Community building

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Community building

by

Kristin Marie Nelson

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF ARCHITECTURE

Major: Architecture

Program of Study Committee:
Tom Leslie, Major Professor
David Block
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Iowa State University
Ames, Iowa
2004
This is to certify that the master's thesis of

Kristin Marie Nelson

has met the thesis requirements of Iowa State University

Signatures have been redacted for privacy
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"On average, food is said to have traveled more than 1300 miles from where it was grown or produced to where it is eaten. In such a system, there is no conceivable way that we can know the human or ecological consequences of eating" (15).

-David W. Orr
INTRODUCTION

The interstate did not reach into the area where I lived in Kansas City. In order to reach it, a fifty block drive from I-70 to an area called "the Plaza" was required. On this drive filled with traffic lights, on any of the five or so major streets on which it was possible to get from one destination to the other, I started to notice an interesting make-up of the neighborhoods. They had an abundance of housing, but all of the business in the areas tended to be made up of nationally branded chains: QT, Wendy’s, McDonalds, Burger King, Captain D’s, and Taco Bell.
A friend was from a notorious neighborhood in Houston, Texas, known for drugs, shootings and overwhelming poverty. Sometimes he would accompany me on the drive from our college to one of the shopping areas on the periphery of Kansas City. Once, noticing no supermarkets on the drive, I mentioned the oddity. He responded that it was not all uncommon for “bad” neighborhoods to have no supermarket. I then asked him how people would get food to eat. His response was that people in the neighborhoods would either know someone with a car who could take them to the distant shopping areas, sometimes up to an hour drive through the city, or buy every meal they ate from the fast food restaurants or from the limited supply of food available in the convenience marts.
**Poverty, Availability, and Price-Nutritional Inequality**

Nearly all of the food in the convenience mart has been processed multiple times before reaching the store. Many contain main ingredients like high-fructose corn syrup, or partially hydrogenated oils. Similarly, the fast food restaurant offers food that has been reconstituted, frozen, thawed, and reheated. The foods tend to lack in major nutrients and invert the Food Pyramid recommended for the human diet.

These are facts that are common knowledge among most Americans. Most continue to eat fast food on a regular basis. The difference in many urban areas across the country is the lack of choice. Unless residents are able to drive considerable distances on a regular basis, they are forced to eat foods of a lesser nutritional value, and fresh produce is almost impossible to locate. A recent study on location and type of food stores documents "urban dwellers pay 3%-37% more for groceries in their local community compared to residents who buy the same goods at large supermarkets (Morland et al. 24). Furthermore, the same study makes a comparison between large markets, local markets and convenience-style markets and found that "supermarkets had twice the average number of "heart-healthy" foods compared to neighborhood grocery stores, and 4 times the average number of such foods compared to convenience stores" (Morland et al. 24) Many plans to control obesity in the United States have presumed that a healthy diet was a matter of choice, and that those on less nutritious diets were making a decision to consume less nutritious foods over nutritious choices. However, according to Dr. Adam Drewnowski, "access to healthier diets could be sharply limited in low-
income neighborhoods simply because of the food environment and the nature of the available food supply. It is the opposite of choice. People are not poor by choice and they become obese primarily because they are poor (www.washington.edu)." He observes that the diet that is recommended by health officials for weight loss is much higher in monetary cost than those diets that are "energy-dense;" these foods that take a larger portion of the daily recommended calorie allowance also "may fail to trigger physiological satiety mechanisms—the internal signals that enough food has been consumed (www.washington.edu)."

Furthermore, a study conducted by researchers at the Center for Disease Control reports that:

Overall Americans were becoming more obese regardless of location, age, race, sex, or educational level completed. "In 1991, only four states had obesity rates of 15 percent or higher; [in 2001] at least thirty-seven states do" (Schlosser 240).

**A Lack of Local Reinvestment—Economic Inequality**

Beyond nutritional issues, economic disparities are striking. With a lack of independent business in many such neighborhoods, an economic wasteland develops around the synthetic, nationally-branded business strip. For the residents living within walking distance of these areas, there are too few jobs for too many people. In his critique of the fast food industry, *Fast Food Nation*, Eric Schlosser details the many offenses of the national chains.
“Roughly 90 percent of the nation’s fast food workers are paid an hourly wage, provided no benefits, and are scheduled to work only as needed. If the restaurant is busy [crew members] are kept longer than usual. If business is slow, they are sent home early (74).

This is not merely coincidence, but part of an overall business philosophy to limit labor expenses. Schlosser reports, “A typical McDonald’s or Burger King restaurant has about fifty crew members...who work an average of thirty hours a week” (74). This statistic demonstrates on average that the chains try to hire too many workers for few shifts, have workers leave as soon as business ebbs, and
keep employees hours below forty per week. Additionally, the restaurants do not tend to be owned by residents of the neighborhood and an extremely large portion of the profit goes directly to the national corporation, rather than being investing locally.

**Dignified Public Transportation-Experiential Inequality**

Access to dignified public transportation is another way to provide choices to people in struggling neighborhoods. In many economically troubled areas, public transport provides limited waiting areas and service. This includes reduced hours of operation, and long waiting times without protection from the elements. Decent public transportation also provides choices in the form of equal access to employment, amenities, and the urban experience in areas other than the immediate neighborhood.
PROPOSAL

The lack of choice and possibility for economic vitality has created a wasteland in many urban neighborhoods. My research implies that architecture can play a major role on a small, individual basis for the economic and nutritional rehabilitation of these communities. The objective is to design a neighborhood market that supplies fresh food as an alternative to prepackaged and fast foods. The building will also contain a transportation hub which provides a dignified and comfortable setting. This business will retain capital within the community and will form the corner stone around which a neighborhood can be rehabilitated.

In addition to the design of the market and transportation center, this proposal also deals the identification and selection of a viable urban neighborhood, based on the ideas of Sandra Perlman Shoenberg and Patricia Rosenbaum, and a suitable site within that neighborhood, based on the ideas of Peter Calthorpe and Douglas Kelbaugh.
CASE STUDIES-REVITALIZATION IN ST. LOUIS

In their book, Neighborhoods That Work, authors Sandra Perlman Shoenberg and Patricia Rosenbaum focus on five neighborhoods in the city of St. Louis: The Hill, Lafayette Park, Soulard, Hyde Park, and The Ville. Each of the neighborhoods is evaluated over an eleven year period, from 1969-1978. The evaluations use a constant set of criteria, to assess viability in the studied neighborhoods. The neighborhoods have different origins within the city, and different sets of circumstances led to their classification as “at risk” or “blighted.” These case studies can be used to show that the factors such as garbage collection, street repairs, community organizations, and codes of behavior can predict which neighborhoods had the potential to be successful. The case studies serve to establish standards for viability of urban neighborhoods. The table on the following page was developed by Perlman Shoenberg and Rosenbaum as a set of guidelines with which to assess the suitability of a neighborhood for potential revitalization efforts.
Prerequisites to Neighborhood Viability

Definition of a neighborhood

A neighborhood exists if:

- Neighborhood boundaries are recognized and identified
- A name is associated with the area
- Institutional anchors are associated with the area
- Neighbors share at least one common tie through a social network and institution or shared use of public space

The criteria of viability in an urban neighborhood

A working-class and/or low-income neighborhood is viable if:

- There is agreement on public behavior
- There are formal organizations identified with the neighborhood
- Linkages exist to outside resource
- Exchange occurs between groups over time

Operationalization of indicators of viability

Agreements on public behavior

- Increased public surveillance
- Perception of existence of a social network
- Agreement on garbage disposal-clean streets through clout with public service and individual initiative
- Use of shared public space when weather permits

Formal organizations in area

- Rise in number of neighborhood associations over time
- Rise in number of members in organizations over time
- Stable membership in older organizations

Linkage to outside resource systems:

- Increase in search application for funding year
- Increase in private funding to organization
- Rise in number of voters at last municipal election as compared to previous year
- Exchange between groups over time
- Organization in existence for at least two years
- Goal congruence with governmental and or private resource givers
- Accomplishment of at least one goal as defined by residents

Figure 4  Neighborhood Viability Standards as established by Schoenburg and Rosenbaum
Figure 5  Location of Case Study Neighborhoods in St. Louis, Missouri
THE HILL

LEGEND

Church
Parochial School
Elementary School

High School
Neighborhood Organization

Figure 6  Map of the Hill Neighborhood in St. Louis, Missouri
Figure 7  Map of the Soulard Neighborhood in St. Louis, Missouri
Figure 8  Map of the Lafayette Square neighborhood in St. Louis, Missouri
Some of the institutional anchors mentioned in the table on the previous page are elementary, middle, and high schools, both public and parochial, churches, hospitals, community centers and neighborhood associations. Schoenberg and Rosenbaum designate a neighborhood as "a delimited area with characteristics that distinguish it from any other group of streets" (3). The study is concentrated on urban working-class and low-income neighborhoods because the inhabitants tend to have access to fewer resources. It also looks at the return of the middle-class and affluent to urban areas only when it becomes a factor in the neighborhoods chosen for study (3). The following summary focuses on those neighborhoods that were deemed to be successful.

The Hill

Schoenburg and Rosenbaum list the Hill as a success story at the end of the research period, mainly due to the efforts of its citizens to have public services maintained at a high level in the neighborhood. Street repair, garbage collection, and streetlight maintenance are among the examples of the citizens pushing for city funds to be distributed in their area. It is also an example of an ethnic neighborhood, which according to the study tends to predict a higher success rate. The Italian bakeries, shops, and upscale dining in the Hill makes it a destination for many people outside of the neighborhood boundaries, while the watchfulness of the community makes it a safe area that serves its residents with a bustling business area within walking distance (49-64).

Lafayette Square

In Lafayette Square, Schoenburg and Rosenbaum show the transition period as a period of displacement, where many of the original residents were
displaced by young families. The families tended to be white, have college education beyond a bachelor’s degree, and the financial means to purchase to blighted mansions in the neighborhood outright, for the price of back taxes. When the city presented a plan to split the neighborhood with an interstate loop, the older residents wanted to sell their homes to the interstate expansion plan. The younger homeowners rallied against the plan and had the neighborhood declared a National Historic District, negating any plan for Interstate construction. Many of the older residents saw the Interstate Plan as an opportunity to get out of a “bad” neighborhood and to avoid the rising property taxes that came with the “Restorationists”, as the young families termed themselves (65-83)

**Soulard**

Schoenburg and Rosenbaum show Soulard as an area that has seen many immigrant groups pass through it. German immigrants were followed by Bohemians, Czechs, Slovaks, Croatians, Lebanese, and finally rural white migrants from Missouri, Tennessee, Arkansas, and Kentucky. During the 1947 comprehensive city plan, Soulard was labeled “obsolete,” a designation that placed it below blighted. Other neighborhoods in the St. Louis case study have experienced rather seamless transitions from blighted to desirable housing, an example being Soulard’s neighbor Lafayette Square. However, Soulard’s smaller homes and less organized neighborhood structure led to conflict among its resident groups (85-100).

In Soulard, the conflict was about more issues and longer lasting. The neighborhood is made up of multiple racial and economic levels. Many of the
higher economic level residents resent the lower income residents. They perceive these residents as a nuisance, and the two groups disagree on many issues. Major examples are illegal dumping and trash disposal, as well as property upkeep. Many of the residents who own their own homes feel that those renting residences in the area do not share their own values and aspirations for the neighborhood. The struggle was listed as unresolved and open-ended at the conclusion of the study (Schoenburg, Rosenbaum 85-100).

Evaluation-Learning from St. Louis

Schoenburg and Rosenbaum show the link that was present in all of the examples the book considered success stories was an active and concerned community. The community had to believe that there was hope for restoring and improving their neighborhood, and relentlessly pursue the means, both public and private to see this accomplished. This included contacting city counsel members, and attempting to draw business and leisure projects drawing a city wide audience into their area. The Hill was an example of such a pursuit of investment. The residents lobbied to have the city’s bicentennial celebration take place on the Hill (61). The neighborhood association earmarked all of the funds from the celebration for neighborhood improvements (61). The neighborhood has also stood together against perceived intrusions, like stopping a drive-in theatre, interstate spur, and a lead disposal (59). Most of the proposed negative additions were stopped without court decisions, with pressure from the neighbors causing the companies to withdraw their proposals.

The presence of a business district is also a factor. Much of the influence that members of the Hill had was due to members of the business community
with affiliations with organizations like the Optimists Club (60). The lack of a local business community in many of the neighborhoods that originally inspired this project points to the need for development in order for the neighborhood to recover.

After visiting Soulard recently, it seems that as in Lafayette Park the younger, wealthier residents have prevailed, but in a much more drawn out struggle. The area still has a bohemian feel, and the walk-up homes are just a few feet from the brick sidewalks which have residents walking to their destinations. There are many buildings in the neighborhood that display fresh paint and renovations, along with for rent or sale signs. The small yards and gardens seem well maintained, and the streets feature period light fixtures and banners proclaiming Soulard as a neighborhood.
NEW GROWTH-PEDESTRIAN POCKETS

Common Place, by Douglas Kelbaugh addresses indicators of a successful community. The author asserts that the two main components around which a community can be built are the food market and a public transportation stop (123). Kelbaugh is primarily concerned with new suburban growth for major metropolitan areas, but for the purpose of this thesis, the ideas will be applied to a struggling urban area. In this case, the market and transit hub provide a new core for an existing neighborhood with many of the supporting pieces of development already in place.

Peter Calthorpe, in his book Pedestrian Pocket Book, focuses on the idea that development is more advantageous when people are able to access...
many of their needs without driving.

Shopping, restaurants, parks, and a public transit station are all within easy walking distance (about 1/4 mile) from where residents live. This allows people who cannot afford a vehicle to have a reliable, accessible means of transportation and to satisfy many of their needs without leaving the neighborhood (11).

Specific occupancy groups are listed in the table on the following page. These ideas apply equally to isolated and disconnected urban neighborhoods and new suburban development. As stated in the St. Louis case study examples, one of the necessary pieces for revitalization is a committed network of business owners and residents with a long standing stake in the success of the neighborhood. Parties with influence in the city government, and civic organizations improve the chances for success. This differs from standard suburban development, which, due to land costs, occurs with much less difficulty.
Major Occupancies Required for Development

**Back Office**
Office facility for a large corporate tenant with a typical floor plan of at least 40,000 square feet and open plan interiors.

**Service Office**
Smaller tenant market spaces of varying square footage with a minimum of 1,000 square foot suites, as is typically found in mixed commercial areas.

**Neighborhood Retail Facilities**
Ground floor commercial spaces serving residents and workers sized for the daily population of the Pocket and including restaurants, services, stores, markets, and shops.

**Commercial Parking**
Computed at half the standard requirement in order to encourage public transit and carpooling, 700 parking stalls must be contiguous with the commercial facilities, 300 can be peripheral. Structured parking of two levels is considered feasible.

**Apartments**
Designed for individuals or childless couples, affordable two or three story flats over parking, with the requirement of two stalls per unit.

**Townhouses/Duplexes**
Two story units with private yards and attached two car garages.

**Single Family Detached Homes**
Small lot family homes with garages on lots of a minimum size of 3,500 square feet.

**Elderly Congregate Living Facilities**
Typically two-story clustered housing with a centrally located community facility with parking at one stall per four units.

**Day Care Facilities**
Two facilities for 100 children each with four separate exterior play areas of 3,000 square feet each. Elementary and secondary schools are assumed to be pre-existing.

**Civic Facilities**
A police station, fire house and Town Hall-type meeting and administrative facility with optional churches, post office, and library, etc.

**Parks and Recreational Facilities**
A central public area that accommodates activities and features as defined by the sports teams.

Figure 10  Occupancy Diagram as defined by Peter Calthorpe
NEIGHBORHOOD SELECTION AND ANALYSIS

Due to issues of location and site accessibility, Omaha, Nebraska was chosen as the city for the project. After the city was chosen, the task of locating an acceptable neighborhood within the city began. The neighborhood must be struggling to fully realize itself, yet display many of the markers for success described above. The neighborhood was chosen with the help of Ms. Jennifer R. Mahlendorf, an Assistant to the Mayor of Omaha, Mr. Michael Fahey. After conversation including a description of the characteristics desired, Ms. Mahlendorf suggested the Near-Northside neighborhood because of the presence of many of the indicators for success as laid out by the table from Schoenburg and Rosenbaum.

Development in the Near Northside

The name, Near-Northside, refers to the location of the area in relationship to the downtown core. There were a few key reasons this area was chosen, the first being the development that is going on all around it. This is having a significant impact in many of the surrounding areas, but has left most of the business in the neighborhood largely untouched. The area is located just north of the Old Market entertainment district, a successful urban reuse project that has been expanding its influence since the 1980’s. The Old Market provides accommodations, cultural activities, and nightlife for visitors as well as locals. It is the site for many festivals, and is largely made up of one-of-a-kind local businesses. There are restaurants, parks, art galleries, boutiques, dance clubs and street vendors and musicians. In the past five years, there has been a push to expand the influence and feel of the Market into the surrounding areas. This
Figure 11  Neighborhood Context Map

- Purple: Housing
- Pink: Religious
- Green: Park
- Yellow: Private Business
- Orange: City Land
- Red: My Site
- Blue: Creighton University
- Brown: Abandoned
- Aqua: Missouri River
Figure 12  Old Market District

Figure 13  Leahy Mall Slides
has led to a large number of the surrounding warehouses being converted into loft-style apartments, with businesses on the ground floor. A riverfront development initiative began with agri-business giant ConAgra building a large park east of the Old Market in the early 1990’s. This park, Heartland of America Park, connects into the Gene Leahy Central Park Mall, which is a large park that borders the Old Market to the north. To the north and west of Leahy Mall, many new construction projects are in progress or recently completed. Some of these are the Omaha Performing Arts Center, the Qwest Convention and Athletics Center, Union Pacific Railroad Headquarters Expansion, First National Bank Headquarters and Childcare Facility, and the Omaha World-Herald Headquarters and Printing Facility. Heartland Park connects into a large riverfront area that is anchored by the Convention Center. Athletic Events for Creighton University basketball, along with University of Nebraska-Omaha hockey will take place, as well as concerts and shows.

**Attractions in the Near Northside**

This highlights the second reason to choose the Near-Northside Neighborhood. The Old Market and large riverfront parks are all within 10 blocks of the neighborhood and Creighton University and the Qwest Center are immediately adjacent. These are all examples of venues with events that are aimed at a city or regional audience, and show another of Schoenberg's markers for success. Creighton University borders the neighborhood to the south and west. Creighton is a private, Jesuit University with long standing interests in the area. Recently, Creighton has purchased much of the land in the Near-Northside as they have a growing student population. For this study, I spoke with
Lennis Pederson, Creighton’s Director of Facilities Management, and he explained the university’s vision for the area.

He described the university’s interest in developing activities and resources for the students in the immediate area. They would like to create a feeling of a student-oriented “Old Market North.” They are interested in turning key pieces of the purchase into apartment living for upperclassmen students at the university. Within the next ten years, Creighton plans to move an additional 1,000 students into loft-style apartments. These are currently under construction with the first 250 student cluster opening in fall of 2004. They plan to add an additional 250 student cluster every other year for eight years. These will be leased year-round in the hope that they will foster a 24-hour presence on the campus and in the community. Currently, many of the students at Creighton live far away from the university, and commute to all of their classes. The university feels that a permanent campus life would benefit the neighborhood and the university atmosphere as a whole. The administration hopes that the comparably low rent and the proximity to the highly desirable Old Market area,
concerts and cultural facilities will pull many of the students back downtown. Besides student housing, Creighton is also upgrading and expanding many of the educational and sports facilities. As a highly regarded university in many professional programs, Creighton has made improvements to the Medical Center, Science Complex, and Law Complex. The student recreation center has undergone a major renovation, and the soccer stadium was completed in the summer of 2003. The school has teams that are regularly ranked nationally in basketball, baseball, softball, and soccer. The school has master-planned a sports complex, which would also include new stadiums for the baseball and softball teams. The basketball team will begin the 2003/2004 season playing in the Qwest Center.
Diverse Residential in the Near Northside

The third marker of success is the mixed residential population present in the neighborhood. A new housing area is under construction in the northern areas of the neighborhood. It is next to the Kellom School, an elementary school that was recently renovated. The housing is concentrated into two groups. The first is single family housing. This is being built around Logan Park, a small neighborhood greenspace with a playground and playing field. The homes are medium sized, and varied in their styling. The other group is low-income condominiums and townhouses. This development was designed by a local architect. The styling is uniformly contemporary, and the units are arranged around a common green space. Also living in the area are elderly residents of an assisted living community in the north central area. Along the river, on the eastern edge of the neighborhood, a mixed-use, luxury condominium development is under construction. In the center of the neighborhood an open door mission, the Sienna-Francis House, operates. This mixture provides that
nearly every possible socio-economic type and age of resident will be present in the neighborhood.

**Business Presence in the Near Northside**

The next marker present in the site is the business presence. The core area around the site is comprised mainly of industrial buildings. Most are operational, but some have been abandoned. Some of the main industrial tenants are M.A.T. (Metropolitan Area Transport, the city bus service), Micklin Lumber and Home Improvement, Airlite Plastics, Modern Equipment Company, and Electric Fixture and Supply. These industrial tenants have the potential to provide jobs for many of the residents living within the neighborhood borders.

**Infrastructure Upgrades in the Near Northside**

The final marker present within the site is the recent upgrade of much of the infrastructure. Cuming Street will be the new access to the Omaha Airport, this being the reason for the above mentioned improvements. This includes the
Figure 19  City Map with Distances from the Site
concrete paving on the major streets and sidewalks, and new streetlights along these upgraded streets. Also, several street closures have clarified the organization of the neighborhood, giving importance to major thoroughfares and reducing traffic on back streets.
Figure 20  Retro-Style Downtown Circulator Buses

Figure 21  Downtown Circulator Bus Route
SITE SELECTION AND ANALYSIS

The site in the neighborhood was chosen for the location on a major thoroughfare and because the lot is largely vacant currently. This eliminates costly demolition and would not require the removal of one of the business structures already present. The site is located on the north-west corner of Florence Boulevard and Cuming Streets. I am proposing that this block will become a mixing area for the families and elderly residents living in the housing to the north, the students living to the south, and the new residents of the Old Market and Riverfront areas. The first of the Creighton loft apartment buildings is scheduled for completion in the fall of 2004, and is located one block south of my site. The Ford lofts are three blocks east, and the housing is three to six blocks north. The site is mostly vacant at this point, occupied partially by a small, dilapidated building. It is a standard city block, 200' by 200', or 40,000 square feet.

Programmatic Requirements

This project proposes that the site be used to cater to two of the most
basic needs of the community: food and mobility. The need for food will be addressed by building a moderately sized community market (not supermarket) on roughly half of the site. The market will also operate production greenhouses situated on the site. These will serve to provide the market with affordable produce. They will follow a vertical growing model, for high yield, low space production. The market will provide all of the traditional food groups. It will have a meats area, fresh produce, a bakery, dairy, a deli, dry goods, and a café. The café and deli will be situated near each other, and will have a seating area that complements the nearby transit hub.

The transit hub will allow residents to wait in comfort for the circulator bus. This is a route that uses retro-style buses from the fifties and serves the downtown area. During rush and lunch hours, the bus runs every five minutes, and the rest of the day every fifteen minutes. Bus fare is a quarter and there are late hours to transport people to and from the Old Market. From the downtown hub, buses can be taken all over the city. For the purposes of this project, a modification of the green line would bring the bus three blocks north to Cuming Street instead of California at the far northern edge of the route.

To address the functions of the program laid out by the necessary functions, as well as the planning issues, intense investigation in plan and section was necessary. Through this process, certain hierarchies were established. For instance, the plants from the greenhouse need solar exposure through a great portion of the day. Since the sun rises in the south-east, and sets in the south-west, a large area of the southern façade would need to be occupied by the greenhouse. This also establishes a strong public face since the southern edge
of the site occurs along Cuming Street. This would provide the public with an inherent understanding of the purpose of the site, as well as an attractive neighbor. The southern exposure is, however in conflict with the need for a highly visible entrance and for the transit hub to occur along Cuming Street. The least busy street occurs along the north edge of the site. This makes it the logical location for the loading dock function for the market. It is also, unfortunately, the side from which many of the residential areas will see the building.

Addressing these issues came in several stages of development.
The first, in the parti, was to arrange the functions in order of direct need. The greenhouse must have direct access to sunlight, and thus, must be on the south. Furthermore, the access to south-eastern morning light is crucial to optimum growth for many plant species, therefore, the greenhouse must orient towards this lighting condition. The transit area must provide for multiple buses arriving at one time, and therefore must be linear along the Cuming Street side. The market must have a certain square footage, would optimally have a large view into the greenhouse and must have direct access to the loading dock. The loading dock would ideally be placed on the least busy side of the block.
The program is arranged on the site in response to these requirements and preferences. The site is divided along a diagonal line running south-west to north-east on the site. In the southern triangular piece, the greenhouse occupies the majority of the square footage. This is devoted to growing the produce from seeds to eventual harvest. The plants are grown in containers on movable benches that allow for extremely efficient usage of space. The transit hub makes use of the triangles of remaining space left over from the square tray table layout. This provides those using transit with a conditioned space to wait in a garden setting. It takes very little space from the growing area, and allows for the multi-bus format that is most desirable in a transit hub. The greenhouse shape allows for residents of the housing areas to see the bamboo grove in the tallest portion of the structure for a great distance, and for this feature to serve as a large scale lantern for the neighborhood.
The northern triangle of the site is devoted to the market function (in yellow). Within this triangle, the spaces are arranged in the order that the customers should interact with them. The café and deli spaces are near the entry to be easily accessible to transit customers. This is followed by the produce area. It is arranged along a center spine (in purple) between the greenhouse and market areas. It is linear to emphasize the link between the growing function embodied by the greenhouse and the buying and eventual consumption of the produce by the customer. This arrangement highlights the difference between the locally grown & consumed model and the remotely
grown & consumed model. The other functions of the market are laid out according to access. Since most of the baked goods will be made on site, the bakery is one of the most remote functions from the loading dock and storage alley (in red). This also applies to the produce, which will be produced entirely on the southern side of the site. The meat counter and diary cases will have intensive restocking needs, and therefore are located nearest the dock and store areas. Because the risk of food contamination is so great from uncooked meat products, these have a separate storage and loading area from the dry and frozen goods, and the dairy products. There are two restrooms in the back of the store. These are located on the back wall of the head house as plumbing needs already exist in this area.

**Greenhouse Production**

In the greenhouse (in green), a wide variety of produce can be grown. These are separated by seasonal and typological divisions laid out in the chart on the following page (Smith 102-141).

Some plants cannot be grown in the greenhouse. These consist primarily of “orchard” type crops such as: apples, peaches, pears, nectarines, plums, and cherries. All of these crops require a freeze-thaw cycle that cannot be achieved in the greenhouse while maintaining the other plant species listed. However, for this particular site, there are extensive orchards in Nebraska City that produce abundances of all of these crops that would be available in the summer through the fall. As for the volume of food produced by such a greenhouse, a properly managed greenhouse can produce 1/4 pound of produce per square foot per month. For the greenhouse proposed in this case,
<table>
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Figure 27  Plants grown in a greenhouse by seasonal and variety
the area is around 15,000 sq. ft. x .25 lb./sq. ft./month = 3,750 lbs. of produce per month. This model would provide 3,750 lbs./month x 12 months = 45,000 lbs of fresh, local produce to the surrounding community per year. (Smith p. 13)

The construction materials for this project have been chosen with several factors in mind. The first, durability, is a major concern due to the neighborhood chosen. Since several instances of graffiti were noted during the site visits, concrete block was chosen as a durable material that has the ability to be sandblasted if necessary to deal with such issues. Also, perforated copper sheets will be used in the large window openings. These provide visual interest, but also dissuade individuals from breaking glass to gain entry to the store when it is closed. The second issue, energy efficiency, is a concern because many small businesses struggle to make utility payments. The market and greenhouse functions are set up to harvest heating and cooling from one another. The greenhouse can pull cooling from the market during the summer. (Frozen foods and dairy cases usually create more than enough cooling for the market needs.) This can be drawn through operable vents near the floor in the curtain wall separating the market from the greenhouse. As air warms in the greenhouse, it is drawn up and out of the roof vents. Also, mesh-like shades are used in the summer to provide even diffuse light and cut down on heat gain in the greenhouse. Conversely, in the winter months, the heat stored in the potting soil and concrete floor of the greenhouse can be harvested through vents in the upper parts of the dividing curtain wall. These vents will pull warm air from the ceiling of the greenhouse into the market. The greenhouse is also designed with double glazing with insulating gas between the panes. This provides a much
better thermal break than single pane glazing, and reduces the need for additional heating and cooling in the greenhouse.

**Design for Revitalization**

The third factor considered for design decisions was the look of the building as a piece of the neighborhood. Clear glazing was chosen over several translucent plastic options because of the feeling of quality achieved with glass and to increase the feeling of the market as a neighborhood garden. This type of glazing system provides high visibility over long distances and increases understanding and curiosity about the market and its mission. The glazing was raised off of the ground by a distance of three feet to limit the damage to the glass by accidental collisions. The south-west corner of the structure was “trimmed off” to encourage residents to cut across the corner. It also acknowledges the closest current population of residents, the Creighton University student population, and opens the front door towards them. Some of the area in the greenhouse is given to bamboo varieties, crops that are edible and ornamental. The different varieties will be grown in two major areas with more massive varieties growing in the peak of the greenhouse and varieties that are shrub to small tree sized growing around the bus hubs. Bamboo shoots are edible, but the bamboo will serve the larger purpose of creating a beautified streetscape and cityscape for the surrounding areas.
CONCLUSION

Based on the research for this project, I feel that this design is well situated at both the city and neighborhood scale, and I am pleased with the location from a planning perspective. One of the greatest difficulties was designing on an infill site within an existing urban context. This created a problem determining a front side of the building, since residents would be approaching from all sides. The design is oriented towards the closest large population, the Creighton housing area. Also, the heights of the buildings in the neighborhood varies greatly, from the large buildings of the Qwest Center to Creighton campus and the down to the residential neighborhoods. This prompted my design to have some very tall, monumental portions, but also to drop down in a gesture towards the single family housing to the north. Finally, situating the program on the site proved to be far more challenging than I had initially supposed. The city block that is the site became very small when confronted with my ambitions for serving the neighborhood with a source for truly fresh produce.

I feel that the design answers the need present in this specific community and that similar projects (not designs) would be beneficial in many urban neighborhoods suffering from a lack of quality services. The need to improve the urban core and the initial suburbs for many larger cities is one of the large issues of our time. I, personally, do not feel that there is one building that can solve this over-reaching problem, but that many small, local gestures are needed. In this project, I made an attempt at such a gesture. The largest effect, however, may not be in any architectural “gesture” made by putting a pen to a sheet of paper, but by picking up the phone, In a conversation with Mr, Lennis Pederson,
Creighton’s Director of Facilities Management, I explained the basis for this thesis, and my intention to design a food market and transit station for this area.

In the March 31 issue of the Omaha World Herald, Mr. Pederson emphasized Creighton’s desire to “create the kind of development that benefits everybody (Grace).” This statement is accompanied by Creighton Vice President for Administration and Finance, Mr. Dan Burkey’s example of the university pushing for “commercial development-such as a much desired grocery store (Grace).”
Figure 29
Sun study showing site at key hours of the day and year
Figure 30 Building plan
Figure 3.1 Building elevations with the surrounding context
Figure 32  North, south, and west building elevations
Figure 35: Section through greenhouse structure
Figure 36  Section through greenhouse curtain wall

Figure 37  Section through cornice detail of greenhouse curtain wall
Figure 38  Perspective in site

Figure 39  Perspective in site
Figure 40 Interior perspective of produce bazaar
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Pedersen, Lennis. Personal Interview, Vice President for Administration and Director of Facilities Management, Creighton University, Omaha Nebraska. July 2003


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Acknowledgments

The author would like to thank those who contributed time, encouragement, support and ideas:

James Leach
Ralph Nelson
Donna Nelson
Tom Leslie
Dave Block
Julia Badenhope