A THESIS REPORT ON

CENTRE FOR CULINARY ARTS:

WHERE FOOD MEETS ARCITECTURE

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074-BAE-237

SUBMITTED TO: TRIBHUVAN UNIVERSITY INSTITUTE OF ENGINEERING

DEPARTMENT OF ARCHITECTURE

PULCHOWK CAMPUS
Pulchowk, Lalitpur

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
BACHELOR OF ARCHITECTURE

24 APRIL ,2023

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This is to certify that this thesis entitled "**Culinary Arts Centre:** Where Food meets Architecture" at **Balkhu, Kathmandu, Nepal** submitted by **Ms. Shreeya Bauddhacharya** has been declared successful for the partial fulfilment of the academic requirement for the completion of the Degree of Bachelor of Architecture.

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CULINARY ARTS CENTRE | WHERE FOOD MEETS ARCHITECTURE

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ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my Supervisor Prof. Dr. Sudha Shrestha, Department of Architecture, Pulchowk Campus for her exemplary guidance and encouragement at the right time and at the required measure. The suggestion and comments for my work were very appreciable and effective throughout. Her suggestions always helped me to handle the challenges and their appreciations for good work always kept motivating me to do much better.

I want to further acknowledge the Department of Architecture, Pulchowk Engineering Campus and allthe faculty members for guidance and support.

Nevertheless, I am also thankful to my seniors and friends for their direct and indirect help and supportand have been critical about my research helping me to improve this study as well as the report.

Shreeya Bauddhacharya

074-BAE-037

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ABSTRACT

Food remains an important placemaking quality in the city. Since the presence of food in public spaces provides a draw that supports other city functions and boosts the social life of public spaces. Thus, food is a great placemaker that draws people too plazas and streetscapes, and people draw more people , and so on, until a space that might normally be quiet and underutilized is suddenly full of life. Food and architecture are complementary creative fields due to the abundance of art in both. These similar projections are excited to investigate a newer perspective, one that could add value to our cities and engage a diverse range of citizens. It's captivating to see how food and architecture have always brought people together and encouraged social interactions and activities.

Both branches of study, given their similar natures and characteristics of different parameters, encouraged me to explore new perspectives, engage the public, and provide a sense of place. The Culinary Arts Centre functions as a driving force for the revitalization of the surrounding neighborhoods, exemplifying one of the intricate urban relationships between architecture and food. It is envisioned as a hybrid of formal and informal spaces. It is more than just a professional academy; it is also a space for chefs from all over Nepal to exchange knowledge and share their experiences in order to promote native culinary research in the context of Nepal, as well as for their own personal and professional enrichment.

The purpose of this thesis is to discover the impact that architecture can have on people's relationships with food and to design a building that will help foster a meaningful and productive relationship with food and bring them closer together.

1. INTRODUCTION

Food is one of the three basic necessities where our lives revolve around the most. Food has been the mainstay of human interaction that brings people together and defines our social and cultural heritage.As Morgan claims: “Food is vital to human health and well-being in a way that the products of other industries are not, and this remains the quintessential reason as to why we attach such profound significance to it “. (Morgan, 2010: 1852).

Food and architecture have always been two basic needs of human civilization. Much of human experience is mainly shaped by two factors: our need for sustenance and our need for shelter. Thus, Food and architecture from early times have continually addressed our survival and sustainability. Whilst food gives us the energy to survive and thrive, architecture the built-up environment around usprotects us from hostile environments and helps us sustain ourselves for longer periods. In modern times, beyond the basic necessity of food and architecture, both quite often together fulfill our need tofeel happy, refreshed and enthusiastic. When people experience a city, Food and Architecture of that place have the larger impact as it is fascinating to observe how food and architecture have always connected people and encouraged social interaction and activities.

1.1. BACKGROUND

The concept of art is one that is not limited to painting, music or dance. With a new understanding of the arts also comes the concept of culinary arts. This particular concept is one that is defined as the artof cooking. Historically, the culinary craft was passed from one generation to the next, in its simplestform, from parent to child, and in the case of professional cooking from master chef to apprentice oftenin a formalized guild system. As the food and hotel business grew in the industrialized world in the 19th century the development of formal and legitimate institutions to teach the craft of cooking occurred. The development of these institutions created the need for suitable curriculum developmentto validate such institutions, and ensure student’s success and meet the needs of industry. (Müller, Vanleeuwen, Mandabach, & Harrington, 2009)

The take of culinary arts has taken drastic changes in the past decades and now has become one of the most renowned professions in the service industry. Each year thousands of young enthusiasts become chefs who join the industry due to personal interest and passion. TV shows featuring cooking shows. Celebrity chefs. Discovering foods of the world and competitions like Master Chef has given the culinary arts a stable platform. With the advancement in the food and technology, countless innovations such as molecular gastronomy have been introduced by talented Chefs.

1.2. DEFINITIONS

The fundamental keyword frequently used in this research are culinary art, culinarians cuisine and gastronomy tourism. These terms can be defined as follow:

- **Culinary art**: Culinary art, in which culinary means “related to cooking”, is the art of the preparation, cooking and presentation of food, usually in the form of meals. People working in this field- especially in establishments such as restaurants- are commonly called "chefs" or "cooks", although, at its most general, the terms "culinary artist" and "culinarian" are also used.Table manners ("the table arts") are also sometimes referred to as a culinary art.
- **Culinarians**: Culinarians are required to have knowledge of food science, nutrition and dietand are responsible for preparing meals that are as pleasing to the eye as well as to the palate.

After restaurants, their primary places of work include delicatessens and relatively large institutions such as hotels and hospitals.

- Cuisine: Cuisine is a characteristic style of cooking practices and traditions often associated with a specific culture. Cuisines are often named after the geographic areas or regions that they originate from. A cuisine is primarily influenced by the ingredients that are available locally or through trade.
- Gastronomy Tourism: Gastronomic tourism refers to trips made to destinations where the local food and beverages are the main motivating factors for travel. (Shakya R. , 2018)

1.3. NEED OF THE RESEARCH

Nepal, being a Agro-based economy, the lives of most of the generations have revolved around growing, preparing and eating food. But due to the current shift in our cultures as well as to the urbanlifestyle we lost the connection with what we eat. Also, different food trends have been emerging in the cities with fine dining restaurant to street food, it does require architectural intervention where multiple things come under single roof. Present scenario leading to the exhausting work- life, lack of social life and food-related activities, it could be introduced as leisure in present urban life-style. In addition, culinary education demands for well-equipped infrastructures to impart in the city.

1.4. IMPORTANCE OF RESEARCH

- To understand how the architecture and food affect the present urban lifestyle,
- To learn about how architecture through the medium of food creates a public realm in the city catering the multiple dimensions of culinary sector.

1.5. PROBLEM STATEMENT

The paradigm shift and changes to urban lifestyle have led to lack of social bond and connections. Thus, disconnections has developed towards our social relationship with food. Also, the idea of recreation and social space have changed from the old times. Earlier the cities used to have central active core for markets, public squares etc. But in present times the recreation space have changed to shopping malls and very few public spaces.

Also, Nepal being culturally diverse country, there is also diversity in cuisine across the Nepal but there is no solid foundation for the growth of Nepal's Culinary Culture. Understanding these issues and problem, the thesis explores on giving public socially engaging places and opportunities to reimagine dining experience.

1.6. PROJECT JUSTIFICATION

Food like architecture always conveys a message or the meaning whether social, moral or spiritual, itillustrates the unique social dynamics of people at certain time and place in history. Thus, the bond between food, place and people manifest itself through culture, rituals and place people manifest itselfthrough culture, rituals, traditions and identity. Cuisine and architecture in their own form are the expressions of and responses to a society's value and standards. They reflect the thoughts and emotion of people and facilitates the spread of their ideas.

Nepal has a population of more than 26 million people, made up of over 40 different races and tribes.The country offers such diversity that the visitor may experience any lifestyle from the stone age, in far west and high hills, to the jet age of Kathmandu. Hence, the diversity in the cuisines is unimaginable. Yet many of the cuisines unique to the tribes have remain undiscovered and clowly is diminishing.

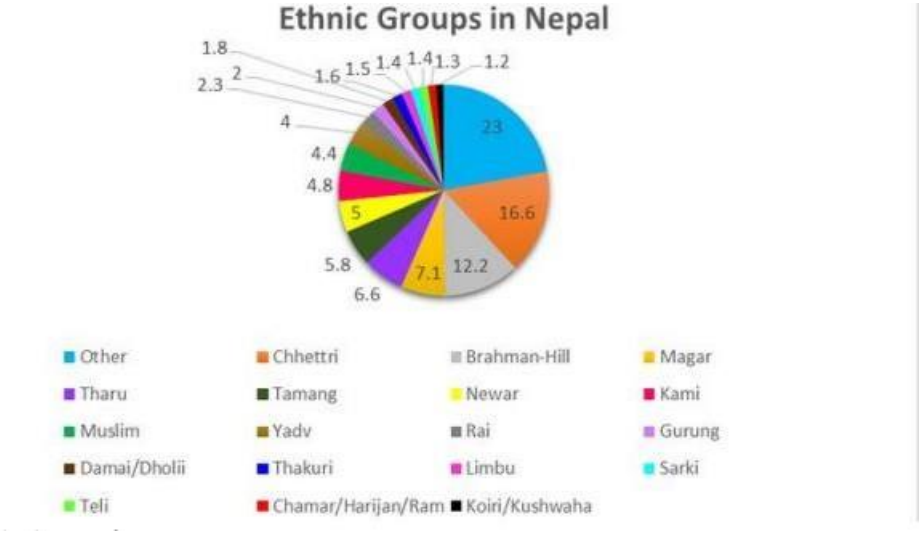


Figure 1-1:Ethnics group of Nepal

Some of the well-known cuisines of Nepal are the traditional Dal Bhat, Newari cuisines like Samaybajiand Bhoy, Thakali Cuisine. The epitome of Nepalese Cuisine recognition comes from the Momos, steamed dumplings filled with meat of choice. Even the local people of Nepal are content in believingthat the cuisine of Nepal is limited to Newar and Thakali cuisines with a wide share of momo and chowmein. But the diversity in terms of

cuisine in Nepal can be witnessed from region to region and is different in each ethnic group. The Tharu people have their buckwheat rotis whereas the Rai peoplehave their unique blood sausages. Hence, it is almost impossible for a person to go to kitchen to kitchento try the taste of every cuisine of every ethnicity in Nepal.

1.7. OBJECTIVES OF THE RESEARCH

- Proposing a culinary arts centre to bring together people from diverse background through food
- To create a place in city in an effort to make it vibrant social hub for all types of culinaryengagement
- Using architecture as a medium to add a physical dimension to food experience

1.8. PROPOSED METHODOLOGY

The followings are the research methods that will be used to collect the required data and the standards for the design.

- Background studies on
    - What the food industry has to offer in new periods
    - Qualities and attributes of public spaces and placemaking
- Case studies
- Identifying a suitable site for the project
    - Site analysis
- Design phase
    - Creating program for the identified activities
    - Concept Development
    - Zoning

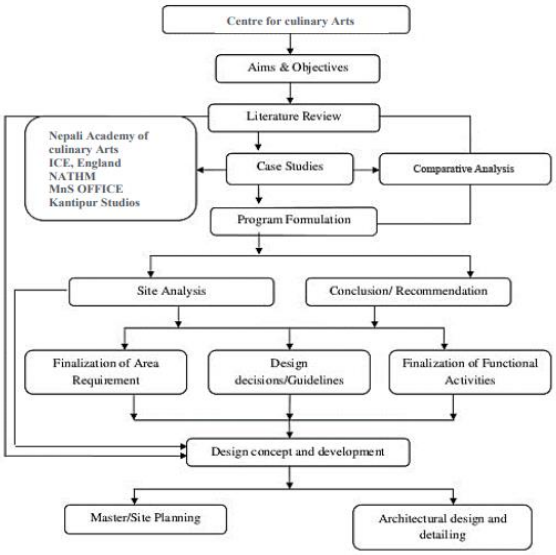


Figure 1-2: Methodology Chart

1.9. EXPECTED OUTCOME

After the completion of the project, the following results are expected to be achieved

- To provide design solution and incorporating the culinary center as public food plaza
- Using architecture as a medium giving physical dimension to the food culture
- To create a permeable open space that is versatile and inclusive in nature.

1.10. TARGET GROUP

The Center of culinary Institute in not meant to be a mere academy teaching culinary arts, but a hubfor professionals for the exchange of knowledge and share their experience in order to promote culinary research in context of Nepal and for their own personal and professional enrichment. The center will primarily aim to elevate the condition of potential yet neglected Nepalese cuisine. The center will be a borderline between the producers (local farmers), the artiste (chefs) and the consumers (local people and tourists). It acts as a social food hub where all these three basic entitiesof food can exchange ideas and influences which can help in the overall development of the food industry of the country. Hence, the Centre for Culinary arts will act as a space for the free exchangeof ideas, experiences between the producers, artiste and the consumers.

The direct users of the space are the students and the professional instructors who will use the facilityfull time. The researchers or other professional can be the indirect users who can use the research experimentation labs for the formulation of standard recipes. The students can use the restaurants services as a space to practice their skills and hence, the facility will be used full time by the students.The general public will be the indirect users as the facility will not be enclosed and permeable to physical interaction.

2. LITERATURE REVIEW

2.1. CULINARY ART

Culinary means “related to cooking” and arts refer to any broad area of interest. Thus, Culinary art is the art of preparing, cooking, presenting and serving food. It is the expression of flavorsand taste. The culinary arts industry is quickly becoming a respected occupation. There is an increasingdemand for skilled employees. Educational facilities can be utilized to showcase the work that is beingaccomplished and the progress of the students, or community cooperation can be of a different nature.Many schools have entered co-operative agreements with local businesses and industry, which enable students to learn work skills as part of the regular curriculum. These are some of the few countless areas that can be tied to Culinary Arts. Of all the areas related to Culinary Arts, food preparation is considered to be the most associated. Basically, Culinary Arts mainly deals with food preparation. There is a science that goes with the preparation of food. (•LLC, 2018)

2.2. ELEMENTS OF CULINARY ARTS

Some of the elements of culinary arts are as follows:

- **Color**: Color is not the most important element in culinary arts, but is vital to have in our dishes.Color is one of the things that makes our dish look good. Some chefs even add food coloring to their dishes to make it look appetizing, even though they know it isn’t healthy. Color also shows how delicious it is. For example: if we have bright red raspberries in front of us and dullgreen spinach, we’re obviously going to want to eat the colorful raspberries. (Müller, Vanleeuwen, Mandabach, & Harrington, 2009)
- **Taste**: Taste is the most vital element in culinary arts. This is because we want to make our food taste good. If we make our food taste good, our audience will like it and want to have more. Spices and herbs are helpful in dishes to help balance the dish and make the dish more interesting and less plain. (Müller, Vanleeuwen, Mandabach, & Harrington, 2009)
- **Flavors**: Flavor is almost similar like taste. We want flavors like sweet, sour, spicy, bitter andsalty. We don’t want a plain old dish on the table, we want dishes with flavors and something that makes it special. (Müller, Vanleeuwen, Mandabach, & Harrington, 2009)

- **Texture**: Texture is an important element. We want to have at least crunchiness, crispness, tenderness, chewiness or some kind of texture in our food. We want to have something that mashes with the taste.
- **Aroma**: Aroma is also necessary to have in our dish. For example, if we go into a restaurant and it smells really good, we'll probably want to order many things because we're possibly having a good appetite. Aroma also attracts and makes us think that the food tastes better thanit really is.
- **Style**: Style is very important for chefs. In other words, it's how they serve their dish to their customers. When some chefs make cakes, they make them into cool shapes depending upon the occasions.
- **Plating**: Plating is the principle of the element style. It's basically how we put things on the table. It's also what types of plates we use. For example: soup would be served in a bowl but for chicken would be served in a circular bowl with garlic on top of chicken.

2.3. HISTORY OF CULINARY ARTS

Throughout the centuries the way food is prepared, what we eat, and even how we eat has all changeddramatically. As culture changes so does our food. With the introduction of new technology and advancements there will always be new ways to prepare and enjoy food. But the most innovative culinary advancements are developed by Chefs who learn their craft very well, then reinvent it. Cookshave been making food for millennia, but the concept of going out to dinner at a restaurant and even the idea of professional chefs are rather new concepts. Both of the concepts have only been around little more than two centuries. (•LLC, 2018)

Restaurants comes from the French word "Restaurer" which means "To Restore". During the 16th century, the word restorative was used to describe rich and lightly flavored soups and stews capable of restoring lost strength by th guild members. Each guild had a monopoly on selling certain foods. First modern restaurant opened in 1765 when Monsieur Boulanger hung a sign advertising the sale ofhis special restorative soup. Other inns served food off premises as the main accommodation provided was sleep but Boulanger's served food "family style" and ate at communal tables within the establishment whose primary interest was dining. In 1782 Antoine Beauvilliers advanced the modernrestaurant with the Grande Taverne de Londres, which provided patrons

with a menu listing of available dishes, and used a trained wait staff to serve patrons at small individual settings.

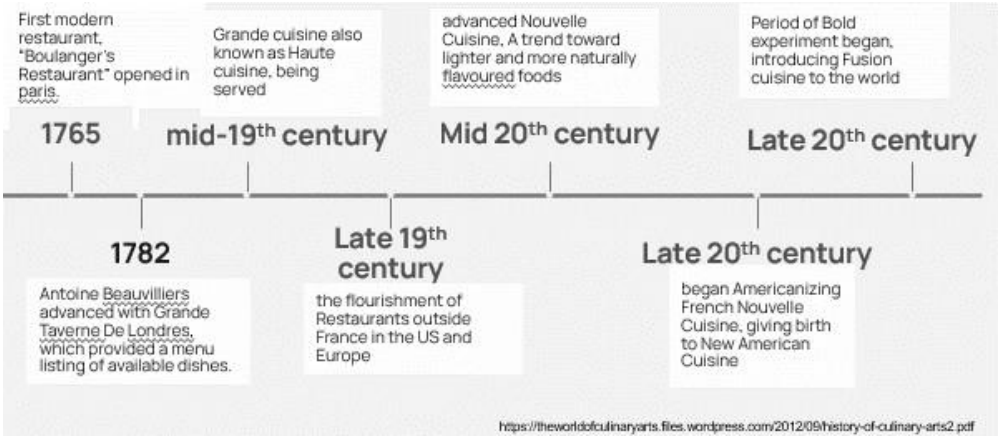


Figure 2-1: Timeline of History of Culinary Arts

After the French revolution, Guilds and their monopolies were abolished. Some chefs left the countrywhile few opened restaurants catering to the middle class. By the mid-19th century Grande cuisine, also known as haute cuisine, was being served at several restaurants in Paris. Grande cuisine is the rich, intricate, and elaborate cuisine perfected by Antonin Carême. He designed and prepared elaborate and elegant pastry and confectionary creations, garnished dishes with ornamental chatelets of colorful ingredients and intricately carved vegetables, and presented his creations on elaborate socles. He standardized the use of roux as a thickening agent, popularized cold cuisine, and designed kitchen tools, equipment and uniforms. He also wrote and illustrated important texts on the culinary arts.

By late 19th century Restaurants started opening in the United States and Europe. Charles Ran Hofer was the first internationally renowned chef of an American restaurant in New York. One of the finestrestaurants outside France was the dining room at London's Savoy Hotel, opened in 1898 by Cesar Ritz and Auguste Escoffier. Escoffier refined Carême'sgrande cuisine, creating cuisine Classique or classic cuisine. Fernand Point is credited with advancing the mid-20th century movement of nouvellecuisine or new cooking. A trend toward lighter, more naturally flavored and simply prepared foods. The chefs of the nouvelle movement emphasized healthful eating using fresh ingredients. They used the finest raw ingredients to produce perfect food that looked elegant and simply. They believed dishesshould be simple and garnishes and accompaniments must

be simple and match, and that cooking methods should be simple and direct whenever possible.

The 1970s saw the birth of New American cuisine, beginning in California but spreading across the United States, it stresses the use of fresh locally grown, seasonal produce and high-quality ingredients simply prepared in a fashion that preserves and emphasizes natural flavors. In 1971 Alice Waters opened Chez Panisse in Berkeley, California. Her goal was to serve fresh food, simply prepared. ChezPanisse and the many chefs who passed through its kitchen launched New American cuisine. Late 20thcentury and Early 21st century saw the period of Bold Experimentation where chefs began combining ingredients and preparation methods from a variety of cuisines, fusion cuisine. Farm-to-Table Movement grew concern for locally raised ingredients influenced chefs to serve fresh seasonal foods,that is produced within miles of their restaurant by the early 21st century. (•LLC, 2018)

2.4. CULINARY TRENDS OF TODAY

A shift in the stereotypes often associated with food industry workers-Celebrity chefs and television programming have breathed new life into the industry, changing it to on industry that hiresthe best and brightest from universities and culinary schools across the world.. On the other hand socialmedia and the Internet have also augmented this growth of the food sector resulting in multiple food start-ups and cooking studios Food entrepreneurs looking for shared kitchen spaces. Food enthusiastsenjoying cooking and various dining options, chefs and students wanting to innovate research and exhibit their culinary creations have become common. Today tourism and globalisation have helped cuisines transcend boundaries pushing the culinary standards to a whole new level A new concept of cooking has been born, where investigation and research hove become key to understand the present and future of gastronomy. (Sreekanth, 2016)

Figure 2-2: Trends In Culinary

2.5. PLACEMAKING THROUGH FOOD

To understand the process of placemaking through food, one must understand the phenomenonof placemaking in the first place. More than a physical space that connects other spaces, an open spacesalso plays an important role in tying up of intangibles on the site. It acts as a ethereal bridge that connects people across many differences. Food is indisputably one of the most important aspects of our everyday lives. Since the advent of the "Cultural-turn" in the sixties of the last century, many takenfor granted aspects of culture have come to be questioned in academic discourse. Food is a wonderfulexample of this.

While consumed on a daily basis, it is often considered as a mere sustenance. The consumption of foodis a common act which in spite of its importance for survival deceives us by its everydayness.

2.6. FOOD CULTURE

Food is the great unifier that connects us across different cultures and generations, and our foodculture is way that food integrates into our traditions, community, heritage, and connects us with our food system. We have all had those moments when we smelled something that reminded us of our childhood, or recreated a dish that we had abroad that immediately brought us back to that foreign place. Food can quite literally propel us to another time, another country, another culture without evenleaving your dinner table, which is why food culture is such an important way that we as people are able to connect and relate to one another. There are many different food cultures of the world, some more distinctive and globally famous than others, and some which very rarely leave their regional environment.

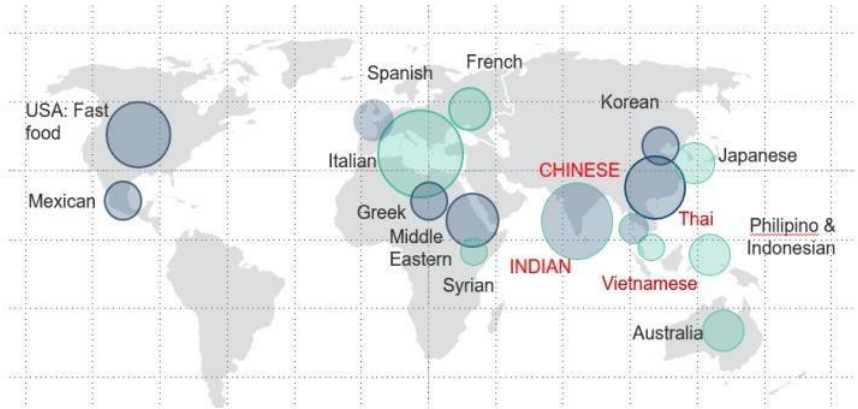


Figure 2-3:Cuisine around the world

Food culture (by definition) refers to the practices, attitudes, and beliefs as well as the networks and institutions surrounding the production, distribution, and consumption of food. Our food culture is asmuch about our ethnic cultural heritage, as it is about our environmental culture and the way our surrounding impact the foods we eat and the way we experience them. Different food cultures aroundthe world are influenced by many factors, but the most noticeable is arguably the way in which different cultures utilize specific ingredients and spices to evoke unique flavor profiles that define their food culture. Food cultures were founded on the way in which food was used to celebrate religious holidays, community events, and family gatherings. In other words, food was celebrated and respectedas an essential part of what makes humans human. But regardless of what ingredients, flavors, or traditions exist between the different food cultures of the world there are two things that act as connected threads woven throughout them all — community and pleasure. There isn't a food culture in the world that does not include these two parts of our food experience

2.7. FOOD CULTURE IN NEPAL

Nepal's food is as culturally diverse as it is geographically and ethnically. There is no better way to understand Nepal and Nepali people, than through their cuisine. Nepal does not have one distinct cooking style. However, food habits differ depending on the region. Nepali food has been influenced by Indian and Tibetan styles of cooking. Authentic Nepali taste is found in Newari and Thakali cuisines which are available in a large number of eateries spread all over the valley. Food is atthe center of any festivals and celebrations in Nepali culture. Wherever we go, our trip would be incomplete without getting an opportunity to taste the local cuisine. Nepal is the land of diverse cuisine.The vast number of ethnic groups have their own delicacies depending on the topography and climateof their region.

Figure 2-4: Newari Kitchen

Nepali food is classified as (a) Madhesi comprising of Maithili, Bhojpuri, Awadhi and Lohorung indigenous to the Eastern Nepal region (b) Janajati cuisine in the middle hills (c) Urbanized Newari cuisine from Kathmandu Valley (d) Thakali cuisine from the Himalayan lowland and (e) Himalayan cuisine, culturally close to trans Himalayan and Tibetan ethnic groups. The wealth of the Nepali foodneeds to be explored, analyzed and tasted to learn more about the country.

2.8. TYPOLOGIES OF EATERY

2.8.1. EAT STREET

It is located in commuting path between shopping and commercial hubs. Seatings are very informal, movable and less. This makes the movement faster. Street lights are the source of light. The ambience and settings are very chaotic and fast-moving. The opportunity to hangout in group is very less due to uncomfortable and congested space.

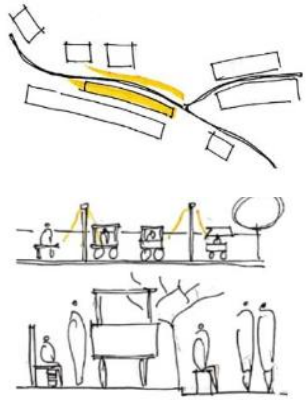


Figure 2-5: Sketch of Eat street

Figure 2-6: Eatstreet in Nepal

2.8.2. FAST FOOD RESTAURANT

It is located in commercial areas, busy market roads, tourist spots or parks. It is generally seen around our city. They are the quick service restaurants serving all class and groupsof people. The lighting is brightly lit as bright ambience affects the psychology of humans to eatand move faster. Also, they are made very attractive using bright colors.

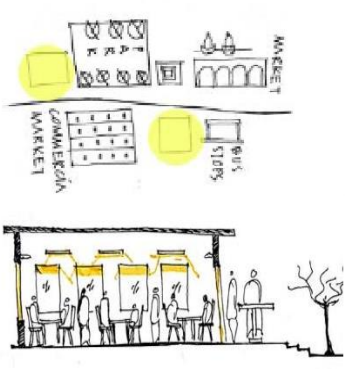


Figure 2-7: Sketch of QSR

Figure 2-8: QSR in Nepal

2.8.3. CAFÉ

It is located in high end neighborhood with the flow of high student crowd around. Different types of enclosures and space quality are given to users. Th ambiance is given moreattention and the setting is made relaxing and calm to make them stay longer. Different activitiesare provided in the café such as coworking, Library, exhibit space etc

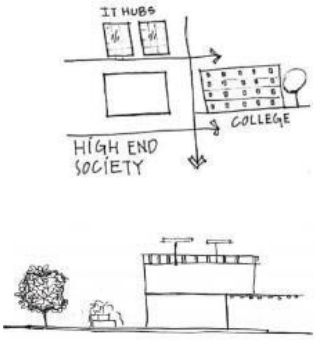


Figure 2-9: Sketch of Café

Figure 2-10: Cafe in Nepa

2.8.4. FINE DINING RESTAURANT

It is located in high end neighborhood with enhanced spatial quality. Seatings are closely placed and privacy is increased for the users. Dim lighting is used in the restaurants as it lets people sit and dine for long time. Other supporting entertaining arts like music, visual sessions are incorporated to build the ambience of the eatery.

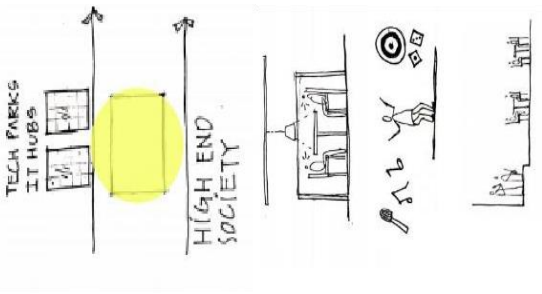


Figure 2-12: Sketch of Fine Dining Restaurant

Figure 2-11: Fine DiningRestaurant in Nepal

2.9. CUISINES OF NEPAL

Nepalese Cuisine is also known as cuisine of Himalayas, which bears its uniqueness by incorporatingthe two great culinary traditions of the region, Indian and Tibetan, into mainstream culinary of its own.The cultural and geographic diversity of Nepal provide ample space for a variety of cuisines based onethnicity, soil and climate. Nepal has resurrected its own unique cultural identity into a harmonious culture, combining different traditions of different indigenous cultures rooting on all corners of the country. A typical every day meal can be characterized by Bhat (Steamed Rice), Dal (Lentil soups) and Tarkali (Vegetable curry), also known as "The Trinity", supplemented by some meat preparations.Nepali food, which is simple and subtle in flavour, is prepared by using unique blend of common ingredients and spices. (Manandhar, 2021)

2.9.1 FEATURES OF NEPALESE CUISINE

Nepal has cultural ad geographical diversity which resulted in variety of Cuisine. It is multi-ethnic andmulti-cultural country. The ethnic group of Nepal has their own special Cuisine. Some features of Nepali ethnic and Regional Cuisines are:

1. Himalayan Cuisine

   Himalayan Cuisine is influenced culturally by Tibetan and closely related ethnic groups in the Himalaya and Trans-Himalaya. Buckwheat, Barley and Millet are important cold-tolerant grains often processed into noodles or tsampa which is flour ground from toasted grain. Potato is staple crop here and dishes are mainly made of Potato. (Manandhar, 2021)

2. Khas Cuisine

   It is typically hilly area Cuisine. Dal-Bhat-Tarkari is eaten two times a day. Similarly, the hillyarea is not so productive so the crop they grow don't last a year due to which other grains likewheat, maize Barley and Millet are popular. They make Gundruk, Sinki and Various FermentedPickle which are available throughout the year. (Manandhar, 2021)

3. Thakali Cuisine

   The Thakali are the people living in thak-khola Valley. Their cuisine is the fusion between Himalayan and Terai Cuisine. They have very distinct taste and food items are very tasty. Theyhave migrated to different places of Nepal and Flourished their Cuisine throughout the Nepal.

4. Newari Cuisine

The Newars are indigenous people living in capital of Nepal “Kathmandu”. Newari cuisine hasmore than 200 dishes with all dishes primary made from Buffalo. No part of Buffallo is wasted,every part is used in preparation of various dishes with different names. The dishes have distincttaste and flavour where Chhoila, Kacchila kwanti, Samay-baji are their signature dishes.

5. Terai Cuisine

Food in Terai refers to mirror cuisine such as Maithili cuisine in the east, Tharu cuisine in the west and Bhojpuri cuisine in the center and near west of Madhesh region of Nepal. Further west, there is Mughlai-influenced Awadhi cuisine – particularly eaten by the substantial Muslim population around Nepalganj. These diets can be more varied than in the Middle Hills because of greater variety of crops grown locally. (Manandhar, 2021) (Khanal, 2020)

6. Lohroung Cuisine

Lohorung are indigenous to eastern Nepal. They have variety of food in their cuisine made from local ingredients. Some of them are Tongba, Wachipa, Kinema, Yangpen and so on.

2.10. PRESENT SCENARIO OF CULINARY IN NEPAL

Nepal’s food is as culturally diverse as it is geographically and ethnically. But many of us are not aware of its richness and are more likely to be informed about the global cuisines than our own. Though food is an epitome of the culture and they have an intrinsic relationship, little attention is paidto understand, explore, and promote Nepali food culture, which defines who we are. If we had to eat out, where would we go? What would we choose? Korean, Japanese or may be Chinese? Nepal’s owncuisine isn’t an option that most would even consider. After all, Dal-bhat is a staple, something we all have at home anyway. But Nepali food goes beyond that, and there’s whole culinary world that we are unaware of. (Khanal, 2020)

Figure 2-14: Growing Trend of korean food in Nepal

Figure 2-13: Staple Dal-Bhat of nepal

On most travel guides of Nepal, the singularity and diversity of Nepali cuisine is just as highlighted as its mountains and natural beauty. These guides discuss the nutritional content and traditional significance of Nepali food and deem it an important part of the 'Nepali experience'. Considering this, one would assume that the Nepali cuisine rides high on the Nepali food market. It does but just as a staple. The local Nepali food in Nepal itself feels like a foreign cuisine. There are local eateries, in great numbers and spread widely but these places are hard to locate and the knowledge of their existence is limited to just the locals. These local eateries don't make up for ideal hangout spots and hygiene isn't always maintained and guaranteed.

With multi cuisine restaurants popping up left, right and center, Nepali food getting lost in the buzz thus the need to promote Nepali food has become even more important. Most Culinary school in Nepaldesign their curriculums mainly to encompass global cuisines. There isn't much documentation of Nepali food so there isn't much information to go by either, thus what is taught in culinary schools inNepal is limited to a few curries and basic dishes. Even in the final years of culinary school where people choose to specialize in a particular cuisine, rarely do people choose Nepali. It isn't a surprise the Nepali market is brimming with professionals who, in the words of Nepali food writers, can makea better lasagna than a good 'sel roti'.

With a surge in the numbers of food bloggers and reviewers, the interest in local food is growing. Andsocial media has power. It can lure hundreds of people to corners of the streets that sell local food or the small alleyways behind old temples that have sold traditional food for generations.

2.11. GASTRO-TOURISM

Food is a part of the destination marketing mix, because it helps to give a sense of place and allows tourists to literally taste the destination, coming directly into contact with local culture. Since we eat two or three times a day, gastronomy is the aspect of culture that tourists most frequently come into contact. They literally ingest local culture. Eating habits are differences that immediately become obvious: the time people eat, the way they eat and what they eat all become immediate points of difference upon entering a new culture. Food provides a direct connection with landscape because tourists can recognize origins of food. Most of the food tourism includes providing tourist with the charm and

taste of Local cuisine and leaving a embark on their minds so that they can distinguish thetaste and culture of the particular destination through the food of that place. (Shakya S. , 2019)

2.12. GASTRO-TOURISM IN NEPAL

Nepal is often associated with many things; the majestic mountains, the picturesque trekking routes, its rich culture and the wonderful people. However, Nepal is planning to become more than just those lately. It is slowly but steadily trying to become a bustling destination for foodies. Over the last couple of years, food is becoming an integral part of the tourism. Nepali food is easily accepted as very balanced, but there is a lot more to it than just a balanced meal. Packed with generations of stories and sentiment with a unique blend of many diverse cultures, the food here, much like the country itself, has cultivated a unique experience for tourists that has them wanting to return and experience those emotions repeatedly. Nepal on its own boasts a huge range of cuisines without taking into account the growing numbers of international cuisines that are slowly making their way into Nepali palate. But it is perhaps the increasing number of international cuisines that are hindering the growth of Nepali cuisine. This is not discrediting the wonderful international cuisines the country and its people have adopted but efforts to prioritize and grow Nepali cuisine is just as important. It is true that there is wider scope for economic growth with serving cuisines from foreign land at present. However, Nepali cuisines are not very far behind in terms of economic opportunities. We need to realize that tourists do not flock to the country to experience food they already have back home. We need to provide them with food that highlights the rich culture Nepal has to offer. (Shakya S. , 2019)

Figure 2-15: Delicacies of Nepalese Cuisine

2.13. CULINARY SCHOOL

Culinary school is an institution devoted to education in the art and science of cooing and food preparation. Some of the schools are dedicated to training professional chefs, others

Figure 2-16:Chef in Learning Kitchens

aimed at amateur enthusiasts with some being a mixture of the two. Before culinary schools were created, professional cooks acted as the teachers for individual students, which provided an atmosphere for chefs to learn in apprenticeship programs. The first school was founded and dedicated to culinary art in the late 1800s. Not until the 1940s did the concept of culinary education make it to mass audiences.Enrollment in culinary schools increased after the post-war period due to a booming economy and hasremained popular ever since. Historically, the culinary craft was passed from one generation to the next, in its simplest form, from parent to child, and in the case of professional cooking from master chef to apprentice often in a formalized guild system. (•LLC, 2018)

2.14. HISTORY OF CULINARY SCHOOLS

The history of culinary education began as an internship and in 1929, the first American Culinary Federation was founded which lead to culinary arts as a subject in the Yale university, where New Haven Institute was founded which formally taught culinary education for the first time in the world. In 1988, the Shaw Guide published "The Guide to Cooking Schools," which is considered to be first comprehensive list of culinary arts programs offered around world. An finally on 1993, Food Networkbegan broadcasting TV shows nationwide, helping to create the modern celebrity chef. (•LLC, 2018)

2.15. INTRODUCTION TO CHEF

Figure 2-17: Chef

Chef is the term derived from the French term Chef de Cuisine, which means Director or Head of Kitchen. They are the trained professional cook who is proficient in all aspects of food preparation, often focusing on a particular cuisine. Different term that include chef in their titles

- Executive Chef: one in charge of the kitchen
- Sous Chef: Usually the assistant to executive chef
- Chef de Partie: Known as Station chef, in charge of particular production of food

2.16. DEMAND OF CHEF

Food is more than just a basic necessity for survival. It's also something that so many people find pleasure in. Even if you aren't a proclaimed "foodie" most of us can admit to having great memories made in the kitchen or around a table. From small dinners to large events, today the expectations are afar cry from the rubber chicken and dry filet that was once anticipated. There's no doubt that encounters with food are taking on greater importance. Especially as more people are leaning on food prepared outside the home. They are expecting top-quality experiences and incredible taste every time they eat.

Figure 2-18: Chef

The take of culinary arts has taken drastic changes in the past decades and now has become one of the most renowned profession in the service industry. Each year thousand

o young enthusiasts become chefs who join the industry due to personal interest and passion. Coming towards the present time, people understand more about the Chef as respectable profession. Their role extends beyond managingother cooks to also planning the menus ensuring that presentation is on point and even developing new,creative recipes for those unique meals everyone craves. (Chef, 2022)

2.17. FOOD PRESENTATION

We “eat” in more ways than one. Before we eat with our mouths, we eat with our eyes. Visual appealis just as important as the tasting experience of the food. Before you even take that first bite, you’ve already judged the meal in front of you. It is the beauty of the plated dish that entices you to take a bite. The design in plating makes the experience of food more than just eating and enjoying, but furtherinto an expression of craftsmanship and art. Using the form, texture, and color to invoke emotions andeven tell a story. Food is a creative means that is universal, and plating is the mode of introduction to the meal itself, the chef behind it, and the cultures around the world that influenced it. Culinary art through plating greatly integrates main senses into the food experience. (w., 2015)

Figure 2-19: Food Art in presentation

Touching the handy instruments and ingredients, smelling the wafts of all the various aromas, hearingthe prep work for the ingredients or the sound of the food being cooked, but ultimately, seeing what you can make from nothing and tasting the culinary creation you’ve made. Food is altogether an art. Through food art, the cook is an artist, the food their medium, and the plate their canvas. (w., 2015)

2.18. FOOD HYGIENE

These good practices prevent customers from suffering food poisoning and allergic reactions, help minimize food waste, and boost efficiency. But above all, they make your food premises a pleasant, safe place to eat for customers, which means they’ll likely

return and recommend you to others. Applying nutrition principles to food preparation transforms learning into a delicious, nutritious experience by allowing people to actually see, feel, and taste what nutrition is all about. (w., 2015)

Figure 2-20: 4C's of Food Hygiene

One way of implementing culinary nutrition is through hands-on education programs. While there are numerous nutrition education programs and just as many cooking programs, there are very few that pair the two fields together. Although the literature is limited, researchers have begun to evaluate the effects of implementing cooking activities into nutrition education programs, and they have found preliminary evidence signifying that an increase in cooking knowledge and skills can help improve eating behaviors. (w., 2015).

2.19. ARCHITECTURAL REQUIREMENTS

Culinary art center is a space where the students can explore the food culture and practice the art of food production. The space itself is a challenge in order to fulfil the diverse requirement of the cookingspace. Therefore, in the design point of view few things should be kept into consideration for the production of quality space. (Panthi, 2016)

2.19.1. THERMAL REQUIREMENT OF SPACE

Temperature control system together with provision for control of heat escape is must in the culinaryspaces. Separate ducts should be provided for the ventilation if needed in order to maintain the indoorair quality.

2.19.2. SERVICES

Separate circulation for the passage of food items and separate circulation control system should be considered for the serving of the food items. The waste products that is produced from the spaces should be considered and special circulation and provision should be provided for it proper management.

2.19.3. DESIGN STYLE

Unique style of design complimenting the culinary culture and bringing a unique sense of practice inthe field of architecture. Modern concept of design is mostly followed for this type of space with sustainable concept in design.

2.19.4. SUSTAINABLE FEATURES

Sustainability has been a major important factor for most of the building today. Architects are developing new initiatives for new sustainability approaches with each building. Since, buildings areone of he most energy consuming things, it becomes important for architect's to realize the need for designing energy efficient methods to ensure that the building consumes less energy. Each year manybuildings get awarded with prestigious LEED awards. Some of the initiatives taken in account to receive he LEED award by buildings are:

- Use of maximum natural lighting
- Roof gardens
- Sensory lights
- Waterless urinals and low-flow toilets.
- PVC cells on the facade

- Arroyo landscaping to treat storm water runoff.
- Drought tolerant and native landscaping.
- Use of low odor and low emission paints, carpeting and finishes to improve overall air quality.
- High efficiency heating and ventilation system. (Panthi, 2016)

2.20. BUILDING COMPONENT

The spatial requirements of the architectural space will be based on the targeted user groups and thevarious functions to be enrolled in the architectural building.

The priority of each function based on the space segregated is:

- Research: 20%
- Academic: 40%
- Commercial: 35%
- Service:5%

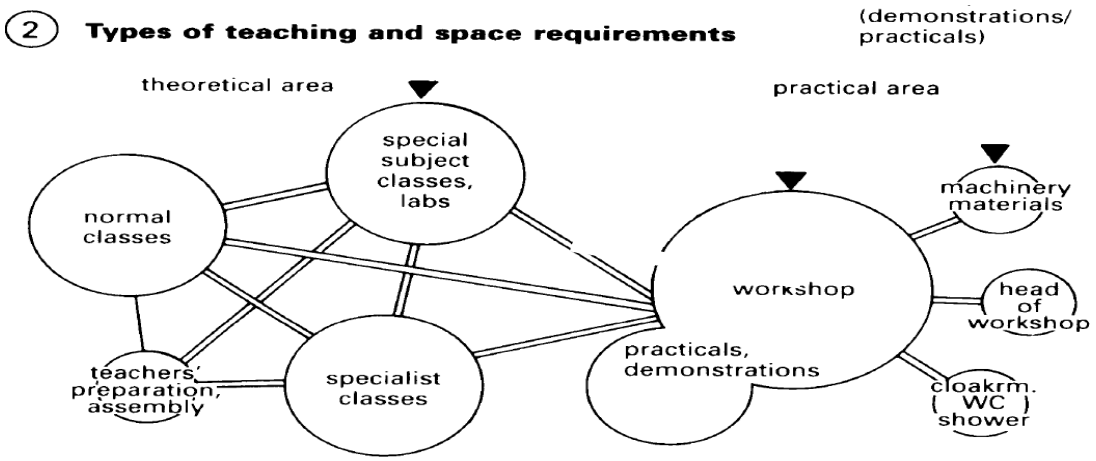


Figure 2-21: Flow of spaces in a school

Source: Neufert Architect's Data, page 314

The basic spatial zoning of an academic institution shows that separate access is required for theoreticaland practical classes along with a separate access for machinery. Direct linkages of all theoretical classrooms is necessary with the workshops and practical demonstrations. (Panthi, 2016)

2.20.1. GENERAL CIRCULATION

General corridor width: 1.5 – 1.8 m

- Aisles leading to the main exit from the areas Which carry substantial traffic: 1.5 m
- For moderate amount of traffic: 1.2 m
- Aisles between rows of desk: 0.9 m
- Space per person: 1.5 m2 per person
- Area per floor: 450m2 to 540m2
- Floor height = 2.7m
- High clear floor height can be thermally uncomfortable & uses high energy
- In case of false ceiling, min. Floor height = 3.9M
- W/ 1'-6" X 1'-6" DUCT

Well-designed entrance foyers provide a transition from the outside to the inside, and can help orientate people once inside the building. Clear view in from outside is helpful. The area should be well lit, with plenty of circulation space. Routes to reception counters, lifts, stairs and WCs should beeasily visible, clearly defined and unobstructed. Entrances to buildings should be placed in a logical relationship within the routes that serve them and be easily distinguishable from the façade.

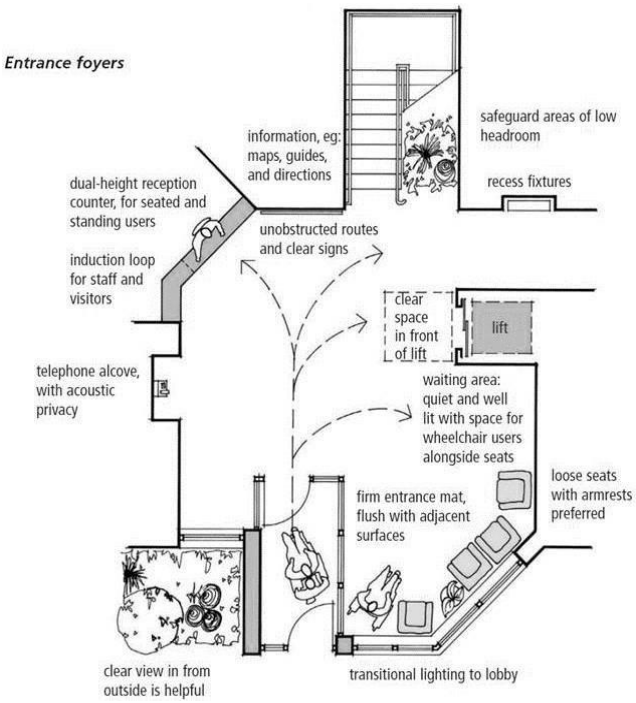


Figure 2-23: Entrance Foyer

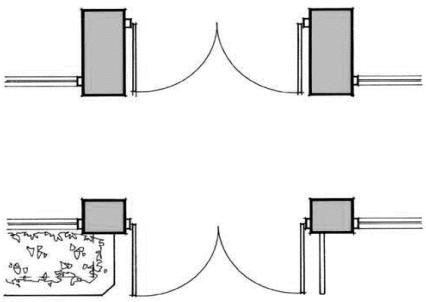


Figure 2-22: Position of Door Entry System

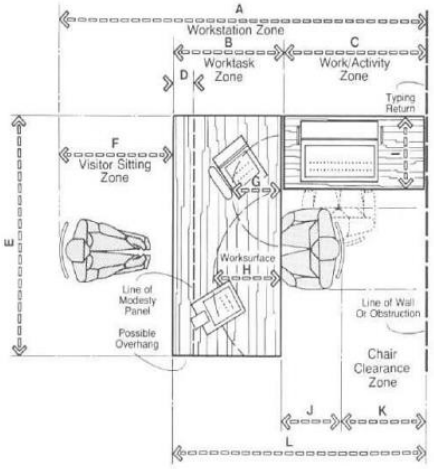
2.20.2. ADMINISTRATION

The administration space in the college premises is the controlling center. It also acts as a contact pointfor parents, students, and faculty members. Here the institutional records are kept and recorded, budgets are established books are kept and students are counseled. The planning of administration section should have efficient working practices and good internal communication.

- Staff room – 7-9m2 per person (individual 10m2 minimum)
- Additional spaces – Computer –2m2
- Photocopy – 2m2
- File storage --- File cabinet –6-8m2 per 1000 files
- Box Files – 3m2 per 100 files

2.20.3. RECEPTION

This space comes under supporting spaces serve the operation of the whole building, and may also present a public face that helps in balancing control and welcome, with a reception desk, visitors seating and display; provision for security and deliveries. Reception areas are the heart of the organization. The receptionist may be responsible for office co-ordination, booking of space, as well as welcoming and directing visitors. Consideration includes the relationship between the entrance and reception, visitor seating, toilets and refreshment, and display area of the function of organization.



	in	cm
A	90–126	228.6–320.0
B	30–36	76.2–91.4
C	30–48	76.2–121.9
D	6–12	15.2–30.5
E	60–72	152.4–182.9
F	30–42	76.2–106.7
G	14–18	35.6–45.7
H	16–20	40.6–50.8
I	18–22	45.7–55.9
J	18–24	45.7–61.0
K	6–24	15.2–61.0
L	60–84	152.4–213.4
M	24–30	61.0–76.2
N	29–30	73.7–76.2
O	15–18	38.1–45.7

Figure 2-24: Reception Space Requirements

2.20.4. OFFICE SPACES

An American study indicated the following reqirements for floor area and space to operate office equipment (personal space + an additional 50cm on all sides):

- Office employees – 4.5m2
- Secratery- 6.5m2
- Departmental Manager- 9.3m2
- Director- 13.40m2
- Assistant Vice President- 18.50m2
- Vice president – 28.00m2

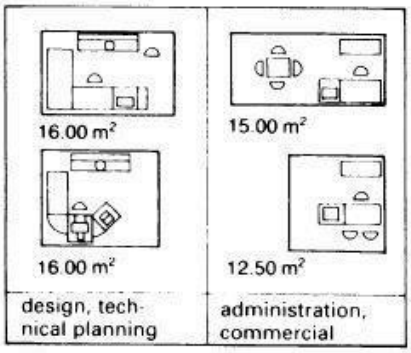


Figure 2-25: Small office Staff room

2.20.5. STAFF ROOM

For office staffs, spaces required according to their post are as follows:

- Professor: 20-24m2
- Lecturer: 15m2
- Assistants: 20m2
- Minimum working space for a staff is 8m2

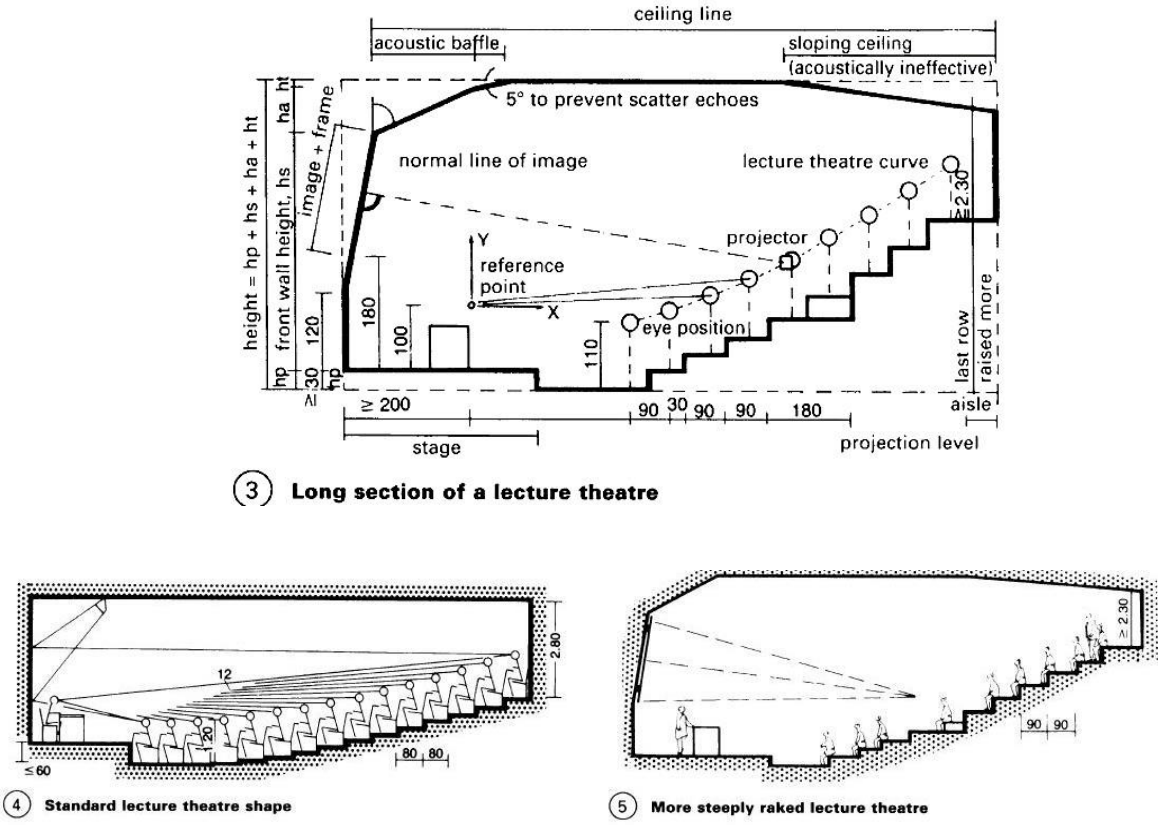
2.20.6. PANTRY

A pantry is a room where beverages, food, and sometimes dishes, household cleaning chemicals, linens, or provisions are stored. Food and beverage pantries serve in an ancillary capacity to the kitchen.

In case of offices, Considering the number of hours that we spend at work every day, it is safe to say that for many, the workplace has become a second home. And no home is complete without an effective (and fully-stocked) pantry. (Panthi, 2016)

2.20.7. LECTURE ROOMS

A lecture hall (or lecture theatre) is a large room used for instruction, typically ata college or university. Unlike a traditional classroom with a capacity normally between one and fifty,the capacity of lecture halls is typically measured in the hundreds. Lecture halls almost always have a pitched floor, so that those in the rear are sat higher than those at the front, allowing them to see thelecturer. Lecture halls differ from seminar rooms in that they allow for little versatility in use, althoughthey are no less flexible than, for example, chemistry laboratories. Experimentation, group work, and other contemporary educational methods are not practicable in a lecture hall. On the other hand, lecture halls are excellent for focusing the attention of a large group on a single point, either an instructor or an audio-visual presentation, and modern lecture halls often feature audio-visualequipment. (Panthi, 2016)



3 **Long section of a lecture theatre**

4 **Standard lecture theatre shape**

5 **More steeply raked lecture theatre**

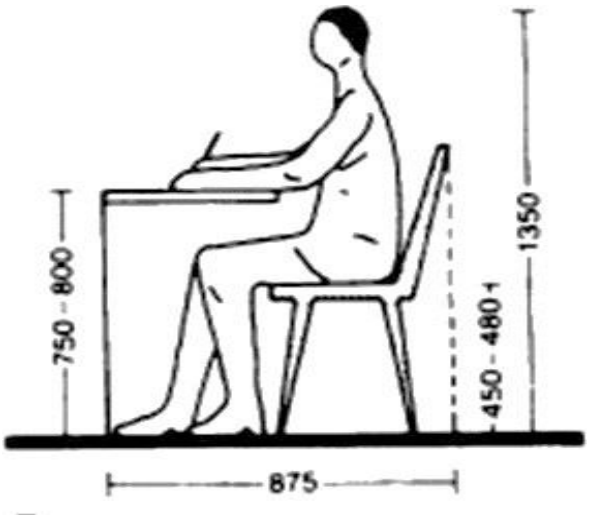
Figure 2-26: Design considerations for lecture room

Source: Neufert's Architect Data

2.20.8. CLASSROOMS

Teaching areas divided according to type of teaching and their space requirements. General-purpose teaching areas occupy 10-20% of the space. General classrooms as normal with 50-60 m2, small classrooms 45-50m2, oversize classrooms 85m2, possibly open-plan classrooms doubling as a film or lecture hall of 100-200 m2. Building requirements, furnishings and fittings basically the same as for general school centres and comprehensive schools. An assembly room of 20m2 per 5 normal classes. For theoretical classes, regular classrooms may be used.

- Normal size: 50-60 sq.m
- Small Size: 45-50 sq.m
- 3'6" between seat centres laterally
- 4'6" between the end seat centres and side walls
- 10 feet between front-seat centres and the front chalkboard
- Light level in a windowless lecture theatre: 6001x.
- North light is desired in classrooms. (Panthi, 2016)



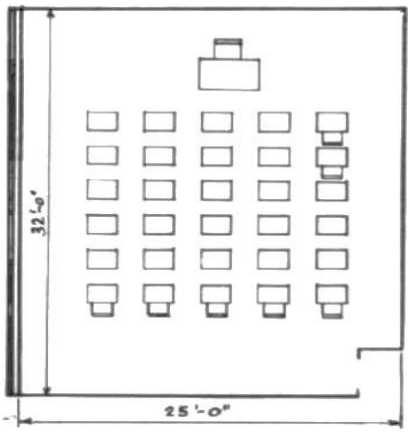


Figure 2-27: Classroom size for 30

Figure 2-28:Considerations while designing classroom

2.20.9. LIBRARY

Libraries perform a range of functions in society. Academic libraries, for example, obtain, collect andstore literature for education and research purposes, and are usually open to the general public. Publiclibraries provide communities with a wide choice of more general literature and other information media, with as much as possible displayed on open shelves. The functions of academic and public libraries are often combined in a single library in larger towns. National libraries, for example, may house collections of literature and historical documentation produced in one country or region (deposit copies) and are open to the public, whereas specialist libraries for the collection of literatureand media in limited subject areas often have limited access. (Panthi, 2016)

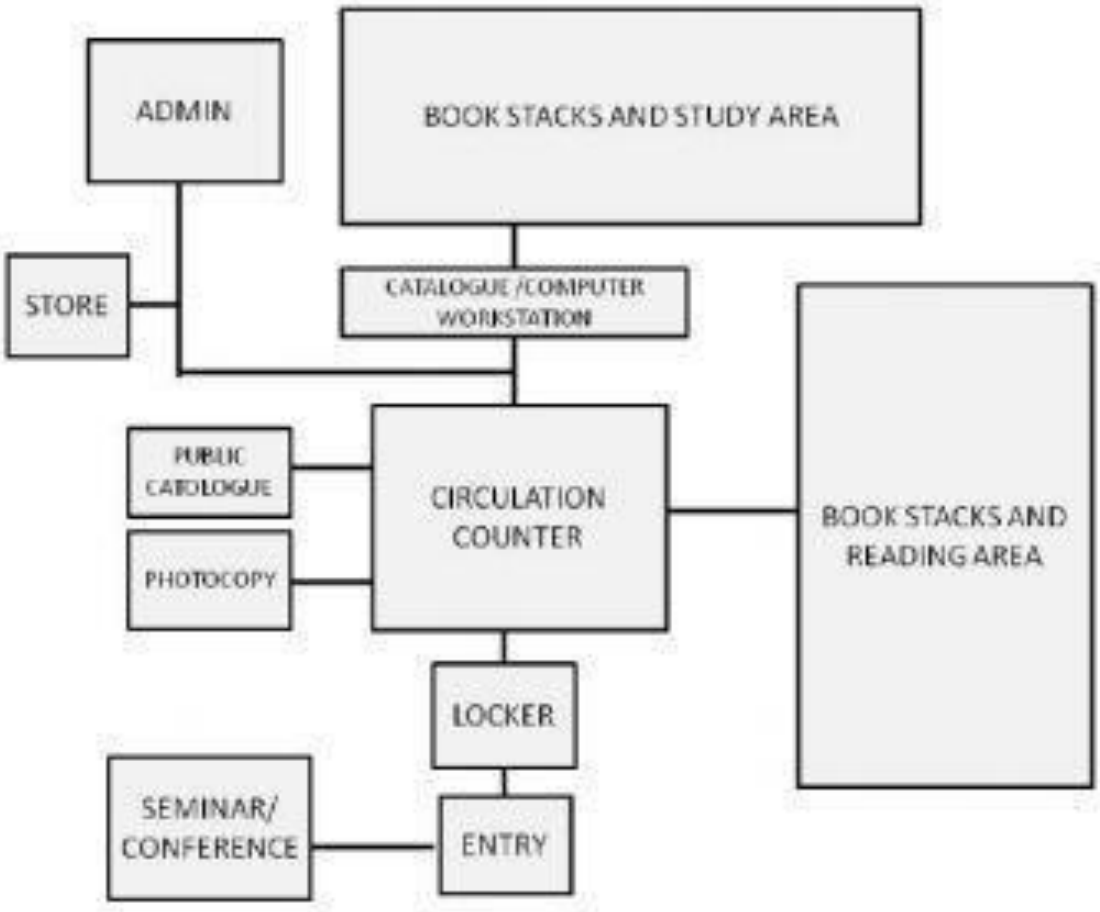


Figure 2-29:Functional layout of library

- Area required for a simple reading/working is 2.5m2 and that for a PC or individual work placeis greater than 4.0m2.
- The circulation routes should be >1.2m wide, & clear spaces between shelves at least 1.3-1.4mwide (or in accordance with local regulations). Crossings and overlapping of routes for users, staff and book transport should be avoided.

- Book shelves should be protected from daylight.
- Reading spaces and Work spaces should preferably be in daylight areas.
- Reading section should be easily accessible.
- Overlapping of different routes should be avoided.
- 20% of total area should be used for circulation and utilities.
- Provision of emergency exits should be provided.

Access

There are two forms of library in relation to book storage:

- Closed access, where the general users have to ask for the material they need.
- Open access, where some or most of the material is on open shelves on which the users may browse.Even in this type of library, however, some closed storage will be required for valuable stock and forobsolescent material.

Administrative

This is the area from where overall management of library is carried out. The office spaces and othermanagement spaces are provided under this area. Every operation of library is guided by administration section. Administration section is segregated and hidden from other areas of library where normally only staffs will have access.

The office areas include:

- Chief librarian's office
- Deputy librarian's office
- Assistant librarian's office
- Account section
- Technical storage
- Stationary

Shelving

Ideally, the design should include large, open, extendible multipurpose areas, which are roughly square, and organized horizontally rather than vertically, and an inviting entrance. Areas for adult users can have five or six shelf levels (maximum reach 1.80 m); in the children's area there should be four shelf levels with a reach height of around 1.20 m. Shelf aisles should not be more than 3 m long, and can also be used to produce niches and exhibition stands. Book transport should be with book trolleys 920 mm x 990 mm x 500 mm (D x H X W). The goods elevator should be at the service entrance, and larger

libraries should also have book conveyors. (Panthi, 2016)

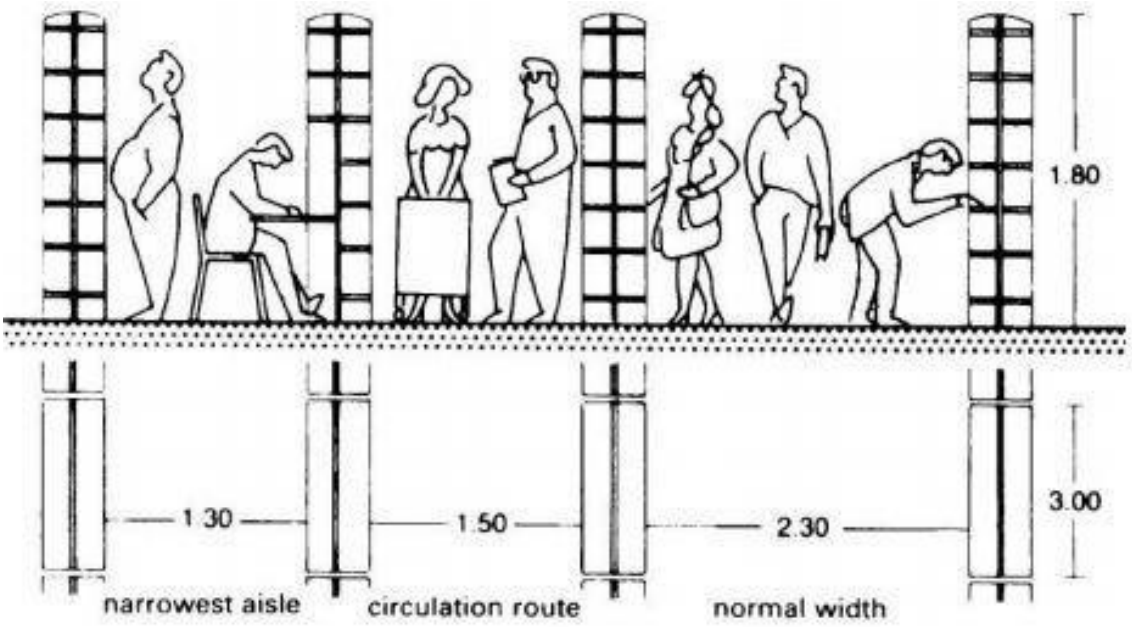


Figure 2-30: Standard Shelf height

Lighting

Lighting is one of the most important considerations while designing a library.

Natural lighting is the best option for any library design but in case the space does not have access tonatural lighting, artificial lighting is provided:

- Administration block: 250-500 lux
- Reading room without individual light: 300-800 lux
- Non-work rooms 100-300 lux
- Shelving area: 150-300 lux

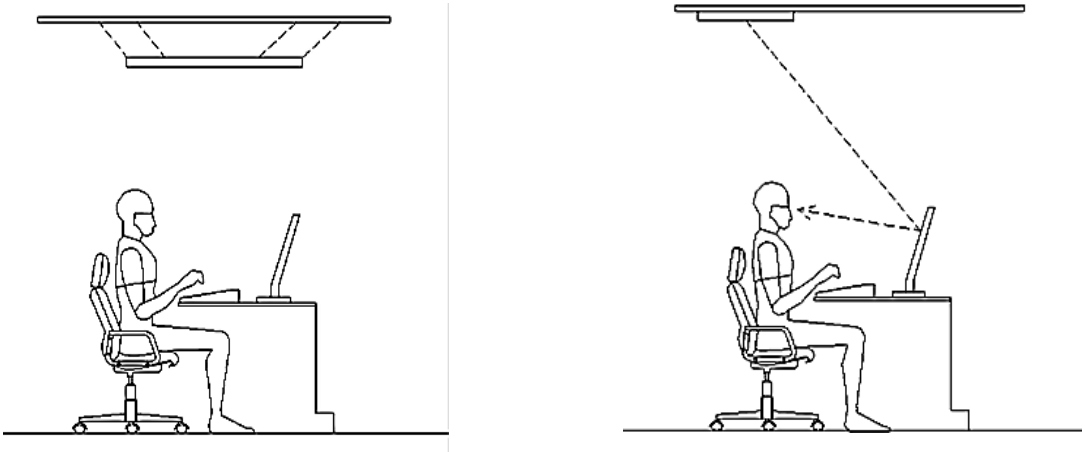


Figure 2-31: Artificial lighting in Library

2.20.10. KITCHEN

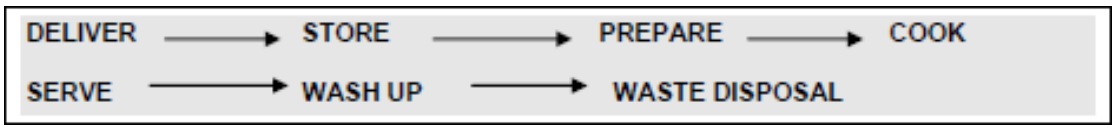
It is important to understand the workflow of the jobs being done in a kitchen in order to plan kitcheneffectively. Time and motion study is carried out to see the feasibility of laying out the machines andequipment so that the staff does not have to move around too much while cooking, otherwise it will cause fatigue and accidents.

The capacity of the kitchen is primarily dependent on the number of customer seats, customer expectations (type, extent and quality of the meals offered) and the proportion of raw materials whichhave to be freshly prepared (as opposed to ready-prepared food), as well as the frequency of customerchanges over the whole day or at busy periods (consumer frequency). Kitchens can be divided into sections and they are:

- Dry areas: It is for storage purpose.
- Wet areas: It is used for the purpose of fish preparation, vegetable preparation, butchery andcold preparation.
- Hot wet areas: It is used for boiling, poaching and steaming.
- Hot dry areas: It is used for frying, roasting and grilling.
- Dirty areas: It is used for refuse, pot wash and plate wash (Shakya R. , 2018)

General Layout of Kitchen Department

Kitchen is a busy place and cross-traffic can really hamper the operations. Planning a kitchen entailsmuch more than just placement of equipment in its place. A well-planned operation will always followa systematic procedure i.e.



Well-planned kitchen operations would always follow a basic three-flow pattern, which would be back- front-back. All the raw materials are received at the kitchen (back of the operation) then processed and sent to the restaurant (front) for consumption. The leftover unusable food is brought back and disposed as garbage. It would be ideal to have straight lines of production to speed up the service to the guests, but it is rarely achieved. The service team usually picks up food from a designated space in the kitchen often referred to as ‘pass window’. This space in the kitchen restrictsthe entry of service staff beyond this point.

- Receiving area: It is a place where the goods are received. This place is not only used to receiveraw food commodities, but also to offload all the supplies.
- Food storage: It should be near to the receiving area and the user department. It should have walk-in refrigerator and fire extinguishers in the same area. The shelves should be 3” away from the wall and 6” above the ground. It should have different shelves for the ingredients which have code numbers and labels. Layout of store is crucial as it should be very well ventilated and temperature controlled so that the commodities are stored safely for consumption. It should have enough space for the trolleys to move around. (Shakya R. , 2018)

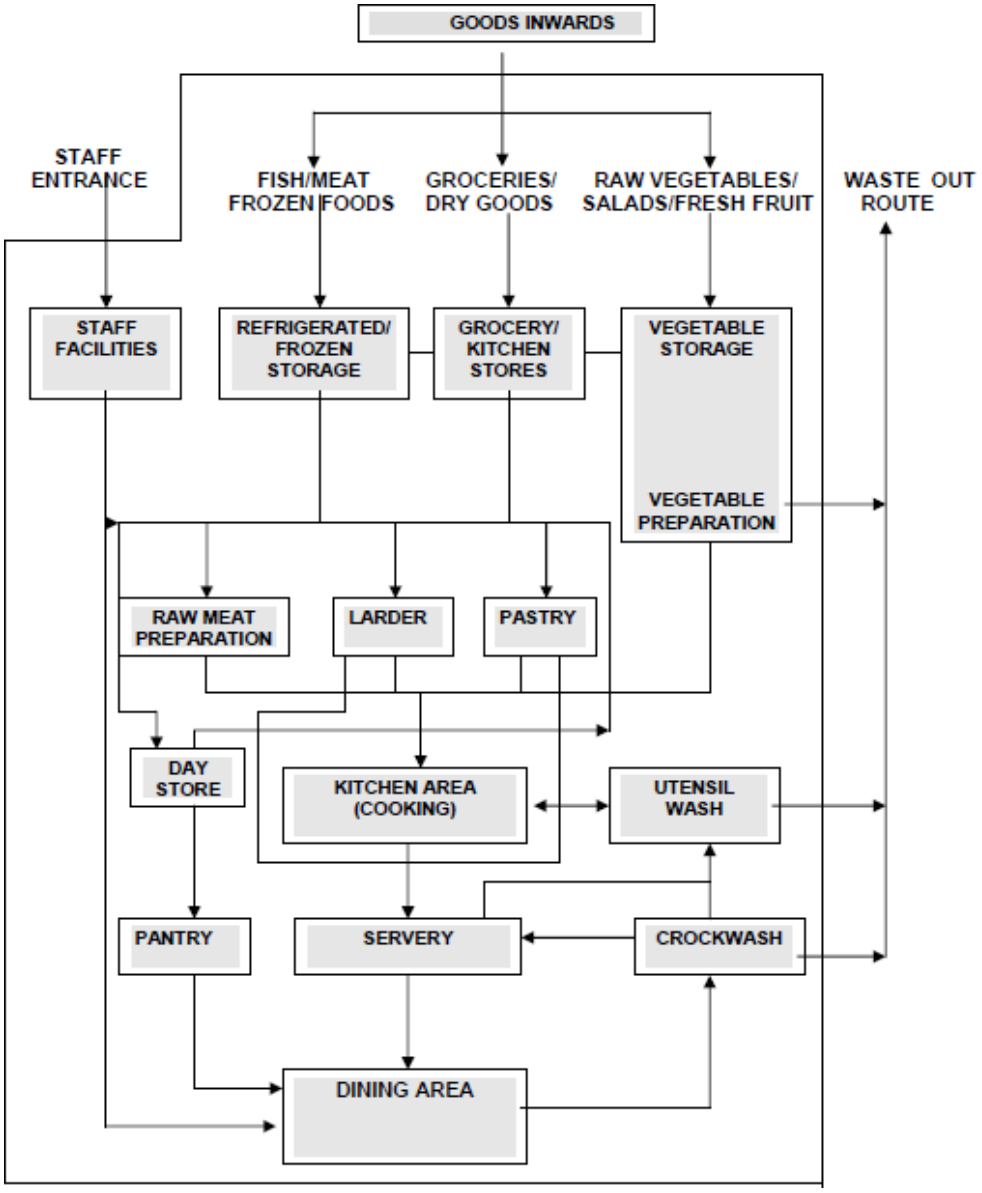


Figure 2-32:General work flow pattern in a kitchen

Source: Commercial kitchen Design by Minnesota Institute for Sustainable Agriculture

The layout must ensure a continuous work flow in one direction in order that cross-over of foods andany cross-contamination is avoided. The staff should not hamper each other by having to cross each other's paths more than is absolutely necessary. Actual work-top areas should be adequate in size forthe preparation process and should be so designed that the food handler has all equipment. (Shakya R. , 2018)

Planning and layout of the cooking area

- Small Kitchen

The layout for the cooking area can be chosen as per amount of equipment required, within the constraints of the building shape and size, and the location of services. The most common are mentioned below:

- Island Groupings

  In an island arrangement, equipment is placed back-to-back in the center of the cooking area. There will need to be sufficient space to allow for this, including adequate gangways around the equipment and space to place other items along the walls

- Wall siting

  An alternative arrangement involves siting equipment along walls. This arrangement is possible wheretravel distances are reduced and normally occurs in smaller premises (Or sections thereof).

- L or U-shaped layouts

  L or U-shaped arrangements create self-contained sections that discourage entry by non-authorized staff and can promote efficient working, with distance reduced between work centers. (Shakya R. , 2018)

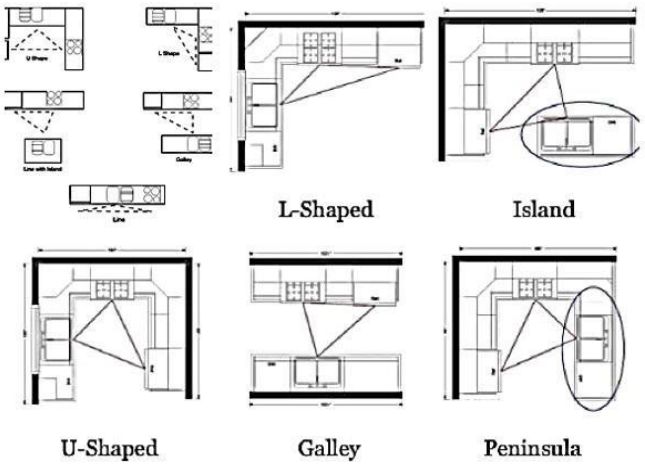


Figure 2-33: Types of island

The Kitchen environment

- **Space**: 11.32m3 per person, discounting height in excess of 3m (10ft) is required.
- **Humidity**: A humid atmosphere creates side effects such as food deterioration, infestation risk, condensation on walls and slippery floors. Anything higher than 60% humidity lowers productivity. Therefore provision for replacement of extracted air with fresh air is essential.
- **Temperature**: No higher than 200C-260C (68-79F) is desirable for maximum working efficiency and comfort with 160C -180C (61-64F) in preparation areas.
- **Noise**: Conversation should be possible within 4m (13f
- **Light**: Minimum legal level in preparation areas is 20 lumens per sq. ft. with up to 38lumens preferable in all areas. Every kitchen must be well illuminated to prevent accidents, increase efficiency, facilitate quality control and prevent waste. Fluorescent light fixtures are advisable for their efficiency and cool operating temperatures.
- **Ventilation**: Air change of a minimum of 30 times an hour for the cooking environment, 50 where there is a low ceiling and 60 for specialized cooking creating intense heat and smoke such as tandoori. Ventilation is of great importance in any kitchen. It prevents odors from penetrating the dining area and increase the well-being of cooks. This in turn improves quality and

efficiency. Some operators actually air condition their kitchen with laudable results. A ventilation system consists of the collection device (canopy) and vehicle to move the air (motor). Canopies are equipped with filters, ofwhich there are three types and they are wire mesh, baffle and liquid. All filters must be thoroughly cleaned at regular intervals to reduce fire hazards, as they collect grease. The size of the canopy and motor depends on the size of the kitchen. Canopies must overhang cooking equipment on both sides by at least 8" (20cm) in most jurisdiction.

- **Maintenance**: The kitchens should be swept during the day, given soap/detergent and water treatment after service and any spillage should be cleaned up immediately. At night, the ceilings, floors and walls should be cleaned properly.
- **Floor coverings**: Kitchen floors must be non-slip to prevent accidents. Tile coverings are prone tocracking and warping due to constant moisture present. If tiles are used, they should be covered witha non-slip coating. Continuous non-slip floor covering containing stone chips is the most suitable. It can be applied quickly and inexpensively. They are also easy to clean and prevent insect infection.
- **Wall coverings**: Kitchen walls can be covered with tiles or durable high gloss finish paint. Tiles are initially expensive, but are durable and easy to clean. High gloss finish paint is more expensive inthe long run and less sanitary. (Panthi, 2016)

2.20.11. COMMERCIAL KITCHEN

Commercial kitchens are found in restaurants, cafeterias, hotels, hospitals, educational and workplace facilities, army barracks, and similar establishments. These kitchens are generally larger and equipped with bigger and more heavy-duty equipment than a residential kitchen. For example, a large restaurant may have a huge walk-in refrigerator and a large commercial dishwasher machine. In developed countries, commercial kitchens are generally subject to public health laws. They are inspected periodically by public-health officials, and forced to close if they do not meet hygienic requirements mandated by law. (Panthi, 2016)

Structure:
Building

- The building must be of sound construction and of an adequate size to accommodate the equipment, food and food related products and the various activities involved with operating afood handling establishment.
- All exterior doors and windows must be tight fitting (preferably self-closing) and capable of restricting the entrance of insects and rodents.
- If the food handling establishment will utilize below grade occupancy for any food preparationor processing activities or food storage, there may be additional requirements by the Public Health Inspector. Contact your Public Health Inspector for further information

Floors

- Floors and floor coverings of all food preparation areas, food storage areas, equipment and utensilwashing areas and walk-in-refrigeration units shall be constructed of smooth, impervious and durable material which is either seamless or with seams that are heat-sealed or chemically bonded.
- Floor coverings in food preparation areas, equipment and utensil washing areas must be coved andsealed at all floor and wall junctions to a height of 10cms (4 inches).
- All floors in washrooms must be made of impervious durable materials and wall and floor junctions coved and sealed.

List of Approved Floor Coverings

	Vinyl Tiles	Quarry Tiles	Sealed Concrete	Poured Seamless	Commercial Sheet Vinyl (seamless)
Kitchen – Cooking area/ Food prep area		✓	✓	✓	✓
Dishwashing		✓	✓	✓	✓
Dry storage	✓	✓	✓	✓	✓
Serving Area	✓	✓	✓	✓	✓
Washrooms		✓	✓	✓	✓
Walk-in refrigerators		✓	✓	✓	✓

Figure 2-34: Floor Coverings

Source: Design Guideline for construction of food handling business by Manitoba

Walls, Partitions and Ceilings

- All walls and partitions in food preparation areas, equipment and utensils washing areas and walk-in refrigeration units must be of a smooth non-absorbent finish and easily cleanable and durable for the purpose intended. (Panthi, 2016)

- Studs, joists and rafters in food preparation areas, equipment and utensil washing areas andwalk-in refrigeration units must be covered and not exposed.
- Ceilings in all food preparation, equipment and utensil washing areas must be of a smooth non-absorbent finish and easy to clean. Where a T-bar ceiling is used the
- inserts must be non-perforated and plastic coated or have another finish that is nonabsorbentand washable.
- All finishing materials should be of commercial grade quality. (Panthi, 2016)

Examples of Approved Wall Surfaces

	Glazed Surface	Concrete Filled Epoxy Paint	Drywall with Epoxy Paint	Plastic/ Fiberglass Wall Panels	Stainless Steel or Aluminum
Kitchen - cooking area			✓	✓	✓
Kitchen – food prep area	✓	✓	✓	✓	✓
Dishwashing	✓	✓		✓	✓
Dry storage	✓	✓	✓	✓	✓
Serving	✓	✓	✓	✓	✓
Washrooms	✓	✓	✓	✓	✓
Walk-in refrigerator	✓			✓	✓

Figure 2-35: Wall Surfaces

Equipment placement and design:

- All kitchen equipment must be of commercial grade quality and preferably certified (listed) byNSF International (NSF).
- Equipment not NSF certified may be subject to approval by a Public Health Inspector prior touse, to ensure it is suitable for the purpose intended.
- It is recommended that heavy and/or large food equipment that is not readily moveable be mounted on wheels wherever possible.
- Equipment that is not mounted on wheels and not readily moveable, must be sealed to the flooror mounted on legs providing a minimum height of 15 cm (6 inches) from the floor and locatedsuch that access can be gained to all sides of the equipment for cleaning purposes.
- All table or countertop mounted equipment that is not readily moveable and is not sealed directly to the table or countertop, must be set on legs allowing a minimum of 10 cm (4 inches)of space between the piece of equipment and the table or countertop.
- A minimum of 91 cm (36 inches) of unobstructed functional space is required for walkways, whereas a minimum of 107-123 cm (42-48 inches) is recommended for work aisles. (Panthi, 2016)

Basic Equipment:

Stainless steel table	Highly sanitary work table made of stainless steel which provides easy washdown. Curved edges recommended for safety.
Reach-in Fridge	Refrigerator built for commercial food service use that has more even cooling capacity and maximizes storage space compared to a residential refrigerator.
Walk-in Cooler and Walk-in Freezer	An enclosed storage space refrigerated to recommended refrigeration/freezer temperatures, which can be walked into, and has a total chilled storage area of less than 3,000 square feet.
Commercial Freezer	Freezer designed to freeze food and prevent bacterial growth that is more powerful and operates at a more consistent temperature than a residential freezer.
Ice Machine	Machine designed to produce and store high-quality ice. Consider the type of ice most relevant for use. (ie: full cube, half cube, flake, or nugget)
Food prep sink	A one or two compartment sink for washing produce, filling pots/pans/steam kettles or other cooking reservoirs, and providing water needed in recipes.
Handwashing sink	Sink(s) should be placed in or immediately adjacent to any restroom(s). Sinks should be easily accessible for persons renting out the kitchen. Check local code for specifics they might have on placement of handwashing sinks.
Warewashing: Three compartment sink	Recommended in case commercial dishwasher breaks. The sink should have three compartments and must be able to fully submerge the largest kitchen utensil or pot.
Mop sink	One-compartment sink for rinsing mops. Kitchen must also accommodate place to hang mops and have curbed floor drain.
Range & Oven	A unit with cooking, grilling, and broiling capacities. Restaurant ranges are more versatile due to multiple range arrangement options and take-up less space than heavy-duty ranges.
Grill	Feature which can be bought separately but is often included in commercial range and oven models.
Ventilation exhaust hood	A device with a mechanical fan that hangs above the cooktop in the kitchen. It removes airborne grease, fumes, smoke, odors, heat, and steam from the air. "Type I" indicates fire-suppression while "Type II" indicates no fire-suppression.

Figure 2-36: Equipment

2.20.12. KITCHEN DESIGN:

The size and design of any kitchen will be defined by the equipment's needed or used in the kitchen. Below is one of the most basic layout of a commercial kitchen with the basic equipment

The kitchen is the main hub of the facility. Its prime function is cooking and finishing of food prepared elsewhere within the facility and from where it is moved forward to the service area.

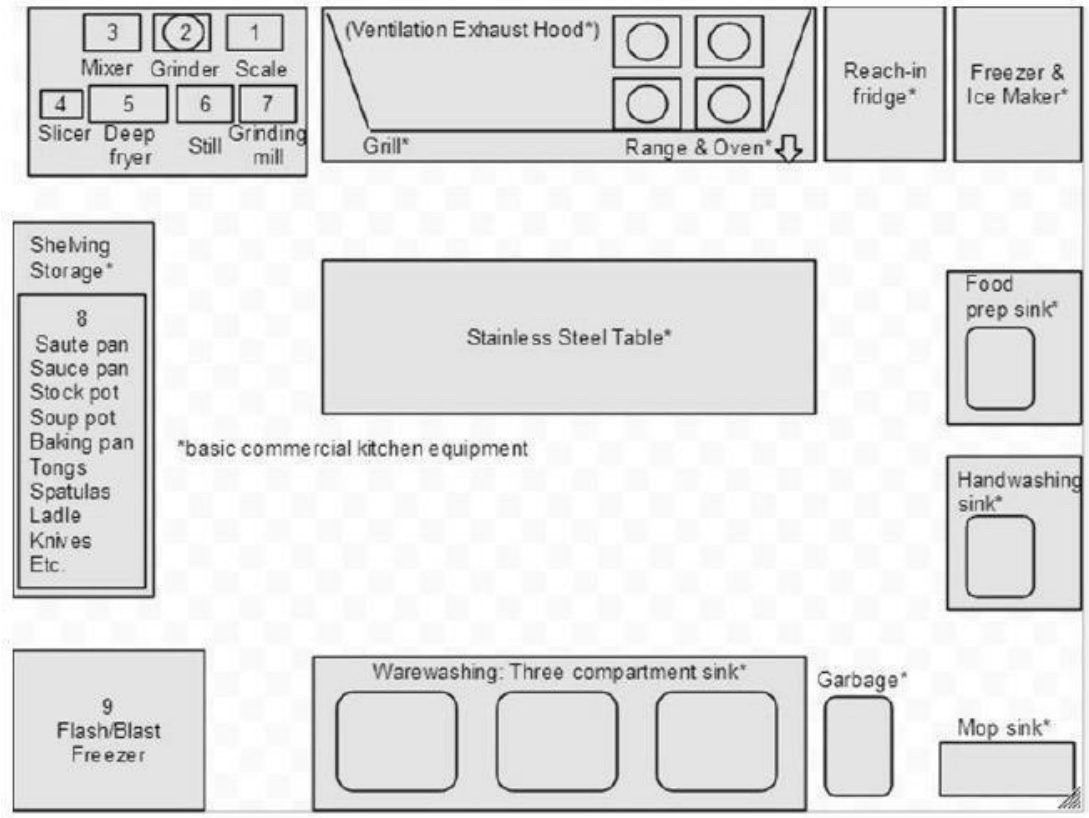


Figure 2-37:Basic kitchen with equipment

LAYOUT CONSIDERATIONS

- Typical kitchen layouts are based on the equipment detailed in JSP 315, Scales 39 and 52, Part
- 4. The standard and specification of the equipment is detailed in DE Specification 42 – CateringEquipment Specification.
- Equipment should be laid out to make best use of the space available and provide a linear workflow from the preparation areas through to the servery.
- Kitchens should be planned with separation between the kitchen and the servery area but this can also be influenced by the style of service.

- Kitchens require a direct functional relationship with storage and preparation areas, servery and the utensil wash.
- The prime cooking equipment should be located, wherever possible, in an island setting. Similar types of equipment to be grouped together with sufficient worktop space placed adjacent to allow 'put-down' space. (Panthi, 2016)

Heavy processes such as frying etc, should be grouped together. In larger kitchens the equipment (deep fat fryers, bratt pans, etc) may be sited in a separate suite, preferably in a central cooking suite rather than against a wall.

- Equipment providing long cooking processes such as ovens etc, need to be located furthest from the servery access whereas short order grills and ranges should be located nearby.
- All equipment should, where practicable, be mobile to facilitate cleaning and maintenance. Adequate space should be allowed to provide access for cleaning and to avoid damage to fabric and fittings. Sufficient equipment should be available to enable all of the kitchen operational tasks to be carried out in a safe and hygienic manner.
- Back bar equipment may be installed within the kitchen to meet the Particular Specification.
- Service supplies of gas, water and electricity should rise or drop at one connection point to groups of equipment and contained within a service spine. In installations where a service spine is not practical, connections to equipment shall be not less than 300mm clear of the floor and the equipment sited not less than 150mm clear of the walls.
- Adequate floor drainage gullies should be installed to allow direct discharge from defined items of catering equipment and allow appropriate drainage to assist floor cleaning procedures. (Panthi, 2016)

2.20.13. CROCKERY WASH

Function

The crockery wash provides facilities for the receiving, sorting, washing, sterilisation and drying of all crockery, cutlery, glassware and trays after use in the dining room. Emphasis should be given to treating this area as a total integrated system. The detailed design shall take full account of the Energy Conservation Act 1981, the CIBSE Energy Code and

current Building Regulations and shall include sufficient space for the provision and installation of all equipment necessary to comply with the requirements and recommendations.

LAYOUT CONSIDERATIONS

- The siting of the crockwash is the most critical and difficult of the areas in planning termsbecause of the conflicting requirements.
- It should be sited so that there is direct access to the waste food storage/treatment area (toprevent cross contamination).
- Access from the dining areas with dirty plates should be such that they do not pass through theservery areas.
- Clean plates should not be contaminated by dirty plates and waste food.
- The equipment should be laid out to make best use of the space available and provide aworkflow system to complement the determined method of clearance.
- The location and layout of the crockery wash depends on whether:
- Tables are cleared by staff either directly to the crockery wash or by the use of trolleys

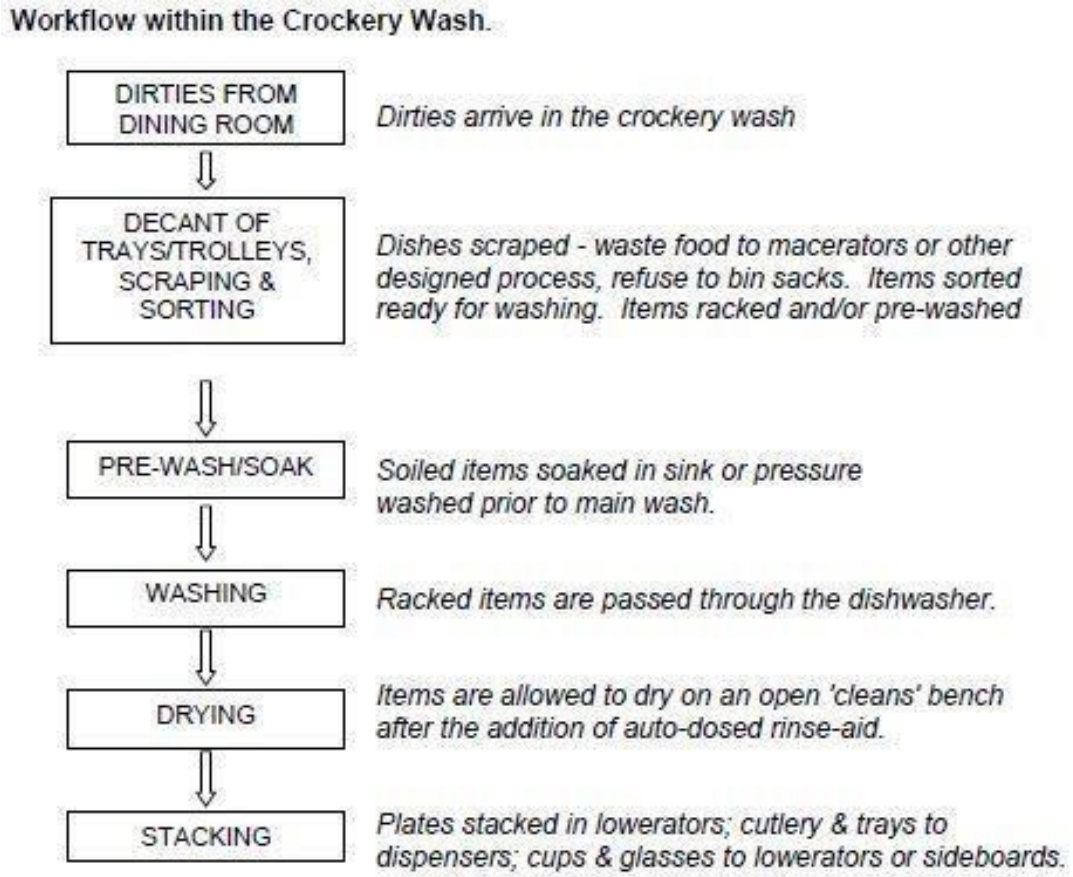


Figure 2-38: Workflow

2.20.14. UTENSILS WASH

FUNCTION

All cooking equipment from the kitchen area and the servery is washed at this location. This includes pots, pans, gastronomy service containers, utensils and parts from food preparation equipment. Waste food is either scraped into suitable containers prior to further treatment or disposed of in the waste disposal unit. Washed utensils, etc. are rinsed in hot water (>82°C) and left to drain dry prior to being stored on the storage racks.

LAYOUT CONSIDERATIONS

- The utensil wash has a direct functional relationship with the kitchen and the servery area.
- In smaller kitchens, consideration may be given to combining the crockery wash and the utensilwash.
- The equipment layout should allow adequate space to receive the dirty utensils and provide a linear flow.
- The provision of a pass-through Utensil Washing machine should be considered. The KDEA should be consulted at an early stage.
- Adequate dedicated ventilation and extraction shall be provided to ensure that steam emitted from the utensil washing machine or steriliser sink does not give rise to condensation within the room.
- Adequate floor drainage gullies should be installed to allow direct discharge from defined itemsof catering equipment and allow appropriate drainage to assist floor cleaning procedures. (Shakya R. , 2018)

2.20.15. PASTRY PREPARATION

FUNCTION

The pastry preparation area produces the cakes, pastries, hot and cold sweets, etc to meet the daily menu requirements, including raw pastry for use by the kitchen and the larder. This room will be provided where it can be demonstrated that there is sufficient output to justify it.

LAYOUT CONSIDERATIONS

- Minimum area for stores is 15m2, roughly 8-10m2 per employee for all store rooms.
- Routes between stores and work areas should be short.
- Work areas for bakery and pastry should be separate. The bakery needs a warm and humidenvironment whereas pastry making needs a rather cooler environment.

- Bakery includes the following areas:
- Dough preparation, working of dough, baking, and storage of finished products
- Pastry making is split:
- Cold area (butter cream, cream, chocolate, fruit) & warm area (pastes, cake, pastries & biscuits)(Shakya R. , 2018)

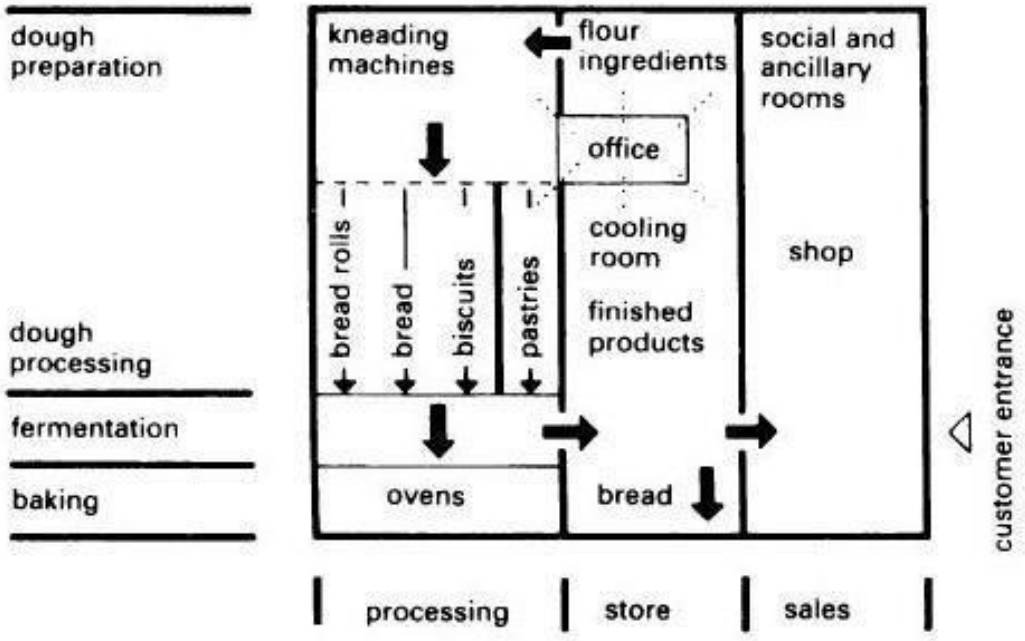


Figure 2-39: Functional Layout of Bakery

2.20.16. LARDER

FUNCTION

The larder is the main food preparation area and should be considered as the area offering the highestrisk in terms of food preparation and cross contamination. Where space is at a premium the raw meatpreparation area may be included within the larder, however, strict separation of the work processes should be demonstrated. (Shakya R. , 2018)

LAYOUT CONSIDERATIONS

- The larder has a direct functional relationship with the main kitchen, servery, storage and delivery areas.
- Sufficient equipment should be provided to allow all of the larder operational tasks to be carriedout in a safe and hygienic manner. Food items prepared ready for cooking or service will needto be stored at the correct temperature regime until required.

- The room shall be self-contained and only designed as part of the Raw Meat Preparation to utilise a single air cooling facility where space is severely restricted. In all new build projects and the majority of refurbishments the larder and raw meat preparation areas shall be separate rooms. Where a combined room is the only option, the layout shall ensure the physical separation of areas for raw and cooked foods at all times with any dwarf wall separation being a minimum of 1800 mm above finished Floor Level (AFFL). Sufficient wash hand basins are to be provided and sited so as to ensure that there is no risk of cross contamination
- The area shall be provided with a dedicated wash hand basin.
- When high-risk operations are taking place, the temperature in the room is to be capable ofbeing maintained at +13°C.
- Insulation, contained in vapour proof bags, shall be provided to the back of the ceiling tiles toprevent condensation; loose insulation is unacceptable.
- Adequate floor drainage gullies should be installed to allow appropriate drainage to assist floorcleaning procedures. (Shakya R. , 2018)

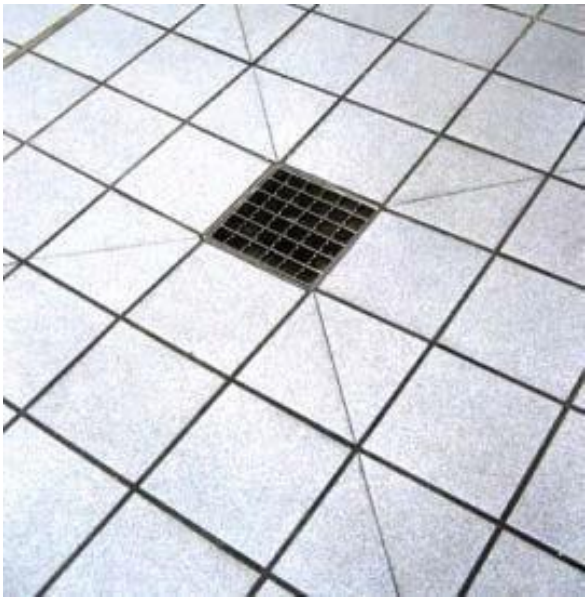


Figure 2-40: Floor Damage Gullies

2.20.17. RAM MEAT PREPARATION

FUNCTION

The Raw Meat Prep provides storage and preparation facilities for meat, poultry, fish and game, etc.following delivery and prior to cooking.

LAYOUT CONSIDERATIONS

- The raw meat prep has a direct functional relationship with the main kitchen, storage and delivery areas. It should be sited close to the loading/unloading area so as to reduce the risk ofcross contamination.
- Sufficient equipment should be provided to allow all of the operational tasks to be carried outin a safe and hygienic manner. Adequate holding facilities will be required to keep prepared food in the correct temperature regime until required.
- Rest same as Larder. (Shakya R. , 2018)

2.20.18. VEGETABLE PREPARATION AND STORAGE

FUNCTION

All fresh vegetables, salads and fruit are received, stored and prepared in this area prior to beingforwarded to the kitchen for cooking.

LAYOUT CONSIDERATIONS

- The Vegetable Preparation Room has a direct functional relationship with the goods inwards area and the main kitchen.
- The room is predominately a wet area and mobile sinks are regularly used for the transport of prepared vegetables to the kitchen. A suitable potable cold water tap is required for filling thesinks. An adequate floor drain is required to empty the mobile sinks and provide for effective cleaning and wash down of the room.
- Equipment should be laid out to make best use of the space available and provide a linear storage and workflow from the preparation areas through to the kitchen.
- Sufficient equipment should be provided to allow all of the vegetable preparation tasks to be carried out in a safe and hygienic manner; noting that food is prepared ready for cooking and will need to be stored prior to being required.
- The temperature in the room is to be capable of being controlled to ensure that it is not above +16°C.
- There are two distinct lines of preparation:
- Potato Storage and Preparation
- Pre-washed potatoes are delivered and stored directly from the loading bay onto a potato platform. The potatoes are processed through potato peeling machine(s), after which they are discharged into a fabricated trough where they are hand-finished and temporarily stored in themobile sink until required for cooking.
- Vegetable Storage and Preparation
- Fresh fruit, greens and root vegetables are stored on mobile vegetable racks. Salad items arestored in a refrigerator.
- In-line benching with a sink should be provided for the preparation of

vegetables. Processeswill include the use of a vegetable preparation machine, hand preparation and washing.

- Waste peelings etc are either deposited into suitable containers or macerated. (Shakya R. ,2018)

2.20.19. BULK REFRIGERATION AND STORAGE

FUNCTION

The Bulk Refrigeration/Freezer Store houses the main chilled and frozen food deliveries prior to issueto the other areas.

LAYOUT CONSIDERATIONS

- The room must be self-contained and capable of being secured.
- It should be sited close to the loading/unloading area and the Catering Control Offices.
- Access should be wide enough to accept palletised deliveries where specified.
- The area shall be well ventilated and provide sufficient air changes capable of extracting heat given off from the refrigeration and freezer plant and meet the manufacturers recommendations for operating temperatures. Mechanical extraction shall be provided above refrigeration and deep freeze cabinets.
- Consideration may be given to the provision of walk-in modular refrigerators and freezers when the menu dictates a requirement for a large quantity of lighter, bulky items
- In smaller messes, consideration may be given to combining the room with the Bulk Grocery Store and Day Store to provide one large storage area. (Shakya R. , 2018)

2.20.20. BULK GROCERY STORE

FUNCTION

The Grocery Store receives and issues the full range of food commodities.

LAYOUT CONSIDERATIONS

- The room must be self-contained and capable of being secured.
- It shall be sited close to the loading/unloading area and the Catering Control Offices.
- Access to the store and the gangways within shall be wide enough to accept palletised deliveries.
- The area must be well ventilated and provide sufficient air changes capable of extracting heat given off from any refrigeration and freezer plant and be temperature controlled within the range of 12°C – 16°C.

- Insulation, contained in vapour proof bags shall be provided to the back of the ceiling tiles to prevent condensation, loose insulation is unacceptable.
- Consideration may be given to combining the Bulk Grocery Store and Day Store to provide one large storage area where the administration for the issue of stores allows. The relevant KDEA should be consulted.

2.20.21. SERVERY

FUNCTION

The servery is the focal point for the service of all meals. (Shakya R. , 2018)

- The servery has a direct functional relationship with the main kitchen, dining room, crockwashand the pantry and, to a lesser degree, the utensil wash. The layout should be designed to minimise the cross flow of both staff and diners.
- The servery should be planned for either self-service or staffed service for the 3 meals daily orthrough the day service according to the particular requirements.
- Where a cafeteria type service is offered involving the customers approaching the servery counter displays directly, a full-height solid wall should separate the servery and kitchen.
- Access doors should be wide enough to ensure the safe movement of staff who may be carryinghot food. The doors should be capable of being held open (electronically) during the service period or swing through 180°, with a dedicated in/out traffic flow.
- Where a full steward service is offered the servery may form part of the kitchen fitted out witha suitable ‘service pass’.
- Adequate ventilation should be provided and be designed so as not to draw cooled air across the surfaces of the hot counters.

2.20.22. EXTERNAL SERVICE AREA PLANNING

FUNCTION

The external service area is the delivery point for all items of food which are to be handled by the catering department. It is also the collection point for all kitchen and dining room waste and refuse. It is essential that this area be designed to ensure that these two processes are kept separate.

LAYOUT CONSIDERATIONS

- The area should be sited at the rear of the catering complex. Where possible, the area should be suitably screened from public view to improve the overall appearance of the Mess.
- The approach road should provide good vehicular access with adequate turning space to alloweffective delivery for all sizes of vehicles up to, and including, large

articulated lorries. It is essential that a 'swept path analysis' be carried out to prove the access route.

- There should be easy, level access for the unloading of goods. Ramps and threshold strips are to be suitably graded for delivery cages, trolleys and hand operated forklift traffic and set at a gradient to meet current Health & Safety requirements. Where levels differ and direct access is not possible then the installation of an appropriate loading platform should be provided.
- All hard surfaces should be smooth for ease of cleaning and to allow use of trolleys and hand operated forklift units.
- To avoid the risk of cross contamination there should be adequate separation between the goodsdelivery and refuse collection points.
- Weather protection shall be provided to the unloading area and the refuse collection point.
- A cold water point and drainage gully for wash down of the area should be provided. An external electricity supply should be provided for a high-pressure water or steam cleaning machine.
- External lighting shall be provided for the unloading/loading areas and refuse collection areas.(Shakya R. , 2018)

2.20.23. WET REFUSE (FOOD WASTE)

Where automated systems do not exist an area shall be provided for the storage of separated wet refuse. It shall be a well-ventilated enclosure, which is fly, vermin and weather proof.

Where specialist systems such as vacuum removal and bulk storage or accelerated decomposition systems are installed to hold waste food for long periods prior to further

processing and re-cycling, such containers shall be located in a covered weatherproof area or within a dedicated room. Bulk storage of waste food within sealed tanks shall be located within 70 metres of the disposal point and the external pump out valve shall be easily accessible to vehicular traffic.

Specific services to be provided include an appropriate external electricity supply, external lighting, a cold water point for wash down and a floor drainage gully into the mains drainage system rather than a soak away. (Shakya R. , 2018)

2.20.24. WASTE OIL STORAGE

An area shall be provided for the storage of waste oil. It shall be either a well-ventilated enclosure, which is fly, vermin and weather proof or a purpose designed bonded item of

equipment on a hard standing. Waste oil shall be stored in suitable closed containers which in turn shall be stored in the bonded area or receptacle that meets with current environmental regulations.

2.20.25. DRY REFUSE

The area should be a weatherproof enclosure or the bin storage system be supplied with fully closable lids and house the appropriate type and number of bins agreed to be provided. It may include the scaled compactor room within the dry refuse area as the design permits. The designer should establish, at an early stage, the type and number of bins to be stored and that the compactor is compatible with the refuse system used. (Shakya R. , 2018)

Figure 2-41: External Service area

2.20.26. LABORATORIES

Laboratories differ according to type of use and discipline.

According to use:

Laboratories for teaching and practical, comprising a large number of workstations, using with simplebasic equipment. Research labs are usually in smaller spaces with special equipment and additional rooms for activities such as weighing and measuring, centrifuges and autoclaves, washing up, climatized and cold storage rooms with constant temperature.

According to subject:

Chemistry and biology labs with fixed benches. Rooms have frequent air exchange, often additionalfume cupboards (digestors) for work which produces gas or smoke. Digestors often in separate rooms.

Lab workstation

- The bench, fixed or movable, is the module which determines the lab workstation; its
- measurements, including work space and passage space, form the so-called lab axis, the
- basic spatial unit.
- Normal measurements for standard workbench: 120cm width for practicals, several times thisfor a research lab, 80cm depth of work surface including energy conduit.
- Benches and fume cupboards are usually part of a modular system, width of elements 120cm,fume cupboards 120 and 180cm. The conduit carries all the supply systems: benches and low cupboard are placed in front of it.
- Benches are made of steel tubing, with work surfaces of stoneware panels without joints, less frequently tiles, or chemical-resistant plastic panels. Low cupboards are of wood or chipboardwith plastic laminate. Supply services are from the ceiling void, or from below through the floor structure. (Shakya R. , 2018)

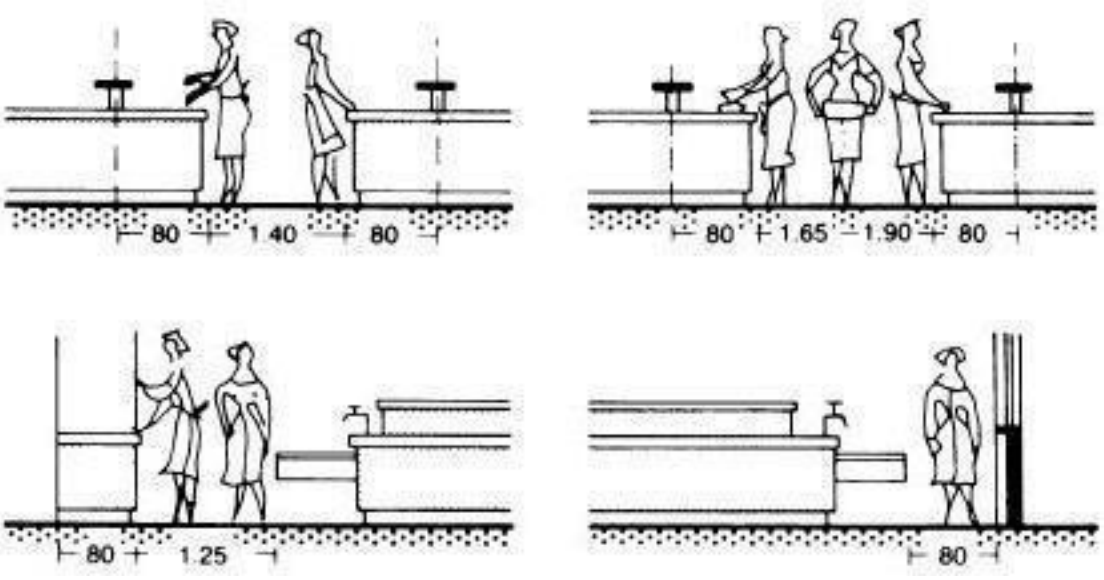


Figure 2-42:Minimum passage width between workstation

Ventilation

Low-pressure or high-pressure systems, the latter are recommended particularly in multistory buildings for institutes with higher air requirement in order to reduce the cross-sections of the ducts.Cooling and humidification as required. Ventilation systems have the highest space requirement of all services.

Electrical services

Where a high number of connections and special supplies of electricity are required, a

separate transformer in the building is essential.

Vertical services system

There are many vertical service ducts inside the building or on the facade, taking the services directlyinto the labs in separate ducts: decent rally distributed air supply and exhaust air to fume cupboards, separate ventilators on the roof.

Horizontal services system

Vertical main services concentrated in shafts and distributed from there horizontally via the service plant floors to the bench by connections from above or below. Rooms are used according to a scheduleof accommodation and plan. Rooms with natural or artificial light and ventilation, with high or low servicing, allow the creation of zones of differing use and technical qualities. So laboratory buildings should have large internal areas with two corridors. The building length depends on the longest reasonable horizontal run of wet services. Services floors for plant in the basement or at roof level. (Shakya R. , 2018)

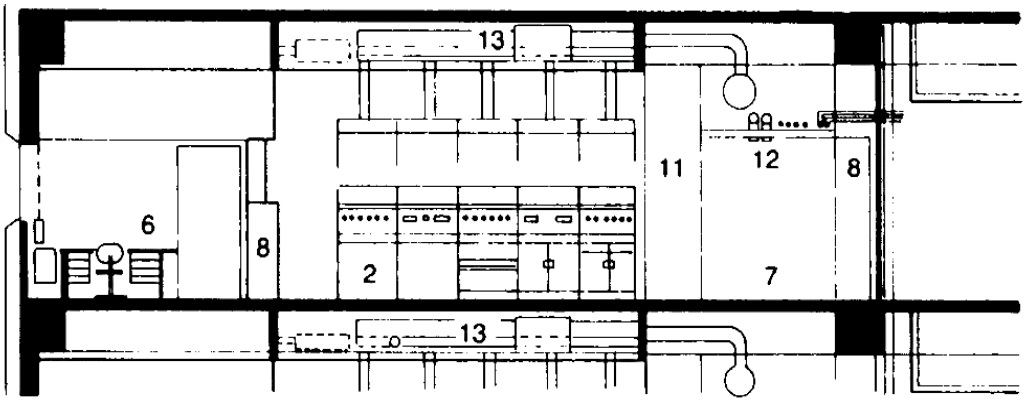


Figure 2-43: Section of Lab

2.20.27. WINE ROOM

- While bottle shapes and styles vary slightly, wine and champagne are sold mostly in 750- milliliter bottles. Wine bottles typically measure 3 to 3.2 inches (7.62 to 8.12 centimetres) in diameter and are about 12 inches (30.5 centimetres) tall.
- One 12-bottle case of wine will take up about 1 cubic foot (0.03 cubic meter) of space in a diamond-bin configuration in which they are stacked next to one another. Nine bottles per cubicfoot is a more comfortable margin when planning spaces.

- Another consideration is whether to store bottles horizontally or upright. Usually it's only storing wine upright in extreme climates or for long periods of time that will give problems. Corks have to dry out, crack or contract to disturb the wine, and other capping methods are becoming more common. That being said, storing wine bottles horizontally works best spatially
- Some suggests that it may be better for wine to store bottles at an angle, which ensures that both wine and the air bubble are in contact with the cork. This will keep the cork damp but allow any expansion and contraction of the air bubble due to temperature variation to result inair, and not wine, passing through the cork.

In order to better understand the concept of preserving and aging fine wines, the six critical elementsassociated with proper wine storage are as follows:

Temperature: The ideal temperature for wine storage is somewhere between 11°C and 14°C (52°F to 58°F). There is an acceptable temperature range - but once chosen, temperature must not fluctuate. Wine is a complex and fragile balance of amino acids, phenols, carbohydrates and other chemical compounds. Aging wine is a series of different chemical reactions between these compounds and minute quantities of oxygen in the bottle from when it was corked, plus minute amounts allowed to enter through the cork over time.

On the other end of the scale, wines stored at very low temperatures will age much slower. Although they may not be as damaged as those stored at higher than ideal temperatures (as long as it is above freezing), these wines are commonly subject to the damaging effects of low humidity levels that are usually associated with cold environments (i.e. the refrigerator is probably the number one worst place to store your wines). (Shakya R. , 2018)

Temperature Stability: Wine must be kept in an environment where temperature is constant and stable. An acceptable level of temperature fluctuation is said to be about 2 to 3°C (5°F) around the average once per year. Temperature stability is the "holy grail" of wine storage. Besides humidity, itis the most important of the storage requirements, and at the same time one of the hardest ones to achieve. Maintaining constant temperature over time is even more important than the actual average temperature level.

Humidity: Relative humidity levels should range between 60 and 80 percent. Cork is a natural product and will deteriorate with time. The cork will still dry out even when the bottle is placed on its side. Although the bottom of the cork is in contact with the wine, the top of the cork is exposed to the air and influenced entirely by the conditions of the air around it. If the air is too dry, the top of the cork will dry out, shrink, crack and allow

more air to come into contact with the wine. The problem is made worse if low humidity is accompanied by temperature fluctuations. High humidity levels will help keep the cork from drying out. Humidity below about 50% RH is getting too dry. Levels above 80% will not damage the cork/wine, but we run the risk of mild or mildew damaging our storage area and our wine labels.

Ventilation: Wine needs to be kept in an odor-free environment. Since some air will always get back into the wine through the cork, the molecules that make up that odor can, and will, get into the wine over time (i.e. we're talking years here, not from simply painting the house). Certain odors are fairly benign. Others like highly volatile chemical compounds are particularly harmful. Odors to look out for include solvents (i.e. fresh paint, cleaning solutions), or various aromatic food products like onions, garlic, etc. So we shouldn't store these around our wines.

Darkness: Wine should not be subjected to excessive amounts of light. Light, especially the short wavelengths, breaks down the complex molecules that create some of the special flavors in properlyaged wines. This is rarely a problem since wine is already well protected in glass that virtually absorbsall ultraviolet rays. Dark-colored glass absorbs most other light. Low- level lighting will not harm wine. But it should be kept out of direct sunlight.

Security: Although not an environmental condition, security is an important issue. There is no sensehaving a sophisticated cellar if our wine is susceptible to loss or damage due to fire, theft, or equipment failure. Professional storage facilities protect their inventory with commercial- grade fire suppression equipment such as the sprinkler system. These systems rarely let a fire get out of control.

(Shakya R. , 2018)

2.20.28. RESTAURANT

A restaurant is a business which prepares and serves food and drinks to customers in exchange for money, either paid before the meal, after the meal, or with an open account. Meals are generally served and eaten on the premises, but many restaurants also offer take-out and food delivery services, and some only offer take-out and delivery. Restaurants vary greatly in appearance and offerings, including a wide variety of cuisines

and service models ranging from inexpensive fast food restaurants and cafeterias to mid-priced family restaurants, to high-priced luxury establishments. In most of the public buildings, the necessity of restaurants and café is obvious to cater the public with the foods.Restaurants should be planned so that the variety of sitting can be achieved according to the number of customers visiting it (e.g. tables for two and four, which can be placed together to give six, eight and ten places). In other words, the planning of the restaurants should be flexible enough to accommodate variety of customers. (Shakya R. , 2018)

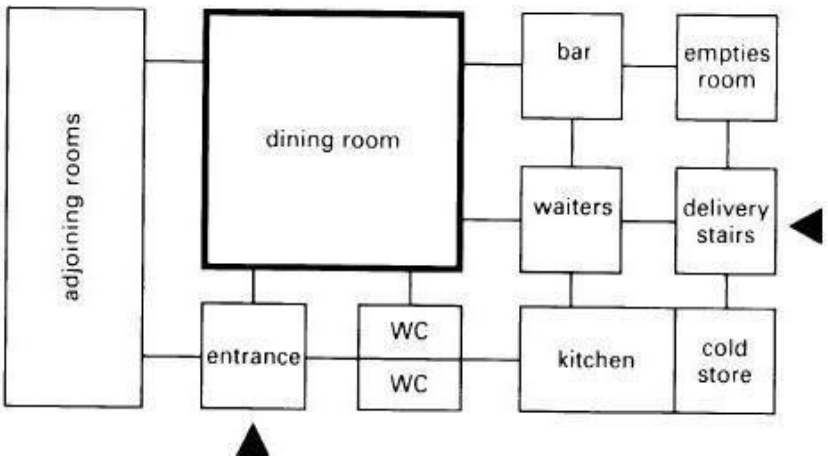


Figure 2-44: Functional layout of a Restaurant

Design guidelines (Spatial requirements)

In primary space planning, "The rule of Thumb" for determining the area requirements of a restaurantis:

- Dining Room: 60% of total area
- Kitchen, cooking, storage, preparation, etc: 40% total area
- Service aisles: 0.9-1.35m wide if used both by trolleys and guests

Structural columns in a dining room are best located at the middle of a group of tables or at the cornerof the table.The ceiling height of the dining area should relate to the floor area.

Table 1Ceiling height in a restaurant

Area of dining	**Ceiling height**
$\leq 50m^2$	2.5m
$>50m^2$	2.75m
$\geq 100m^2$	3.0m

The minimum width of escape routes: 1.0m for 150 people

- General walkway width: Minimum 1.10m with clearance height of minimum 2.1m
- Window area: ≥1/10 of area of the restaurant
- Guest access should not be confused with the service entry

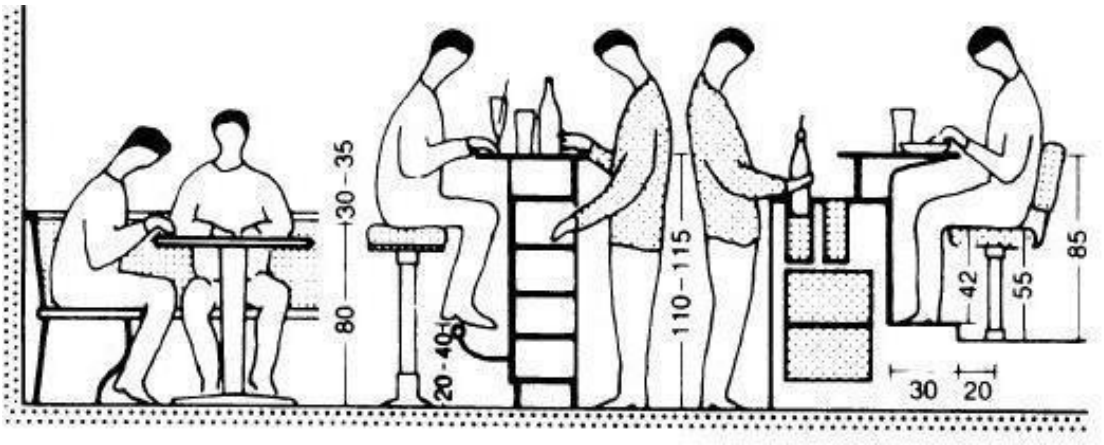


Figure 2-45: Height requirement in Restaurants

Planning factors

- The organizational sequence of different functions is of great importance in planning and design of restaurant. The following considerations should be made so as to achieve good restaurant design:
- Public access should be inviting and be separate from the service entry and waste disposal.
- The exterior appearance should communicate clearly with signs, lighting and menu displays and convey image of cleanliness.
- The interior should create a good impression and a suitable environment.
- Each type of restaurant needs a different identity. Ambience is an important factor in restaurantdesign.
- Large regular spaces should be broken up into smaller, more intimate areas by use of screens or decorative features.
- Level changes are not usually preferential by caterers but are acceptable providing they make a positive contribution to design, not more than 2 or 3 steps should be involved and the main part of the restaurant should be on same level as the kitchen. Raised seating areas should be protected by balustrades.
- The cash desk may be at the entrance, by service doors or within the kitchen area, depending on the management system. (Shakya R. , 2018)

Outdoor dining

Restaurant types and space allowance

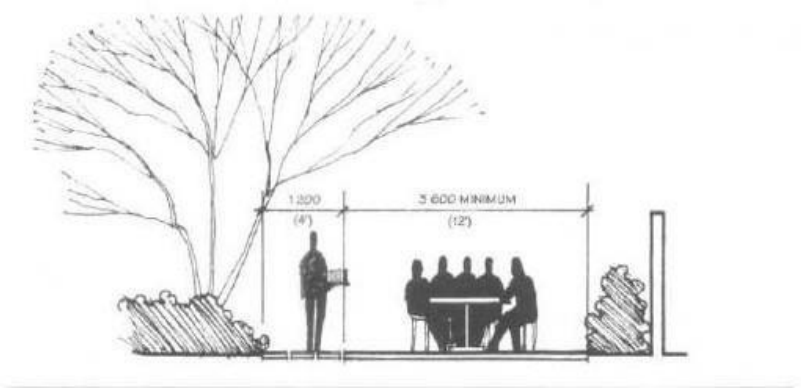


Figure 2-46: Requirements of Outdoor DIning

- Traditional restaurant 1.3-1.9m2/person
- Specialty restaurant 2.0m2/person
- Snack bar services: 1.5-2.2m2/person
- Café services: 0.83-1.5m2/person
- Coffee bars: 1.2-1.4m2/person

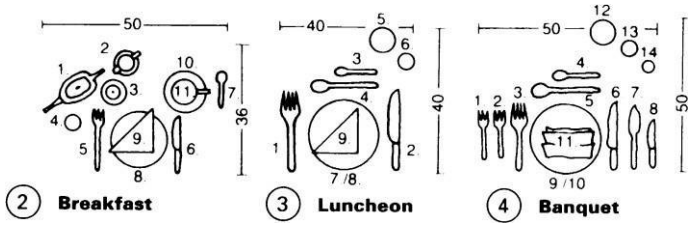


Figure 2-47: Setting of table

The table setting generally defines the space allocated for an individual for a meal.

- Number of waiters varies according to the standard of services: Restricted menu:1 waiter/waitress per 12-16 covers
- Typical menu: 1 waiter/waitress per 8-12 covers Deluxe: 1 waiter/waitress per 4-8covers
- Cloakroom: 0.04m2/person
- Furniture/ equipment stores: 0.14m2/person
- The desirable spaces for receiving are 5%, for food storage 20%, preparation 14%, cooking 8%, baking 10%, ware washing 5%, traffic aisle 16%, trash storage 5%, employee 15%, miscellaneous 2%
- Aisle space between tables and chairs should be calculated to include passage area andthat occupied by the person seated at the table. A minimum passage area is 18 in between chairs and including chair (Shakya R. , 2018)

Storage

Dry goods stores: Have shelves (200mm minimum above floor level to prevent damp) and storage units for flour, dried ingredients, cans and packets. The design should optimize linear storage.

For vegetable stores good air circulation is necessary.

Refrigerated stores are for perishable food (e.g. butter, cream, fresh meat, fish and drinks) and the temperature has to be kept between 0 and 3°C. They are normally modular, formed in 75mm thick panels. In smaller kitchens, a refrigerated cabinet can be used instead. Deep freezes are normally modular, formed in 75mm thick panels, and with an insulated floor. The temperature must be kept between -18 and -21°C. In smaller kitchens, a cabinet freezer can be used instead.

Other stores

Crockery, cutlery, glass and silverware requires - 0.14-0.2 m2/person.

For alcohol, allow - 0.2 m2/person, divided into areas for beer and mineral bottles, kegs, white wine and spirits. Ease of delivery, access to server and return of empties must also be considered.

2.20.29. SERVICE ROUTES AND RAMPS

A service route which is directly linked to the store room is one of the most important components while designing a store. Instead of stairs, ramps are generally used to ease the transport of goods. Thefloors connecting sales area and delivery ramps should lie in the same level.

2.20.30. EXHIBITION / GALLERY

Exhibition is display, show or demonstration of something of beauty, value or particular interest to a targeted audience. Exhibitions are complex presentations that concepts, showcase objects, excite thesenses. Exhibitions must teach to different learning styles, respond to issues of cultural and gender equity, and offer multiple levels of information. The gallery exhibits and important part of any exhibition space which must have the space, freedom and flexibility to create an exhibition environment. In any exhibition gallery, proper considerations should be given to the movement of people and also to the pattern. Since exhibitions are for people and the main aim being communication, accessibility becomes very important of any exhibition area.

In a Culinary Arts Centre, the importance of a gallery space is to exhibit the lifestyle, recipes of the various cuisines.

Circulation Planning

The major determinant of spatial arrangement is the circulation pattern, which includes determining the best routes through a space or series of spaces, and recognizing appropriate resting places. A series of basic principles that can be useful in evolving circulation systems as follows:

- It is useful to provide orientation information at the entrance to inform the visitor about what is thereand help the visitor to find the way around.
- An overriding requirement in the development of a circulation system is the need for clarity. Mazelike circulation has the potential for creating confusion and irritation. (Shakya R. , 2018)

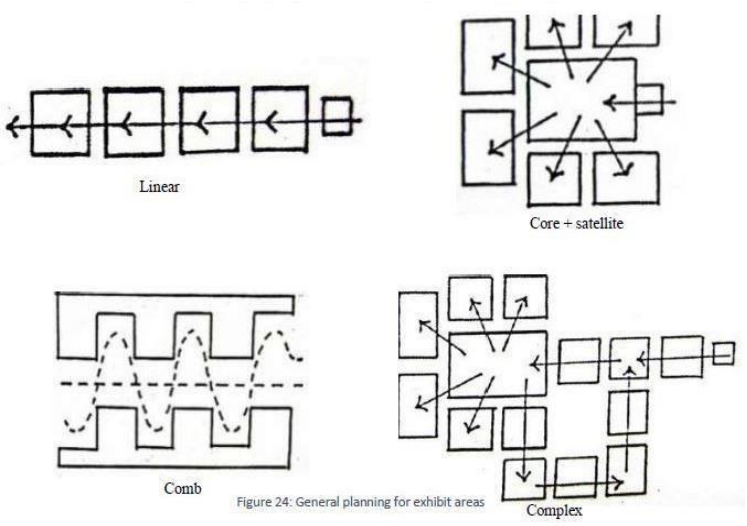


Figure 2-48: General planning for Exhibit area

General guidelines for planning:

Visitors should be correctly oriented inside theexhibition area.

- Viewers should be able to move through theexhibit without being forced to
- walk past objects they have already seen.
- Adequate space should be provided for visitorsto move at different speeds. The
- circulation space should also allow the visitorsto take a quick look at the
- exhibits so that they can decide which ones toexamine in detail.
- A viewer tends to turn clock wise upon entering the exhibit area. Circular pattern should be designed with this in mind. (ShakyaR. , 2018)

Lighting

Natural Lighting:

Natural day lighting is the practice of placing windows or other openings and reflective surfaces so that during the day natural light provides effective internal lighting. Particular attention is given to daylighting while designing a gallery when the aim is to maximize visual comfort or to reduce energy use. Day light may come from above or from the side. When light is allowed to enter from above, suitable skylights are provided in the ceilings of the exhibition rooms. (Shakya R. , 2018)

Artificial Lighting

In terms of lighting of an individual work, the first aspect to consider is the risk of glare which is produced when the glass surface mounted on the work of art reflects incident light into the viewer's eyes. The factor is the even fall of light across the whole picture surface so that there is no variation in the illumination of each area. A general starting point for a solution is to calculate a source positionfor light by imagining a line running from the center of the painting to the ceiling at an angle of 35 to45 from the vertical plane of the work, and placing the fitting on that line with its beam directed at 55to 45 to the ceiling plane. (Shakya R. , 2018)

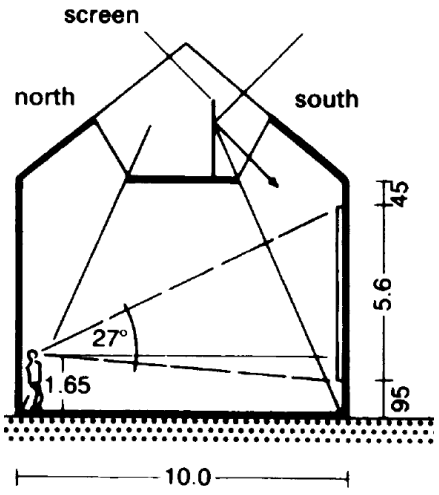


Figure 2-49: Use of natural and Artificial Lighting

2.20.31. FOOD COURT

Food courts are large halls that house groups of small outlets selling a wide variety of specialist food products. Customers can either sit and eat on the premises or take the food away. With attractive trolleys and a market-style environment, food courts offer a

pleasant shopping environment and can be added to supermarkets beyond the check-Outs. The produce is predominantly fresh of cooked on the premises so storage space for one day's trade is adequate. Deliveries are usually made in the morning. A typical food court might include a bakery. a butcher. cafes and bars, a delicatessen snack bar. an ice-cream Parlour plus ramps and counters selling sea food, fruit. vegetables. flowers. bees and wines, whole food. local specialities etc. (Shakya R. , 2018)

Table 2 Standards for food court

	FOOD COURT SIZE	20,000 sq.ft.
Tenancy Sizes		
600 sq.ft.		3 nos.
300-350 sq.ft.		8 nos.
250 sq.ft.		4 nos.
Kiosks - 60 sq.ft.		2-3 nos.
Total No.		15 nos.
Tenancy Area		6000 sq.ft.

Area Breakup recommended:

Seating Areas	60-65% of Food Court Area
Tenancy Areas	30-35% of Food Court Area

Seating Areas include the dining covers, public area circulation etc.
Tenancy Areas include the FOH & BOH of Food Tenants, DishWash areas, restricted areas & its circulation like service corridors

Source: https://www.scribd.com/doc/76460553/Food-Court-Design-Guidelines-12Sept08-1

2.20.32. SUSTAINAIBILITY

Hydroponics

Plants grow through a process called photosynthesis, in which they use sunlight and a chemical inside their leaves called chlorophyll to convert carbon dioxide (a gas in the air) and water into glucose (a type of sugar) and oxygen. Write that out chemically and you get this equation:

$6CO2 + 6H2O \rightarrow C6H12O6 + 6O2$

There's no mention of "soil" anywhere in there—and that's all the proof you need that plants can grow without it. What they do need is water and nutrients, both easily obtained from soil. But if they can get these things somewhere else—say, by standing with their

roots in a nutrient-rich solution—they can do without soil altogether. That's the basic principle behind hydroponics. In theory, the word "hydroponics" means growing plants in water (from two Greek words meaning "water" and "toil"), but because you can grow plants without actually standing them in water, most people define the word to mean growing plants without using soil.

Why grow things hydroponically?

- Reduction of energy costs in transportation.
- Year-round crop production preparation protection from weather.
- Crops are then sold within the same infrastructure (reduction of crop waste).
- Elimination of crop machinery fossil fuel emissions.
- 5 acres of land in traditional farming would produce the same amount ofcrops to that of a 30 story building (2,400 acres of land).
- Yields many times greater when they switch from conventional methods because hydroponically grown plants dip their roots directly into nutrient-rich solutions
- Hydroponic plants also grow faster. round.

It's not all good news; inevitably there are a few drawbacks. One is the cost of all the

Figure 2-50: Vegetables grown by using Hydroponics

equipment youneed—containers, pumps, lights, nutrients, and so on. Another drawback is the ponic part of hydroponics: there's a certain amount of toil involved. With conventional growing, you can sometimes be quite cavalier about how you treat plants and, if weather and other conditions are onyour side, your plants will still thrive. But hydroponics is more scientific and the plants are much moreunder your control. You need to check them constantly to make sure they're growing in exactly the conditions they need (though automated systems, such as lighting timers, make things quite a bit easier). Another difference (arguably less of a drawback) is that, because hydroponic plants have much smaller root systems, they can't always support themselves very well. Heavy

fruiting plants may need quite elaborate forms of support. (Shakya R. , 2018)

How does hydroponics work?

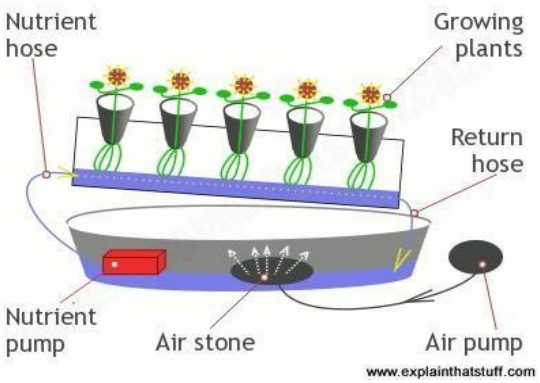


Figure 2-56: Mechanism of Hydroponic

Source: http://www.simplyhydro.com/system.htm

There are various different ways of growing things hydroponically. In one popular method, you standyour plants in a plastic trough and let a nutrient solution trickle past their roots (with the help of gravity and a pump). That's called the nutrient-film technique: the nutrient is like a kind of liquid conveyor belt—it's constantly sliding past the roots delivering to them the goodness they need. Alternatively, you can grow plants with their roots supported by a nutrient-enriched medium such asrockwool, sand, or vermiculite, which acts as a sterile substitute for soil. Another method is called aeroponics and it's typified by a popular product called the AeroGarden (see box below). Although the name suggests you're growing plants in air, the roots are actually suspended inside a container fullof extremely humid air. Effectively, the roots grow in a nutrient-rich aerosol a bit like a cloud packedfull of minerals (Shakya R. , 2018)

2.20.33. FIRE PROTECTION

Once a fire has started, been detected and a warning given, everyone in the premises should be able to escape to a place of total safety unaided and without the help of the fire and rescue service. However, some people with disabilities and others with special needs may need from staff that will need to be designated for the purpose.

Escape routes should be designed to ensure, as far as possible, that any person confronted by fire anywhere in the building, should be able to turn away from it and escape to a place of reasonable safety, e.g. a protected stairway. From there they will be able to go directly to a place of total safety away from the building. (Panthi, 2016)

The level of fire protection that should be given to escape routes will vary depending on the level of risk of fire within the premises and other related factors. Generally, premises that are simple, consisting of a single storey, will require fairly simple measures to protect the escape routes, compared to a large multi-storey building, which would require a more complex and inter-related system. The following points should be taken into consideration for an emergency escape to create a good fire protecting system in an apartment.

- Should be able to allow the evacuation of all occupants in a relatively short time
- Meet the minimum requirements as to size
- Be free of any obstruction and shall not provide any resistance to movement
- Be clearly visible, preferably with proper signs
- Be continuous and shall not intrude into private space.

2.20.34. FIRE ESCAPE

A fire escape is a special kind of emergency exit, usually mounted to the outside of a building or occasionally inside but separate from the main areas of the building. It provides a method of escape in the event of a fire or other emergency that makes the stairwells inside a building inaccessible. Fire escapes are most often found on multiple-story residential buildings, such as apartment buildings. At one time, they were a very important aspect of fire safety for all new construction in urban areas;

A fire escape consists of a number of horizontal platforms, one at each story of a building, with ladders or stairs connecting them. The platform and stairs are usually open steel gratings, to prevent the buildup of ice, snow, and leaves. Railings are usually provided on each of the levels, but as fire escapes are designed for emergency use only, lthese railings often do not need to meet the same standard as railings in other contexts. The ladder from the lowest level of the fire escape to the ground may be fixed, but more commonly it swings down on a hinge or slides down along a track. The moveable designs

allow occupants to safely reach the ground in the event of a fire but prevent persons from accessing the fire escape from the ground at other times (such as to perpetrate a burglary or vandalism).

Exit from the interior of a building to the fire escape may be provided by a fire exit door, but in some cases the only exit is through a window. When there is a door, it is often fitted with a fire alarm to prevent other uses of the fire escape, and to prevent unauthorized entry. As many fire escapes were built before the advent of electronic fire alarms, fire escapes in older buildings have often needed to be retrofitted with alarms for this purpose.

Generally, every building more than 5 stories high shall have a separate fire escape having a minimum width of 17cm. the fire escape shall have a minimum tread width of 20cm and each riser shall be not more than 20cm high. The number of risers per flight shall not be more than 15. Such a fire escape shall carry users towards an open space. (Panthi, 2016)

The Number of Escape Routes and Exits

In general there should normally be at least two escape routes from all parts of the premises especiallywhen it exceeds 500 sq. m in plinth area but a single escape route may be acceptable in some circumstances (e.g. part of the premises accommodating less than 60 people or where travel distances are limited). Additional stairs shall be provided in proportion to any increase in the plinth area.

Where two escape routes are necessary and to further minimize the risk of people becoming trapped,you should ensure that the escape routes are completely independent of each other. This will preventa fire affecting more than one escape route at the same time

When determining whether your premises have adequate escape routes, you need to

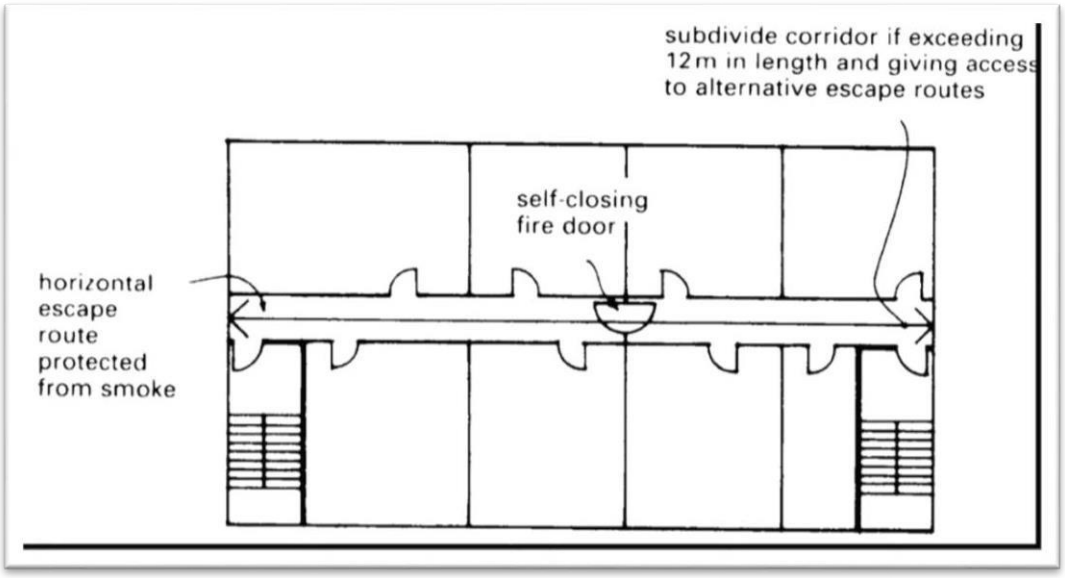


Figure 2-51: Use of self-close fire door to subdivide corridor

consider a number of factors, including:

- the type and number of people using the premises;
- escape time;
- the age and construction of the premises;
- the number and complexity of escape routes and exits;
- whether lifts can or need to be used;
- the use of phased or delayed alarm evacuation; and
- assisted means of escape/personal evacuation plans (Panthi, 2016)

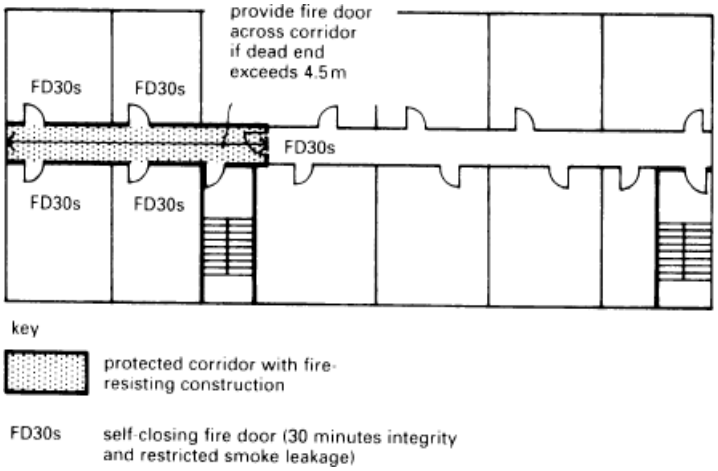


Figure 2-52: Provision of fire door with fire resistance construction

Materials and Support

Steel or an approved noncombustible material is allowed for use when constructing a fire escape. The fire escape needs to have the ability to support its own weight plus an

additional weight of 100 lbs. per square foot. (Panthi, 2016)

Location

The location of the fire escape on the building is important. The door and window openings that leadto a fire escape must provide easy access to the fire escape. The location of the access must not put the fire escape or people using the fire escape in the path of a potential fire. The entrance to the fire escape should not pass through an intervening room and should provide a balcony or landing to accessthe stairs. The escape must also sit no more than 8 inches below the floor level and 18 inches below the windowsill. (Panthi, 2016)

Fire Resistance Rating

Because fires may encroach upon fire escapes, fire escapes should have a fire-resistance rating of at least 45 minutes. Some fire escapes, depending on their arrangement, may require longer minimum resistance ratings. (Panthi, 2016)

Management of Escape Routes

It is essential that escape routes, and the means provided to ensure they are used safely, are managedand maintained to ensure that they remain usable and available at all times when the premises are occupied. Inform staff in training sessions about the escape routes within the premises.

Corridors and stairways that form part of escape routes should be kept clear and hazard free at all times. Items that may be a source of fuel or pose an ignition risk should not normally be located on any corridor or stairway that will be used as an escape route.

Sufficient access to the site for vehicles must be provided to allow fire appliances to approach the building. Principal appliances are ladders, hydraulic platforms and pumping appliances. Access roadsfor fire appliances should be at least 3.7m wide with gates no less than 3.1m. Headroom of 3.7m for pumps and 4m for high reach appliances is required. The respective turning circles of these appliancesare required. The respective turning circles o these appliances are 17m and 26m between curbs. Allow5.5m wide hard standing adjacent to the building, as level as possible (not more than 1:12), with a clearance zone of 2.2m to allow for the swing of hydraulic platform.

Firefighters must be able to gain access to the building. The normal escape routes are sufficient in small and low buildings but in high buildings and those with deep basements additional facilities suchas firefighting lifts, stairs and lobbies, contained within protected

shafts will be required. Fire mains in multistoried building must be provided. These may be wet or dry.

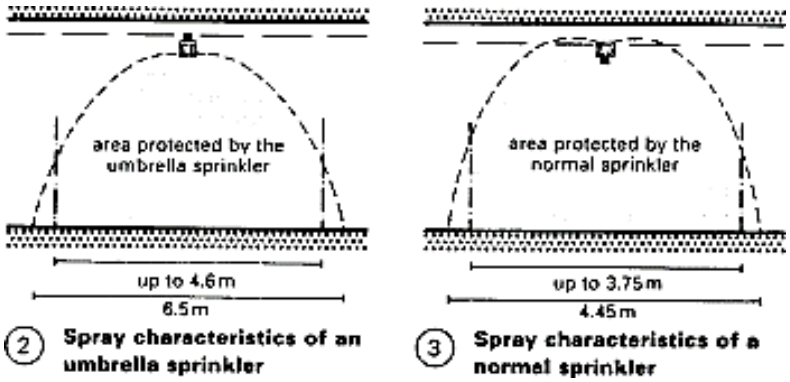
A means of venting basement to disperse heat and smoke must be provided. In basements, flames, gases and smoke tend to escape via stairways, making it difficult for firefighters to gain access to the fire. Smoke vents are needed to provide an alternative escape route for these emissions directly to the outside air and allow the ingress of cooler air. Regulations stipulate the positions and sizes of vents either natural venting or mechanical venting is associated with a sprinkler system may be used. (Neufert)

The requirements for means of escape are summarized as follows:

- Maximum travel distance with escape, possible in one direction only- 12.2m
- except for on the ground and first floors when it may be 30.5m if the following
- requirements are met:
- Opening in all offices 840mm X 535mm minimum.
- Lower level of opening light not more than 3800mm above ground and 915mm
- above floor level.
- Maximum travel distance with escape possible in alternative direction- 46m,
- Maximum distance between two adjacent exits from a storey- 61m.
- Fire fight stair- at least one fire-fighting stair is required in building with floors
- over 18.3m above ground level which should:
- Be continuous throughout building.
- Have access at ground level direct to open air.
- Have open able windows at each landing level.

AUTOMATIC SPRINKLE SUPPRESSION SYSTEM

These systems act immediately (even in unoccupied areas), exactly where they are needed, using a minimum of extinguishing agent. A well-designed and maintained automatic suppression system is faster, more efficient, and less likely to do additional damage than manual fire department suppression. All types of automatic sprinkler systems use pre piped waterways and regularly spaced sprinkler heads individually activated by fire contact.



(2) **Spray characteristics of an umbrella sprinkler**

(3) **Spray characteristics of a normal sprinkler**

Figure 2-53: Automatic Sprinkler System

3. CASE STUDY

3.1. ACADEMY OF CULINARY ARTS

3.1.1. INTRODUCTION

Academy of Culinary Arts was established in 2010 to advocate and provide quality education in the field of culinary and hospitality at Lagankhel, Lalitpur. Till date a total of 450 graduates have passed out and have been placed in reputed hotels, resorts and cruise lines around the world. This academy has set a benchmark for the culinary & Hospitality Education standards in Nepal within a decade of itscommencement.

Figure 3-1: Academy of Culinary Arts

3.1.2. OBJECTIVE OF THE STUDY

- Spatial ZONING analysis
- Functional efficiency in terms of layout, planning, circulation, and movement of people.
- To understand the teaching methodologies and course curriculum

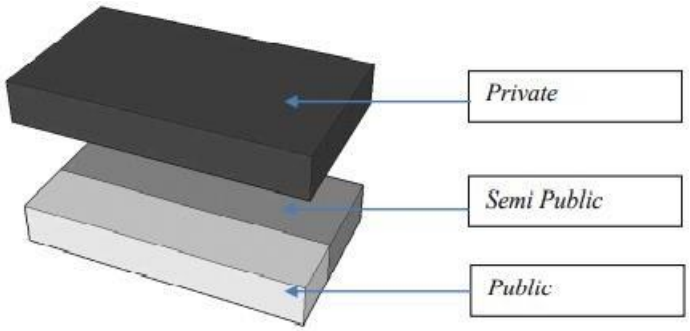
3.1.3. ARCHITECTURAL ASPECTS

It is a modern contemporary building with the maximum use of glass in exterior and has flat roof. The building is a steel construction and uses pre-fabricated boards for walls and partitions. The building is designed to be inclusive as it facilitates ramp in the front of building and for the vertical circulation lift is provided. Apart from this, Washroom specially for disabled people is designed in the building.

3.1.4. ZONING

The zoning has been done vertically in the building.

- The Ground floor is public and semi-public zone with reception, waiting area, RestaurantsBarrel room, Barista room and cafeteria with washrooms.
- The first floor consists of classrooms, practical kitchens, multipurpose hall and spill out areafor the students.



3.1.5. SPATIAL ANALYSIS

CLASSROOMS:

Spacious classroom is provided with cluster pods layout. Each pods is equipped with a 36" Desktop for presentation and lectures. None of the classrooms have windows, so AC is provided in each room,the capacity of each classroom is 40.

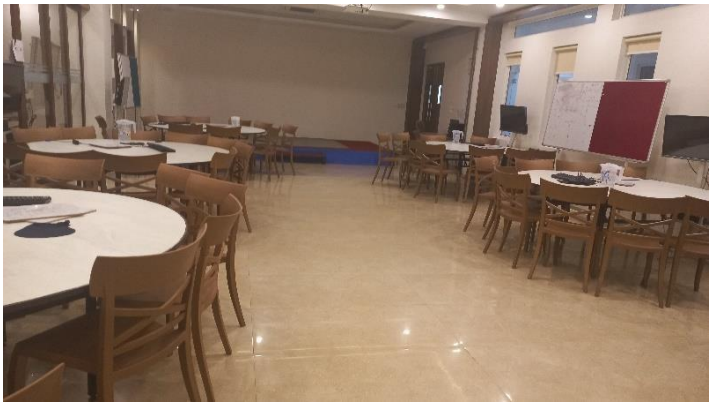


Figure 3-2: Classroom Module

KITCHENS:

It consists of three fully operational kitchen with individual workstation and internationally utilized kitchen equipment used for teaching. All the cooking hubs are provided with hood and there is a spacefor the presentation of food.10 kitchen island with

4 burner cooking hub is used in this kitchen. Artificial light is used in the kitchen since there is no window provided. All these three kitchens are connected by a common hub where common equipment are provided. This hub is also connected withthe bakery room.

Figure 3-3: Kitchen module in practical lab

RESTAURANT

A fully functional restaurant utilized for practical purpose and consists of hostess desk, buffet counterand a live cooking station. The restaurants open to public only on events but they are planning to openit to public for regular days in future. It is in the ground floor and directly visible from the reception. The restaurant is accompanied with s small commercial kitchen in the back. The capacity of the diningarea of the restaurant in 40-50. The restaurant is also visible from the road and has big floor to ceiling windows. Curtains have been used as visible barriers. This restaurant is mainly used for the practicalexam of the students.

Figure 3-4: Dining area of Restaurant

BAR:

A Barrel room which is equipped with modern bar equipment is provided in the ground floor. It is connected with the theory classroom where the students get their theory class done.

Figure 3-5: Barrel Room

CAFETERIA

A well-furnished cafeteria is operated for Breakfast, Lunch and Tea. Cafeteria is connected with two spills out area for the student in the upper floor by the staircase.

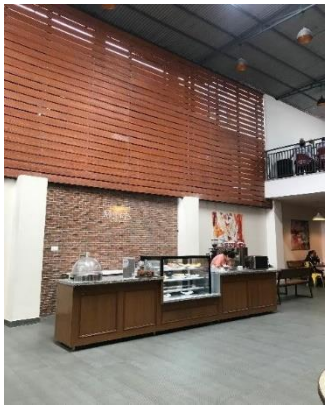


Figure 3-6: Cafeteria

RECEPTION

A lavish reception area is operated in the front foyer. The space is accompanied with a beautifully designed waiting room and consists of a lift for the vertical circulation. It is the public zone of the building. The lobby area is double heighted with full floor to ceiling window.

3.1.6. PLANNING ASPECT

Building complex had vehicular road on one side i.e., East. There was one entrance gate in the front of the building. It had adequate space around for beautiful landscape but the proper landscape is not done. There was no space allocated for the parking and students and visitors were expected to park the vehicles in the opposite side of road. A service road is provided at the back side for loading and unloading of the materials which connects to specific room for storing categorized accordingly.

However, spaces are well defined inside the building. A grand atrium was available as we entered inside the building and this was also used as front of the house. It was of double height and to reduce the air volume false ceiling was designed. Lift is also provided for the vertical circulation within the building. A spacious double heighted cafeteria is designed at the back of the building which is connected to the upper floor through staircase. Different spill out area is also well connected by the cafeteria where students brainstorm their different ideas.

First floor mostly consists of the Practical Kitchen and theory Classrooms. There are three Practical Kitchens and one bakery Lab which is connected by a hub where the common equipment of Kitchen is placed. Proper Chimney had been provided in each kitchen counter with easy access to basin and storage counter. Different theory classroom and multipurpose hall is arranged along the corridor. Mostly artificial light is provided in the theory and practical classroom.

LIGHTING AND VENTILATION

It is a modern building with the maximum use of Glass in the front façade. So, it meets the daylight standards in restaurant, Front of the house and some practical kitchen. Back of the house doesn't consists of windows so daylight standard is not met and the artificial lighting are provided to supplement the requirement. Apart from this, skylight is also provided in the cafeteria for the requirement of daylight.

Ventilation is of great importance in any kitchen. It prevents odor from penetrating the dining area. Proper chimney had been provided for the proper ventilation in kitchen. Each kitchen counter is equipped with its own hood for the ventilation and fresh air.

Figure 3-7: Stainless Hood in Kitchen

Figure 3-8: Artificial Lighting in Lobby

3.1.7. AREA DISTRIBUTION

S.N.	Description	Floor Area (Sq.ft)	Floor Area (Sq.m)	Space allocation (%)
1	Reception	233.85	21.72	0.90
2	Front of house	1004.89	93.35	3.87
3	Administration office	684.11	63.55	2.64
4	Restaurant and Bar	1461.39	135.76	5.63
5	Kitchen attached to restaurant	473.39	43.97	1.82
6	Recreation, dining & locker	2766.69	257.03	10.66
7	Toilet (M)	64.72	6.01	0.25
8	Toilet (F)	71.63	6.86	0.28
9	Utility Room	73.92	6.86	0.28
10	Staff room	421.73	39.17	1.63
11	Meeting room	205.79	19.11	0.79
12	Audiovisual room	851.19	79.07	3.28
13	Kitchen & Presentation room	2823.62	262.26	10.88
14	Computer lab	552.16	51.29	2.13
15	Housekeeping room	467.72	43.45	1.80
16	Classrooms	3926.23	364.75	15.13
17	Circulation space	2409.77	223.8	9.29
18	Open space	7451.65	692.28	28.72
	Total	25944.45		100

FLOOR PLANS

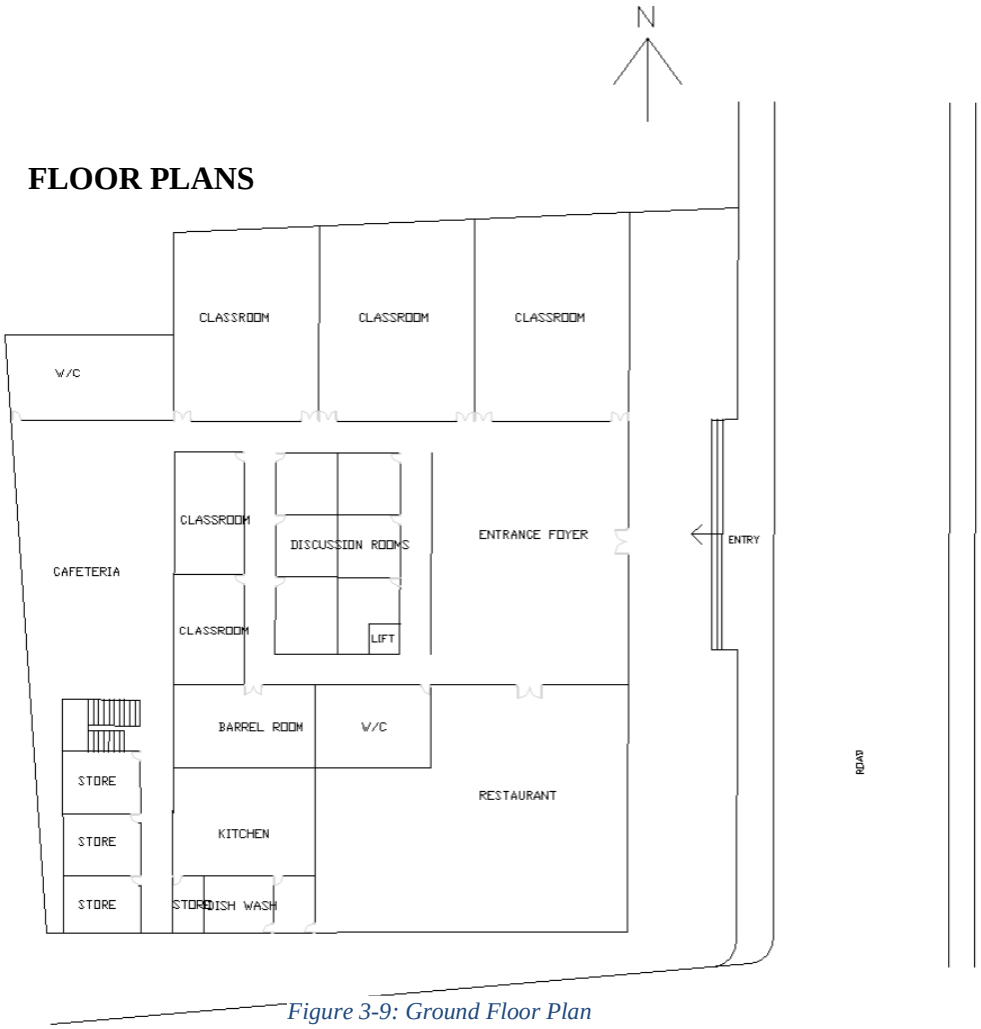


Figure 3-9: Ground Floor Plan

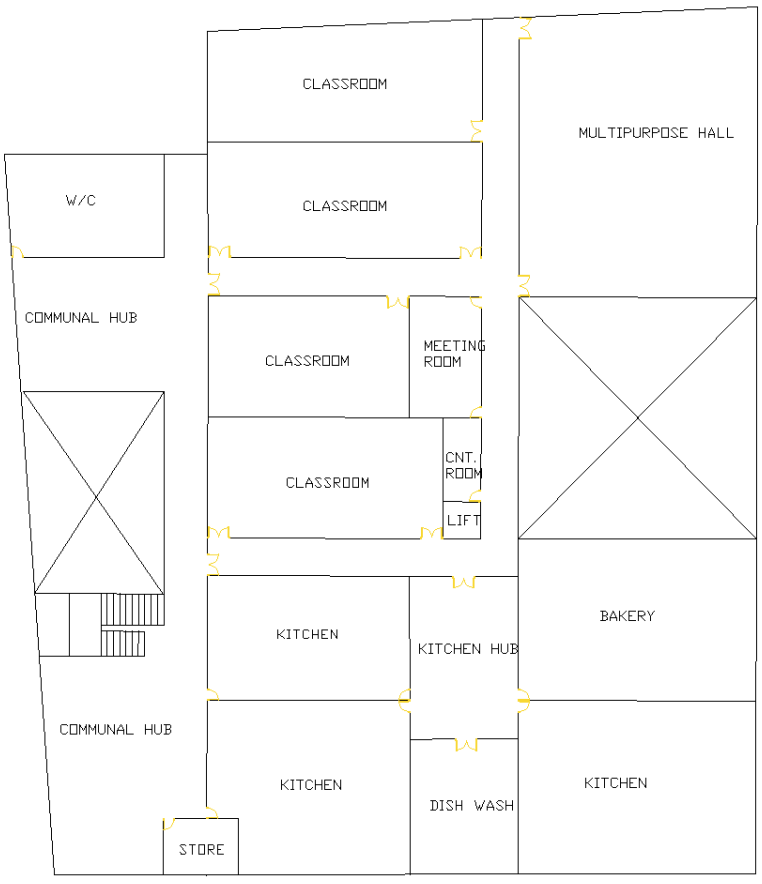


Figure 3-10: First Floor Plan

3.1.8. INTERNATIONAL FOOD TASTING

International Food Tasting is the most celebrate food carnival organized by the Academy of Culinary Arts and Hotel Management, one of the best colleges for Hotel Management in Nepal. This event celebrates cuisines from different countries of the world. This is 5th consecutive year that the Academy of Culinary Arts and Hospitality Management is hosting the IFT. This year the festival features cuisines from Turkish, West African, Vietnamese, Caribbean and Norwegian. The event is seamlessly handled by the students who not only prepare the food but also look after the marketing and sales of the festival. The students say that they serve around 400-500 people on a daily basis.

PERFORMATIVE EXPERIENCE

The idea of the event was very interesting because people got to taste different cuisines at once that too, watching the chefs cook live. The organizers were very welcoming; it honestly felt very good to see such humble people around. This event helps in catering different experience where people get to try the cuisine of different country and learn more about the taste palette of people of different country. As they entered the premise of Academy of Culinary arts, they would see the Reception desk where we issue their ticket. Then they are welcomed by students with the wet tissue for hygiene and mango welcome drinks. As people are enjoying the welcome drinks, we are assigned with the guide who will helps us with the whole food carnival.

The food carnival starts off with the small tour of college where the guide guides us through the different practical classroom such as Barista, Bar etc. Also, in the Barrel room, different event is happening which is detached to the food carnival. Here people get to experience making their own cocktail drink after paying extra money. This was interesting experience on its own.

Figure 3-11: Children experiencing making their own drinks

The whole venue was packed with people from teenagers, youngster to adult

experiencing the same food carnival and sharing their view on cuisine of different country. As people tried all the 5 cuisines, they get to finish the carnival with the sweet treats i.e., Desserts. This whole experience was quite new and exciting for me as people were able to try the cuisine from different parts of the world. Even though people were unfamiliar with the taste, but it didn't diminish their curiosity towards the cuisine thanks to the chattering of the people around describing the taste and comparing our palette with the palette of foreigner which basically kept on our toes to get the first-hand experience. Overall, it was a wholesome experience.

Figure 3-12: Food Tasting Counter

3.1.9. INFERENCES

- There is no proper landscaping and parking facility.
- Design of the building was inclusive as provision of ramps was given in the building. Also,Lifts was available for the vertical circulation.
- Two doors were provided in the kitchen and restaurant area which was essential for easycirculation and at the time of hazard.
- A service road well connected to the designated store room is provided.
- Learning environment is greatly promoted through the pods design classroom with computerattached and different spill out area for brainstorming

3.2. NEPAL ACADEMY OF TOURISM AND HOTEL MANAGEMENT (NATHM)

3.2.1. INTRODUCTION

Nepal Academy of Tourism & Hotel Management (NATHM) has a history of four decades' services in Nepalese Tourism & Hotel Management Education. Since its inception the Academy has played a crucial role in developing the human resources for this industry with the aim of enhancing the level ofquality in tourism and hospitality services. It has been providing craft and supervisory level of skill- oriented training to cater to the demands from this particular sector. This pioneer institution is renowned for generating qualified workforce for the ever-increasing demands of the Hospitality & Tourism Sector.

Figure 3-13: Nathm

3.2.2. OBJECTIVE OF THE STUDY

- To understand the program of various functional spaces
- Planning and space requirement of a Culinary institute as per equipment.

3.2.3. CHARACTERISTICS OF THE CASE STUDY

- Date of Establishment: 1972 A.D.
- Location: Ravibhawan
- Approach: About 400m south from main road
- Site area: Aroun 22 ropani
- Site Surrounding:
- North- Residences
- East- Residences
- South- Residences
- West – Lincoln School

3.2.4. ARCHITECTURAL ASPECT

ARCHITECTURAL EXPRESSION: Adaptive Re-use (Neo Classical)

The building is an old neoclassical building and adaptive reuse has been done to convert in into a culinary arts and hospitality school.

3.2.5. ZONING

- The ground floor was public and semi-public and consisted of reception and classrooms.
- The first floor was also public and semi-public and consisted of offices and classrooms.

3.2.6. PROJECT COMPONENTS

The facilities provided by NATHM for the students of culinary field are as follows:

JUNIOR AND SENIOR RESTAURANT:

There are two restaurants run by the students each of 32 capacities. Both the restaurants are directly attached the servery and receive ample amount of daylight. The restaurants are used for hosting events. The senior restaurant is directly accessible through the commercial bulk kitchen and is separated by amultipurpose small hall.

Figure 3-14: Servery connecting Restaurants

Figure 3-15: A well lit Restaurant

OFFICES

Since, NATHM is a governmental institution, a large body is dedicated for the administration of the school. The entire first floor of the main wing has been dedicated to offices of various departments. Large Spacious offices are planned along the courtyard.

Figure 3-16: Spacious offices at NATHM

Figure 3-17: Design of spaces wrt courtyard

THEORY CLASSROOMS

The theory classrooms of NATHM are not stepped and the capacity of each class room is 40. The desks and chairs of the classrooms are typical.

Figure 3-18: Layout of theory classroom

PRACTICAL KITCHEN CLASSROOMS:

- There are 8 kitchen counter for 16 students at a time but 20 students are taught in theclassroom.
- Both the classrooms did not contain exhaust hoods on top of hoods.
- Bulb light and fluorescent Light Tube is used for the lighting of the practical kitchens.The pipelines are exposed since the building has been adapted for re-use.

Figure 3-19: Layout of Practical Kitchens

Figure 3-20: Use of Exhaust Fan in Kitchens

DEMO LAB ROOM:

Its capacity is about 40 students at a time. Demonstration lab consists of a proper demo area in the front and consists of the following equipment:

- Pizza oven- 2’ * 3’6”
- Hot case – 2’3” * 3’ 10”
- Working Tables- 3’* length cont. consistent
- Sink *2 – 5’ length

A reflector suspended from ceiling so that the students can watch what’s happening inthe screen above.

Figure 3-21: Demo Kitchens

BAKERY LAB

NATHM had two fully equipped bakery Lab with the following equipment:

- Ice cream maker- 1.5’ * 1’5’
- Hot case
- Mixer
- Burner
- Baking Rack
- Fridge
- 8*work table
- Sink- 4’5” * 2’

The bakery lab also has a small office attached to it. The second bakery lab had the following equipment:

- Oven- 4-5” * 2’7”
- Grill oven- 4’* 2’7”
- Big Rack oven – 5’7” * 4’

Figure 3-22: Equipments in Bakery

STORAGE:

There is a proper provision of a well facilitated pantry in NATHM. Two cold storage units of6’ * 8’ sizes have been provided but are not currently used. The storage units had shelves andvarious tables for the storage of various goods.

Figure 3-23: Storage room

COMMERCIAL KITCHEN:

NATHM had big bulk kitchen that was attached with a servery and a larder. All the basic components of a bulk kitchen were present in the kitchen attached to the restaurant in the ground floor. There was provision of floor drainage gullies.

Figure 3-24: Use of drainage gullies in Kitchen

3.2.7. PLANNING CONSIDERATIONS

Building complex had vehicular road on one side i.e. north. There was one entrance gate inthe front of the building i.e. on north side. It had adequate space around for beautiful landscape. There was proper planning of parking space and parking shed were provided. Sufficient parking was available.

The access to each building, since they are separate, is not well defined and not easy to perceive. The classrooms of culinary were available in one of the blocks of NATHM. Spaces were well defined. Circulation space was not much clear. Circulation was through a single staircase only. No emergency escapes were provided. All the classrooms were also not located properly. No proper chimney had been provided in each kitchen classroom. Only adjust fans were provided. Windows were provided in large number in order to illuminate the interior of building and to avoid any accidents that is likely to occur in kitchen classroom while cooking. A service road was provided at the back side for loading and unloading of materials. A food storage room was also provided. And all cooking equipment were stored in respective kitchen classrooms. Locker rooms were provided for students. The cafeteria is provided at the back of the building and the restaurant is not directly connected to the multipurpose hall.

3.2.8. AREA DISTRIBUTION

S.N.	Description	Area (sq.ft)	Area (sq.m)
1	Kitchen classroom	833.81	77.46
2	Baking kitchen	561.50	52.16
3	Demo lab	565.45	52.53
4	Food science lab	362.41	33.66
5	Senior's restaurant	1968.34	157.78
	Bulk Kitchen	694.58	64.52
6	Junior's restaurant	3761.27	349.4
	Kitchen attached to restaurant	760.38	70
7	A cafeteria	1012.13	94

3.2.9. FLOOR PLANS

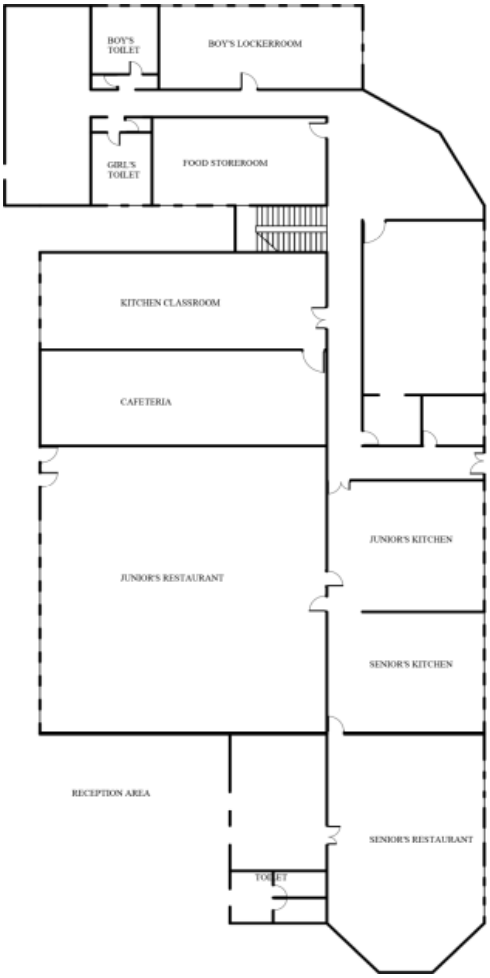


Figure 3-25: Ground Floor Plan

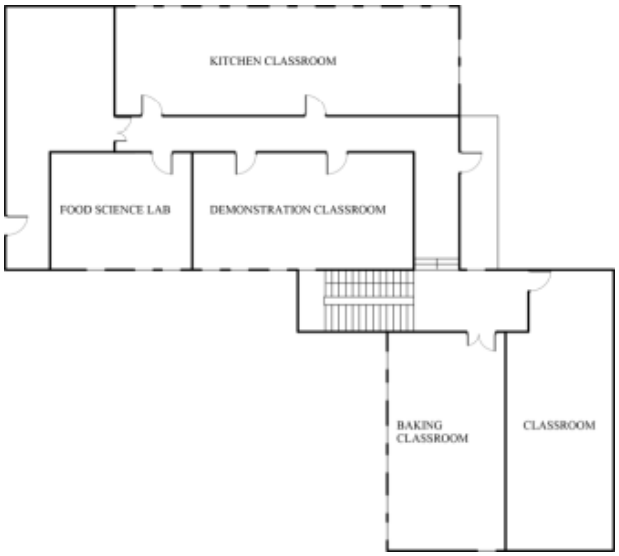


Figure 3-26: First Floor Plan

3.2.10. INFERENCES

- No proper chimney in each kitchen and only exhaust fan
- Naturally lit with an open courtyard
- Clear Circulation Needed
- Need of Canopies over gas hub
- No definite spaces for the presentation of dishes.

3.3. BASQUE CULINARY CENTRE

3.3.1. INTRODUCTION

The Basque Culinary Center, based in San Sebastián, in the Basque region of Spain, is a culinary foundation created in 2009 by Mondragon University and a group of prominent Basque chefs as a training, research and innovation project, aimed at developing the culinarysector, with the idea of relating cooking with management, science and other disciplines. Thenew building that houses Basque Culinary Center the head-office is located in a tangential site to the Miramon Technologic Business Park. This condition of proximity with the very steep slope of the site assumes the start point of this architectonic proposal.

The Basque Culinary Center consists of two lines of work: the Faculty of Gastronomic Sciences within Mondragon University, the first to offer official university-level training in the gastronomy sector in Spain, and a Research and Innovation Centre in the field of Food and Gastronomy. The institution's campus was inaugurated in October 2011. (Frearson, 2011)

Figure 3-27: Basque Culinary Centre

3.3.2. COURSES OFFERED

The courses offered in this college are as follows:

- Degree in Gastronomy & Culinary Arts
- Postgraduate programs
- Programs for gastronomy enthusiasts

3.3.3. VOLUME GENERATION

From a conceptual point of view, volume generation is based on the scale work between the iconographical image (piled up dishes) and the building itself. The artist Robert Therrien (Chicago 1947) handles daily kitchen objects as dish services, pots, to uplift them into artistic objects, by means of accumulations, scale multiplication. The plane character of these objects take contrast with their iconographical presence when they assume their new dimension. The same strategy has been taken to the exterior volume definition of the building, where the Therrien´s dishes will function as daily support of the spaces related to the Technologic development and innovation in Gastronomy.

3.3.4. PLANNING ASPECT

On the one hand the building becomes the icon of the Gastronomic Science University, showing towards the exterior an image based on the technologic and innovation leadership, but on the other hand, it respects and interacts with the scale of the low density quartier whereit settles down. It´s because of this dual condition why the building makes the most of the slope to organize the functional programme from the upper side to downside, locating the public areas in the access floor, allowing the specialty of the programme while going down, while entering the building.

Figure 3-28: Settling Dorm of BCC

The volume takes a U-shape, through which the way down the slope it´s allowed, without forgetting the fact of giving shape to an interior space through which all the circulations are developed. This way a space full of activity is configured, where all the relationships and interchange take place as two determined elements for the innovation act. From a functional point of view, it has been divided into three groups, one of them related to the Academic area and one another to the Practice area and the last one to the Research area. Bringing together ina vertical way all the spaces related to the Gastronomic Practice area,

as the changing-rooms, ateliers, precooking kitchen, access to raw and other kitchens, there forms the interconnectionbetween them for people and food in a straight way.

At long distance the building shows the different levels that give shape to it, comparing its scale to the buildings of the Technologic Business Park, while at short distance the roofs become areas used for cultivation of edible and aromatic plants, almost neutralizing the effect of the building towards the closest semi-detached housings. The building expresses itself the condition of the slope as an aspect drawn from the place emphasizing the character of support of the floor structure that are piled up as untidy dishes following the contour lines. As the floor structures are shown as activity supports, the dishes keep the iconographical value as the support of the work developed in the kitchen

Figure 3-29: Cultivation of Crops in roof

Figure 3-30: Courtyard used as green garden

3.3.5. PROJECT COMPONENTS

The facilities provided by BCC for the students ofculinary field are as follows:

CLASSROOM:

Classrooms are located in the first, second and third levels in the form of labs or academic classroom settings. A sensory analysis classroom is also provided to learn techniques for analyzing products using their senses which are in the form of laboratory for tastings and samplings. Some are like the typical academic classroom settings and some are in the form oflecture halls. The designs through the classrooms are very clean and neat. Hygiene is an important element in an educational facility especially a culinary one so this is shown clearly throughout the interiors of the building.

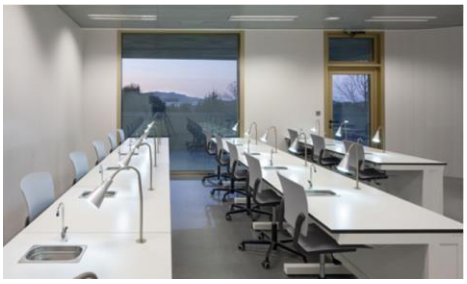


Figure 3-31: Classroom of BCC

Materials

Materials included in all types of classrooms consist of:

- Polished Concrete
- Vinyl
- Wood
- Steel

Lighting

There are two types of lightings for the lab style classrooms, they include:

- Fluorescent Lighting
- Task Lighting
- Natural Light

INSTRUCTION KITCHENS:

Various themed workshops and experimental workshop provided. Themed workshops that focus on a range of foods such as meat, vegetables, desserts and fish. Here, students put the different ways of cooking each ingredient into practice. Experimental workshops boasting avant-garde equipment – a firm favorite among students. Participants work in groups to develop their own haute cuisine project with the support of experts. Creative innovation and creativity workshops in which participants let their imaginations run wild and experiment with different ingredients, products and cooking techniques. There is no particular design theme to the space because it is not functional in the area. Instead, it is followed with a sleek and neat design that focuses on an important element; hygiene.

Figure 3-32:: Instruction Kitchen

Lighting

There are two types of lightings for the lab style classrooms, they include:

- Fluorescent Lighting
- Task Lighting

Equipment

- Ovens
- Fryers
- Ranges
- Mixers and Blenders

LIBRARY:

A **library** is designed equipped with all the necessary technology so that students can boosttheir studies.

Figure 3-33: Library

Materials included in all types of classrooms consist of:

- Polished Concrete

- Vinyl
- Wood

Lighting

There are two types of lightings for the lab style classrooms, they include:

Figure 3-35: Cafe counter and Seating at BCC

- Fluorescent Lighting
- Task Lighting
- Natural Light

AUDITORIUM

An auditorium where conferences, cooking demonstrations and special subject sessions are held.

Figure 3-34: An auditorium at BCC

CAFETERIA

The cafeteria is located on the fourth level. It includes multiple types of seating arrangements. It is equipped with one service counter that is accommodated by its own kitchen. It has a naturalistic style to its interior. It has a comfortable feel to it. Throughout the entire space, windows are available to let as much natural light in as possible, which lends itself to its pleasant atmosphere. It also offers its students to apply what they learnt from courses such as table service knowledge, short order cooking and working in a commercial type setting with real service.


Figure 3-36: Cafe counter and Seating at BCC

Materials included in all types consist of:

- Polished Concrete
- Vinyl
- Wood
- Steel
- Glass

Lighting

There are two types of lightings for the lab style classrooms, they include:

- Fluorescent Lighting
- Task Lighting
- Natural Light
- Spotlight

LEVELS OF BCC

The spaces are arranged along the central circulation path along the courtyard. From a Functional point of view, circulation between zones are in a summarized way. It can be divided into three groups (Academic Area, Practice Area. Research area)

The building consists of five levels:

- Level 0 (includes the research area.)
- Level 1 (includes the academic area.)
- Level 2 (includes the practice area and part academic area.)
- Level 3 (includes practice area.)
- Level 4 (includes public/general area.)
- Level 5 (includes Service Area)

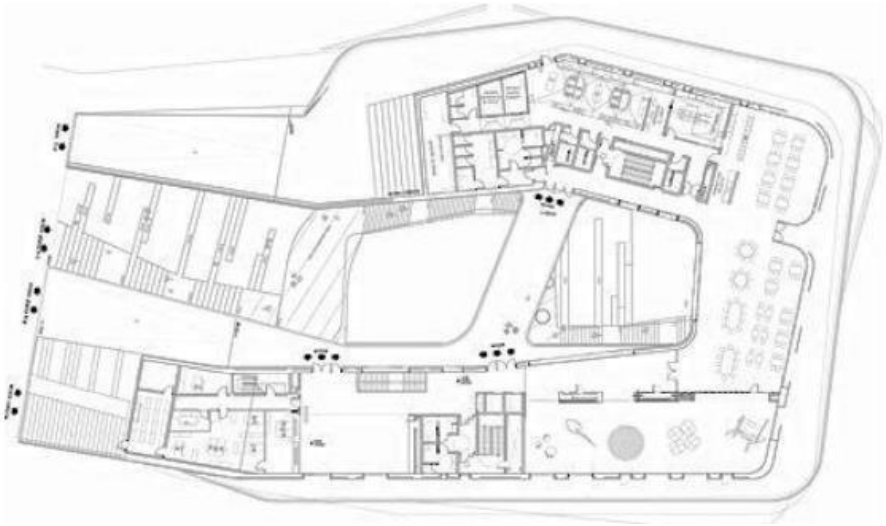


Figure 3-37: Level 5 of BCC

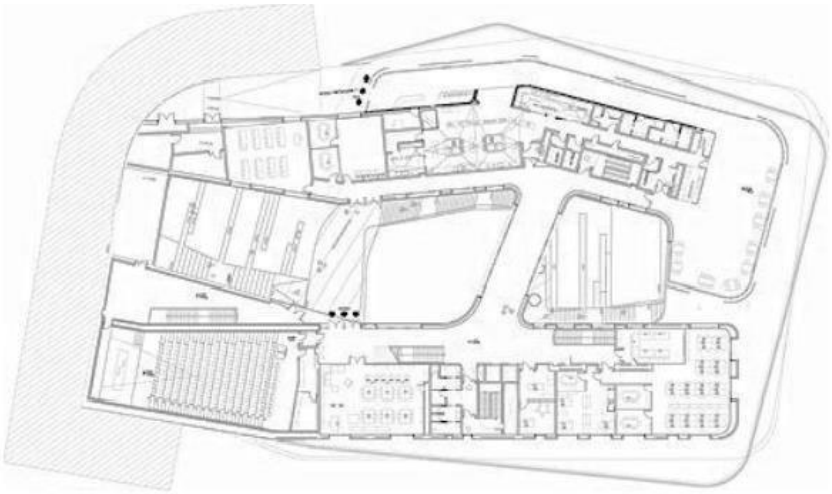


Figure 3-38: Level 4 of BCC

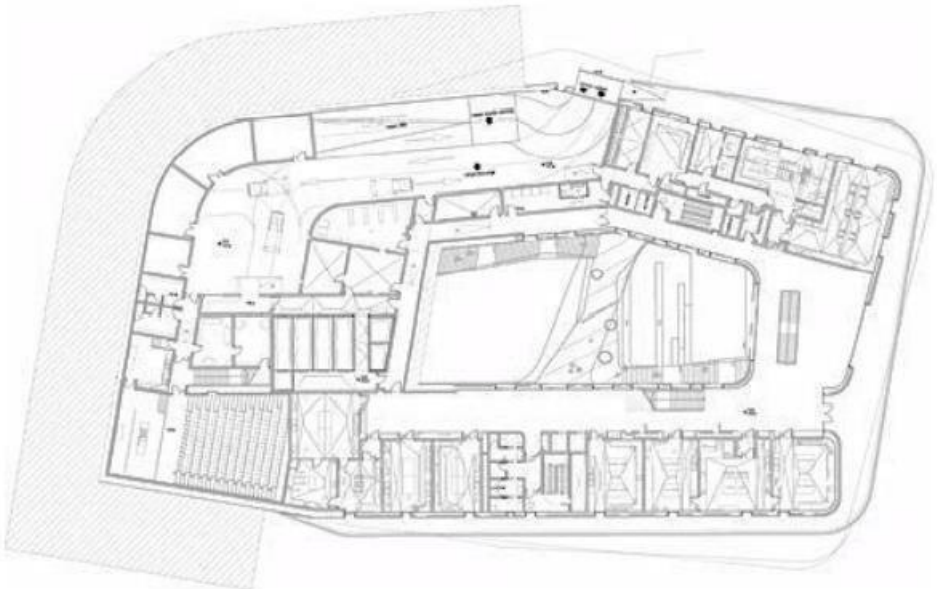


Figure 3-39: Level 3 of BCC

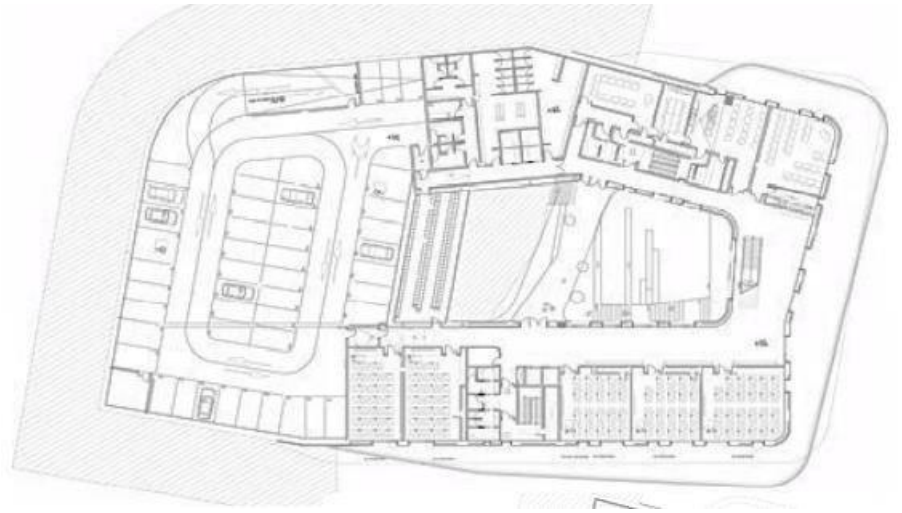


Figure 3-40: Level 2 of BCC

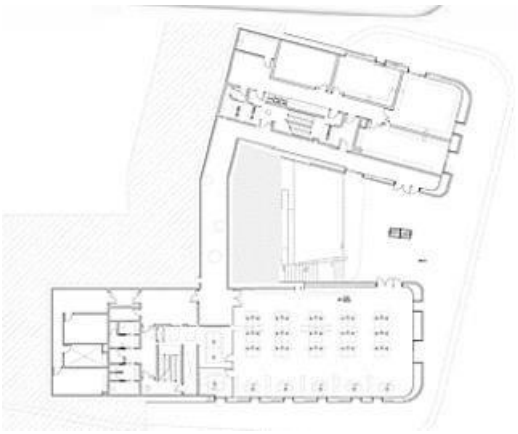


Figure 3-41: Level 1 of BCC

3.3.6. AREA DIVISION OF EACH SPACE

Level 0 and Level 1 (Research and Academic Areas)

Space Name	Space Area (SQM)
Research Lab	1000 SQM
Faculty Office	16 SQM
Classroom	31 SQM
Toilet	20 SQM
Administrative Office	19 SQM

Table (2-2) Level 0 & 1 - BCC

Level 2 and Level 3 (Practice and Academic Areas)

Space Name	Space Area (SQM)
Demonstration Kitchen	85 SQM
Instruction Kitchen	95 SQM
Skills Kitchen	100 SQM
Classroom	65 SQM
Toilet	40 SQM
Lockers	10 SQM
Auditorium (Level 2)	180 SQM
Library	40 SQM

Table (2-3) Level 2 & 3 - BCC

Level 4 (Public/General Areas)

Space Name	Space Area (SQM)
Cafeteria/Restaurant area	800 SQM
Administration office	20 SQM
Outdoor Patio	500 SQM
Storage (Cold & Dry)	130 SQM
Toilet	20 SQM

Table (2-4) Level 4 - BCC

3.3.7. INFERENCES

- Design of Building wrt to existing contours of the site.
- Proper segregation of site into academic, practice and research area
- Sustainable approaches like PV cells and green roof
- Concept Derivation
- Material and Lighting used for various spaces
- Various facilities provided for students for learning

3.4. CULINARY ACADEMY OF INDIA

3.4.1. INTRODUCTION

The Culinary Academy of India is the first professional training school for a higher educationin culinary arts founded in India. Ever since its inception in 1996, Brand CAI has matched thestandards of top American and European culinary institutes. Today CAI is recognized as India's premier culinary arts and catering technology institute, and one of the best colleges foraspiring chefs' world over.

The Culinary Academy of India is located in close proximity to some of the most illustrious hotels in Hyderabad. This enables our students to get more practical hands-on training at professional kitchens. The added advantage of convenience for on-the-job experience translates to steeper growth for each individual, while providing a wholesome understanding of the industry they will be working in. Being the first professional culinary arts training schoolin India, our students are exposed to tremendous job opportunities in the hospitality sector. Andour practical training and soft skills coaching empower our students with the prerequisites to handle senior positions in professional kitchens with confidence and dynamism.

3.4.2. COURSES OFFERED

The courses offered in this college are as follows:

- Bachelor's Degree in Catering Technology & Culinary Arts
- Post Graduate Diploma in Culinary Arts
- Craft Certification Course in Food Production

3.4.3. PROJECT COMPONENTS

The facilities provided by CAI for the students of culinary field are as follows:

TRAINING KITCHEN

The Culinary Academy of India has eight sophisticated kitchens, fully-equipped for training aspiring chefs. Each kitchen has a different specialty, and over the academic progression, our students will rotate between them. Our kitchens are planned by professional chefs and are industry standard, creating a mock environment in each setup. In addition, our chefs have designed the space in a way to maximize individual attention to each chef trainee.

Figure 3-42: Indian Bounty Kitchen

Figure 3-43: Teaching Kitchens

F & B RESTAURANT

Figure 3-44: Restaurant

Brand CAI has a fine dining restaurants where students will learn the basic principles of F & B service and room management. The restaurant has 36-covers, and students will have mock sessions to practice their skills. Speciality equipment, cutlery and knives, restaurant decoration and layout planning, and many more practical sessions will be held here over the course of a student's academics. The restaurant also has a fully fledged display bar, along with training equipment and different glasses for students to learn and practice their hand at bartending.

CRUISE TRAINING FACILITIES

The Culinary Academy of India is the official training centre for galley personnel in India. India today is a hotspot for cruise recruitment and CAI plays a critical role in providing employment for students aspiring to be a part of the international cruise line industry. Over ourillustrious albeit short history, CAI has proven itself at the global level and emerged as a qualitysource of providing cruise qualified personnel. This is also in part due to our specialised facilities for training cruise personnel. Owing to this, almost all the Carnival Cruise Brands now use CAI as their authorised training centre for pre-embarkation cruise

training.

Figure 3-45: Cruise Gallery

LIBRARY & CLASSROOMS

At the Culinary Academy of India, the best resources for our students to learn are provided. The library & resource centre has some of the most iconic gastronomic books ever published.This reading material combined with the theory lessons equip our students with a detailed understanding of food. Keeping in mind the hi-tech approach in the food service operations, computer applications education is provided to students through the duration of their course.They also have multiple audio-visual classrooms for students to take advantage of during theirtheory class.

Figure 3-46: Classrooms

3.4.4. LEVELS OF CAI

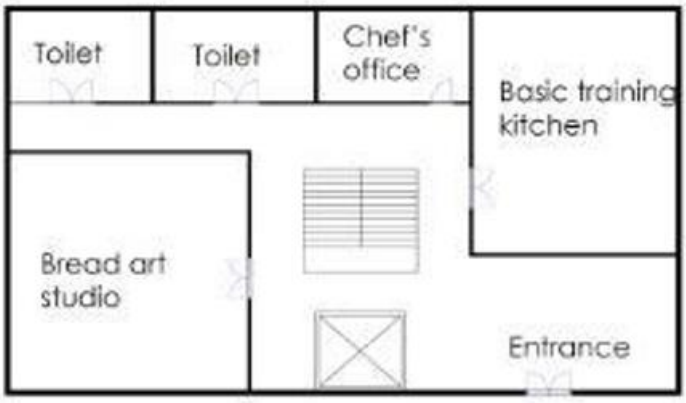


Figure 3-49: Ground Floor plan

Figure 3-48: Basic Training Kitchens

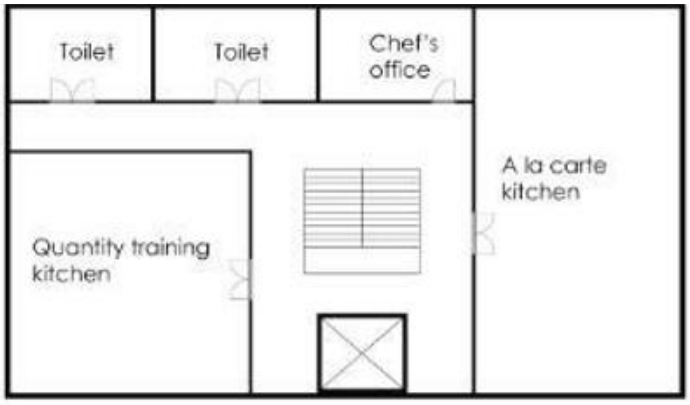


Figure 3-47: First Floor Plan

Figure 3-50: A-la Carte Kitchens

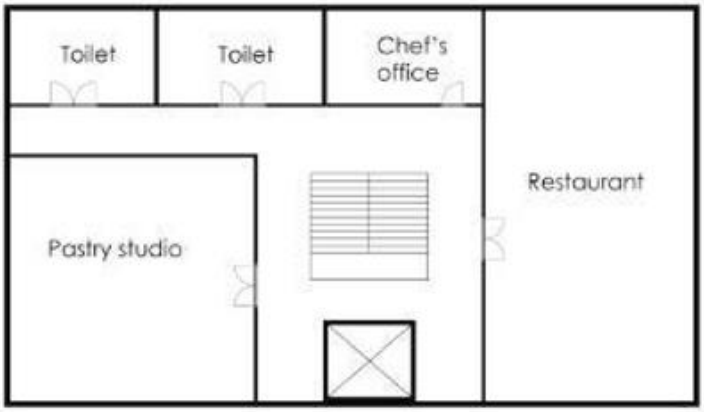


Figure 3-51: Pastry Studio

3.4.5. INFERENCES

- Perfect balance of classroom and practical workshop in each floor
- Consists of additional kitchens like a la carte, bread art, Cruise Gallery
- Not very well lit, needs artificial Lighting

3.5. MANIPAL DEPARTMENT OF CULINARY ARTS

Figure 3-52: Manipal Department of Culinary arts

3.5.1. PROJECT INFORMATION:

- Location: Manipal, Karnataka, India
- Climate: Tropical
- Site Area: 4.7 acres
- Year: 2018
- Building Typology: Instititutional
- Affiliated: Mahe University
- No.of Floors: 04
- Total Students Intake: 150

3.5.2. PROJECT SELECTION- INTENT

The main aim of this project selection was to understand the functioning of a international standalone culinary institute.

3.5.3. KEY FEATURES

- To provide a world class training school for chefs
- To exhibit the cultural and heritage values of cooking field through gallery
- Trying to provide first of its kind standalone degree for culinary arts in India

3.5.4. NEIGHBOURHOOD

Manipal is a locality of Udupi City, 5km from centre of Udupi KarnatakaSurrounding Land use: Institutional, Residential, Commercial

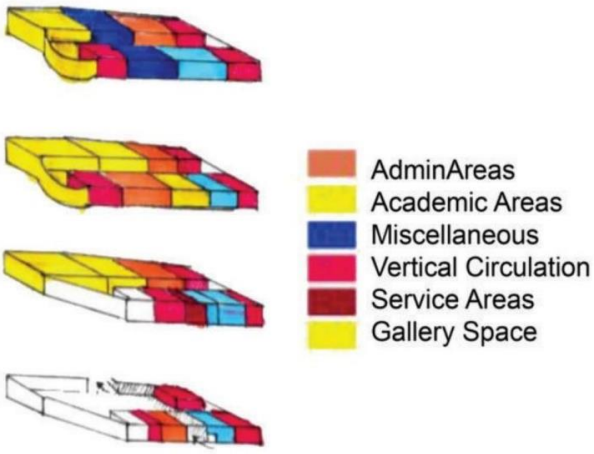
3.5.5. APPROACH

- Main access: Udupi-Agumbe Hwy in southIt has both entry and exit at the same side. Key Programs
- Culinary Gallery, Bakeries, Kitchen Labs, Class-rooms,Admin spaces, Library

3.5.6. COURSES OFFERED:

- BA in Culinary Arts – 3 yrs. (90)
- PG diploma in Culinary Arts- 1 yr. (30)
- M.sc in Nutrition and applied Dietetics- 2 yr. (30)

- Spatial Zoning



3.5.6 Form and Massing

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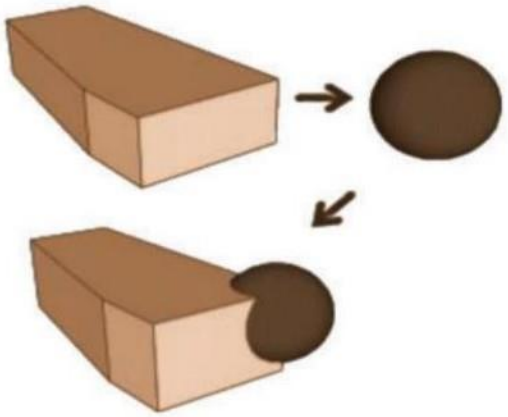
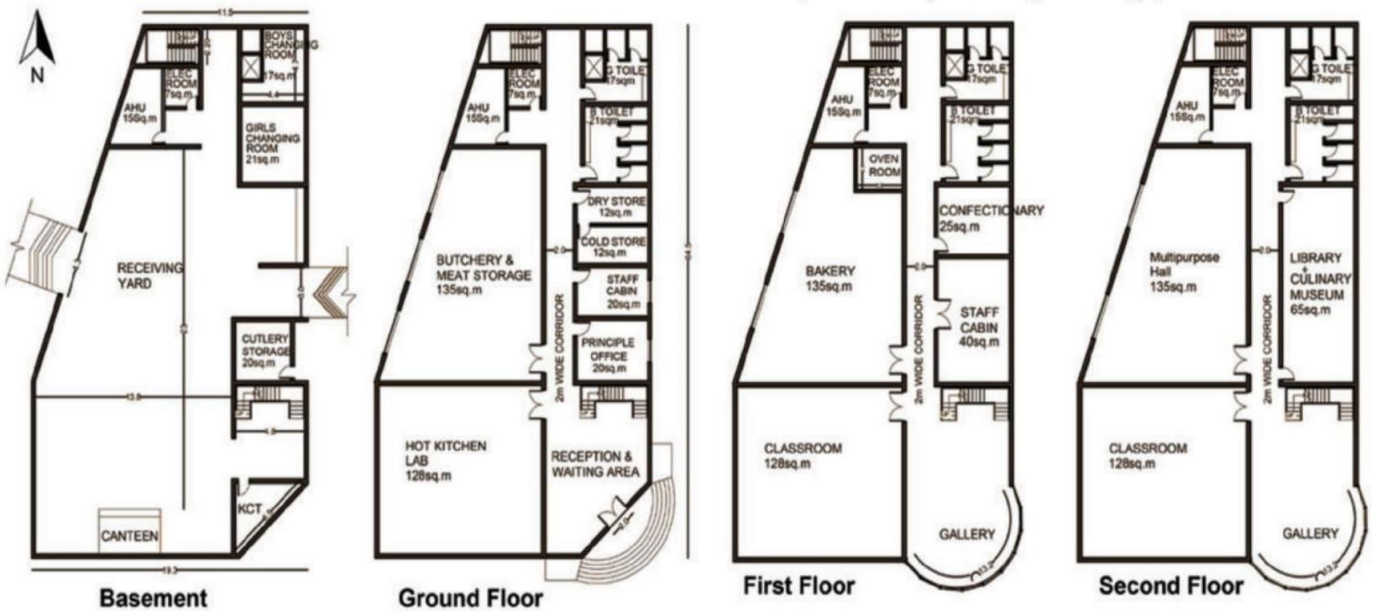
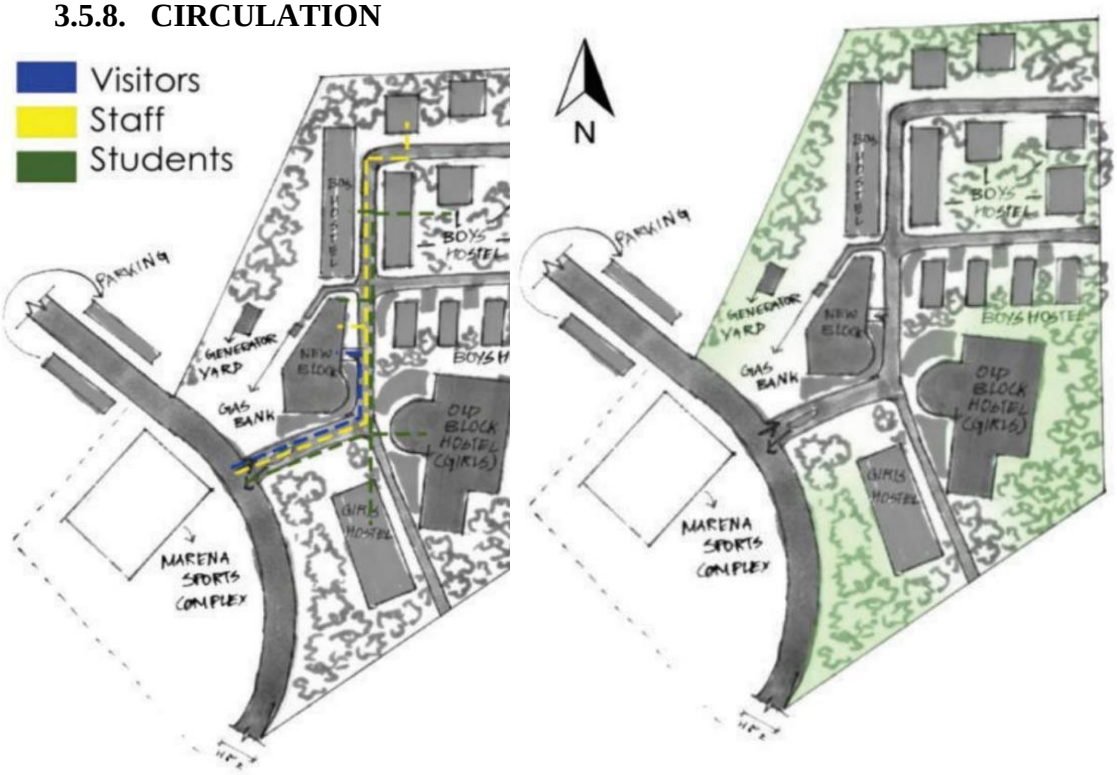


3.5.7. FLOOR PLANS



3.5.8. CIRCULATION



3.5.9. PROJECT COMPONENTS

Kitchen

Kitchen is the place where students hone their cooking skills. Training kitchens are categorized by its functions such as basic and advanced teaching kitchen, Bakery training centre and confectionary. Each kitchens are provided with the workstations and preparational table and equipments.

Working Diagram of Kitchens:

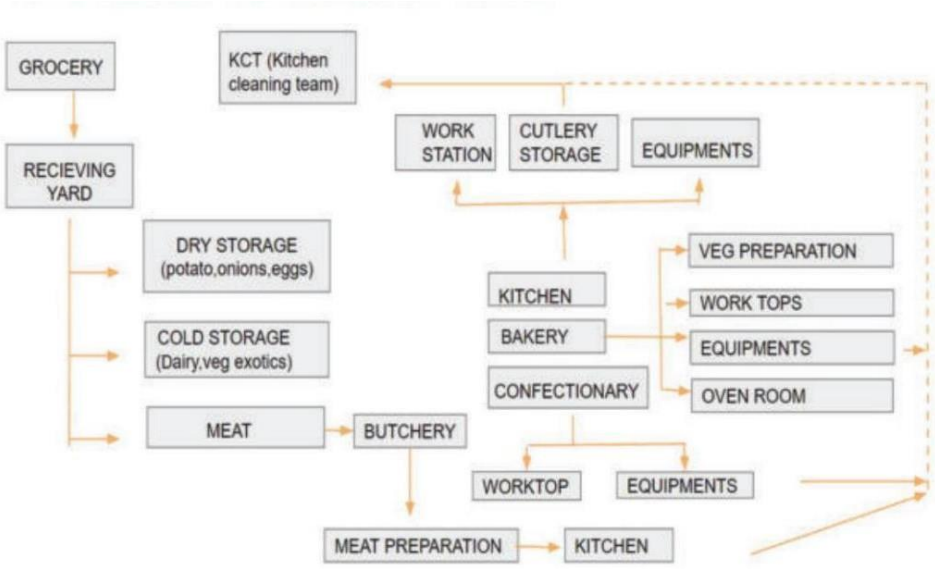
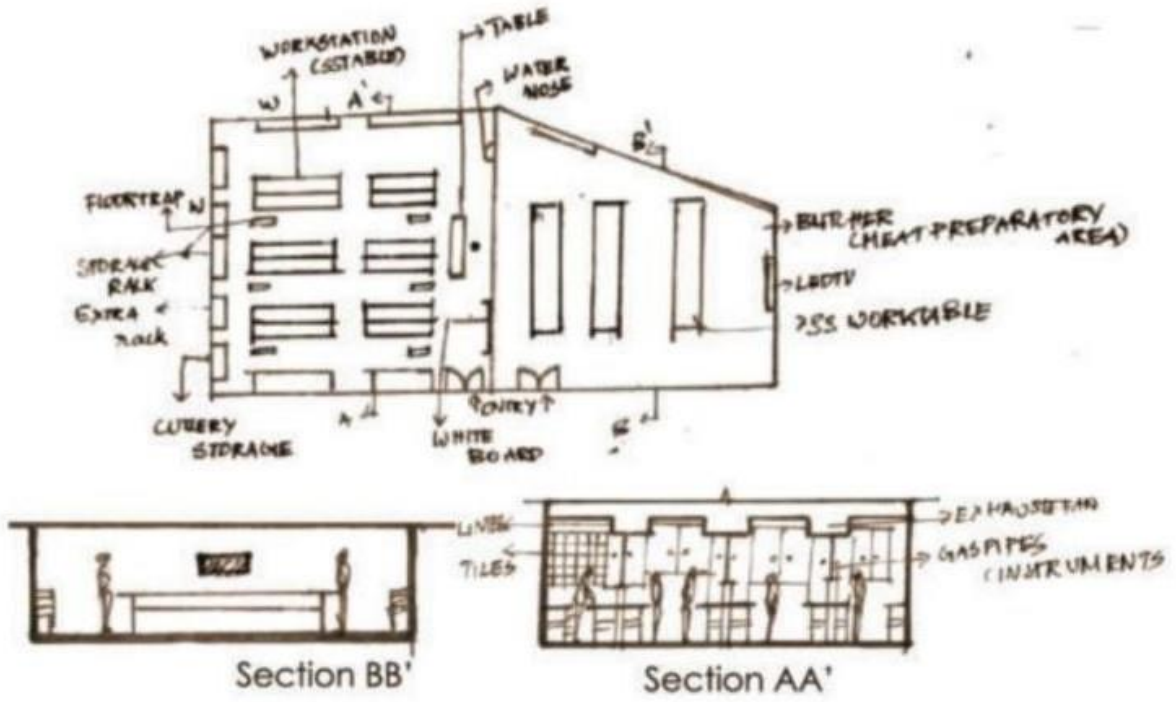


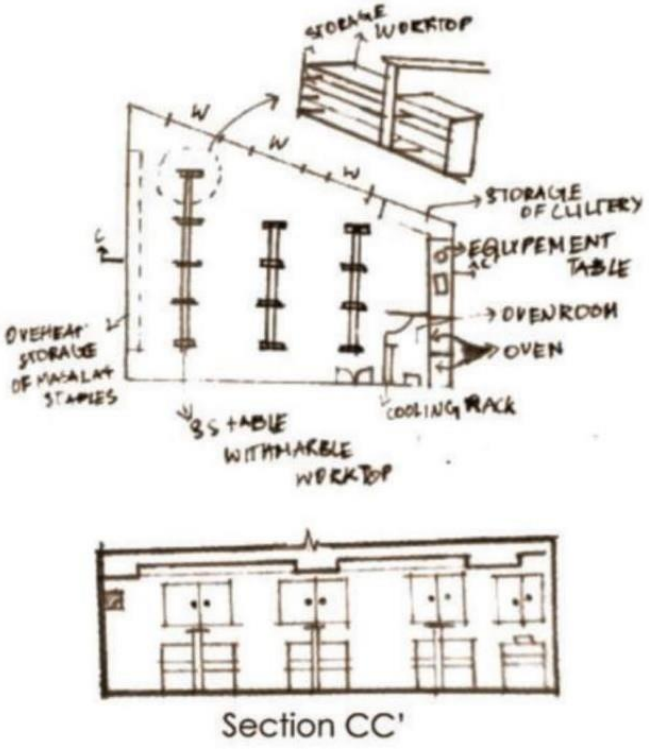
Figure 3-53: Working Flow

Figure 3-54: Kitchen Layout

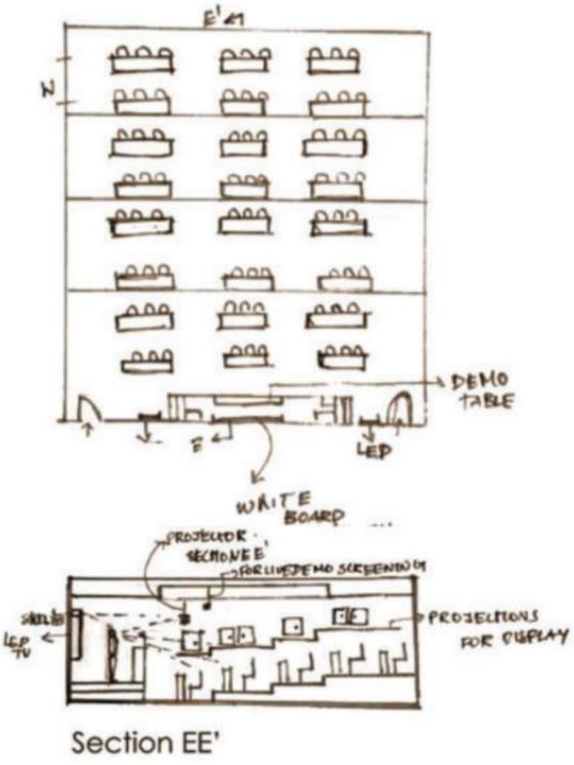
Furniture Layout:



Baker



Classroom



3.5.10. BUILDING SERVICES

- Parking Amentites: No designated Parking
- Bike parking provision provided outside the campus. Car Parking for outsiders and student is not allowed.
- Security: Security cabin at entrance gate
- Playground Facilities: No playgrounds provided. The marena sports complex is used.
- Gas supply: Through gas bank located behind the gas supplied through gas pipes to the work-station.
- Air-conditioning(hvac): AHU located to every floor
- Fire Safety: Fire exit stairs at the rear end; Fire extinguishers provided in kitchens and corridors.Solid waste disposal: Waste is collected from the kitchen, bakery and confectionary in a dumptruck and sent for vermicomposing
- Staircase,lifts, ramps: One main staircase near entrance.

3.6. MANIPAL CULINARY ARTS GALLERY

Figure 3-55: Culinary Gastro Gallery

India's First Living Culinary arts museum.

Opened: April 2018, Vikas Khanna (founder and curator of the museum) – an internationally renowned chef and co-host on famous television cooking reality show Master Chef India.The museum offers insights into how food was stored and cooked, and the metals used to makethe vessels. "This museum is helping utensils get a second chance to live" says Khanna, who hopes to house 10,000 objects in the museum. Being part of new Department of Culinary Artsbuilding, has the shape of a giant pot, similar to the ones found in Harappa. The Udupi cuisineinfluence on the culinary arts museum. The gallery spread approximately over 25,000 sqft. Museum of Culinary arts exhibits nearly 2,000

objects on display. Museum offers insights intohow food was stored and cooked, and the metals used to make the vessels. The artefacts also reflect the ancient wisdoms. It is a unique blend of the cultural artefacts.

With the great heritage of Udupi, combined with the large number of Indian and Internationalstudents residing in an around Manipal, it was very apt for the college to create a museum for today's Indian youth and the international visitors to understand the rich culinary heritage of India. The museum is a myriad collection of stone, metal and wooden culinary equipment fromthe bygone eras; most of which have been replaced by modern gadgets today. The collectionsinclude the materials from all over India- rights from Jodhpur to Mysore and Gujarat to the Northeastern states. It is a unique blend of the cultural artefacts that reflects the ancient wisdom.

The Gallery's Upstairs

Display the collection of both within the glass shelves and over the counters. An array of foodcontainers, tiffin boxes, colanders, graters and scrapers, pounders and grinders, spice boxes, oilcontainers, teapots are laid out neatly.

The Topmost Floor

Figure 3-56: Inside the Gallery

Contains kitchen equipment used for cooking especially for large gatherings all arrangedaesthetically.

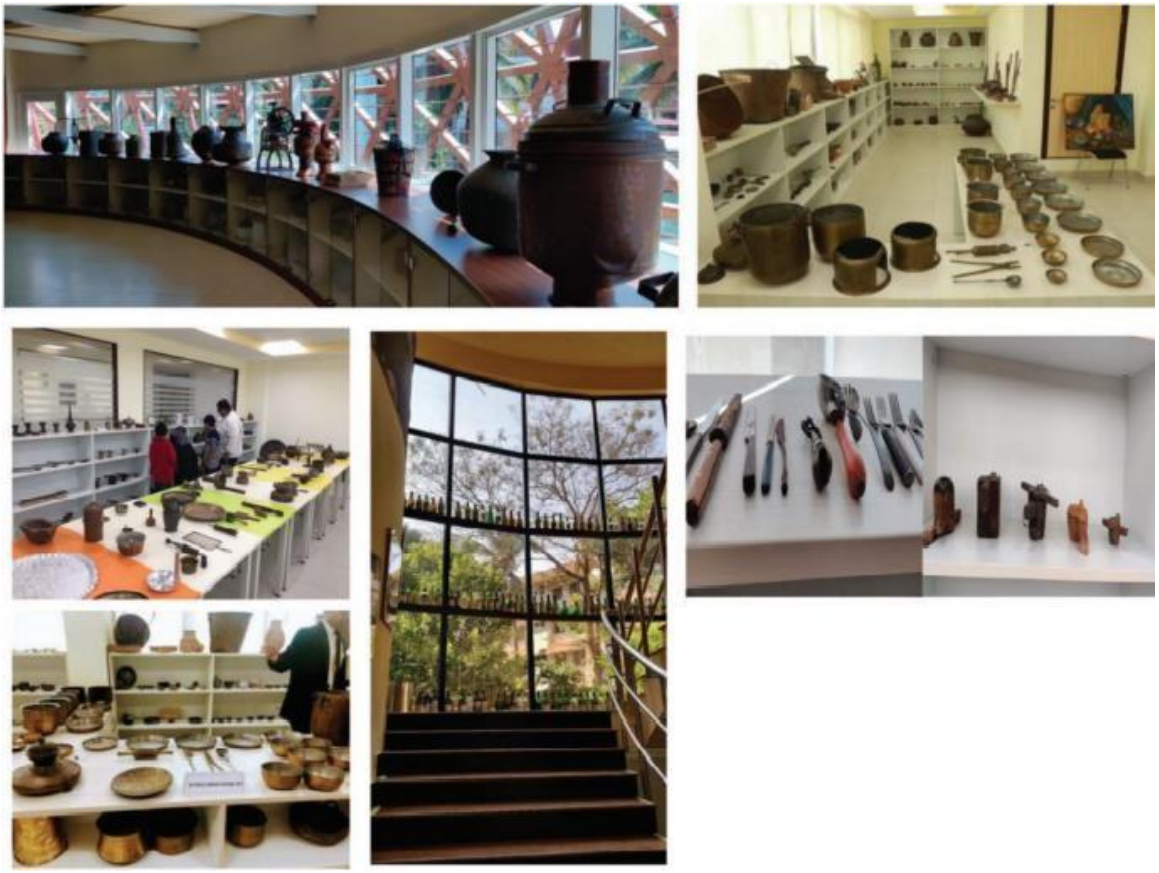


Figure 3-57: Utensils in the gallery

4. SECONDARY CASE STUDY

4.1. SASA: D' NEWA RESTAURANT

4.1.1. INTRODUCTION

Sasa: is synonymous with typical Newari Food Culture. This typical Newari eatery exudes a vibrant native Newari sensibility. The Newa Restaurant serves traditional Newari food, and the location is spacious and can hold up to a thousand people for banquet events. Sasa: Twa has been thoughtfully created to reflect cultural aspects in not just the design but also on the menu. Everyone's favorite Newari eatery in Kirtipur is quickly evolving into this great value establishment.

- Location: Kirtipur
- Established: 2009
- Site surrounding: Residential area
- Topography: Contour land

4.1.2. OBJECTIVE OF THE STUDY

- To understand the design aesthetics for an ambient Newari restaurant design
- To understand the colour schemes and choice of materials for a Newari restaurant
- For spatial requirement and sensory metaphors of a Newari restaurant

4.1.3. PLANNING ASPECT

The main entrance is grand with rich Newari architecture. The people feel like they are inside Newari building as the "Hiti" and traditional temple on the sides give that authenticity of Newari culture. As soon as you enter, the passage guides you to side-by-side falcha area; alsoused as seating space for customers. An open kitchen is also located which further leads to themain courtyard area of the restaurant. A courtyard is surrounded by "falcha" on four sides, where two of them is used for dining, one for live music and interactive activities whereas otheris used as counter and photo booth on upper floor having 360 view of the restaurant.

4.1.4. ARCHITECTURAL ASPECT

Sasa; is one of the most famous Newari restaurants in the Kathmandu valley due to its strategicdesign. The restaurant uses the natural contour of the site and multiple falcha have been designed with respect to the site. All the falcha have been designed with the indigenous materials such as jhingati tiles for roof, telia tiles, wood and mud. Dalucha is used for decorations.

One of the major attractions of the restaurant is the open kitchen where women dressed

Figure 4-2: Use of traditional materials

in traditional Newari dresses make traditional Newars cuisine such as Wa:. All the other dishes are made in the kitchen but only this particular place is open to visitors and hence one can understand the effect of open kitchen on the customers, especially tourists who get amazed bythe making of the Newari cuisine.Another attraction of Sasa; is the live music event every Friday and Saturday which attracts hundreds of young people from all over the valley to spend the weekend in the restaurant. Thecentral falcha is used as the stage.

Figure 4-1: Open Kitchen to have connection with visitors

Figure 4-3: An open courtyard space and falcha themed stage for interactive spaces

4.1.5. INFERENCES

- Design of small hut as a part of food court representing the Newari cuisine.
- Need of sitting places in a Newari restaurant, chairs are usually never used.
- The use of open kitchen to attract people
- Introduction of events to attract people
- Use of the design elements like black and red cloth, dalucha, wooden low laying tablesto give a typical Newari ambience.

4.2. MONALISA THAKALI RESTAURANT

4.2.1. INTRODUCTION

The most well-known and oldest traditional feasting concept, Monalisa, skillfully fuses fine dining with contemporary Thakali cuisine. Monalisa has a history of supporting the family legacy. Owner of Mona Lisa Thakali Bijaya Sherchan says, "The Mona Lisa Thakali name is a family legacy. We have a restaurant in Pokhara that is quite successful. I've decided to carry on this legacy and brought it to Kathmandu."

The Mona Lisa, perhaps one of the finest works of art on display at the Louvre, is a

Figure 4-4: Entrance

charming and breathtaking work of art. "This well-known work of art, which was my grandfather's favorite, served as the inspiration for the name Monalisa. He chose the name Monalisa ThakaliRestaurant because he like the artwork and wanted the establishment to sound more European.Adds Sherchan.

The restaurant has a warm and inviting atmosphere. Its furnishings are embellished with relics, implements, and representations of Nepali history and culture. The ceiling's Nepali Dhaka fabric gives the space a lively appearance. The restaurant's cuisine, like its design, is afusion of fantastic new cooking ideas and time-tested techniques, striking an unusual balance between an avant-garde eatery and a more conventional Nepali thakali establishment.

Figure 4-5: The famous Monalisa art with little touch of Nepali culture

- Location: Bishalnagar Marg, Kathmandu
- Established: 1980
- Site surrounding: Surrounded by commercial and office areas; Bhatbhateni supermarket
- Topography: Flat land

4.2.2. OBJECTIVE OF THE STUDY

- To understand the design aesthetics for an ambient Thakali restaurant design
- To understand the colour schemes and choice of materials for a Thakali restaurant
- For spatial requirement and sensory metaphors of a Thakali restaurant.

4.2.3. PLANNING ASPECT

The sight of the restaurant is easy and functional. “The restaurant wasn’t built entirely new andhence the authentic Thakali image isn’t seen. The design was followed by combining already existing 2 houses and later, interior was carried out to resemble the umbrella of different cultures in Nepal, not just Thakali”, says the owner. Parking spaces for both two wheelers andfour wheelers have been provided inside the restaurant premises which is directly accessible through main primary road.

The main entrance is spacious and as you enter the premises, the staffs welcome you with “Namaste”, giving that proper homely environment. The seating areas then lead to a children park and then to the open space of restaurant. The kitchen is at the center of the entire space, which becomes easily accessible to every corners. The garden area is kept as raw as possible and more recycle materials were used for furniture.

Figure 4-6: Recycled door used as table in the restaurant

Spatial layout of restaurant (Bubble diagram)

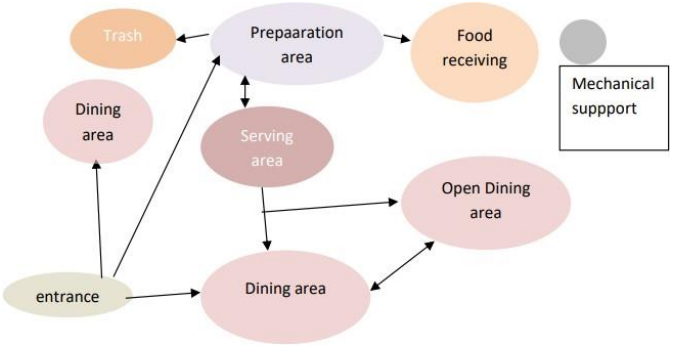


Figure 4-7: Bubble Diagram

4.2.4. ARCHITECTURAL ASPECT

The restaurant not only specialize in Thakali cuisine but also continental, Chinese, Japanese and Schezuan Chinese. With the variety of dishes, they have tried to display every culture within the space,however, Thakali style as a major.

Since the rehabilitation of two residences as a restaurant was done, exterior doesn't meet Thakali essence. However there is some "daura" which is an important aspect in Thakali kitchen, on the exterior. The inside space is decorated in a well-manner. The color schemes onwall, which is a resemblance of "ghar lipeko" in Thakali family is done in an artistic manner. The display of famous cuisines from Thakali family, frames of jewellery showing different cultures in Nepal, touch of Dhaaka in the ceilings, make the space more attrctive and homely. The famous utensils used by the Thakali family is displayed beautifully as well. This showcaseof the cuisine and jewellerly helps in enhancing the people relation with the space and evoke different memory specially maybe of their childhood or the nostalgia of home for people.

Figure 4-8: Inside the Restaurant

4.2.5. INFERENCES

- The need to reflect the origin of the cuisine in any restaurant design to make itthematic.
- Use of traditional utensils
- Display evokes the sense of belongings

4.3. HANKOOK SARANG RESTAURANT

4.3.1. ARCHITECTURAL ASPECT

Kathmandu has seen a rise in Korean restaurants in the past decade, with the growing influenceof K-pop and Korean culture amongst the young crowd. The delight of eating at Hankook Sarang must be the attachment of Korean culture in the dining experience. Hankook Sarang's Tangal outlet itself represents a traditional Korean house that has a courtyard decorated with aKoi Pond at the center.

Figure 4-9: Typical Korean Architecture

Kathmandu eaters can definitely sense the traditional aura of typical Korean house inside the restaurant while tasting the flavors of Korean cuisine. Stepping inside the Hankook Sarang restaurant will surely feel like being in a Korean village. The central garden and stoned walls attempt to impress customers with a naturalistic feel that's rare to find in this neighborhood. The restaurant reminds us of the typical Korean house that we usually see in Korean dramas and movies with the maximum use of timber. The interior of the restaurant also imitates the vibe of typical Korean feature with wooden partition and door.

Figure 4-10: Use of wooden partition as in typical Korean

4.3.2. INTRODUCTION

For those seeking authentic Korean cuisine and a peaceful atmosphere in Nepal, Hankook Sarang Restaurant is the place to go. Since its opening, the restaurant has offered simple, wholesome, and culturally rooted Korean cuisine. Since 2002, when they opened their first location in Tangal, they had been offering an authentic Korean culinary experience. Hankook Sarang has become a popular brand among Nepalese enthusiasts of Korean culture and cuisine over time. The restaurant picked up the pace very quickly and became one of the most popular Korean cuisine restaurants in the area. As of today, the brand operates another branch in Jyatha and Jawalakhel. Hankook and Sarang are two words that literally translate to "Korea" and "Love," respectively. Chij Man's tagline, "Love From Korea," resonates with the restaurant's name and is straightforward yet heartfelt.

Figure 4-11: Hankook Sarang, tangal

4.3.3. OBJECTIVE OF THE STUDY

- To understand the design aesthetics for an authentic Korean restaurant
- To understand the colour schemes and choice of materials for a Korean restaurant
- For understanding the experience and event in Korean restaurant

4.3.4. EXPERIENCE DESIGN

This restaurant allows visitors for trying the typical Korean dress which is known as "Hanbok". This results in experiencing the different culture within the Nepal. Many people visit the restaurant mostly for trying the Korean dress. Apart from enjoying the Korean cuisine, this restaurant enables people to experience the different culture that is unfamiliar to us. As Nepali youngster have been quick in following the trend building a preference for everything Korean– clothes, lifestyle, dances, songs and cuisines. Capitalizing on the trend, Hankook Sarang hasallured the Nepalese audience with its infatuating Korean architecture, Korean dress and mouth-watering food offerings.

Figure 4-12: People experiencing Korean Dress

Food can quite literally propel us to another time, another country, another culture without evenleaving the dinner table, this experience of trying costumes of another country while enjoyingtheir authentic cuisine helps to experience the feeling of being in the same country without even travelling. This also helps in promoting different culture of country while keeping food at its centre. So, Hankook Sarang doesn't just bring Korean cuisine to the table but also surrounds its customers with traditional Korean culture.

Figure 4-13: People experiencing Korean cuisine

4.4. PERSONA HEADQUARTERS

4.4.1. INTRODUCTION

The corporate office complex known as Pasona HQ has nine stories and 215,000 square feet.The largest and most effective farm-to-table restaurant ever accomplished inside an office building is located there. Urban farming is becoming a viable alternative because indoor farming technology is becoming more affordable, which is a response to the dwindling watersupplies, unsustainable farming methods, and the growing desire to cut our food miles (Mahajani, 2016). There are currently well over 200 vertical farms in operation worldwide. The Pasona Group in downtown Tokyo has an active Urban Farm growing in their headquarters, complete with rice paddies in the main lobby, tomato vines strung above conference tables, lemon and passion fruit trees serving as partitions for meeting spaces, saladleaves grown inside seminar rooms, and more. (Andrews, 2013)

Figure 4-14: pasona HQ, then vs now

4.4.2. OBJECTIVE OF THE STUDY

- To understand the benefits of indoor farming in office spaces.
- To get acknowledged with the types of approaches adopted by Pasona HQ to make it asustainable building.
- Better understanding of farm to table concept.

4.4.3. THE DESIGN

The building's 43,000 square feet of green space, which makes up more than 20% of their office space, is shared by both office workers and crops. Over 200 species of fruits, vegetables,and rice are grown, harvested, prepared, and served at the building's cafeterias using both hydroponic and soil-based farming techniques.

Figure 4-15: hydroponics lab in Persona HQ

A climate control system is used to monitor humidity, temperature, and air flow in the building to ensure it is safe for the occupants and appropriate for the farm. Ducts, pipes, and vertical shafts were rerouted to the building's perimeter to allow for maximum height ceilings.

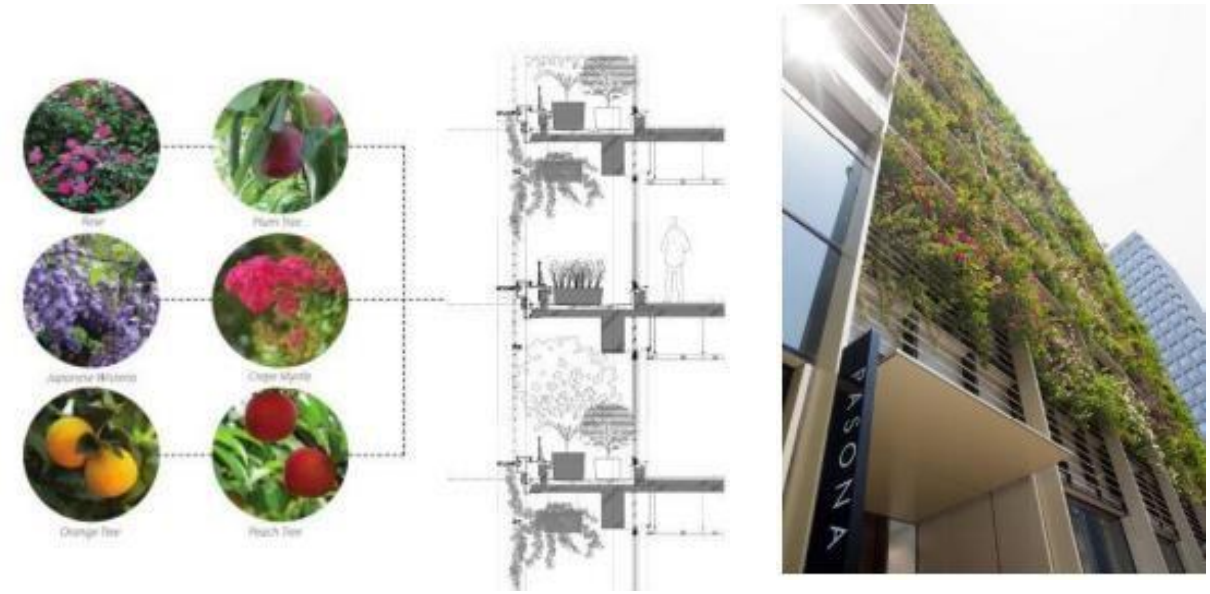


Figure 4-16: Plant species grown in green walls

Metal halide, HEFL, fluorescent, LED, and an automatic irrigation system are used to light these crops. Utilizing technology, an intelligent climate control system can be managed to balance human comfort during office hours and enhance crop growth after hours by monitoring humidity, temperature, and breeze.

- The balconies between the deep double skinned facade are planted with seasonal flowers and orange trees. These plants produce a living green wall and give the

buildinga dynamic identity by partially relying on the exterior climate.

- The lighting has been designed with hidden lights on the bottom vertical edge of the beams creating a large lit cove in the space between the beams. This method used throughout the workspace achieves 30% energy saving as compared to the conventionalceiling mounted lighting method.
- Irrigation is done by drip and mist auto irrigation system that operates twice a day.

The Benefits

As the crops harvested in Pasona HQ are served within the building cafeterias, it highlights 'zero food mileage' concept of a more sustainable food distribution system that reduces energyand transportation cost. Though the farm is a loss to the net rentable area for a commercial office, Pasona believes in the benefits of urban farm and green space to engage the public andto provide better workspace for their employees. Beyond aesthetic and visual improvement, itexposes city workers to growing crops and interaction with farmland on a daily basis and provides improvement in mental health, productivity and relaxation in the workplace.

Studies show that most people in urbanized societies spend over 80% of their time indoors. Plants are also known to improve the air quality we breathe and a sampling on the air at PasonaHQ has shown reduction of carbon dioxide where plants are abundant. An improvement on the air quality can increase productivity at work by 12%, improves common symptoms of discomfort and ailments at work by 23%, reduce absenteeism and staff turnover cost.

Employees are asked to participate in the maintenance and harvesting of crops with the help of agricultural specialists. Such activity encourages social interaction and improves teamwork.It also provides them with a sense of responsibility and accomplishment in growing and maintaining the crops that are ultimately prepared and served at the building's cafeterias. (Allen, 2013)

Figure 4-17: plantation insise mesh green wall

4.4.4. INFERENCES

- Within the interior, the deep beams and large columns of the existing structure are arranged in a tight interval causing low interior ceiling of 7'-6". With building servicespassing below, some area was even lower at 6'-8". Instead, all ducts, pipes and their vertical shafts were re-routed to the perimeter, allowing maximum height with exposedceilings between the beams.
- Lightings are then installed, hidden on the bottom vertical edge of the beams, turningthe spaces between the beams into a large light cove without further lowering the ceiling. This lighting method, used throughout the workspace from second floor to 9thfloor, achieved 30% less energy than the conventional ceiling mounted method.
- Food is harvested, prepared and served on-site in the cafeterias - making Pasona's Urban Farm the largest farm-to-table office scheme in Japan.

4.5. COMPARATIVE ANALYSIS

S.No.	Parameters	Literature Study	Academy Of Culinary Arts	NATHM	Basque Culinary Centre	Culinary Academy of India	Inference
1.	Site & Surrounding	Active Urban Zone	Located In Lagankhel, High Traffic Area	Located in a quite area besides Lincoln School, Residential Zone	Spain, among the green slopes of Gipuckoa	Hyderbad India, Along the chains of hotels	Design with consideration to site
	Planning	Segregation of theory and practical spaces yet connection needed	Basic Rectangular plan	Courtyard Planning	Planning with Central Open spaces	Basic Rectangular Plan	Courtyard plan with Central Open space feasible for Lighting
3.	Zoning	Segregation of proper public and private spaces.	Vertical Zoning of Spaces.	No Proper Zoning	Proper vertical zoning of academic, practical & research area.	Each floor with one theory and practical classroom.	Vertical zoning is preferred.
4.	Circulation	Clear Circulation of spaces within the building.	Provision of both the staircase and ramp.	Only Staircase.	Provision of staircase. Ramp and Fire escape	Staircase and Fire escape.	Provision of Lift, Staircase and Fire exit preferred.
5.	Architectural Style	Depending upon the use of the building	Modern building with floor to ceiling glass windows.	Adaptive re-use of neo-classical building.	Contemporary curved building that blends with nature	Modern building.	Contemporary style that has its own features.
6.	Lighting	Use of Maximum Daylight	Use of both the Natural Lighting and Artificial Lighting	Courtyard planning, thus sufficient natural light.	South Oriented with open space in the middle, stepped elevation	Use of Both Natural and Artificial Lighting	Use of Daylight over Artificial lighting by proper orientation
7.	Ventilation	Proper Ventilation Required	Natural Ventilation and use of AC in	Natural Ventilation	Natural Ventilation with Central air	Natural Ventilation with Central air	Natural Ventilation with Central air

	Kitchen Space						
9.	Types Of Kitchen	Basic, Advanced, Demo, Bakery, Confectionary	Basic and Advanced Kitchen with Bakery and Barrel room	Basic, Advanced and Demo Kitchen with two Bakery room	Basic, Training, Experimental, and Butchery	Basic, Advanced, Cruise Kitchen, Indian Bounty Kitchen	Provision of Basic, Advanced & special Nepali Kitchen
10.	Gas Supply	Through Pipes from gas banks.	Through pipes from gas banks	Through Pipes from Gas banks	Through Pipes from Gas banks	Through Pipes from Gas banks	Should be taken from gas pipes from gas banks
11.	Exhaust System	Commercial Grades	Commercial exhaust hood in all kitchen	Exhaust Fan in all Kitchen except the Bulk kitchen	Commercial Grades in all kitchens	Commercial Grade in all kitchens	Heavy and Commercial grade must be followed
	Storage Room						
12.	Loading and Unloading Area	Separate space for Services	Separate space at the back of building for Loading/ Unloading	Separate space at the back of building for Loading/ Unloading	Directly to the floor containing majority of Kitchens	Separate space at the back of building for Loading/ Unloading	Separate hidden entry for service loading and unloading should be given to the main building
13.	Mode of Transport to Kitchen	Service lift required	Manual/ Lift	Manual	Manual	Lift	Lift provision for must be used for easy transportation
14.	Dry/Cold Storage	Separate service space for storage	Separate storage space for Dry, Cold and Meat products	Storage space only for dry ingredients	Separate space for Dry and Cold Storage	Separate space for Dry and Cold Storage	Provision for Dry and Cold Storage must be given
	Classroom						
15.	Proximity to Kitchen	Should be separated but in close proximity	Classroom in the same floor as in kitchens	All the theory classroom in the upper levels	Separate floor exclusive to theory kitchens	Each floor consists of a classroom and a kitch1en	All Theory based classroom can be in separate floors
16.	No. of Students	1.5 m2/person	990 sq.ft for 40 students	580 sq.ft for 40 students	40 students per classroom	40 students per classroom	Ideal 40 studentscapacity
18.	Teaching Mode	Projector screen	Projector and white board	Projector and white board	Projector and white board	Projector and white board	Projector and white board

5. PROGRAM FORMULATION

5.1. KEY PROGRAMS

- Culinary School
- Gastro Gallery
- Live Kitchen
- Multi-Cuisine Restaurant
- Food Street Plaza/ Retail space
- Shop Commodities (Semi Open)
- Shop Commodities (Closed)
- Organic Farming
- Service area

A. Culinary School

- Reception
- Administration
- Theoretical Classes
- Labs
- Teaching Kitchens
- Demo Kitchens
- Restaurant
- Pantry Space
- Faculty Space
- Amenities

B. Gastro Gallery

-Reception
-Exhibition Space
-AV room
-Storage Room
-Resource Centre

C. Live Kitchen

- Display/ Stage Area
- Modules
- Incubation Kitchen Area
- Co-working Kitchens

D. Food Plaza

-Commercial

-Flea Markets
-Mobile Modules

E. Service Area

- Maintenance
- Storages
- Waste Disposal
- Loading Products

5.2. EXPECTED USERS

- Chefs (Visitors)
- Chefs (Instructors)
- Students
- Public Visitors
- Employees
- Food Enthusiasts
- Food Start-ups

5.3. PROGRAMS OFFERED

A. Culinary School

S.No.	Courses Offered	Duration	Intake
1.	Bachelors in Culinary Arts	1.5 yrs	40 std.
2.	Diploma in Bakery & Patisserie	1 yr.	20 std.
3.	Diploma in Confectionery	18 months	20 std.
4.	Monthly Workshops	15 and 30 Days	10 std.

5.4. AREA REQUIREMENTS

S.NO.	Components	Literature Study	No. of Users	Proposed	Remarks
1.	Administration				
	Reception	8m2 /person	2	16 m2	2*8
	Waiting Lounge	Standing:1m2/person Sitting:1.25m2/person	20	22.5 m2	(10*1 + 10*1.25)
	Director's Room +Toilet	Director: 28m2 Toilet:2.2m2/unit	2	30.2 m2	(28+2.2)
	Account Room	2m2/person Waiting:1.25m2/person	4 4	13m2	8m2 5m2
	Admin Room for Various depts.	4.5m2/person	8	36m2	
	Meeting Room	1.5m2/person	15	45 m2	
	Staff Cabin	4.5 m2/person	12	54m2	
	Staff Lounge	2.5m2/person	12	30m2	
	Pantry & Store			25m2	
	WC & WB	1.2 m2 & 1m2		4.4 m2	(2 WC, 2 WB)
	Miscellanous			20m2	
Total				**300m2**	
2.	Academic Facilities				
	Basic Kitchen (x2)	100m2	20	200m2	100*2
	Advanced Kitchen(x2)	130 m2	20	160m2	130*2

	Pastry Kitchen + Store(x3)	6.5 m2/person	20	390 m2	130*3
	Skill Tests Kitchen(x2)	70m2 + 30% for eqp.	20	182m2	
	Demostration Theatre+ Store(x2)	2.5m2/person, 25% of theatre Hall	20	125m2	(20*2.5+0.25*50)*2
	Food Science Lab(x2)	90 m2	10	180m2	
	Wine Lab	3m2/person, 30% for equipment	20	80m2	(3*20+0.3*60)
	Mixology Lab	3m2/person, 30% for equipment	20	80m2	(3*20+0.3*60)
	Barista Trainings	3m2/person, 30% for equipment	20	80m2	(3*20+0.3*60)
	Wet Storage (x2)			50m2	
	Dry Storage (x2)			64m2	
	WC(M+F) Urinal WB	1.2m2 0.9m2 1m2	M-WC: U: WB= 3:6:6 Fe-WC: WB= 9:6	14.4m2 5.4m2 12m2	(M: 3WC, 6Urinal, 6WB) (F: 9WC, 6WB)
	Locker & Changing Room (x4)	0.6m2/person 1.4 m2/person	20	160m2	
	Janitors(x2)	13m2		26m2	
Total				1880m2	
Adding 15% total area as green farm =282m2				**2162m2**	
3.	Library Facility				
	Check-in	5 m2/ person	2	10m2	
	Staff work Space	5m2/person	2	10m2	
	Book Collection Space	0.009m2/per book		180m2	2000*0.09
	Reader's Space	2.5m2/person	40	100m2	
	Computer space	4m2/person	10	40m2	
	Store			10m2	

	WC(M+F) Urinal WB	1.2m2 0.9m2 1m2		3.6m2 0.9m2 4m2	(M:1WC,1Urinal,2 WB) (F:2WC, 2WB)
Total				**360m2**	
4.	Gastro- Gallery				
	Exhibition Space	2m2/person	200	400m2	
	AV room	1.5m2/person	60	90m2	
	Reception	8m2 /person		8m2	
	Storage	10% of Hall		40m2	
	Resource Centre	10% of Hall		40m2	
	Technical Room			20m2	
	WC(M+F) Urinal WB	1.2m2 0.9m2 1m2		12m2 3.6m2 12m2	(M:4WC,4urinal, 6WB) (F:6W C &6WB)
Total				**625m2**	
5.	Restaurant				
	Reception	8m2 /person		8m2	
	Waiting Lounge	Standing:1m2/person Sitting:1.25m2/person	20	22.5 m2	(10*1 + 10*1.25)
	Dining	2m2/person	100	200m2	
	Kitchen	25% of Dining		50m2	
	Equipment Stores	10%of Dining		20m2	
	Dish Wash	5% of Dining		10m2	
	WC(M+F) Urinal WB	1.2m2 0.9m2 1m2		3.6m2 0.9m2 4m2	(M:1WC,1Urinal,2 WB) (F:2WC, 2WB)
Total				**320m2**	
6.	Bakery Shop				
	Reception	8m2 /person		8m2	
	Waiting Lounge	Standing:1m2/person Sitting:1.25m2/person	20	22.5 m2	(10*1 + 10*1.25)
	Dining	1.5 m2/person	50	75m2	
	Kitchen	25% of Dining		20 m2	
	Equipment Stores	10%of Dining		7.5 m2	
	Dish Wash	5% of Dining		3.75 m2	

	WC(M+F) Urinal WB	1.2m2 0.9m2 1m2		3.6m2 0.9m2 4m2	(M:1WC,1Urinal,2 WB) (F:2WC, 2WB)
Total				**145 m2**	
7.	Food Street				
	Tenant Area	13.9 m2/ food court		112.2 m2	
	Seating Area	60% of tenancy area		66.72 m2	
	Loading and Unloading area			20 m2	
Total Area				**200 m2**	
8.	Support Facilities				
	Receiving Area			12m2	
	Waste Collection Area			10m2	
	Electrical Room			20 m2	
	Guard House			15m2	
	Mechanical Room			15m2	
	WC & WB	1.2 m2 & 1m2		4.4 m2	(2 WC, 2 WB)
Total				**76.4 m2**	

Total carpet area		**4540 m2**	
Circulation & Wall Area		**1140 m2**	
Total built up area		**5680 m2**	
Total parking		**1120 m2**	
Outdoor area		**2280 m2**	
total area		**10000 m2**	

6. SITE ANALYSIS

6.1. CRITERIA FOR SITE SELECTION

For the design of Centre of Culinary Arts, a project that is not merely just an academy but also a center of interaction of the four major entities: Students, Chefs, Public and Media, the requirement of the site were different than that of a mere academy. Simply, an institution zone was not sufficient. The following consideration were made for choosing the site:

- Mainly and prior most criteria are it should be near a prime area enough to attract people from the different neighboring area.
- Should have the facility of having multiple access points to the site.
- Should have public transport in proximity and well connected with city's major routes and landmarks.
- Should have daily market/ grocery facility nearby for easy transport of food items
- Presence of other academic institutions nearby

6.2. SITE LOCATION

Location: Gahkhel Marg, Balkhu, Ward No:14

Site area : 30 ropani

Site surrounding:

- North – Islamic Cultural Centre
- East – Vayodha Hospital
- South – TU, Kritipur
- West – Residential

Orientation: East-West Orientation

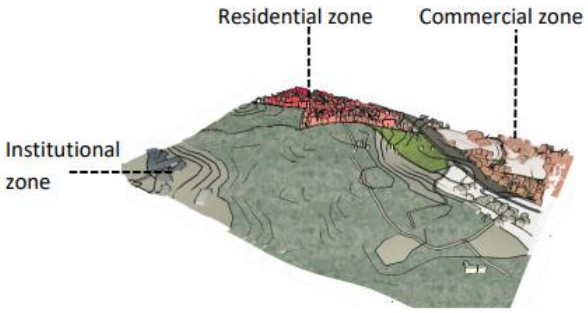


Figure 6-1: Zoning of the site

Figure 6-2: Site information

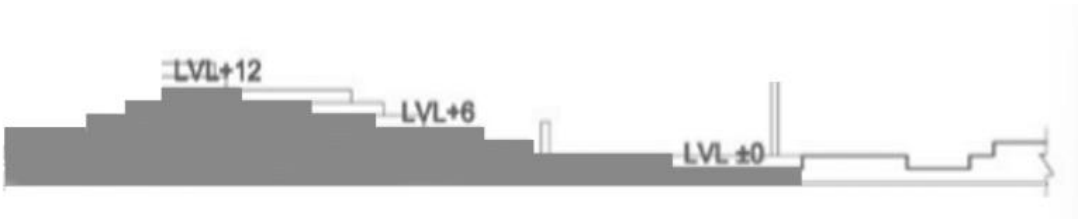
6.3. CHARACTERISTICS OF THE SITE

- Size and Shape

The size of the site is 30 ropani and is irregular in shape. The site is slightly tapered towards the east side.

- Topography

Geographically, the site has latitude of 27°-44' N & 85°-21' E. The site has an altitude of 1320 meter above sea level. The site is located on a high land and hence is noticeable. The site is area is used for agricultural purpose without any structures within the site. The site consists of contour from north to south.

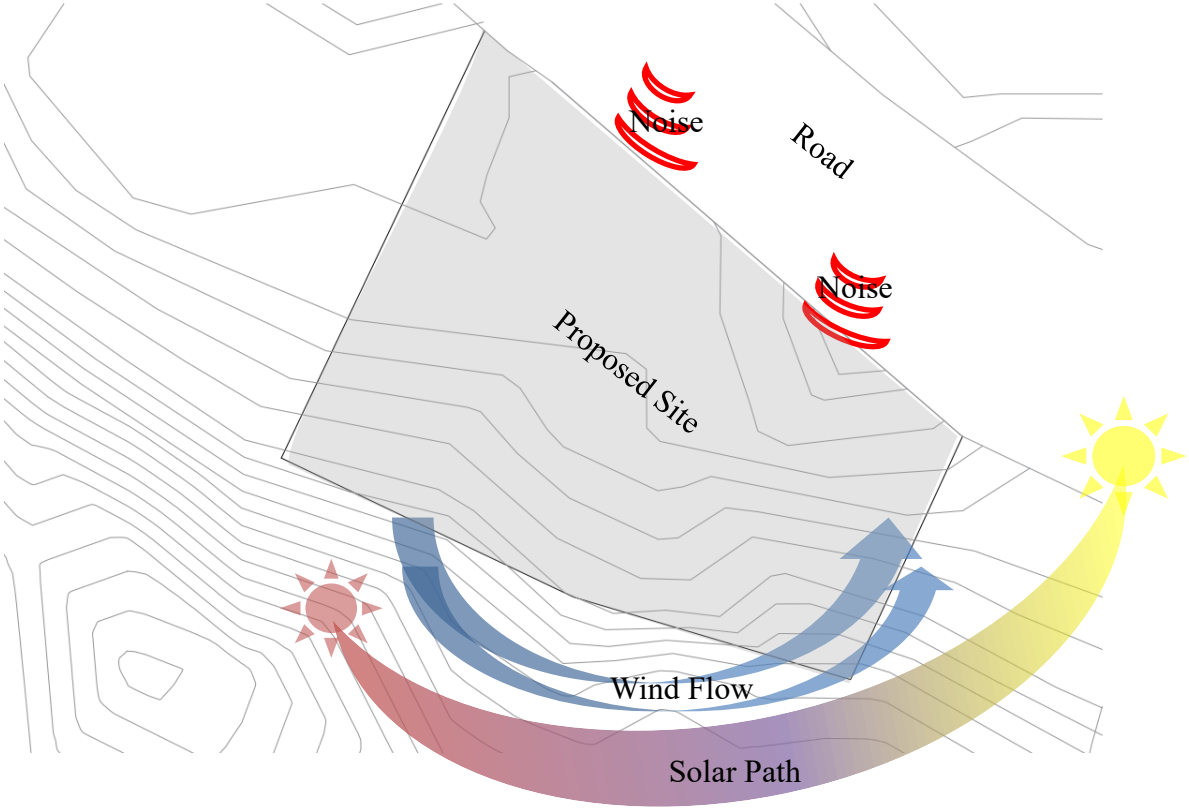


6.4. ACCESS AND APPROACH

- Major approach road is Ring Road
- 4km from Basantapur Durbar Square
- 5.7km from Patan Durbar Square
- 17.6km from Bhaktapur
- 250m from balkhuchowk

- 400m from kalankichowk
- 4.9km from Ratnapark
- 4.8km from Kirtipur
- Airport: 10 km from vehicle

Figure 6-4: View from the site



6.5. SWOT ANALYSIS

Strength

- Easily Accessible
- Presence of proper infrastructure facilities
- Within the city core, so, can attract more people

- Maximum frontage is available due to which the whole site is not blocked from any view

Weakness

- Noise and air pollution due to ring-road
- Glare from south-western side

Opportunity

- With Proper catchment area, the downpour can be harvested and reused
- Can help elaborate the design as the icon of the city
- Because the site lies in between the haphazardly developed urban city and the untouched green land it definitely acts as a transitional point and may act as a best place for demonstrating the contrast

Threat

- A possibility of downpour during monsoon
- Electrical poles are present along the road side of the site

6.6. LEGAL ANALYSIS

As per building bye laws of 2064, the proposed site lies in the institutional zone and under subzone of government, semi-government institute. The various legal provisions are summarized as follows:

- Maximum allowable ground coverage: 40% of site area
- Maximum allowable floor area ratio (FAR): 2.5
- Minimum area of parking: 15% of site area.

7. CONCEPT AND DESIGN DEVELOPMENT

7.1. OVERVIEW

Food today is no longer a mere means for sustenance, it is an art, a hobby, a profession, above all a kaleidoscope of experiences that people crave for. Food is as much a part of culture as architecture is. But what is fascinating about food and cities today is that the cities today have become truly global, offering us a taste of multiple culture through a wide array of culinary experiences. This quest for what a city could offer in terms of food led me to explore the same through this design thesis.

The exploration of gastronomy began with the study of culinary world today. Visiting culinary schools, getting a sneak peek of the workings of kitchens of themed restaurant, enjoying cooking sessions, being a part of food fests, learning about how food start ups work, reading about food experiences in social media food groups, it is clear how cities today offer much more than just multiple dining experiences. Unfortunately, Nepalese cuisines may not be making waves in the country but western cuisine is quite popular among the people here. Many people have developed a taste for western food much of this craze also comes due to social media.Unique in its multi-ethnic and multi-cultural ingenuity, Nepal offers an unlimited choice of cuisines based on region, ethnicity, culture, environment and diverse climatic conditions. But, most of us have preconceived notion about Nepali cuisine only consists of Newari food or the ever so popular Dal-Bhaat, which is still true to some extent but Nepali cuisine represents so much more than just the two. Culinary academy in Nepal also should focus on documenting the Nepalese cuisine rather than the Global cuisine in their curriculum.

This project aims to provide a one stop destination for all culinary engagement. It is not only simply a formal academic but also a social hub for people to exchange and share their food experiences. The center's primary goal will be to improve the state of Nepalese cuisine, which has great potential but is often under-appreciated.

7.2. POINT OF DEPARTURE

Nepalese Cuisine is diverse based on geography, caste, religion and so on but the one thing common in all these is the way it is prepared. As they are prepared in traditional method of firewood in traditional stove known as "Chulo". Thus, the major essence of Nepalese cuisine is its unique taste which is bestowed by being made in the Firewood

Chulo. The significant character of cooking in chulo is that it takes long time for food to cook but once cooked the taste is worth it. This basically depicts of worth of slowness in any activity. It presents the slowness of food through its product.

Figure 7-1: Traditional Chulo

Similarly, the expansion of the working class, advancements in infrastructure and technology, and our establishment as a global power have caused people to lead increasingly frenetic lives in the city. In the pursuit of astronomical success, we are losing our instinct to connect with the society and within ourselves. Slowing down does not mean working at a snail pace but is about taking a much-needed pause, where we are allowed to bring our consciousness back to the surroundings, our breath and our emotions. The main concept of the design is "Slowing Down".

7.3. DESIGN APPROACHES

There are various ways through which we can achieve slowness in design. Some of the common approaches are:

Approach 1: Japanese way of Slowing Down

The Japanese have a way of slowing down physically and moving consciously. For example, steps are designed with changing intervals with an intent to shun routine or inattentive motion. The contrast in texture or materials also helps in slowing down.

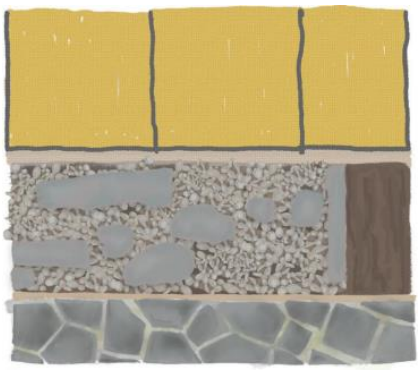


Figure 7-2: Typical setting in Japanese gardens

Approach 2: Plinths

Plinths at traditional houses not only acts as transition zones into the house, but also hosts

for entertainment, rest and deliberation all at the same time.

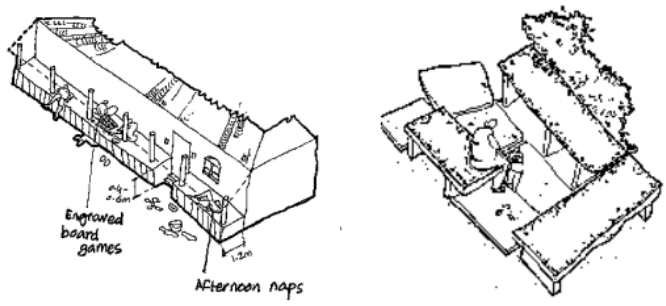


Figure 7-3: Plinths as resting spots

Approach 3: Public Features

Having re-collectable public space features as well as congregation spaces not only creates visual markers but also helps in way finding in the site. This also acts as the Breathing spaces. Throughfares are punctuated by halts at intervals to slow down the otherwise linear movement.

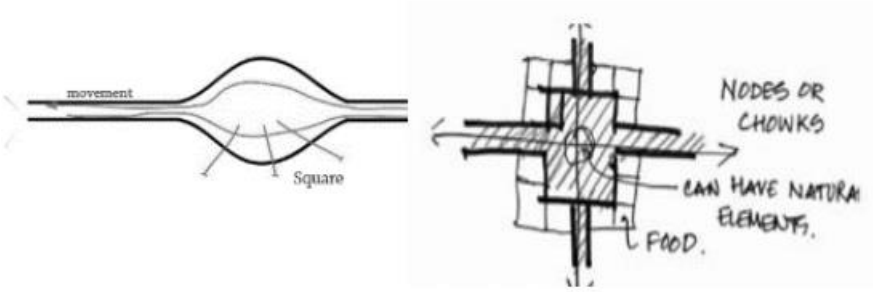


Figure 7-4: Nodes as breathing space

Approach 4: Activity Path

To encourage the movement of the users throughout the site, the activity nodes are part of the pedestrian. When the activities are introduced in the walkway, the users become the part of activity and not just a passerby. Also, they act as pause and rest points.

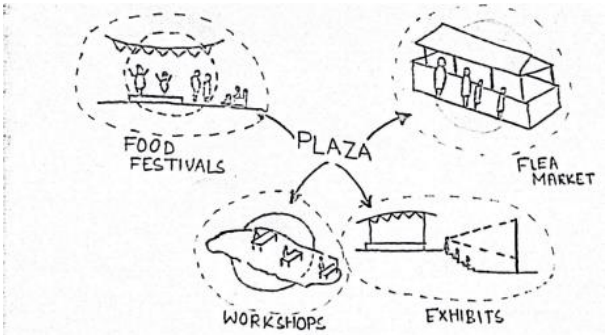


Figure 7-5: Dynamic activities

Approach 5: Journey Experiences

The users are given different journey experiences. These experiences are created by the changes brought about by different physical changes in the movement such as enclosures, gateways, light, levels, surface textures and change in direction.

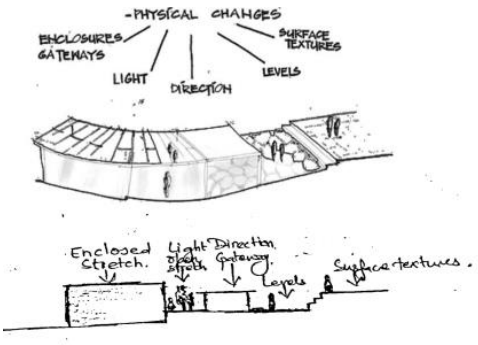


Figure 7-6: Journey movement

7.4. ZONING

Zoning is done in three ways with respect to the site inferences, which could further support spatial planning in the site. The site is segregated into three zones i.e. public, semi-public and private zone.

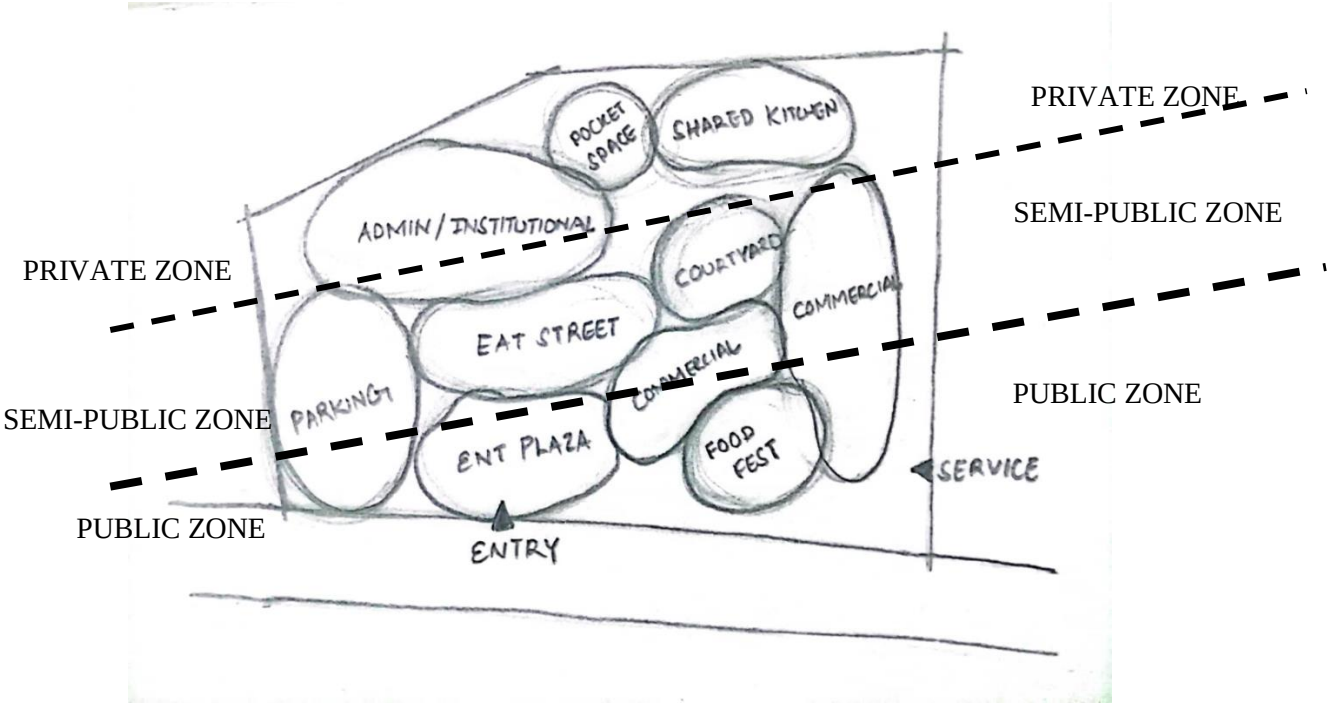


Figure 7-7: Spatial Zoning

Functionally, the site is zoned with three major functions: Commercial space, Shared Kitchen Spaces and Institutional space as per their privacy level wrapped around pocket open spaces.

7.5. FORM DEVELOPMENT

- **Step 1**: Placement of functional block as per zoning in L-shaped placement wrapping around the central plaza. This plaza hosts the dynamic activities in the building.

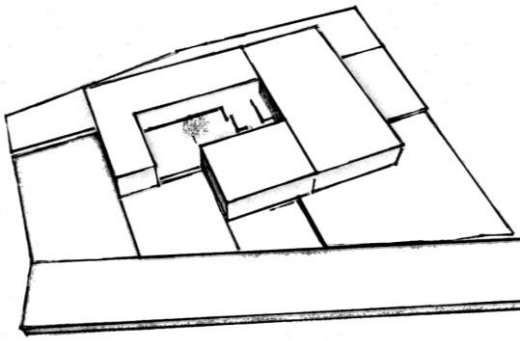


Figure 7-11: Placement of block

- **Step 2**: Breaking the block in order to create the openness in the plaza. Punctures made in the commercial block in order to create the courtyard and breathing space.

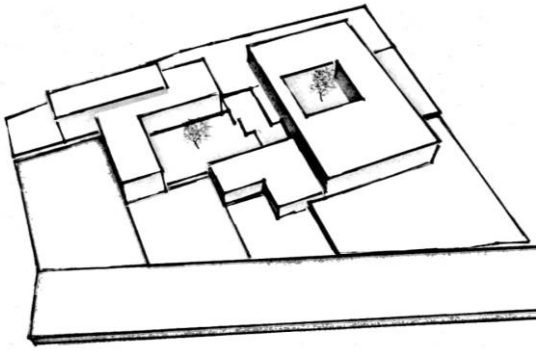


Figure 7-10: Breaking the volume

- **Step 3**: Dividing the central courtyard in to different pocket spaces in different levels as per the contour. These pocket space will host different activity in order to increase the user movement throughout the site in a continuous loop.

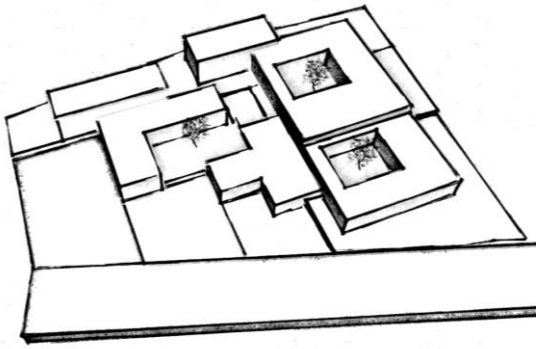


Figure 7-9: Introduction of courtyard

- **Step 4**: Breaking the blocks in the central plaza in order to create the transitional space between indoor and outdoor space. Volume breaking down in different levels as required. Final form was created.

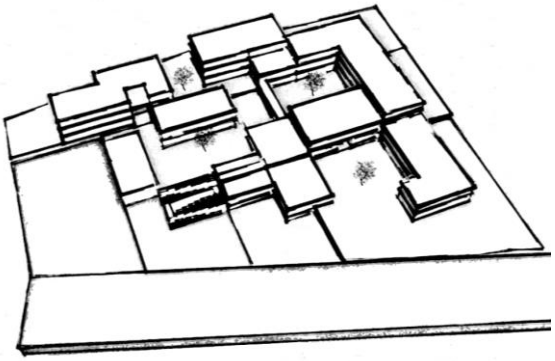


Figure 7-8: Final Volume

7.6. PLANNING CONSIDERATIONS

The main entry to the building is from the North of the site i.e along the main road. A service road is introduced at the west of the site for the separate service entry. Taking into account the site's role as a transitional zone between urban and nature, form is developed as L-shaped which would wrap the central plaza facing the main entry. Inside the building is clearly made for activity, and chance encounters. Entry points encourage movement and exploration and its ground levels is left wide open to invite people into businesses. Public spaces around the concourse offer inviting areas with rest and play in mind. These areas can also accommodate concerts, events, festivals and food trucks.

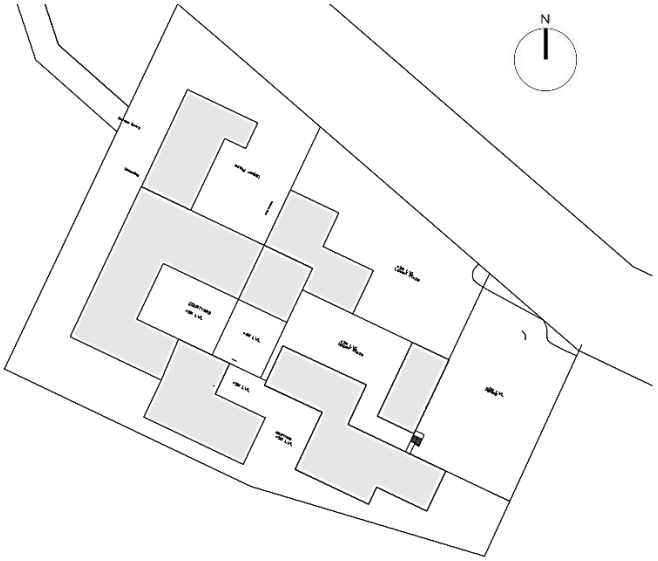


Figure 7-12: Roof Plan

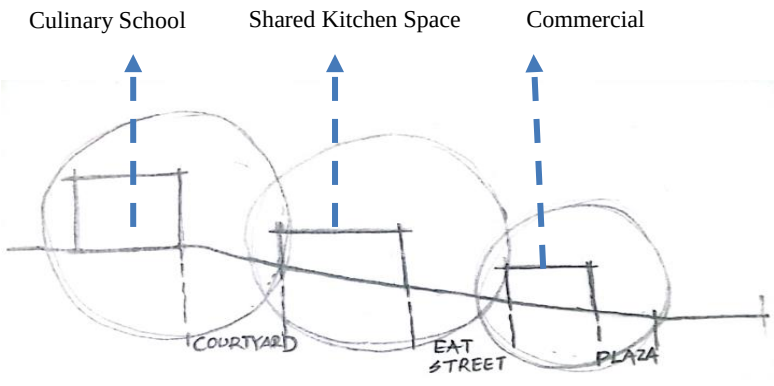


Figure 7-13: Commercial Section

The ground floor of the center would feature flexible spaces used by both culinary students and recreational users alike. The upper level centre plaza acts as typical eat street

with different food kiosks in the either side. This plaza tries to bring the street movement in the upper levels. Moving forward we get to the courtyard space of retail commercial kitchens which features different dining option from open, semi-open to closed dining.

Figure 7-14: Sketch showing activities happening in different level of plaza

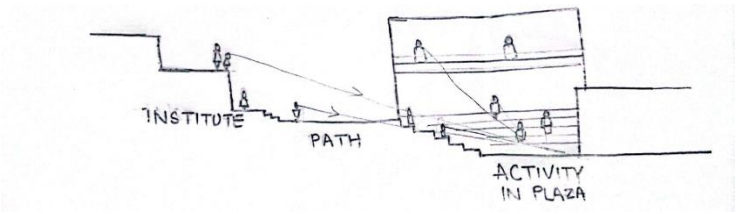


Figure 7-15: Steps acting as plinth

Open kitchen acts as a focal point for the people to take a pause and enjoy the food being prepared by the students of culinary academy itself. On further moving we reached the lower-level pocket space which is connected with the entertainment filled dining options with different gaming and karaoke options. This pocket space is minimally touched so that food fests and events could be performed as required. We basically can conclude the movement as we could reach the lower plaza.

Total Site area	: 13500 m2 (approx. 26 ropani)
Maximum Ground Coverage Area	: 40 %
FAR	: 2.5
Total Ground Coverage	: 4500 m2(33.33%)
Total Parking area	: 2000 m2
Total Built up area	: 11500 m2

7.7. INDIVIDUAL COMPONENTS

7.7.1. ADMINISTRATION

Administration block is located at the ground floor of institutional block. It houses all the administrative functions with the clinic and reception at the foremost part. Offices are provided for the department manager and directors with workspace for the other staff. Account section is directly connected with the reception and waiting lounge.

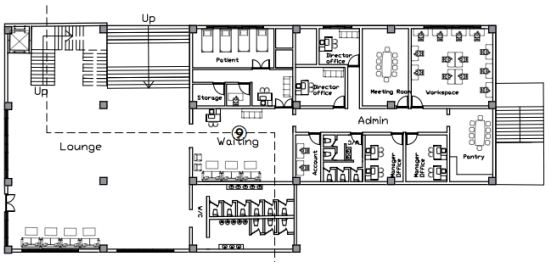
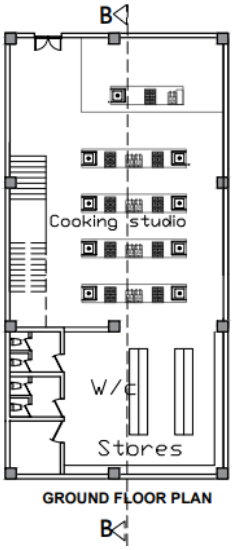
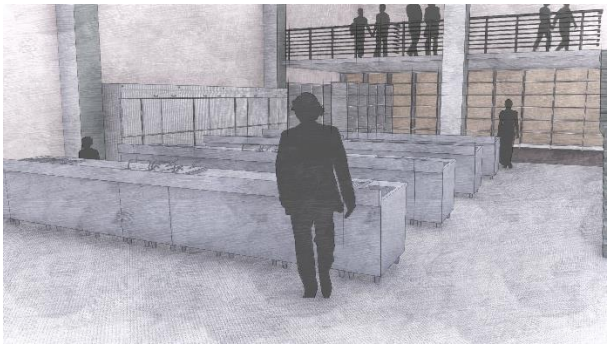


Figure 7-16 : Administration Plan Figure *7-17: View from Entrance to administration block*

7.7.2. PUBLIC COOKING STUDIO

A large cooking studio is connected with the plaza where the public share the kitchen space in a daily basis. On some special occasion, it acts as program studio for different events and cooking show. Publics who like to observe the cooking operations taking place below are catered to on the upper floor which is also accessible through the upper plaza. There is a display section available where different where different regional foods are showcased in creative and entertaining ways. The upper floor houses an office to oversee all operations, along with a storage facility for media-related equipment including digitalcameras and other necessary gear for videography procedures.





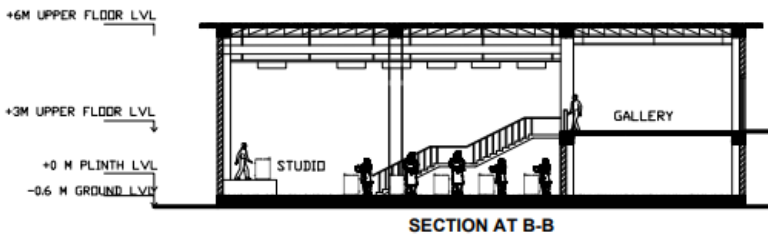


Figure 7-18: Plan and section of cookingg studio

7.7.3. EAT-STREET

A commercial eat-street plaza is provided at the central plaza with different food kiosks on the either side. It gives the vibe of everyday street with food stalls where we basically can watch the food being prepared and enjoy it in the central plaza space. The upper plaza is minimally treated with sittings for street vibe eating settings. On the either side of plaza, semi open space is provided for the food court which would on special occasions hosts different festivals and markets. The architecture on the either side tries to juxtapose the traditional vibe, with the typical Pati style with slope roof on the right side and contemporary settings with minimal features on the left.

Figure 7-19: Eat street

7.7.4. RESTAURANT

A typical Nepali restaurant is provided at the western part of the site on the 5m level as we ascend from the central plaza. The entrance is acknowledged by the traditional style gate with stone spout on the either side. As we enter through the gate, the space acts as a completely new in compare to the previous with a closed courtyard. This restaurant features different type of dining from Open, Semi-open and Closed Dining variety. Open Kitchen with traditional firewood acts as a focal point of the kitchen. This restaurant is basically run as practical for the senior year students of culinary. The semi-open seating arrangement is done in the Pati area, which tries to impart the traditional. The architecture here also tries to show the glimpse of traditional architecture with timber column in the pati with timber dalaan. Low tables and mats are used to outfit the several dining areas scattered across the room.

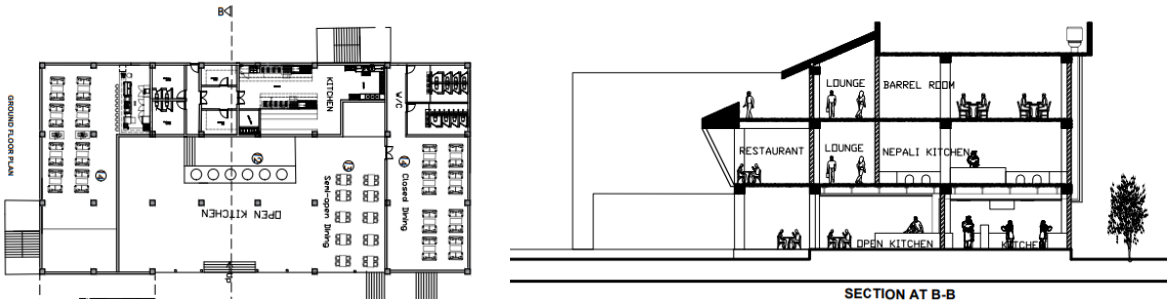


Figure 7-20: Plan and section of Restaurant block

Figure 7-21: Views of Restaurant

7.7.5. TEACHING KITCHENS

Teaching Kitchens are provided in the upper level of the institutional building. 3 basic teaching kitchens are provided and one Nepali kitchen is provided in order to better document the traditional Nepalis cuisine as this center mainly focus on the promotion of Nepali cuisine. Apart from these, Pastry labs, Barista Lab and Barrel room are also provided for the workshop and diploma program. These classrooms are provided with proper openings for maximum daylight. The wet and dry storage space is also provided on this floor where service is provided through back side of the block.

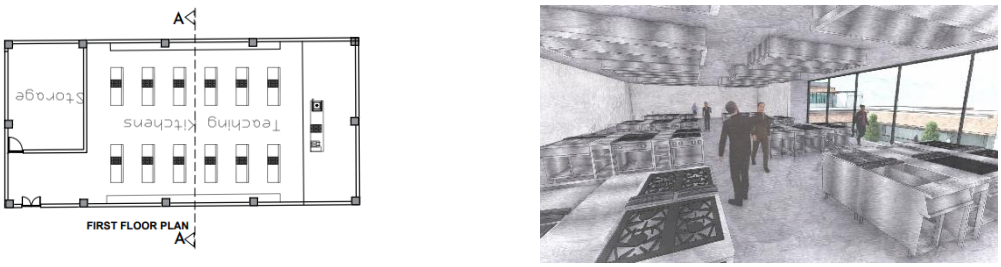


Figure 7-22: Teaching Kitchen

7.7.6. LIBRARY

A brainstorming library is provided at the ground floor of the institutional block which could be used by both the general public and students and chef. All the books documented related to Nepalese cuisine is stored and documented in the library. A cozy small reading section is also provided at the back.

7.7.7. CLASSROOMS

Theory classrooms are also provided exclusive to the students in the upper level. The classroom layout are kept in different order as such cluster pod layout or traditional setting as required. Apart from this, Mixology lab and researcher's lab is also provided for the chef and students who are wanting to innovate and research the new recipe. The mixology is provided to learn the art of mixology and skill of inventing, preparing, and serving mixed drinks, or cocktails.

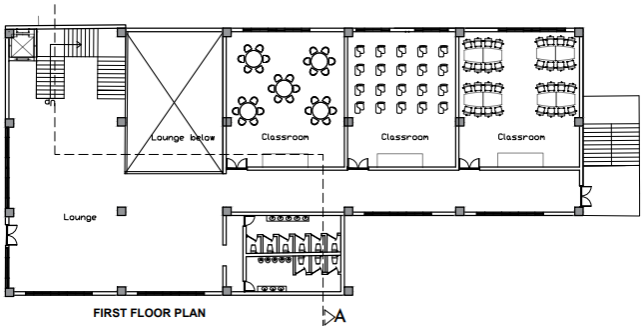


Figure 7-23: Plans showing layouts of classroom

Figure 7-24: 3d view of the classroom

7.7.8. DEMONSTRATION HALL

One demonstration theatre is provided for 120 people in the first floor level, which could be used for special lectures, demonstration by celebrity chef and different community level programs for the public. This provides a variety of learning approaches and stimuli to the students.

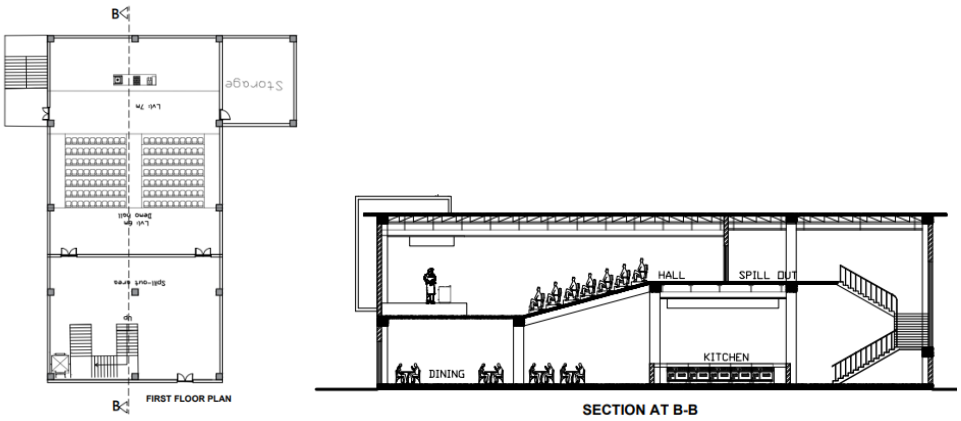


Figure 7-25: Plan and section of Demonstration Hall

Figure 7-26: 3d view of Demonstration hall

7.7.9. CONVENIENCE STORE

This is mainly entitled for the students of culinary students of the centre. One convenience store attached with the bakery section is provided at the lower plaza close to the entry for easy and fast use. Here, all the culinary creations of students from the centre which could be stored, frozen and consume in limited shelf life is display so that general public could buy it in cheaper price and enjoy. Also, upper-level self-service pantry is provided where people could reheat the dish and eat.

7.8. STRUCTURE

The architectural style of building is contemporary in addition the centre being institutional cum commercial building with max live loads. Thus, the general blocks are designed in RCC framed structures, which will help in better transfer of loads. The span between the column is maximum of 9m and hence column size of 600mm x 600mm is used. Since the building is placed in the contour site, Shear wall is provided in the building whereas retaining wall is provided in the exterior walls where necessary.

Since a clear span is need for the public cooking studio and demonstration hall, flat prat truss made of channel section is provided.

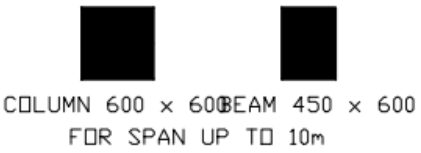
Structural Configurations

Column Size = 600mm x 600mm

Main beam size = 450mm x 600mm

Secondary beam size = 300mm x 450

General span of 7m to 9m



7.9. BUILDING SERVICES

One of the key elements of the design is the building service, which includes both services for regular use and service for emergency situations. The calculations for water demand, sewage production, septic tank size, and rainfall storage capacity are provided below.

7.9.1. WATER SERVICES

The project planned to use both the trated water and municipal supply water for drinking and residential use as a sustainable strategy, where rainwater would be used for gardening and storing extra for firefighting purpose. For the collection of drinking water, water from municipal line is collected in the upper-level underground water tank. The water can be subsequently transferred to the underground water tanks of particular buildings on lower levels via gravity flow. The water is then distributed to each building through hydropneumatics water supply system or overhead water supply system.

The application of hydropneumatics water supply system eliminates the use of overhead tank in the buildings for water distribution. It is connected to the major supply tank and supplies water through air pressure.

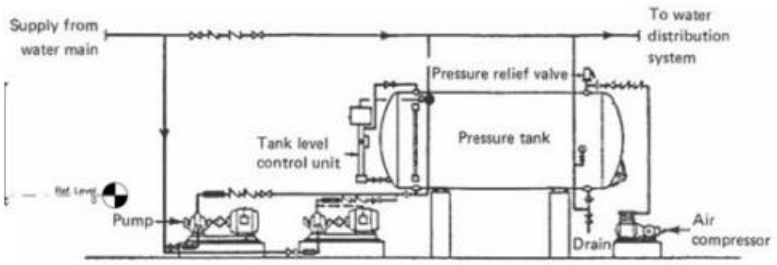


Figure 7-27: Hydropneumatic water supply system

For rainwater harvesting, underground tank is accommodated on lower level as collection by gravity flow will be easier.

7.9.2. CALCULATION OF WATER DEMAND

Program	No. of users	lpcd	Total (lit.)
Restaurant	120	50	6000
Retail	80	15	1200
Cooking Studio	20	50	1000
Cooking Pod	35	50	1750
Culinary Classroom	150	50	7500
Cafeteria	100	50	5000
Game Dining	50	50	2500
Demonstration Hall	100	15	1500
Miscellaneous	100	50	5000
		Water Demand for people	31,450
		Water demand for plants and other landscaping	3000
		GRAND TOTAL WATER DEMAND	34450

So, total amount of water required / day: 34450 litres/day = **34.5cu.m**

Safety Factor = 34.5*2= 70 cu.m

- **Firefighting requirement (As per NBC): 50 cu.m**
- **Total demand: 120 cu.m**
- For size of water tank,

Take, **Height of Water Tank (h)= 3 m**

L x b x h = 120

L x b = 120/3= 40

If L=2b,

3b=58;

B =4; L=8 ; H=3

Therefore, size of water tank = **8m x 4m x 3m**; tank to be filled twice a day.

(Refer to the annex for drawings)

7.9.3. CALCULATION OF RAIN WATER HARVEST

The practice of collecting and storing rainwater at the surface or in subsurface aquifers prevents it from being lost to surface run-off. A method of collecting rainwater from the roof has been suggested, and the water gathered will be utilized for fire fighting emergency, watering plants and flushing toilets after necessary purifications. The water collected from primary catchment areas are transported through gutter to a water tank that will store rainwater for gardening purpose, especially during non-monsoon seasons.

Catchment Area = 2000 sq.m

Since, annual rainfall in Kathmandu = 1.6m, thus,

Assuming runoff coefficient = 0.7

Annual rainwater harvest = 2240 cu.m

The S 8515 2009 states that the capacity of the rainwater harvesting storage tank must be at least 5% of the annual rainwater yield. Thus, the tank capacity of the rainwater tank = 5% of 2240 = 112 cu.m

Take, **Height of Water Tank (h)= 3.5 m**

L x b x h = 112

L x b = 112/3= 38

If L=2b,

Then 3b = 83; i.e., b=2.7 m

L=6m; B = 3m; H=3m

Hence, the size of water tank to collect rainwater is **6m x 3m x 3m**

(Refer to the annex for drawings)

7.9.4. SANITATION

Calculation of septic tank and soak pit capacity:

- No.of Users : 200(Primary User) + 500(Visitor)
- Approx. User = 500
- Volume of septic tank required= No. of users *3 cu.ft

  = 500 * 3

  = 1500 cu.ft = 40 cu.m
- Assuming height of tank to be 2m
- L*B*H = 40
- L*B = 20

Hence, the size of Septic tank is **5m x 4m x 2m** and the size of soak pit is **5m dia.**

(Refer to the annex for drawings)

7.9.5. FIRE PROTECTION

About 50 cu.m water is allocated for fire safety purpose. Here, sprinkler fire system is considered for this purpose. The major building that requires fire safety is in the academics and restaurants. Same layout is carried out on other buildings as well.

(Refer to the annex for drawings)

7.10. DESIGN ATTRIBUTES

7.10.1. ARCHITECTURAL EXPRESSIONS

The overall design of the project is kept minimal contemporary style. The ample use of glazing window, concrete plaster, vertical wooden panels and bricks contributes in achieving the functional and sophisticated look to the centre. While strolling around the centre hints of traditional architectural style also could be seen in the centre which tries to juxtaposed the traditional and contemporary Architectural style. For instance, Jhingati tiles slope roof in the central plaza opposite the elegant contemporary style brings the contrast in viewing. Also, the slanted window with tiki jhya in the upper floor of restaurant tries to mimic the sajhya of traditional Newari window. Also use of brick in external façade with pidhi area as semi-open space tries to potray the typical pidhi of traditional Nepalis house.

Figure 7-28: View of Window with tikijhya

7.10.2. CONSTRUCTION MATERIALS

The construction material is largely defined bu the architectural approach for the the project. Since the building follows contemporary style, the materials are chosen as suited such as concrete for framed structure, Brick for the exterior walls can be seen in the project. In the part where glimpses of traditional architecture is seen, traditional material such as timber for wooden dalan and column, jhingati tiles for roofing are used.

Figure 7-29: Elevation using Brick and concrete

Figure 7-30: Elevation Using Jhingati roof

7.11. 3D VIEWS

Figure 7-31: Aerial view of the centre

Figure 7-32: Lower plaza View

Figure 7-33: Entrance view

Figure 7-34: Event space in Upper plaza

Figure 7-35: View toward Convenience store

Figure 7-36: Upper Plaza view

Figure 7-37: Transitional space view

Figure 7-38: Restaurant courtyard view

8. MODEL PHOTOS

Figure 8-1: Front View

Figure 8-2: East Side View

Figure 8-3: West Side View

Figure 8-4: Aerial View

Figure 8-5: North Side view

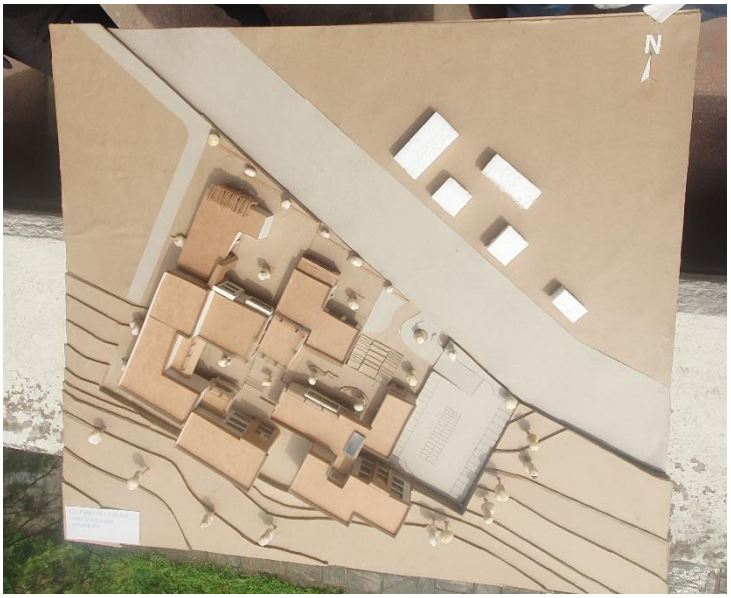


Figure 8-6: Top View

9. CONCLUSION

The center for Culinary Arts is a project that is based on the idea that the combined components of an urban food systems, be they markets, street vendors or any part of the food cycle in addition to feeding us, plays an important role in creating vibrant, engaging and unique places. These places which not only enhances the local food culture but also serve a larger social function such as enlivening and generally improving the urban fabric. Thus, food is a great place maker that draws people too plazas and streetscapes, and people draw more people, and so on, until a space that might normally be quiet and underutilized is suddenly full of life.

The project intended to be a one-stop solution for all culinary-related activities. It functions as a social hub for food, allowing for the exchange of ideas and influences among all four fundamental components of food, which can help advance the nation's food industry as a whole. The primary goal of the center will be to improve the state of Nepalese cuisine, which has great potential but is frequently underappreciated. The thesis also re-imagines the dining experiences at different scales to give people a space to socialize, interact and relax from their busy schedules.

10.ANNEX (DESIGN DRAWINGS)

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