain an appreciation of the vast void by being suspended within it. An example of this bridge structure occurring on the first, fourth, and fifth floors is seen in Figure 62.

Located on the second floor seen in Figure 63, is a flexible studio space rentable to community groups and artists in

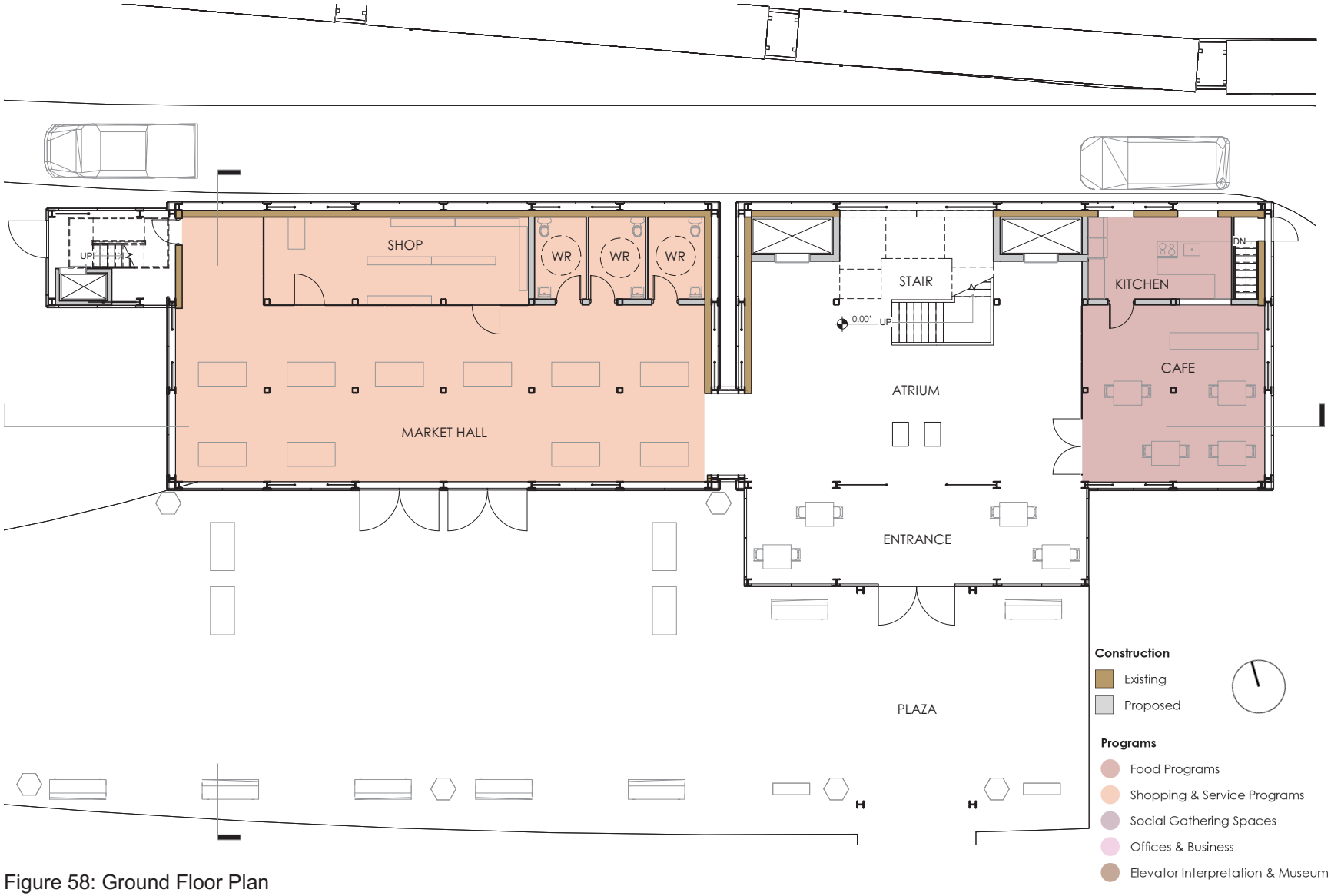


Figure 58: Ground Floor Plan

Figure 59: The unique ceiling structure of the market hall reveals the existing bin hoppers.

Figure 60: The layers of construction can be seen in the large black box performance space.

addition to a double height exhibition space featuring a glass wall that allows patrons to confront the retained bin structure. This space is accessible by one of the glass bridges to the annex from which visitors are able to glimpse the prairie landscape and surrounding town exhibited in Figure 64.

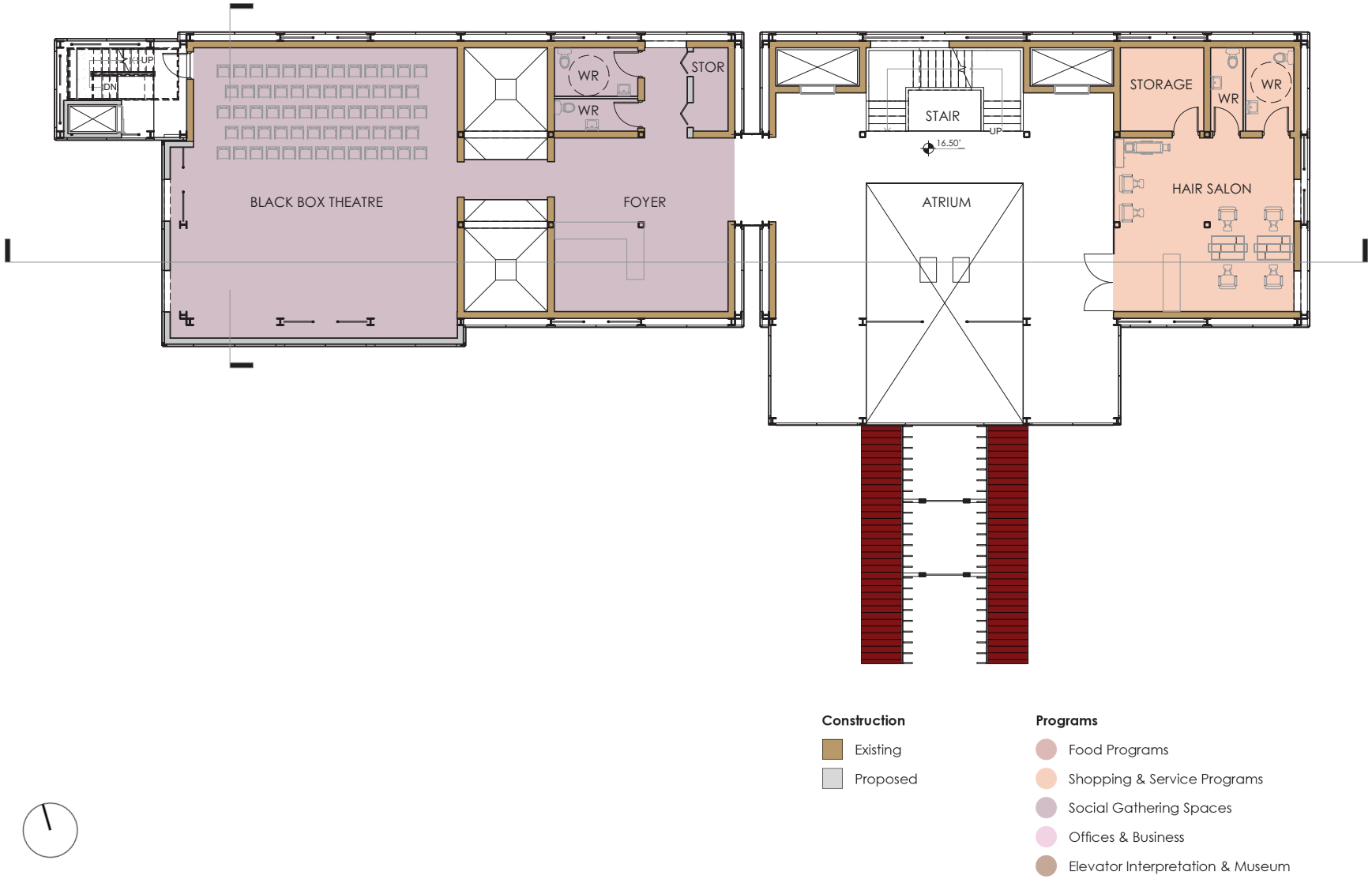


Figure 61: First Floor Plan

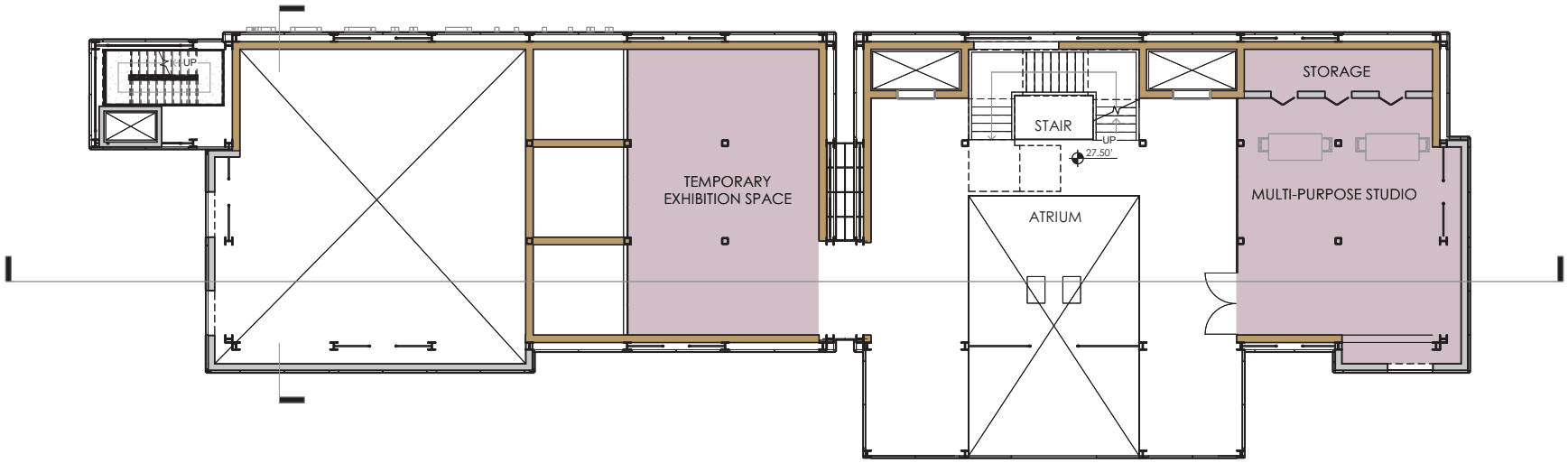
Figure 62: Bridges will span over the grain bin void that connect the east and west ends of the annex building.

The third floor seen in Figure 65, features a gym on the mezzanine overlooking the flexible studio thus maintaining it as an active space throughout the day.

On the fourth floor seen in Figure 66, there exists the administration offices for the complex as well as a co-working environment for residents who require a space for intermittent needs of reliable internet or office space rental.

At the summit of the annex building on the fifth floor seen in Figure 67, is a restaurant that highlights the gabled roof structure seen during the summer evening in Figure 68 and allows patrons to eat their meal alongside views of the landscape. Above the main restaurant seating area is a mezzanine at the sixth floor designed for entertainment seen in Figure 69. The fifth floor also features a space dedicated to an interpretive exhibit of the elevator's history.

Lastly, on the seventh floor seen in Figure 70, is a mezzanine where patrons take advantage of the elevator's height and



Construction

- Existing
- Proposed

Programs

- Food Programs
- Shopping & Service Programs
- Social Gathering Spaces
- Offices & Business
- Elevator Interpretation & Museum

Figure 63: Second Floor Plan

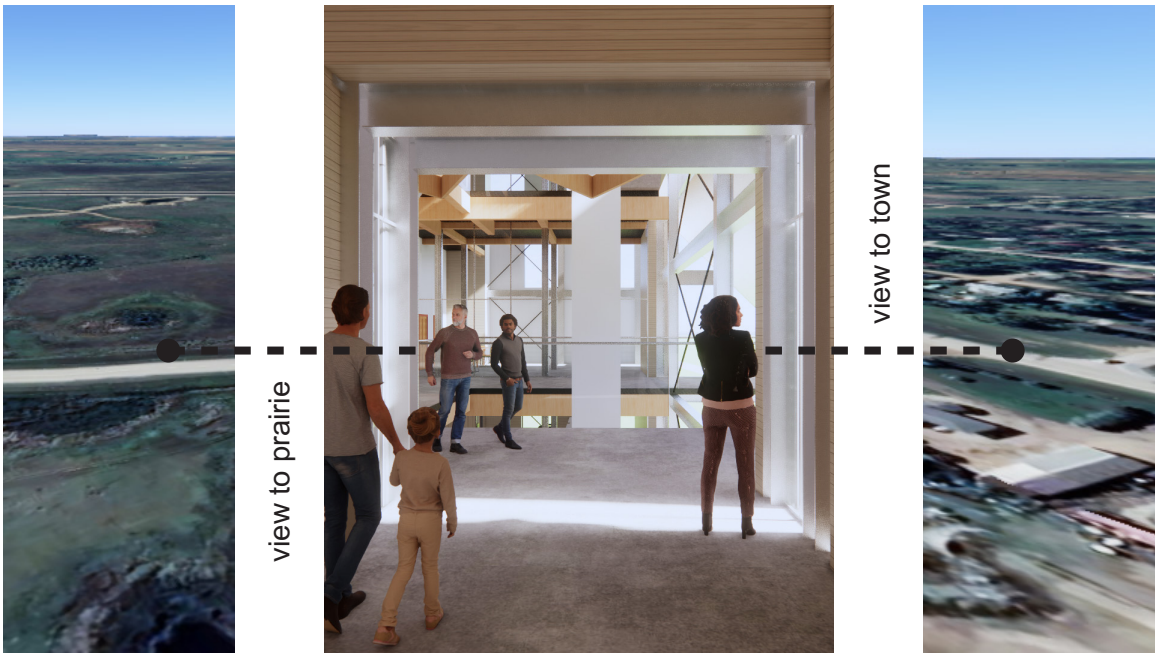
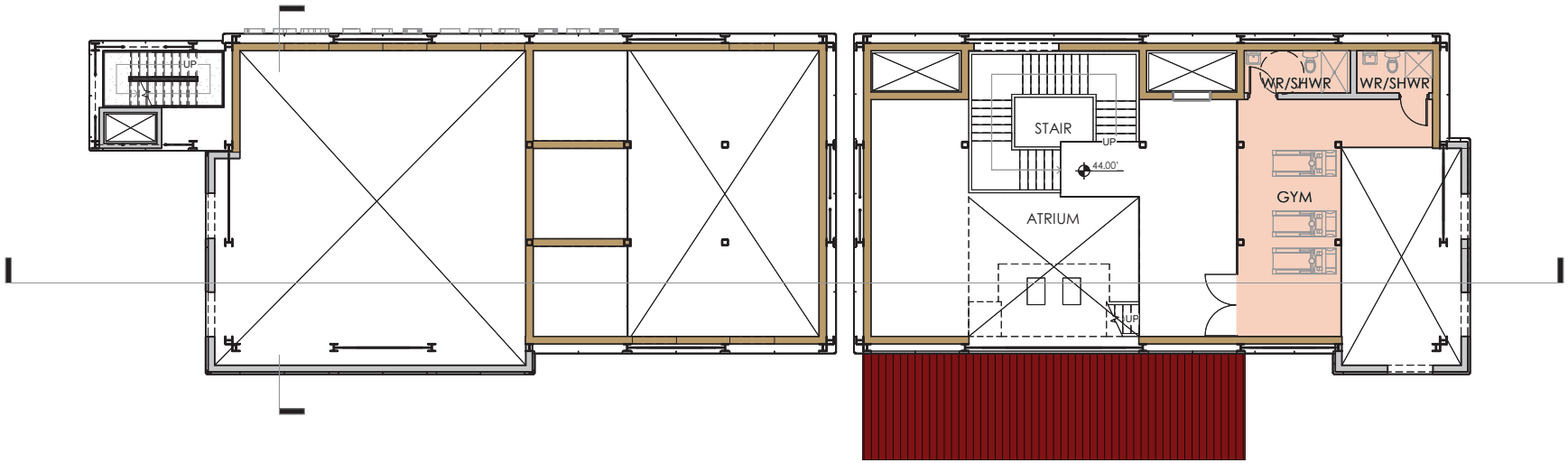


Figure 64: Patrons will process through glass bridges connecting the main and annex buildings from which they will glimpse the surrounding landscape and town. Satellite Imagery (Google Earth 2022).

appreciate the beautiful views while looking down into the atrium at the full length of the elevator leg.

5.2.3. Structural Reinforcement

As mentioned previously, the building to be structurally stable requires additional support. This structural proposal encompasses four areas of intervention, exo-skeleton structure to maintain exterior cribbing, interior vertical and lateral elements, bin hopper reinforcement, and new floors. Materials chosen for each of these areas are steel, steel/glulam hybrid, dimensional lumber, and concrete respectively. This method was chosen so as to make use of the good quality dimensional lumber removed from the existing cribbing since the elevator at the time of writing this thesis is being actively used to store grain by the farmer who owns the property, and recycling it either as single pieces in the hopper reinforcement or treating it off site to be brought back as glulam beams used in place of the removed cribbed



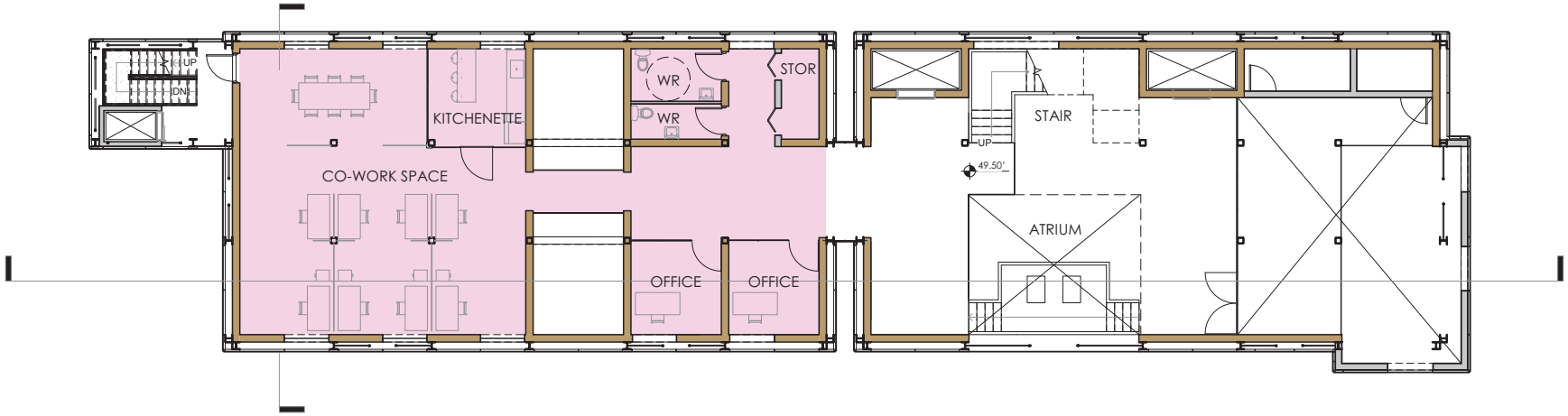
Construction

- Existing
- Proposed

Programs

- Food Programs
- Shopping & Service Programs
- Social Gathering Spaces
- Offices & Business
- Elevator Interpretation & Museum

Figure 65: Third Floor Plan



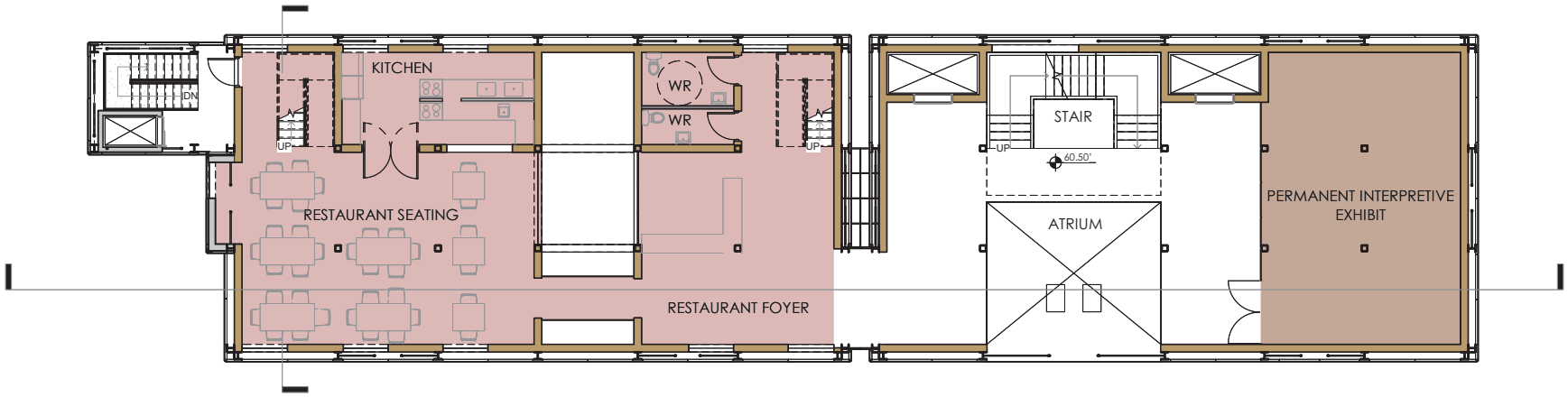
Construction

- Existing
- Proposed

Programs

- Food Programs
- Shopping & Service Programs
- Social Gathering Spaces
- Offices & Business
- Elevator Interpretation & Museum

Figure 66: Fourth Floor Plan



Construction

- Existing
- Proposed

Programs

- Food Programs
- Shopping & Service Programs
- Social Gathering Spaces
- Offices & Business
- Elevator Interpretation & Museum

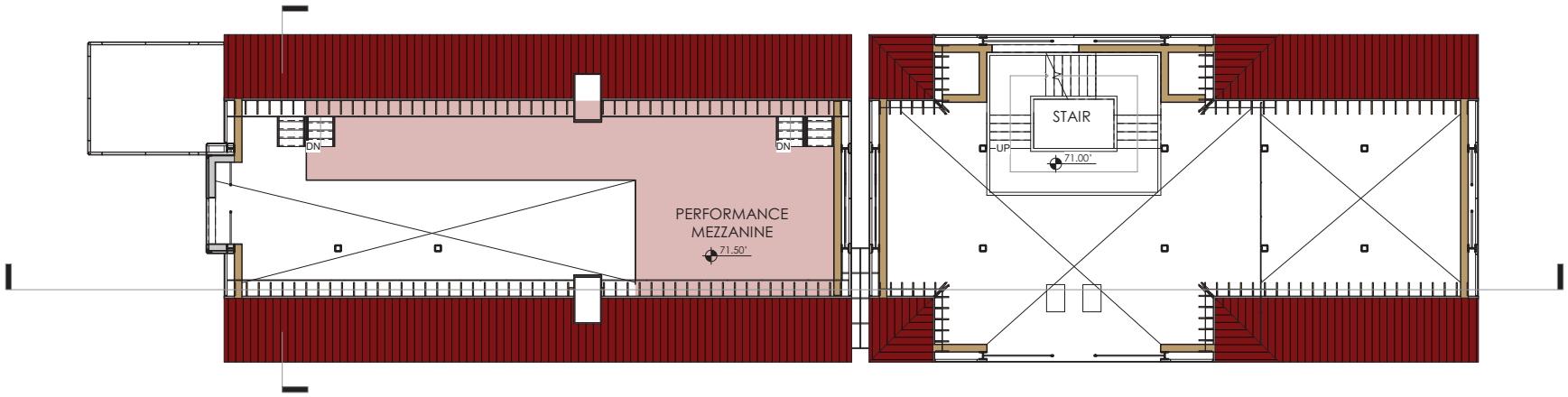
Figure 67: Fifth Floor Plan

Figure 68: The restaurant features the exposed gabled roof and views out to the countryside

walls. In this way, the lateral elements of the building will remain as dimensional lumber. Steel was chosen for the interior columns and exterior skeleton as a distinctly new material acting solely as vertical support, and stability.

To create space for the new programs, cribbing was subtracted away from the grain elevator, seen in Figure 71, as the next move in design. The new concrete floors (except for the gym mezzanine) are placed at 11’ vertical increments coinciding with the retained lateral bin support which in turn shows contrast between new and old. Unique pieces of the structure such as the hybrid steel and wood truss designed to span the 33’ requirement of the black box theatre and the use of the dimensional lumber to brace the bin hoppers as part of the ground floor ceiling once the concrete slab was removed can be seen in the long and short building sections in Figures 72 and 73.

In order to retain the exterior cribbed walls as an interior treatment and be approachable to patrons while allowing



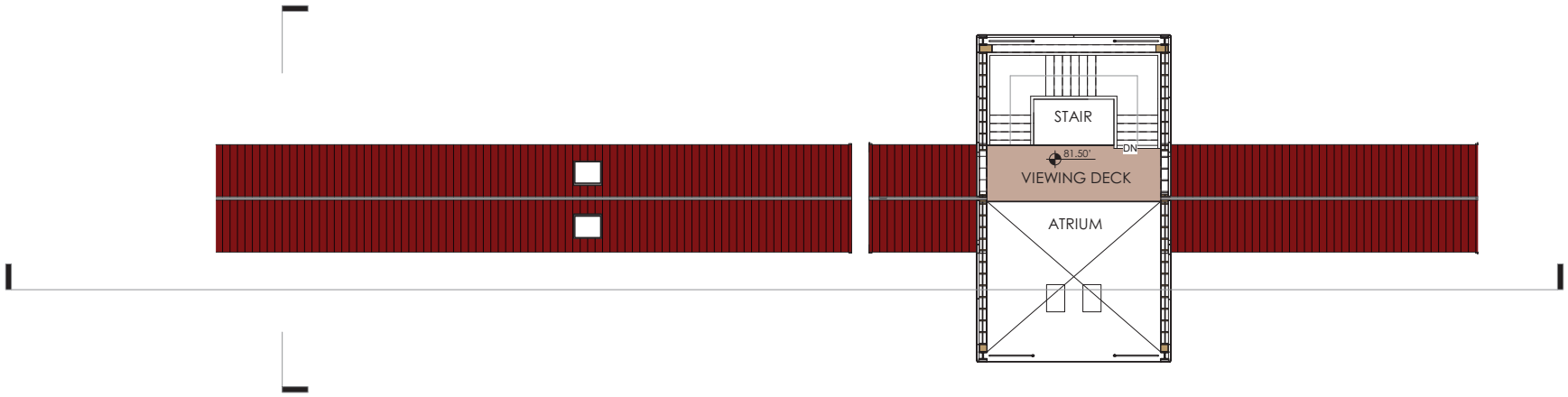
Construction

- Existing
- Proposed

Programs

- Food Programs
- Shopping & Service Programs
- Social Gathering Spaces
- Offices & Business
- Elevator Interpretation & Museum

Figure 69: Sixth Floor Plan



Construction

- Existing
- Proposed

Programs

- Food Programs
- Shopping & Service Programs
- Social Gathering Spaces
- Offices & Business
- Elevator Interpretation & Museum

Figure 70: Seventh Floor Plan

the building to represent its age, following the theory that material patina is representative of history and can be lived in (Pallasmaa 2005, 32), the proposed skeleton is built outward so not to sacrifice interior floorspace. The overall structure of the building can be seen in the exploded views in Figures 74 and 75, thus demonstrating the feasibility of this project that tackles the issue of adapting a large, industrial building for a new, contemporary use.

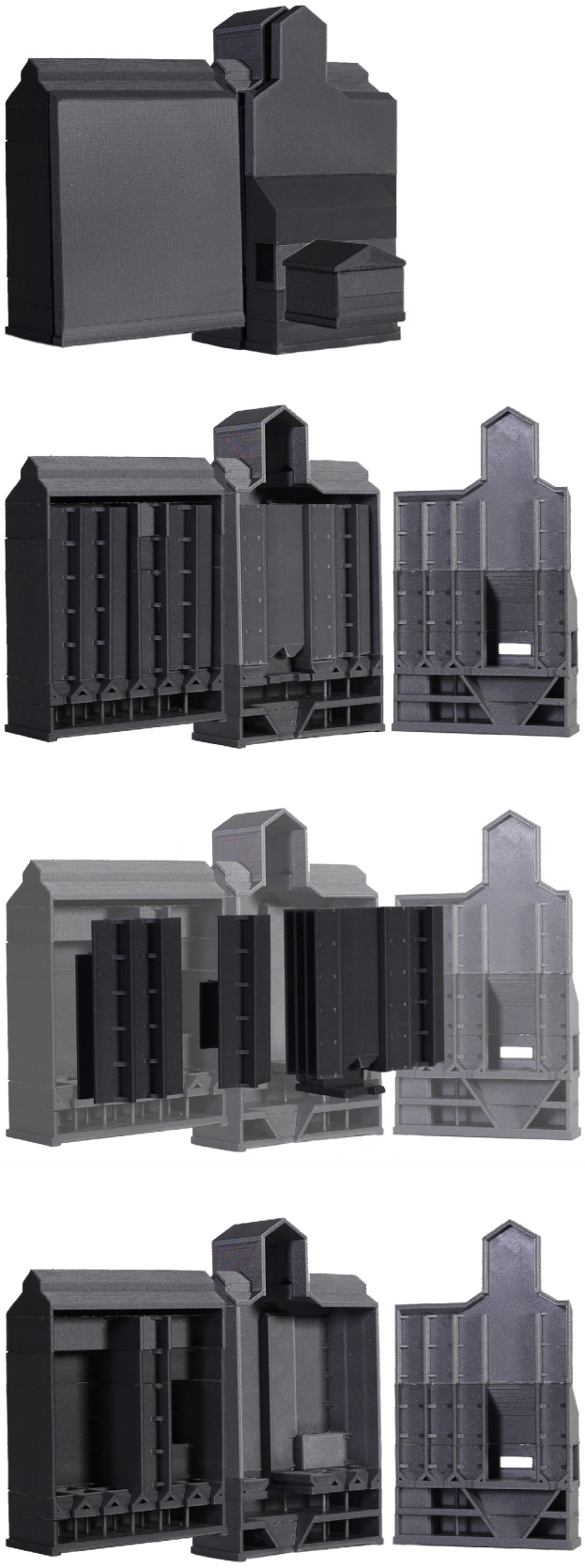


Figure 71: 3D printed model showing the existing section and the subtraction of cribbing to create voids.

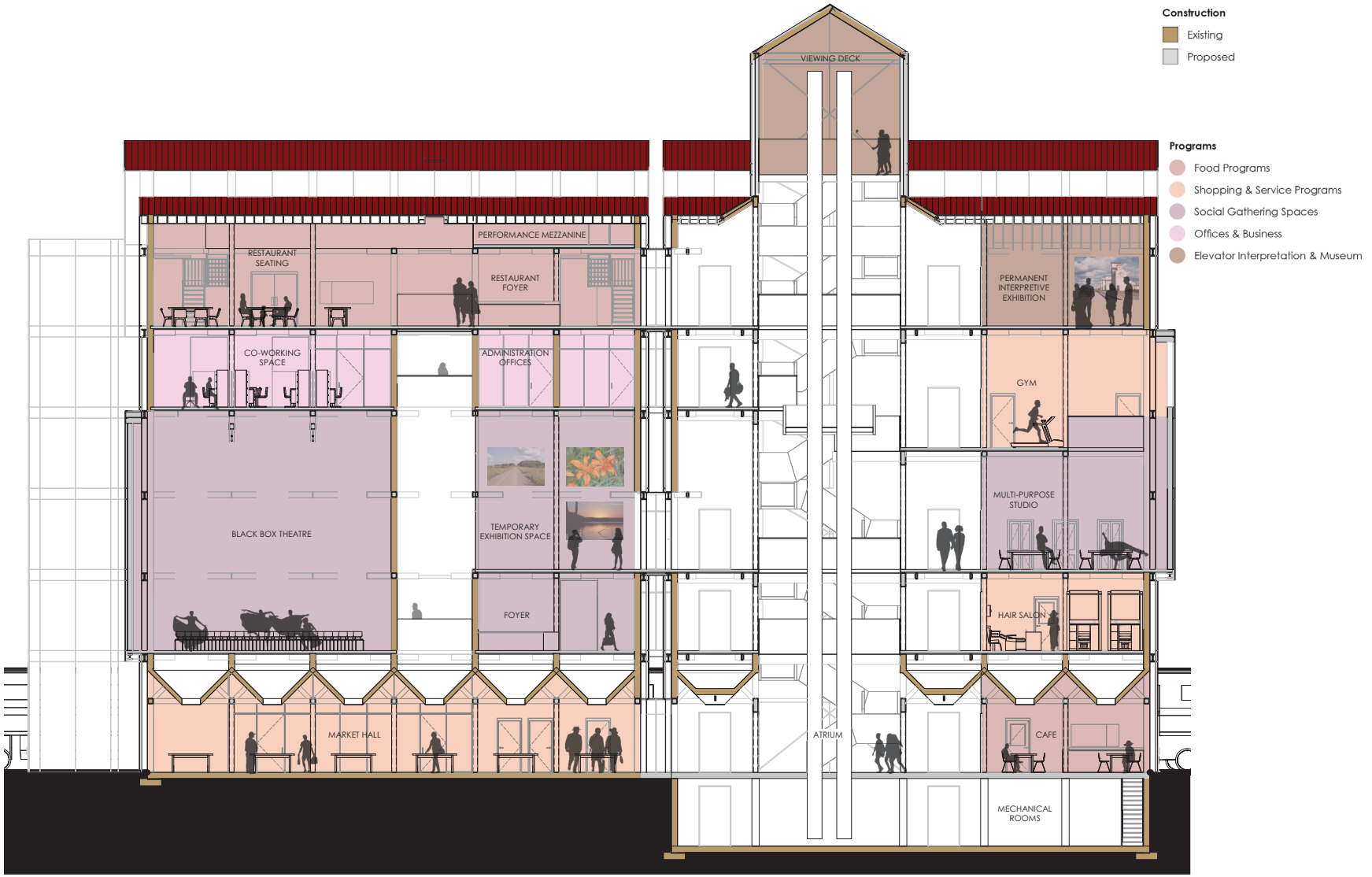


Figure 72: Long building section looking north.

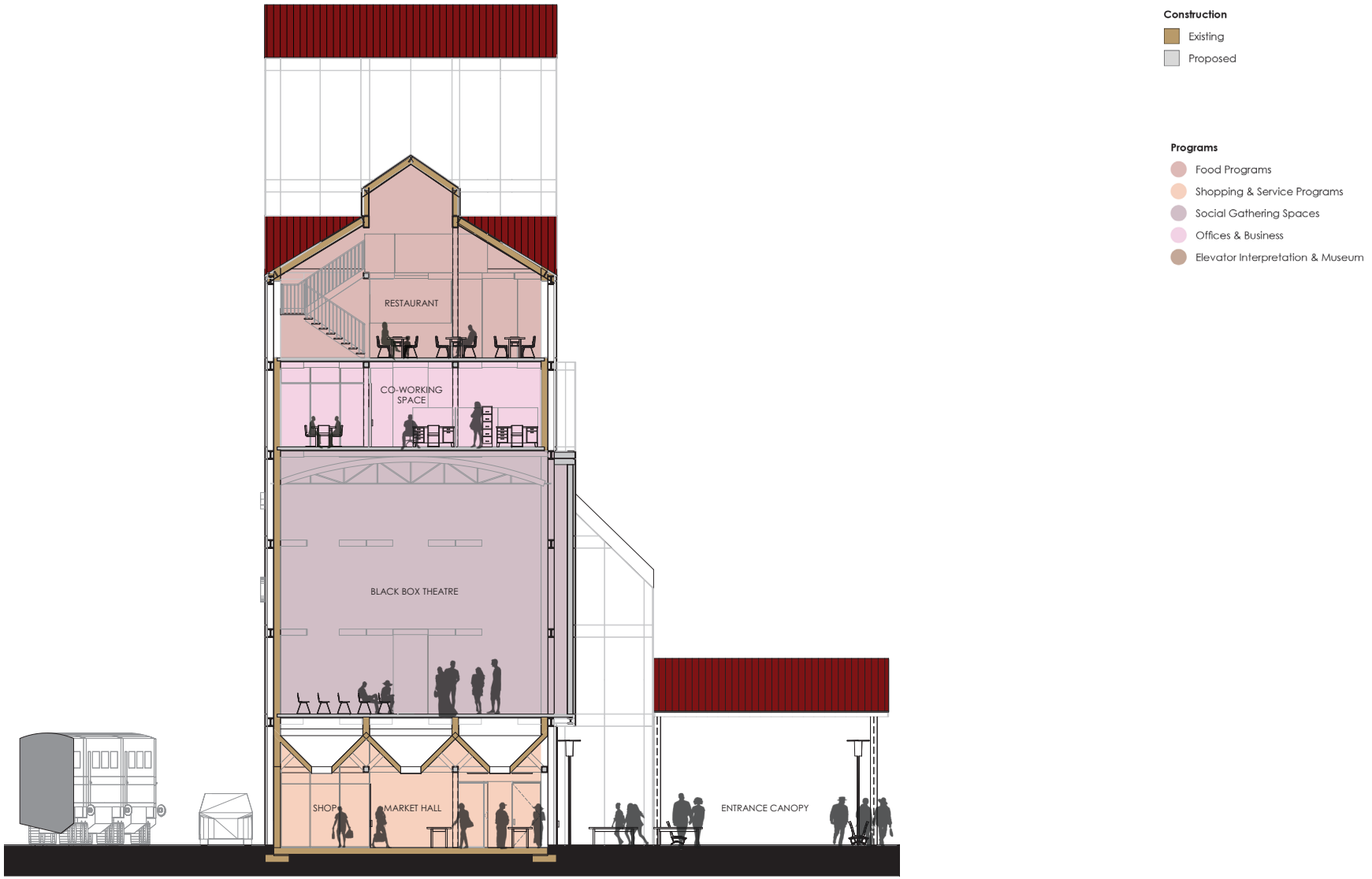


Figure 73: Short building section through the performance space looking east.

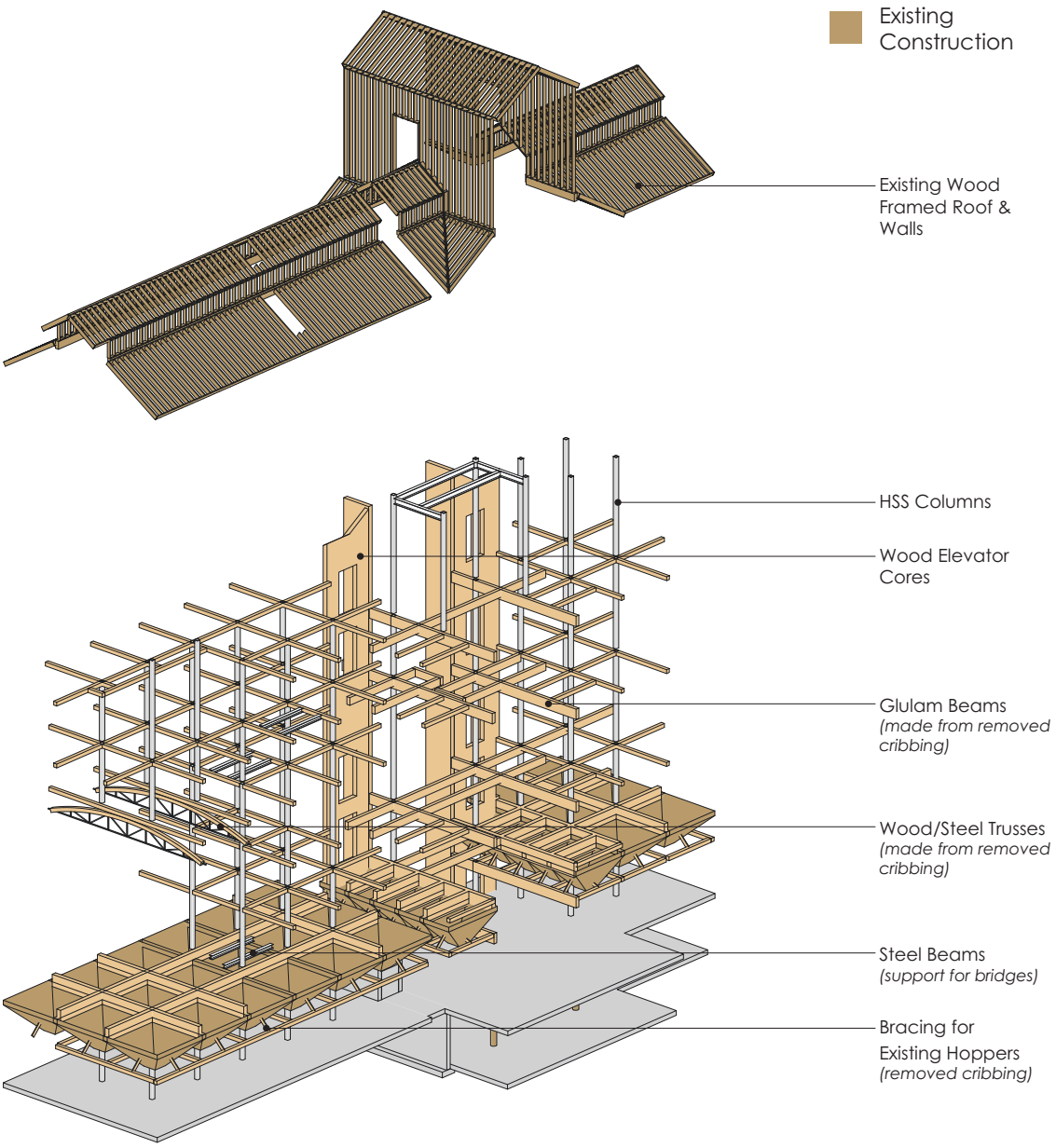


Figure 74: Structure added in place of the removed cribbing on the interior of the elevator.

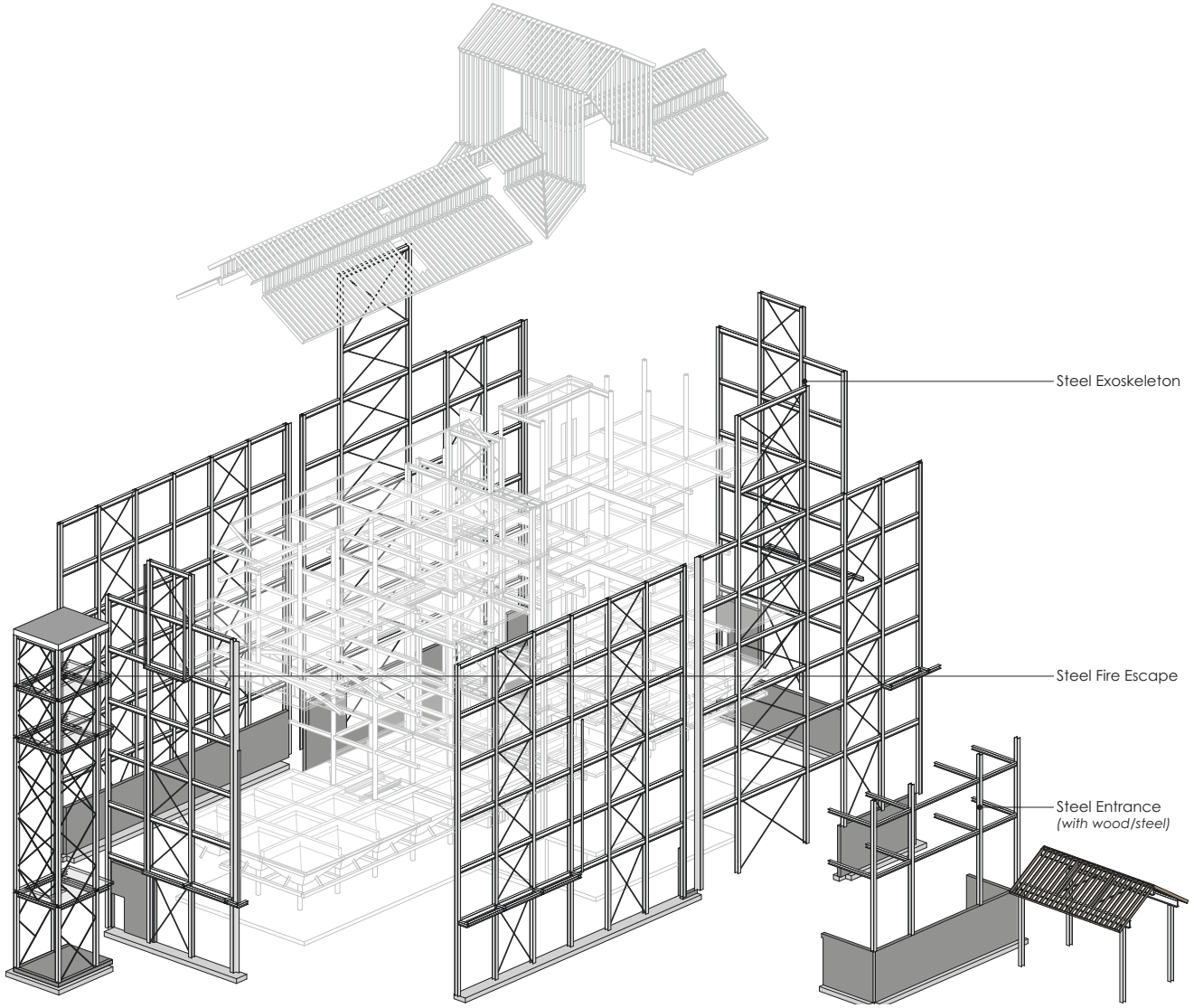


Figure 75: The steel exoskeleton added to support the existing exterior cribbing.

Chapter 6: Conclusion

The architectural intervention in this thesis will transform the grain elevator into a building that represents the collective memory of the town, combats isolation in the aging community by providing a place of connection and gathering while programmatically contributing economically and socially to its town.

There are four design goals for this project to enable an active monument supportive of skill and tradition transfer between the older and younger generations of Whitewood, Saskatchewan. They are:

1. Create spaces to support intergenerational gathering
2. Create an active site that engages its current neighbours and contributes to future growth
3. Connect the elevator's contemporary program with its historic use and symbolism
4. Preserve the existing vernacular cribbed construction

In order to adequately address the issue of rural isolation, a population profile for the town as well as research into the scope of the problem and its consequences had to be done. It was found that rural isolation is a consequence of the geography of the region and the type of people that it cultivates. However, this same region promotes community and neighbours helping neighbours, therefore this project aimed to capitalise on these virtues in order to find a solution to the negativity of isolation.

This thesis required an in-depth understanding of the grain elevator, not just as a building, but as a typology that defined

an era of settlement and the social and economic fabric of a region. From this analysis it was determined that the role the elevator played in rural communities encompassed a scope larger than simply the storage and circulation of grain within the greater agriculture economy. Subsequently programs to contribute to the bridging of the younger and older generations were derived.

By mapping the town and the programs that exist and the subsequent cultural spaces and activities that were lacking alongside those that would be required if the community is to grow stronger and welcome an increased number of visitors, additional programs were identified. This resulted in a rich social and cultural program for the large site encompassing the former Saskatchewan Wheat Pool “C” elevator and its auxiliary buildings. Therefore, the design proposal complements the existing downtown shops and services with a complex of cultural, economic, and education spaces for community members and businesses.

Recognising the importance of the elevator on the site, a growing narrative and procession is created through the organisation of programs and services for the patron arriving by vehicle, a pedestrian via the proposed footbridge, or visitors to the town by train.

Recognising that the grain elevator’s structural integrity lies in its repetition of solid cores, therefore, the subtraction of cribbing to create new program spaces makes the building fragile. Through the use of a steel exoskeleton the elevator’s iconic silhouette is able to be maintained while the existing exterior walls now serve as an interior treatment. The dimensional lumber removed from the building can be repurposed as glulam alongside steel columns for the

interior, thus allowing the elevator's DNA to be retained and contribute to the building having historic and contemporary elements without it losing its original narrative.

The aim of this project is to return the contributory aspect of the grain elevator to the building. By doing so the elevator seeks to incentivise and be a part of the future growth of the town without duplicating existing conditions, instead complementing and diversifying them through new cultural spaces. As seen in Figure 76, the population of the last 100 years shows an increasing trend as well as a stabilisation and attempt at growth after a population peak in the late 1970s - early 1980s. Therefore, there is the possibility of the elevator design becoming a part of future development. In this way the project can be looked at through an architect's but also a developer's eyes while maintaining the close cultural link to the memories and values of the community.

At the conclusion of this project, the proposal shows how physical pieces of the prairie region's collective memory and cultural landscape do not have to be remnants of the past.

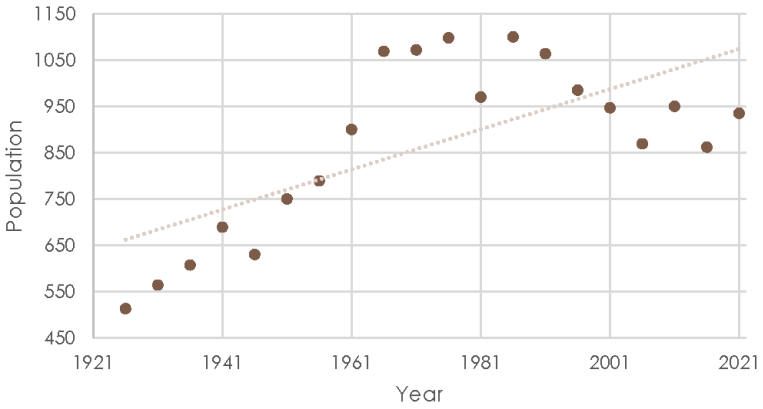


Figure 76: The population of Whitewood charted over the last 100 years (Statistics Canada 1947, 179; Statistics Canada 1957, 6 – 45; Statistics Canada 1967, 9 – 52; Statistics Canada 1977, 3 – 34; Statistics Canada 1981; Statistics Canada 1991; Statistics Canada 2001; Statistics Canada 2011; Statistics Canada 2022e).

Instead, they can be reimagined as places for the skills, traditions, and stories that knit generations together and showcase the community fellowship and resilience of the prairie people. When the entirety of a community is brought together to a place of kinship and belonging, everyone is stronger.

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