A Center for FOOD - Kowloon City, Hong Kong

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Submitted to the Department of Architecture in partial fulfillment of the requirements for the degree of
Master of Architecture at the Massachusetts Institute of Technology

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Abstract

Modern day living limits us from understanding and seeing where our food comes from and how it was planted, grown, and manufactured. As we become more and more conscious about our diets, our relationship to food is more distant than we've ever come to realize. The closest we get to knowing the source of our food is through reading labels from manufacturers, of nutritional facts and ingredients. The relationship between food and the consumer in an urban environment becomes highly complex and mysterious.

The Center for Food is a multi-faceted building, dealing with the way food is transported, processed, prepared, served and consumed. This thesis investigates the different food conditions in contemporary Chinese culture, and brings them together as a part of the Kowloon City community. It looks at how food enters a dense and complex urban environment, is sampled, adapted to the specific eating habits and typologies and redistributed. A system of programmatic organization is used to study, illustrate and heighten the relationships between the different modes of food consumption, in all their brutal reality. The building incorporates a series of food related mixed use programs into the community, allowing for an opportunity to see the process of food relative to the urban setting. It challenges the conventional zoning principles of program uses, and redefines the parameters of how all the elements converge at the site. The project satisfies our desires to understand what we are consuming, where we are eating, and how our food is processed.

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Introduction

To say that the consumption of food is a vital part of the chemical process of life is to state the obvious, but sometimes we fail to realize that food is more than just vital. People of different social classes or occupations eat differently. People on festive occasions, in mourning, or on a daily routine eat again differently. Different religious sects have different eating codes. Men and women, in various stages of their lives, eat differently. Different individuals have different tastes. Food is what brings people together. Rituals of what to eat, when to eat and how to eat is particular to specific cultures and traditions. In Japan, people—especially women—are not socially allowed to eat in public because it is considered impolite to expose one's teeth. Recently, police in Kuwait City arrested five Kuwaitis for violating rules by eating in public places in broad daylight in an open area, during the month of Ramadan. In other, Latin American cultures, food is communion, not only between those together at the table but between ingredients. Sometimes meals are offered at festival celebrations at the scale of the town, which one can easily involve dining with hundreds of others.

Michel Foucault once stated, "the modern food choice subject has been a product of independent historical forces." History has depicted food as symbols, as myths and as a gift from divinity. Many of these depictions are closely related to architecture. The aesthetics of how a table is put together, the preparation of meals, and the production of food often intersects with the form, production and sequence of space.

Beyond the facile comparison of "like an architect, so too the chef," the intersections of the preparation of meals and the production of space coincides under what kind of circumstances? What is the relationship between the rituals of dining, the design of meals, and the process of cookery that form and inform a distinctly expressive architecture?
The development of the project is structured upon an understanding of the relationships and commonalities between food and architecture, and the outcome translated from gastronomy into architecture. The project focuses specifically on issues relating to eating, processing and cooking, set up at different scales, set in different scenarios to look at the architectural implications of rituals and habits. It is divided into three major components of research: the cultural, the site and the programmatic intervention. The entire process of how food is grown, processed, packaged, sampled, bought, cooked and served in a dense urban environment for the mass public is investigated and is studied as the parameter of the project and premise of the program.

This thesis will study the relationship between and the art of building, the consumption, process and of food and architecture, exploring the social, habitual, and cultural links between the two. The objective is to find a common vocabulary between gastronomy and architecture, as the basis of the project to investigate issues relating specific to the cultural, social, and habitual conditions of the site in Kowloon City and the city of Hong Kong. The demands for development is also an important component of the project, given its rich history and its current condition for renewal. The project creates a specific cultural destination for the site using food as an agent.
Project Background research, site history, social cultural issues, existing site typologies
RESEARCH
Eating as a Cultural Phenomenon Habits | Rituals

The difference between eating habits and rituals are based upon a series of circumstances. Globalization of our rapidly growing world and the authenticity of traditions in different cultures are the key elements distinguishing the two. Spaces of which eating habits occur generally provide the basic needs of serving food. It compromises to the social-economic demands and makes eating, the process of food an other food related activities efficient. Globalization and mass production are the foundations for which food in the urban environment is forced to provide efficiency. On the contrary, eating rituals remain independent from the mass popular influence. Rituals are specific to local culture and conditions and they are not generic, but authentic. Hence, this thesis respond distinctly to the site in Kowloon City and the food Chinese cultures of Hong Kong.

Public eating is a crucial element in setting the boundaries of each eating habit and ritual. Who is watching who and who is being watched creates an interesting dynamic between the occupants of a food or eating facility. The relationships then between different programmatic uses, like between the kitchen and the dining areas; a fast food restaurant versus a formal restaurant; and the market where food is kept and delivered are faced with questions about social norms, sanitary issues, and cultural appropriateness. The relationships no longer remain as a visual or experiential dynamic between occupants, but moreover, these relationships as the resulting as the social and cultural impacts.
Consequently, cultural issues relating to the public and private space for eating are crucial in terms of determining the size and proportions of the space made for specific eating activities, and how the programmatic relationships are set up. Relatively, the duration of eating a fast food meal versus dining a meal at a formal restaurant is determined by the spatial relationship, the sequence of spaces, and the series of arrangements. Habits and rituals of eating operate under the following circumstances which distinguish the from one another:

- Time (duration of cooking and consumption)
- Materials / Tectonics
- Contextual (temperature, seasons, regional)
- Spatial Relationships (from person to person)
- Movements of the Body
- Ordering (of dishes, seating, status, function, sequence of space)
- Place Setting
- Public Eating versus Private Eating
- Fast Food versus Slow Food
Authentic: uncompromising, complex, slow food, rituals

With almost 5000 years of civilized history, gastronomic habits and rituals are deeply inherited in its culture. Food is one of the most important elements of life. Depictions of gods, myths, symbolisms, philosophies, family legends, rituals and celebrations, festivals and holidays are often accompanied and illustrated by food. Food is coherently didactic the Chinese culture. Family legends and traditions are passed down from generations to generations through rituals and habits of eating. Different spices used in particular regions of China correspond to the particular climate. Ingredients of each dish must be appropriate for the occasion of the meal and the people served. The placement of each utensil is carefully laid out, and much of it is based on superstition. Ultimately, food brings people to the table, despite what the occasion may be. The way how the Chinese table is set up is that it always has to be round, so that every member at the table is equal, and it welcomes all from every direction. Everyone at the table can see everyone. Even though the table is round, there is a hierarchy set up according to age and the status of the person. The order of who gets what and who gets first consequently follow this hierarchy. The order of which dish is served followed by which other dish is also very important, just as in other cultures. Except superstition is what governs these orders, and bad karma may be dawmed onto the people if the order is not appropriated. This is apparent in the weekly family rituals of the Sunday morning dim-

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Auspicious numbers often found in the Chinese Culture based upon superstition and phonetics.

Bagua: An Index of the Elements.

Table Setting of a Traditional Chinese Table at a Tea House.

General Mapping of the Number of People to Table.
The sequence of how eat of these dishes are served are so significant. Each dish must correspond to the type of tea served and the taste of the food. As a result the sequence of space is a formal, uncompromised Chinese restaurant is more concentric and more intertwining rather than the linear methodical compromised spaces of a globalized, efficient convenient store or fast food chain restaurant.

Feng Shui
A combination of science, superstition, and an understanding of our environment and the elements- the root of rituals, manners and a way of living. numbers are important in terms of creating the equilibrium within a space. also relates to the importance of family in the Chinese culture. order, placement, orientation and arrangement is very crucial.

Chinese Cooking Methods- deep frying, pan frying chow, steaming, mincing, dicing, chopping and kneading. balance of salty, sweet, sour, bitter, and spicy. Layering- in the process of cooking and the food itself. Mixing of different texture and flavors. Colors are crucial because of superstition and Buddhist traditions. Vibrant colors are preferable, especially for special occasions and holidays.

There is a believe in which any animal with their packs facing the sky are edible.

Diagrams of spatial sequence
Language Between Architecture and Food

The process of making a building and the process of cooking share many different vocabularies. These are not just words that are commonly shared, but a language that have share very distinctive implications relative to physical spaces and as a process of creation. Through developing this common vocabulary, a new architecturally language specific to gastronomy emerges.

Ingredients as Building Blocks- The fragmenting of natural resources for building materials. The compiling of various materials to create something different.

Inflatable | Pneumatic Architecture- Material property remains the same, but the volume of the interior and exterior space changes, and the occupation of the space changes as well accordingly. The expansion and compression of the volume and the density of the cellular structures is determined by the elasticity and viscosity of the material used.
Beating, whisking, whipping- a manipulation of homogeneous elements, changing the volume but not the nature of liquid through agitation.


SITE HISTORY

Kowloon City's Identity and Recent Developments

The site picked for the project is located in Kowloon City of Hong Kong. It is where the Hong Kong International Airport once stood. Its history dates back to the Ming dynasty nearly 300 years ago. It was the home of the notorious Kowloon Walled City, which hosted thousands of families on a single block. For centuries, the area had been a small fishing village. Since the 1920's, the site grew into a dense commercial area as the airport erected, while the site remained residential. The area became an important point of convergence for trades, and hosted many warehouses, and small manufacturing businesses.

Since the airport was abandoned at the end of the 90's, most of the businesses and warehouses vacated the site. The Kowloon wall city has also turned into a desolate park. The airport is emptied and its runway is occasionally used for concerts and large civic events. What were once residential remain residential, with a high concentration of immigrants from near by Southeast Asian countries. Local restaurants and businesses owned by immigrants have budded as an attraction for people from all over the city for a taste of authenticity.

Since the airport moved out of the vicinity of Kowloon City, the area has been suffering economically. Many of its retail and wholesale businesses have moved out. Many of the buildings have been abandoned. In the past five years, developers have invested in the community. Because the old airport is no longer in use, the height ordinances are no longer in affect. High density 20-30 story housing apartment buildings have been planted, in replacement of many of the early 20th century buildings. At the same time, due to a high demand for landuse and redevelopment, and the ongoing debate about filled lands, it is urgent and absolutely appropriate to take advantage of the site's location in city and redevelop the Kowloon City region, and also to create a center for the community. The site for the building is located in the middle of a series of blocking housing developments from the 1930's. The site has gone through a lot of transformation in the past years. It now stands as a mixed use civic building built in the 1980's for the Kowloon City community. It hosts an indoor food market, a youth center, and a public library. Since the community its current condition is quite poor. Over half of the market stalls are idled.
Photos of the General Kowloon City Area
Photos of the Existing Market Building
Kowloon Walled City

The site is near the historic Walled City which is now demolished. Despite the fact that this urban marvel no longer exists, its presence and impact to Kowloon City remains.

This thesis has nothing to do with the infamous Walled City, except for the project site's proximity to its idled location, but the Walled City as a precedent case for urban density issues in Hong Kong, and the Walled City gives a foundational character for the site of Kowloon City.

The Walled City once stood on a site measuring no more than 100x200 meter. Under no legislation, it still held over 35,000 people. Due to its autonomy, it hosted many of Hong Kong's darkest problems, with a high concentration of prostitution, illegal medical practice, drug and criminal activities, illegal immigration, etc. It was considered to be an urban disaster. These problems existed due to the complex nature of the city and the vernacular system of building. The introverted Walled City continued to grow into itself for over a century, leaving behind illegal built structures and a labyrinth-like circulation system. Such vernacular architecture has made its complexity into an amazing case study for dense urban systems and infrastructures.

A Demonstration of the High Density at the Walled City when it was Still Standing.
This Leisure Park is the Site where the Kowloon Wall City once Stood. It's Surrounded by 4-5 Story Mixed Use Residential Buildings.
EXISTING PROGRAMMATIC TYPOLOGIES
Diagrams of Current Conditions

An analysis of how the different mixed use
programmatic types are interlocked and
distributed throughout the site.
2003 had been the most devastating year for the people of Hong Kong in recent history. The SARS epidemic not only killed hundreds, but its residual effect rippled onto the city's economy, social security, and political atmosphere and brought tremendous repercussion to how the government responded to the whole situation. The source of the epidemic traced itself back to food, and the eating habits of Southern Chinese. Researchers tested and proved that the source of the disease is rooted from a wildcat specie known as the civet cat, and then transmitted to humans through the consumption of these wild animals. The regulations on hunting and the consumption of these wild animals in southern China are simply not abode. With Hong Kong's geographical proximity to the mainland, the rapid of the epidemic became immediately detrimental.

Besides the SARS outbreak, the people of Hong Kong also suffering from other food related issues. These devastating events included the outbreak of the H5N1 Poultry Flu Virus; the poisoning caused by the consumption of fish from polluted water with lead content exceeding far beyond the standard; the scare of the "Mad-Cow" disease striking from the west to the east; and the frequently reported cases of "chemically engineered" food products imported from...
China. While these catastrophic, health related events were happening, the problem with the food culture and the tradition food rituals have long been persisting. The wide spread of the American fast food industries in the 1980's in Hong Kong also brought an enormous change to the eating habits of the younger generations. Many of the traditional rituals of eating have been dismissed, due to the demands of changes in culture, and also due to the rise of these fast food chains and convenience stores.

Perhaps the current food related issues are immediately reflected upon the current political situations atmosphere of Hong Kong. Could the food related epidemics and the choice of the eating habits in Hong Kong be a product of the 500,000 people march last summer? It is questionable. But one certain thing, is that, as the economy grew starting in the 1970's, for Hong Kong to establish itself as one of the centers of international financial markets, the average weight of a child between the age of 5-9 has also skyrocketed. Statistics have also shown that obesity is on a steady upward incline, and has becoming a serious health issue, especially amongst the younger generation. The goal food center is to advocate the importance of food and bring an awareness to the processing of food in an urban environment. The project brings these brutal realities of how food is prepared, and treated and fully expose them as part of the urban food process.
Project Development programming, program organization
PROGRAMMING
Development of Programmatic Elements

Given such a complex environment, the program has to address the urban density of the site, the conditions on street level, the building's internal function and the proximity of each existing programmatic type on site. What the building consists of is a system of interlocking programmatic elements. This system studies the relationships between the different programs and plays up the cultural and functional characteristics of each. The complexity of the program is evident in this system. The relationships between elements are either completely exposed or relative sheltered depending on its use and adjacencies. There are four major programmatic components to the project: an indoor market, a series of fast food restaurants and street vendors, two formal restaurants, and a community plaza.

In order to create a new center for the community that is appropriate for the given context, the programmatic elements chosen for the project are extremely important. Each programmatic element must address specific conditions on site, given the existing parameters, to deal with density issues, existing infrastructures, relationships with other programmatic elements, civic responsibility as a community center, each of the steps in the transportation and processing of the food, and

A Series of Sectional Diagrams Illustrating the Current Site Conditions of the Various Interlocking Programs
the spatial sequencing of occupant use. The site and its densely populated buildings surround the site. Each programmatic element and its subdivided components must correspond to its proximate buildings. Issues to deal with include privacy needed for the residential units and creating fronts for local retail and businesses. How food is delivered to the building and be transported throughout is important. The layout of the relative elements must address street conditions by not interrupting both pedestrian and vehicular traffic. The adjacencies between each element should serve specific pragmatic needs, but most important relate to the notion of creating a dynamic environment to expose the processing of food, to succeed with a certain cultural dignity and significance. As a community center, the program should provide open spaces for the general public and the community and to encourage community interaction. Lastly, each element should be conscious of the spaces created for specific environments for the occupiers, to reveal or reserve the eating activities. Consequently, the layout of the program becomes a generative method and a formal strategy for the problems given by the site, cultural issues and social issues.

Time and dimension/distance also play a huge part in determining the adjacencies or the relationships between the interlocking pieces. Time is relative to the duration of stay in each of the program and relative to the cultures of each of these elements. Dimension of spaces were investigated look at basic functional requirements of each program. For example, the distance between the kitchen and the table in a fast food restaurant is relatively shorter in comparison to a formal restaurant.
The investigation of the project began by organizing the program into three separate elements, each represented by a different color to illustrate the parameters given by the existing site typologies and site conditions. The three components are: Markets represented by brown, Restaurants represented by orange, and Fast Food represented by grey. A series of models and sketches were generated to study how each of the components address the major issues of this thesis and relating the program types to the existing program types on site.
A Series of Sketch Diagrams to Study Programmatic Relationships
First Set of Formal Schematic Design at 1/32"=1'
Elevation and Section Models at 1/16" = 1'
The final proposal for Center for Food is a 10-story tall building with a series of half floors. The program consequently consists of 5 major components: Indoor Market, Fast Food, Circulation, Community, and Restaurant.

The community component which is the public plaza is a large opening space on the side of street west of the site. It creates a public space for large community gathering. It engages with the adjacent street vendors and the local retail businesses. A large screen is attached to the north facade to allow for a multi-functional public space. The plaza also provides a seating area for the street vendors.

The street vendors are located on both sides the east and west side of the site, engaging both sides of the pedestrian activities. These vendors which are a part of the fast food component filters into the inner core of the building and up into the higher floors. The fast food elements in the higher floors are individual fast food restaurants.

On the north and south ends of the site are two formal restaurants which are completely isolated from any direct visual connection to the street pedestrians and the proximate residential buildings. However, they are internally exposed to other program spaces.
These two restaurants also have their separate entrance and are completely autonomous from the rest of the building's circulation.

The building's circulation also intertwine as each of the program components interlock. There are two major entrance to the building, one through the public plaza, and their facing the southern street.

A loading dock located on the western street extends from the northern end of the site thru the service core into the indoor market is the first point of entrance for the process of the food. The food enters from the western street which has historically been a market street. It provides spaces for trucks and cars to load products directly into the market without disrupting the regular circulation of the building. There is also an apparent visual connection between the market to the rest of the building to further emphasize the notion of exposing urban food processes. As a result, the market has the most visual physical presence throughout the entire design and it is scattered to create moments of specific exposure. For example, one may be sitting at a fast food restaurant eating a hamburger, while a butcher is slaughtering a cow just on the other side of the wall. Or one may be dining in one of the formal restaurant while street vendors are preparation their food right below their floor. Such dynamic adjacencies are apparent to qualify the brutal realities of how our food is processed.
View into the Public Plaza

View from the Western Street Level

View from the Eastern Street Level

View of the Northeastern Facade

View of the Southeastern Facade
Program Diagrams

I

E-W Sections

Community
Circulation
Fast Food
Market
Formal Restaurant
First Floor Plan
Second Floor Plan
Community
Circulation
Fast Food
Market
Formal Restaurant

Third Floor Plan
Community
Circulation
Fast Food
Market
Formal Restaurant
Fifth-A Floor Plan
N-S Sections

Section A
View Looking from the Forth Floor thru a Double Story Height Atrium Space between a Fast Food Restaurant and the Market
View Looking from the Ground Floor thru a Double Story Height Atrium Space between the Formal Restaurant and the Market
Digital Renderings of Street Conditions
Plexi Glass Model at 1/16"=1'. It is constructed from Layers of Transparent Plexi Glass to illustrate the importance of Layering in the Project and its Directionality. It clearly illustrates the Length of the Building and the Definition of the Boundaries Between Different Programmatic Elements.
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