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THE EVOLUTION OF CHINESE SUPERMARKETS IN NORTH AMERICA: AN ALTERNATIVE APPROACH TO CHINESE SUPERMARKET DESIGN

A Thesis Presented

by

RUOXIN LIN

Submitted to the Graduate School of the University of Massachusetts Amherst in partial fulfillment of the requirements for the degree of

MASTER OF ARCHITECTURE

May 2023

Department of Architecture
THE EVOLUTION OF CHINESE SUPERMARKETS IN NORTH AMERICA

A Thesis Presented

by

RUOXIN LIN

Approved as to style and content by:

______________________________________
Carey Clouse, Chair

______________________________________
Eldra Walker, Member

______________________________________
Stephen Schreiber, Chair
Department of Architecture
DEDICATION

I would like to dedicate this thesis to my parents and grandparents, who showed me the wonders of a Chinese wet market.
ACKNOWLEDGMENTS

I want to thank my thesis advisor, Carey Clouse, for always being positive and supportive of my decisions!
ABSTRACT
THE EVOLUTION OF CHINESE SUPERMARKETS IN NORTH AMERICA

May 2023
RUOXIN LIN, B.A., ISenberg SCHOOL OF MANAGEMENT, UNIVERSITY OF MASSACHUSETTS AMHERST

RUOXIN LIN, M.A., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Carey Clouse

This thesis begins by investigating the evolution of traditional Chinese markets to Chinese supermarkets in North America. By charting the trends of these structures in shop floor layouts and site approaches, a hybridized architecture is uncovered. Then, through the design of a contemporary Chinese supermarket in Philadelphia, PA, the thesis demonstrates how values of identity and cultural awareness can be brought into dialogue with architectural trends.
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CHAPTER 1
HISTORY OF MARKETS

Introduction

Supermarkets are central to the everyday lives of patrons and may also serve as a space for cultural exchange. Supermarkets sell food and products and unite people over shared services and interests. They are the barometers of a local economy, reflecting a community's needs and desires. In architectural discourse, however, supermarkets have been largely ignored and overlooked as institutions worthy of study.¹ Contemporary supermarket design and layout tend to reflect business efficiency and a central focus on generating income for shop owners. Standardized and streamlined visual approaches unite brands across America, displacing local flavors, businesses, and even regional identity. Moreover, the development of the big box store, and warehouse shopping, has further eroded the notion of a particular place, culture, and service. Against this backdrop, smaller-scale, local-focused markets may offer additional value. In these examples, supermarkets' ambiance and cultural identity reflect and help create a sense of community. This thesis interrogates this proposal through the intentional lenses of place-based community, Chinese American identity, and multifunctional supermarket programming. In so doing, the thesis provides an alternative design to counter the large-scale, streamlined, uniformed markets promoted nationally in favor of a more local, authentic, intercultural approach.

Role of Chinese Supermarkets

Supermarkets are essential in supporting Chinese culture and cuisine, offering places to acquire products such as live seafood and fresh-picked vegetables. People’s relationship with the food they buy fundamentally differs from an American grocery store, stemming from cultural, social, and practical differences in buying behavior. Therefore, it is crucial to illustrate the transition of

the traditional markets from China, which originated as rustic warehouses that sheltered products and vendors. In the U.S., Chinese Americans developed new forms of these supermarkets to address different contextual constraints and to introduce ethnic foods to the diverse population of North America.

While supermarket layouts typically reflect marketing psychology, this thesis instead projects the cultural, social, and behavioral programming that could support Chinese Americans and others in using these spaces. Analysis of various Chinese supermarkets' shop floor layouts, site approach, product placement, and services demonstrate the powerful cultural impact that Chinese supermarkets can produce in the U.S.

History and Terms

Farmers' Market

The early European settlers influenced traditional farmers' markets in North America. These markets were the early form of providing fresh produce, meat, fish, poultry, and dairy to urban consumers. Before, markets were known as street markets and operated without any regulations. In 1634, Governor John Winthrop formally established the first known farmers' market in the U.S. in Boston, Massachusetts. Today, one of the oldest farmers' markets is the Easton Farmers' Market in Pennsylvania, established in 1752. It is considered the longest-operating open-air market in America. The Lancaster Central Market in Pennsylvania, established in 1730, is also


one of America's oldest farmers' markets. The market operates in a 120sf lot in the town center, once owned by Andrew and Ann Hamilton. In 1742, the town implemented new regulations. By 1757, the town's official established their first market building, a simple open-air building with stalls and a roof. According to the USDA, there were 400 vendors documented at the Lancaster Central Market at one point in time.

**Wet Markets**

The term wet market applies to traditional produce markets, where vendors sell meats and produce in China and Southeast Asia. According to the Singapore Heritage Society, the term wet market came into usage in the early 1970s, when the Singapore government used the term to distinguish supermarkets versus traditional produce markets. The term derives from the vendors' use of ice to ensure the freshness of their seafood and routine cleaning of their stalls by spraying water resulting in wet floors in the market. While these spaces resemble a farmers' market, they usually contain more extensive shelter, stalls, and lighting for vendors to operate day and night in an exhibition-like building.

**Supermarkets**

The supermarket began to gain public attention in the early 20th century. However, the self-service version gained traction only after World War II. The idea of a self-service grocery store

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came from Clarence Saunders in Memphis, Tennessee. At the time, shoppers had to present a list to the shop clerks, who filled the order for goods. Saunders realized this was not only inefficient but also limited sales. He filed a patent for a self-service grocery store called the Piggly Wiggly on October 21st, 1916.⁸ In the patent, he wrote that the invention was to provide a store format that enabled individuals to serve themselves. It needed to provide convenient and attractive displays of goods. It required a checking and paying station where the billing of goods takes place. He included a horizontal plan (figure 1), a front plan (figure 2), and a longitudinal section (figure 3) of his store design.⁹

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Figure 2. "Saunders, Self-Serving Store horizontal plan." Digital Image. Clarence Saunders. 21 October 1916.
China's first supermarket, the Friendship Store, opened on April 12th, 1981, in Guangzhou. The supermarket sold imported goods from foreign countries, such as Hershey's chocolate, Coca-Cola, and peanut butter. Furthermore, it exported goods from China that were unavailable in other stores, such as spam and condensed milk. The government-owned Friendship Store only took Foreign Exchange Certificates as payment. According to an interview on the CPPCC Daily, foreign goods drew overwhelming attention to the supermarkets, causing an overflow of consumers in the store on the opening day. As a result, the store had to limit the number of shoppers allowed inside. Nevertheless, another issue occurred: Consumers' curiosity caused packages to be opened and tossed everywhere. Therefore, the store quickly adjusted and
packaged products with more transparent packaging and increased the number of staff on the shop floor.\textsuperscript{10}

Similarly, Chinese supermarkets in America also did not sell ethnic goods that catered specifically to Chinese Americans. Instead, the store sold American groceries, meats, and produce to American customers offered at the lowest prices. Selling American goods with Chinese services for American clients helped erode social barriers between these two groups.\textsuperscript{11}

According to author Alfred Yee, Chinese supermarkets operate in two ways: Family-owned and partnership stores. These forms of operation develop a sizeable Asian community because most stores hire individuals recommended by a friend or someone from the same village.\textsuperscript{12} Compared to their competitors, Chinese supermarkets in the U.S. had low prices, resulting in lower labor costs and profits in the 1950s and 1960s. However, with the rise of national and local chains, they gradually lost their compactness. Store owners started selling and closing their shops, unwilling to keep up with the competition.\textsuperscript{13}

The Chinese supermarkets in the U.S. today sell a variety of ethnic foods and continue to expand their consumer base. Additional niche grocery stores began to surface in Chinese communities that sold ethnic goods that cater to their communities' particular needs. However, one of America's largest Chinese supermarket chains, 99 Ranch Market, opened in 1984. Although it started with the same goal, it ultimately expanded its consumer base beyond Asian communities. Alice Chen, the CEO of 99 Ranch Market and founder Roger Chen's daughter, mentioned in an


\textsuperscript{12} Ibid.

\textsuperscript{13} Ibid.
interview that the first store came from a desire to connect to home: "He missed his hometown… (and) he wondered why he could not shop for those foods and brands familiar from home in his local American supermarket."  

**Previous Focus**

From Clarence Saunder's first supermarket design to the current supermarkets, the designs focus on economic and marketing efficiency strategies. For example, in Saunder's design, he recognized the need for a stock room to store products, ample shelves for customers to pick out products, and a checkout station to pay for the goods. These are the essential components he developed for the layout foundation for self-service grocery stores. In the early 1930s, warehouses, factories, garages, and other large buildings were converted to supermarkets, as they suited the needs of many products. However, in 1935, supermarkets focused more on exterior and interior design to attract consumers. This trend led to well-designed supermarkets that considered parking lots, shop floor circulation, and the organization of products such as dairy, meats, seafood, and produce. In addition, the shop floor layouts are designed to support product placement and the efficient flow of customers. However, these designs broadly did not consider combining the cultural aspects of ethnic foods and marketing. Most research today focuses on large consumer chains such as the 99 Ranch Market. However, there is little research regarding the niche supermarkets that have profoundly impacted Asian communities in the United States. These stores could be positioned as a hybrid Wet Market and Supermarket in the U.S., with a particular cultural focus.

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Notes

9 Saunders, Clarence. 1917. Self-Serving Store. U.S. Patent 1,242,872 was filed on October 21, 1916, and issued on October 9th, 1917.
12 Ibid, pp.7
13 Ibid, pp.31
15 Saunders, Clarence. 1917. Self-Serving Store. U.S. Patent 1,242,872 was filed October 21, 1916, and issued on October 9th, 1917.
CHAPTER 2
RESEARCH METHODS
The Return of the Farmers' Market
The arrival of supermarkets provided convenience and faster service in the U.S. Nevertheless, this service soon transformed eating habits into a preference for canned products and processed foods. However, many consumers remain committed to sourcing natural products and fresh ingredients. This connection has enabled the continuation, if not resurgence, of the farmers' market in urban settings, providing urban dwellers the convenience of enjoying fresh produce and promoting a direct relationship with the growers. As food production becomes increasingly industrialized and food retail becomes more depersonalized. This intimate relationship becomes more valuable and desirable for consumers.

In addition to the popularity of the farmer's market, more supermarkets are transforming the retail floor to provide the nostalgia of a traditional market. For example, Whole Foods Markets' produce section organizes some products in rustic stalls and crates to resemble those of traditional farmers' stands. Furthermore, these stores further mimic the nostalgia of an old-fashioned market. Offering mini market stalls within the single big box building, these stores provide fish, meat, and bakery sections as stalls in the store layout.\(^1\)

This research seeks to develop the next stage of a Chinese American supermarket through research by design. First, the research analyzes various Chinese and American supermarkets, from local to chain and from hybrid (wet/supermarket) to those that provide additional services such as food courts. From analyzing this list of precedents, a preliminary grocery shop layout was developed and then tailored to suit the community's needs in one particular prototype. Additionally, the research provides a model for a market that provides additional public services,

such as housing and a community center, which could be attached to the supermarket to provide more efficient resources. While going to the supermarket may be unavoidable, locating some essential services nearby could benefit community relationships.

According to IBISWorld, as of 2023, there are approximately 63,348 supermarket and grocery store businesses in the U.S.\(^2\) However, there is a lack of statistics demonstrating the percentage of ethnic markets in the United States. Additionally, it is essential to determine what makes a market successful in its operations and design layout before developing the list of precedents.

There are various types of markets, and Chinese supermarkets can be considered a hybrid between wet markets and supermarkets. Some markets are entirely transitioning to a supermarket model, although supermarkets in China tend to sell foreign goods.

In various cases, consumers still would like to purchase goods in a traditional wet market where they can select and speak to the growers regarding the produce. However, the wet market has a downside—difficulties maintaining sanitation standards and ventilating while preserving historic buildings. Therefore, in China today, there is an ongoing trend of renovating and transforming traditional wet markets to suit more modern tastes and health demands.

Researcher Zhong Shuru at Sun Yat-Sun University discusses the benefits and the criticisms of these wet market renovations. The resulting benefits of these renovations are stricter food safety, sanitation monitoring, and better ventilation with the new facility for the vendors and consumers. In addition, the new trend did not start only to retain previous shoppers. Nevertheless, the younger generation appreciated the wet market culture as much as their elders. However, some attempts drew the new generation's attention but did not work as ideal.

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One of the examples mentioned in Zhong's article was the two-week collaboration with Prada at Shanghai's Wuzhong Market. The brand's logo embellished the market on surfaces such as vegetable stalls and small packaging. The event drew the attention of young Chinese fashion lovers. Nevertheless, primarily criticized because the visitors threw away packages of Prada-branded celery immediately after taking a selfie with it. Moreover, the collaboration appealed to the younger population but failed to retain them. As Zhong noted, "For many young Chinese, traditional wet markets are not part of their lives."³ However, this is one of the extreme cases of the renovation movement. There are many other reasons why younger generations are drifting away from the wet markets. Those include the urbanization of China, which has pushed the Chinese family structure to solo living and nuclear families. Many young couples take high-paying and high-intensity jobs in the city, becoming dependent on take-out meals. In addition, the time it takes to shop for groceries and to cook food at home is becoming a luxury that not all family units have. Furthermore, with the rise of e-commerce in China, produce has become more available online, eliminating the time needed to travel to a market.⁴

From reviewing previous market renovations that occurred in China, there are some critical factors to keep in mind. First, Chinese markets in the United States are a hybrid between wet markets and supermarkets, and they must also attend to the ambiance. Providing the hustle and bustle people desire from a traditional wet market experience. Second, the design of the market not only needs to draw in the younger generations, but it also needs to retain those current consumers. Third, the circulation and the products sold in the market are critical because live seafood, fresh vegetables, and meats are essential in Chinese cuisine. In each of these crucial


⁴ Ibid.
factors, additional criteria can assist in achieving the goal. The list of factors and requirements is organized in the box below. This box does not list everything essential for a market; additional factors include responses to the site condition and community (Chapter 3).

<table>
<thead>
<tr>
<th>Essential Factors of a Chinese Supermarket</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Retaining the ambiance of a traditional wet market to maintain the nostalgia of the market.</td>
</tr>
<tr>
<td>o Allowing bargaining and picking of vegetables to increase consumer and vendor interaction.</td>
</tr>
<tr>
<td>o Adding a food court to bring livelihood to the market and increase the hustle and bustle.</td>
</tr>
<tr>
<td>- Design of the market needs to appeal to the general population, not only the younger crowd. Furthermore, it must relate to Chinese Americans and modern Chinese immigrants who just arrived in America.</td>
</tr>
<tr>
<td>o Simplifying traditional Chinese patterns.</td>
</tr>
<tr>
<td>o Utilizing symbolic colors such as red symbolizes fortune and luck.</td>
</tr>
<tr>
<td>o Utilizing rustic containers that reminiscence the nostalgia of being in a wet market.</td>
</tr>
<tr>
<td>- Circulation</td>
</tr>
<tr>
<td>o The amount of merchandise sold can impact the market’s circulation.</td>
</tr>
<tr>
<td>Therefore, before designing the market, it is crucial to determine the amount of food the community desires.</td>
</tr>
</tbody>
</table>

Figure 4: Essential Factors of a Chinese Supermarket
Precedents
This thesis focuses on the opportunities to explore the cultural preservation of Chinese wet markets through innovative ways of uniting traditional market practices with modern architectural designs. The three precedents in this section focus on innovative approaches and the architectural process of providing functional space for traditional market practice. They provided directions for a designer to consider the possibility of market renovation and the essential decisions in market design. The majority of the market precedents followed a modular interior layout. Modularity provides the opportunity for future alterations and changes in shopping trends. In addition, the open space allows for better air quality in the market. Finally, the markets also recognize the importance of implementing outdoor programs that benefit the community.

Liutan Market, Wuxi, China

Figure 5: "Bloom Liutan Market." Digital Image. Qingshan Wu. 11 December 2022.
The Liutan Market in Wuxi, China, by MINAX Architects, is a wet market renovation to provide a new building and modern facilities for the outdated wet market. The renovation was the district's response to boost livelihood and to adjust the urban space quality. Although the building façade did not reconcile the traditions of Chinese architecture, it stood as an innovative example of a Chinese wet market. Furthermore, the modern façade symbolizes the emerging new social activities promoted on the new site.

Figure 6: "Liutan Market Interior Before." Digital Image. Qingshan Wu. 11 December 2022.

In addition, this market solved many concerns mentioned in the previous chapter regarding wet market renovations. The development ensures that the rental price of market kiosks will remain unchanged after the renovation. Moreover, the interior layout remains the same to preserve cultural shopping habits and provides open spaces for future alterations.5

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Figure 7: "Liutan Market Interior After." Digital Image. Qingshan Wu. 11 December 2022.
The Ergon Agora East Supermarket in Pylaia, Greece, designed by Urban Soul Projects, demonstrates the possibility of community building with markets. The market re-used an old industrial shell of the 1970s on a 6000m² lot that reaches the sea. The interior space remains open, and movable commercial furniture separates the programs in the market. The exterior spaces are where the Ergon Agora thrives in building a community. The large lot provided spaces for various outdoor events such as concerts, late-night movies, community markets, and food trucks.⁶

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The Besiktas Fish Market, in Istanbul, Turkey, by GAD architects, uniquely responds to the market renovation. The market resides on a 320m² triangular lot at a busy commercial intersection. The market structure's simplicity and the refurbishment's elegant design provided overhead shelter over the existing market. The refurbishment project solved the distress of neglect, lack of infrastructure, and the hygienic problems the market was facing. It also provides a more professional environment for the shop owners.⁷

Notes

4 Ibid.
CHAPTER 3
SITE ANALYSIS: CHINATOWN, PHILADELPHIA, PA

Site History
Philadelphia Chinatown is a place of memories, culture, and development. In 1876, the Philadelphia Press reported a new influx of Chinese immigrants.¹ The movement of Chinese emigrants ranged from the Pacific Coast to the Atlantic States in the United States. Saint Andrew's Church established a Sunday school for Chinese laundry workers in 1850. The first Chinese Christian in Philadelphia was baptized at Saint Andrew's in 1856. However, these early settlers did not establish a concentrated area of settlement. Throughout the 1880s and 1890s, Chinese emigrants, mostly young men in their early twenties, came from San Francisco and Seattle and set up laundries around the city. Many men were recruited from California to work as strikebreakers in the laundry business in New Jersey and Philadelphia. Slowly, they started opening businesses in Chinatown, seeking their fortunes. The first laundromat was opened in 1870 by Lee Fong, also known as Ah Lee. Ten years later, a restaurant called Mei Hsiang Low opened on the second floor above the laundry. Although Chinese laundries were dispersing throughout the city, there was more of a cluster within five blocks of Ninth and Race Streets in Philadelphia.²

Most Chinese emigrants settled around Ninth and Race Streets when Philadelphia was booming, with workshops drawing new and old immigrants to the manufacturing business. The primary businesses included manufacturing textiles and clothing, machinery and hardware, printing and publishing, leather production, and construction. These industries employed skilled European

immigrants, older ethnic populations, and African Americans, each living near home and work. However, this industry boom did not last in the area. As time passed, the business found new homes, and so did the people. The European workers found new housing opportunities outside the central business district, and the neighborhood remains with Chinese characteristics. In the early 1900s, the district was populated by warehouses, cheap rooming houses, and slum dwellings. The area of Philadelphia north of Market Street and east of Broad Street became known as "Skid Row." Populated by cheap restaurants, saloons, flophouses, and missions and was inhabited by homeless and displaced individuals. Chinatown at Ninth and Race Streets sat in the center between the two districts. Although by 1900, the area was predominantly Chinese, due to the spatial regulation of the area during this period, the Chinese community felt they were boxed in the area due to violence and harassment.³

**Zoning and Current Condition**

Buildings in Chinatown include 1830s row houses and 1890s commercial buildings, and almost all suffer from decades of deferred maintenance.⁴ The Chinese community adapted row houses and commercial buildings to meet the immigrant community's needs. As a result, the zoning of this area consists of mixed commercial and residential uses, with a few industrial allocations. Shops and restaurants occupy the street level, and laundries and the upper floors are primarily residential and occasionally private offices. The upper residential areas were small and densely populated; most people shared rooms averaging fourteen to fifteen persons per address in 1910.⁵ The row houses in this neighborhood are modified with Chinese symbols and decorative motifs. Some of the historic structures in Chinatown, such as the Far East Restaurant at 907-909 Race

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⁴ Ibid.

⁵ Ibid.
Street shown in the painting by Frank Hamilton Taylor in 1923 (Figure 12)\(^6\), resemble the \textit{wu-dian ding} known as the Chinese hipped roof design in traditional Chinese architecture.

According to the People's Daily Online, the \textit{wu-dian ding} was often used in royal construction projects, large monasteries, and temples.\(^7\) In addition to the decorative motifs, murals filled the brick façade of the rowhouses, and new decorative symbols were used in newly constructed buildings (Figures 10 and 11).

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Figure 11: Collection of Cultural Symbols and Statues, Chinatown Philadelphia, PA
Figure 12: "Far East Restaurant." Digital Image. Frank Hamilton Taylor painted in 1923, published online at Pennsylvania Legacies in May 2012.

Notes
Notes

3 Ibid.
4 Ibid.
5 Ibid.
CHAPTER 4
DESIGN APPROACH

The Site

The site is a 36,800sf vacant lot located on an empty parking lot owned by the local municipal government, slated for development. It is just one street away from the existing center of Chinatown. Open parking lots and large institutional and municipality buildings populate the area. However, some buildings, such as the Police Headquarters and the African American Museum, are set to relocate. Looking closely at the site (Figure 14), the west edge of the site lot began to mimic the business and the livelihood of Chinatown. The North edge facing the large highway still consists of a privately owned vacant parking lot seeking development opportunities. The East Edge defines the public transportation routes with bus and subway lines that are locally used but have relatively low traffic. Finally, the South edge responds to the busy street that faces the Temple University Podiatric.
The Community

The market plays a central role in the community. It measures the microeconomics that occurs in the community and rapidly responds to the supply and demand of the consumers. Therefore, before designing the market, it is crucial to study the clients involved in the community. The chart below (Figure 15) defines the three essential groups of clients on site. The chart was created by observing on-site, and analyzing historical documents written by and about this community.

The first group of clients is a group that consists of residents and community members. Throughout history, the Chinatown community has struggled to find a community space to express their identity and space. From site observations, there is a lack of green space, public parks, and gathering space. Therefore, upon deciding on the lot, the response to target their needs is to provide a safe outdoor space for the community to pursue their activities. The second group of clients is the supermarket workers. Most of the workers primarily speak Chinese and a dialect
of a region of China. However, adjusting to the language barrier and understanding financial documents written in English could be challenging. In response, a community center was added to the program. The last group of clients is travelers and tourists. Chinatown is a tourism hotspot but lacks information to educate others regarding Chinese food culture. Many visitors often ask where the best place to eat is and have many questions regarding the fruits and vegetables not often seen at other supermarkets. In response, adding a community restaurant that cooks the food straight from the market could fulfill their needs.

### COMMUNITY AND THEIR SUPERMARKET

<table>
<thead>
<tr>
<th>CLIENTS</th>
<th>NEEDS</th>
<th>RESPONSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residents and Community members</td>
<td>• A Community space for community voice&lt;br&gt;• Limited English Proficiency (LEP)</td>
<td>• Outdoor Bulletin Board&lt;br&gt;• A place where locals can express their needs for the community!</td>
</tr>
<tr>
<td>Supermarket Workers</td>
<td>• Limited English Proficiency (LEP)&lt;br&gt;• Having difficulties understanding legal documents</td>
<td>• English workshops&lt;br&gt;• Volunteer Tax assistants and other legal documents</td>
</tr>
<tr>
<td>Tourists</td>
<td>• A Place to take incredible photos and eat fantastic food!&lt;br&gt;• Direction and information seeking</td>
<td>• Outdoor Fruit/ Vegetable stands&lt;br&gt;• Small food venues/ stands with large windows&lt;br&gt;• Information Kiosk</td>
</tr>
</tbody>
</table>

Figure 15: The Community and their Supermarket

**The Program**

The program derives from Contemporary Market Architecture Planning and Design, written by Neil Tomlinson and Valenti Alvarez Planas. The book emphasizes that the expected economic life of buildings is usually 20 to 25 years. Therefore, the importance of modularity in a market is
crucial due to the time perspective.\footnote{Neil Thomlinson and Valenti Alvarez Planas, \textit{Contemporary Market Architecture Planning and Design} (Australia: The Image Publish Group Pty Ltd, 2018), p. 5.} In addition, Tomlinson also provides a recommendation chart for the percentage of food sold in the market.\footnote{Ibid. p. 033} However, not all items mentioned in the chart apply to a Chinese supermarket. Therefore, alterations and adjustments are made to better define the site's program.

<table>
<thead>
<tr>
<th>Fresh food product mix: 66</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fish and seafood: 18 percent 3,448 sqft</td>
</tr>
<tr>
<td>- Produce -- fruits and vegetables: 18 percent 3,448 sqft</td>
</tr>
<tr>
<td>- Dairy, milk beverages: 5 percent 956 sqft</td>
</tr>
<tr>
<td>- Meat poultry and eggs: 17 percent 3,256 sqft</td>
</tr>
<tr>
<td>- Day stalls: 8 percent 1,532 sqft</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specialty food product mix: 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Locally roasted coffee/tea: 2 percent 383 sqft</td>
</tr>
<tr>
<td>- Herbs and spices: 3 percent 574 sqft</td>
</tr>
<tr>
<td>- Noodles fresh and dry: 6 percent 1149 sqft</td>
</tr>
<tr>
<td>- Maple/honey: 1 percent 192 sqft</td>
</tr>
<tr>
<td>- Nuts and dried fruit: 1 percent 192 sqft</td>
</tr>
<tr>
<td>- Snacks: 5 percent 957 sqft</td>
</tr>
<tr>
<td>- Sauce, vinegar, and oils: 5 percent 1149 sqft</td>
</tr>
<tr>
<td>- Preserves: 1 percent 192 sqft</td>
</tr>
<tr>
<td>- Wine, beer, and spirits: 2 percent 383 sqft</td>
</tr>
<tr>
<td>- Bakery/cafe: 4 percent 766 sqft</td>
</tr>
<tr>
<td>- Flowers: 4 percent 766 sqft</td>
</tr>
<tr>
<td>- Miscellaneous: 1 percent 192 sqft</td>
</tr>
</tbody>
</table>

Figure 16: Market Food Mix

After combining the initial research of the site and the community, a concept diagram (Figure 17) was created to demonstrate the design process of the hybrid market. First, the site establishes all
the entrances where clients would approach the site. Then each of the building blocks is designed to house each of the programs. This process also allows for increased open spaces supporting modularity changes. In addition, it provides ample storage area for each of the market programs and prevents cross-contamination between raw foods. Next, the market's main entrance is set to the East, and the roofs are trimmed to maximize solar gain and snow loads. After placing each building on site, external programs are implemented with a large open grass field to inspire community engagement. A final axonometric diagram (Figure 18) demonstrates each program's separate building on site.

Figure 17: The Concept Diagram
Cultural Preservation of The Wet Market

First, focusing on the four supermarkets on site, a group of items that reflect the cultural identity of a Chinese supermarket is discovered (Figure 16). The items below reflect the tradition and the desire for fresh foods in Chinese culinary culture. It demonstrates the rapid response to change and the ebb and flow of everyday life. These items can be incorporated as modular furniture in the market and rearranged to respond to the rapid change in consumer shopping habits. The other attempt to harmonize with modern Chinese architecture is to utilize natural materials such as wood, often seen in traditional Chinese architecture. The finishing of the wood bridges the cultural identity in a modern building design. It simplifies the complex design of traditional Chinese architecture. This sustainable material also promotes a connection with nature, inspiring a welcoming sensation generated by natural materials.
The floor plans (Figure 20 and Figure 21) below demonstrate the implementation of these items in each program. For example, in the fish market marked in blue, bushel baskets are located near the fish tank designed for shellfish. In addition, each building contains a section surrounded by the produce. For example, in the fruits and vegetable building (green), the supermarket worker is positioned inside each of the cubes, surrounded by vegetable stalls; this is a traditional Chinese wet market layout that promotes conversation between the seller and the consumers.

The ground plan also indicates the various access routes for clients to approach the site. The yellow arrows indicate the tourist access and ways to reach the restaurant. In addition, to connect the community restaurant to the site, outdoor seating is arranged for direct access from all accessways (Figure 22). The west end of the restaurant is the designated site recycling and disposal area, where the trucks can pick up the trash from the one-way street shown in the west façade (Figure 23). This area also allows trucks to drop off produce, and workers can refill the inventory through the center accessway on the site.
Figure 20: Ground Plan

Figure 21: Second Floor Plan
The community center is located on the North edge of the site. The location provides an opportunity to create a Tai Chi Garden on the Northwest corner and an open outdoor gathering.
space for the community members. The exterior program also includes an outdoor chess area sheltered by the office space above. The sheltered space allows visitors to play chess regardless of the weather (Figure 24).

![Figure 24: East Edge View](image)

This project considers a variety of programs that respond to market demand and the community. The design offers a common architectural program, the supermarket, to demonstrate cultural preservation through modern designs and bridge the cultural gap among the Chinese American community in Philadelphia, PA. It builds upon this mission by providing additional programs to assist a variety of stakeholders, residents, and clients. In so doing, this thesis produces a design that challenges contemporary big-box grocery store models and profoundly reflects the needs and desires of a diverse community.
Notes

2 Ibid. p. 033.
CHAPTER 5
CONCLUSION

Supermarkets were not widely known in China until 1981, when the first one opened in Guangzhou, offering foreign goods such as Hershey's Chocolate and Coca-Cola. However, these supermarkets did not align with the traditional way of purchasing products that reflected Chinese cultural identity. As a model, this version of a grocery store has limited cultural reference and translation.

Later, a fusion of Chinese supermarket and wet market styles emerged in the United States by designing large-scale big-box Chinese American supermarkets. These also lack cultural framing and many of the qualities of wet markets. Moreover, a cultural gap persists between Chinese Americans and those who have recently immigrated from China regarding the architectural styles of these markets.

To bridge this gap, this thesis design project proposes a new type of Chinese American supermarket. Blending the qualities of a wet market and a more contemporary big-box supermarket, it offers a hybridized approach to these shopping styles while elevating the theme of cultural exchange. To do this, the architecture combined utility needs with modern facilities and finishes, blended the architectural style of current and traditional Chinese motifs and established a modular interior layout that resonates with Chinese cultural shopping habits. The final design demonstrates one possibility representing the modular options that can be reconfigured in various layouts. I hope the research on supermarket design moves beyond business models to incorporate architectural and historical research.

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Notes

Bibliography


Saunders, Clarence. 1917. Self-Serving Store. U.S. Patent 1,242,872 was filed on October 21, 1916, and issued on October 9th, 1917.


