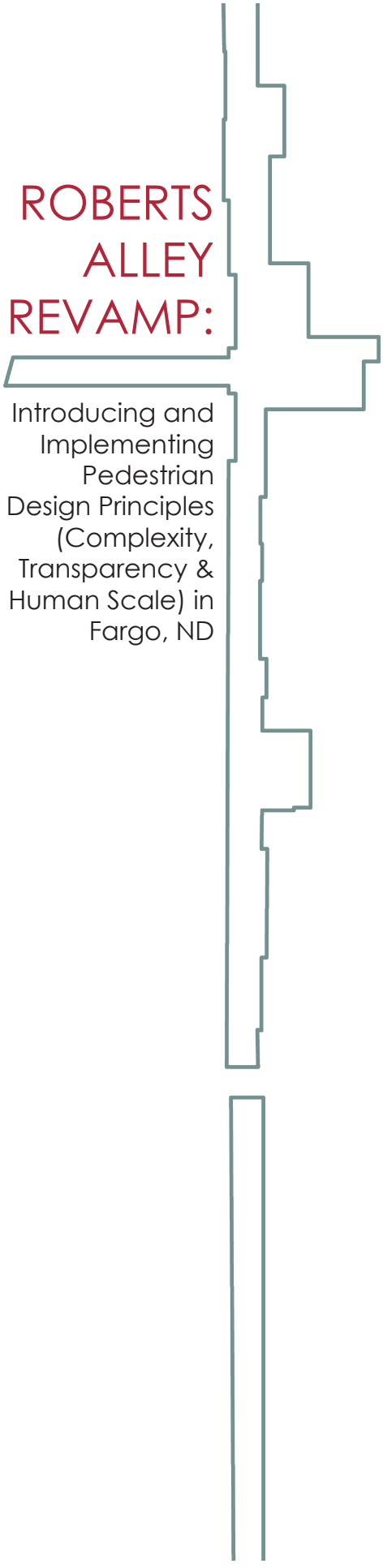
ROBERTS ALLEY REVAMP:

Introducing and Implementing Pedestrian Design Principles (Complexity, Transparency & Human Scale) in Fargo, ND



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ROBERTS ALLEY REVAMP:

Introducing and Implementing Pedestrian Design Principles (Complexity, Transparency & Human Scale) in Fargo, ND

A Design Thesis Submitted to the
Department of Architecture
and Landscape Architecture
of North Dakota State University

By

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In Partial Fulfillment of the
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THESIS ARCHIVAL NOTE

The following thesis project, entitled ROBERTS ALLEY REVAMP: IMPLEMENTING PEDESTRIAN DESIGN PRINCIPLES (COMPLEXITY, TRANSPARENCY & HUMAN SCALE) IN FARGO, ND, was composed over the course of the 2016-2017 academic school year. The Thesis Program, as contained here, was initiated and completed in the fall semester as a part of the LA 563: Programming and Thesis Preparation course. Supplemental material, including the Thesis Boards and the Thesis Presentation documents, were generated in the spring semester as a part of the LA 572: Design Thesis studio. Any inconsistencies between the different documents, in terms of research and design, should be disregarded per the evolution of the project across the two semesters.

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LIST OF FIGURES

* ALL ROBERTS ALLEY IMAGES ARE PERSONAL PHOTOGRAPHS

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ABSTRACT

Alleys are underutilized as contemporary pedestrian thoroughfares because they have historically served to hide the utilitarian functions of urban life. Thus, the narrow spaces fail to provide the necessary amenity required for active pedestrian spaces, and are therefore shrouded by negative stigmas. As a result, alleyways are disregarded as being viable pedestrian thoroughfares and therefore fail to be integrated into existing urban networks.

The redevelopment of Roberts Alley in Fargo, North Dakota seeks to evaluate and apply the traditional urban design principles of transparency, complexity, and human scale in order to challenge the historic stigmas and usage patterns surrounding alleyways. By introducing pedestrian amenity, whether physical (seating and lighting) or perceived (comfort and safety), redevelopment strives to promote thoroughfare and engage adjacent commercial business. The resulting design research serves as a site-specific plan for redevelopment, as well as a pedestrian model that can be applied to similar urban alleyways throughout the country.

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EXPLANATION OF THESIS

This capstone project aims to pedestrianize Roberts Alley, arguably one of Downtown Fargo's most prominent backstreets. The resulting research and masterplan intends to challenge the historic usage patterns of alleyways, as well as the negative stigmas that surround them. In addition to creating a viable thoroughfare that integrates with the existing pedestrian network of Downtown Fargo, the redevelopment masterplan aims to involve and stimulate adjacent business while simultaneously fostering community and culture.

DEFINITION OF PROJECT TYPOLOGY

In its downtown alone, Fargo, North Dakota has approximately five miles of underutilized alleyways. These narrow passages, typically void of activity except for service and delivery, have the potential to enhance, enliven, and activate the existing pedestrian network and contribute to the ongoing revitalization of downtown. While alley redevelopment is a relatively new project typology in the professional fields of landscape architecture, city planning, and urban design, the typology is quickly gaining momentum as cities throughout the United States are recognizing the hidden potential of alleyways, and are transforming entire networks as a means of urban revitalization. For example, Chicago's Green Alley Program offers a means of urban stormwater management, while an Alley Leasing Program allows Baltimore residents to gate their alley and use it as a communal gathering space. In California, cities such as Santa Cruz and Pasadena have placed a pedestrian emphasis on alleyways adjacent to retail establishments in efforts to provide additional space for shopping, dining and ambling. The success of these programs not only validate the hidden potential of alleyways in metropolitan areas, but also demonstrate redevelopment to be a worthwhile investment at the municipal level.

PROJECT JUSTIFICATION

As metropolitan cities continue to become more densely populated, and space becomes increasingly limited, it becomes pertinent that even the smallest of urban spaces is imbued with both purpose and meaning. As a result, municipalities and design officials are becoming increasingly aware of the underutilized spaces scattered throughout their communities. Under the umbrella of urban renewal, these spaces are being transformed through adaptive design and programming. The redevelopment of these small, often overlooked urban spaces, has proven to invoke a variety of resultant benefits including: economic stimulation, increased safety and wellbeing, and an enhanced sense of community and culture. Alleyways are just one of the many urban spatial typologies that are beginning to be actively transformed in communities throughout the country. These spaces, while often perceived as being dirty and unsafe, have tremendous opportunity to not only integrate into the existing pedestrian networks surrounding them, but also to provide meaningful space and thoroughfare in which community and culture thrives, and adjacent commercial business activity flourishes.

While my collegiate career in Landscape Architecture at North Dakota State University has introduced me to a variety of project scales and typologies, I find myself continuously drawn to the urban environment. My capstone project is reflective of this passion. In the last five years, I have had the unique opportunity to experience firsthand the renaissance that is currently happening in Downtown Fargo. This capstone aims to respond and contribute to this exciting period of revitalization and growth. Coincidentally, the Kilbourne Group and I share the same interest in the redevelopment of Roberts Alley. With a project timeline projected until March of 2019, Kilbourne Group plans to transform the alleyway and construct three multi-use structures adjacent to the west side of the space. As an educational exploration, Kilbourne Group's redevelopment plans allow me the unique opportunity of designing for (and around) both existing and proposed structures. Thus, in addition to generating a comprehensive redevelopment masterplan for the alley, I have the chance to evaluate and respond to the proposed structures (most of which are still in the conceptual stages) and potentially offer alternative research-based design ideas. As a result of its real-world application, I find this capstone project to be especially relevant to my transition from design student to design professional.

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CLIENT DESCRIPTION

The client for the re-development of Roberts Alley is two-fold with the City of Fargo acting as the primary client, and adjacent private business owners as the secondary client. While most of the redevelopment is to be funded by the City of Fargo, it is the hope that redevelopment will spark the investment and participation of adjacent business. While both of client groups are likely to reap the benefits of redevelopment, their redevelopment goals and needs are likely to differ. The City of Fargo, funded primarily by taxpayer dollars, is likely to desire directness, durability and diligent cost control of a moderate budget, whereas the private investment of adjacent business is likely to accommodate the additional expenditures of design additions and material upgrades in efforts to promote increased business activity.

USER DESCRIPTION

Since redevelopment aims to emphasize the pedestrian, the primary user of the space can be defined as anyone who works, lives or plays within a one-quarter mile radius of the alleyway, as this distance is generally accepted as being the measure of walkability. On a day-to-day basis, the alleyway is likely to serve both the premeditated and the unpremeditated pedestrian. The premeditated pedestrian understands how the alleyway integrates into the existing pedestrian framework and is therefore likely to be a frequent traveler of the space. This user type is most likely to use the alleyway as a shortcut or thoroughfare to their intended destination. Thus, the alleyway must serve the most basic of pedestrian needs including: adequate lighting, short-term seating, and perceived safety.

The unpremeditated pedestrian is a first-time user, or someone who stumbles upon the space en route to an intended location. Upon perceived comfort and safety, this user is likely to venture from the known route in order to explore the space. If the first-time user is able to perceive how the alleyway integrates into the existing pedestrian framework, he/she has the potential to become a premeditated pedestrian. If unable to perceive how the alleyway integrates and connects to the pedestrian framework, the unpremeditated pedestrian is likely to become a destination pedestrian, or someone who inhibits the space on a sporadic basis for a specific purpose or program. This type of user does not integrate the alleyway into their normal pedestrian route, but is likely to visit

the space when it hosts an event of interest such as a gathering or market. Thus, in order to capture and maintain the interest of the unpremeditated user, the alleyway must demonstrate adaptive programming and visual complexity in addition to providing basic pedestrian amenity.

AUDIENCE DESCRIPTION

This capstone project intends to inform the professional practice of landscape architecture and urban design by supplementing the existing knowledge surrounding alleyways and their redevelopment. Furthermore, this project aims to provide a framework for best practice in regards to pedestrianizing the urban alleyway. Upon completion of the design research, the resulting framework will serve to benefit not only the professional, but also the municipality, as it can be used inspire, inform, and guide alley redevelopment projects throughout the country.

More specifically, this capstone project intends to be critiqued and evaluated by the Kilbourne Group and the City of Fargo, as the project has an inherently real-world component built into it. With the construction of Roberts Garage well underway, Kilbourne Group has implemented a redevelopment timeline projected through March of 2019 with an additional two structures proposed to run adjacent to the west side of Roberts Alley. In addition to the new construction, Kilbourne Group has made it clear that they intend to redevelop Roberts Alley as part of the project. That being said, design work related to the alleyway is still very preliminary in nature. Thus, this capstone serves to present Kilbourne Group and the City of Fargo with a research-based design option that is both aesthetic and feasible, with the hope that it may inspire and guide the real-world redevelopment of Roberts Alleyway.

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PROJECT EMPHASIS

The redevelopment of Roberts Alley in Fargo, North Dakota seeks to emphasize pedestrian thoroughfare and walkability. By applying the following urban design principles correlated to walkability: transparency, complexity, and human scale, redevelopment strives to emphasize the pedestrian while simultaneously de-emphasizing the utilitarian nature of the urban alleyway, thereby challenging the historical stigmas that surround these spaces. By placing the pedestrian at the forefront of design decisions, the resulting design outcome is likely to mimic the pedestrian amenity of adjacent and surrounding streetscapes. As a result, the alleyway is likely to integrate into the existing pedestrian framework of Downtown Fargo and be perceived as a viable thoroughfare.

PROJECT GOALS

As a finale to my undergraduate career at North Dakota State University, this capstone project seeks to accomplish project-driven, as well as professional goals.

From a project-driven standpoint, I hope to complete a comprehensive design that I can present to the City of Fargo and the Kilbourne Group, both of which are actively involved in the "real-world" redevelopment of Roberts Alley as it progresses into conceptual and schematic development. It is my intent to support and justify my final design with substantial research, so as to prove its success to these groups on the basis of urban walkability and connectivity. At the very least, I hope to provide a unique perspective and vision that serves as a source of inspiration for redevelopment as it unfolds. Lastly, I hope to showcase the range of my design abilities by carefully combining both hand- and computer-rendered graphics in my final presentation materials.

In attempt to challenge myself as a future professional, I hope to speak in-person with the design professionals involved in the redevelopment of Roberts Alley several times throughout the spring semester. By doing so, my capstone project has the ability to respond to design decisions as they are made (thereby simulating a real-world design

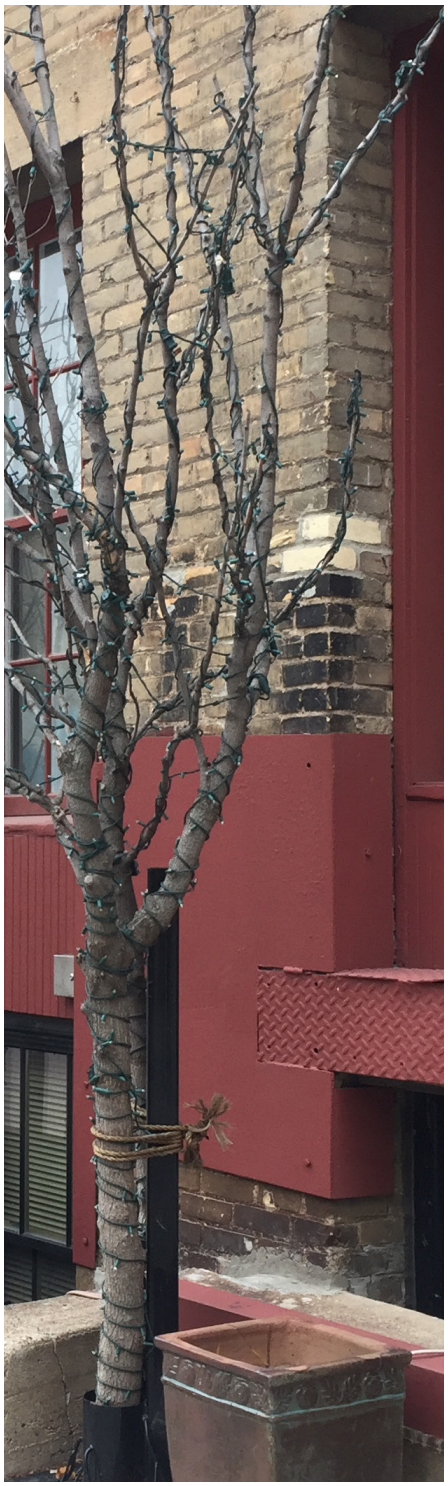
project), while simultaneously allowing me the opportunity to practice professional networking and interpersonal communication.

RESEARCH DESIGN PLAN

The first three weeks of the semester will be spent conducting conclusive site analysis and establishing an overall vision for the redevelopment of Roberts Alley. The six-week design phase will progress from general to specific, starting with a comprehensive masterplan of the entire 3-block site in weeks four through six, and ending with a smaller site plan in weeks seven through nine. The design process for each of these plans will begin on paper, where conceptual diagrams will start to shape potential landscape forms and layouts.

In order to select the strongest concept for masterplan development, I will use the evaluative research technique to assess programmatic elements and their corresponding arrangements in regards to projected walkability. In efforts to do so, a walkability score will be assigned to each conceptual plan using Ewing and Handy's Summary of Models (Fig. 15) from *Measuring the Unmeasurable: Urban Design Qualities Related to Walkability* (2009) as a rubric for measurement. The conceptual plan with the highest walkability score will be selected for further design development, ultimately becoming the final masterplan. Once a concept has been selected for further design development, landscape forms will be further iterated and tested on paper before being refined and finalized using AutoCAD software.

Upon completion of the masterplans, the remainder of the semester will be spent preparing presentation graphics and materials with the semester culminating in the final presentation in weeks fifteen and sixteen. A digital site model will be created using SketchUp and then rendered using the Maxwell Render plug-in. The resulting perspective images will be enhanced using Adobe Photoshop and hand-rendering techniques. In addition to a digital model, a physical model will also be produced to further communicate design ideas. Final materials will be assembled into a presentation that will effectively demonstrate how the urban design principles operationalized by Ewing and Handy (2009) may be applied to a completely new situational context – the alleyway. In lieu of the final presentation, all project materials will be collected, documented and submitted to NDSU's Institutional Repository during the final week of the semester.



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RESEARCH

As open space becomes increasingly limited in communities throughout the United States, planners and landscape architects are becoming interested in the underutilized spaces in their communities. While these spaces are widely thought to deflate surrounding property values and encourage undesirable activity, they are being successfully reintegrated into surrounding neighborhoods through creative and adaptive site programming. However, as underutilized spaces continue to be examined and transformed under the umbrella of urban renewal, the pedestrian potential of alleys continues to be overlooked. Alleyways are underutilized as contemporary pedestrian thoroughfares because they have historically served to hide the utilitarian functions of urban life. As a result of their utilitarian focus, alleys

typically lack aesthetic and pedestrian amenity. Through the research and application of three traditional urban design principles: transparency, human scale, and complexity, alleyways can overcome the historically negative stigmas that surround them, and be successfully integrated into existing metropolitan networks.

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HISTORY OF ALLEYWAYS

In order to understand the future of alleyways, the past must first be understood. The word alley is believed to be derived from the Latin term ambulare, which translates to walk (Wolch et al., 2010). While this derivation accurately describes the earliest uses of alleyways, a review of alley history reveals that it no longer serves to describe the contemporary uses of these spaces.

The first alleys in the United States were patterned after those of the medieval period, however, they formed their own identity when they became utilized for shoddy immigrant housing in the latter half of the 19th century. As a result, the narrow back streets became associated with danger and disease. The negative perceptions surrounding these spaces were further enforced by issues of race and class in the 20th century, as those of racial minority were required to use alleys for their back door entry to businesses. Thus, in addition to being perceived as being dirty and disease ridden, alleyways became regarded as being places unfit for the proper man. In response, municipalities nationwide began to pave their alleys in attempt to sterilize the spaces from the dirt and disease they had become associated with (Wolch et al., 2010). While the introduction of pavement largely failed to reverse the historical stigmas surrounding alleyways, it drastically altered the usage patterns of such spaces.

According to Wolch et al. (2010), the introduction of pavement, in conjunction with the popularization of the automobile, allowed alleys to be perceived as being viable spaces for vehicular thoroughfare and garage access. In fact, businesses in urban and industrial areas began to utilize alleyways to accommodate services and deliveries. As a result, alleyways quickly became associated with vehicular, rather than pedestrian activity. Today, urban alleyways continue to accommodate service and delivery activities in addition to housing utilities and waste. A physical audit of three hundred Los Angeles alleyways confirms the prevalence of such activities in alley settings. The audit, conducted by Wolch et al. (2010), reported that vehicles accounted for over fifty percent of observed alley activity. The results serve to illustrate

the departure of the pedestrian alleyway as a result of an increased emphasis on vehicles and vehicular thoroughfare. As a result of vehicular prominence and resounding historical stigmas, the pedestrian has become virtually absent from the modern alleyway.

That is not to suggest that historical development is the sole contributing factor to the demise of the pedestrian oriented alleyway. The negative perceptions surrounding alleys are likely to be heightened as a result of their general lack of aesthetic. Unlike more prominent streetscapes, alleyways fail to be regulated under design criteria and are therefore not subject to the scrutiny of other streetscape typologies (Wolch et al., 2010). As a result of ambiguous status and lack of aesthetic, alleyways typically fail to be considered as viable walking space by pedestrians, who instead choose to occupy urban sidewalks that are more visually appealing and offer greater amenity. Thus, the historical stigmas surrounding the spaces fail to be challenged, and vehicular usage patterns remain.

PUBLIC PERCEPTION OF ALLEYWAYS

Do alleyways have the potential of being viable pedestrian spaces despite the historically negative perceptions that surround them? In an audit of three hundred Los Angeles alleyways, Wolch et al. (2010) determined a majority to be "walkable, quiet, and clean" (p. 2888). However, the results of the physical audits contrasted sharply with resident perceptions that were revealed in a corresponding focus group discussion. A consensus from the focus group revealed that alleyways were alleged as being "threatening, unsafe, and dirty places that lacked clear function or jurisdiction" (p. 2889). The results of the focus group discussion not only confirm the strength of the negative stigmas surrounding alleyways, but also provide evidence as to why they fail to be considered as viable pedestrian spaces. Arguably, the negative perceptions associated with alleyways not only limits their current usage patterns, but also threatens the future viability of such spaces in the urban framework.

While the negative stigmas surrounding alleyways pose a challenge to planners and urban designers in regards to revitalization and activation programs, it is likely that pedestrian perceptions can be challenged through the application of traditional urban design principles. In fact, when shown images of alleyways enhanced with landscape, focus group members responded positively despite their prior overwhelmingly negative feelings toward these spaces (Wolch et al., 2010). This finding is further supported by an alley reuse study conducted in the commercial district of Los Angeles' Hollywood neighborhood. The study, conducted by researchers Seymour and Trindle (2015), compared the volume and type of activity in a newly renovated alley to that of a nearby control alley, reported nearly eight times more activity in the renovated alley than in that of the latter. When compared to a larger sample of three hundred Los Angeles alleys, the renovated alley was used four times more often than others in the sample. Thus, the perceptions and usage patterns of alleyways are proven to be influenced by the amenity and aesthetic that results

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from redevelopment. That being said, no research to the author's knowledge has attempted to identify and measure the specific physical features that contribute to successful alley redevelopment projects.

What amenities must alleys provide in order to be perceived as safe, functional spaces? More broadly, what influences pedestrians to explore and remain in an urban space? The field of urban design has traditionally sought answers to such questions in attempt to influence the design decisions of metropolitan project typologies. If the objective is to promote alleyways as viable pedestrian spaces, it is logical that previous research conducted in regards to urban streetscapes is largely applicable to urban alleys, as they themselves are defined as being "narrow back street[s]" (Wolch et al., 2010, p. 2875). In other words, alleys are more likely to be regarded as viable pedestrian spaces if they can mimic the aesthetic of successful and commonly traveled sidewalks and thoroughfares. Thus, the remainder of the discussion will elaborate on the relationship between urban design and the perceived walkability of space in attempt to provide the framework for pedestrian-oriented alley redevelopment.

OBJECTIFIABLE QUALITIES OF THE PEDESTRIAN ENVIRONMENT

The relationship between environment and pedestrian walkability has been referenced by urban designers for many years, many of whom have suggested various perceptual qualities that are thought to promote pedestrian engagement and activity. While urban design literature has emphasized the importance of perceptual qualities in the walking environment, few attempts have been made to objectively measure the qualities described in order to test for significance and reliability. That is until recently. Using a mixed method quantitative and qualitative approach, researchers Ewing and Handy (2009) were able to objectively measure the following perceptual qualities commonly referenced in urban design literature: imageability, enclosure, transparency, human scale, and complexity. While the scope of the study was limited to the pedestrian perception of commercial streetscapes, the measures and findings presented by Ewing and Handy will be evaluated for plausibility in the context of existing alleyways. For the purpose of focus in this discussion, imageability and enclosure will not be further expanded upon for the reason that imageability is ultimately a result of the other four perceptions, and the significant contributors to enclosure, as identified by the study, are difficult to manipulate in existing conditions. Instead, the remaining dialog will introduce and elaborate on the principles of human scale, transparency and complexity, each of which commonly appear in urban design literature and have been shown to positively influence the pedestrian perception of

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urban streetscapes (Ewing & Handy, 2009). These principles, as described, can be utilized to evaluate the aesthetic of existing alleyways, as well as direct revitalization efforts to increase their pedestrian appeal.

TRANSPARENCY

Of the urban design qualities, transparency is the most commonly defined in municipality codes and design standards (Ewing & Handy, 2009). For example, the City of Fargo not only defines transparency, but also sets a transparency standard for new development in the Downtown Mixed-Use (DMU) zone which requires:

> At least 35 percent of the ground-floor façade of buildings along sidewalks [are to] be comprised of windows, doors and other transparent elements (e.g. glass block) that allow views into the buildings, plazas or arcades. Calculations shall be based on the linear footage of the ground floor, and said transparent elements shall be a minimum of four feet in height (City of Fargo, 2015).

Alleyways are typically exempt from these or similar requirements, as a majority of these spaces were constructed well before city code defined and adopted the principle of transparency into their design standards. Furthermore, alleys generally avoid the scrutiny of such codes, as their historical and municipal definitions prevent them from being considered as pedestrian thoroughfares or sidewalk equivalents. As a result, a majority of alleyways lack first floor windows, and therefore lack the most significant variable in the perception of transparency (Ewing & Handy, 2009). Given the unfavorable existing parameters surrounding these narrow spaces, is transparency a principle that can feasibly be introduced?

Fortunately, Ewing and Handy's (2009) research model suggests that transparency is not limited to the ability to see into buildings via glass windows and facades. In fact, transparency need only be perceived in order to be effective. Therefore, the principle of transparency becomes prevalent in the streetscape if the activity behind the street edge can be imagined by pedestrians. At the greatest level of perceived transparency, indoor activities are brought streetside. These activities often take the form of outdoor retail displays or patio cafés, however signage that conveys specific building use is also considered to be effective. In the appropriate context, transparency has the potential to be easily and

effectively implemented in alleyways, especially those located in mixed-use and commercial areas where the space is predominantly surrounded by retail and dining establishments. While it is generally feasible for businesses within these zoning districts to extend their products and services into the alleyway, it would be far more difficult for zones with primary office and industrial uses to do so, as the functions carried out within them do not readily extend into the outdoors. Thus, the feasibility of introducing transparency into existing alleyways is largely dependent on location and context.

If executed correctly, transparency engages the pedestrian through a variety of interactions with the streetscape and surrounding businesses. As features associated with transparency are introduced into the landscape, opportunities for pedestrian interaction become more readily available. While increased engagement and interaction encourages amplified activity within the alleyway, comfort and amenity must also be perceived in order for the space to be considered a viable pedestrian thoroughfare.


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HUMAN SCALE

The definition of human scale typically varies amongst urban designers, however most agree that building width is equally important as building height when describing the design principle (Ewing & Handy, 2009). Places that are thought to be of human scale are generally considered to "feel good," so much so that the people who occupy them might spend extra time there, oftentimes without being able to identify why. That being said, many municipalities fail to reference or define human scale in their land development codes and guidelines. The City of Fargo (2015) only briefly attempts to define human scale for its University Mixed-Use District, which requires that: "pedestrian scale components will be incorporated into architectural details, attractive streetscapes and safe traffic movements" (Article 20-0216). While the City of Fargo sets forth a general standard for its University Mixed-Use District, it fails to operationalize the term in quantitative or qualitative terms. How frequently must the pedestrian scale components occur in order for the space to be perceived as being human scale? The answer to such a question might vary depending on which City official you happen to speak to. Like Fargo, many other municipalities fail to answer the preceding question, as human scale typically isn't operationalized in land development codes throughout the country.

While the importance of human scale environments seems to be understood throughout the urban design and planning professions, various interpretations and definitions have made the principle difficult to consistently measure and apply. Can human scale as a design principle be simplified so far as to describe a general set of features that can then be applied to an existing landscape? Ewing and Handy's (2009) research suggests so. In fact, the researchers were able to identify and operationalize five contributing variables to human scale in the urban environment, many of which can be translated and applied to existing alley spaces.

In fact, the presence of street furniture and first floor windows in urban spaces, while previously identified as being variables contributing to the perception of transparency, were also found to be significant contributors to human scale. Small planters, which were identified separately of street furniture, were also discovered as being features that contribute to the perception of human scale in a space. As anticipated, the correlative research found long sightlines and building heights weaken the acuity of human scale in the urban environment, both of which happen to be acute characteristics of existing alley spaces (Ewing & Handy, 2009).

When analyzed by the features described above, urban alleyways typically lack a sense of human scale. The long sightlines and tall, typically stark building walls that surround alleys encourage users to quicken their pace in attempt to move through the narrow spaces as quickly as possible. Fortunately, the redevelopment of such spaces offers the opportunity to remedy the existing conditions. For example, the prominence of surrounding building heights can be deemphasized by bringing the overhead plane down to a more appropriate level. This might be achieved by incorporating an overhead structure, or by introducing street trees, which can serve to form an organic canopy over the space. Furthermore, the long, narrow views through alleyways can be shortened by including features that interrupt the line of sight and therefore break the space into smaller rooms, thereby encouraging interaction, whether it be with other pedestrians or the streetscape itself. The inclusion of human scale elements in the alley setting not only strengthens the perceived comfort of the space, but also inspires the pedestrian to extend his stay. However, if the pedestrian is to be encouraged to occupy space for an extended period of time, an adequate level of environmental complexity must exist in order to engage and maintain his interest.

COMPLEXITY

Complexity, in the simplest of terms, is the "visual richness of a place" (Ewing & Handy, 2009, p. 81). Unlike transparency and human scale, complexity as a design principle is neither mentioned, nor defined in the City of Fargo municipal code. In order for a space to engage and maintain pedestrian interest, it must contain a high level of complexity, as the slow speeds at which pedestrians travel allows for large amounts of information to be comfortably received and interpreted. That is not to say that an environment


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with numerous elements is always complex. In fact, these environments can possess low levels of complexity if the elements, while numerous, become predictable, so as to lack surprise; or so disordered that they become incomprehensible (Ewing & Handy, 2009). Alleyways, however, typically lack complexity as a result of too few or similar elements.

So what exactly contributes to the complexity of place? Over the years, urban designers have related complexity to a variety of features including: building typology and shape, architectural ornamentation, textural changes, and the presence of people and street furniture. These features, while measured and observed in several visual assessment studies, failed to be tested for significance prior to the research conducted by Ewing and Handy (2009). To the surprise of the researchers, many of the features described in classic design literature were not found to be notable contributors to complexity, including: "[the] number of building materials, [the] number of building projections, textured sidewalk surfaces, [and the] number of street lights and other types of street furniture" (Ewing & Handy, 2009, p. 81). Instead, the researchers found the number of people, the number of buildings and dominant building colors, as well as the presence of outdoor dining to be the most significant features contributing to the perception of complexity in the pedestrian environment.

In the context of existing alleyways, the features described as being contributors to complexity offer both opportunities and challenges. For instance, little opportunity exists to change or add to the number of buildings that surround an existing alleyway. Furthermore, the private nature of surrounding buildings makes it difficult for facade colors to be manipulated so as to provide a greater level of complexity. That is not to suggest that complexity cannot be achieved in such spaces, as public art and outdoor dining already exist in a small number of alleyways throughout the country, and have proven to viable in these settings. Furthermore, Ewing and Handy (2009) determined the greatest contributor to the perception of complexity to be the presence of people. Thus, complexity is likely to be achieved by applying

the previously discussed principles of transparency and human scale, as they are known to enhance the aesthetic of space and promote pedestrian thoroughfare and activity.

CONCLUSION

While the urban design principles described above have been identified as being contributors to pedestrian perception and activity, the supporting data was gathered from a study whose scope was restricted to commercial streets. Therefore, the application and results of the features described above may differ in alley settings. Furthermore, additional research suggests that while the objectifiable characteristics of a space generally explain the facilitation and distribution of pedestrian activity, they fail to address the qualitative characteristics that are also likely to influence pedestrian choice of place (Zacharias, 2001). For example, Zacharias (2001) argues that pedestrian purpose and itinerary are influenced not only by the character of the place, but also by location and programmed activities. That being said, the success of alleyway redevelopment cannot rely solely on the application of urban design principles, but must also include creative and adaptive programming if the goal is to introduce dynamic activity into these spaces.

Furthermore, the urban design principles previously described do not fully address the issue of safety the general public typically associates with alleyways. In order for alleyways to be perceived as viable pedestrian spaces, the potential users of the space must first identify them as being safe to pass through. That being said, introducing adequate lighting into alleyways is likely to enhance the perception of safety, as research has found darkness to heighten fear and suggest risk in individuals (Painter, 1996). In fact, in a study of three urban streets, incidents of crime and disorder were significantly reduced after lighting improvements were made to them. Furthermore, pedestrians reported increased feelings of personal safety after the improvements, and as a result the streets experienced a significant increase in the number of users after daylight hours (Painter, 1996). Thus, adequate lighting becomes extremely relevant to the conversation of alley revitalization and pedestrian amenity, despite being omitted from the urban design principles previously described.

Overall, the perceived principles of transparency, human scale, and complexity offer viable guidelines to alley redevelopment. These guidelines, while valuable indicators of pedestrian preference, cannot be strictly relied upon to produce an active space, as location, programming and perceived safety are also recognized as being important variables to successful pedestrian-oriented redevelopment. The findings in this body of work serve to offer a rubric for the evaluation of pedestrian amenity in existing alley spaces, while simultaneously offering design guidelines to pedestrian-oriented redevelopment.


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Annotated Bibliography

Ewing, R., Handy, K. (2009). Measuring the unmeasurable: urban design qualities related to walkability. Journal of Urban Design, 14(1), 65-84.

By utilizing ratings from a panel of 10 experts, Ewing and Handy attempt to objectively measure urban design qualities of the pedestrian environment as described in traditional urban design literature. Of fifty-one possible perceptual qualities, eight were selected to be measured based on the frequency of occurrence and relative importance in literature. Of the eight selected, the following five were able to be operationalized: human scale, enclosure, complexity, imageability and transparency. Ultimately, the authors seek to understand the relationship between the physical features of the urban environment and pedestrian behavior. To further define each of the perceptual qualities, the authors measured 130 physical features and assessed their significance in contributing to the strength of the models. The findings serve as a tool to evaluate the pedestrian amenity that already exists in alley settings, and to guide alley redevelopment efforts.

Municipal Code Corporation, & The City of Fargo, North Dakota. 2014. Fargo, North Dakota – Code of Ordinances. Retrieved from: https://www.municode.com/library/nd/fargo/codes/code_of_ordinances

The City of Fargo Code of Ordinances was referenced so as to determine if attempts were made to operationalize any of the perceptual qualities described by Ewing and Handy in Measuring the Unmeasurable: Urban Design Qualities Related to Walkability. The findings, or lack thereof, serve to illustrate Ewing and Handy's argument that the principles described in classic urban design literature, while largely regarded as being influential to the pedestrian perception of space, have historically failed to be operationalized and included in land development code. That being said, the perceptual principles of transparency, human scale and complexity were not entirely absent from the code. The relevant definitions will serve to further describe the principles to which they are associated, and serve to guide the subsequent design research phase, which seeks to redevelop an existing alleyway in Fargo, ND.

Painter, K. (1996). The influence of street lighting improvements on crime, fear and pedestrian street

use, after dark. Landscape and Urban Planning, 35, 193-201.

Painter implements improved lighting on three London streets in attempt to reveal the connection between street lighting and perceived pedestrian safety. The results, gathered from quasi-experimental research techniques, illustrate the profound impact adequate lighting can have on a space previously perceived as being dangerous. Following the introduction of improved lighting, Painter recorded a decrease in undesirable activity on each of the streets, and an overall increase in pedestrian activity. Furthermore, respondents noted that their perceived level of safety was drastically improved while walking the enhanced streetscapes. Painter's findings, which are directly relatable to the alley setting, will serve to illustrate how the stigmas of crime and disorder can be mitigated with simple lighting improvements.

Seymour, M., Theadora, B. T. (2015). Use dimensions of an alley revitalization project. Landscape Research. 40(5), 586-592.

Seymour and Trindle attempt to determine whether the usage patterns of revitalized commercial alleyways differ from similar non-revitalized alleyways through a series of systematic behavioral observations. A collection of one thousand, nine hundred and seventy-six recorded observations offers evidence that alley revitalization has considerable effects on both activity type and usage volume. In fact, Seymour and Trindle report that the revitalized alley had approximately eight times the activity than that of the non-revitalized alley. However, the authors offer that the results might be limited, as observations were only made during daylight hours. Furthermore, the observations might not be readily generalizable in less temperate regions, as the results were collected during the summer months in southern California.

Wolch, J., et. all. The forgotten and the future: Reclaiming back alleys for a sustainable city. 2010. Environment and Planning, 42, 2874-2896.

Wolch, et. all explore the distribution, activity and resident perceptions of alleyways in Los Angeles, California through an integrated mixed-methods strategy that includes several data collection tactics, including: resident focus groups, physical audits and behavioral observation studies. The authors discuss the origins and evolutions of alleys and discuss the recent revitalization initiatives that are attempting to bring value to the typically

underutilized spaces. While physical audits revealed alleys to be typically clean and quiet, the focus groups revealed that local residents perceive them as being dirty, unsafe, and associated with undesirable activities. The authors suggest the strong, negative perceptions surrounding alleyways offer challenges to urban planners and designers, however note that residents were quick to supply measures they felt would improve alleyways, and responded positively toward depictions of revitalized alleys. An analysis of results reveals that renovated alleyways are likely to offer economic, ecological and social benefits to surrounding neighborhoods.

Zacharias, J. (2001). Pedestrian behavior and perception in urban walking environments. Journal of Planning Literature, 16(1), 3-18.

Zacharias pairs his own laboratory-based and microscale research with

Roberts Alley : 13

findings from similar studies to assess pedestrian spatial behavior in walking districts. The author suggests that the ability for pedestrians to perceive and decipher the layout of the city is critical to the success of pedestrian links that are inserted into an existing network, as this allows the pedestrian to adopt path minimization. That is not to say that topology and geometry are the only contributors to the success of a pedestrian corridor, as physical factors such as the presence of people and amenity are also recognized as being important. Zacharias argues that among the most important factors in generating pedestrian movement through a corridor is the management of entry experience, as this has proven to play a significant role in determining pedestrian route.


ENTRANCE
PINCH
POUR

Fig. 1

PRECEDENT ANALYSIS

The precedent analysis examines three alley redevelopment projects designed to promote pedestrian thoroughfare and activity. The precedents, located in Fort Collins, CO, Pasadena, CA, and Los Angeles, CA are similar to Roberts Alley in that they all share a similar commercial context. Thus, the programming found in each of these spaces is likely to translate to the redevelopment of Roberts Alley. Furthermore, each of the precedents is considered to be successful in regards to increased pedestrian thoroughfare and activity, thereby establishing proof that alleyways can in fact be viable pedestrian spaces. As a whole, the precedents will be used to guide and inspire the redevelopment program of Roberts Alley.

MONTEZUMA FULLER ALLEY | FORT COLLINS, CO

411 feet | Downtown Development Authority & Russel Mills Studios

Fig. 2

Fig. 3

Fig. 4

Fig. 5

PROJECT DESCRIPTION

Montezuma Fuller Alley was upgraded with improved drainage, pavers, lighting, street furniture, and planter boxes in the hopes that alley improvements would encourage adjacent businesses to add new entrances and patios off of the alleyway, thereby promoting activity and interaction. This concept has already proven to be successful, as Equinox Brewing has established a beer garden in the space. In efforts to continue to serve businesses and improve spatial aesthetic, five dumpster enclosures were built in the alley to reduce the visual prominence of garbage disposal and collection. Lastly, the alley serves as a host to public art. In collaboration with Fort Collins' Art in Public Places program, forty pavers were engraved with children's drawings and then randomly placed throughout the alley.

CONCLUSION

The Montezuma Fuller Alley is very similar in context to Roberts Alley in that a majority of adjacent businesses are either retail or dining establishments. Thus, the amenities added to the Montezuma Fuller Alley are particularly applicable to future design considerations in regards to Roberts Alley. Furthermore, the concept of clustering and combining trash into dumpster enclosures is likely to be considered in the redevelopment of Roberts Alley, as the prominence of dumpsters currently plagues the visual aesthetic of the space.

MERCANTILE PLACE | PASADENA, CA

400 feet | The City of Pasadena & Meléndrez Associates

PROJECT DESCRIPTION

Mercantile Place is one of twenty-six alleys redesigned to "address actual pedestrian patterns as well as the specialized needs of existing businesses, cultural institutions and residences in Old Pasadena" (The City of Pasadena, Old Pasadena Streetscapes & Alley Walkways Refined Concept Plan). The alley network, which spans a 22-block area, achieves the previously stated objectives by providing improved paving, outdoor dining and entertainment spaces, adequate signage (including alley directory kiosks), and other pedestrian streetscape amenities. In efforts to promote pedestrian walkability while simultaneously accommodating business service and delivery, retractable bollards strictly control and enforce truck access to the nighttime hours of 11pm - 2am.

CONCLUSION

Like Montezuma Fuller Alley, Mercantile Place is similar to Roberts Alley in that it is surrounded predominantly by commercial business. While pedestrian activity is highly prioritized in Mercantile Place, the space still accommodates vehicular service and deliveries between the hours of 11pm and 2am. This controlled and strictly enforced delivery strategy offers a precedent for vehicular and pedestrian separation in the redevelopment of Roberts Alley.


Fig. 6


Fig. 7


Fig. 8


Fig. 9

E. CAHUENGA (EACA) ALLEY | LOS ANGELES, CA

465 feet | Community Redevelopment Agency & LA Bureau of Engineers

Fig. 10

Fig. 11

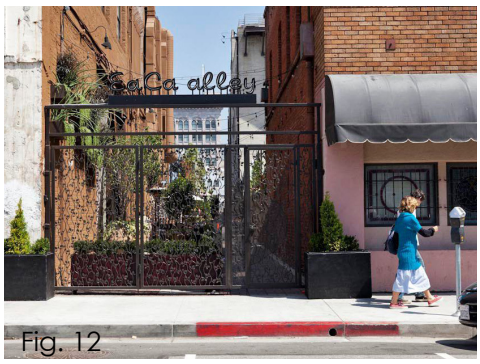


Fig. 12

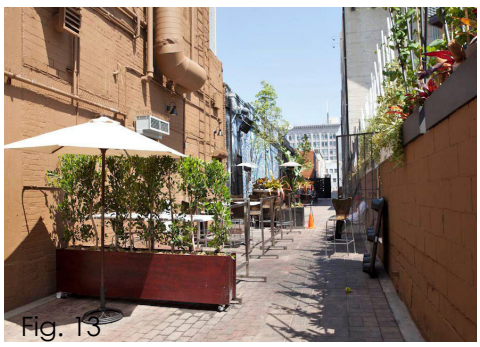


Fig. 13

PROJECT DESCRIPTION

The EaCa redevelopment project aims to be a year-round garden showcase and features sculpture, lighting, custom planters and areas for outdoor dining. The cost of redevelopment, totaling nearly $800,000, was joint-funded by adjacent businesses (who were responsible for landscaping and lighting), the Hollywood Property Owners Alliance (security and maintenance), and the now-obsolete Community Redevelopment Agency. In efforts to promote safety and security, the alley has limited hours and remains closed to thoroughfare from 2am - 9am. In addition to new pedestrian amenities, the space boasts additional programming including the Cahuenga Corridor Street Market where local artists sell their wares. The redevelopment of the alley is considered to be widely successful. In fact, the alley experiences nearly eight times more activity than other alleys in the neighborhood (Seymour & Trindle , 2014).

CONCLUSION

EaCa alley not only capitalizes on the retail-orientated nature of adjacent business, but also introduces additional programming by hosting a street market each Sunday. A similar concept might be applied to Roberts Alley in efforts to maximize alley exposure and activity. Furthermore, EaCa Alley provides evidence to the success of alley redevelopment, as Seymour & Trindle (2014) documented usage patterns for the space after redevelopment and found that EaCa alley had "nearly eight times the amount of activity observed in the control alley, and was in use twice as often as the control alley" (590).

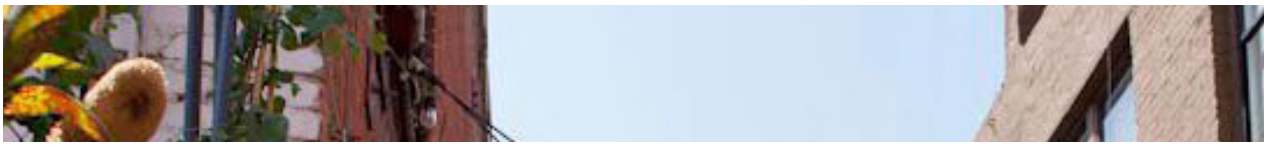


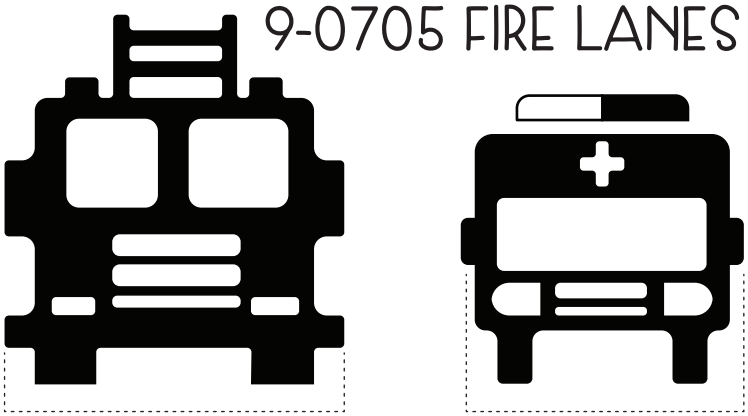
Fig. 14

Roberts Alley : 14

CODE ANALYSIS

Roberts Alley falls within the Downtown Mixed-Use district of Fargo, which is "intended to preserve and enhance the City's downtown area. The district allows a broad range of uses in order to enhance downtown Fargo's role as a commercial, cultural, governmental and residential center. Development is intended to be pedestrian-oriented with a strong emphasis on safe and attractive streetscape" (City of Fargo Municipal Code, 2016). While the DMU strives to emphasize attractive streetscapes, Fargo's municipal code fails to be progressive enough to truly back this mission. This is especially true in regards to alleyways, as they are generally disregarded from code language altogether. While the lack of directive is likely to be a challenge to redevelopment planning and design, there is likely to be significant opportunity as well being that the redevelopment mission of Roberts Alley directly aligns with that of the DMU.

9-0705 FIRE LANES



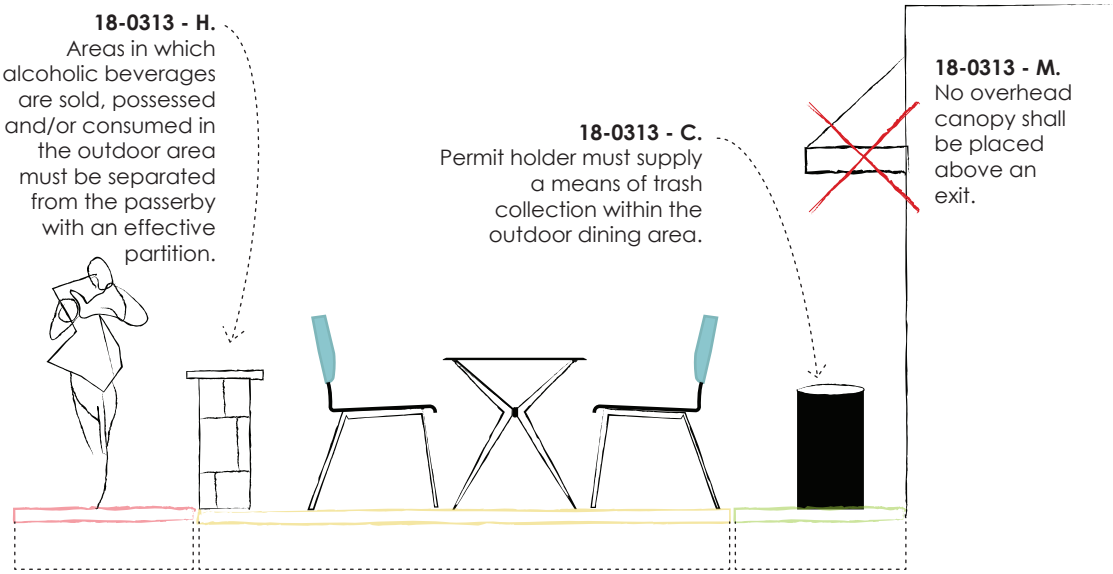
8' - 0" wide, 10' - 2" clearance

6'-8" wide, 9'-6" clearance

9-0705

No person shall park any motor vehicle in or obstruct in any way any fire lanes or access roads which have been designated and marked with No Parking signs.

18-0313 OUTDOOR DINING AREAS



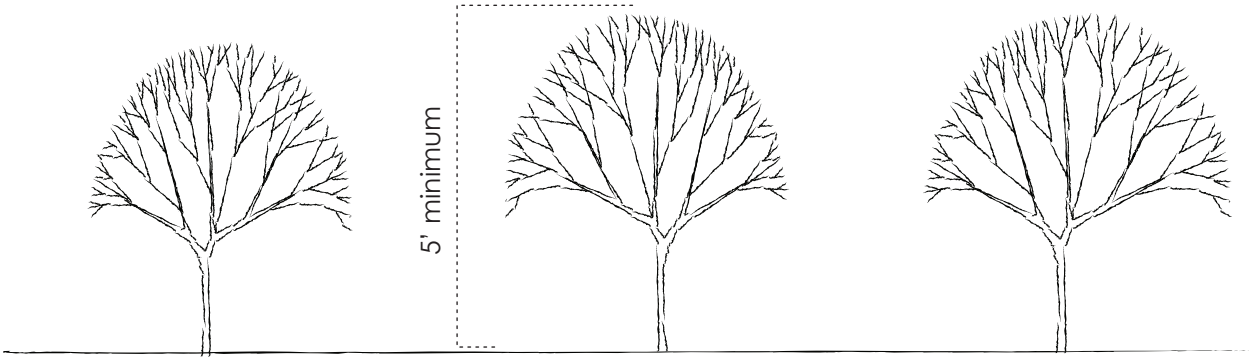
18-0313 - B.
Unobstructed pedestrian zone-minimum 4'-8" clearance.

18-0313
Outdoor dining area that extends 42" beyond storefront requires permit.

18-0313 - K.
All dining furniture and temporary partitions shall be moved inside the building during non-business hours, or during inclament weather.

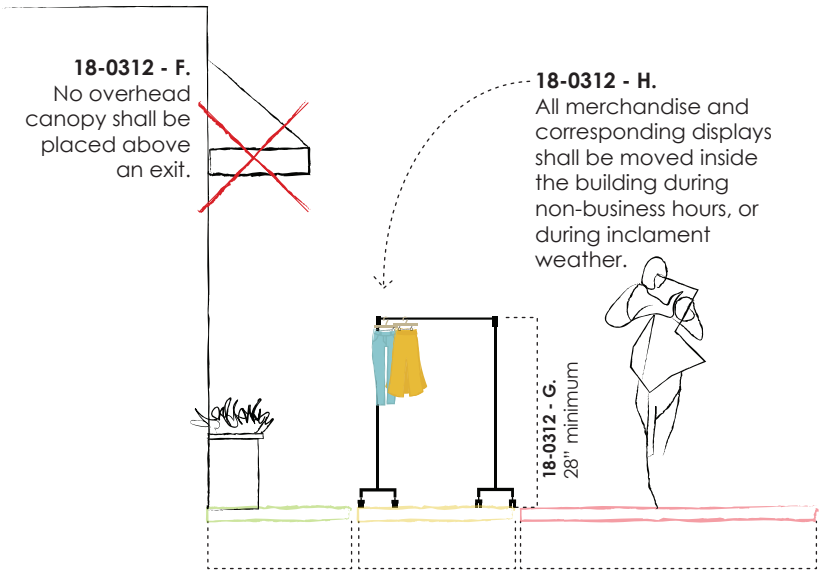
18-0313
Outdoor dining areas permitted on sidewalks in the Central Business District.

19-0204 SIZE REQUIREMENT OF TREES



19-0204
No tree less than 5' in height shall be planted on any street, boulevard or alley. Trees should not obstruct convenient passage of traffic.

18-0312 OUTDOOR MERCHANDISING AREAS



18-0312 - F.
No overhead canopy shall be placed above an exit.

18-0312 - H.
All merchandise and corresponding displays shall be moved inside the building during non-business hours, or during inclament weather.

18-0312 - A.
Merchandise area that extends 36" beyond storefront requires permit.

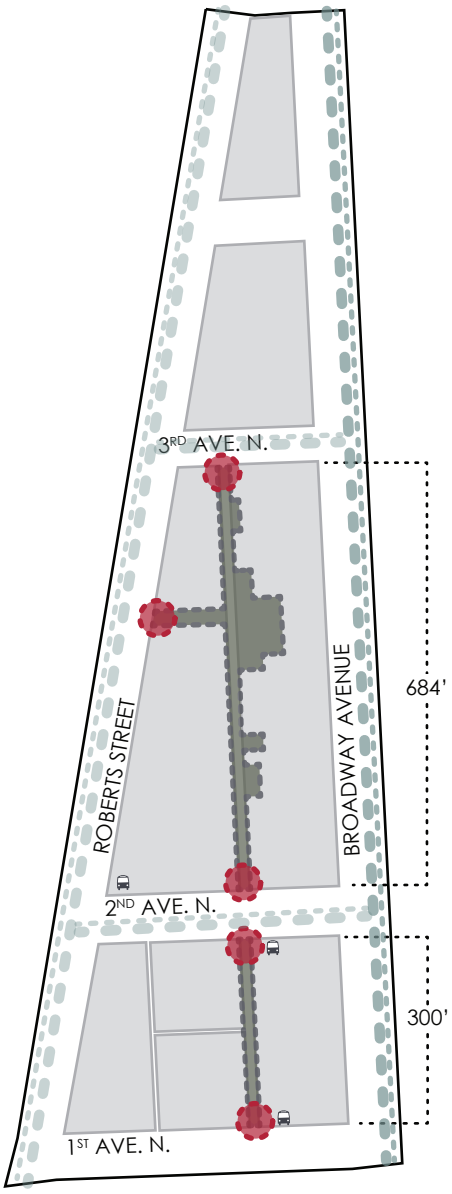
18-0312
Retail displays permitted on sidewalks within the Central Business District.

18-0312 - B.
Unobstructed pedestrian zone - minimum 6' clearance.

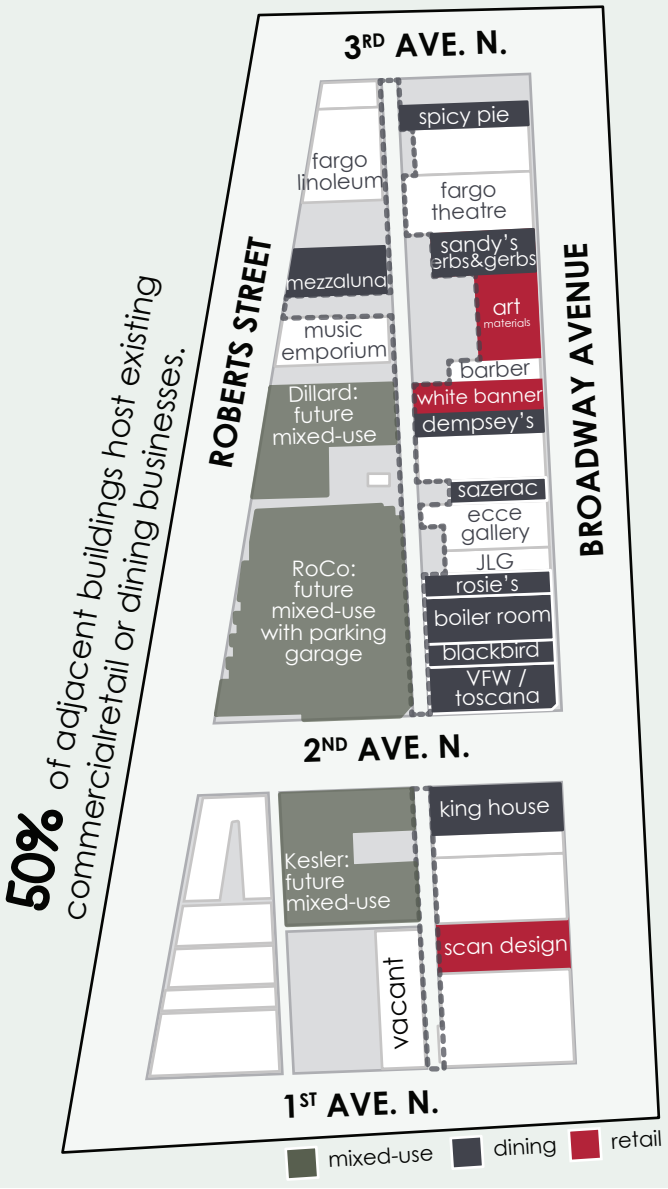
Roberts Alley : 15

SITE ANALYSIS

Roberts Alley is located in the Downtown Mixed-Used district of Fargo, North Dakota and serves as the backstreet to downtown's busiest and most commercial thoroughfare – Broadway. The alley spans the length of two regular blocks and one super-block for a total of 1,130 feet and is primarily used for service and delivery activities. With new mixed-used development occurring immediately adjacent to the west side of the space, there is ample opportunity to simultaneously redevelop the alley and re-orient it to encourage pedestrian thoroughfare and activity. An analysis of the site reveals it to be highly utilitarian in aesthetic and function. As a result, the space lacks the interest and amenity necessary to support pedestrian activity. Redevelopment seeks to apply the previously discussed principles of urban design to the space in order to promote the perception of walkability and integrate the site into the existing pedestrian network.



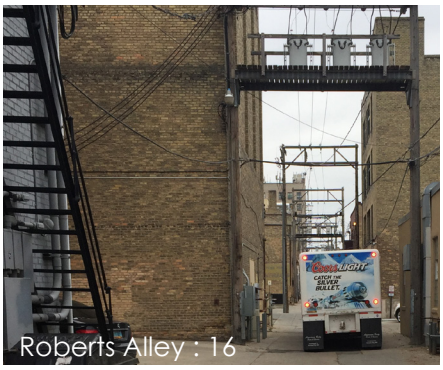
vehicular circulation
pedestrian circulation
heaviest circulation - pedestrian & vehicular
access node
bus stop



N. ALLEY: 28,821 ft²
S. ALLEY: 639 ft²
TOTAL: 29,460 ft²

EXISTING FUNCTIONS

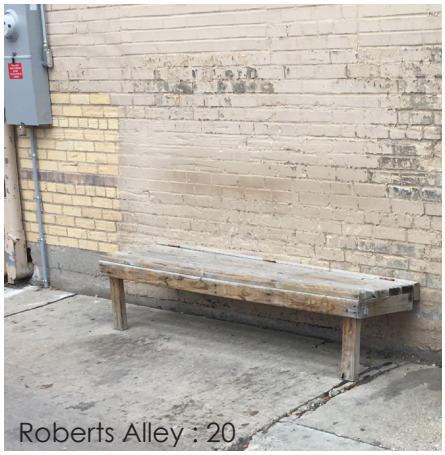
Inventory of the space revealed that vehicles and utilities currently dominate the space. While the redeveloped space seeks to emphasize pedestrian activity, it is vital that the site continues to serve the utility and service needs of adjacent business. Thus, alley redevelopment must find harmony between the intended new uses and those that already exist.


Roberts Alley : 16


Roberts Alley : 17

Roberts Alley : 18

Roberts Alley : 19

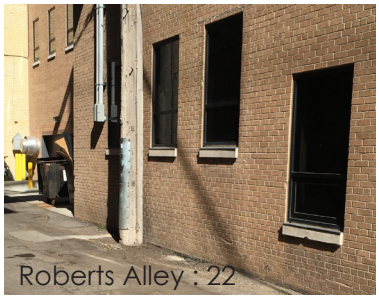


Roberts Alley : 20

HUMAN SCALE

The space features very few human-scale amenities in the form of street furniture or urban planters. The lack of human-scale is further exaggerated by the long, narrow sight lines that allow the user to see down the entire alleyway. Introducing additional street furniture and small planters is likely to promote a more aesthetic pedestrian environment and therefore promote thoroughfare and activity.

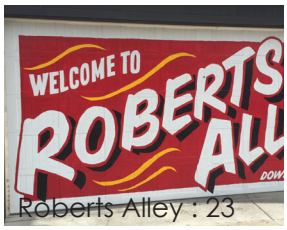
Roberts Alley : 21



Roberts Alley : 22

TRANSPARENCY

The space lacks transparency as it fails to accommodate a variety of active uses, and a majority of adjacent buildings fail to feature first floor windows. That being said, there are opportunities to activate the space and provide transparency through signage and displays that reveal the services and products of adjacent businesses. In a perfect case scenario, retail displays and outdoor dining spaces would be implemented.



Roberts Alley : 23

Roberts Alley : 24

COMPLEXITY

The space generally lacks complexity, a vital component of capturing and maintaining pedestrian interest. If the space is to serve pedestrians, complexity must be introduced so as to provide visual simulation. While public art exists in the form of three murals on site, additional complexity can be introduced by providing outdoor dining and introducing accent colors to break up the monotony of existing building color.

Roberts Alley : 25

CONCLUSION

Access to the site is extremely limited off of existing north/south pedestrian and vehicular thoroughfares. Thus, it becomes extremely important to emphasize site entry and connectivity on existing east/west thoroughfares. Downtown Fargo's grid layout is beneficial in this instance, as the ability to perceive the urban framework encourages the pedestrian to be more exploratory in his or her route. Additionally, the presence of people, furnishings and signs have been proven to be important motivating factors to the exploration of unknown street environments. The prominence of adjacent retail and dining businesses provides opportunity to promote a variety of active uses in the alley including: strolling, shopping and dining.


WELCOME TO

PROGRAM

The speculative program for Roberts Alley begins to address key redevelopment problems in regards to form, function, economy and time. These problem statements, in addition to research findings, serve to direct and inspire redevelopment. At this point, the program is hypothetical in nature, as the evaluative research process (to be defined in the "plan for proceeding" section) intends to assess and refine the programmatic elements to be included in the final redevelopment masterplan. Lastly, a spatial relationship diagram reveals adjacent business, as well as vehicular and pedestrian circulation lanes to be key organizing elements.

PROBLEM STATEMENTS

FUNCTION

Since service and delivery activities are to remain in the alleyway, redevelopment must periodically accommodate large vehicles (height & width clearance) while still promoting pedestrian thoroughfare and activity.

Since the alley intends to better serve the pedestrian, it must provide enough amenity and visual interest so as to be considered a viable pedestrian thoroughfare.

Since redevelopment intends to make the alleyway more aesthetically pleasing, creative grouping and screening methods will be implemented so as to disguise the prevalence of dumpster and trash receptacles.

FORM

Since the alley is plowed by the City of Fargo, appropriate paving and ground materials must be selected to withstand snow removal.

Since the alley depends on surrounding businesses to help activate the space, it must be negotiable and flexible in design regulations so as to encourage businesses to contribute activity to the space.

Since Second Avenue North divides the alleyway, the design solution must connect the two spaces both visually and physically.

Since the alley has long, narrow views, which are proven to diminish the perceived walkability of space, the design solution must attempt to shorten the pedestrian viewshed by creating small, distinct rooms within the larger space.

TIME

Since redevelopment strives to activate the alley year-round, the space must provide seasonal amenities and accommodate seasonal programming.

Since the alley will be used on a continuing basis over the course of a day, the design solution should consider safety during nighttime hours and capture the spirit of a 24-hour thoroughfare.

Since the alley strives to promote pedestrian walkability, vehicular thoroughfare through the space should be restricted during active daylight hours.

Since additional development is being constructed adjacent to the alleyway, the space must plan to accommodate additional density as new residential and commercial units are occupied.

Since the businesses surrounding the alleyway are somewhat likely to change over time, the alley must be flexible so as to accommodate changes in business and delivery needs.

ECONOMY

Since alley redevelopment is intended to be a catalyst for private investment within the space, it must demonstrate value to adjacent stakeholders and businesses.

Since the alley is to balance public and private investment, it must respond to an initially moderate budget with directness and durability, while maintaining the flexibility to accommodate additional expenditure as private investment allows.

Since much of the alley is to be funded by the City of Fargo, the design must respond to a moderate budget with diligent cost control.

SPACE LIST

FUNCTION	# OF UNITS	AREA/UNIT	NET AREA
CIRCULATION/THOROUGHFARE			
12' VEHICLE LANE (FREE OF OBSTRUCTION)	1	11,100 SQ. FT. (MINIMUM)	11,100 SQ. FT. (MINIMUM)
PEDESTRIAN LANE (FREE OF OBSTRUCTION)	1	5,550 SQ. FT. (MINIMUM)	5,550 SQ. FT. (MINIMUM)
NET AREA SUBTOTAL			16,650 SQ. FT.
UTILITIES			
COMBINED UTILITY BOX (NEW DEVELOPMENT)	1	310 SQ. FT.	310 SQ. FT.
EXISTING UTILITIES	45	4 SQ. FT.	180 SQ. FT.
COMBINED DUMPSTER	4	210 SQ. FT.	840 SQ. FT.
NET AREA SUBTOTAL			1,330 SQ. FT.
RETAIL			
SMALL RETAIL DISPLAY ZONE	7	6 SQ. FT.	42 SQ. FT.
LARGE RETAIL DISPLAY ZONE	5	15 SQ. FT.	75 SQ. FT.
NET AREA SUBTOTAL			120 SQ. FT.
DINING & FOOD SERVICE			
BISTRO-STYLE DINING AREA	3	125 SQ. FT.	375 SQ. FT.
PATIO DINING AREA	2	1,000 SQ. FT.	2,000 SQ. FT.
VENDOR CART AREA	8	56 SQ. FT.	1,330 SQ. FT.
NET AREA SUBTOTAL			3,705 SQ. FT.

QUALITATIVE COMMENTS
THOROUGHFARE TO BE CONSTRUCTED OF DECORATIVE PAVERS OR CONCRETE IN EFFORTS TO PROMOTE AESTHETICS. THIS SPACE IS LIKELY TO OVERLAP THE PEDESTRIAN CIRCULATION LANE, AS SERVICE & DELIVERY IS TO BE RESTRICTED TO SPECIFIC TIMES.
THOROUGHFARE TO BE CONSTRUCTED OF DECORATIVE PAVERS OR CONCRETE IN EFFORTS TO PROMOTE AESTHETICS. THIS SPACE IS LIKELY TO OVERLAP THE VEHICULAR CIRCULATION LANE.
PROPOSED UTILITY BOX TO BE DISGUISED BEHIND A DECORATIVE OR VEGETATIVE SCREEN SO AS TO DE-EMPHASIZE THE UTILITARIAN NATURE OF THE ALLEYWAY.
EXISTING UTILITIES TO REMAIN AS THEY SERVE ADJACENT BUSINESS. A BALANCE OF EXPOSURE & SCREENING DE-EMPHASIZES THE UTILITARIAN NATURE OF THE ALLEY, WHILE MAINTAINING A SENSE OF GRITTY VITALITY & URBINITY.
DUMPSTERS SERVICING EXISTING BUSINESSES ARE TO BE COMBINED SO AS TO REDUCE THEIR VISUAL PROMINENCE AND IMPACT IN THE ALLEYWAY. DECORATIVE OR VEGETATIVE SCREENING SERVES TO FURTHER DISGUISE THEM FROM PLAIN SIGHT. A BALANCE OF EXPOSURE & SCREENING DE-EMPHASIZES THE UTILITARIAN NATURE OF THE ALLEY, WHILE MAINTAINING A SENSE OF GRITTY VITALITY & URBINITY.
FLEXIBLE RETAIL SPACE THAT ACCOMMODATES MOVEABLE RETAIL RACKS AND MANNEQUINS. TO BE LOCATED ADJACENT TO EXISTING RETAIL BUSINESSES.
FLEXIBLE RETAIL SPACE THAT ACCOMMODATES MOVEABLE TABLES & LARGE DISPLAY STANDS. TO BE LOCATED ADJACENT TO EXISTING RETAIL BUSINESSES.
AREAS ARE TO BE LINEAR IN NATURE & IMMEDIATELY ADJACENT TO PEDESTRIAN CLEARANCE ZONE. SPACES ARE TO BE FURNISHED WITH MOVEABLE BISTRO FURNITURE & ARE INTENDED FOR QUICK DINER TURN-OVER: GRAB-&-GO.
AREA TO FEATURE MOVEABLE BISTRO SEATING IN EFFORTS TO ACCOMMODATE GROUPS OF VARYING SIZES. AN OVERHEAD CANOPY WILL FURTHER DEFINE THE SPACE, WHICH IS DESIGNED TO ACCOMMODATE DINERS WHO ARE HOPING TO LINGER OVER THEIR MEAL. DINER TURNOVER OCCURS LESS FREQUENTLY IN THIS SPACE WHEN COMPARED TO THE BISTRO-STYLE DINING AREAS.
FLEXIBLE SPACE THAT ACCOMMODATES MOVEABLE FOOD VENDOR CARTS. TO BE LOCATED ADJACENT TO PEDESTRIAN CLEARANCE ZONE. PROVIDES OPPORTUNITY FOR SPONTANEITY & VENDOR VARIETY.

SPACE LIST (CONTINUED)

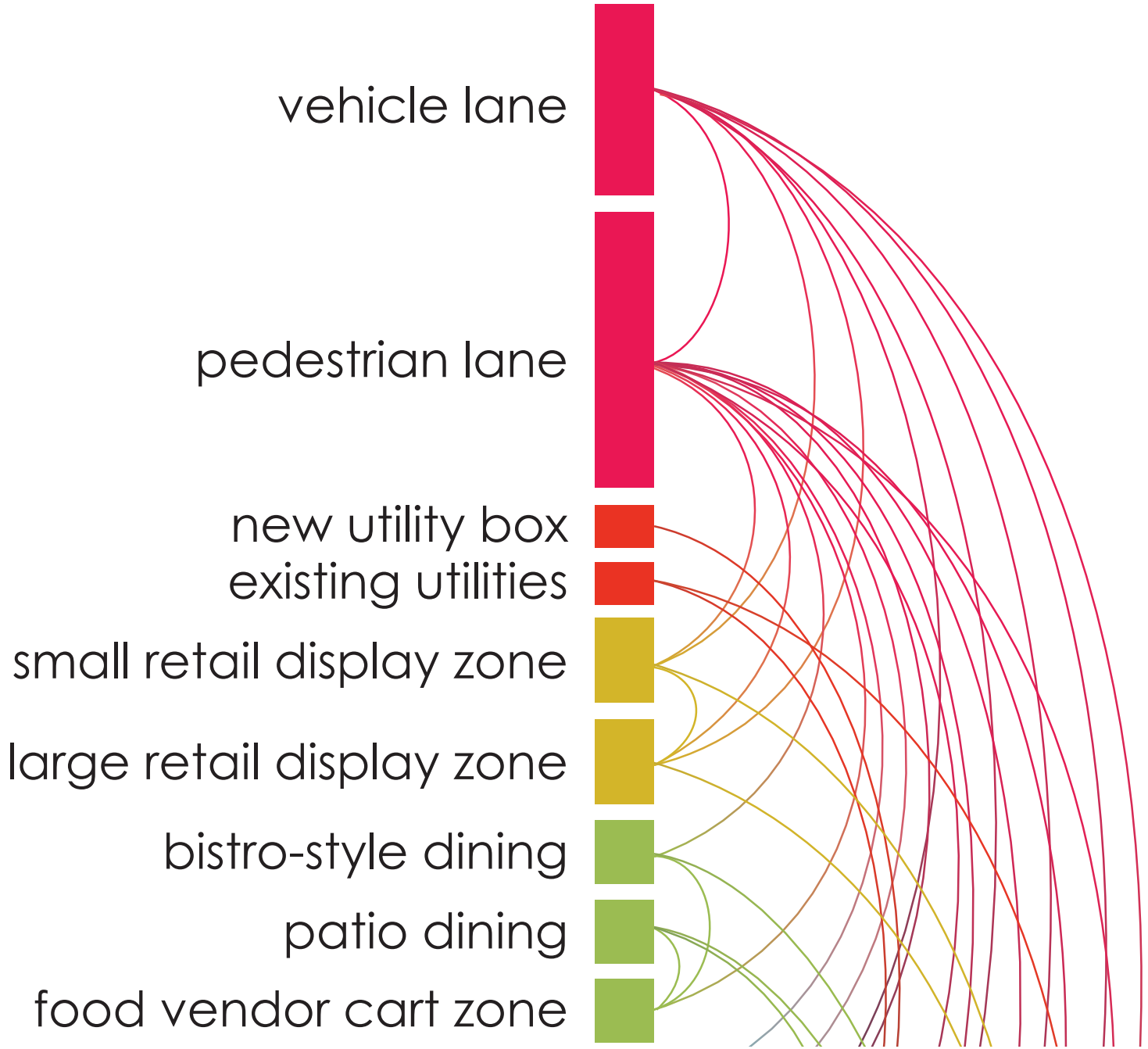
FUNCTION	# OF UNITS	AREA/UNIT	NET AREA
SEATING			
SHORT-TERM SEATING	5	30 SQ. FT.	150 SQ. FT.
LONG-TERM SEATING	3	64 SQ. FT.	190 SQ. FT.
NET AREA SUBTOTAL			340 SQ. FT.
LANDSCAPE FEATURES			
SEASONAL BLOOM (PERMANENT)	25	310 SQ. FT.	5,225 SQ. FT. (MIN. 15% SURFACE)
SEASONAL BLOOM (MOVEABLE)	20	4 SQ. FT.	80 SQ. FT.
VISUAL SCREENING	8	210 SQ. FT.	200 SQ. FT.
OVERHEAD CANOPY	25	6 SQ. FT.	6,965 SQ. FT. (MIN. 15% SURFACE)
ART - WALL MURALS	5	VARIES (36 SQ. FT. MIN.)	1,000 SQ. FT.
ART - SCULPTURE	5	9 SQ. FT.	45 SQ. FT.
SIGNAGE & WAYFINDING	3	3 SQ. FT.	9 SQ. FT.
NET AREA SUBTOTAL			13,525 SQ. FT.
TOTAL AREA			**35, 670 SQ. FT.**

QUALITATIVE COMMENTS
TO BE LOCATED IMMEDIATELY ADJACENT TO PEDESTRIAN CIRCULATION LANE. OFFER A PLACE TO REST, HOWEVER AREN'T OVERLY COMFORTABLE SO AS TO PROMOTE ACTIVITY & QUICK TURNOVER.
TO BE MORE INTIMATE THAN SHORT-TERM SEATING AREAS DESCRIBED ABOVE. INTENDED FOR MORE LONG-TERM STAY, AND THEREFORE MIGHT ACCOMMODATE ACTIVITIES SUCH AS CONVERSATION OR READING. FEATURES MORE COMFORTABLE SEATING OPTIONS. TO BE LOCATED FURTHER FROM THE PEDESTRIAN CIRCULATION LANE
ANNUALS & PERENNIALS PLANTED IN BEDS WITHIN THE ALLEY. SEASON-LONG COLOR & BLOOM PROMOTES VISUAL INTEREST & COMPLEXITY, WHILE THE SOFTSCAPE NATURE OF THE BEDS ALLOWS FOR STORMWATER PERMEABILITY.
ANNUAL PLANTINGS IN MOVEABLE PLANTERS OF VARYING SHAPES & SIZES SO AS TO PROMOTE VISUAL INTEREST & COMPLEXITY.
VISUAL SCREENING IS TO BE USED TO DE-EMPHASIZE THE VISUAL PROMINENCE OF UTILITIES IN THE ALLEYWAY. POSSIBLE SCREEN TYPOLOGIES INCLUDE: CONSTRUCTED DECORATIVE SCREENS, OR NATURAL VEGETATIVE SCREENS COMPRISED OF PLANT SPECIES THAT FEATURE DENSE BRANCHING PATTERNS.
AN OVERHEAD CANOPY AT PEDESTRIAN-APPROPRIATE HEIGHT ALLOWS THE ALLEYWAY TO BE PERCEIVED AS BEING HUMAN-SCALE. POSSIBLE CANOPY TYPOLOGIES INCLUDE: TREE COVER, STRING LIGHTS, OR A CONSTRUCTED OVERHEAD STRUCTURE.
EXISTING WALL MURALS ON SITE (3) TO REMAIN. ADDITIONAL WALL MURALS MAY BE COMMISSIONED SO AS TO PROMOTE VISUAL COMPLEXITY WITHIN THE ALLEYWAY & BREAK UP THE MONOTONY OF ADJACENT BUILDING MATERIAL & COLOR.
COMMISSIONED SCULPTURES IN THE SPACE PROVIDE VISUAL INTEREST & SERVE AS VISUAL LANDMARKS TO IDENTIFY PLACE WITHIN THE ALLEY.
SIGNAGE & WAYFINDING KIOSKS HELP TO LOCATE ONESELF WITHIN THE LENGTH OF THE ALLEY & PROVIDE DIRECTION TO NEARBY PLACES OF INTEREST, THEREBY ALLOWING THE USER TO VISUALIZE HOW THE ALLEY FITS WITHIN THE LARGER PEDESTRIAN NETWORK.

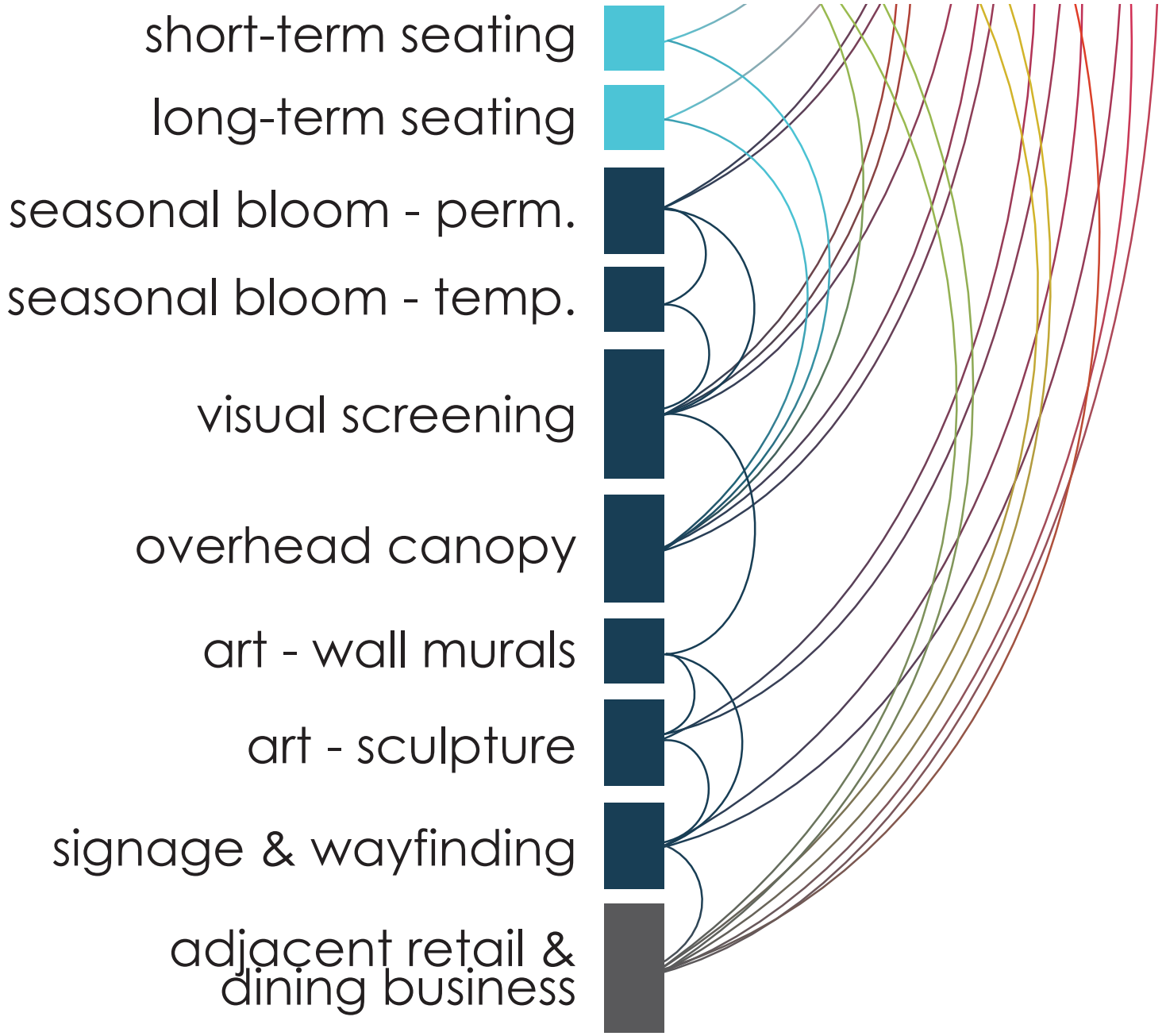
LANDSCAPE AREA SUMMARY

LANDSCAPE AREA - SPACE NAME	# OF UNITS	NET AREA
ROBERTS ALLEY - NORTH		
12' FIRE/DELIVERY CLEARANCE LANE	1	7,518 SQ. FT.
EXISTING UTILITIES	30	120 SQ. FT.
COMBINED UTILITY BOX (NEW DEVELOPMENT)	1	310 SQ. FT.
COMBINED DUMPSTERS	3	630 SQ. FT.
VISUAL SCREENING	4	100 SQ. FT.
SHORT-TERM SEATING	3	90 SQ. FT.
BISTRO-STYLE DINING AREA	2	250 SQ. FT.
FOOD VENDOR CART AREA	3	168 SQ. FT.
SMALL RETAIL DISPLAY AREA	5	30 SQ. FT.
LARGE RETAIL DISPLAY AREA	3	45 SQ. FT.
SEASONAL BLOOM - PERMANENT	VARIABLE	4,235 SQ. FT. (MIN.)
SEASONAL BLOOM - MOVEABLE	5	20 SQ. FT. (MIN.)
ART - SCULPTURE	2	18 SQ. FT.
SIGNAGE & WAYFINDING	2	6 SQ. FT.
COURTYARD (SEE AREA SUMMARY BELOW)	1	5,243 SQ. FT.
TOTAL - GROSS LANDSCAPE AREA		**18,873 SQ. FT.**
COURTYARD - ROBERTS ALLEY SOUTH		
OVERHEAD CANOPY	VARIABLE	540 SQ. FT. (MIN.)
BISTRO-STYLE DINING AREA	1	125 SQ. FT.
FOOD VENDOR CART AREA	2	112 SQ. FT.
LONG-TERM SEATING	1	64 SQ. FT.
SEASONAL BLOOM - PERMANENT	VARIABLE	405 SQ. FT. (MIN.)
SEASONAL BLOOM - TEMPORARY	5	20 SQ. FT. (MIN.)
ART - SCULPTURE	1	9 SQ. FT.
ART - WALL MURAL	1	36 SQ. FT. (MIN.)
TOTAL - GROSS LANDSCAPE AREA		**1,311 SQ. FT.**

LANDSCAPE AREA - SPACE NAME	# OF UNITS	NET AREA
ROBERTS ALLEY - SOUTH		
12' FIRE/DELIVERY CLEARANCE LANE	1	3,592 SQ. FT.
EXISTING UTILITIES	15	60 SQ. FT.
COMBINED DUMPSTERS	1	210 SQ. FT.
VISUAL SCREENING	3	75 SQ. FT.
SHORT-TERM SEATING	2	60 SQ. FT.
SMALL RETAIL DISPLAY AREA	2	12 SQ. FT.
LARGE RETAIL DISPLAY AREA	2	30 SQ. FT.
SEASONAL BLOOM - PERMANENT	VARIABLE	900 SQ. FT. (MIN.)
SEASONAL BLOOM - MOVEABLE	5	20 SQ. FT. (MIN.)
ART - SCULPTURE	1	9 SQ. FT.
SIGNAGE & WAYFINDING	1	3 SQ. FT.
COURTYARD (SEE AREA SUMMARY BELOW)	1	2,863 SQ. FT.
TOTAL - GROSS LANDSCAPE AREA		**7,834 SQ. FT.**
COURTYARD - ROBERTS ALLEY NORTH		
OVERHEAD CANOPY	VARIABLE	1,055 SQ. FT. (MIN.)
PATIO DINING AREA	1	1,000 SQ. FT.
FOOD VENDOR CART AREA	3	168 SQ. FT.
LONG-TERM SEATING	2	128 SQ. FT.
SEASONAL BLOOM - PERMANENT	VARIABLE	790 SQ. FT. (MIN.)
SEASONAL BLOOM - TEMPORARY	5	20 SQ. FT. (MIN.)
VISUAL SCREENING	1	25 SQ. FT. (MIN.)
ART - SCULPTURE	1	9 SQ. FT.
ART - WALL MURAL	1	36 SQ. FT. (MIN.)
COMBINED UTILITY BOX (NEW DEVELOPMENT)	1	310 SQ. FT.
TOTAL - GROSS LANDSCAPE AREA		**3,541 SQ. FT.**


vehicle lane
pedestrian lane
new utility box
existing utilities
small retail display zone
large retail display zone
bistro-style dining
patio dining
food vendor cart zone

SPATIAL RELATIONSHIP DIAGRAM



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A PLAN FOR PROCEEDING

The subsequent discussion speculates on the process required to execute a thorough design research project for the redevelopment of Roberts Alley. If implemented as described, this process effectively demonstrates the breadth of abilities I've developed in my undergraduate career at North Dakota State University.

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DEFINING THE RESEARCH DIRECTION

Redevelopment research and design hinge on the concept of walkability, which in essence serves as a measure to indicate how friendly an area is to walking. Urban designers typically define walkability in regards to proximity, place, and physical access. The redevelopment of Roberts Alley seeks to create place by applying the urban design principles of transparency, complexity, and human scale as previously defined in the research section of this booklet. Furthermore, redevelopment seeks to integrate the alleyway into the existing pedestrian network in order to promote physical access and proximity. Thus, the redevelopment of Roberts Alley intends to address and implement each measure of walkability, and should therefore be evaluated using these terms.

DESIGN METHODOLOGY

This capstone project intends to implement both evaluative and design research techniques in order to discover **how alleyways can better accommodate pedestrians by providing amenity and thoroughfare, while sustaining the necessary utilitarian functionalities to serve adjacent business.**

Using the evaluative research technique, I will test programmatic elements and conceptual layouts using Ewing and Handy's Summary of Models (Fig. 15) from *Measuring the Unmeasurable: Urban Design Qualities Related to Walkability* (2009). Ewing and Handy's research presents thirty-eight physical characteristics of urban design that were identified and objectively measured as being significant contributors to walkability in the urban environment. The physical characteristics and their corresponding *p*-values are found in the Summary of Models, which is to serve as the rubric for measurement and evaluation. The rubric will be applied in the early stages of the design process to test the effectiveness of each conceptual masterplan in regards to walkability. A projected walkability score will be generated for each conceptual plan and the plan with the highest walkability score will be selected for further design development, ultimately becoming the final masterplan. Thus, the evaluative research technique will allow me to justify design decisions and prove the projected effectiveness of my final masterplan in regards to walkability.

The resulting masterplan will translate and project the principles of urban design as described and operationalized by Ewing and Handy from their original commercial streetscape context to Roberts Alley in Fargo, ND. Thus, the applied operational design research will effectively demonstrate how the urban design principles described as being significant contributors to walkability may be applied to a completely new situational context – the alleyway. Consequently, the resulting design research has the potential to serve as a model for pedestrian-oriented alley redevelopment in urban areas nationwide.

THE DESIGN PROCESS : DOCUMENTATION

KEY METHODS

[hand sketching – bubble diagrams, schematic layouts & sections] [drafting - AutoCAD] [digital modeling - SketchUp] [physical modeling - laser cutter, wood shop] [digital rendering – Maxwell Render, Adobe Creative Suite] [hand rendering - overlays to enhance digitally rendered graphics]

KEY MILESTONES

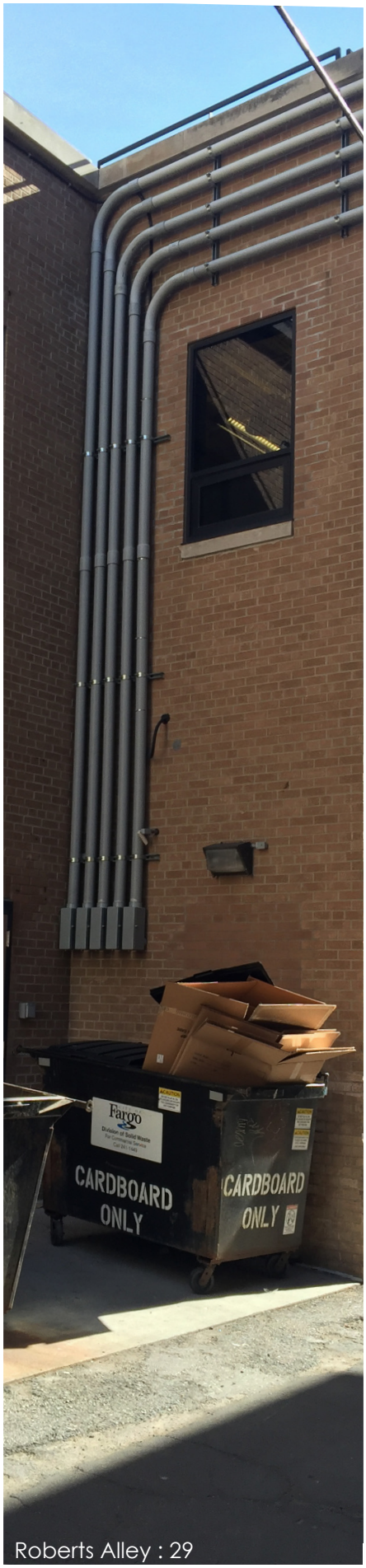
[base material and site analysis – weeks one through four] [conceptual development; masterplan – week four] [evaluative research; program & masterplan – weeks four through five] [schematic development; masterplan – weeks five through six] [conceptual development; site plan – week seven] [schematic development; site plan – week eight] [design development; site plan – week nine] [presentation; proposal – week ten] [production; presentation graphics and model – weeks ten through fifteen] [presentation; final – weeks fifteen through sixteen] [documentation; thesis book – weeks sixteen through seventeen]

KEY DELIVERABLES

[site inventory & analysis graphics] [several conceptual layouts & their corresponding walkability scores obtained from the evaluative research process] [a final masterplan encompassing the entire length of Roberts Alley] [a final site plan encompassing approximately one block length of Roberts Alley that illustrates a safe & effective pedestrian connection across 2nd Avenue North] [illustrative site & construction details] [supporting section & perspective graphics] [physical site model] [physical & digital presentation materials] [thesis booklet]

KEY ASSESSMENTS

[site inventory & analysis – physical, biological, and cultural assessments] [programmatic assessment utilizing evaluative research technique described above] [conceptual layout assessment utilizing evaluative research technique described above]



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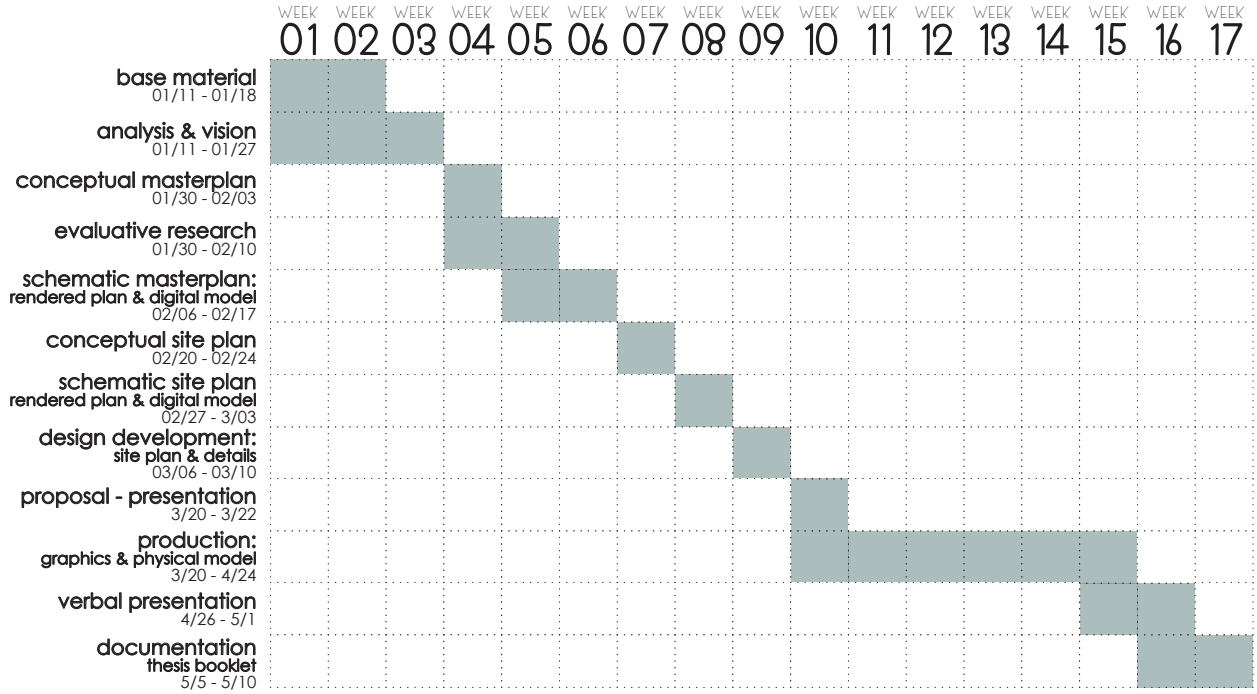
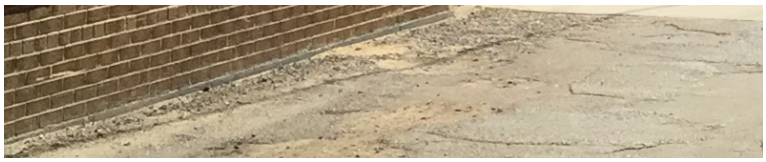
PROJECT SCHEDULE



My design process always begins on paper. After the completion of site analysis and visioning exercises, a series of conceptual plans will be generated. Utilizing the evaluative research technique, each conceptual plan will be assessed for projected walkability and the concept with the highest score will be selected for further development. All of the conceptual plans and their corresponding walkability scores will be scanned and archived digitally for use in final presentation materials.

Upon completion of conceptual diagramming, landscape forms and their associated scales will continue to be refined on paper before transitioning to AutoCAD for final schematic development. Schematic design work will



occur simultaneously in AutoCAD and SketchUp, allowing for assessment in both 2-D and 3-D views. Pending the completion of the masterplan, a one-block section of Roberts Alley will be selected for further development as a site plan. The site plan will take the ideas present in the masterplan and further develop them so as to produce site, material, and construction details. The site plan will be executed using a process largely similar to the one described above for the masterplan.

With complete master and site plans, a series of perspective images will be generated from the previously completed digital models and rendered using Maxwell Render. These images will be further enhanced using Adobe Photoshop and hand rendering techniques. Additional supporting graphics and a physical model will be produced to further illustrate my design ideas. All materials produced throughout the semester will be archived and arranged into both a physical presentation for critical jury evaluation, and a digital presentation for submission to NDSU's Institutional Repository.

Fig. 15

Urban design quality	Significant physical features	Coefficients	*p*-values
Imageability	people (#)	0.0239	0.000
	proportion of historic buildings	0.970	0.000
	courtyards/plazas/parks (#)	0.414	0.000
	outdoor dining (y/n)	0.644	0.000
	buildings with non-rectangular silhouettes (#)	0.0795	0.036
	noise level (rating)	−0.183	0.045
	major landscape features (#)	0.722	0.049
	buildings with identifiers (#)	0.111	0.083
Enclosure	proportion street wall—same side	0.716	0.001
	proportion street wall—opposite side	0.940	0.002
	proportion sky across	−2.193	0.021
	long sight lines (#)	−0.308	0.035
	proportion sky ahead	−1.418	0.055
Human scale	long sight lines (#)	−0.744	0.000
	all street furniture and other street items (#)	0.0364	0.000
	proportion first floor with windows	1.099	0.000
	building height—same side	−0.00304	0.033
	small planters (#)	0.0496	0.047
	urban designer (y/n)	0.382	0.066
Transparency	proportion first floor with windows	1.219	0.002
	proportion active uses	0.533	0.004
	proportion street wall—same side	0.666	0.011
Complexity	people (#)	0.0268	0.000
	buildings (#)	0.0510	0.008
	dominant building colours (#)	0.177	0.031
	accent colours (#)	0.108	0.043
	outdoor dining (y/n)	0.367	0.045
	public art (#)	0.272	0.066

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CONCLUSION

The material in this booklet is intended to be further investigated, interpreted and developed in the Spring 2017 semester of LA572: Design Thesis Studio. Ultimately, the resulting design research aims to illustrate that urban alleyways have the potential to be transformed into viable pedestrian spaces, while still accommodating the utilitarian and delivery functions required of existing adjacent business. Fargo is an ideal setting in which to argue and advocate for the redevelopment of alleyways, as its downtown is already dynamic and rapidly changing to be more representative of its continually-growing young adult population, the arts, and vibrant place-making. The redevelopment of Robert's Alley seeks to build upon and further this movement.