

SEAFOOD BUSINESS CENTER

AMONRAT KHRUEATANG

A THESIS SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

BACHELOR OF ARCHITECTURE (INTERIOR ARCHITECTURE)

DEPARTMENT OF INTERIOR ARCHITECTURE
SCHOOL OF ARCHITECTURE AND DESIGN
ASSUMPTION UNIVERSITY

2016

SEAFOOD BUSINESS CENTER

Amonrat Khrueatang



A thesis submitted in partial
fulfillment of the requirements
for the degree of

Bachelor of Architecture (Interior Architecture)

Department of Interior Architecture
School Architecture and Design
ASSUMPTION UNIVERSITY

2016



Thesis Approved:

Date Assoc. Prof.Dr. Pralong Phirananda, DEAN

Date A. On-la-or Homsettee, Chairperson

Date
A. Peeraanong Wongtanakornchai, Thesis Advisor

SEAFOOD BUSINESS CENTER

Amonrat Khrueatang

173 pages

May 19, 2017,

Seafood Business Center is the place that very useful and helpful for people with their lifestyle and the visitors, the center have combine all the things; culture, tradition, identities, etc. The knowledge of researches will confirm more about the quality of being the center. There are a lot of informations and the places that also combine all of things in Prachuap Kiri Khan province in the center. That make people have opportunities to learn more about the things, culture, identities from every city in Prachuap Kiri Khan Province. Also combine the identities of the Southern Thailand to be representing in the center. Moreover, this center will be the connecting ground for the seafood business.

The information of Seafood Business Center are not even for people who are just pass to other city or those who that interested but also , will help other people such as farmers, seller, and etc. to have a better chance to joining the center. The center will be the place for people to meeting and exchanges the knowledge and idea.

Acknowledgements

First of all, I would like to thank you to my advisor, A. Peeraanong Wongtanakornchai, for every suggestion, advices, guidance and all knowledges and inspired that Ajarn given to me. Also, the way Ajarn taught me to find the way out of the project. I am very appreciated.

Moreover, thank you all Ajarns from internal and external committee for guide and find the way to goal for this project and advices. Also, thanks to all institute and some business owner that gave me the very important informations. And, ministry of fishery, for the information of fish products, exports, imports, and legality, that information are very useful for the project.

Thank you to my family, parents, friends, for support, love, and the spirit that you all show to me.

Amonrat Khrueatang

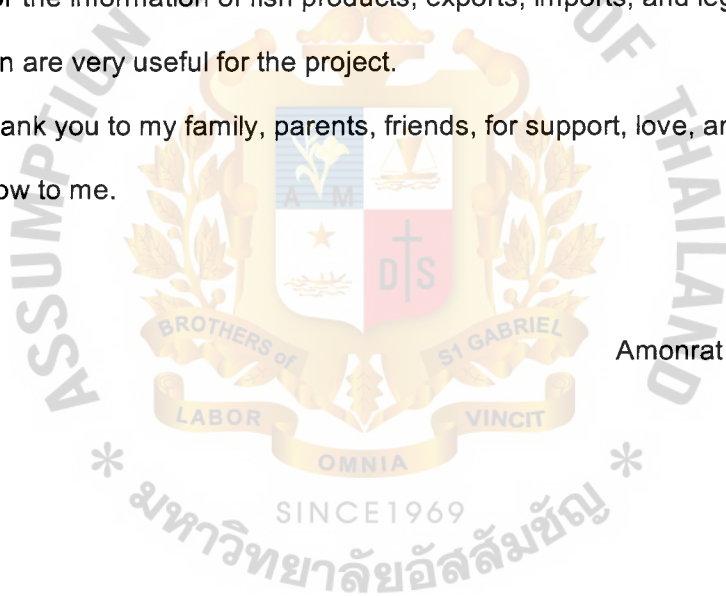


Table of Contents

	Page
Acknowledgements	i
List of Figures	v
List of Tables	vi

Chapter 1: Thesis Introduction

1.1	Project Background	2
1.2	Studied Defined	3
1.3	Thesis Statement	3
1.4	Research Scope	3
1.5	Design Scope	4
1.6	Definition of Terms	4

Chapter 2: Project Type Research

2.1	Literature Searches	6 - 18
2.2	Design Theory and Principles	19 - 22
2.3	Case Study	
2.3.1	Primary Case Study	24 - 46
2.3.2	Secondary Case Study	47 - 59
2.4	Existing Building Studies	
2.4.1	Existing Building System	60 - 70
2.4.2	Existing Problems and Solutions	71
2.5	Site Studies	
2.5.1	General information and History of building	72
2.5.2	Site Location	73 - 74
2.5.3	Site Context	75 - 76

2.5.4 Site and Zoning	77
2.5.5 Sensory and Natural Physical Features	78
2.5.6 Circulation and Access	79

Chapter 3: Data Collections

3.1 Target User Studies	
3.1.1 Target Users	81 - 87
3.2 The Proposed User Behavior	
3.2.1 User / Function with activities	88 - 91
3.1.4 User Timing	92
3.1.5 User Behaviors and Activities	93 - 95
3.3 Human Factor	
3.3.1 User Psychological Needs and Physical Needs	96 - 98
3.4 Function and Facility Studies	
3.4.1 Project Organization Chart	99
3.4.2. Seafood Center	100 - 101
3.4.3.Functional Department	102 - 106
3.5 Aesthetic and Form Studies	107 - 111
3.5 Project Specific	112 - 121

Chapter 4: Data Synthesis and Programming

4.1 Case Studies area requirement and percentage (or standard data)	
4.1.1 Function and Area requirement	123
4.1.2 Function and Area requirement	124
4.1.3 Function and Area requirement	125

4.1.4 Compared case Studies area requirement (%) and Project area requirement	126 - 128
4.2 Estimated project area requirement	129 - 141
4.3 Adjacency Studies (Adjacency Matrix and Bubble Diagram)	
4.3.1 Matrix Adjacency	142
4.3.2 Bubble Diagram	143 - 146
4.4 Functional Diagram and Proposed Zoning	
4.4.1 Zoning	147
4.4.2 Proposed Zoning	148 – 149

Chapter 5: Design solution

5.1 Design Concept	
5.1.1 Concept Statement	151
5.1.2 Concept Design Method	151 - 153
5.2 Design Development	
5.2.1 Planning Development	154 - 167
5.2.2 Design Scope Development	168 - 177
5.3 Thesis Final Presentation	178

Bibliography

List of Figures

	Page
Chapter 1: Thesis Introduction	
Chapter 2: Project Type Researches	
Figure 2.1 Standard Booth	15
Figure 2.2 Perimeter Booth	16
Figure 2.3 Peninsula booths	16
Figure 2.4 Island booth	17
Figure 2.5 Demonstration area	17
Figure 2.6 Towers	18
Figure 2.7 Taipei Flower Wholesale Market	24
Figure 2.8 1 st floor plan	25
Figure 2.9 2 nd floor plan	26
Figure 2.10 lamp into the building	27
Figure 2.11 loading area	28
Figure 2.12 exterior of Taipei flower market	28
Figure 2.13 facade and roof	29
Figure 2.14 planning of SF Flower market	30
Figure 2.15 planning of SF Flower market	31
Figure 2.16 layout of of SF Flower market	32
Figure 2.17 section of SF Flower market	33
Figure 2.18 section of SF Flower market	34
Figure 2.19 Food Villa Building and Front view	35

Figure 2.20 Food Villa Location	36
Figure 2.21 Food Villa Market Master Plan	37
Figure 2.22 Food Villa Market zone Plan	38
Figure 2.23 Food Villa translucent façade and ventilation gap	39
Figure 2.24 Food Villa gap and wind diagram	40
Figure 2.25 Food Villa 3D Plan	40
Figure 2.26 Food Villa interior and structure	41
Figure 2.27 Seafood zone in Food Villa	41
Figure 2.28 logo and in front of Shinsen fish market	43
Figure 2.29 logo and in front of Shinsen fish market	43
Figure 2.30 Shinsen fish market map and zone	45
Figure 2.31 Alive aquamarines Shinsen fish market	45
Figure 2.32 fresh seafood zone in Shinsen fish market	46
FIGURE 2.33 Siam Paragon PLAN (ground floor)	47
Figure 2.34 Seafood area	48
Figure 2.35 The Dock Kitchen at Gourmet market, siam paragon	49
Figure 2.36 in front of Sydney Fish Market	50
Figure 2.37 Sydney Fish Market Map	51
Figure 2.38 shop and inside Sydney Fish Market	52
Figure 2.39 visitors tour at Sydney Fish Market	53

Figure 2.40 interior and cleaning space	53
Figure 2.41 in front of Fish Market	54
Figure 2.42 Ground floor plan of Fish Market in Bergen	55
Figure 2.43 First floor plan of Fish Market in Bergen	55
Figure 2.44 Section of Fish Market in Bergen	55
Figure 2.45 overall building of Fish market in Berge	56
Figure 2.46 Fish Market in Bergen	56
Figure 2.47 Asean Fishery and Aquaculture Expo Plan	58
Figure 2.48 Building Plan and Area	61
Figure 2.49 Existing zoning	62
Figure 2.50 Accessibilities and Circulation	64
Figure 2.51 Section and Construction	65
Figure 2.52 Entrance	66
Figure 2.53 Front corridor	66
Figure 2.54 Restaurant	67
Figure 2.55 Meeting room	67
Figure 2.56 Hallway to reception	68
Figure 2.57 Reception area	68
Figure 2.58 Waiting Area	69
Figure 2.59 Lift hall	69

Figure 2.60 Guest rooms (2 nd – 5 th floor)	70
Figure 2.61 Main Stair	70
Figure 2.62 Prachuap Sam Ao Hotel	72
Figure 2.63 Site Location in Macro scale (Prachuap Kiri Kham Province)	73
Figure 2.64 Site Location in Macro scale	73
Figure 2.65 Site Location in Macro scale	73
Figure 2.66 Site Location in Intermediate scale	74
Figure 2.67 Site Location in Intermediate scale	74
Figure 2.68 Site Location in Micro scale	74
Figure 2.69 The Existing around the site	75
Figure 2.70 Site Location in Macro scale	75
Figure 2.71 Sun and Wind direction diagram	76
Figure 2.72 Boundaries and site area	77
Figure 2.73 Site coverage and building height	77
Figure 2.74 East view	78
Figure 2.75 West view	78
Figure 2.76 Access way from Phet-ka-sem Road.	79

Chapter 3: Data Collections

Figure 3.1 space requirement for tank	112
Figure 3.2 space requirement for tank	113

Figure 3.3 plan and section	113
Figure 3.4 Curtain wall framing	115
Figure 3.5 Double-glazed unit with laminated glass	117
Figure 3.6 Large colour coated steel cassette panels supported on vertical rails	118
Figure 3.7 Typical light steel infill walls in a steel framed building	120

Chapter 4: Data Synthesis and Programming

Figure 4.1 Matrix Adjacency of overall relationships	142
Figure 4.2 Bubble Diagram of overall relationship	143
Figure 4.3 Bubble Diagram and matrix adjacency of Business center	144
Figure 4.4 Bubble Diagram and matrix adjacency of Market area	144
Figure 4.5 Bubble Diagram and matrix adjacency of restaurant	145
Figure 4.6 Bubble Diagram and matrix adjacency of Knowledge center	145
Figure 4.7 Bubble Diagram and matrix adjacency of Back of house	146
Figure 4.8 Functional Diagrams	147
Figure 4.9 zoning of 1 st floor plan	148
Figure 4.10 zoning of 2 nd floor plan	148
Figure 4.11 zoning of 3 rd floor plan	149
Figure 4.12 zoning of 4 th floor plan	149
Figure 4.13 zoning of 5 th floor plan	149

Chapter 5: Design Solution

Figure 5.1 The concept approach	151
Figure 5.2 Three main concepts	152
Figure 5.3 Collage concept	152
Figure 5.4 Conceptual model	153
Figure 5.5 First floor plan	155
Figure 5.6 Second floor plan	157
Figure 5.7 Third floor plan	159
Figure 5.8 Fourth floor plan	161
Figure 5.9 Fifth floor plan	163
Figure 5.10 Ceiling plan	164
Figure 5.11 Section A	165
Figure 5.12 Section B	166
Figure 5.13 Reception area	168
Figure 5.14 Lift hall	169
Figure 5.15 Waiting area	170
Figure 5.16 Fresh market	171
Figure 5.17 Dry market	171
Figure 5.18 Stair hall	172
Figure 5.19 Gourmet market	173

Figure 5.20 Information area	173
Figure 5.21 Business center	174
Figure 5.22 office1	174
Figure 5.23 office 2	175
Figure 5.24 Staff pantry	175
Figure 5.25 Buffet restaurant	176
Figure 5.26 Bar	177
Figure 5.27 Fine dining restaurant	177
Figure 5.28 Final presentation Board	178



List of Tables

	Page
Chapter 1: Thesis Introduction	
Chapter 2: Project Type Researches	
Table 2.1 Building problems and solutions	71
Chapter 3: Data Collections	
Table3.2 Pie chart Age, Nationality	81
Table 3.3 Pie Chart show result of people who like seafood	82
Table 3.4 Pie Chart show result of how often people eat seafood	82
Table 3.5 Bar Graph show the number of the place of purchase seafood	83
Table 3.6 Bar Graph Shows the reason why people prefer to purchase seafood at that place	83
Table 3.7 Bar Graph Shows the reason why people not prefer to purchase seafood at that place	84
Table 3.8 Bar Graph Shows the reason of purchase seafood at that place	85
Table 3.9 Pie chart shows about people prefer seafood from local or imports	85
Table 3.10 bar graph shows about what people want to have in the seafood	
Center	86
Table 3.11 Pie chart shows the result about should seafood center be the business center	87
Table 3.12 Organization chart	99

Chapter 4: Data Synthesis and Programming

Table 4.1 Function and Area requirement : Case study 1 Food Villa	123
Table 4.2 Function and Area requirement : Case study 2 Asean Fishery and Aquaculture Expo	124
Table 4.3 Function and Area requirement : Case study 3 Fish market in Bergen	125
Table 4.4 Compared case Studies area requirement (%) and Project area requirement	126
Table 4.5 Seafood exports in percentage (Fresh, Frozen, Dried)	128
Table 4.6 Area requirement of Lobby and information area	129
Table 4.7 Area requirement of Market area	130
Table 4.8 Area requirement of Business center and lounge	132
Table 4.9 Area requirement of Knowledge area	133
Table 4.10 Area requirement of Seminar room	134
Table 4.11 Area requirement of Meeting room	135
Table 4.12 Area requirement of Restaurant	137
Table 4.13 Area requirement of Kitchen and storage	138
Table 4.14 Area requirement of Office	139
Table 4.15 Area requirement of Back of house	140
Table 4.16 Project Area Requirement	141

Chapter 5: Design Solution

Chapter 1 : Thesis Introduction

1.1 Project Background

1.2 Studied Defined

1.3 Thesis Statement

1.4 Research Scope

1.5 Design Scope

1.6 Definition of Terms

Chapter 1: Thesis Introduction

1.1 Project Background

Nowadays, architecture become a part of people lifestyle. Many Buildings in Thailand have its story and background history of itself by concern about Thai culture and demand from surrounding but many building started from no where or without story and inspiration, had to close down and left without nothing but shamed on it, some of them come up with the interesting story and history, or using very nice concept and design for the building, that should make it to be better and continue to make those building valuable again. Moreover, with problems of the unstable economic in Thailand, it caused the business stop and cannot make their business building or property better and even surely that easy to get old without renovation for using.

From the building that used to be another type of project but has been closed down for a long time, and the building itself got old and deserted. The building had taken over and renovated and remake it to be more useful, to become the hotel to serve visitors and people from other area.

This center is the place where provided the facilities for serving people with the interesting objects and some knowledge of that area or the surrounded area, that showing the identities to presenting to the visitors. Also, where individuals and groups gather to promote and share common interested. Centers typically offer sufficient a space to accommodate as thousand of attendees, and this should be suitable for some major trade shows, sometimes known as the exhibition centers.

1.2 Studied Defined

1.2.1 Objective of Study

- To understand more about traditions, cultures, identities of surrounding area
- To understand more about cultures of people or community around
- To create the new facilities that may serve visitors with the right direction and functions
- To apply the main character of that in to the center

1.3 Thesis Statement

This information of Seafood Business Center will give people and visitors to understand more about traditions, cultures, and identities. And this is the great experience for people who interested in the culture. Moreover, it is useful way and a chance to promoting out the seafood from fishery of Prachuap Kiri Khan Province. Moreover, in the seafood center, will be the place that combines the identities and all seafood products.

1.4 Research Scope

- To study center function and facilities of exhibition and distribution
- To study center zoning and circulation
- To study trends of center design
- To study the target of users and their specific requirement
- To study building, environment, and context
- To study cultural and identities of people and the community
- To study cultural of site surrounding

1.5 Design Scope

Reception and Lobby Area

Reception and Waiting area

Information area

Knowledge area

Restaurant

- Buffet restaurant
- Fine dining restaurant

Market area

- Fresh market
- Dry market
- Gourmet markry

Business area

Business center

Business Lounge

Seminar Room

Meeting Room

Office area

Back of House

1.6 Definition of term

Prachuap Kiri Khan Seafood Center is the one interesting place for people who want to know about history or the place that combine all the very interesting of Prachuap Kiri Khan. Location is suitable for all visitors to shopping and businessman. Seafood and fishery can represent about culture and identities of that community combined with new innovation, design for visitors or even, foreigners who interest about culture, identities. Moreover, visitors may get the new experiences and special things from the culture of that community.

Chapter 2: Project Type Researches

2.1 Literature Searches

2.2 Design Theory and Principle

2.3 Case Study

2.4 Existing Building Studies

2.5 Site Studies

Chapter 2: Project Type Researches

2.1 Literature Searches

Center

The definition of distribution center is the place where people knew that the facility that is usually smaller than a firm's main warehouse or market, and is used for receipt, temporary storage, and redistribution of goods, according to the customer's orders as they received. Also called, "branch warehouse" or "distribution". It can be a meeting point of people who travel to another destination and stop by to get something or spend their time to look for the combination of the identities or special things from that city. Also the customers will feel more convenient to get things that they want in one place, and environment of the center will make them feel like they are in the real place.

Nowadays, customers become more professional and wanted to get things or food from the real local place. So, they want the place to contact directly. This will be a choice that customers can stop to contact their business and take time with the distribution center for more facilities, not even for distribution.

The fishing industry is evolving for most fishermen, knowing how to catch is no longer enough. New regulations, growing demand from consumers to know, where their food comes from, rising fuel prices, and increasing globalization have changed the business dynamic of fishing. ¹

At the same time, with many fisheries in decline, fishermen must develop new ways to fish without depleting the resource on which they depend. They must innovate to survive. To be successful, they need to focus on developing their businesses as well as fishing.

¹ Monica Jain. "Fish 2.0: Connecting fishermen and investors" <https://www.virgin-unite/leadership-and-advocacy/fish-20-connecting-fishermen-and-investors>

Defining the Exposition Industry.

- Many companies using the exhibition or center to represent and selling the project and products in this process more than using business to business advertising, direct mail, or public relations.

- Exhibition and center are more effective than advertising, direct mail, and use other marketing process to components in general to introduce the new products.

- Exhibition and center is the most percentage that 91 percent of business decision makers report about "extremely useful" sources.

- Exhibition and center is the marketing tools that can show the activities, measure, quantify products, and the outcome is more successful than other.

- Exhibition and center can help the business or companies to reach their goal and also the customers are easy to contact with the company directly.

- The companies or business that integrates the marketing into the exhibition and center that will be better to both way is visitors attraction and lead conversation efficiency.

Expositions and Trade show

The business of expositions was not considered an industry unto itself: rather expositions were regarded as functions of those industries they served to promote or as an adjunct to other industries with which it is inextricably linked – travel, hotel/lodging, and food service. The expositions or trade show, field is emerging as a viable and separate business category that not only facilities commence in all areas of the economy but also opens new marketplaces at all level from manufacturer to wholesale and retail to customers

Global 's marketplace, people communicate more than ever through impersonal means, using high-tech electronic systems. Though convenient and effective, these systems lack one important component: human contact. It is human

nature to interact for business and to exchange an idea or talk thing over. That is the forming of human relationships that make trade shows work now and in the foreseeable future call it the “ fiddle factor ” that people still like to touch, see, hear, smell, and taste. Expositions continue to be one of the most effective marketing strategies mix simply.

Types of Meetings and Events

The difference between a seminar and a workshop and the difference between trades show an exhibition that have a lot of types with all the different meeting terms it can get quite confusing.²

- Annual General Meetings:

An Annual General Meeting (AGM), or a shareholders meeting, is a large gathering held by publicly traded companies. These meetings are held in order to let shareholders ask the board of directors questions about a company's health, as well as to elect new members to the board.

- Board Meetings:

While the term “Board Meeting” technically means a gathering of a company or organization's board of directors, to us a board meeting really is a gathering of decision makers. At this gathering, important facts are presented and decisions are made as to the best course of action to take in the coming months.

- Breakout Session:

At a convention or conference, breakout sessions are meetings (workshops, seminars, or presentations) intended for small groups. These meetings can be held in smaller meeting rooms within a convention center or hotel as well as off-site meeting and boardrooms.

- Business Dinners and Banquets:

² <http://www.venues.com/event-planning-guide/types-of-meetings-and-events>

These are generally formal celebrations organized by a company or organization to celebrate achievements within the organization and to boost employee and member morale. Depending on the size of the organization, these dinners may be a small gathering at a local restaurant or conducted in a large hotel banquet hall or unique event space like an art gallery or museum.

- Conference:

Although “conventions” and “conferences” are terms that are used interchangeably, the meeting industry standard definition of a conference is of a meeting of a shorter duration than a convention and designed to meet a specific objective. See: Convention.

- Colloquium:

A colloquium can be best described as an “academic networking event.” Participants are often experts in a given field and they meet to informally present and exchange new ideas. Some academic programs require participation in a colloquium in order to complete the program.

- Conclave:

Conclaves are meetings conducted in secret. In general, conclaves are used to describe “closed door” meetings between individuals who have a certain level of power or influence. One of the most famous conclaves is the Papal conclave, where cardinals meet to elect a new pope.

- Congress:

While most Americans generally associate the word “Congress” with the legislative branch of government, a congress can also a large group of individuals who meet on a regularly scheduled basis, often to make decisions through a debate and voting process.

- Consumer Shows:

A consumer or gate show is a trade show that's open to the general public. These

shows generally have an entrance fee. People interested in learning about the latest products (electronics, automobiles, etc) often go to consumer shows.

- Conventions:

A convention is an a large gathering of people with a shared interest (usually professional or fandom related). These events are often recurring, and are usually scheduled at a specific time each year. Conventions usually have keynote speakers, as well as presentations that familiarize attendees with advancements or trends within a their particular field of interest. See: Conference.

- Exhibitions:

An exhibition is a trade show that focuses on B2B businesses.

- Expo or Expositions:

An expo is a large scale exhibition or trade show often conducted on an international level. One of the most common examples of an expo is The World's Fair.

- Fairs:

A fair is a trade show or expo organized for the purpose of exhibiting arts and crafts, industrial products and agricultural products, but more local and on a smaller scale. Unlike most trade shows, entertainment and fair food (think fried twinkies and french fry studded corn dogs!) are often a major draw.

- Functions:

A social gathering or party, sometimes of a ceremonial nature. A function is usually one or one of several gatherings that contribute to a larger event.

- Fundraisers:

A fundraiser can be a party, dance, dinner organized for the express purpose of raising money for a cause or organization.

- Galas:

A gala is a large scale dinner gathering or party that often includes entertainment and/or awards ceremonies following dinner.

- "Green" Meetings:

"Green" meetings are events produced with sustainability in mind. When planning an event considerations are made concerning the use of water, electricity, fuel as well as the consumption of renewable products as opposed to disposable products.

- International Events:

According to the meeting industry standard definition, an international event is any event where 15% or more of the participants come from out of the the event's host country.

- Meetups:

A meetup is an informal meeting or get-together organized for people with similar interests. These interests can be anything: dating, networking, board games, romance novels, meditation, hiking, wine tasting—just to name a few. Most meetups are associated with meetup.com, a website that provides listing services for meetups.

- Networking Events:

Organizing or sponsoring a networking event can be a great way to raise a company or individual's profile within a certain community. Networking events can run from informal schmooze and booze affairs at a local bar to fully fledged galas complete with an open bar.

- Party:

A generic term for any social gathering.

- Plenary or General Sessions:

A large meeting open to all people attending an event. These sessions often kick off a large conference or convention before it begins.³

- Political Events:

Political events are organized to raise awareness or funds for a particular candidate or cause. Democratic and Republican national conventions, the largest political events in the U.S. are organized to energize the base and bring in delegates from

³ <http://www.eventues.com/event-planning-guide/types-of-meetings-and-events>

each of the 50 states.

- Press Conferences:

Press conferences are often organized by newsmakers (most often in politics but also in business and in sports) to make an announcement or to field questions by press who happen to be invited to the conference.

- Product Launch Events:

Product Launches are often large scale events whose organizers invite journalists, bloggers and social media influencers to witness the very first unveiling of a company's product. A successful product launch will often include a venue that is unique to the product being used.

- Receptions:

In the meetings industry, receptions refer to a social function where light refreshments are served, usually buffet style. Receptions are often informal, and attendees will usually stand up and socialize rather than sit down at a table. For weddings and other social events, receptions are informal celebrations or gatherings that follow a more formal ceremony.

- Retreats and Team Building Events:

Retreats can be anything from go-cart races to ski trips to ropes courses. Essentially the purpose of the retreat is to get team members to know each other better and thus be more efficient as a team.

- Seminars:

In business, seminars are meetings organized to inform a group of people about a specific topic, or to teach a specific skill. Expert speakers and teachers are usually invited to speak on topics like personal finance, investing, real estate, web marketing, and many others. See Workshop.⁴

- Shareholder's Meetings:

See Annual General Meeting.

⁴ <http://www.eventues.com/event-planning-guide/types-of-meetings-and-events>

- Social Events:

A large gathering organized to celebrate major life events and religious ceremonies. Common social events include: anniversaries, weddings, birthdays, and bar/bat mitzvahs.

- Symposiums:

Symposiums are meetings organized so that experts in a given field can meet, present papers, and discuss issues and trends or make recommendations for a certain course of action.

- Trade Shows:

Trade Shows are an opportunity for companies to exhibit some of their latest products, as well as yet to be released prototypes to journalists as well as others in the industry. See also: Exhibition, Consumer and Gate Shows, Expo.

- Workshops:

The terms “workshop” and “seminar” are used interchangeably. While both are education focused events, workshops generally have more hands-on and group activities. Workshops are better for teaching skills that require interactivity and individual participation to learn.⁵

Market

Types of market that determines to the strategy that need in the business. It is different strategies in the market between consumer market and industrial market. Also, for the industrial market is dealing with bulk product selling. Costing and marketing is a critical function for both types of markets. Moreover, the globalization of the company is rise with their marketing strategies. There are various factors that use the normal business strategies to going global.

- Consumer Markets

The consumer market is involves marketing of consumer. As awareness and

⁵ <http://www.eventues.com/event-planning-guide/types-of-meetings-and-events>

knowledge of consumers rises, marketing of consumer goods gets tougher. Today a lot of focus has shifted to consumer goods marketing because a consumer has a lot of choices. The brand loyalty is at its lowest and the worst fear a brand can face now is a high rate of brand defection.

- Business Markets

The business market is similar to consumer market also organizational buyer has numerous options but just the only of number of software and hardware that provide in the market. The characteristics of business market are dealing by taken time and involve selling the products.

- Global Markets

The global markets are the cost of the transportation, government policies for all of this is for expansion to the globalization. Moreover, the global markets are different from each market but the core idea is the same. Most global marketing companies work on one fundamental.

- Government or Nonprofit Market

The government market is mostly involves the government offices, factories, army, and other government departments. The non profits on the other hand may involve groups based on different beliefs some of which really have an excellent brand name and are recognised by several companies. Both of these entities have a limited purchasing budget and hence the price of products is important. Accordingly the purchase process is organized.⁶

⁶ Hitesh Bhasin." Types of Market "Accessed November 29, 2016. <http://www.marketing91.com/types-of-market/>

Traffic Flow

The traffic or circulation, the number of visitors viewing an exhibition or desirable to show the exhibitors but if the floor plan of exhibition or center is the organize will causing traffic tie-ups and every visitors will loses.

Booth Types

Booth types are 3 primary categories.

- Anchor booths is large and well lit set up by the companies that similar in the industry. It also has a feature entertainment, music, and food.
- In – line booths, the majority of booth is using in – line that will set up in row and not on the corner or the end. This will use in smaller exhibition.
- Corner booth is 2 side booths on row “corner” the designers can charge it to be double for corner booth because it has 2 sides exposed to traffic.

Booth Design

The display sizes and designs are very impact to the look of the show the same with the traffic flow. There are 6 common exhibit design elements.

- Standard booth is the one or more standard units in straight line. The maximum height

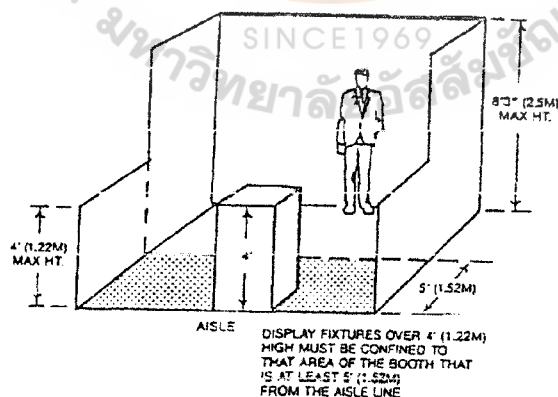


Figure 2.1 Standard Booth

- Perimeter wall booth is a standard wall booth that local on the out of outer perimeter wall of exhibit floor. The maximum height is 3.6 meters.

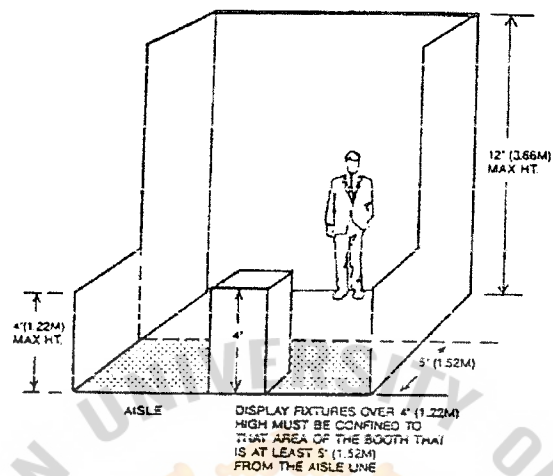


Figure 2.2 Perimeter Booth

- Peninsula booth is one or more display level in four or more standard units back with an aisle on three sides. The maximum height is 4.8 meters.

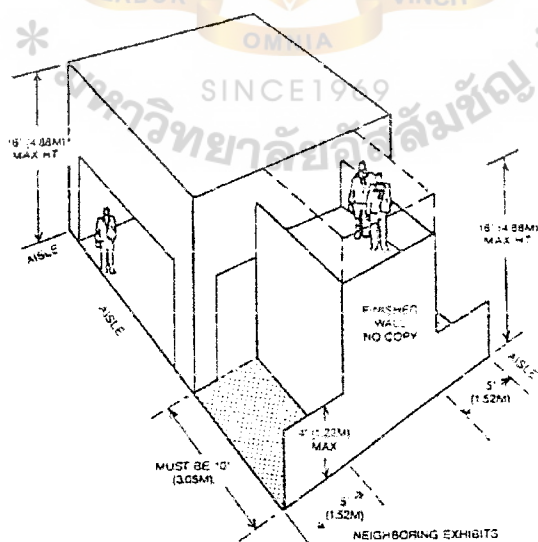


Figure 2.3 Peninsula booth

- Island booth is exhibit with one or more display levels in four or more standard units with aisle on four sides. The maximum height is 4.8 meters.

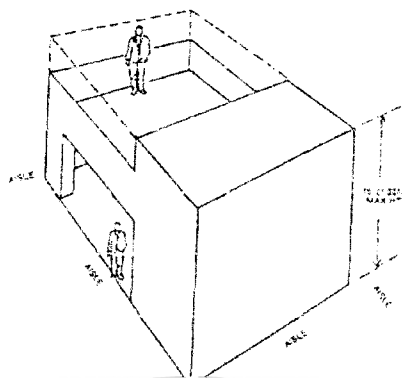


Figure 2.4 Island booth

- Demonstration area is the space that set up for interaction of exhibit personnel and audience through presentations, product demonstrations, or sampling. The table must be minimum of 0.60 meter from the aisle line.

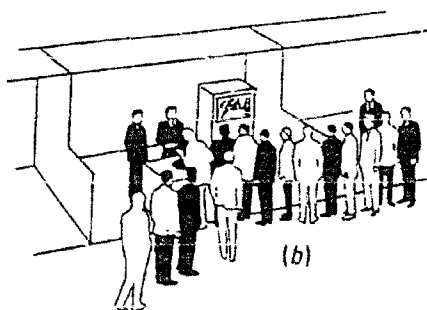
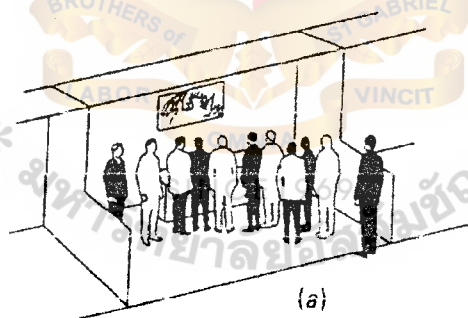


Figure 2.5 Demonstration area

- Towers are freestanding exhibit components separate from the main exhibit and used for identification and display purposes only. The maximum height is 4.8 meters.⁷

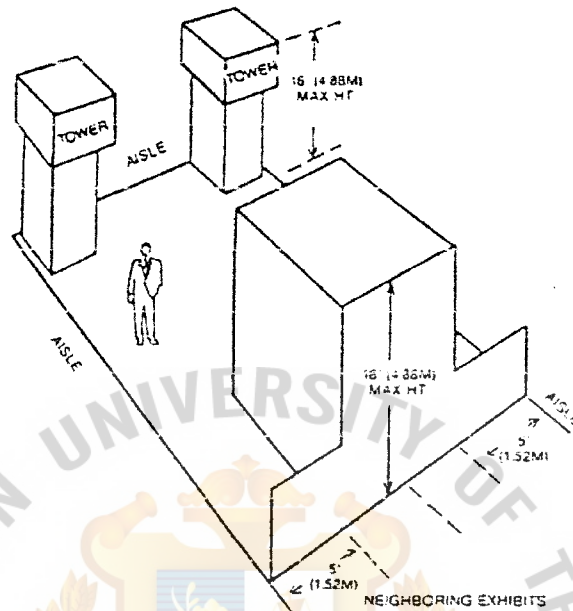


Figure 2.6 Towers

⁷ Deborah Robbe, Expositions and Trade Shows. New York, 2000, 69-74.

2.2 Design Theory and Principles

Seafood market is a marketplace used for marketing seafood products. It can be dedicated to wholesale trade between fishermen and fish merchants, or to the sale of seafood to individual consumers, or to both. Retail fish markets, a type of wet market, often sell street food as well.

Seafood markets range in size from small fish stalls, such as the one in the photo at the right, to the great Tsukiji fish market in Tokyo, turning over about 660,000 tonnes a year.

The art of seafood case display

- Look at the seafood case from the customer's viewpoint. Shingle or lie steaks and fillets to show off the best side, facing, or edge towards the customer. An example is when salmon steaks are shingled with the skin edge towards the customer and the red meat side facing the clerk behind the case. It should be the other way around. Show the red meat to the customer.
- Use colors intermittently to make individual displays stand out and to create a pleasing pallet of colors to the eye. It is contrast that helps something stand out to the human eye. Three white fillets next to each other are bland. White cod and tilapia fillets with orange salmon fillets in between make all three items jump out at the customer due to the color contrast. This is done in the produce department too. Two carrot displays with green onions in between make all three products jump out to the customer's eye.
- Use textures and direction to break up the display and create eye-catching patterns. This is effective when you just don't have that many colors to work with. An example is to have cod fillets displayed in a long vertical rows toward the customer. Then display tilapia fillets horizontally next to the cod, then run the next long white fillet

next to the tilapia. The contrasts in texture helps all three products stand out better.

- Use high and lows in the case to make products jump out to customers. The seafood case is three dimensional, so use all the dimensions available to highlight product and catch customer's attention. Again, contrast helps products stand out. A small mountain of shrimp between two lower-height displays is a good example of this.

- Create sharp, well-defined edges. Whether the display is straight or curved, the edges of the display should be clean and crisp. These clear, defined lines between displays help the contrast jump out to the customer. Tip: Most fillets have a very straight edge on the top or dorsal side of the fish fillet. The belly side of the fillet is usually more jagged or unruly. Use the top straight side on the edges of the display to create sharp, defined lines.

- Use what you have in the cooler. Don't make the same boring display with same products in the same spot every day. Otherwise, you should let the corporate merchandiser planogram the case based on scan data and category-management principals. Set large, deep and focal displays based on large inventory in the cooler, or based on a hot ad price, or based on high gross profit for the item. Have a reason for each large or focal point display. Have a reason for the placement of every item. The seafood case should reflect the cooler inventory in the store and the seafood manager's objectives for the day. That is why it can't be done as well from a corporate office.

- Use the right lighting in the right places to bring out the best colors in seafood and to enhance the attractiveness of the overall display. Seafood comes in many colors, so a natural white-color spectrum bulb helps the wide variety of colors stand out. Many meat cases use light bulbs with more infrared or ultraviolet to bring out the red in the meat.

- Keep the fish case fresh throughout the day. Do not pile it high in the morning and let it dry out all day. Some seafood managers will display one or two deep at set up, and add more product for the lunch and after work rush hours. Bringing out fresh product to augment displays throughout the day helps keep a fresher look and customers will buy more if they see it coming out of the back cooler. I liken it to the bakery baking chocolate chip cookies or rolling out hot Italian bread at 5 p.m.⁸

Thailand's seafood industry

Thailand is one of the world's leading seafood exporters, with half of its production comprising crustaceans, mostly internationally traded shrimp. The industry has grown significantly since the 1970s, with production doubling from 20 kilograms per capita in 1990 to 40 kilograms per capita in 2008 (FAO, undated; Laowapong, 2010) After a record-high production of 1.4 million tonnes in 2009, Thailand saw its production fall to 1.3 million tonnes in 2010 and then – mainly because of widespread flood damage in 2011 and the dive in shrimp yield as a consequence of Early Mortality Syndrome, or EMS (FAO, 2014a) – to 1.2 million tonnes in 2011 and 2012. The total value of Thailand's seafood exports in 2011 amounted to US\$7.3 billion (EJF, 2014).⁹

Since the middle of the last decade, total seafood production in Thailand has been in decline, with major increases in aquaculture production partly mitigating significant drops in marine capture productivity. Another important new feature is that Thailand has increasingly taken to importing raw materials for its processing industry. In, chilled, and frozen tuna, with imports of 700,000–800,000 tons annually (FAO, 2009). This country is also one of the world's largest exporters of shrimp, canned

⁸ Chuck Anderson. "The art of seafood case display" Accessed June 18, 2013.
<http://www.seafoodsource.com/blogs/behind-the-fish-counter/the-art-of-seafood-case-display>
⁹ http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_474896.pdf

tuna, squid, and cuttlefish. Shrimp products and canned tuna, respectively, contribute 36 per cent and 27 per cent of the total value of Thailand's fish exports (FAO, 2009).



2.3 Case study

To design a center that combines the market and distribution in to one place to serve the facilities and convenient to the customers and travelers.

Factors that need to be studied are:

- 1.To study the arranging and planning of market center
- 2.The facilities and space requirement for center
- 3.To study case studies by context, supporting facilities, and transportation
- 4.To find guideline and recommendation for idea of designing center
- 5.To find the advantage and disadvantage of each case

Lists of Case Study

Primary Case Study

1. Taipei Flower Wholesale Market, Taiwan International Flower Trade Center
- 2.San Francisco Flower Mart
- 3.Food Villa
- 4.Shinsen Fish Market

Secondary Case Study

- 1.Gourmet Market at Siam Paragon
- 2.Sydney Fish Market
- 3.Fish market in Bergen
4. Asean fishery and aquaculture expo 2016

PRIMARY CASE STUDY

1. Taipei Flower Wholesale Market, Taiwan International Flower Trade Center



Figure 2.7 Taipei Flower Wholesale Market

Name	: Taipei Flower Wholesale Market, Taiwan International Flower Trade Center
Center	
Site location	: Taipei City, Taiwan
Area	: 29,700 sq.m
Project year	: 2012

In 2001, the Taipei City Government chose to relocate the Taipei Flower Wholesale Market and transform it into an International Flower Trade Center. Contrary to the market's previous temporal location, the new site is located within an industrial urban context allowing convenient transportation. Subsequently, the new location merges logistical distribution and includes program for exhibition, education, and urban activities.¹⁰

¹⁰ "Taipei Flower Wholesale Market, Taiwan International Flower Trade Center Large site for cut flowers market. / H.P. Chueh Architects & Planners" Accessed 10 March, 2014.

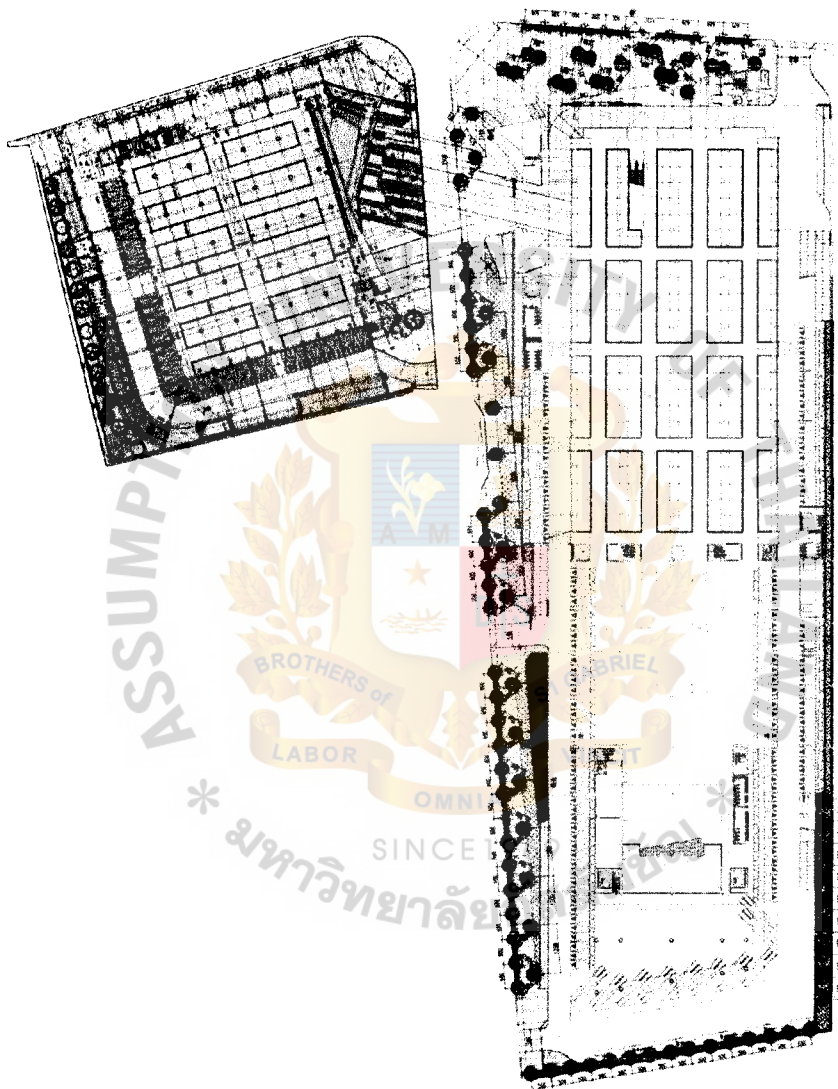


Figure 2.8 1st floor plan

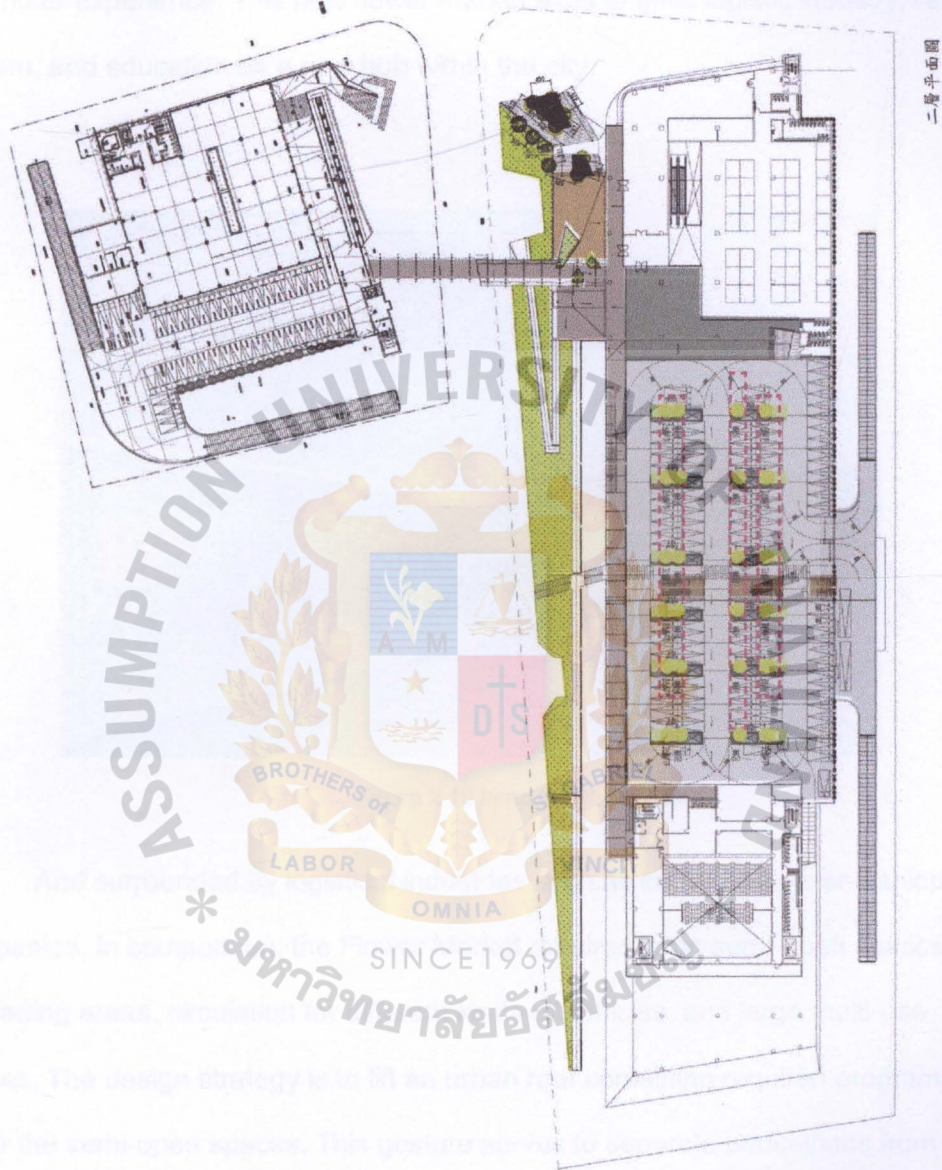


Figure 2.9 2nd floor plan

The total site area is a generous 28,764 sqm. West of Ming Shan Street is a larger site for cut flowers while the East site is reserved for the sale of plants. A bridge connects the two sites allowing commercial opportunities and diversifying the commuter experience. This new flower market aims to unite logistic industry, retail, tourism, and education as a new hub within the city.

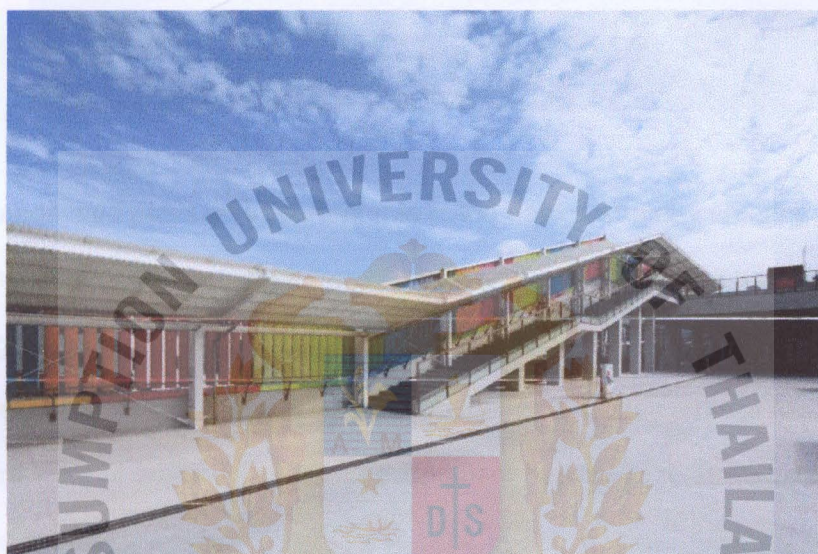


Figure 2.10 lamp into the building

And surrounded by logistical industries such as supermarkets and shipping companies. In comparison, the Flower Market requires large semi-open spaces such as loading areas, circulation for different kinds of vehicles, and large multi-use spaces. The design strategy is to lift an urban roof containing required programs to cover the semi-open spaces. This gesture serves to separate pedestrians from vehicles while allowing different activities to happen simultaneously.



Figure 2.11 loading area

Landscape plays an important role in the design strategy creating separations and connections. The landscape “ramp” along pedestrian circulation defines the main flower logistic area boundary and provides green spaces for the public. In addition, a fifteen meter set back from the South site boundary, provides a plaza towards the main entrance and leads people to a second floor public space through landscape-integrated stairs.



Figure 2.12 exterior of Taipei flower market

2. San Francisco Flower Mart

Name: [illegible]

Since visual identity is a main concern of the project, the building transfers floral color sequences to the facade's louver system. Spanning the length of the site, colorful panels on the facade aim to distinguish the program from its industrial context.



Figure 2.13 facade and roof

This larger site is mainly for cut flower auctions and distribution. The urban roof provides lifted spaces and the opportunity for future expansion. The loading area, auction room, and distribution area are located on the first floor of the North end while the South end houses 163 retail shops. Customers can be brought to the second floor through interior retail areas or exterior landscape access. The second floor provides more public space for flower utility shops, restaurants, and outdoor parking and the main volume on the North end contains all administrative affiliates.

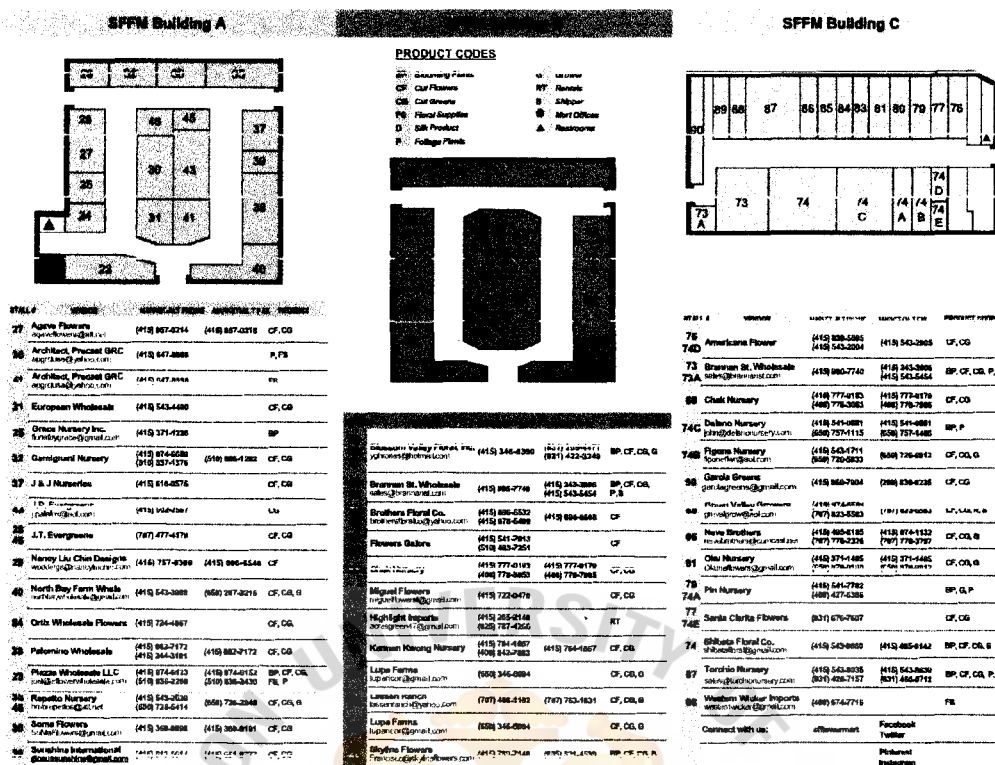


Figure 2.15 planning of SF Flower market

Facing ongoing push-back from tenants of the SF Flower Mart, Kilroy Realty has designed an alternative design for the proposal re-development of the SF Flower Mart site which would ditch their plan for a high-technology underground market and keep the New Flower Mart above ground.¹¹

Based on their expertise and knowledge of the flower business and its operations, the CFM Board of Directors, which included several tenants of the Flower Mart, concluded that a below-grade wholesale flower market and an adjacent below-grade parking area would be the best design for a new flower market ("New Flower Mart"), as it would create a smooth flow of goods between the warehouse and parking areas. After KR Flower Mart, LLC purchased the Property and SFFM took over operations of the aggregate Flower Mart, the developer presented the original below-grade plan for the Project.

¹¹ "Developer Might Ditch Plans For An Underground S.F. Flower Mart" Accessed May 12, 2015. <http://www.socketsite.com/archives/2015/05/kilroy-might-ditch-plans-for-an-underground-s-f-flower-mart.html>



Figure 2.16 layout of SF Flower market

Some existing Flower Mart tenants expressed concerns that a below-grade wholesale flower market may not be the best design for the New Flower Mart, due to lack of visibility and accessibility from street level. During a series of meetings with the tenants, the governing board of SFFM and representatives of the developer responded that the new, below-grade wholesale flower market would have prominent signage and access from street level. Some tenants also expressed concerns that a below-ground warehouse may be too dark and have poor air circulation, and that a parking area immediately adjacent to the warehouse could produce vehicle exhaust fumes that are potentially harmful to the flowers. SFFM Board members and representatives of the developer explained that the parking area would be sealed off from the warehouse and that skylights would bring natural light into the warehouse. Examples with photos of successful underground markets from around the world, including flower markets, were also provided.¹²

¹² "Developer Might Ditch Plans For An Underground S.F. Flower Mart" Accessed May 12, 2015. <http://www.socketsite.com/archives/2015/05/kilroy-might-ditch-plans-for-an-underground-s-f-flower-mart.html>

One difference is the parking and loading areas for the above-ground market. The parking area for the New Flower Mart remains below ground, creating the need for additional elevators, ramps and/or escalators to connect to the warehouse, while the loading area for the flower market is located above-grade, adjacent to the warehouse. The above-grade flower market also results in a multi-level plaza, with the portion above the warehouse elevated above street level.¹³

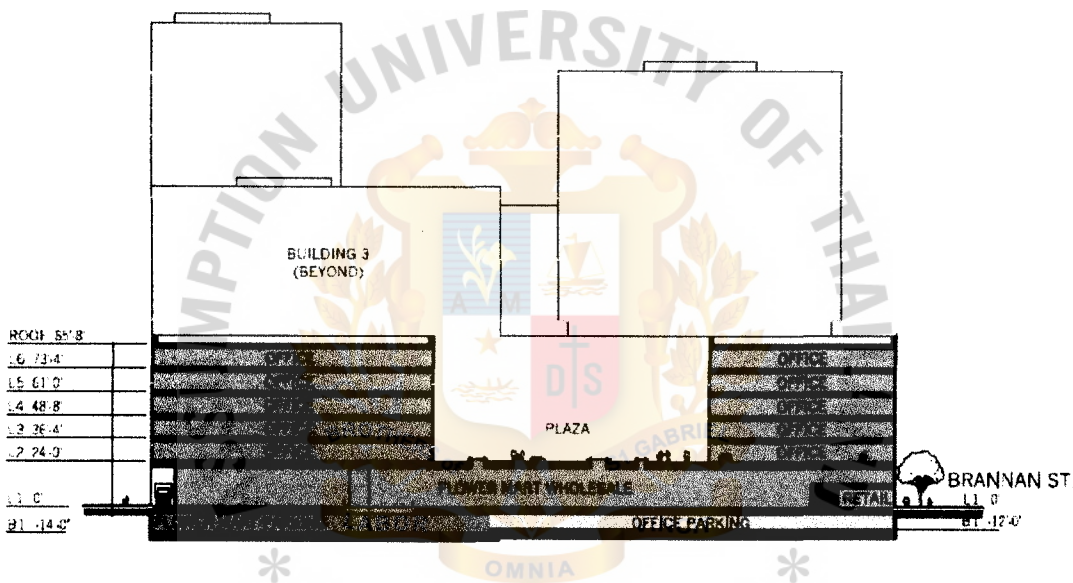


Figure 2.17 section of SF Flower market

¹³ "Developer Might Ditch Plans For An Underground S.F. Flower Mart" Accessed May 12, 2015. <http://www.socketsite.com/archives/2015/05/kilroy-might-ditch-plans-for-an-underground-s-f-flower-mart.html>

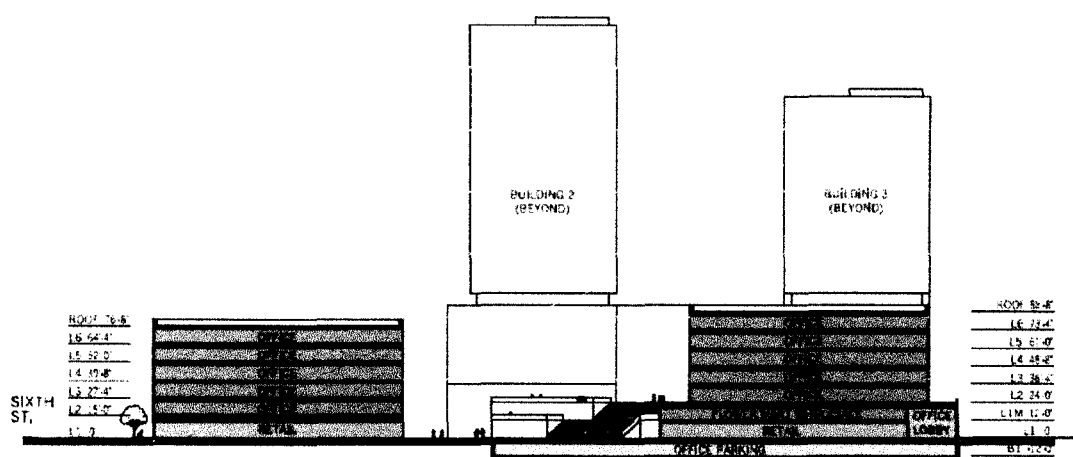


Figure 2.18 section of SF Flower market

This differs from the below-ground Flower Mart proposal, in which all plazas would be at grade. The skylights that existed in the original version have been moved to the elevated plaza to bring natural light down into the warehouse. As the flow of goods between the warehouse and parking areas is less efficient with an above-grade flower market, some tenants still prefer the original version of the Project. A majority of tenants, however, have expressed support for continuing to explore the above-grade version.¹⁴

¹⁴ "Developer Might Ditch Plans For An Underground S.F. Flower Mart" Accessed May 12, 2015. <http://www.socketsite.com/archives/2015/05/kilroy-might-ditch-plans-for-an-underground-s-f-flower-mart.html>

3.Food villa



Figure 2.19 Food Villa Building and Front view

Name : Food villa market

Site location : 49/38 Soi Ratchaphruek, Khwaeng Nong Khaem, Khet Nong Khaem, Bangkok

Time : 06.00am – 10.00pm everyday

Area : 4,000 sq.m

Project year : 2013

Site approach

Food Villa approach is by car or any transportation on Ratchaphruek road and the site is next to the circle ratchaphruek community mall and villa de bear. The surrounding is in the outside of the city that can get more activity for city people to spent time in food villa.



Figure 2.20 Food Villa Location

This Project is divided into 4 areas, which are

1. Main Market Building (4,000 sq.m.) – providing over 400 stalls selling fresh food, seafood, prepared food and food court.
2. Retail Shop Building – which has several shops, restaurants, fashion shops, book store, pharmacy, etc.
3. Starbucks Drive thru Building
4. Plants and Pet shops



Figure 2.21 Food Villa Market Layout Plan

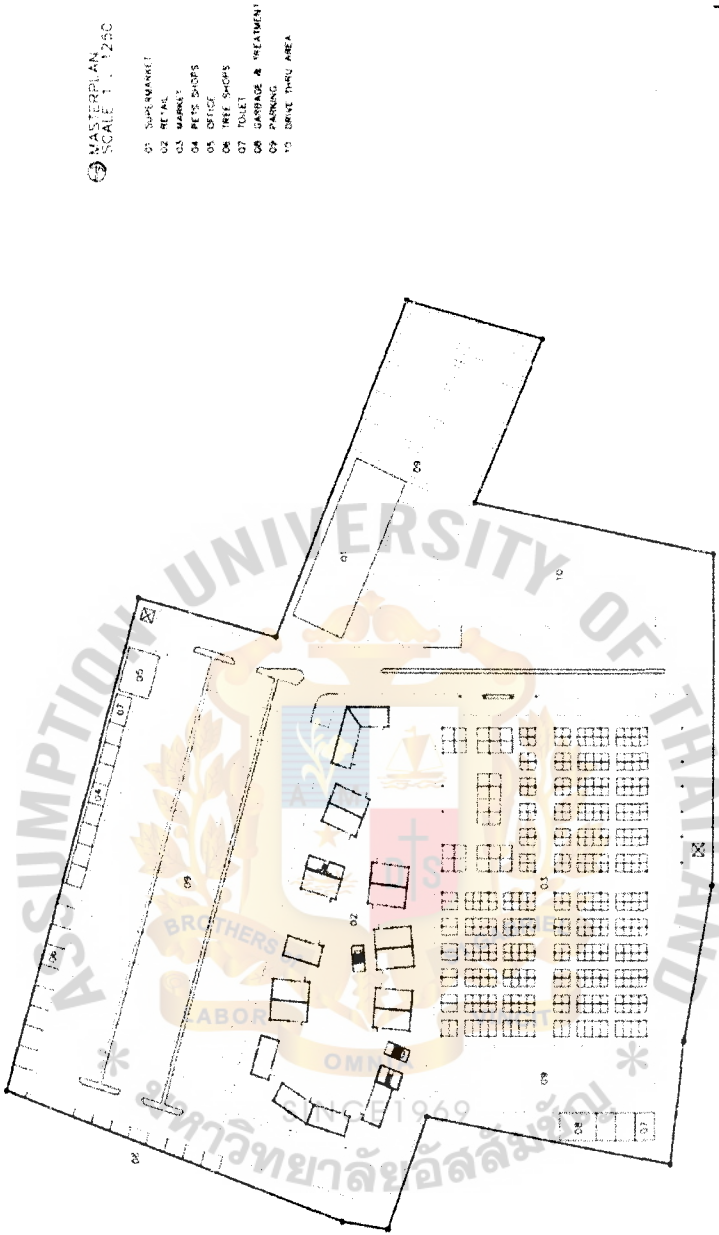


Figure 2.21Food Villa Market Master Plan

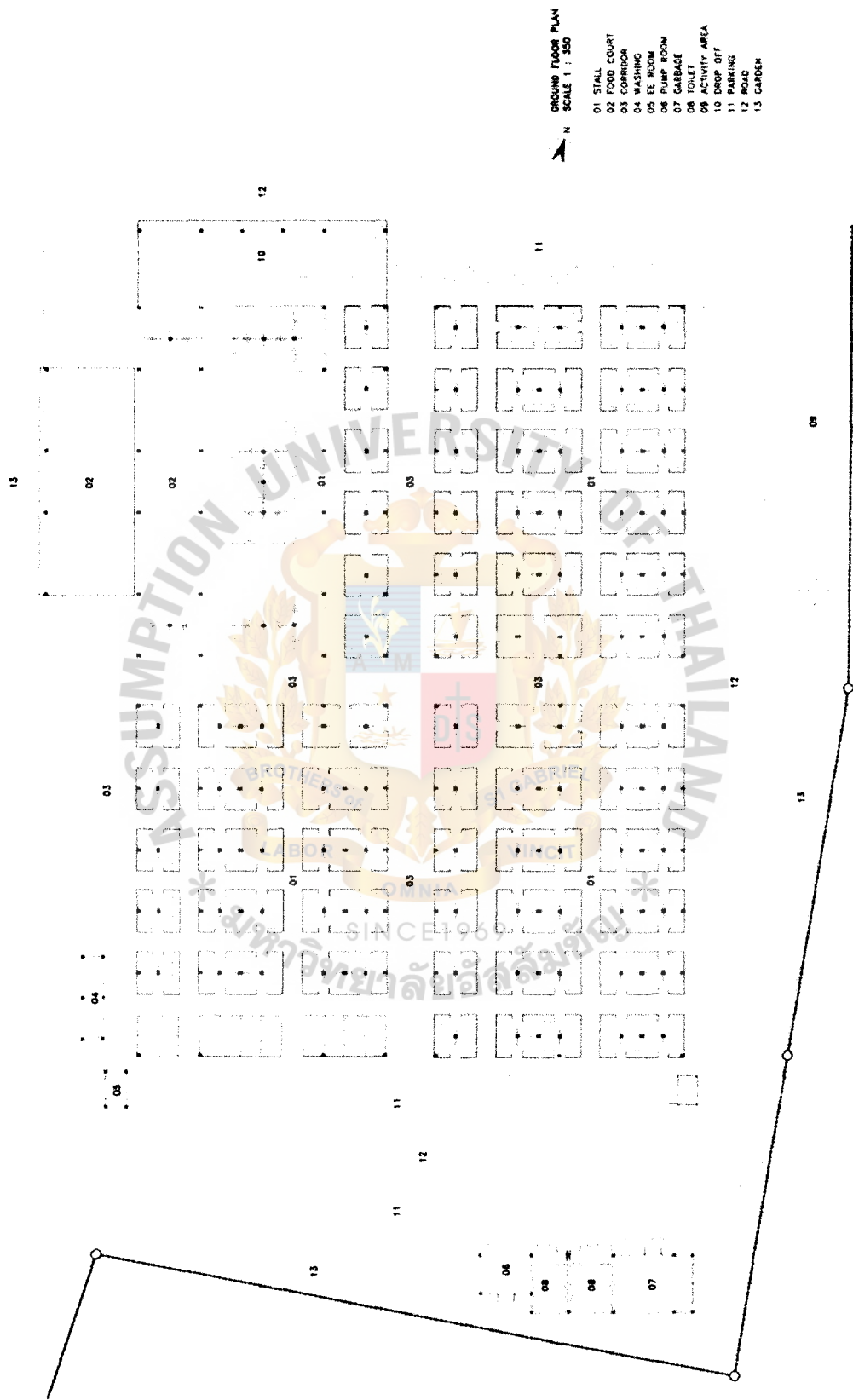


Figure 2.22 Food Villa Market zone Plan

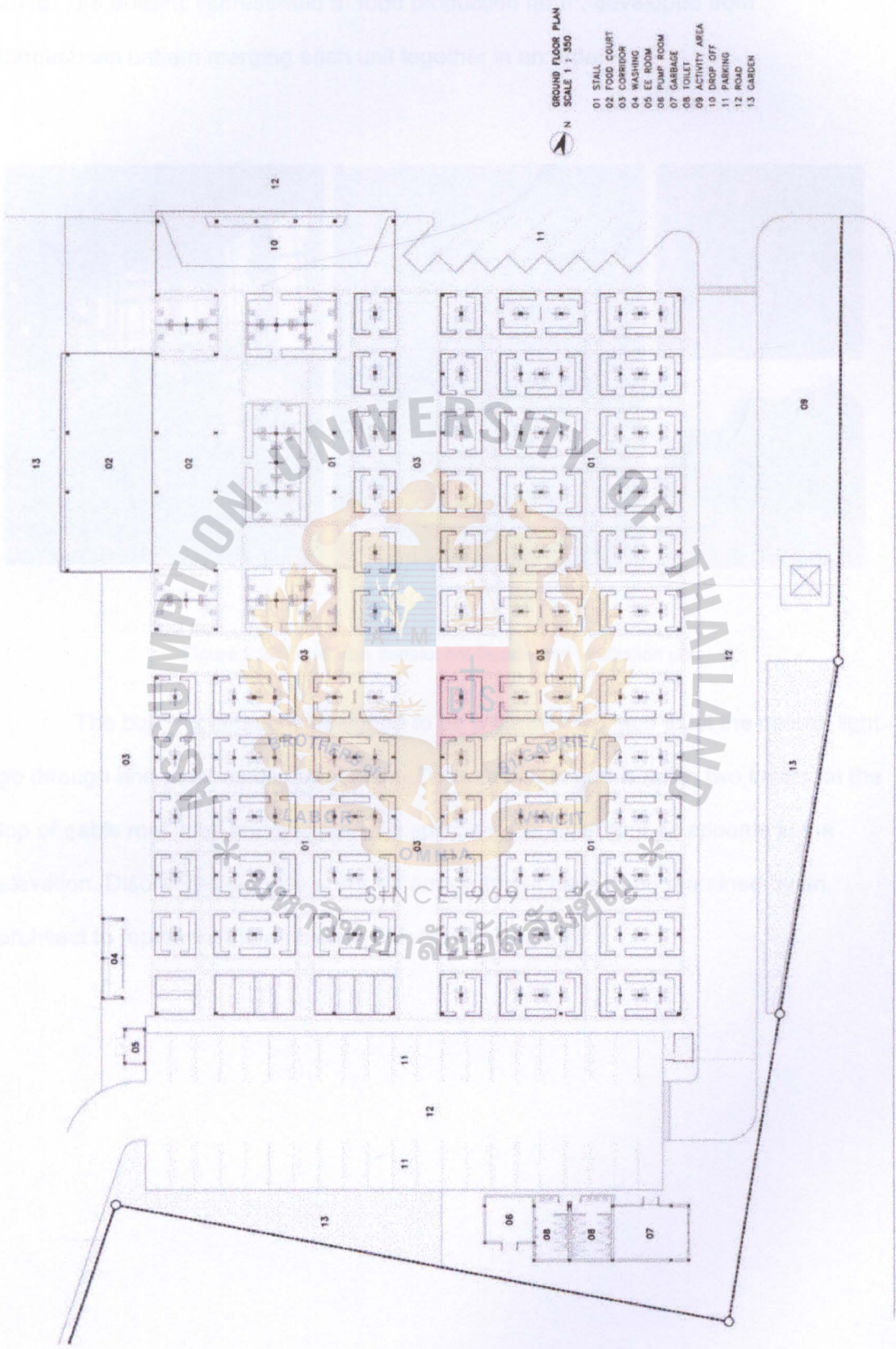


Figure 2.22 Food Villa Market zone Plan

Main Market Building has been designed in 2013 and officially launched in 2015. The building represented a “food production farm”, developed from farmhouses pattern merging each unit together in an order.

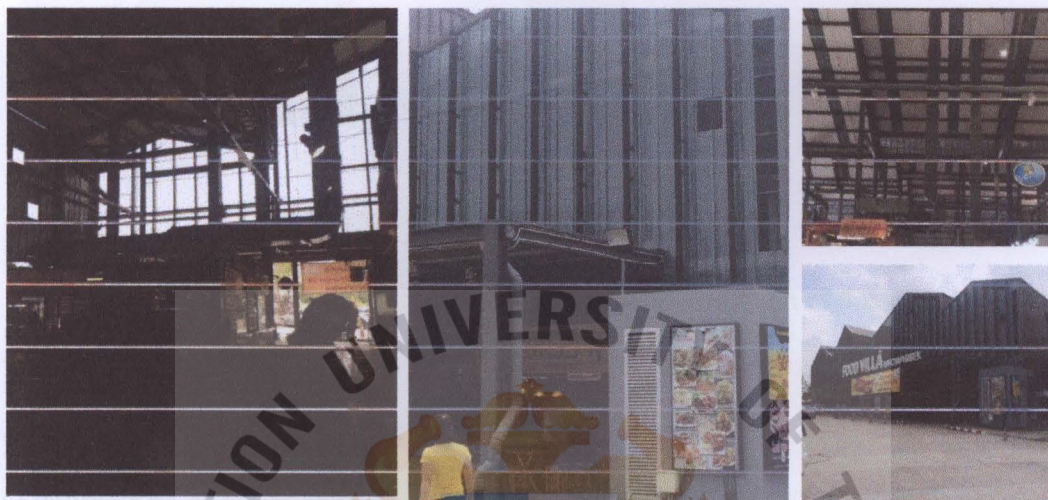


Figure 2.23 Food Villa translucent façade and ventilation gap

The building facade is designed to be a translucent face to let the natural light go through and glow inside out at night. The ventilation gap is set in two layers, at the top of gable roof itself and between the split levels of each roof as appears in the elevation. Disordered signess and stuff arrangement have been remained by an architect to represent the ambience of local Thai market.

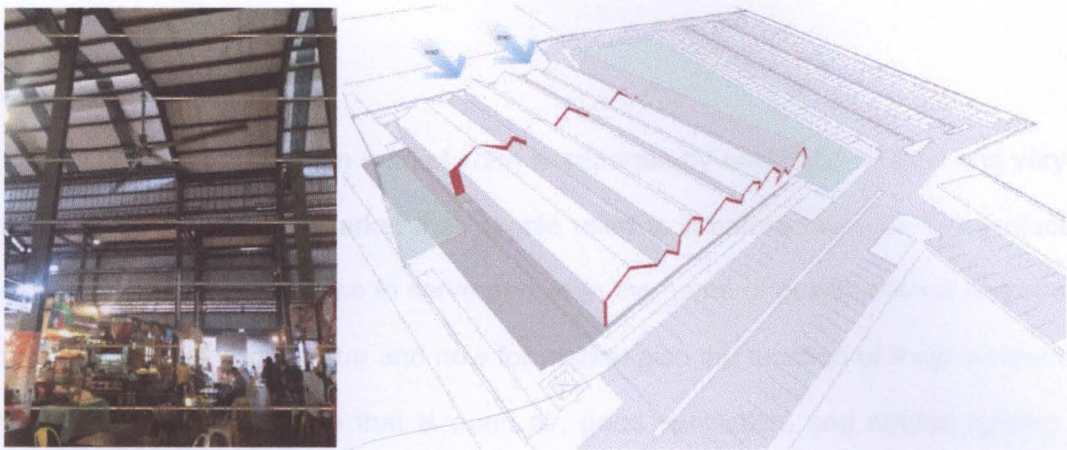


Figure 2.24 Food Villa gap and wind diagram

I this villa project, there many type of facilities and main of this one this food villa that they take this space to be the market and food villa market is a local open-air market open daily features outstanding standard of fresh market, offering a variety of high-quality food, life style shops and many more at a reasonable price.

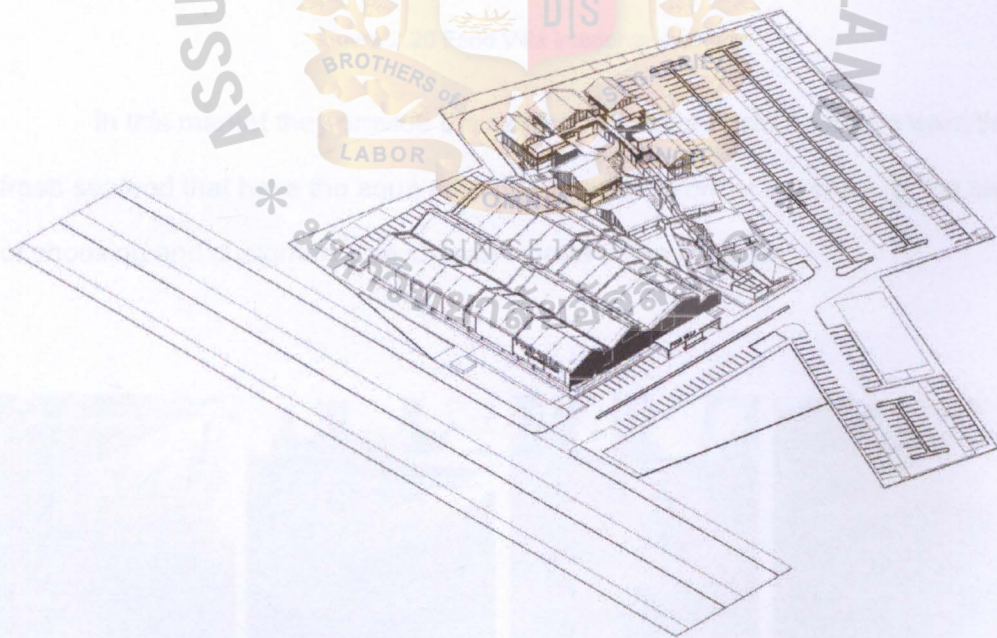


Figure 2.25 Food Villa 3D Plan

Interior Design

The interior design in market zone is separate by each type of food and very difference to other fresh market that people used to it before because this project want to create the new space to serve people in the name of quality market and use the materials that very unique and new for market also the function of it will concern more about people lifestyle that is open air, good ventilation, and natural lighting. Moreover, the interesting about the interior is material of structure that use metal instead of used concrete or wood for local market.

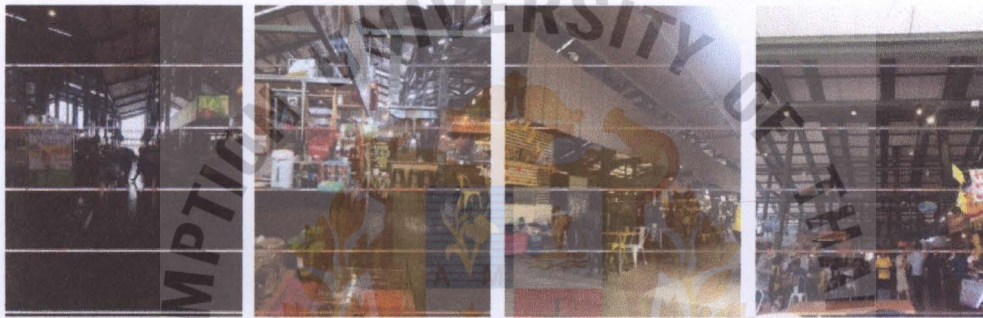


Figure 2.26 Food Villa interior and structure

In this market they provide the seafood zone for customers who want the fresh seafood that have the aqua area and freeze in front of the shop for the choice of choosing and customers can choose whatever they wanted.



Figure 2.27 Seafood zone in Food Villa

List of Materials

1. Roof: Steel roofing (Metal sheet)
2. Facade: Steel wall cladding (Metal sheet siding)
3. Flake ventilation: Artificial wood on Steel structure
4. Flooring: Polished concrete surfaces
5. Stall: Black tiles top counter and artificial wood at side stall on Steel structure



Figure 2.23 Ings and in front of Siam fish market

Sørensen's Philosophy

Sørensen's Philosophy contains three identity by telling The philosophy is

4. SHINSEN FISH MARKET



Figure 2.28 logo and in front of Shinsen fish market

Name : Shinsen Fish Market

Location : 163/6 Soi Sukhumvit 39 Klongton-Nua Wattana, Bangkok, Thailand

Time : 11.00 am. – 11.00 pm. everyday

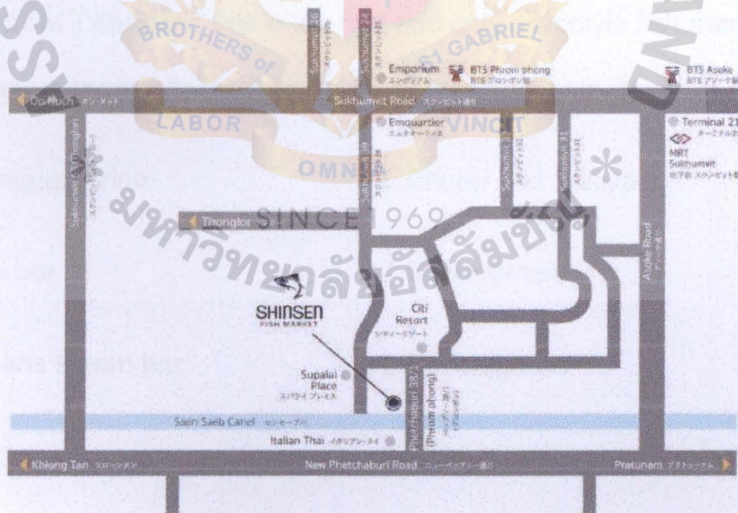


Figure 2.29 logo and in front of Shinsen fish market

Shinsen's Philosophy

Shinsen's Philosophy explains thier identity by telling The philosophy is

simple core values that we want to keep working on everyday to be at our best. And that is what we want you to experience the Shinsen Fish Market.

Alivestyle Market

Diverse culture and modern lifestyle is a part of Shinsen Fish Market philosophy. Shinsen desire to be much more than a place selling food and have expressed it via the design of venue that allows people to enjoy our 10 services that operates from morning to midnight. The market is capable of satisfying needs of diverse urban population such as for a breakfast quick-stop before signing in for work, for a lunch with client in afternoon, or for learning to cook in free time. It is diversity that creates unique experience, making Shinsen Fish Market alivestyle market.

Concept

Shinsen fish market using the concept of AAD (Addiction Aquatic Development) from Taipei and this is the first and only alivestyle fish market in Bangkok that serve the freshness from all over the world everyday in all 10 zones.

- | | |
|----------------------|-----------------------|
| 1. Live aquamarine | 6. Shubu and Sukiyaki |
| 2. Sushi bar | 7. Supermakei |
| 3. Raw and steam bar | 8. Beverage bar |
| 4. Grill bar | 9. Flora |
| 5. Cafe | 10. Cooking school |

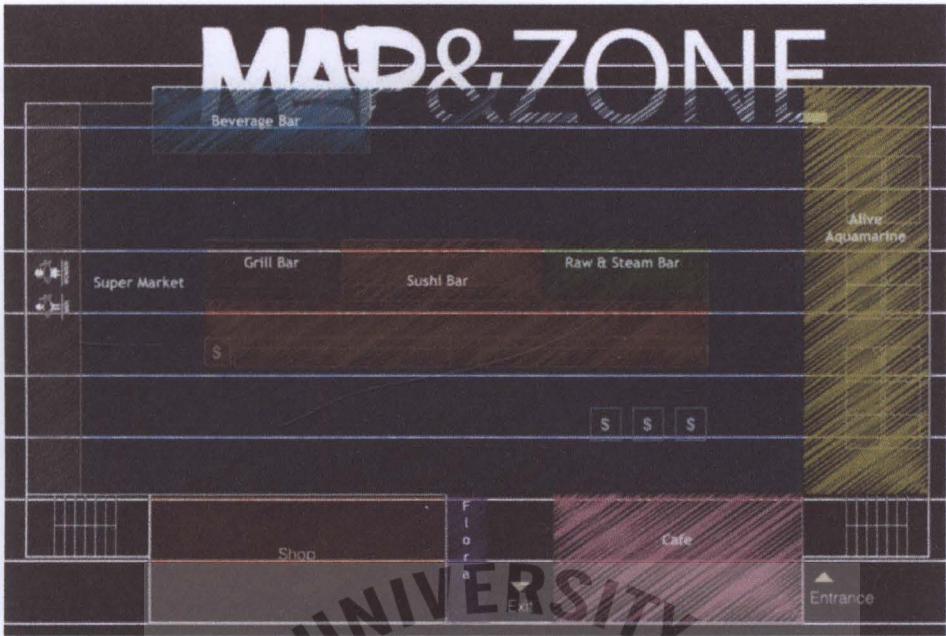


Figure 2.30 Shinsen fish market map and zone

The zoning inside SHinsen fish market got the inspiration from Taiwan and some Japanese culture to represent about the food and fish market and also provide the alive aquamarine for the freshness of seafood.

Shinsen fish market facilities

Shinsen fish market is the place that will serve people about the seafood and Japanese food also Shinsen fish market have the alive aquamarines to show to customers and buy it and they will provide the open kitchen area, supermarket, food area, take home area with the atmosphere of aquatic.

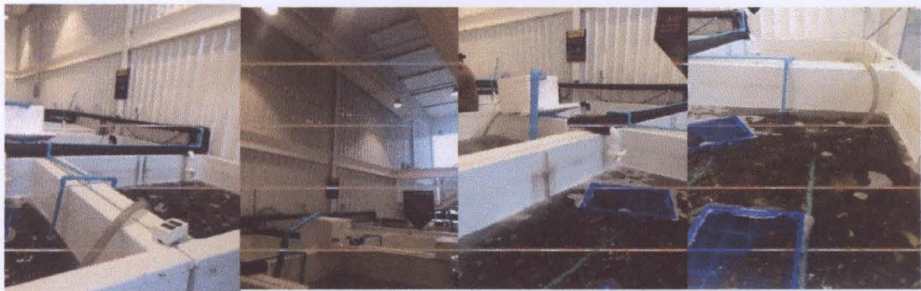


Figure 2.31 Alive aquamarines Shinsen fish market

At Shinsen fish market, they provide live, fresh and raw products with excellent quality and reasonable price. Customers may select to start their freshness here or bring it back home for your family.

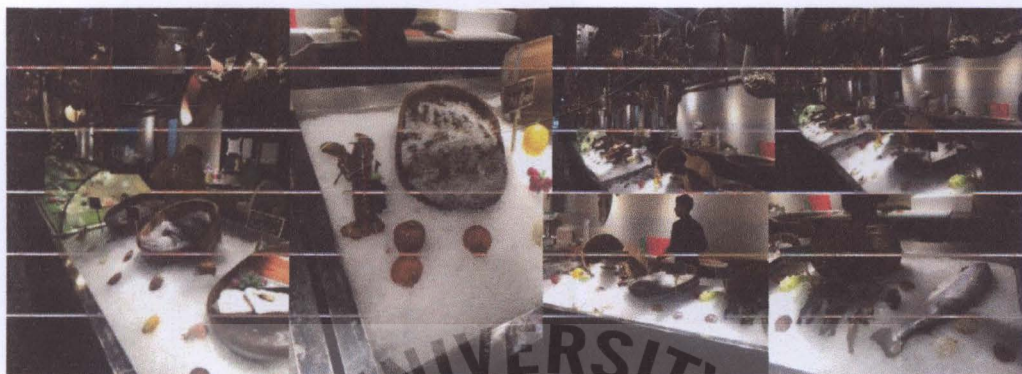


Figure 2.32 fresh seafood zone in Shinsen fish market

Shinsen Fish market in the supermarket zone provides the varieties of fresh and quality-controlled products that the customers can buy with satisfaction such as imported and local fresh seafood products, fruits, vegetables, and can high quality meat.

Name

Location

Opening hours

Siam Paragon is a popular shopping mall housing a host of international high-end fashion brands, South-east Asia's largest aquarium, a 16-screen Complex, and a comprehensive collection of world cuisine. Located prominently in front of Siam BTS Skytrain station - the interchange of the two BTS lines - it is considered by many to be the center of Bangkok.

Considering the mall contains over 250 shops, the report is logical and fairly pertinent, certainly when compared to the sprawling 'Central World' mall nearby.

However, this mall provides mainly luxury items for well-heeled Thais and international visitors with cash to splurge. If you are looking for something extra-special then Siam Paragon is definitely the place to find it.

For the ground floor, Siam paragon use this floor to be the space that for foods and restaurant area, fresh market, take home area, supermarket, and etc. Moreover, this one will concern more detail in the Gourmet market that provides Boundless of fresh, finest and juiciest fruits of more than 200 kinds both from local and international welcome you everyday at Gourmet Market.

Seafood

Inside of gourmet market have provided the fresh and a lot of seafood for the customers to buy and take it home. There are many seafood and choices in the seafood zone that will show in front of the zone to show how freshness is and another is pack seafood that already provide in pack and easy to grab and go.



Figure 2.34 Seafood area

Gourmet market is not only provide the grocery store for customers but provide the restaurants and open kitchen to serve to customers who want to taste the

food with professional chef and also can buy that ingredients to cook at home.

Therefore, for the open kitchen will show the food and alive to make more fresh and decision for customers, this may use less space to do the open kitchen, the function that also have are kitchen, cooking area, storage area, counter dining area, alive aqua area, order area. The kitchen is in the square space with the high ceiling and using the pendant light to decoration and use the color and tone in black color.



Figure 2.35 The Dock Kitchen at Gourmet market, siam paragon

The Dock's design

The dock by thammachart Seafood, is the famous importer for top quality fresh seafood from around the world, proudly to presents the dock, it is a unique seafood bar serving top with quality live and fresh seafood at Siam Paragon. So, people can sit and enjoy the fresh seafood cooked to perfection by the experienced chefs at a reasonable price. For the freshness, the dock is the only one in Bangkok that has live tanks in every branch to nourish and present famous live oysters from around the world. And using the concept with "Casual, Affordable and Above all fun"

2.Sydney Fish Market



Figure 2.36 in front of Sydney Fish Market

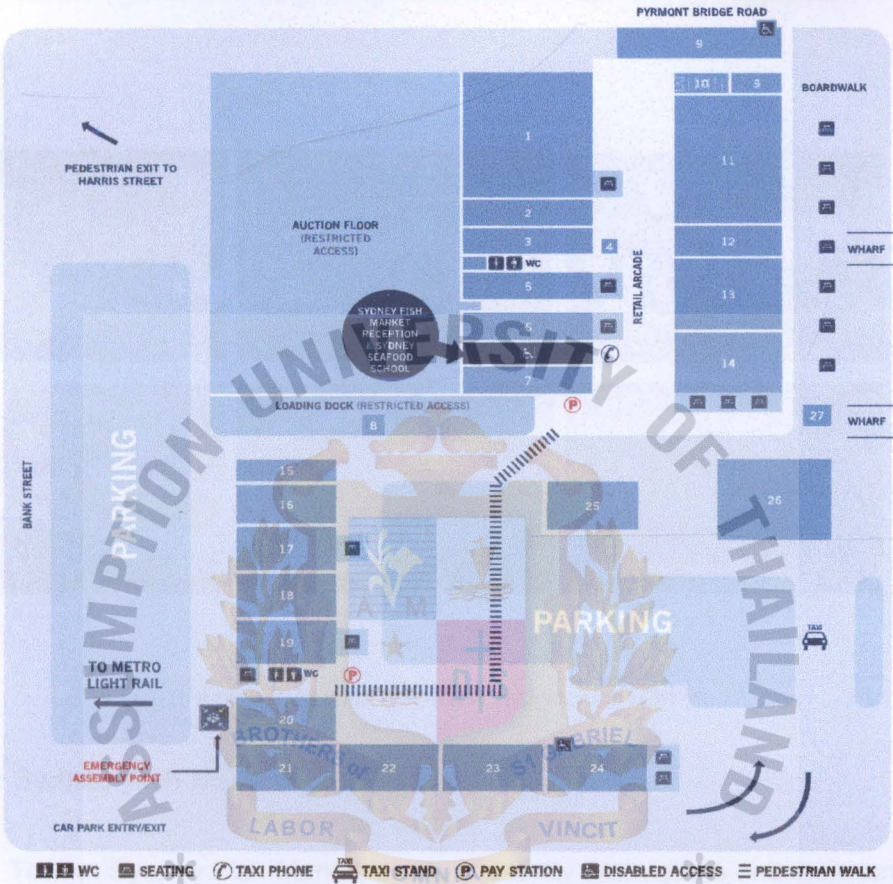
Name : Sydney Fish Market

Location : Bank Street, Pyrmont, Sydney

Daily : open from 7am until 4pm every day, except Christmas Day.

Sydney Fish Market is the largest market of its kind in the Southern Hemisphere and the third largest seafood market in terms of variety in the world and the tsukiji Fish Market is the biggest wholesale fish and seafood market in the world and for the second largest is La Nueva Viga Market, Mexico City, Mexico. A working fish market, Sydney Fish Market sources product both nationally and internationally and trades over 13,500 tonnes of seafood annually - with up to one hundred sustainable seafood species traded every day and approximately 500 species traded annually. Sydney Fish Market employs approximately 65 staff to organise the weekday wholesale auction, promote Sydney Fish Market as the center of seafood excellence and operate the Sydney Seafood School. Now ,Sydney Fish Market had launched the new innovative new online-based seafood trading system and provides traders with advanced facilities for direct online seafood sales including wild harvest,aquaculture and frozen products, taking fish trading to a new level.

SYDNEY FISH MARKET MAP



- 1 BLACKWATTLE DELI

2 GREGORY'S BREAD

3 FISHERMAN'S FINE WINES

4 WATERFRONT FLOWERS

5 FISH MARKET CAFE

6 CHRISTIE'S SEAFOODS

7 ROSIE'S OF PYRMONT

8 SECURITY

9 WATERSIDE FRUIT CONNECTION

10 STAIR ACCESS TO FISHERMAN'S WHARF SEAFOOD RESTAURANT

11 NICHOLAS SEAFOODS

12 SUSHI BAR

13 PETER'S FISH MARKET

14 DOYLE'S AT THE FISH MARKET

15 TRANSTASMAN FISHERIES

16 DE COSTI SEAFOODS

17 ANDROTIS SEAFOOD CAFE

18 POULOS BROS SEAFOODS

19 DEEP SEAFOOD CAFE & OYSTER BAR

20 ALL SEAS WHOLESALE

21 NET & TACKLE SALES

22 DOYLE'S WHOLESALE

23

24 VIC'S MEAT MARKET

25 MUSUMECI SEAFOOD

26 CLAUDIO'S QUALITY SEAFOODS

27 SCOOP ICE CREAM & COFFEE

Open every day from 7am – 4pm (except Christmas Day) | Bank Street, Pyrmont, Sydney | www.sydneyfishmarket.com.au

Figure 2.37 Sydney Fish Market Map

Sydney Fish Market's Retail

Sydney Fish Market's six wet fish retailers offer Australia's biggest variety of fresh seafood. Sydney Fish Market also features numerous restaurants and cafes, bakery, butcher, gourmet deli, greengrocer, bottle shop, fishing supplies store and gift shop.

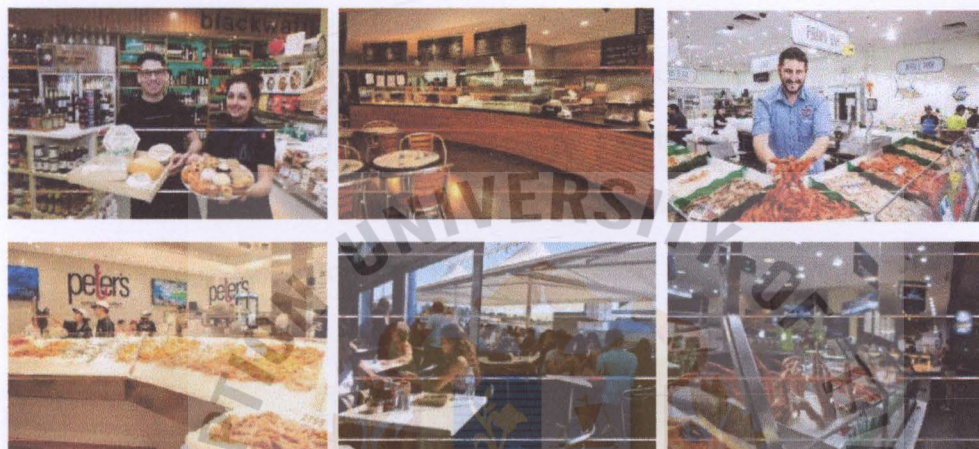


Figure 2.38 shop and inside Sydney Fish Market

Tour at Sydney Fish Market

Tour at Sydney Fish Market is one of activity that visitors or businessman can see all the methods and working life there, also have variety of seafood is sourced from individual fishermen, co-ops, fishing businesses and aquaculture farms in Australia, New Zealand and the Asia-Pacific Region with over 100 species available to buyers daily. Moreover, the staff will take visitors to see behind the scenes to explore all facets of the market and learn about the history of Sydney Fish Market, explanation of how the Dutch auction and buying system works, viewing over 100 species, find out about sashimi, live product and our specialist seafood retailers this will take about 1 1/2 - 2 hours.



Figure 2.39 visitors tour at Sydney Fish Market

Interior Design

The interior of fish market is very normal because this market got and do for freshness of seafood and used the fluorescent, for the counter that show seafood is the level that easy to see and touch the products. Moreover, the clean area is behide the counter so make visitors can see the methods.



Figure 2.40 interior and cleaning space

3. Fish market in Bergen



Figure 2.41 in front of Fish Market

Name : Fish market in Bergen
 Location : Strandkaien 3, 5013 Bergen, Norway
 Area : 4260.0 sqm

The fish market has a long history in Bergen, and is an important tourist attraction. This fish market in need of upgrading to offer comfort and hygiene all year round for both vendors and visitors. This necessitated a building on the open square. Our project tries to offer the necessary facilities while reflecting both the urban situation and the long history of the place. The moderate height of the building allows for a view of the historical structures behind, and the transparent facade of the open ground floor allows the market to flow underneath and gives a clear view of the harbor. Also, The historic warehouse property lines are traced in the paving, and the historic harbourside architecture is reflected in the materials and colors of the new facade.

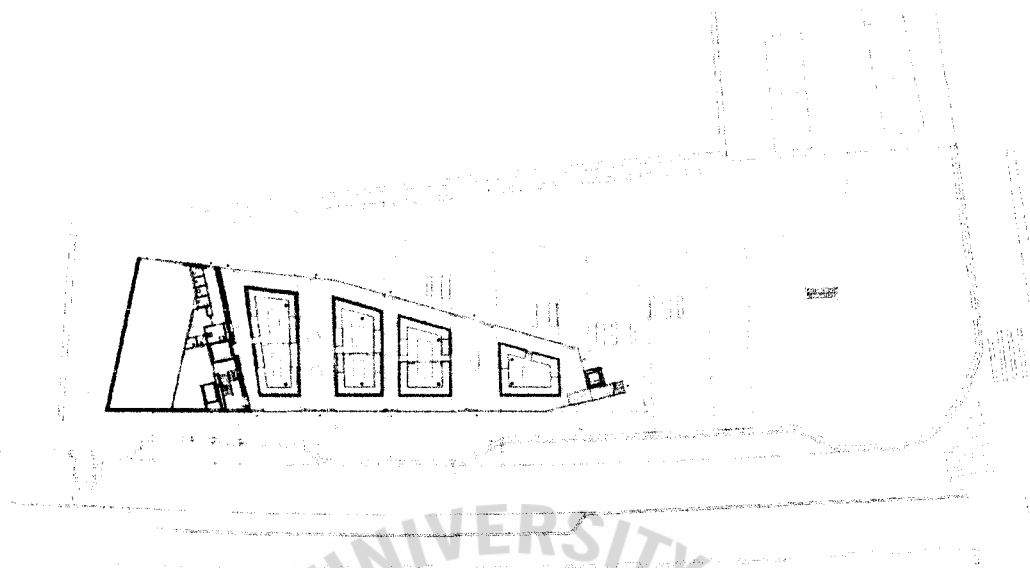


Figure 2.42 Ground floor plan of Fish Market in Bergen

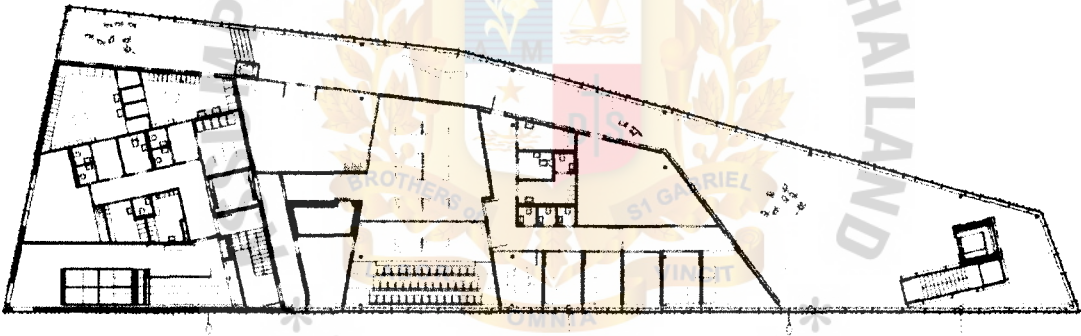


Figure 2.43 First floor plan of Fish Market in Bergen

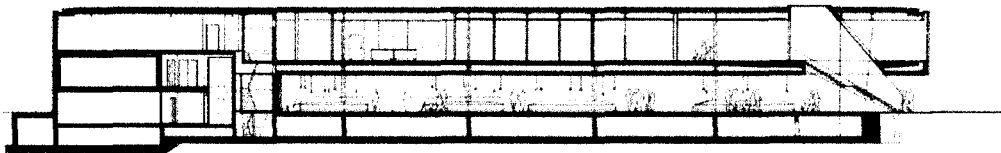


Figure 2.44 Section of Fish Market in Bergen



Figure 2.45 overall building of Fish market in Bergen

The hall tells the story of the market. In addition to the public section, a service area with a number of technical rooms is spread over three stories. The roof of the market hall forms the "Norwegian Seafood Center" and tourist information office with panorama windows overlooking the historical city center. The choice of colors and materials for the building is likewise oriented on the historical architecture: On the facade wooden slats in the typical Bergen colors ocher yellow, dark red and white alternate in arrangement and density, becoming denser at the rear of the building.

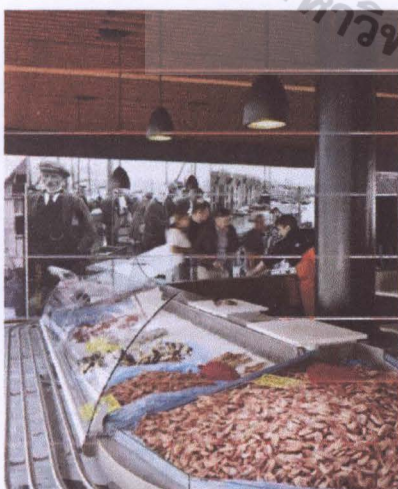


Figure 2.46 Fish Market in Bergen

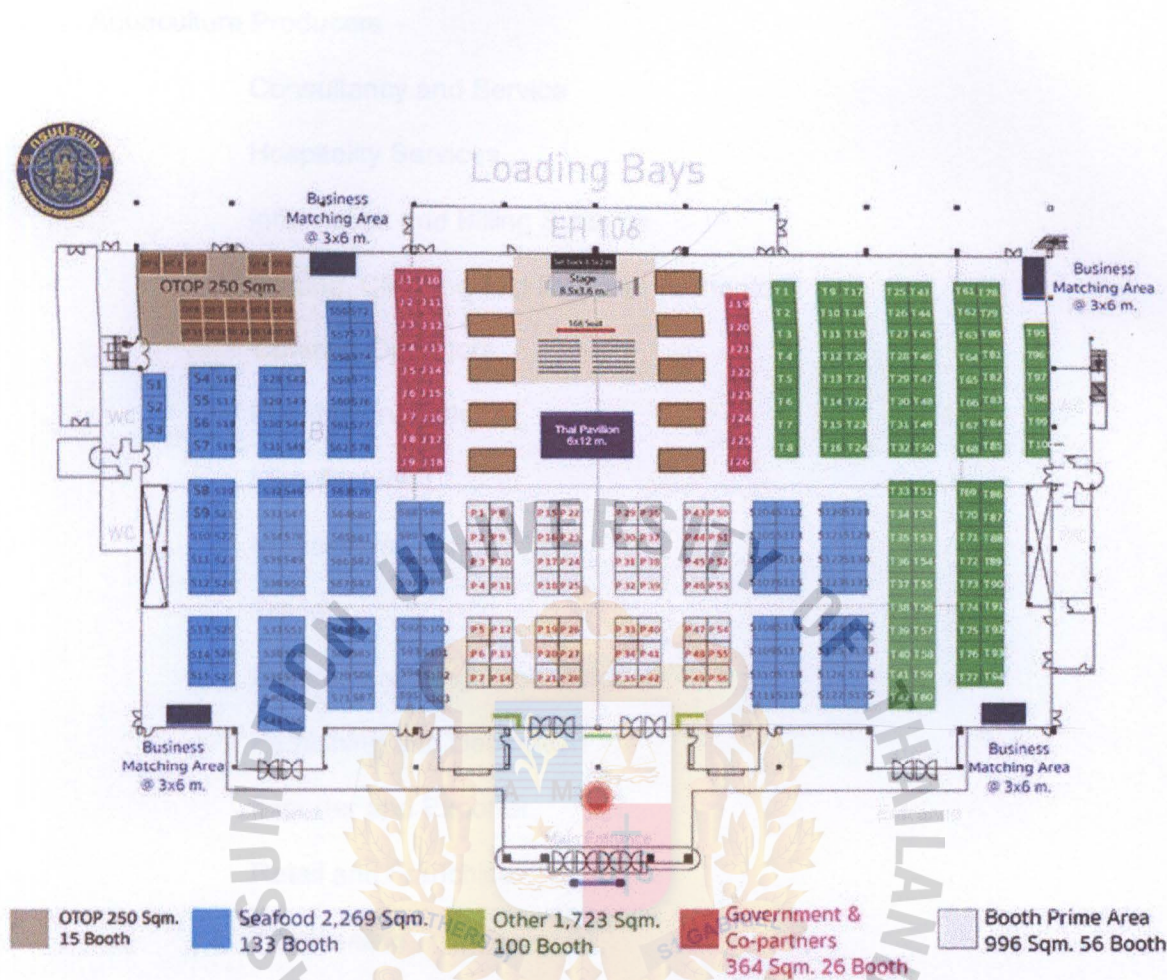
The transparency of the market also makes the market activity seem like part of a staged scene. The market life of preparing and selling fish is clearly visible, unlike in traditional market halls where market life tends to be hidden.

The wooden panels reflect colors typical for Bergen - ochre, dark red and white, changing in rhythm and density. And the façade lively can see from the front of the building, the glass façade stands for accessibility. Accessibility and closeness, alternating with each other, contribute to a "modern marketplace".

The function in the market, there is a service entity of 3 floors. It houses storage space, cold storage and freezer, production of ice, wardrobe and restrooms as well other technical units.



4. Asean Fishery and Aquaculture Expo 2016



– Exposition Area 7,550 m2 with 330 booths (3×3 m)

– More than 10,000 visitors are expected

– Targeting exhibitors from domestic and international

– List of Exhibitors

Food

- Grocery
- Halal Food

Seafood

- Chilled Seafood
- Dried Seafood
- Fresh Seafood
- Frozen Seafood
- Processed Seafood
- Ready-to-eat Seafood

Frozen Food

- Chilled & Frozen Meat Products
- Frozen Food
- Frozen Fish

Food Service

Aquaculture Producers

Consultancy and Service

Hospitality Services

Information and Billing Systems

Rinsing, Cleaning and Disposal Technology

Catering Operators

Distribution Systems

Manufacturing

Processors

Traders

Chilling, Freezing Technology

Furnishing and Decoration

Importer and Exporter

Retail and Franchise

Wholesaling

Food Technology

- Cooling and Refrigeration Technology
- Food Processing Technology
- Food Packaging Technology

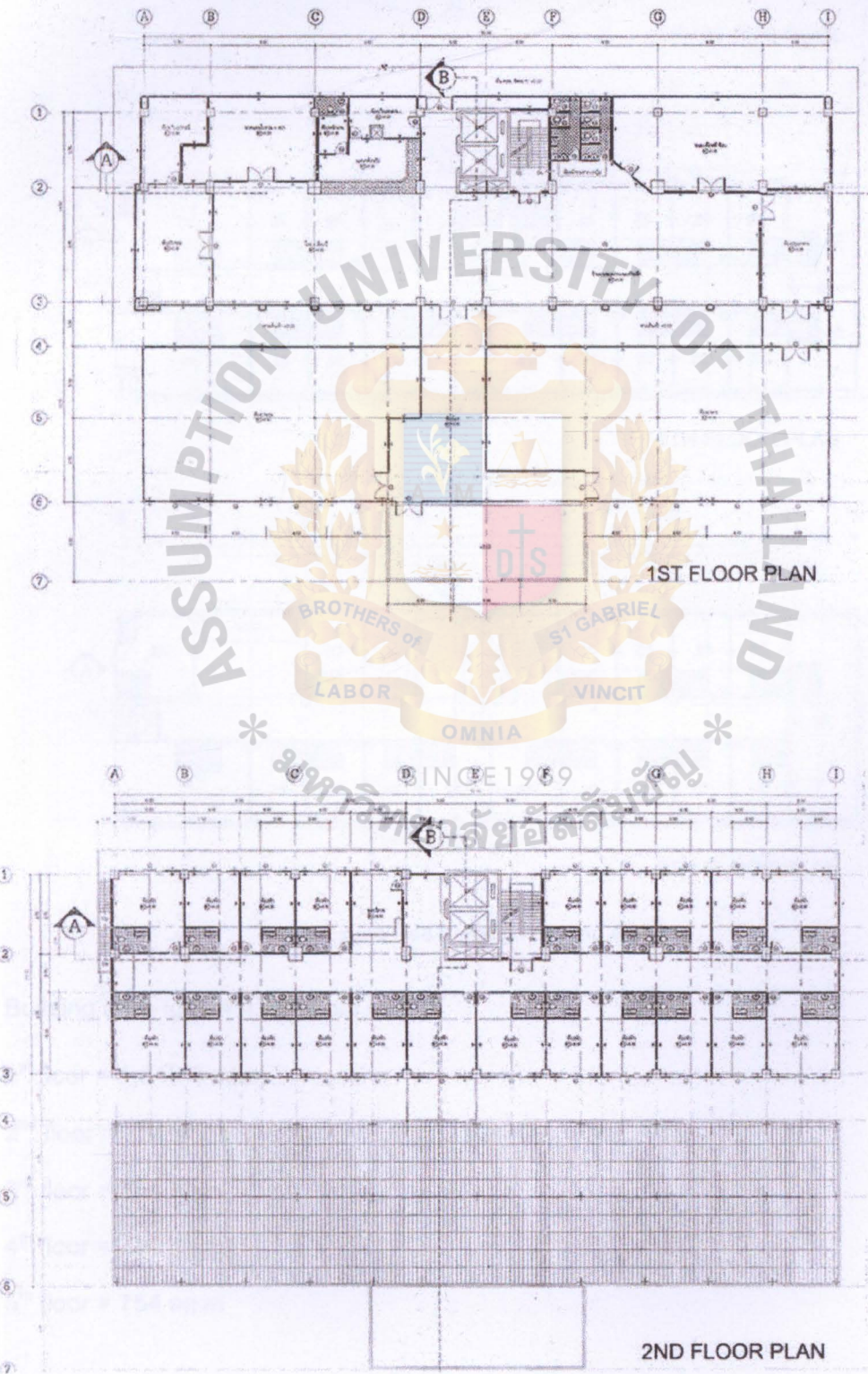
Others

- Associations
- Government
- Institutions
- Media
- Meeting with ASEAN local producers and SMEs

2.4 Existing Building Studies

2.4.1 Existing Building System

- Building Plan and Area



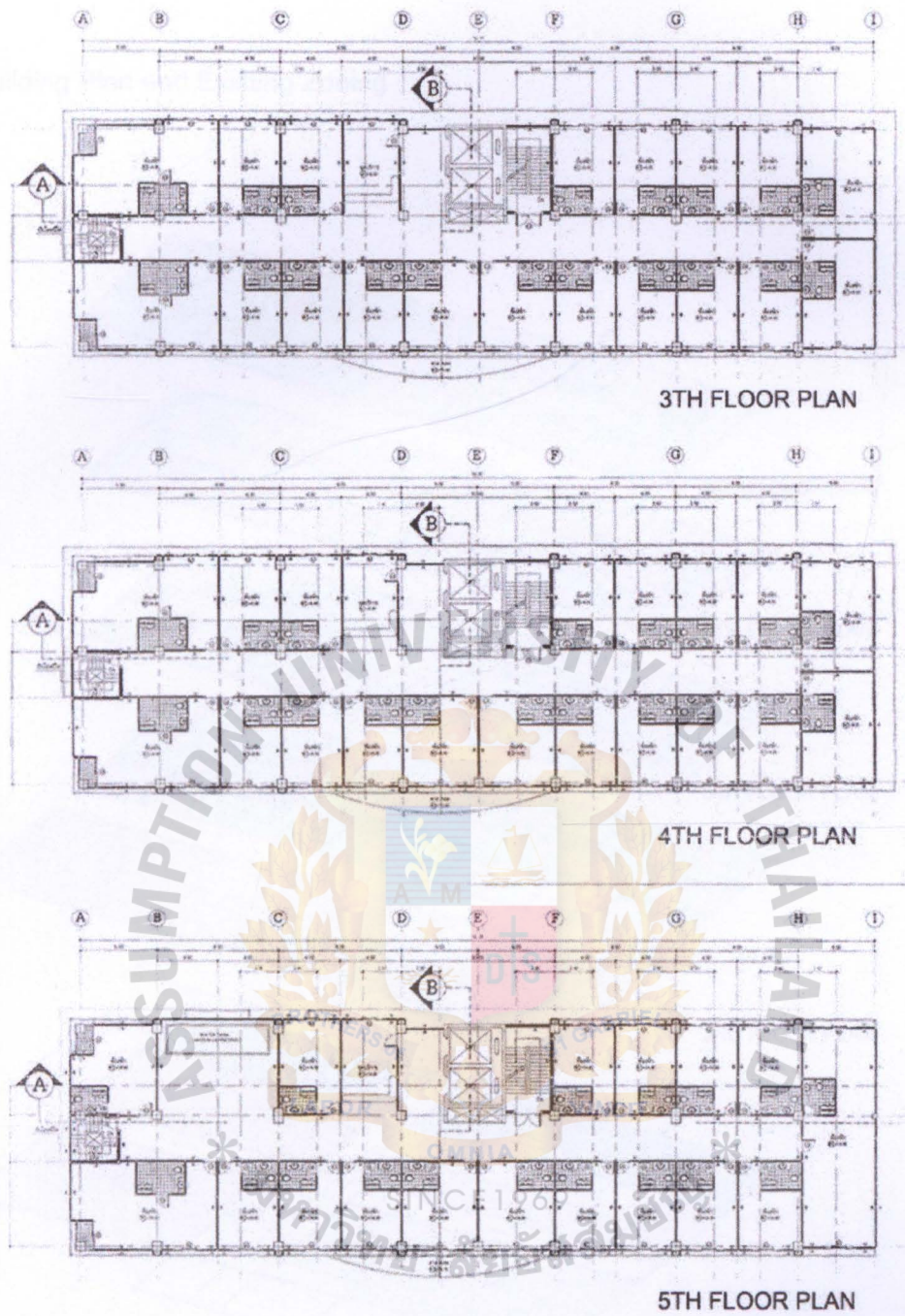


Figure 2.48 Building Plan and Area

Building area total = 4,565.6 sq.m

1st floor = 1,549.6 sq.m

2nd floor = 754 sq.m

3rd floor = 754 sq.m

4th floor = 754 sq.m

5th floor = 754 sq.m

- Building Plan and Existing Zoning

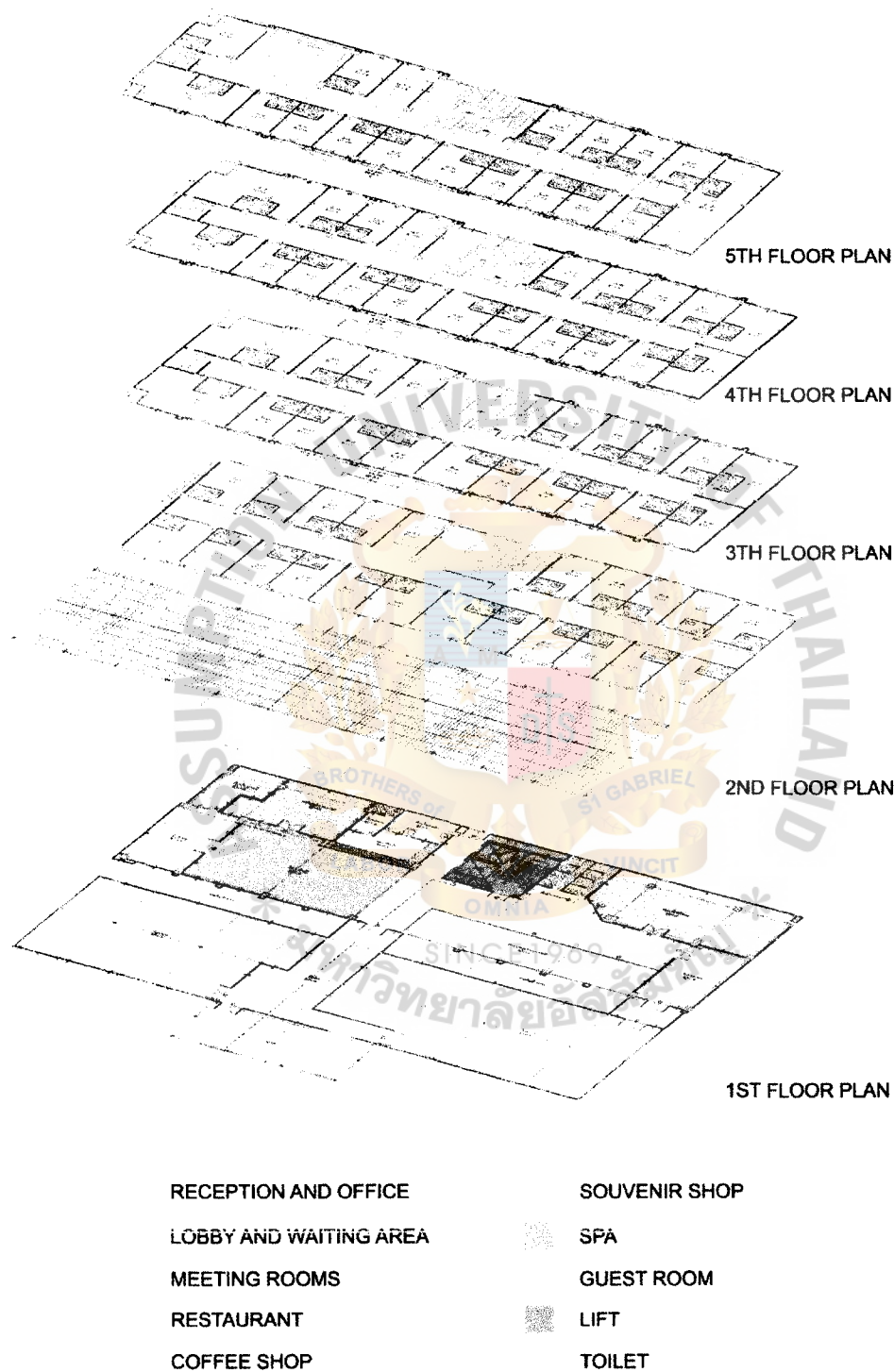
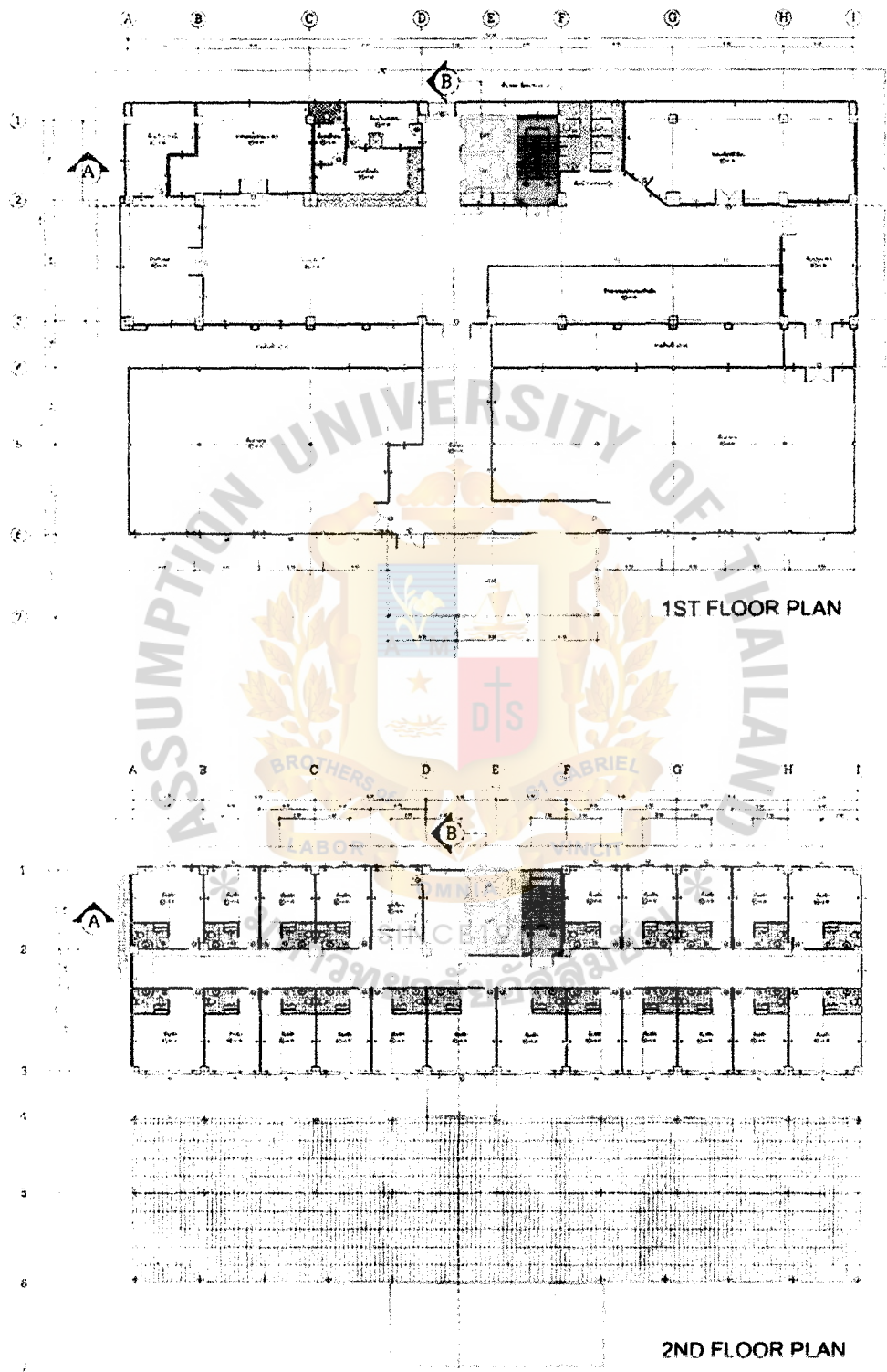
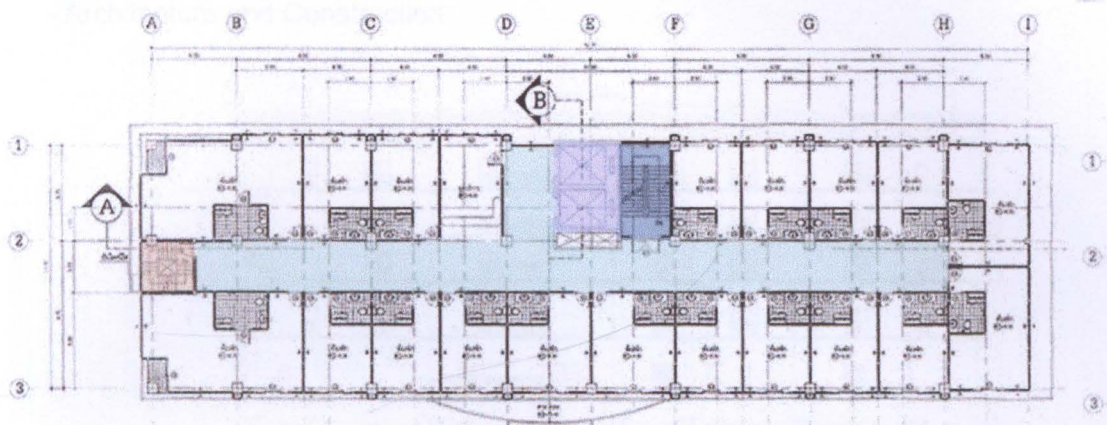


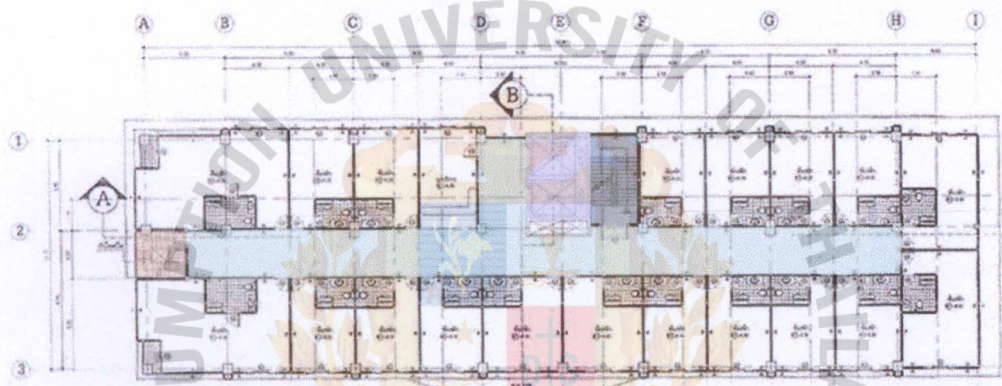
Figure 2.49 Existing zoning

- Building Accessibilities and Circulation

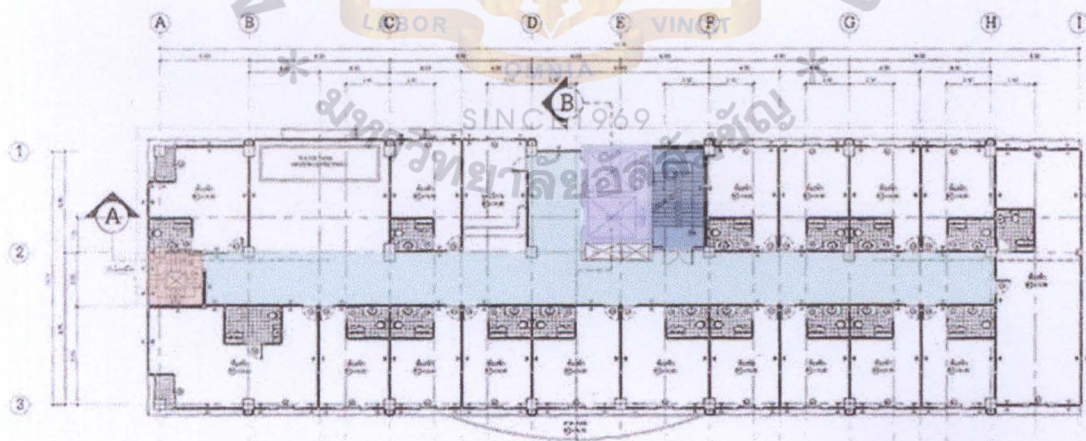




3TH FLOOR PLAN



4TH FLOOR PLAN



5TH FLOOR PLAN

- | | | |
|--------|---------------|------------------|
| LIFT | MAIN ENTRANCE | MAIN CIRCULATION |
| TOILET | MAIN STAIR | STAIR |

Figure 2.50 Accessibilities and Circulation

- Architecture and Construction

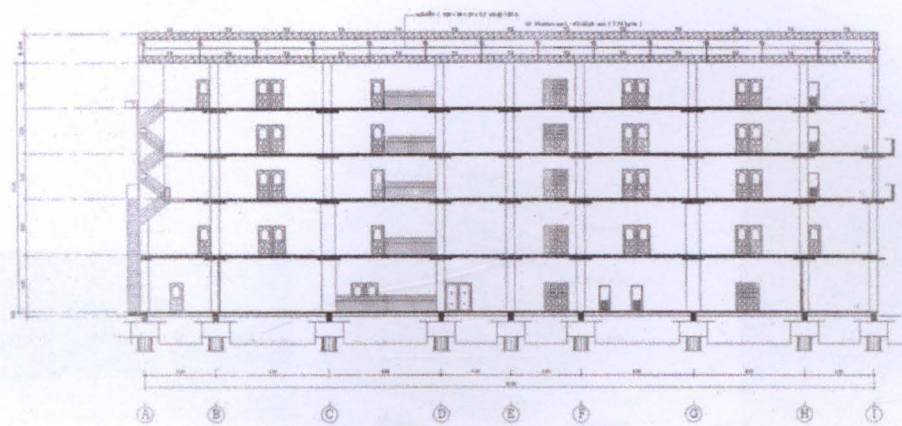


Figure 2.51 Section and Construction



- Building Interior and Construction

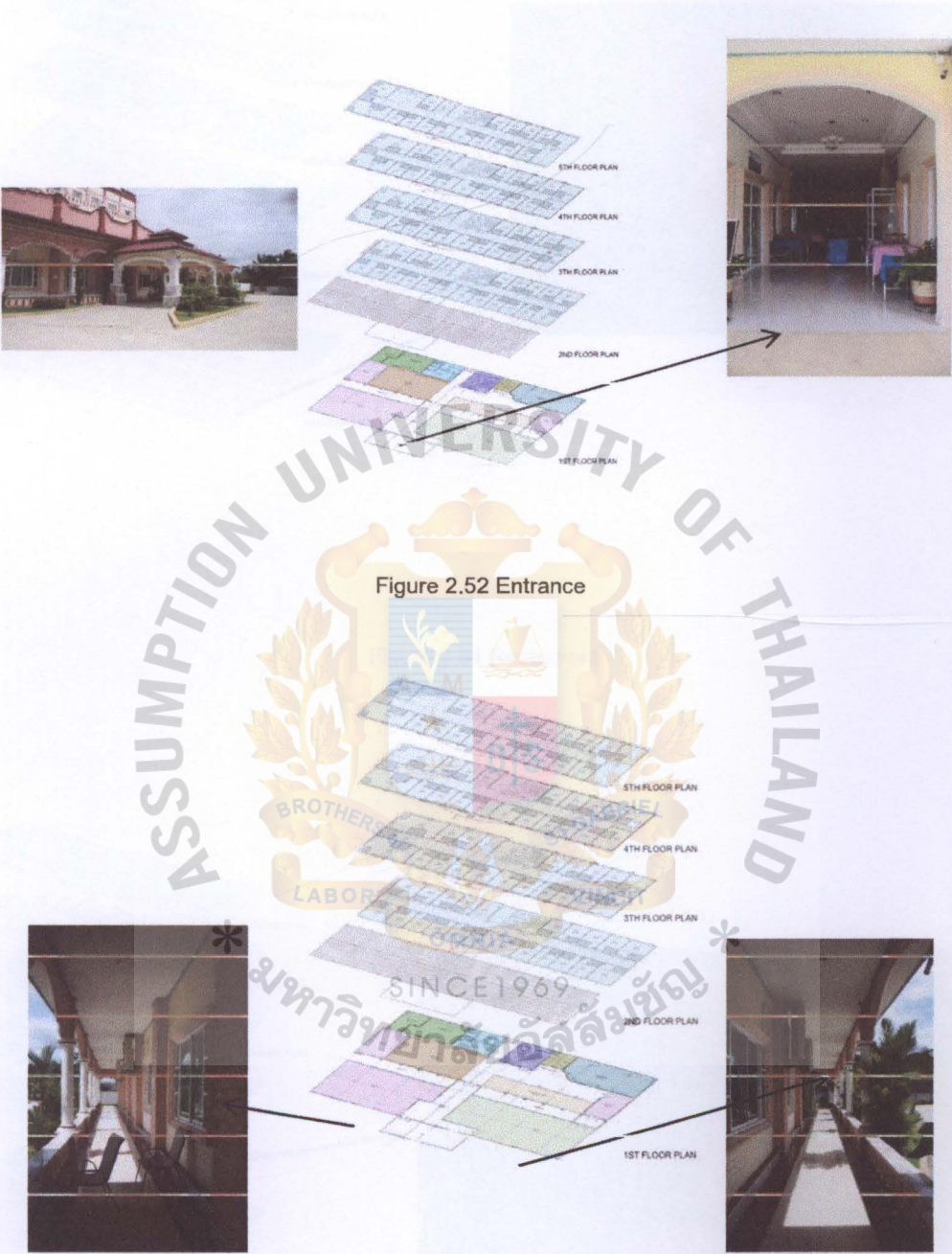


Figure 2.52 Entrance

Figure 2.53 Front corridor

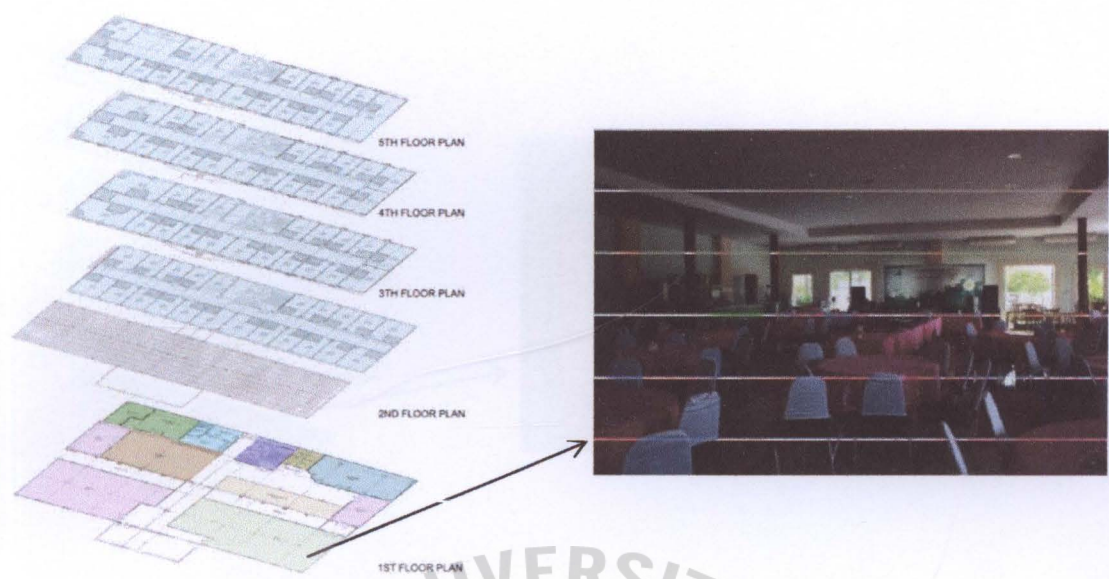


Figure 2.54 Restaurant

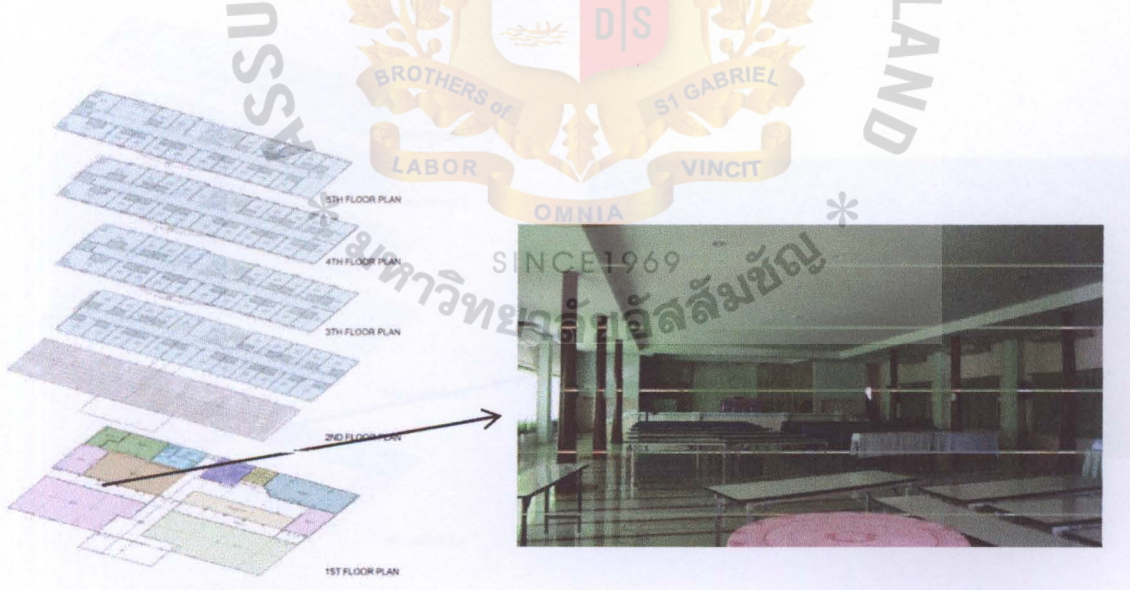


Figure 2.55 Meeting room

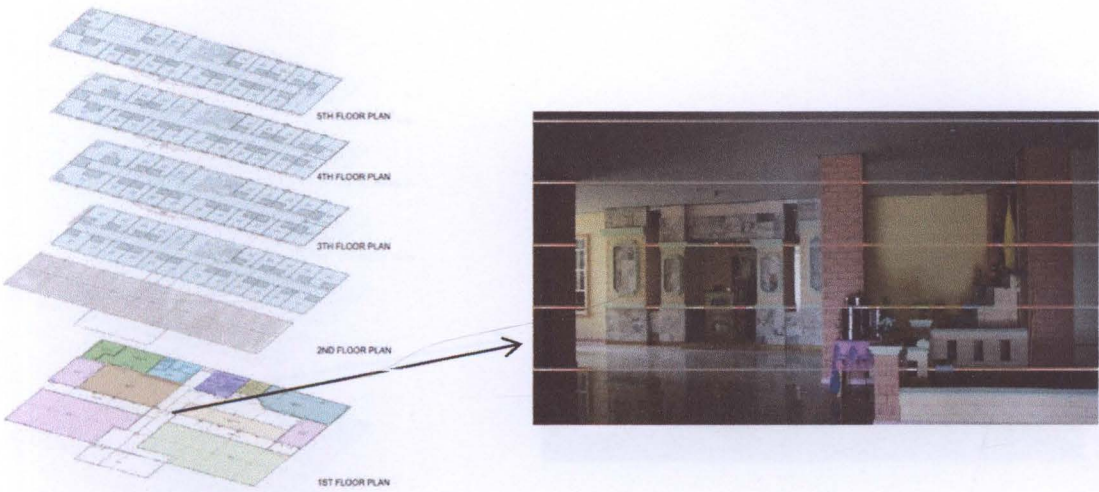


Figure 2.56 Hallway to reception

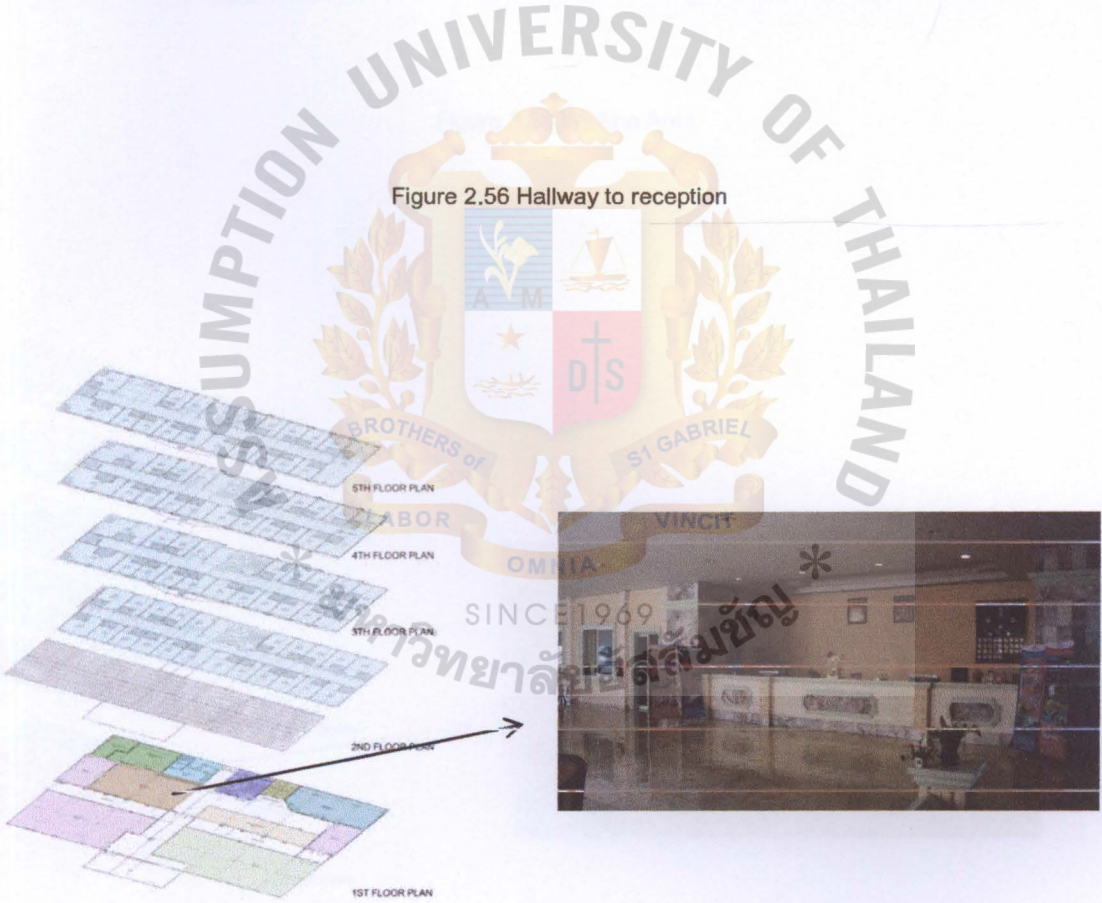


Figure 2.57 Reception area

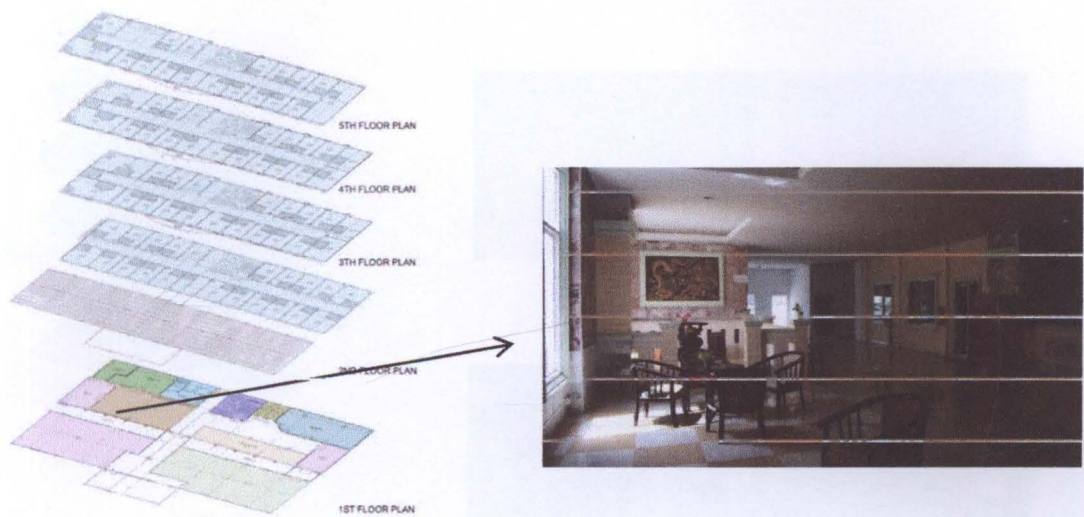


Figure 2.58 Waiting Area

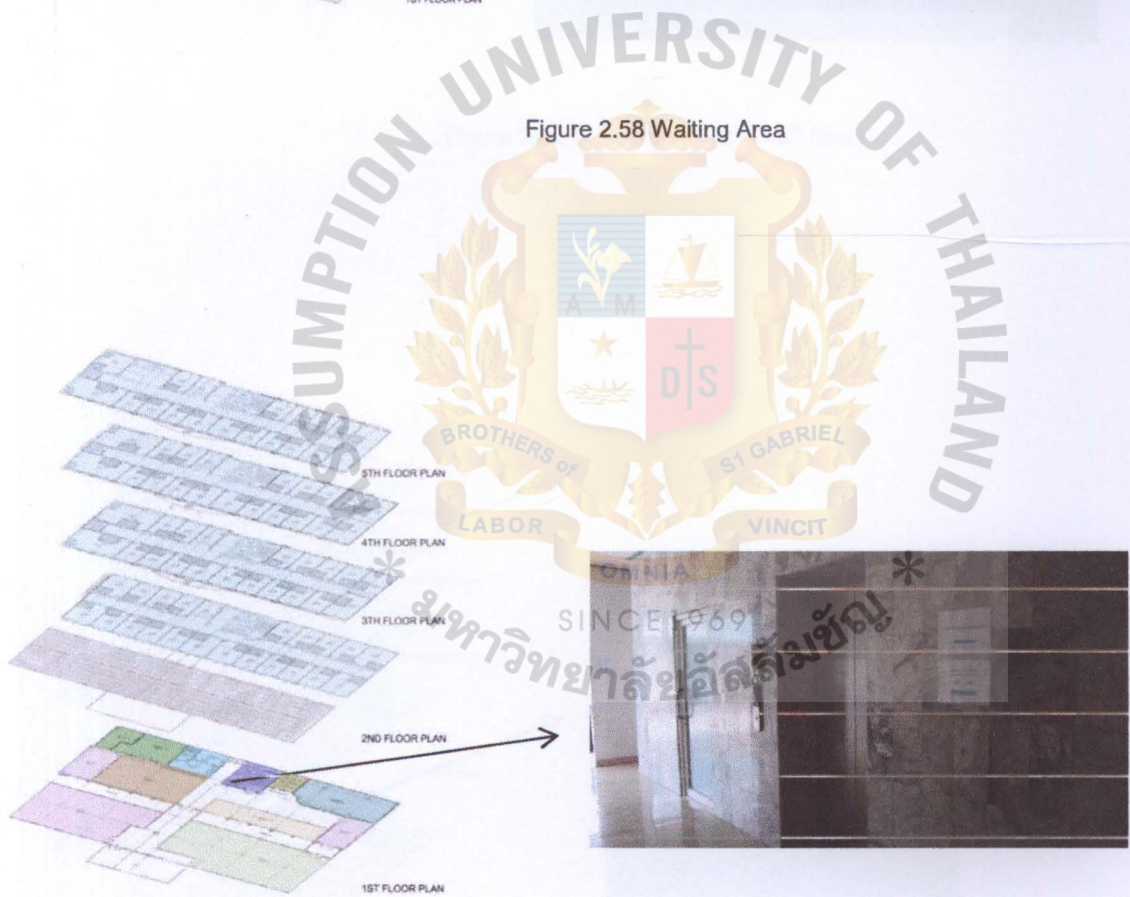


Figure 2.59 Lift hall

2.4.2 Existing Problems and Solutions

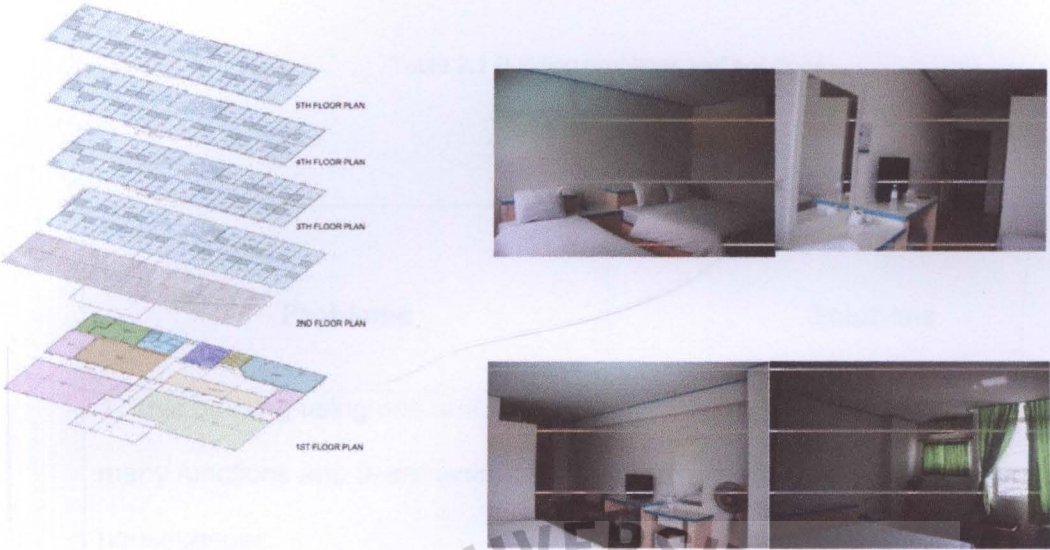


Figure 2.60 Guest rooms (2nd – 5th floor)

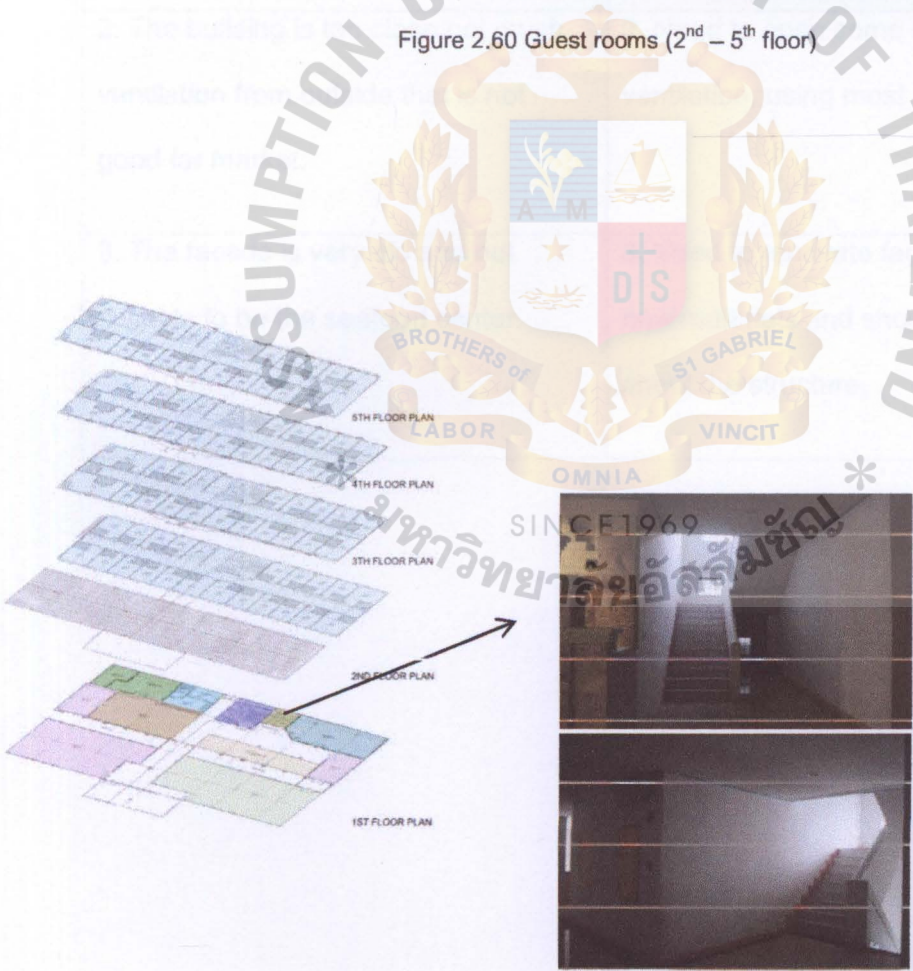


Figure 2.61 Main Stair

2.4.2 Existing Problems and Solutions

Table 2.1 Building problems and solutions

Problems	Solutions
1. This building using one entrance for many functions and users even for housekeeper.	1. Should provide the entrance for staff and housekeeper in back of house.
2. The building is too close,not much ventilation from outside that is not good for market.	2. Need to open some space for ventilation, using most natural.
3. The façade is very old and not suitable to be the seafood center.	3. Need to renovate façade with the new materials and should concern about the structure.

2.5 Site Studies

Prachuap Sam Ao Hotel



Figure 2.62 Prachuap Sam Ao Hotel

Prachuap Sam Ao Hotel is locate in the city and near to the Phet-ka-sem Road. That is the main road of Bangkok to Southern part of Thailand. It was the old building of hospital and renovated to be the Hotel in nowadays. So, people will stop here for take a rest in short stay. It is not the destination of people.

2.5.1 General information and History of building

- Name : Parachuo Sam Ao Hotel
- Location : 502/12 Petchhakasem Road, Prachuap Khiri Khan District, Muang Prachuap Khiri Khan, Prachuap Kiri Khan, Thailand 77000
- Year : 2554 BC
- Building area : 4,565.6 sq.m
- Structure : Column and beam
- History : This building was built about 16 years ago for the hospital and after that the hospital had close their business and leave the building for nothing. Until 5 years ago this building had renovated for the hotel to nowadays.

2.5.2 Site Location

- Macro scale

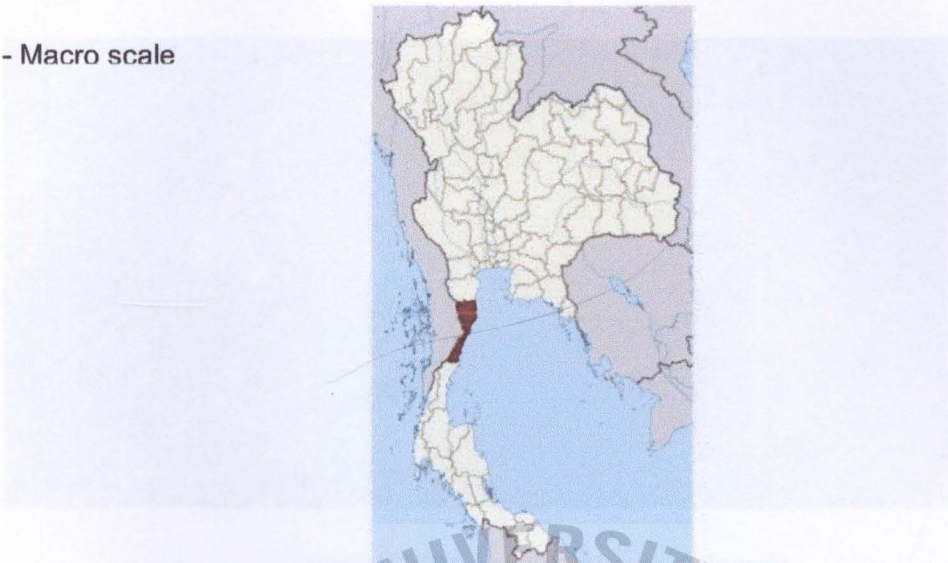


Figure 2.63 Site Location in Macro scale (Prachuap Kiri Kham Province)



Figure 2.64 Site Location in Macro scale

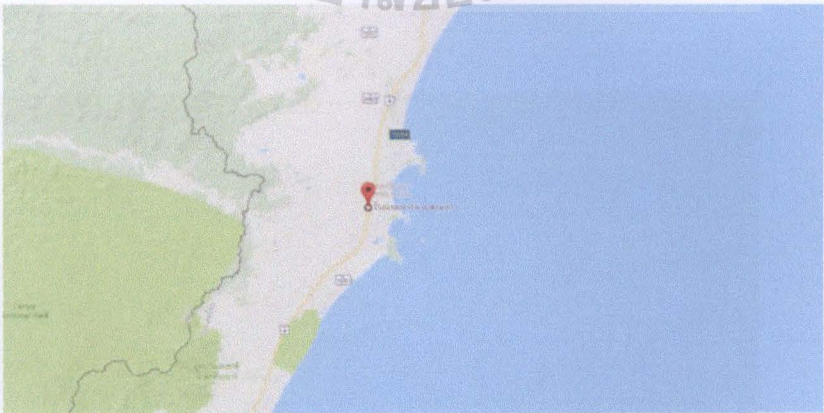


Figure 2.65 Site Location in Macro scale

- Intermediate scale



Figure 2.66 Site Location in Intermediate scale



Figure 2.67 Site Location in Intermediate scale

- Micro scale

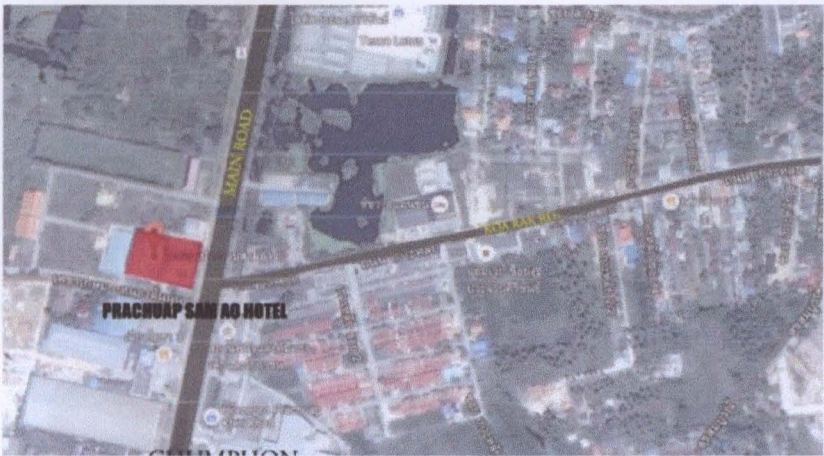


Figure 2.68 Site Location in Micro scale

2.5.3 Site Context

- Existing uses



Figure 2.69 The Existing around the site



- Site Surrounding

Figure 2.70 Site Location in Macro scale

- Sun and Wind Direction

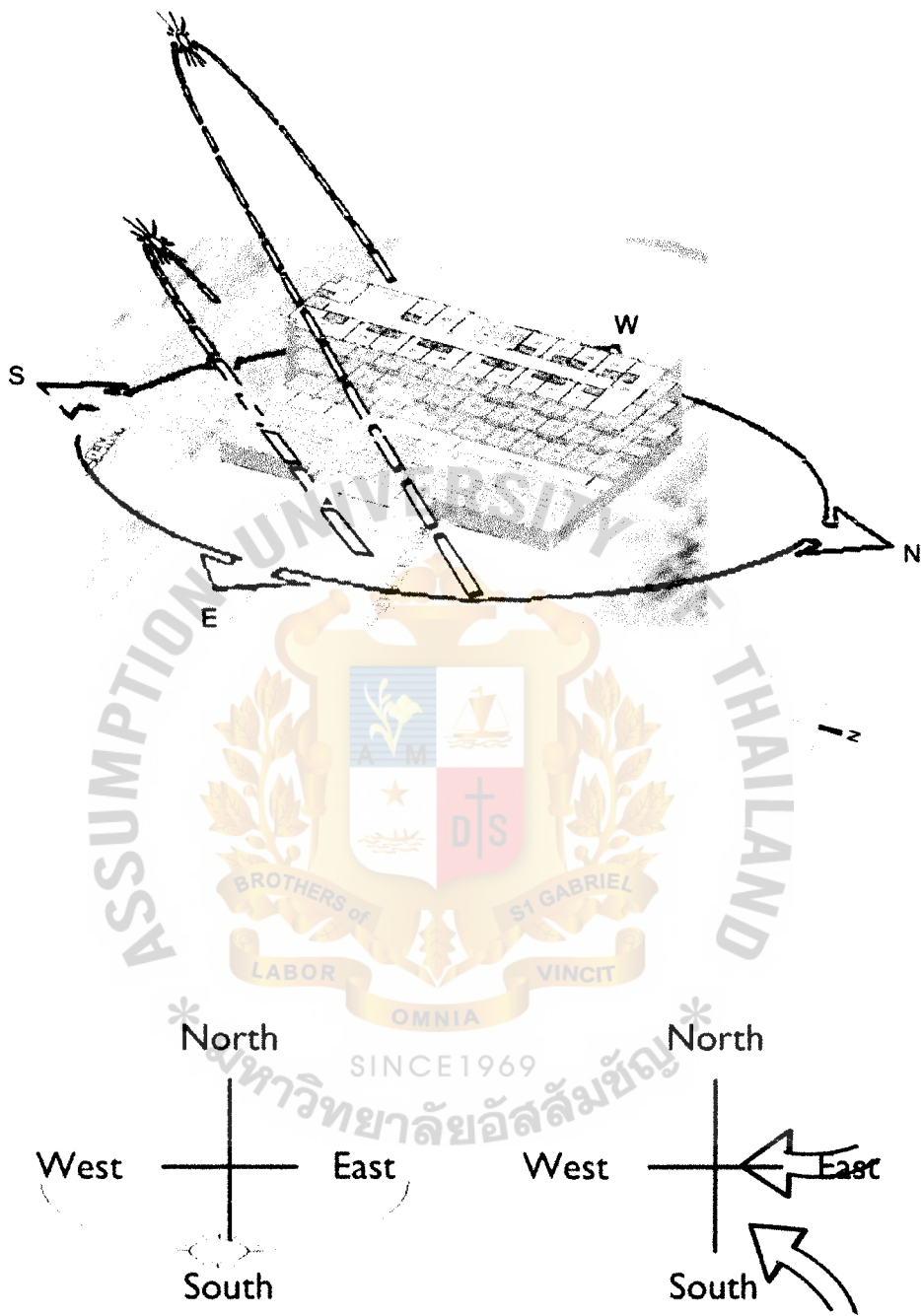


Figure 2.71 Sun and Wind direction diagram

2.5.4 Site and Zoning

- Boundaries and Site Area



Figure 2.72 Boundaries and site area

- Site Coverage and Building Height



Height : 19.75 m.

Figure 2.73 Site coverage and building height

2.5.5 Sensory and Natural Physical Features

- View from the site

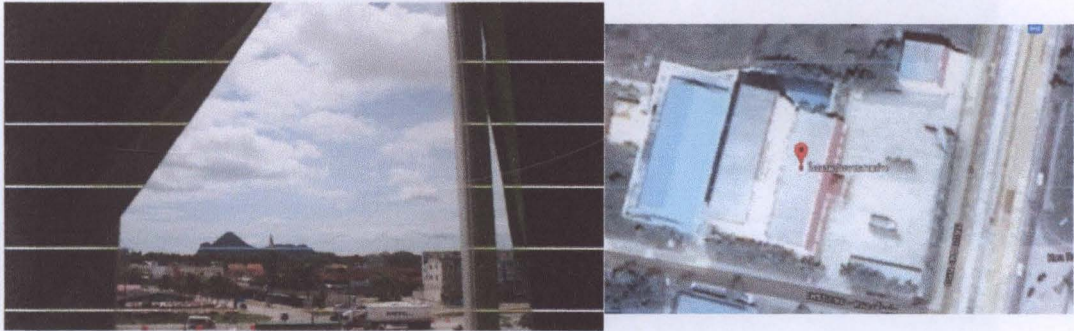


Figure 2.74 East view



Figure 2.75 West view

The watermark logo of Assumption University of Thailand is centered on the page. It features a circular emblem with a central shield. The shield is divided into four quadrants: top-left (blue with a white lily), top-right (white with a blue cross), bottom-left (white with a blue star), and bottom-right (red with a white cross). Above the shield is a crown. The shield is flanked by two golden lions. Below the shield is a banner with the text 'LABOR OMNIA VINCIT'. The outer ring of the emblem contains the text 'ASSUMPTION UNIVERSITY OF THAILAND' at the top and 'มหาวิทยาลัยอัสสัมชัญ' at the bottom, with 'SINCE 1969' in the center of the bottom arc.

Chapter 3: Data Collections

3.1 Target User Studies

3.2 The Proposed User
Behavior

3.3 Human Factor

3.4 Function and Facility
Studies

3.5 Aesthetic and Form
Studies

3.6 Project Specific

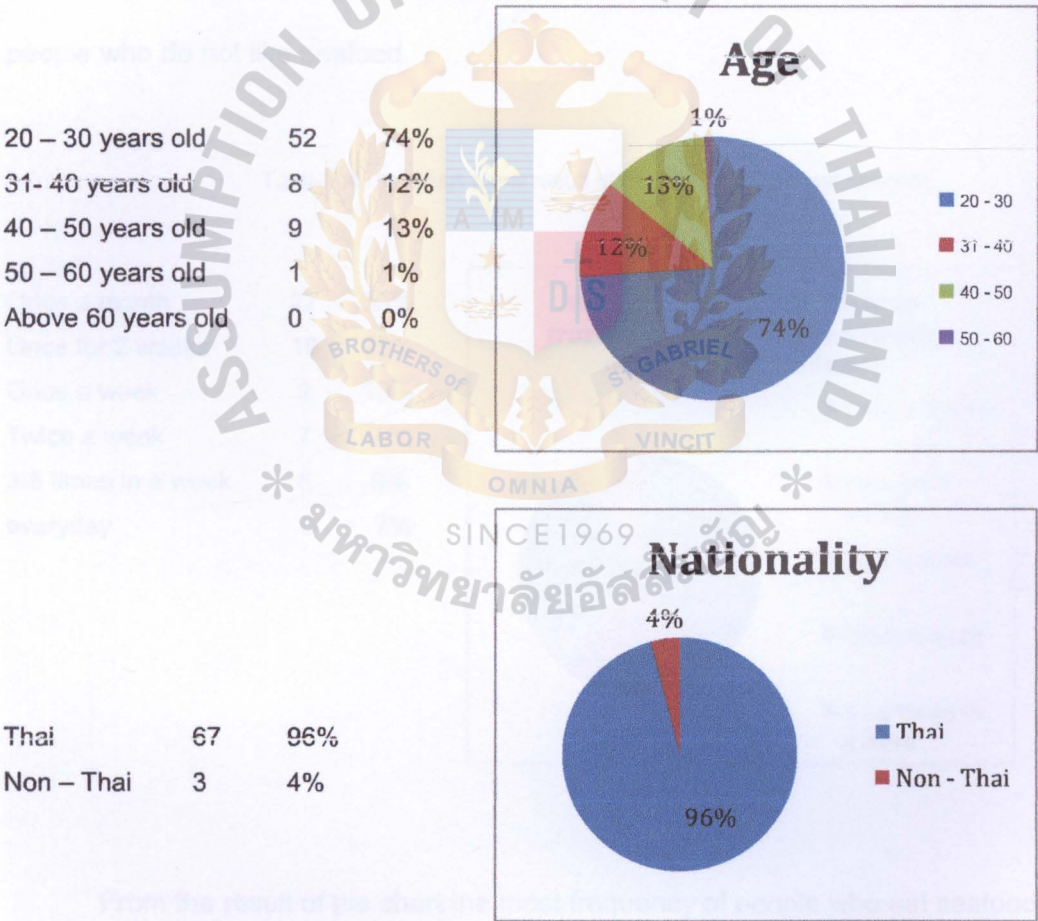
Chapter 3: Data Collections

3.1 Target User Studies

3.1.1 Target Users

Target users of seafood center are come from questionnaire of 70 people who are officer ages that including seafood lover, wholesaler, retailers, fisherman who are relate to seafood.

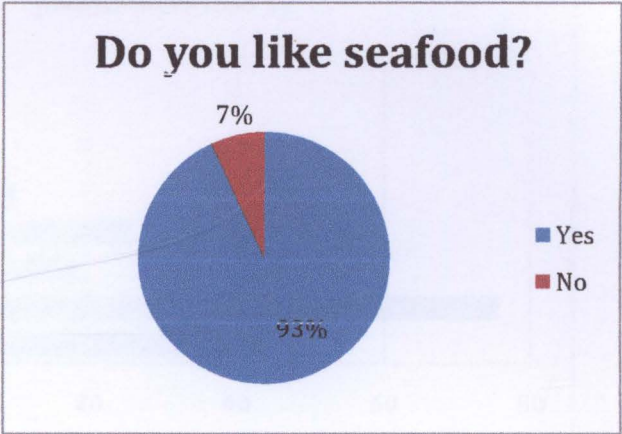
Table3.2 Pie chart Age, Nationality



From the questionnaire, the percentage of age of 20 – 30 years old is the highest percentage. Also, the nationality is mostly from Thai.

Table 3.3 Pie Chart show result of people who like seafood

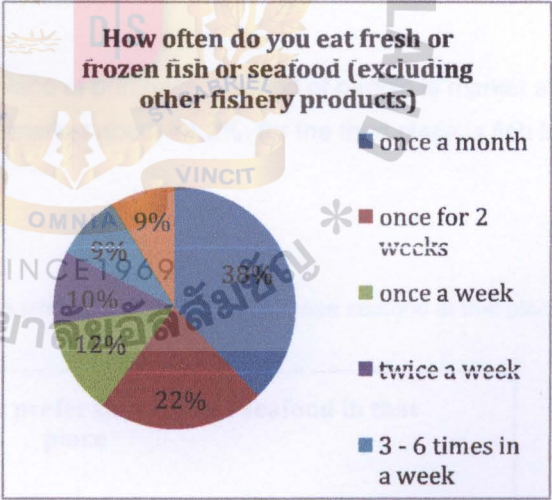
Yes	64	93%
No	5	7%



From the result of pie chart, people who like seafood is 93% and 7% for people who do not like seafood.

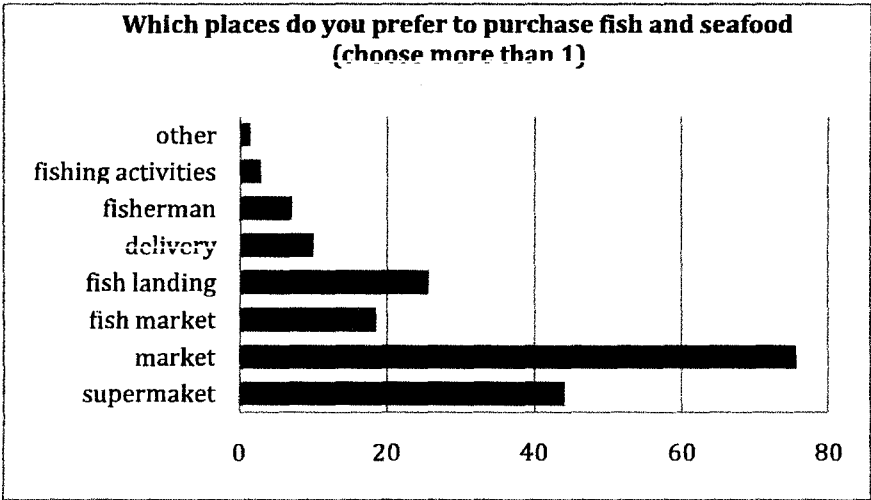
Table 3.4 Pie Chart show result of how often people eat seafood

Once a month	27	39%
Once for 2 weeks	16	23%
Once a week	9	13%
Twice a week	7	10%
3-6 times in a week	6	9%
everyday	5	7%



From the result of pie chart the most frequency of people who eat seafood is 39% for once a month and 23% for once for 2 weeks. That is how often people eat seafood.

Table 3.5 Bar Graph show the number of the place of purchase seafood



Supermarket	31	44.2%
Market	53	75.7%
Fish market	13	18.55%
Fish landing	18	25.7%
Delivery	7	10%
Fisherman	5	7.1%
Fishing Activities	2	2.85%
Other	1	1.4%

The Bar Graph shows that the place of purchase seafood of people is market about 75.7% the highest one and next is supermarket about 44.2%. for the third place is fish landing about 25.7%.

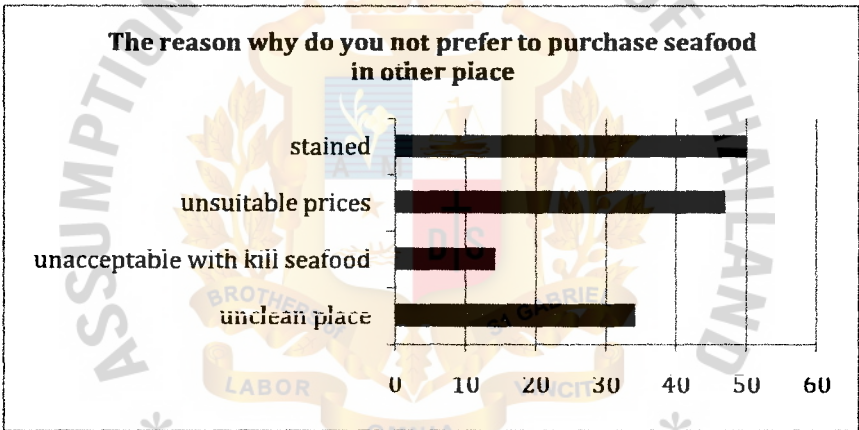
Table 3.6 Bar Graph Shows the reason why people prefer to purchase seafood at that place



Convenience	50	71.4%
Cleanness	30	42.8%
Various kind of seafood	32	45.7%
More choice	20	28.5%
Facilities and service	16	22.8%

The Bar Graph shows the reason of people that prefer to purchase seafood in that place. The first reason is convenience and the second is various kind of seafood. And the last reason is cleanness.

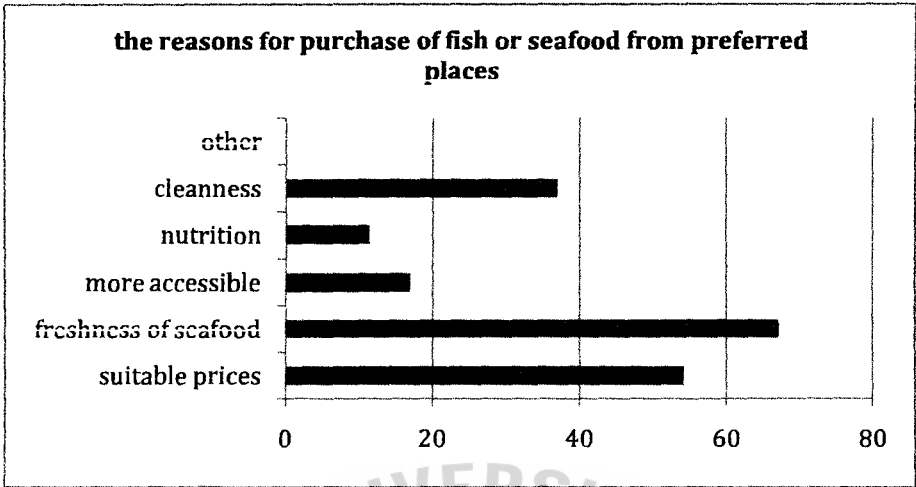
Table 3.7 Bar Graph Shows the reason why people not prefer to purchase seafood at that place



Unclean place	24	34.2%
Unacceptable with kill seafood	10	14.2%
Unsuitable prices	33	47%
Stained	35	50%

The bar Graph shows the reason why people don't like to go to that place for purchase seafood. First is stained and the second is unsuitable prices for seafood while the third reason is unclean place.

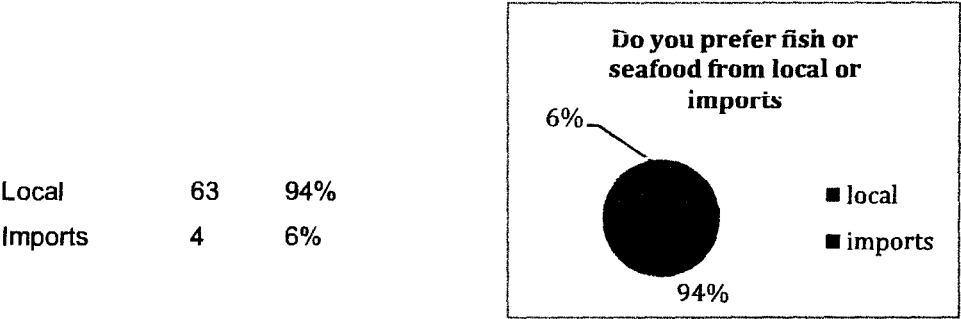
Table 3.8 Bar Graph Shows the reason of purchase seafood at that place



Suitable prices	38	54.2%
Freshness of seafood	47	67.1%
More Accessible	12	17%
Nutrition	8	11.4%
Cleanness	26	37%
Other	0	0%

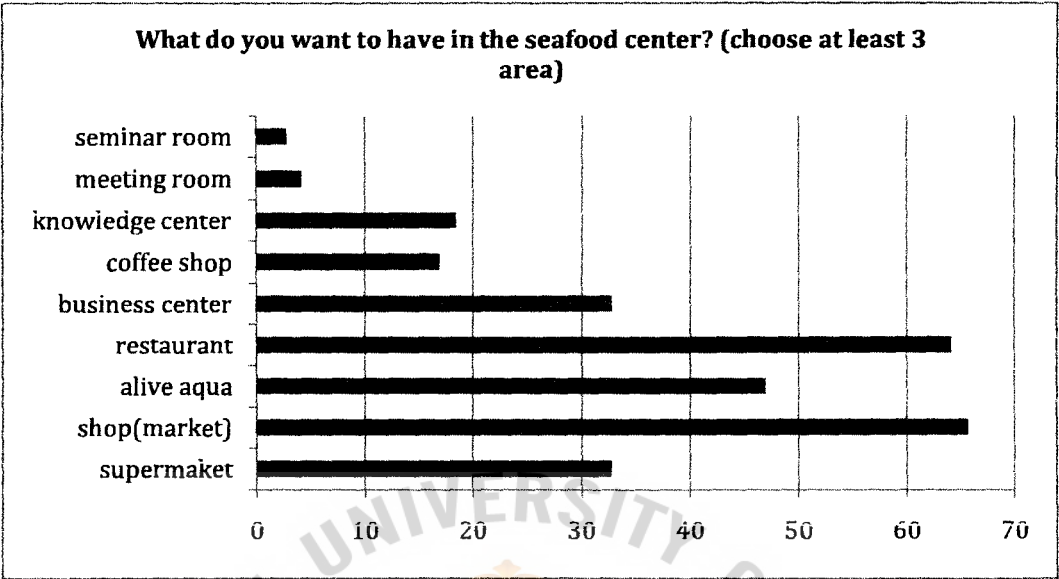
The bar graph shows the reason of people to choose to buy seafood at that place because freshness of seafood and next is suitable prices. Moreover, people think about cleanness.

Table 3.9 Pie chart shows about people prefer seafood from local or imports



The pie chart shows that people prefer seafood from local more than imports.

Table 3.10 bar graph shows about what people want to have in the seafood center.

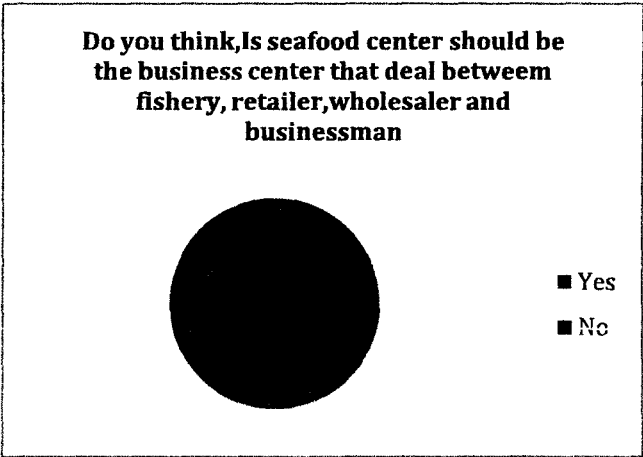


Supermarket	23	32.8%
Shop(market)	46	65.7%
Alive aqua	33	47%
Restaurant	45	64.2%
Business center	23	32.8%
Coffee shop	12	17%
Knowledge center	13	18.5%
Meeting room	3	4.2%
Seminar room	2	2.8%

From the bar graph, people are want to have shop(market) in the seafood center in 65.7% and want to have restaurant for 64.2%. the last is alive aqua is 47%.

Table 3.11 Pie chart shows the result about should seafood center be the business center.

Yes	61	87%
No	9	13%



From pie chart, shows that most of people of agreement to be the business center.
























3.2 The Proposed User Behavior





























Target user study and result of the questionnaire can be categorized the users of seafood market into 5 main types.

1. Visitor : they might come with a group or individual and both are from local area and travelers.
2. Businessman : people who interesting about seafood and want to deal with the retailers or wholesalers.
3. Retailer / wholesaler : fisherman or owner of fishery.
4. Officer : Manager, staff
5. Staff / housekeeper : staff, house keeper, M&E staff, chef. They should come early to provide their duties.



3.2.1 User / Function with activities

AREA	FUNCTION	ACTIVITIES
Reception and Waiting area	<ul style="list-style-type: none">- Reception / front desk- Waiting area- Front office- W.C.	<div></div> <div>Reception Waiting Front office W.C.</div>
Information area	<ul style="list-style-type: none">- Reception- Information counter- Waiting area	<div></div> <div>Information Waiting Meeting</div>
Restaurant	<ul style="list-style-type: none">- Reception- Waiting area- Dining area- Kitchen- Storage- W.C.	<div></div> <div>Reception Waiting Dining Order</div> <div></div> <div>Serving Paying Kitchen</div>
Shop (market)	<ul style="list-style-type: none">- Reception- Alive aqua- Shop area- Seafood Booth- Eating and seating area- Souvenir shop	<div></div> <div>Reception Alive aqua Shopping Order</div> <div></div> <div>Eating Paying Souvenir shop</div>

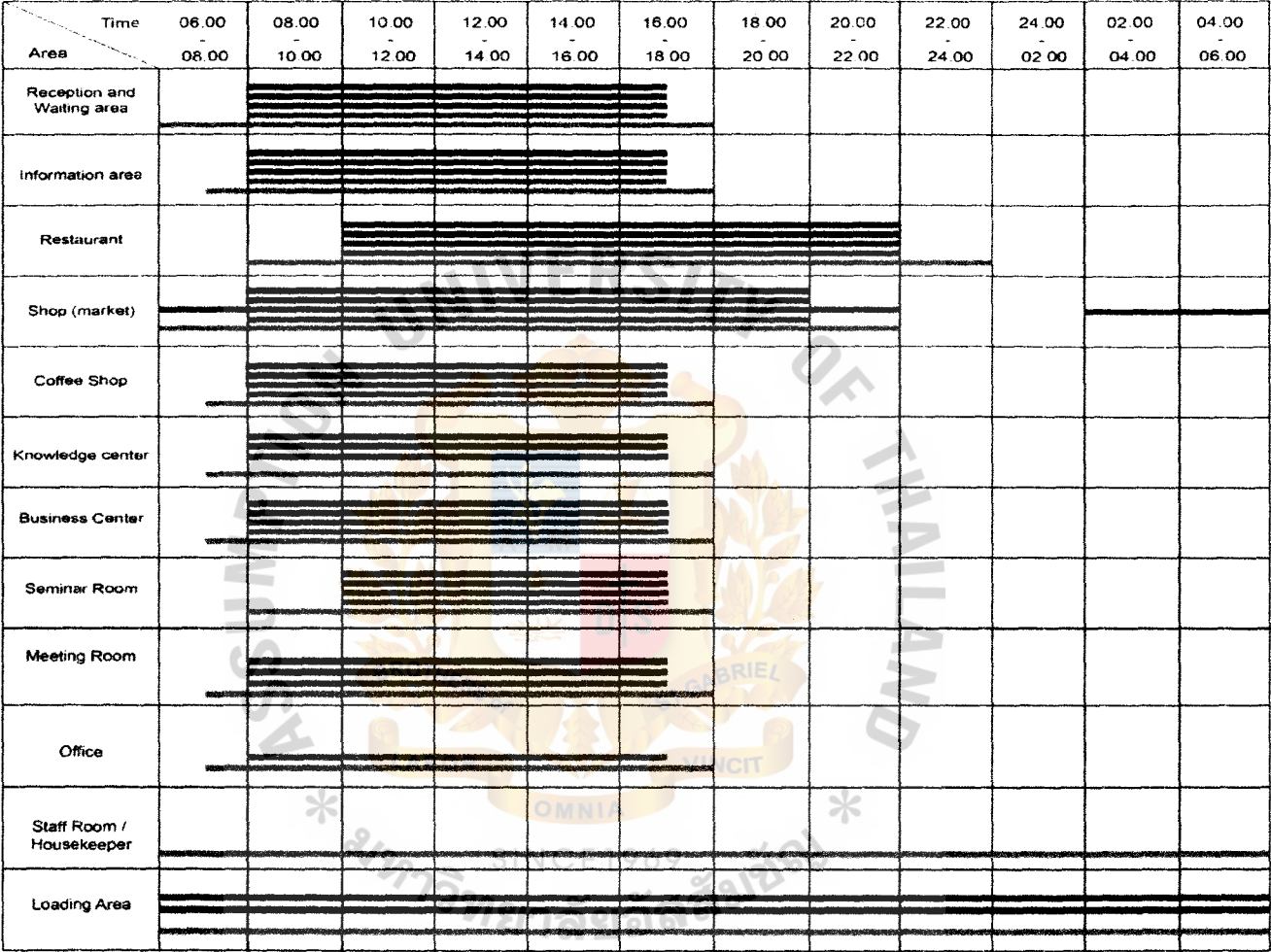
Coffee shop	<ul style="list-style-type: none"> - Reception - Waiting area - Eating area - Kitchen - Storage - W.C. 	 Reception Serving  Waiting  Order 
Knowledge center	<ul style="list-style-type: none"> - Reception - Learning area - Gallery 	 Information  Learning  Exploring  Gallery
Business center	<ul style="list-style-type: none"> - Reception - Waiting area - Meeting area - W.C. 	 Reception  Information  Meeting  Business
Seminar Room	<ul style="list-style-type: none"> - Seminar area - Food and Beverage 	 Seminar  F&B
Meeting Room	<ul style="list-style-type: none"> - Meeting area 	 Meeting
Office	<ul style="list-style-type: none"> - Working area - Meeting room - Files storage - Pantry - W.C. 	 Clock in  Working  Break time  Meeting  Clock out
Staff room	<ul style="list-style-type: none"> - Locker room - Pantry - Storage 	 Clock in  Locker  Working  Break time  Clock out
Loading area	<ul style="list-style-type: none"> - Loading area - Checking area - Storage 	 Loading  Checking  Storage

SYMBOLS

					
RECEPTION	WAITING	INFORMATION	MEETING	ORDER	SERVING
					
FOOD AND BEVERAGE	DINING	PAYING	SHOPPING	EATING	TEACHING
					
EXPLORING	LEARNING	BUSINESS DEAL	SEMINAR	WORKING	CLOCK IN - OUT
					
BREAK TIME	LOCKER	CHECKING	STORAGE	LOADING	GALLERY
					
SOLVENIR SHOP	ALIVE AQUA	KITCHEN	FRONT OFFICE		



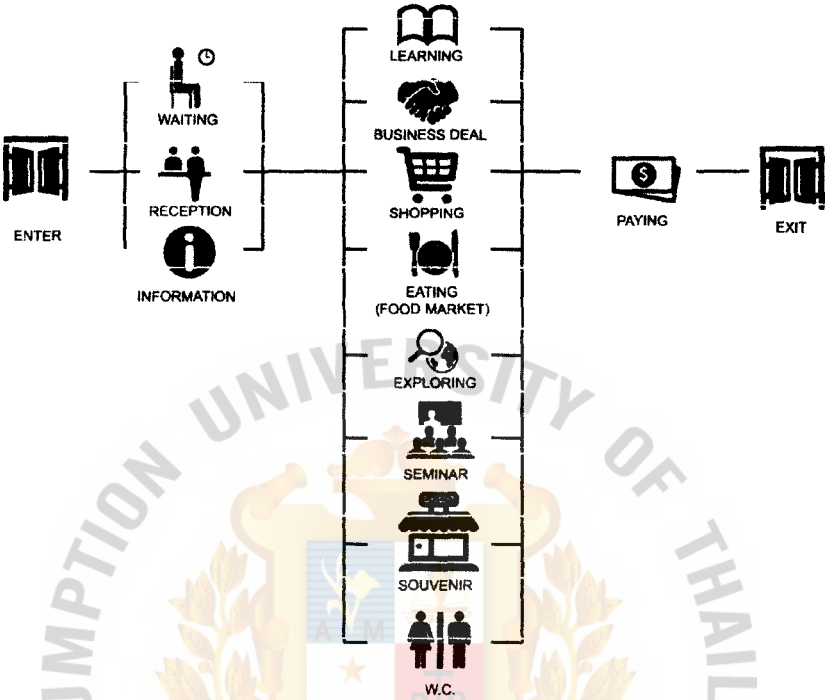
3.2.2 User Timing



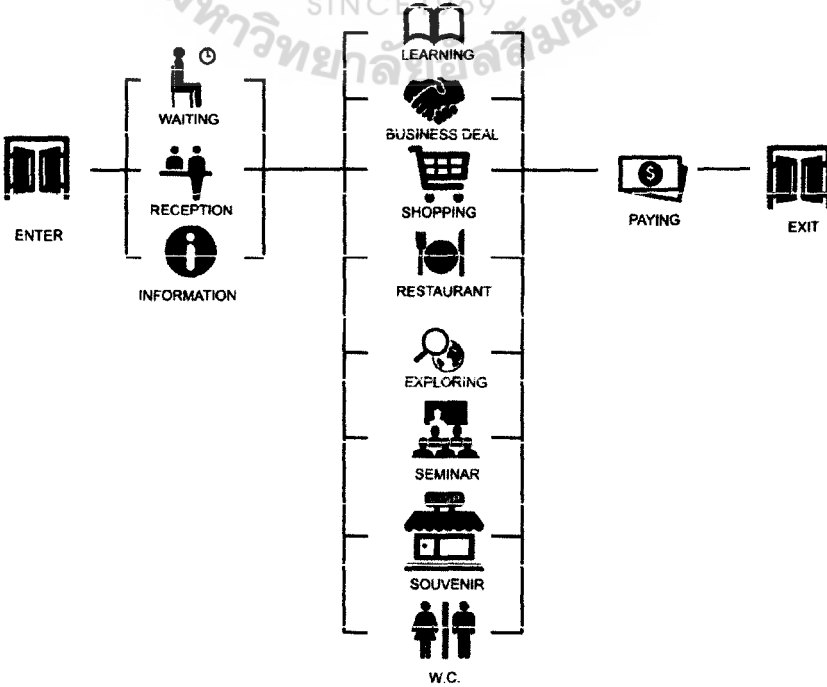
■ VISITORS ■ BUSINESSMAN ■ RETAILERS / WHOLESALERS ■ OFFICER ■ STAFF / HOUSE KEEPER

3.2.3 User Behaviors and Activities

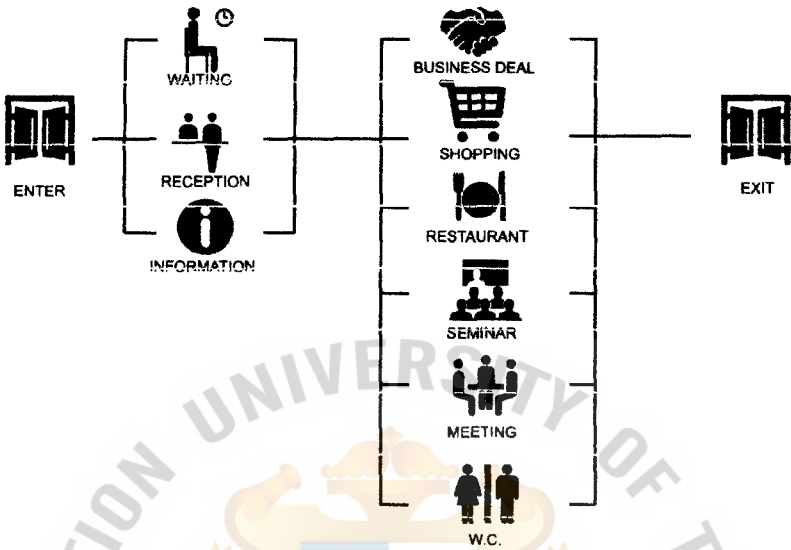
■ VISITORS



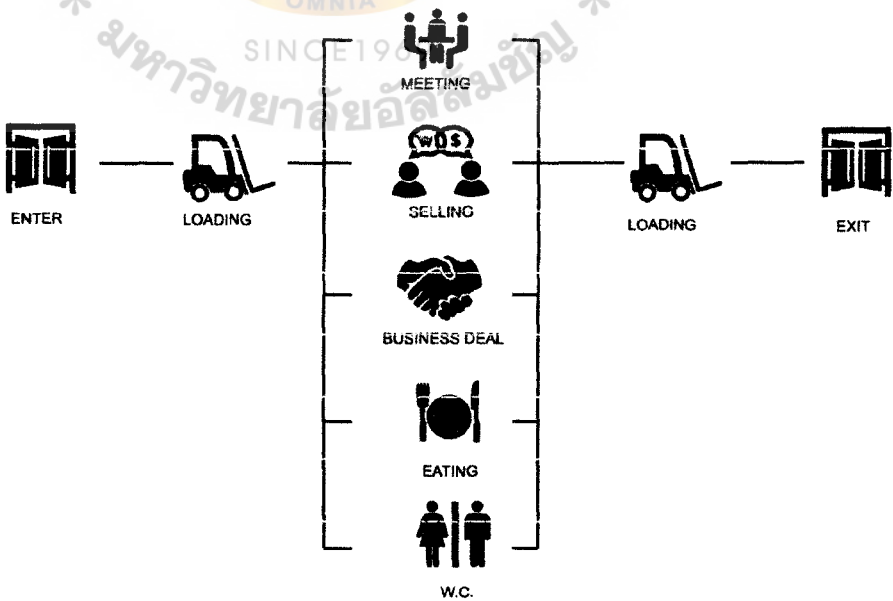
■ VISITORS / GROUP



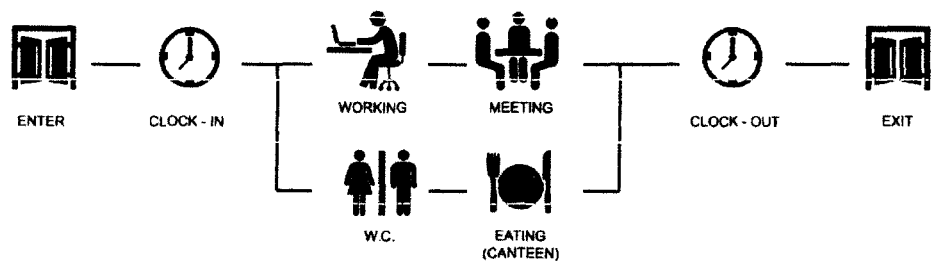
■ BUSINESSMAN



■ RETAILERS / WHOLESALERS



■ OFFICER

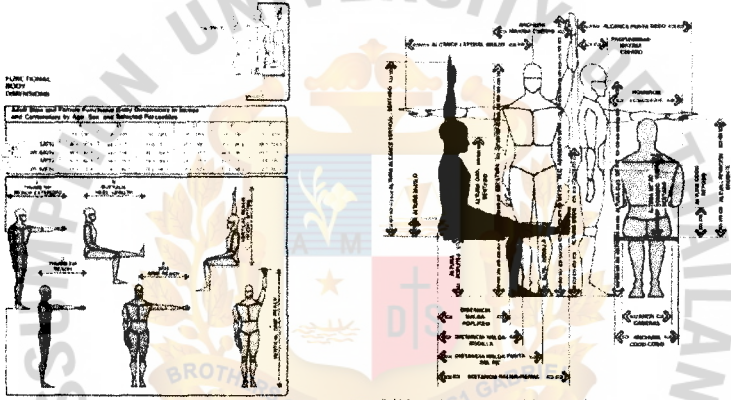
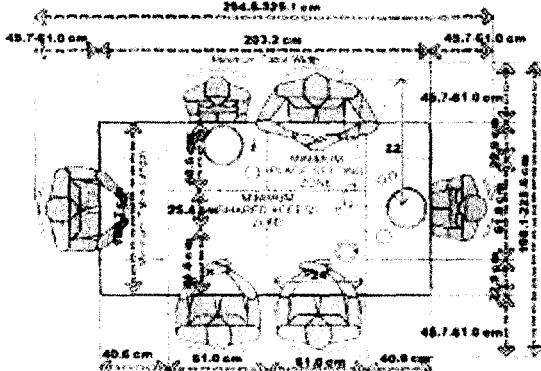


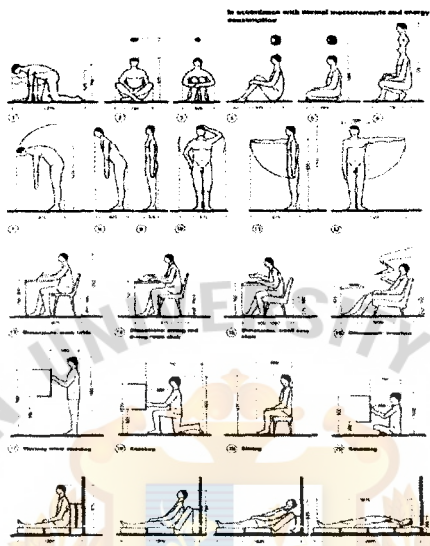
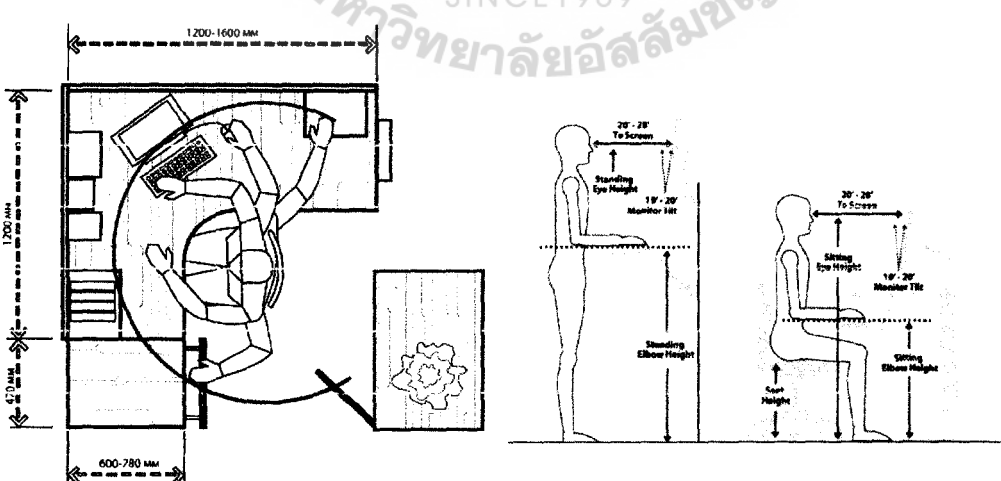
■ STAFF / HOUSE KEEPER



3.3 Human Factor

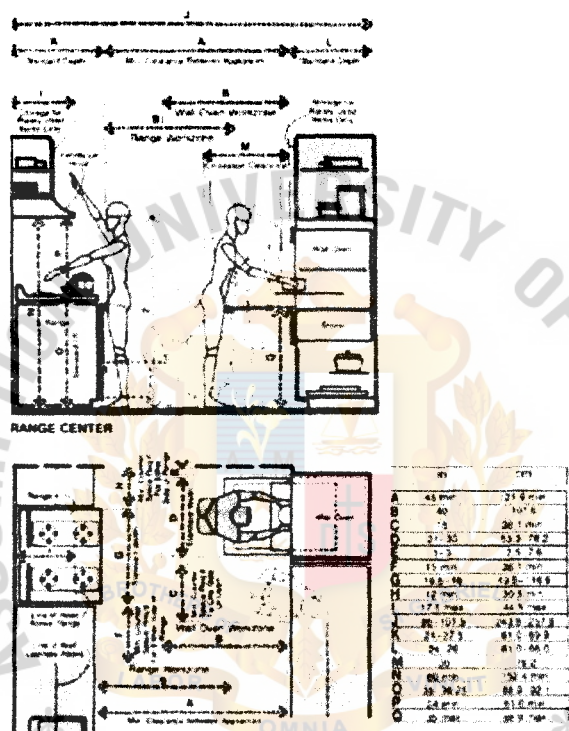
3.3.1 User Psychological Needs and Physical Needs

User	Psychological Needs
Visitors	<div><ul style="list-style-type: none">- Cleanness- Welcoming- Comfortable- Aesthetic- Facilities & service- Safety</div>
<div><p>Physical needs</p><p>Fig. 1.1 Anthropometric Parameters for Human Body (in cm) (Source: Adapted from: Anthropometric Data for Human Factors Engineering, 1996)</p></div>	
Businessman	<div><ul style="list-style-type: none">- Cleanness- Welcoming- Comfortable- Aesthetic- Facilities & service- Safety</div>
<div><p>Physical needs</p><p>RECTANGULAR TABLE MINIMUM LENGTH AND WIDTH DINING FOR SIX</p></div>	

Retailers / wholesaler	<ul style="list-style-type: none">- Cleanness- Comfortable- Facilities & service- Safety
<p>Physical needs</p> <p>In accordance with normal measurements and energy measurement</p> 	
Officer	<ul style="list-style-type: none">- Cleanness- Comfortable- Facilities & service- Safety
<p>Physical needs</p> 	

Staff / House keeper	<ul style="list-style-type: none">- Cleanness- Comfortable- Facilities & service- Safety
-------------------------	---

Physical needs



Kitchens - Anthropometric Data

3.4 Function and Facility Studies

3.4.1 Project Organization Chart

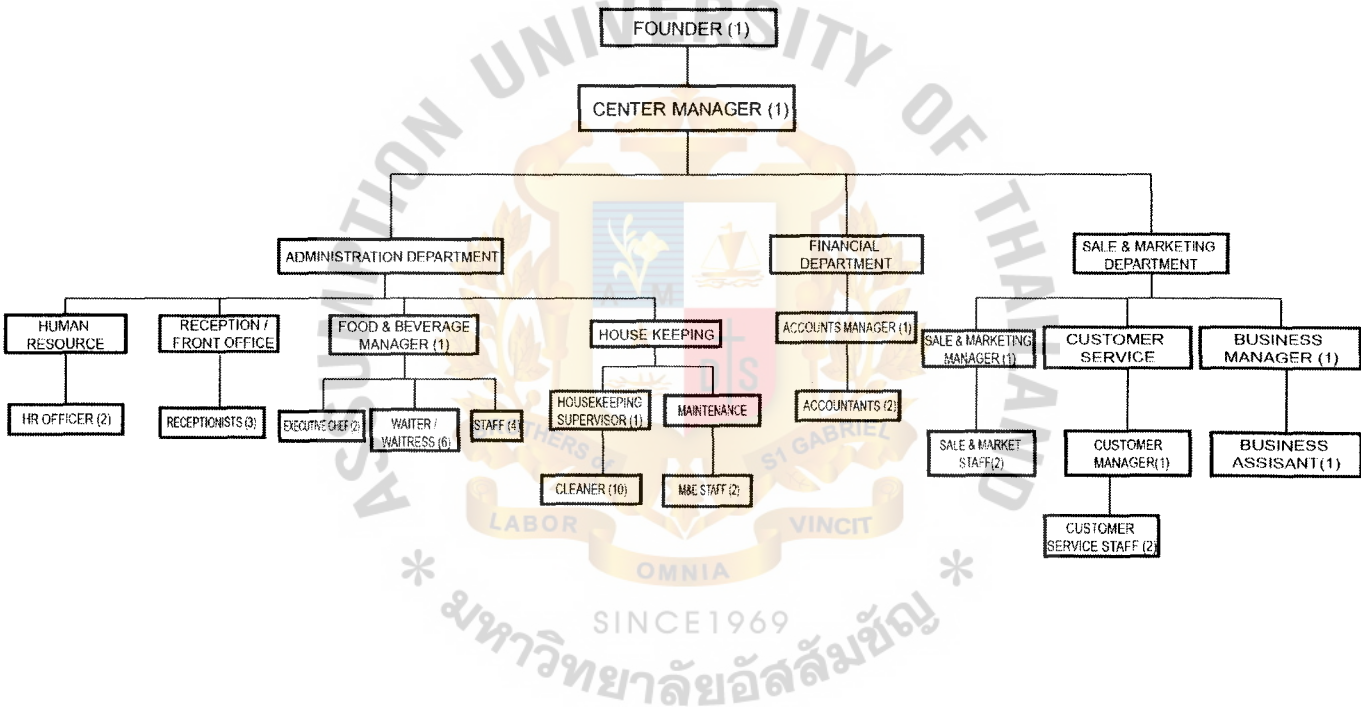


Table 3.12 Organization chart

3.4.2. Seafood Center

A Seafood center organization chart is very useful and important to understanding more about the different in each department in the seafood center. Also, it is the way that can see all of department link and work together. Everyone are work in their part and that depend on the activities of each one. Moreover, research and study of seafood center and activities in each section will make it become more management.

The employment and staff are different to each other and many factors are decided by the organization of the center. Mostly, the factors will based on the following :

- Center's classification
- Center's type
- Center's product type

For Seafood Center, employment and staff will come from the local area or nearby community. The facilities and services will focused on customers that react to seafood center. The market area will have the space for retailers and wholesalers in their area to serve seafood to customers. And every employment and staff should have the knowledge and skill in seafood to make them more professional to customers and businessman.

Seafood Center Administration can be divided into following

1. Center Manager

Center manage is the one who is responsible to overall organization of the center. Also, the center manage will take care and controls all employment in the center.

2. Reception / Front office

- Receptionists : the one who welcomes customers and take care and can give all the information about the center to customers and suggest for facilities and services to the customers.

- Security : A person who take care and secure all of people in the center.

3. Official Department

- Human Resource : there are several duties of Human Resource that all the information of center and employees will carries by them. And controls about the systems of work in each section.

- Accounting : reports all the finance information about the import and export seafood and product. Moreover, to reports finance information about the business deal in each company.

- Sale and marketing : the one who set up the way to help financial department to the goals and bring the business to their aims.

- Customer service : A person who dealing with customers directly for the services after, or helping customers for any problems to make the customer feels happy and trust in the facilities and services.

4. Food and Beverage

- Chief : A person who have the duty to provides all food to customers

- Waiter : the one who taking care of customer's order to order chief about the foods and serve foods and drinks to customers.

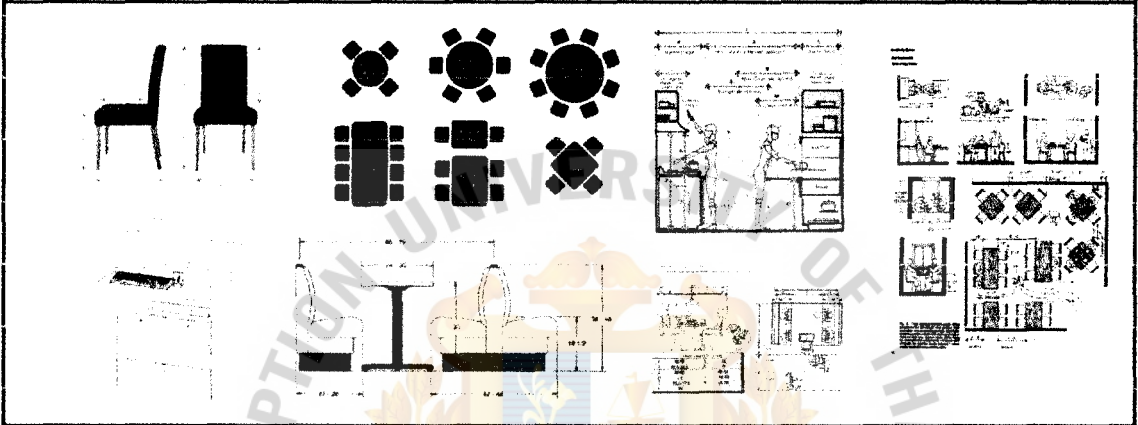
5. House keeping

- Cleaner : their duty is about cleaning to all area in the center

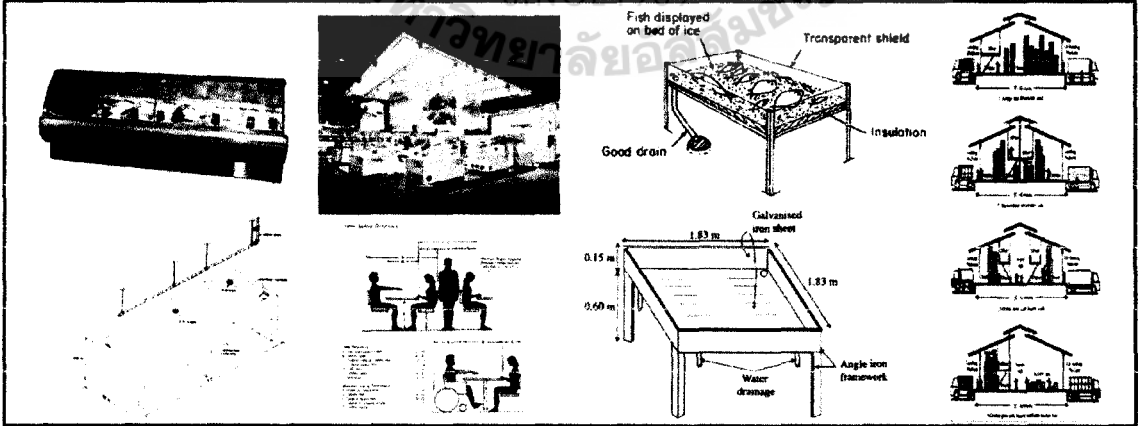
6. Maintenance

- A person who taking care and maintain about the electronic control, water supply, aqua tanks and pump and HVAC system.

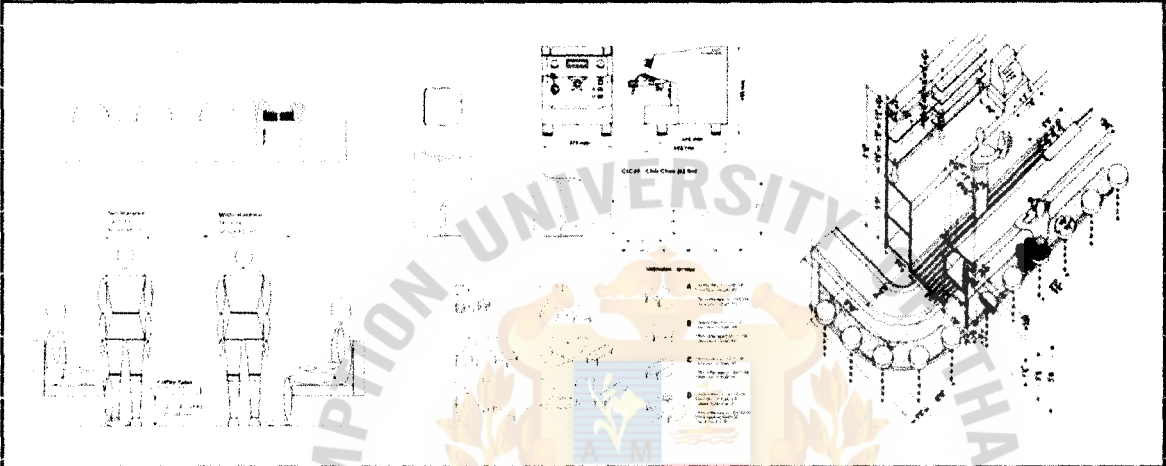
AREA	FUNCTION	TYPE OF USER				
		VISITOR	BUSINESSMAN	RETAILER/ WHOLESALE	OFFICER	STAFF/ HOUSE KEEPER
RESTAURANT	RECEPTION	*	*	*	*	*
	WAITING AREA	*	*	*	*	
	DINING AREA	*	*	*	*	
	CASHIER	*	*	*	*	*
	KITCHEN					*
	STORAGE					*
	GARBAGE ROOM					*
	W.C.	*	*	*	*	*



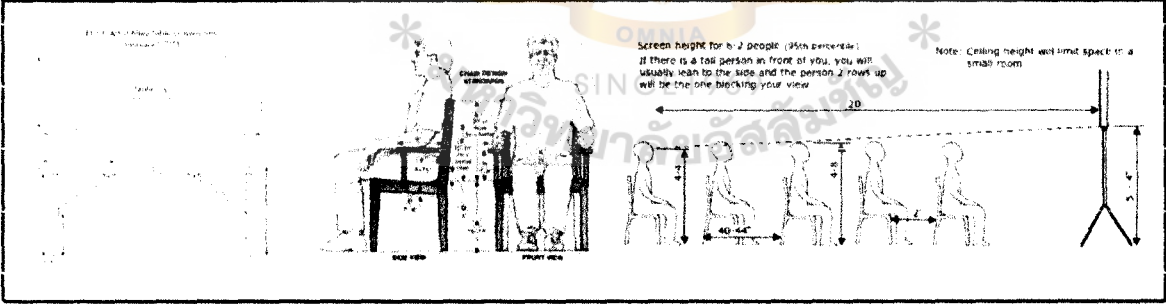
AREA	FUNCTION	TYPE OF USER				
		VISITOR	BUSINESSMAN	RETAILER/ WHOLESALE	OFFICER	STAFF/ HOUSE KEEPER
MARKET (SHOP)	RECEPTION	*	*	*		*
	WAITING AREA	*	*	*		
	ALIVE AQUA	*	*	*		*
	SEAFOOD SHOP	*	*	*		
	MARKET AREA	*	*	*		
	EATING AND SEATING	*	*	*	*	*
	STORAGE					*
	W.C.	*	*	*		



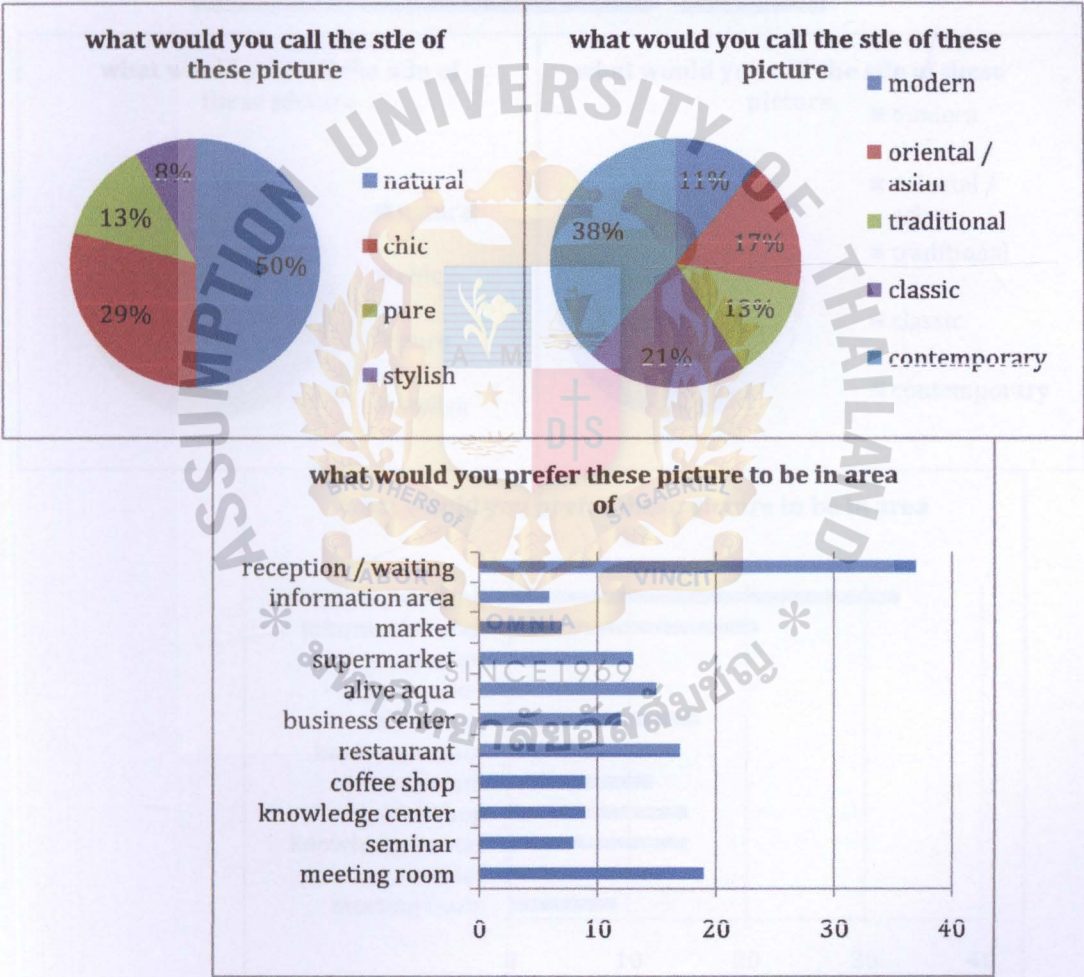
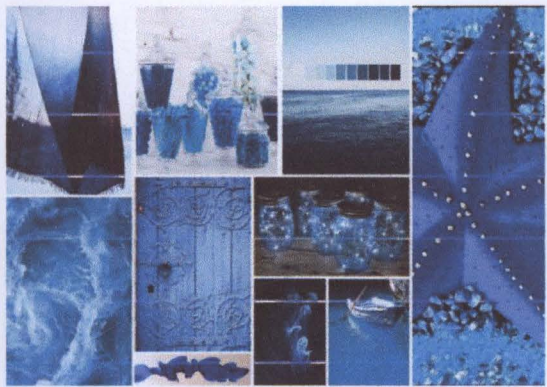
AREA	FUNCTION	TYPE OF USER				
		VISITOR	BUSINESSMAN	RETAILER/ WHOLESALE	OFFICER	STAFF/ HOUSE KEEPER
COFFEE SHOP	RECEPTION	*	*	*	*	*
	WAITING AREA	*	*	*	*	
	DINING AREA	*	*	*	*	
	KITCHEN					*
	STORAGE					*
	GARBAGE ROOM					*
	W.C	*	*	*	*	*



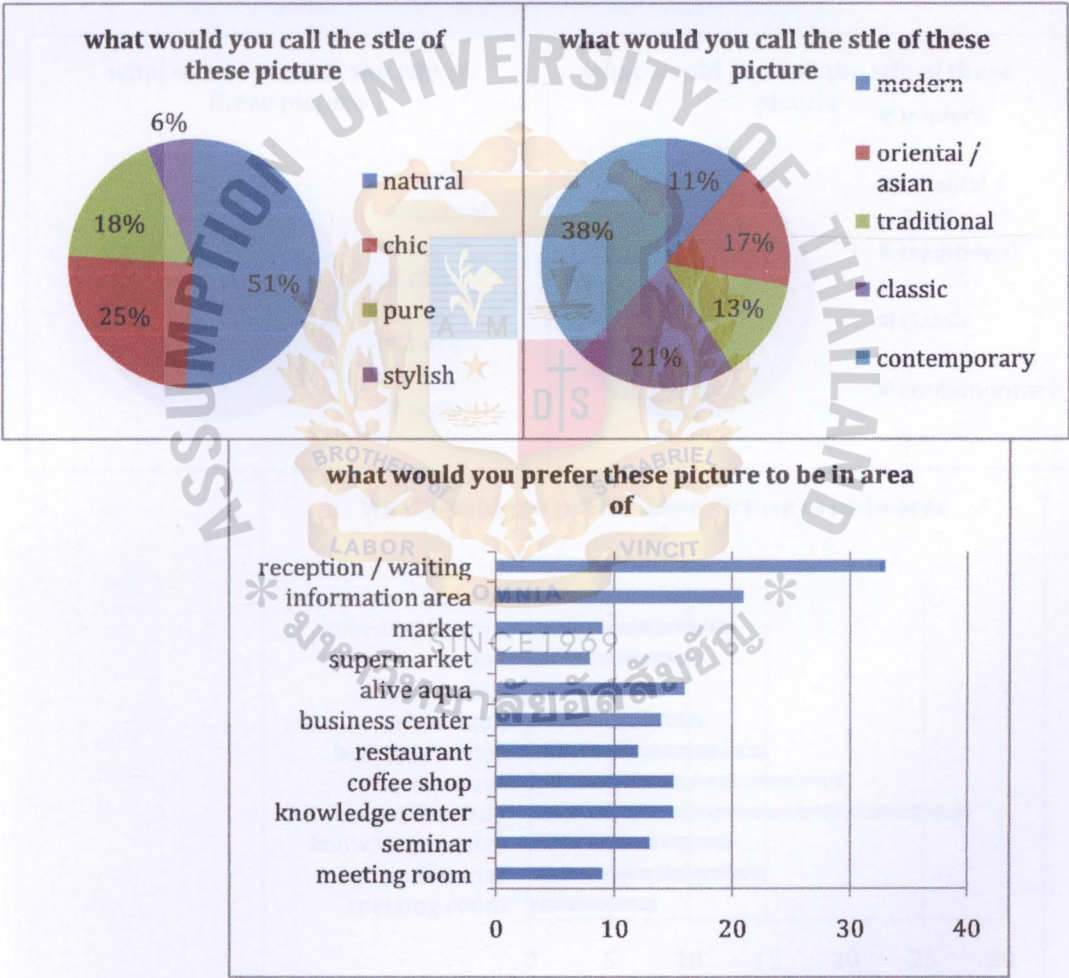
AREA	FUNCTION	TYPE OF USER				
		VISITOR	BUSINESSMAN	RETAILER/ WHOLESALE	OFFICER	STAFF/ HOUSE KEEPER
KNOWLEDGE CENTER	RECEPTION	*	*	*		*
	LEARNING AREA	*	*	*		*
	KNOWLEDGE AREA	*	*	*		*
	GALLERY	*	*	*		



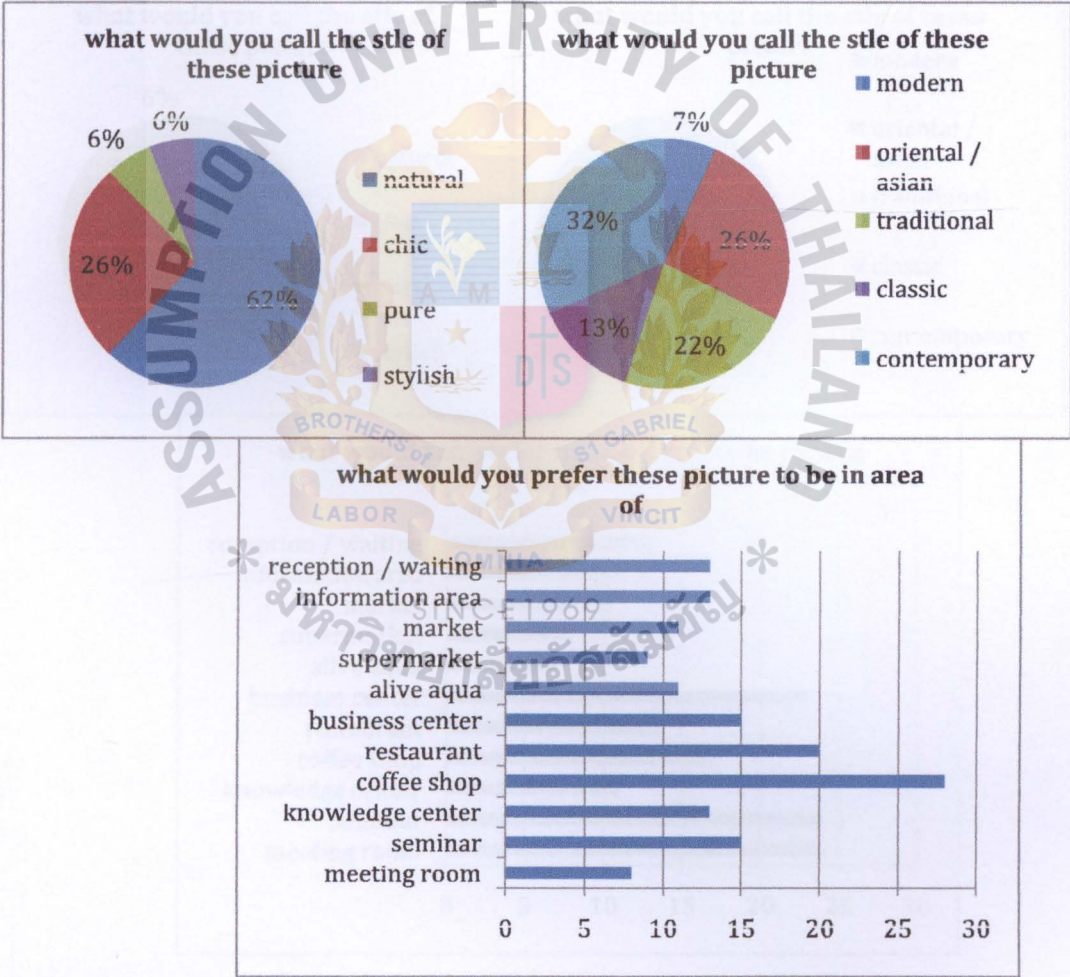
3.5 Aesthetic and Form Studies



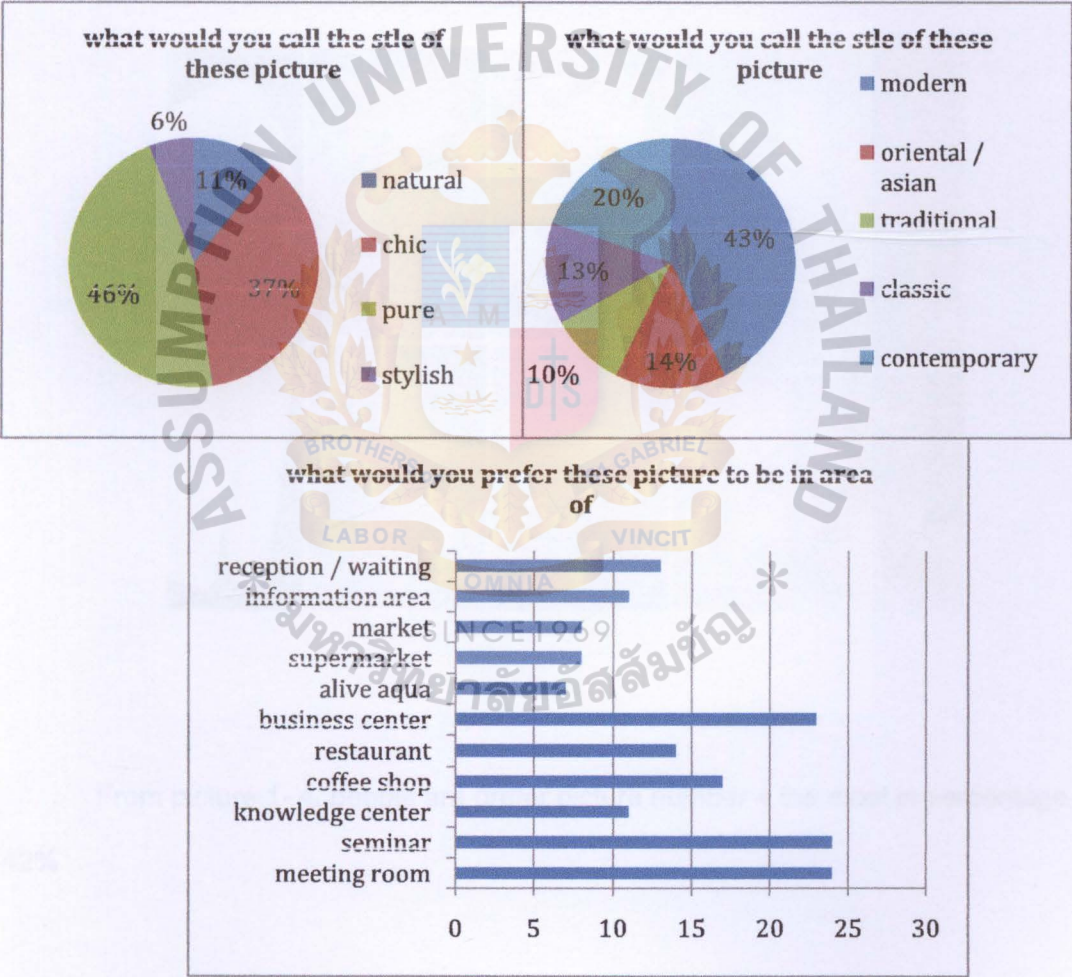
The area that people prefer for this picture is reception about 37% and the color scheme is natural. For the style that people think is modern 50%.



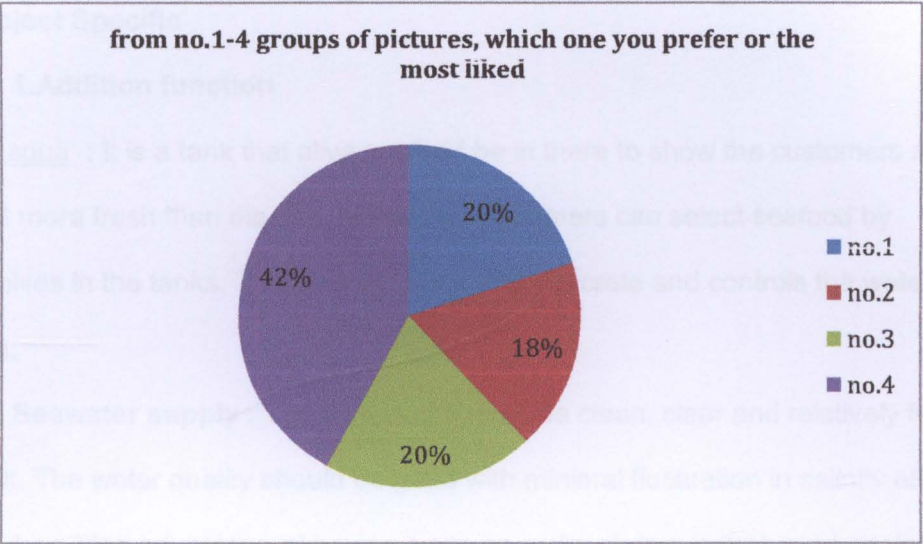
The area that people prefer for this picture1 and picture2 is reception and waiting area about 37% for picture1 and 33% for picture2 also the color scheme is natural are the highest percentage for both. For the style that people think both picture is modern style.



The area that people prefer for this picture is coffee shop about 38% for and also the color scheme is natural 62%. For the style that people think is Oriental / Asian 31%.



The area that people prefer for this picture in the seminar and meeting room in percentage of 24 and also the color scheme is pure 48%. For the style that people think this picture is modern style 39%.



From picture 1- 4, people are prefer picture number 4 the most in percentage

42%

3.6 Project Specific

1.Addition function

- Alive aqua : It is a tank that alive seafood be in there to show the customers and make it more fresh than die one. Moreover, customers can select seafood by themselves in the tanks. This tank will build with concrete and controls the water by system.

Seawater supply : The seawater should be clean, clear and relatively free from silt. The water quality should be good with minimal fluctuation in salinity all year round. An added advantage of having a site on rocky shores is that good quality seawater is relatively near the shoreline. This reduces the cost of piping installation and pumping.

Pond size : depends on the larval requirement which is based on the number of seafood. But the pond floor should be well concreted to a thickness between 7.5 cm - 10 cm. Wall should be plastered to a thickness of 5 cm. Water tap should be well connected to allow free flow in and out of water. This particular type has the advantage of you monitoring the hygiene of seafood.

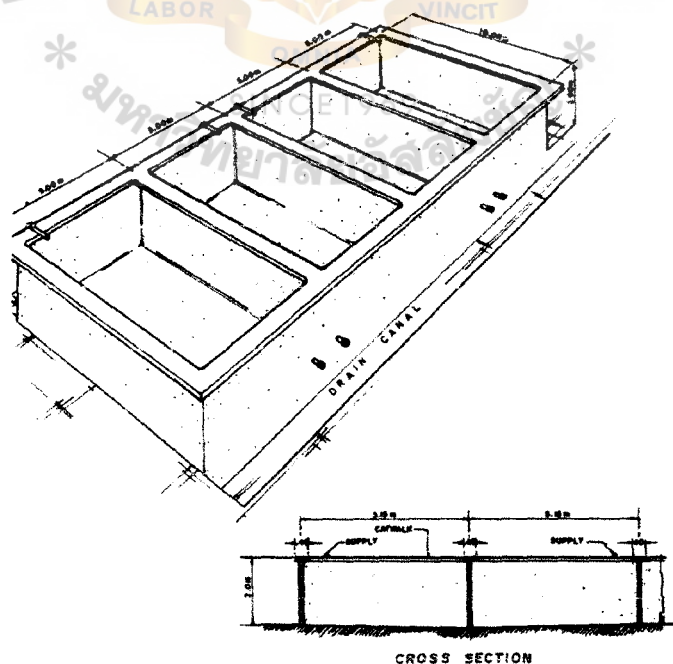


Figure 3.1 space requirement for tank

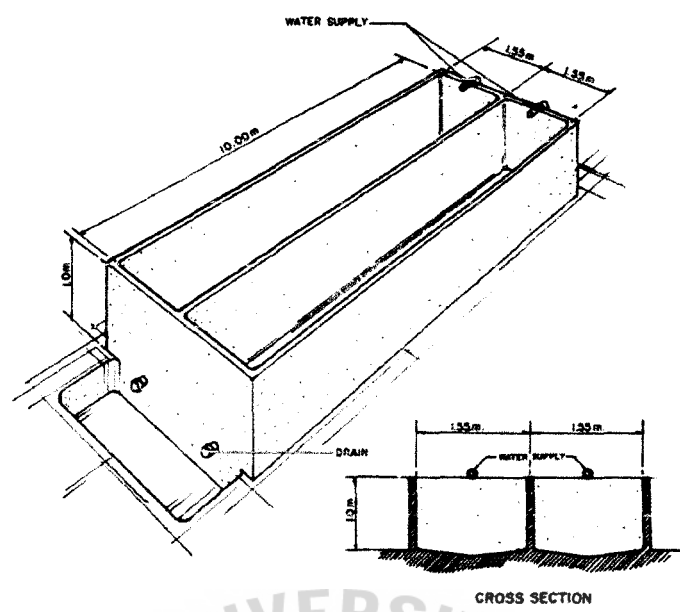


Figure 3.2 space requirement for tank

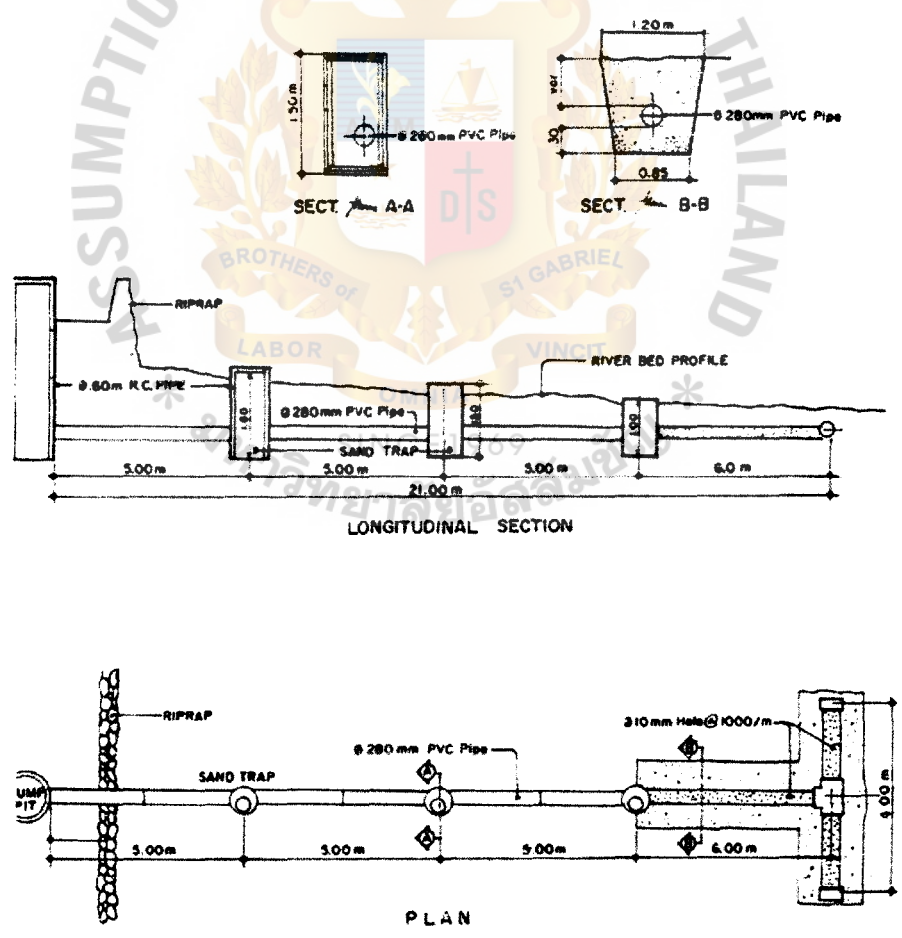


Figure 3.3 plan and section

2. Renovation

- Building Façade Renovation

The building façade provides the separation between the inside and the outside environments but is also required to provide acceptable light levels and a visual connection with the outside in the form of views out of the building. The façade may also be required to provide the building user with operable windows for ventilation.

The separating functions include:

- Weather tightness including elimination of water ingress and control of air permeability and resistance to wind actions;

Building cladding systems are required to sustain wind actions and transfer them to the main building structure. Systems are usually mounted on a building floor by floor so at each floor level the building frame supports the weight of one storey height of the envelope. The envelope may either be bottom-supported or suspended from the floor above. Wind actions are transferred by the cladding system to the building floors which act as a linear support. Building cladding systems formed of large panels are usually one-way spanning. Each floor level therefore supports one level of wind load on a building.

Curtain walling panels are usually two-way spanning, supported on four sides by the transoms and mullions which frame them. Transoms span side to side, supported by the mullions which span from floor to floor. Loads are transferred by brackets, usually fixed at the edge of the floor slab. The mullions are usually provided with sleeved joints to achieve transfer of shear forces at the joints. Mullions are usually top-hung so that they act in bending and tension.

Rain screen cladding, masonry and insulated render are fixed to supporting systems which are usually designed to span from floor to floor

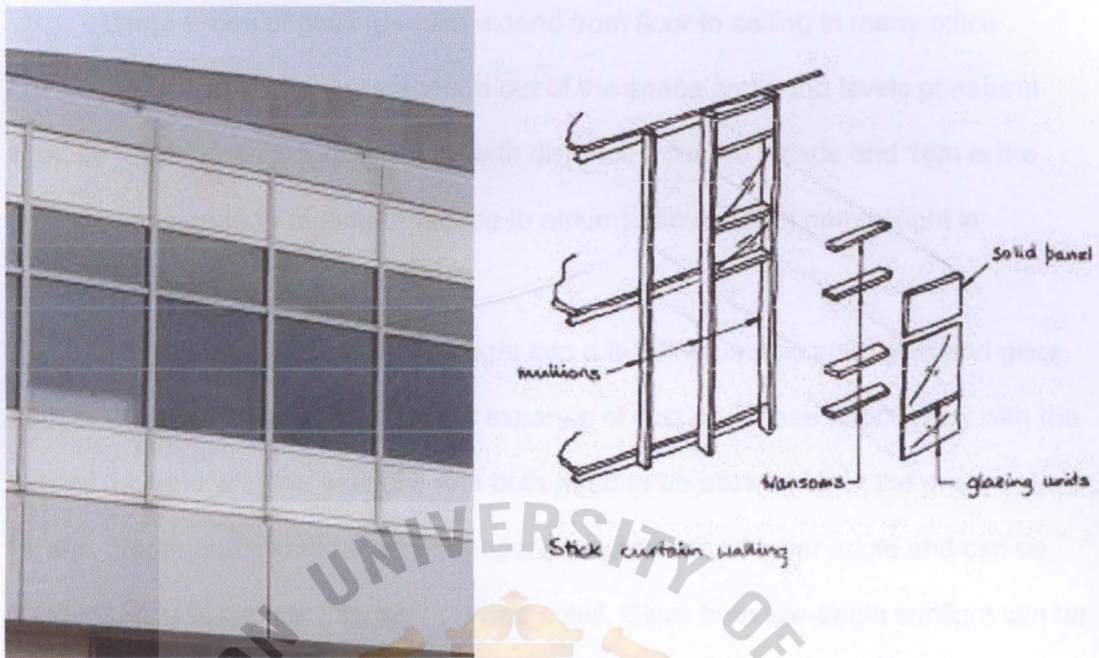


Figure 3.4 Curtain wall framing

- Insulation (both thermal and acoustic)

The building façade is required to perform a thermal insulating function which is becoming increasingly onerous under the pressure to reduce energy consumption and CO₂ emissions. Insulating material is incorporated into the opaque parts of the façade and insulating glazed units (iglus) are used in the transparent areas. Minimum U-values are given in the Building Regulations, equal to 0.35 W/m²K for walls and 2.2 W/m²K for windows and curtain walling. Better insulation (lower U-values) averaged over the building envelope can be achieved by increasing the areas of opaque wall and reducing the areas of windows.

The building envelope also provides acoustic separation between the external and internal environments. In general, a building envelope constructed of more massive elements (e.g. masonry or pre-cast concrete) provides better acoustic separation.

- Control of solar gain and ultraviolet radiation and the management of views into the

building.

Large areas of glazing which extend from floor to ceiling in many office developments provide excellent views out of the space and good levels of natural light. Levels of natural light diminish with distance from the façade and 18m is the plan depth (façade to façade or façade to atrium) above which natural light is considered to be too low.

The penetration of direct sunlight into a building causes solar gain and glare, both of which increase with a greater expanse of glazing. These effects vary with the time of day and with the seasons and both need to be allowed for in the design of the façade. South elevations receive stronger sunlight from a higher angle and can be shaded using horizontal louvres or brises soleil. Glare from low-angle sunlight can be a particular problem in the early morning and late evening for east- and west-facing elevations. Shading can be provided with vertical fins or with user-operated blinds. Solar gain can be reduced by specifying a selective solar control coating on one of the surfaces of the glass (usually in the cavity of an igu). The coating is called selective because solar radiation of different wavelengths is selectively allowed to pass through the coating: visible wavelengths of light are allowed to pass more freely than infrared wavelengths.

For spaces for exhibitions or displays of materials susceptible to ultraviolet (uv) degradation, a uv-inhibiting film can be applied to the surface of glazing or laminated glass can be specified with sufficient interlayers between the glass laminates to absorb uv radiation.

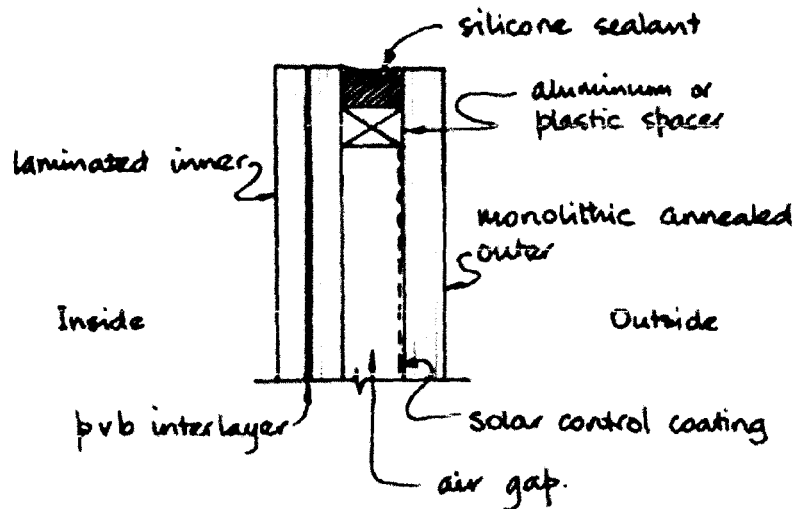


Figure 3.5 Double-glazed unit with laminated glass

Solar gain must be allowed for in the design of the building services. The benefits of full-height glazing have been questioned as a result of pressure to reduce energy costs because there is little advantage to natural light levels in having glazing below desk level but full-height glazing increases the heating and cooling demand and increases energy costs. The Target Zero Programme considers these issues in the context of different building types. Schools, hospitals and residential buildings frequently have larger areas of solid wall and smaller windows as a proportion of the façade area and so these issues are less significant.

Types of façade systems

A wide variety of façade systems may be used in modern multi-storey buildings, which are:

- Brickwork and stonework (masonry)
- Curtain walling
- Precast concrete panels with various types of finishes
- Insulated render
- Metallic cladding
- Tiles and stone veneer panels
- Large boards consisting of an aesthetic and weather tight veneer

- Glass and steel façade systems

The choice of facade system is dependent on the scale and use of the multi-storey building, and on its local environment and neighbors. A variety of steel components may be used in modern facade systems, such as:

- Steel profiled sheets and composite (sandwich) panels
- Flat and rigidised cassette panels with folded edges
- Light steel infill walls using C sections
- Hollow steel sections (often circular) for facades and roofs, particularly used for visual effect in atria and in entrance areas
- Stainless steel glazing support system
- Metallic elements in unitised curtain walling

Light steel infill walls have largely replaced the block-work inner leaf in both steel and concrete framed buildings. A variety of facade systems may be attached to the infill walls.



Figure 3.6 Large colour coated steel cassette panels supported on vertical rails

Benefits of steel façade systems

The benefits of steel façade systems may be presented in terms of their functional and aesthetic requirements, as follows:

- A variety of colours and surface textures is possible
- Lightweight facades minimise the loads on the supporting structure

- Light steel infill walls using C sections can be used to support a wide range of cladding systems
- Facades can be highly pre-fabricated for speed of installation
- Steel glazing systems can be used for visual effect in tall entrance areas and atria
- Steel is non-combustible and robust to damage in façade panels
- A high level of thermal and acoustic insulation can be provided.

Solutions using light steel infill walls

Light steel walls may be of two types:

- Light steel infill walls that span between the floors or between the floor and edge beam
- Panelised systems that are placed outside the slab edge and are attached at discrete locations.

Light steel infill walls are more widely used because of the simplicity of the installation process and the ability to deliver cut-to-length C sections for the particular as-built dimensions of the project. The development of light steel infill walls has been one of the major innovations in the last 10 years. Light steel infill walls consists of C sections that span 2.4 to 5m between floors, and are designed to resist the wind pressures applied to the building façade and also to support the weight of the particular type of cladding system that is attached to them.

Benefits of light steel infill walls

The benefits of light steel infill walls are:

- Rapid construction system with an installation rate of over 50m²; per day
- Less materials handling on site than for brick and block-work
- Tall walls up to 5m and high wind pressures up to 2kN/m²;
- Ability to create large windows without wind posts
- Minimum material use (less than 5kg/m²; of steel in the façade)
- No on-site waste when C sections are delivered cut to length
- Light weight, which reduces the loads on the supporting structure

- Can be used for a wide range of cladding systems
- Can be dismantled in building extensions etc. and re-used



Figure 3.7 Typical light steel infill walls in a steel framed building

Steel and glass facades

Steel and glass are synergistic materials and are often used in facades and roofs of multi-storey buildings. The glass panels are generally supported by separate vertical steel elements to the main structural frame of the building that may be internal or external to the building. Stainless steel and hollow steel sections are often used in combination with glass.

Building performance

The glazed walling system is designed to provide the necessary functions of weather-tightness, natural lighting and shading, and thermal insulation. The silicone joints between the glazing panels are therefore very important to these functions. The main issue in the design of glazing systems is the avoidance of high solar gain, particularly on south facing facades, and also the heat loss due to the relatively high U-value of double or even triple glazing systems that adds to heat loss. A modern argon filled double glazing system (combined with low emissivity glass) has a U-value of 1.6 to 1.8 W/m²K, and this can reduce to 0.8 to 0.9 W/m²K for high quality triple glazing systems.

Large glazing panels are usually supported by vertical mullions or in some cases, glass fins. The glass is designed to accommodate the movement of its support system due to the wind and other forces acting on it. Typical deflection limits under the design wind loads are defined by the Institution of Structural Engineers^[3]

The glass elements may also be combined with louvres and bonded photovoltaic panels.

Double-skin façade systems

Double-skin facades originated in northern Europe and are formed of two glass walls separated by a cavity on south-facing elevations and are used to reduce the energy consumption of a building. Shading devices are usually mounted in the cavity and, depending on its width, walkways for access and cleaning. This type of façade has many variations in arrangement.

The variations relate to:

- Width of cavity;
- Type of glazing (single/insulating) for the inner or outer skins;
- Division of the cavity horizontally and vertically;
- Natural or mechanical ventilation of the cavity;
- Integration of the cavity ventilation with the building services;
- use of opening windows into the cavity.

The two skins form a thermal buffer zone and passive solar gains in the cavity reduce heat losses in winter. If the cavity ventilation is integrated with the building services, air heated by the sun can be introduced into the building, providing good natural ventilation and reducing the heating load. In summer, the heated air in the cavity is ventilated to the outside, conducting heat away from the building and reducing the cooling load. The design of the double skin façade must be integrated with the design of the building services to be most effective.

The watermark logo of Assumption University of Thailand is a circular emblem. It features a central shield with a blue field containing a white star and a red field containing a white cross. The shield is flanked by two golden lions. Above the shield is a crown. The shield is surrounded by a wreath of golden leaves. The text 'ASSUMPTION UNIVERSITY OF THAILAND' is written in a circular path around the top of the emblem. Below the shield, there is a banner with the text 'BROTHERS of ST GABRIEL' and another banner with 'LABOR OMNIA VINCIT'. At the bottom of the emblem, it says 'SINCE 1969' and 'มหาวิทยาลัยอัสสัมชัญ' in Thai script.

Chapter 4: Data Synthesis and Programming

4.1 Case Studies area
requirement and percentage (or
standard data)

4.2 Estimated project area
requirement

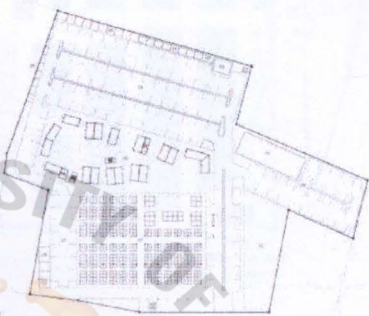
4.3 Adjacency Studies
(Adjacency Matrix and Bubble
Diagram)

4.4 Functional Diagram and
Proposed Zoning

Chapter 4: Data Synthesis and Programming

4.1 Case Studies area requirement and percentage (or standard data)

4.1.1Function and Area requirement : Case study 1 Food Villa



Function and Area requirement : Case study 1 Food Villa		
Function	Area (sq.m.)	Area (%)
Supermarket	150	4.97
Retail area	937.5	31.1
Market area	1,500	49.77
Kiosk area	125	4.14
Office	20	0.66
W.C.	16	0.53
Garbage	15	0.49
Drive - thru	250	8.29
Total	3,013.5	100

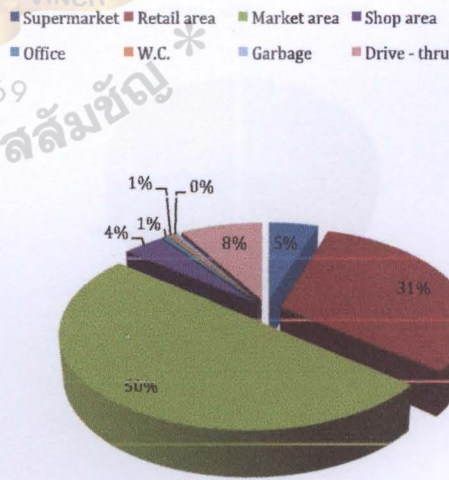
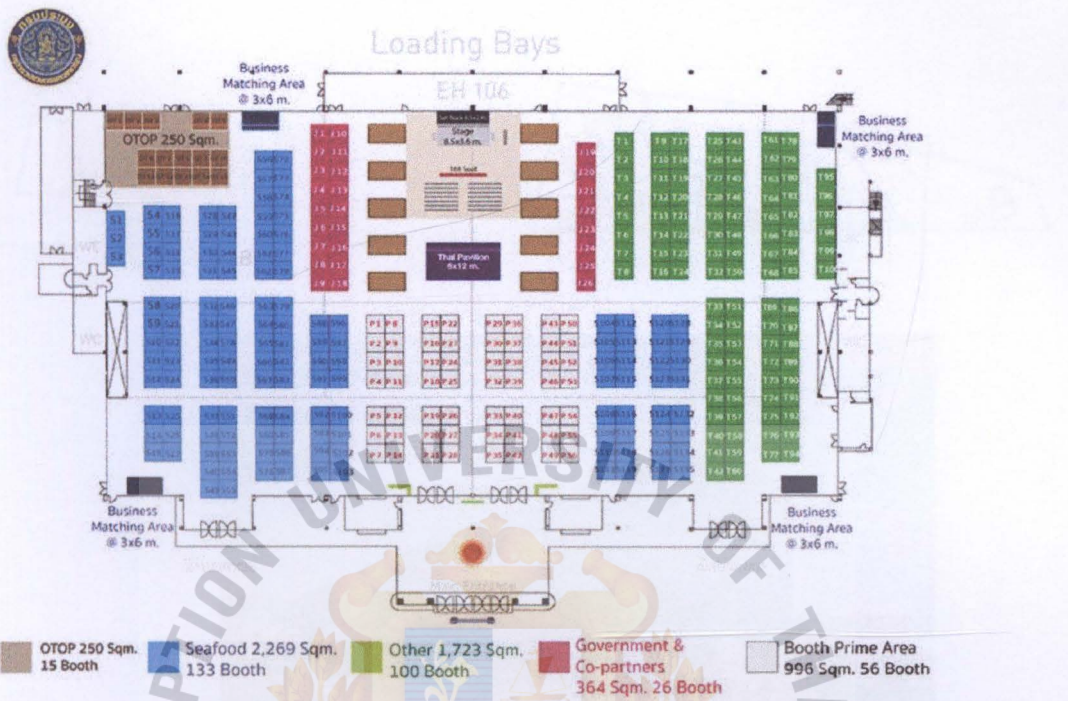


Table 4.1 Function and Area requirement : Case study 1 Food Villa

4.1.2 Function and Area requirement : Case study 2 Asean Fishery and Aquaculture



Function and Area requirement : Case study 2 Asean Fishery and Aquaculture Expo		
Function	Area (sq.m.)	Area (%)
OTOF booth area	250	4.40
Seafood booth area	2,269	39.98
Government & co - partners	364	6.41
Booth Prime Area	996	17.55
Business Matching area	72	1.26
Other booth	1,723	30.36
Total	5,674	100

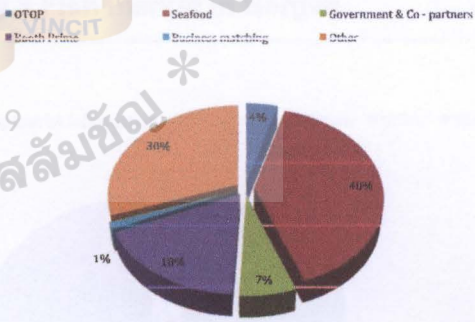


Table 4.2 Function and Area requirement : Case study 2 Asean Fishery and Aquaculture Expo

4.1.3 Function and Area requirement : Case study 3 Fish market in Bergen



Function and Area requirement : Case study 3 Fish market in Bergen		
Function	Area* (sq.m.)	Area (%)
Market hall	750	39.16
The tourist information	300	15.66
Knowledge exhibition	100	5.22
Office	750	39.16
W.C.	15	0.78
Total	1,915	100

A 3D pie chart illustrating the area distribution of the Fish Market in Bergen. The chart is divided into five segments: Market hall (39%), The tourist information (16%), Knowledge exhibition (5%), Office (39%), and W.C. (1%). A legend at the top identifies the colors for each function: Market hall (blue), The tourist information (red), Knowledge exhibition (green), Office (purple), and W.C. (dark blue).

Function	Area (sq.m.)	Area (%)
Market hall	750	39.16
The tourist information	300	15.66
Knowledge exhibition	100	5.22
Office	750	39.16
W.C.	15	0.78

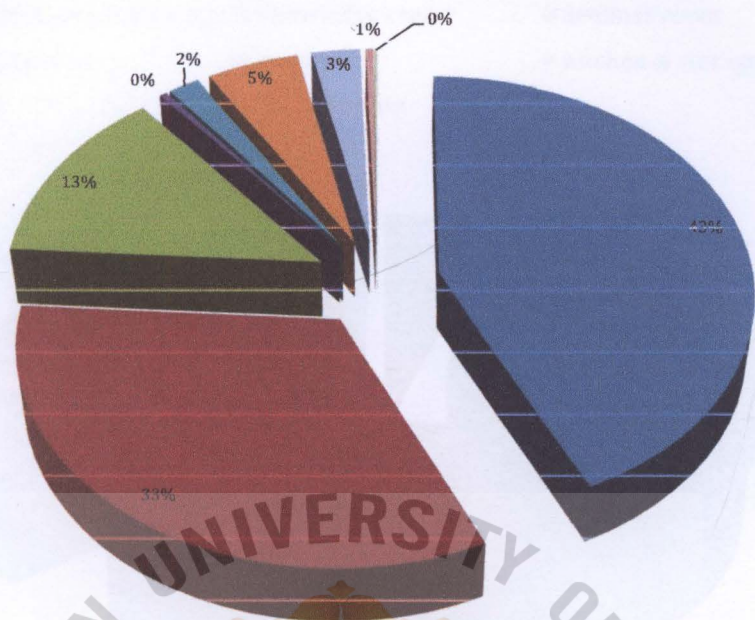
Table 4.3 Function and Area requirement : Case study 3 Fish market in Bergen

4.1.4 Compared case Studies area requirement (%) and Project area requirement

Function	Case study 1 : Food Villa (Area in %)	Case study 2 : Asean Fishery and Aquaculture Expo (Area in %)	Case study 3 : Fish market in Bergen (Area in %)	Project's average area allowance (Area in %)	Project's average area allowance (Area in sq.m)
Sell area	89.98	-	39.16	43.03	1965
Exhibition area	-	98.7	-	32.9	1503
Office	0.66	-	39.16	13.27	606
Business matching area	-	1.26	-	0.42	19.2
Knowledge area	-	-	5.22	1.74	79.44
Information area	-	-	15.66	5.22	238.32
Drive - thru	8.29	-	-	2.76	126.01
W.C.	0.53	-	0.78	0.43	19.63
Garbage	0.49	-	-	0.16	7.3
Total Percentage	100	100	100	100	
Reference : Project square meter	3,013.5	5,674	1,915	-	4,565.6

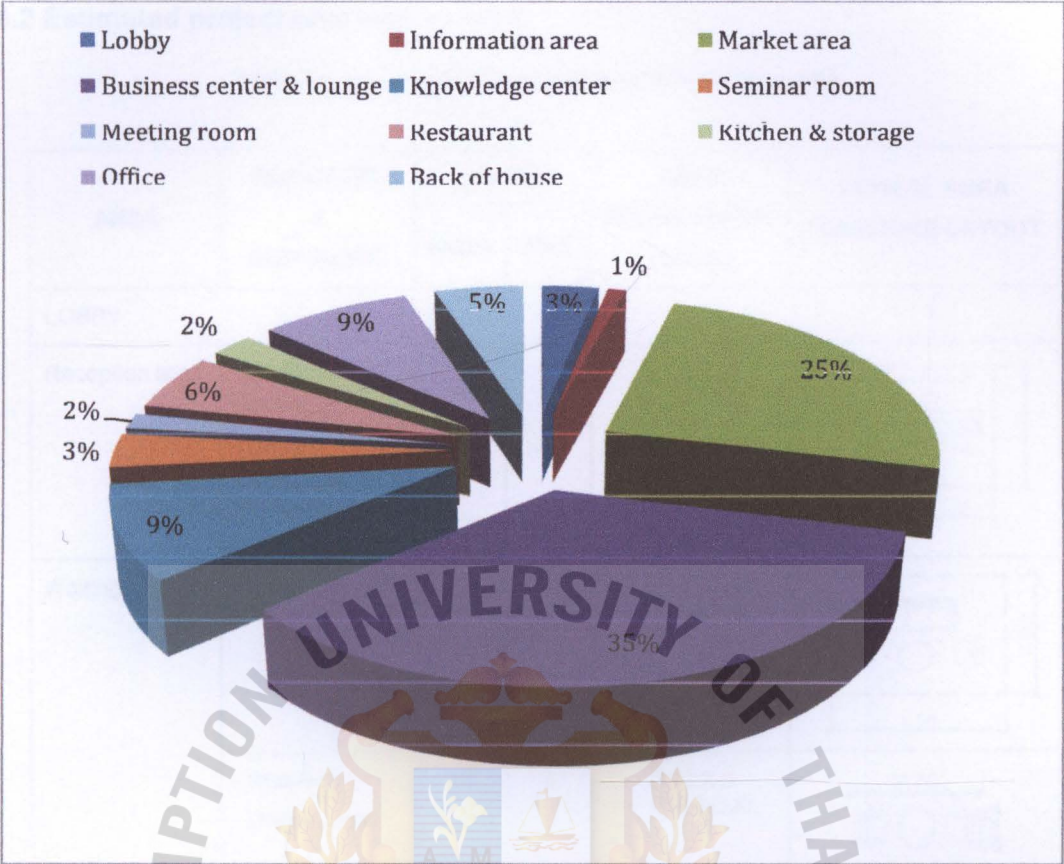
Table 4.4 Compared case Studies area requirement (%) and Project area requirement

■ Sell area ■ Exhibition area ■ Office ■ Business matching ■ Knowledge area
■ Information area ■ Drive - Thru ■ W.C. ■ Garbage



Project's average area allowance

FUNCTION	AREA (SQ.M.)	AREA (%)
Lobby area	139	3.19
Information area	44.85	1.03
Market area	1,072	24.65
Business center & lounge	1516.15	34.87
Knowledge center	412.39	9.48
Seminar room	150.8	3.46
Meeting room	69.96	1.60
Restaurant	248.46	5.71
Kitchen & storage	105.69	2.43
Office	369.36	8.49
Back of house	219.23	5.04
TOTAL	4,347.89	100



Seafood exports in percentage (Fresh, Frozen, Dried)				
Products	Exports (ton)	Exports (%)		
Fresh, Frozen	25,642	31.17	<p>Legend:</p> <ul style="list-style-type: none">Fresh, FrozenSeafood cannedSeafood processing	
Seafood canned	46,008	55.93		
Seafood processing	10,608	12.89		
Total	82,257	100		

Table 4.5 Seafood exports in percentage (Fresh, Frozen, Dried)

4.2 Estimated project area requirement

Table 4.6 Area requirement of Lobby and information area

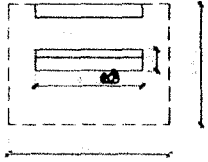
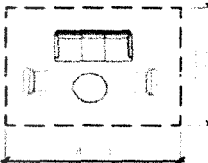
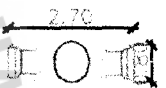
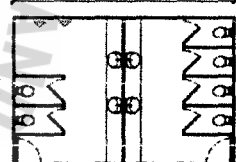
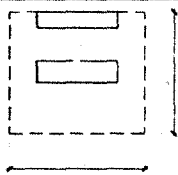

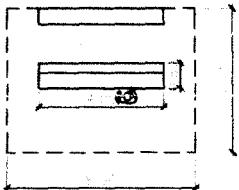
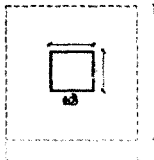
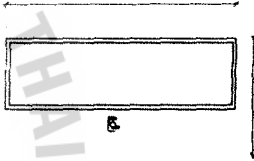



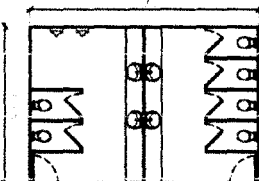
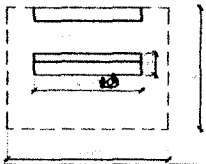
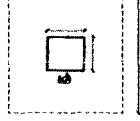
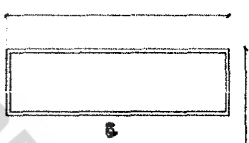



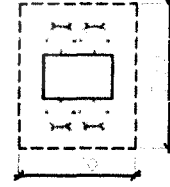
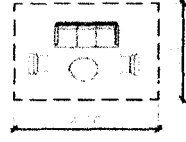

AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
LOBBY					
Reception area	<ul style="list-style-type: none">- Reception counter- Chair- Computer- Telephone	2	1	27 SQ.M.	
Waiting area	- Sofa set	10	2	13.5 X 2 = 27 SQ.M.	
	<ul style="list-style-type: none">- Armchair- Coffee table	10	5	2.16 X 5 = 10.8 SQ.M.	
Restroom	<ul style="list-style-type: none">- Sink- Water closet	8	1	42.13 SQ.M.	
TOTAL FURNITURE AREA				106.93 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				32.07 SQ.M.	
TOTAL AREA REQUIREMENT				139 SQ.M.	
INFORMATION AREA					
Information	<ul style="list-style-type: none">- Information counter- Chair- Computer	1	1	22.5 SQ.M.	
	- Brochure counter		1	12 SQ.M.	
TOTAL FURNITURE AREA				34.5 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				10.35 SQ.M.	
TOTAL AREA REQUIREMENT				44.85 SQ.M.	

Table 4.7 Area requirement of Market area

AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
MARKET AREA					
Reception area	- Reception counter - Telephone	1	1	27 SQ.M.	
Sell area	- Seafood display		6	36 X 6 = 216 SQ.M.	
	- Alive aqua		3	50 X 3 = 150 SQ.M.	
	- Booth		20	15 X 20 = 300 SQ.M.	
Dining area	- 4 person dining table	12	3	9.9 X 3 = 29.7 SQ.M.	
	- 2 person dining table	20	10	6 X 10 = 60 SQ.M.	
Restroom	- Sink - Water closet	8	1	42.13 SQ.M.	
TOTAL FURNITURE AREA				824.83 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				247.44 SQ.M.	
TOTAL AREA REQUIREMENT				1,072.27 SQ.M.	

AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
BUSINESS CENTER & LOUNGE					
Reception	- Reception counter - Telephone	1	1	27 SQ.M.	
Shop	- Seafood display		2	36 X 2 = 72 SQ.M.	
	- Alive aqua		5	50 X 5 = 250 SQ.M.	
	- Booth		40	15 X 40 = 600 SQ.M.	
Dining area	- 4 person dining table	12	3	9.9 X 3 = 29.7 SQ.M.	
	- 2 person dining table	20	10	6 X 10 = 60 SQ.M.	
Meeting area	- Meeting table	4	4	8.91 X 4 = 35.64 SQ.M.	
Business lounge	- Armchair set	5	2	13.5 X 2 = 27 SQ.M.	
	- 2 person armchair set	2	5	2.16 X 5 = 10.8 SQ.M.	

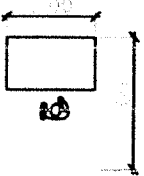
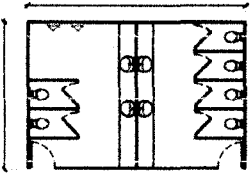
	- Food and Beverage bar		2	6 X 2 = 12 SQ.M.	
Restroom	- Sink - Water closet	8	1	42.13 SQ.M.	
TOTAL FURNITURE AREA				1,166.27 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				349.88 SQ.M.	
TOTAL AREA REQUIREMENT				1,516.15 SQ.M.	

Table 4.8 Area requirement of Business center and lounge



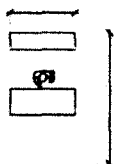
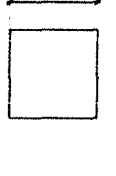
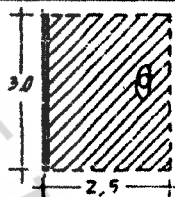
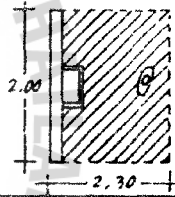
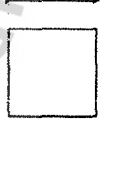
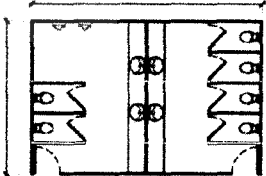
AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
Knowledge Center					
Reception	- Reception counter - Chair - Computer - Telephone	1	1	8 SQ.M.	
Learning area	- Booth	2	5	15 X 5 = 75 SQ.M.	
	- Wall board		5	7.5 X 5 = 37.5 SQ.M.	
Knowledge area	- Projector		1	4.6 SQ.M.	
	- Booth	2	10	15 X 10 = 150 SQ.M.	
Restroom	- Sink - Water closet	8	1	42.13 SQ.M.	
TOTAL FURNITURE AREA				317.23 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				95.16 SQ.M.	
TOTAL AREA REQUIREMENT				412.39 SQ.M.	

Table 4.9 Area requirement of Knowledge area

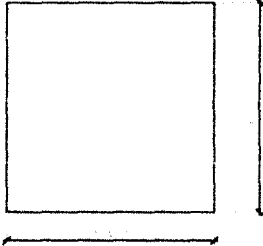
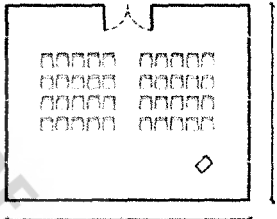
AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
SEMINAR ROOM					
Waiting		20		36 SQ.M.	
Seminar area	- Chair - Podium - Food & beverage bar	40	40	80 SQ.M.	
TOTAL FURNITURE AREA				116 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				34.8 SQ.M.	
TOTAL AREA REQUIREMENT				150.8 SQ.M.	

Table 4.10 Area requirement of Seminar room

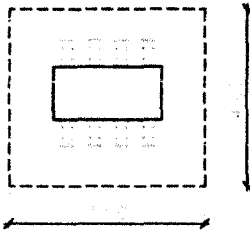
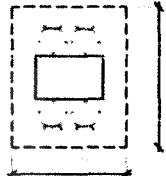
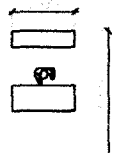
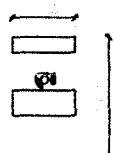
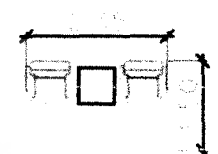
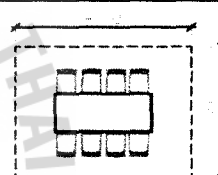
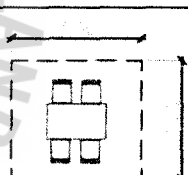
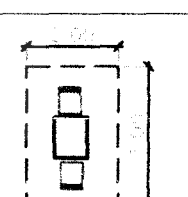
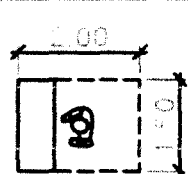
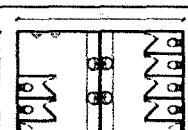
AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
MEETING ROOM					
Meeting room	- Meeting table	8	2	18 X 2 = 36 SQ.M.	
	- Meeting table	4	2	8.91 X 2 = 17.82 SQ.M.	
TOTAL FURNITURE AREA				53.82 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				16.14 SQ.M.	
TOTAL AREA REQUIREMENT				69.96 SQ.M.	

Table 4.11 Area requirement of Meeting room

AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
Restaurant					
Reception area	- Reception counter	1	1	8 SQ.M.	
	- Cashier counter	1	1	8 SQ.M.	
Waiting area	- Armchair - Coffee table	10	5	3.5 X 5 = 17.5 SQ.M.	
Dining area	- 8 persons dining table	8	2	15.3 X 2 = 30 SQ.M.	
	- 4 persons dining table	4	5	9.9 X 5 = 49.5 SQ.M.	
	- 2 persons dining table	2	5	6 X 5 = 30 SQ.M.	
Service station	- Counter cabinet - Tableware	4	2	3 X 2 = 6 SQ.M.	
Restroom	- Sink - Water closet	8	1	42.13 SQ.M.	

TOTAL FURNITURE AREA	191.13 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%	57.33 SQ.M.	
TOTAL AREA REQUIREMENT	248.46 SQ.M.	

Table 4.12 Area requirement of Restaurant



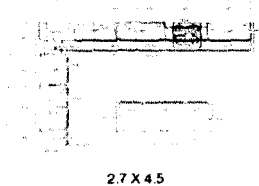
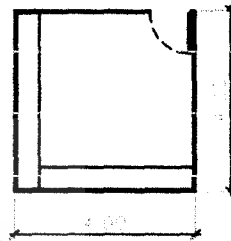
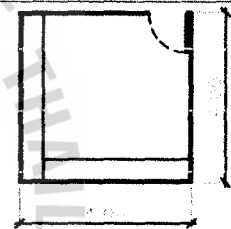
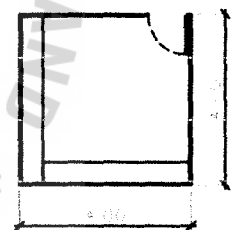
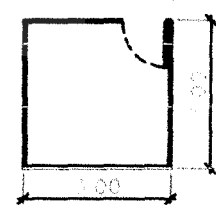
AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
KITCHEN AND STORAGE					
Kitchen	- Preparation area - Sink - Refrigerator - Cooking area	5	2	12.15 X 2 = 24.3 SQ.M.	 2.7 X 4.5
	- Cold storage		1	16 SQ.M.	
	- Storage		1	16 SQ.M.	
Washing room	- Washing machine - Sink		1	16 SQ.M.	
Garbage room			1	9 SQ.M.	
TOTAL FURNITURE AREA				81.3 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				24.39 SQ.M.	
TOTAL AREA REQUIREMENT				105.69 SQ.M.	

Table 4.13 Area requirement of Kitchen and storage

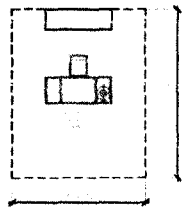
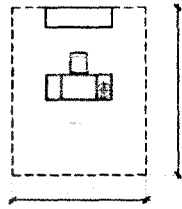
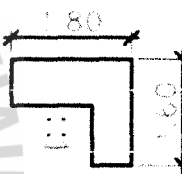
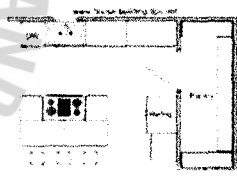
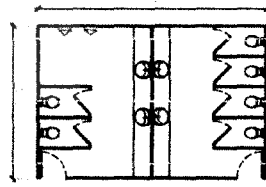
AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
OFFICE					
- Founder room	- Working table - Chair - Computer - Telephone - Cabinet	1	1	20 SQ.M.	
- Manager room	- Working table - Chair - Computer - Telephone - Cabinet	6	6	20 X 6 = 120 SQ.M.	
- Working area	- Working table - Chair - Computer - Telephone - Cabinet	25	25	2.88 X 25 = 72 SQ.M.	
- Pantry	- Sink - Microwave - Refrigerator - Table set		1	30 SQ.M.	
Restroom	- Sink - Water closet	8	1	42.13 SQ.M.	
TOTAL FURNITURE AREA				284.13 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				85.23 SQ.M.	
TOTAL AREA REQUIREMENT				369.36 SQ.M.	

Table 4.12 Area requirement of Office

AREA	FURNITURE & EQUIPMENT	NO. OF		AREA REQUIREMENT (SQ.M.)	TYPICAL AREA FURNITURE LAYOUT
		USER	UNIT		
STAFF AND HOUSEKEEPING (BACK OF HOUSE)					
- Clock in - out	- Clock in – out machine		1	2 SQ.M.	
- Locker room	- Locker		1	6.51 SQ.M.	
- Staff / housekeeper room	- Table - Chair		2	36 X 2 = 72 SQ.M.	
- Storage	- Cleaning equipment - Shelves		1	16 SQ.M.	
- Pantry	- Sink - Microwave - Refrigerator - Table set		1	30 SQ.M.	
Restroom	- Sink - Water closet	8	1	42.13 SQ.M.	
TOTAL FURNITURE AREA				168.64 SQ.M.	
SUGGESTED CIRCULATION FOR AREA 30%				50.59 SQ.M.	
TOTAL AREA REQUIREMENT				219.23 SQ.M.	

Table 4.12 Area requirement of Back of house

Project Area Requirement

FUNCTION	AREA (SQ.M.)	AREA (%)
Lobby area	139	3.19
Information area	44.85	1.03
Market area	1,072	24.65
Business center & lounge	1516.15	34.87
Knowledge center	412.39	9.48
Seminar room	150.8	3.46
Meeting room	69.96	1.60
Restaurant	248.46	5.71
Kitchen & storage	105.69	2.43
Office	369.36	8.49
Back of house	219.23	5.04
TOTAL	4,347.89	100

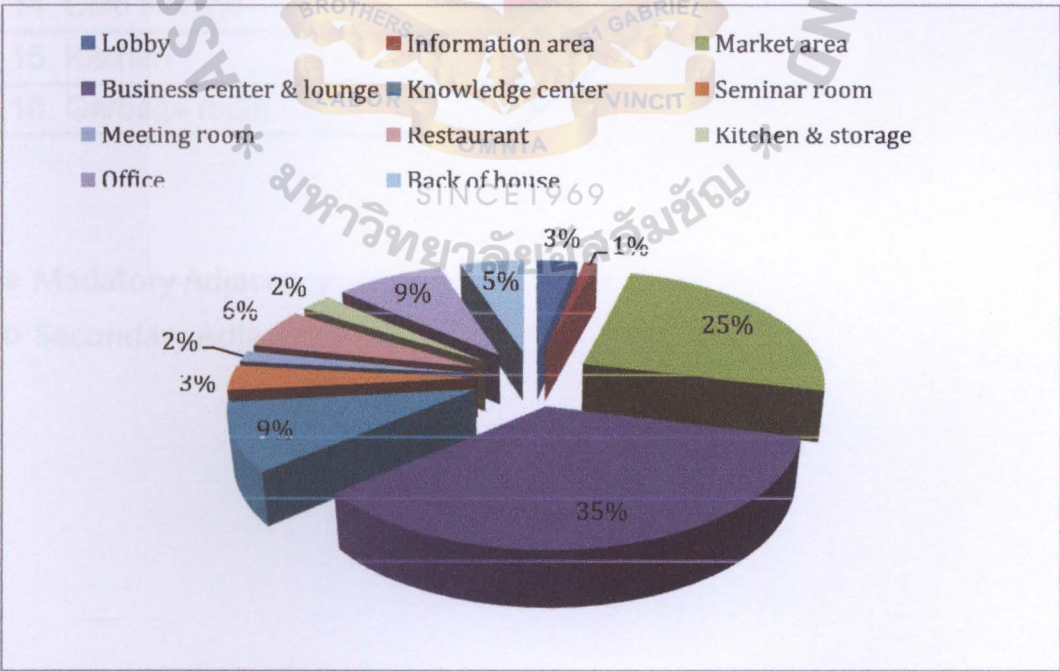


Table 4.13 Project Area Requirement

4.3 Adjacency Studies (Adjacency Matrix and Bubble Diagram)

4.3.1 Matrix Adjacency

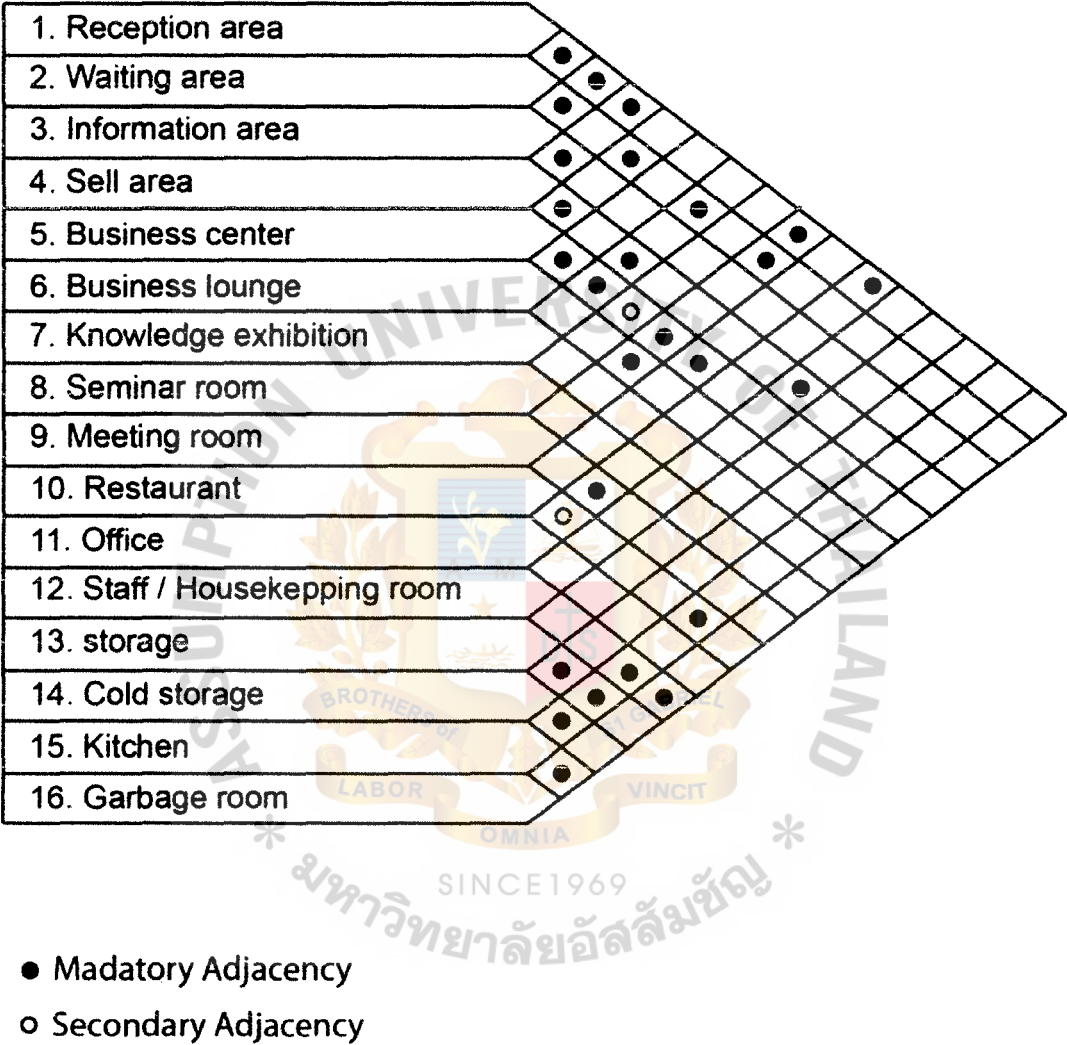


Figure 4.1 Matrix Adjacency of overall relationships

4.3.2 Bubble Diagram

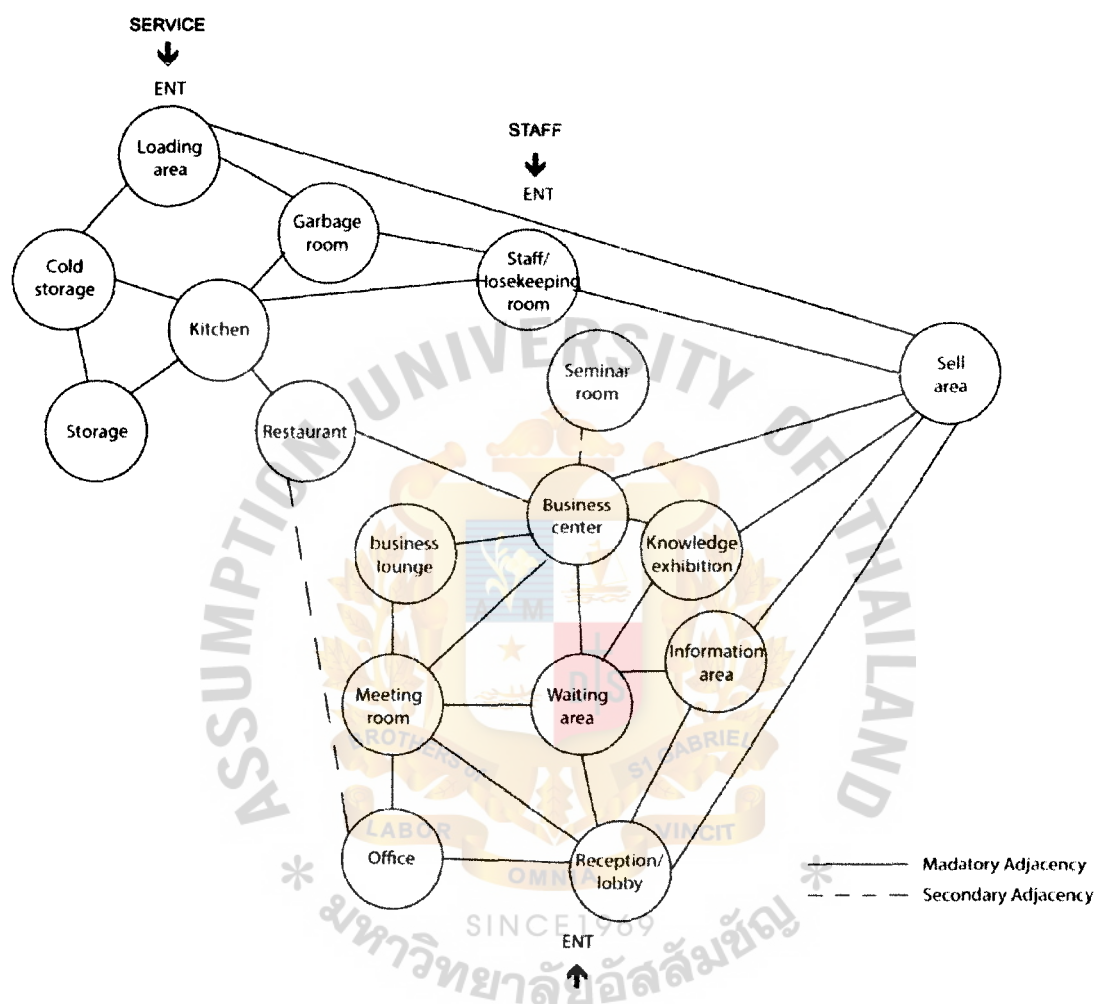


Figure 4.2 Bubble Diagram of overall relationship

Bubble Diagram and Matrix Adjacency of Business Center

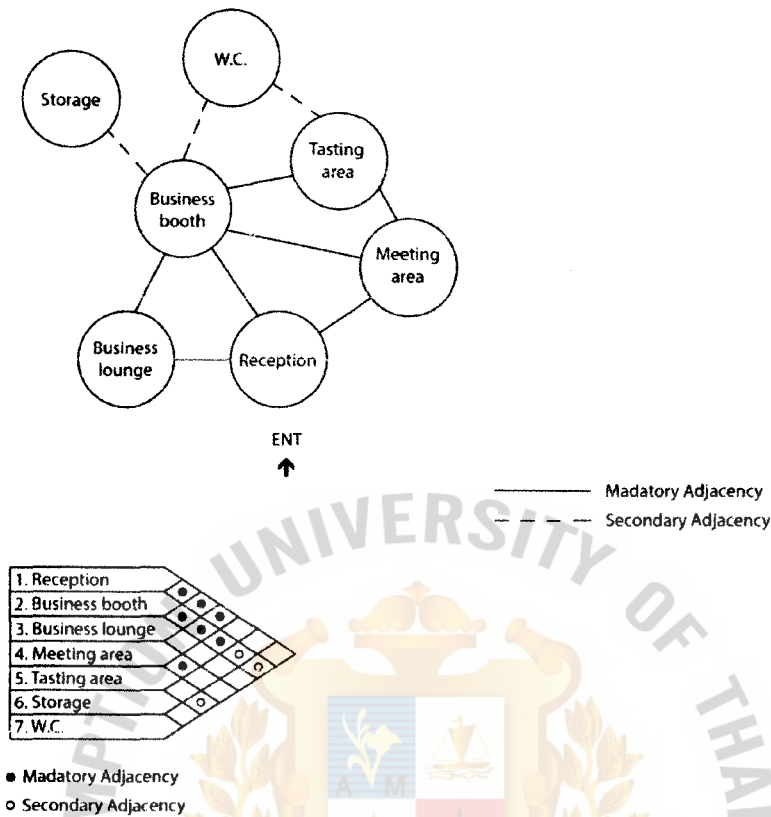


Figure 4.3 Bubble Diagram and matrix adjacency of Business center

Bubble Diagram and Matrix Adjacency of Market area

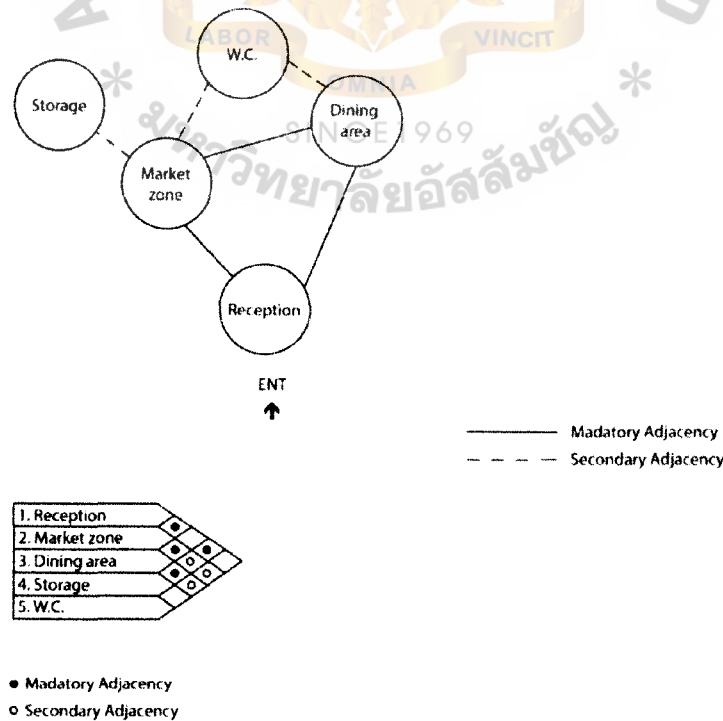


Figure 4.4 Bubble Diagram and matrix adjacency of Market area

Bubble Diagram and Matrix Adjacency of Restaurant

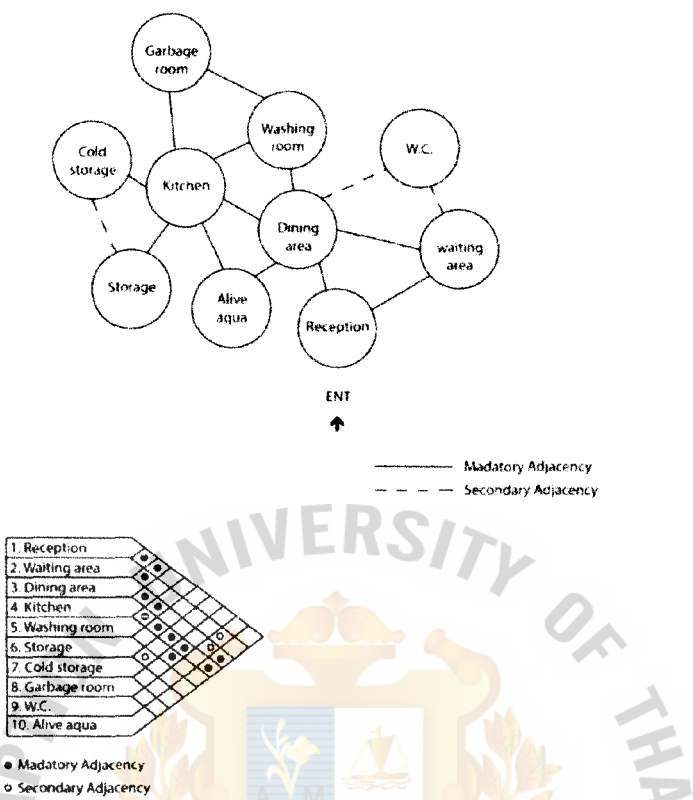


Figure 4.5 Bubble Diagram and matrix adjacency of restaurant

Bubble Diagram and Matrix Adjacency of Knowledge Center

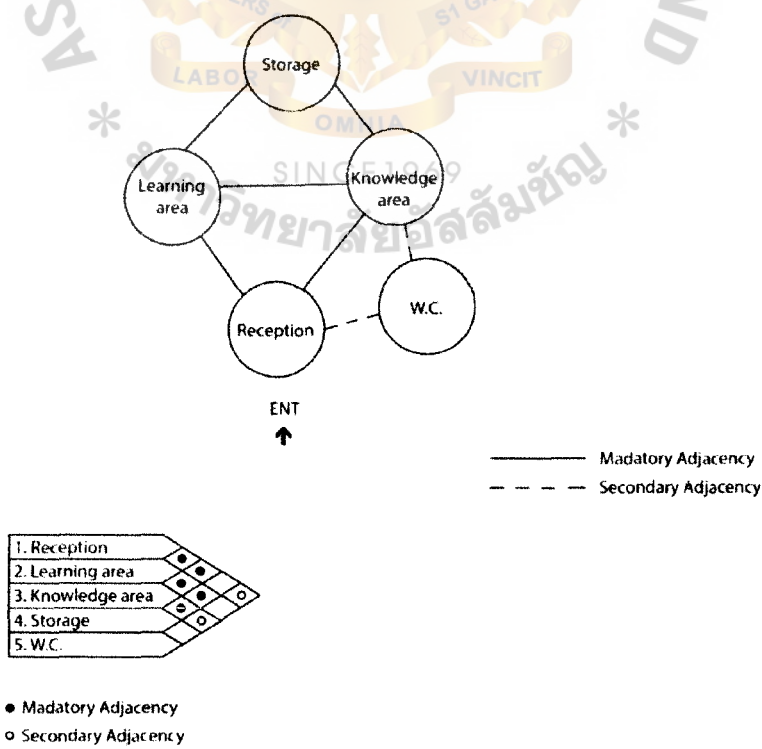


Figure 4.6 Bubble Diagram and matrix adjacency of Knowledge center

Bubble Diagram and Matrix Adjacency of Back of house

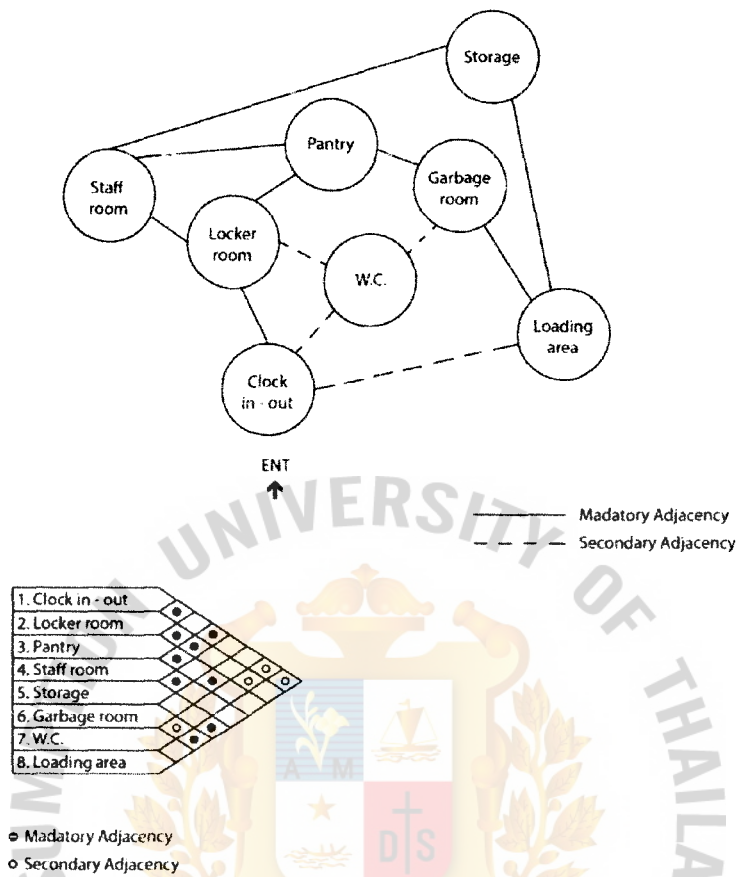
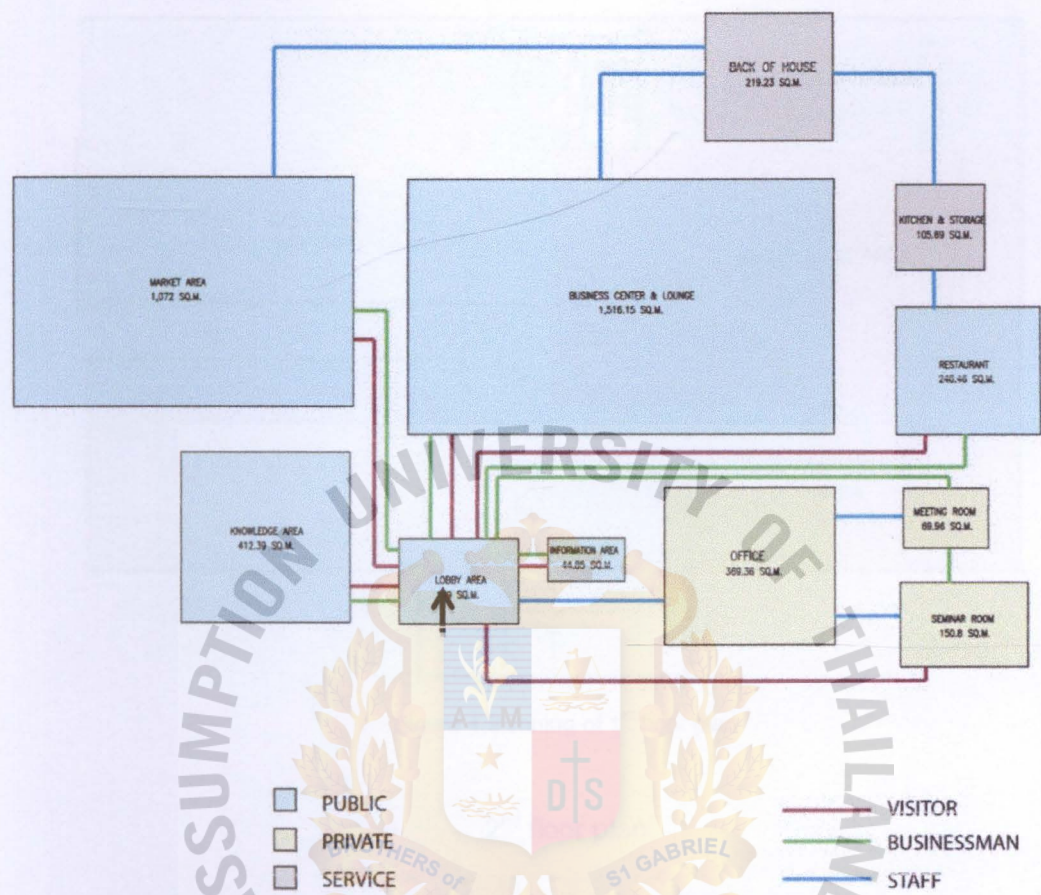


Figure 4.7 Bubble Diagram and matrix adjacency of Back of house

4.4 Functional Diagram and Proposed Zoning

4.4.1 Zoning



FUNCTION	AREA (SQ.M.)	AREA (%)
Lobby area	139	3.19
Information area	44.85	1.03
Market area	1,072	24.65
Business center & lounge	1516.15	34.87
Knowledge center	412.39	9.48
Seminar room	150.8	3.46
Meeting room	69.96	1.60
Restaurant	248.46	5.71
Kitchen & storage	105.69	2.43
Office	369.36	8.49
Back of house	219.23	5.04
TOTAL	4,347.89	100

4.4.2 Proposed Zoning

1st floor plan

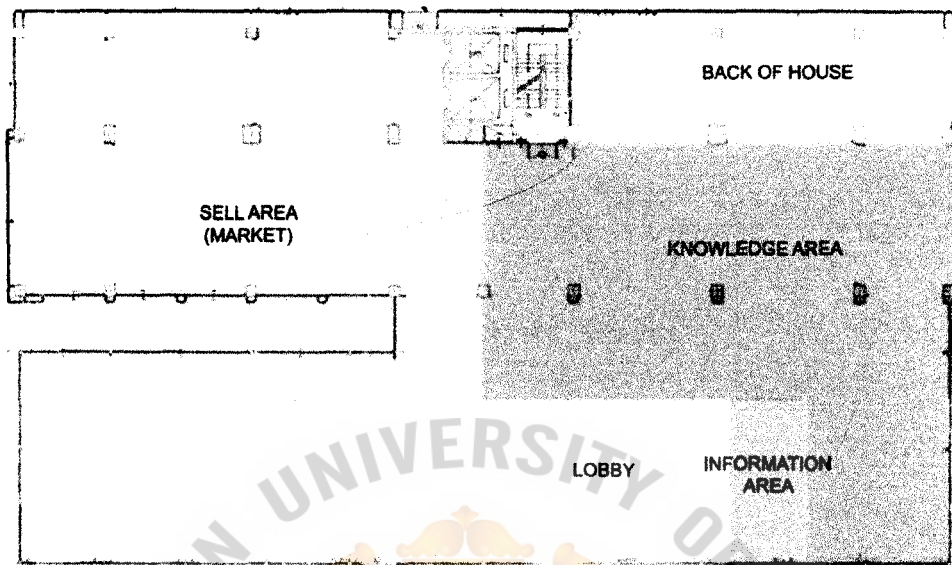


Figure 4.9 zoning of 1st floor plan

2nd floor plan

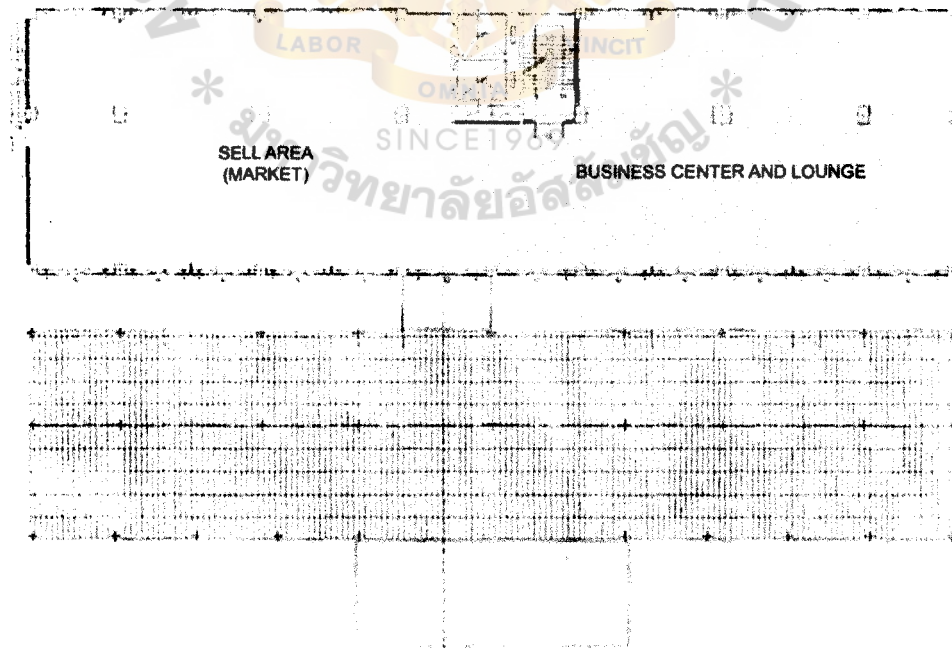


Figure 4.10 zoning of 2nd floor plan

3rd floor plan

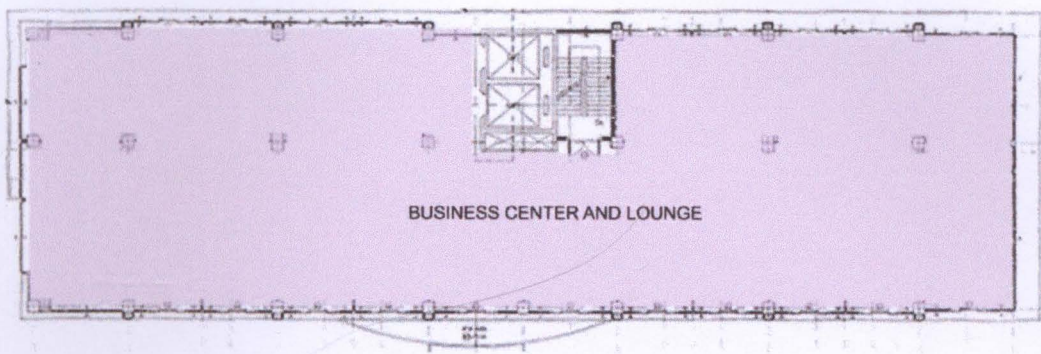


Figure 4.11 zoning of 3rd floor plan

4th floor plan

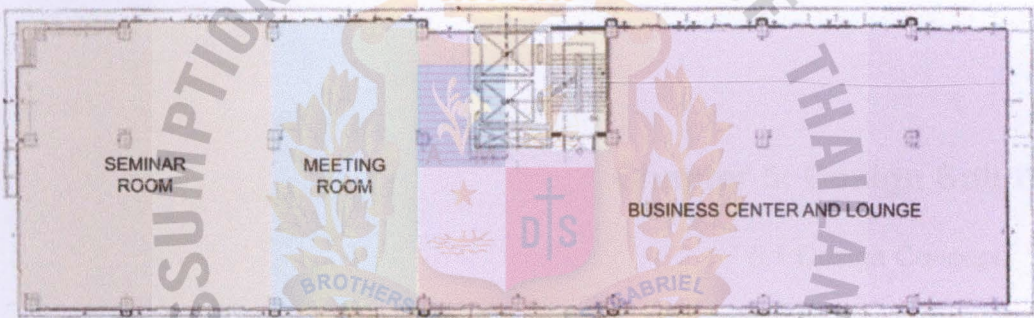


Figure 4.12 zoning of 4th floor plan

5th floor plan

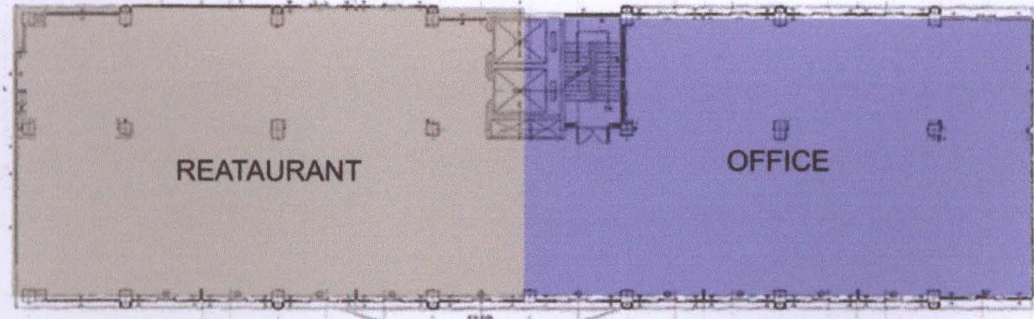


Figure 4.13 zoning of 5th floor plan



Chapter 5: Design Solution

5.1 Design Concept

5.2 Design Development

5.3 Thesis Final

Presentation

Chapter 5: Design Solution

5.1 Design Concept

5.1.1 Concept Statement

The main concept of the project is the center that represent about the concept which comes from three keywords that is; center, combine, and revolve. All of these words are about the connection of people, life in the sea, and business. It is a cycle of fishery and cultures that want to present to the concept of center by using the main idea from group of the fish that always be together and go around in the same way. Moreover, the concept will tell about people who always come and have connection of fishery and businessman that will deal that business with each other. Therefore, not only the business that focused on this concept but will remained about cultures of fishery and life in the ocean.

5.1.2 Concept Design Method

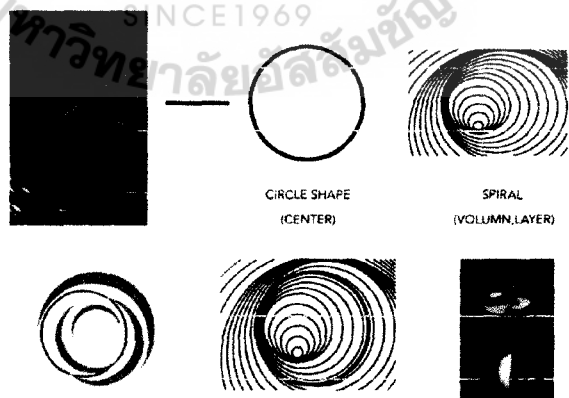


Figure 5.1 the concept approach

The concept method comes from three main keywords that mostiy using shape of circle that from the group of fish in the sea. And analyze the shape

and form of it to find the conceptual model that can easy to understand about the concept. The concept will telling a lot of meaning and represent the life of people, life under the sea, and also the color and shape can used for telling the mood and tone.

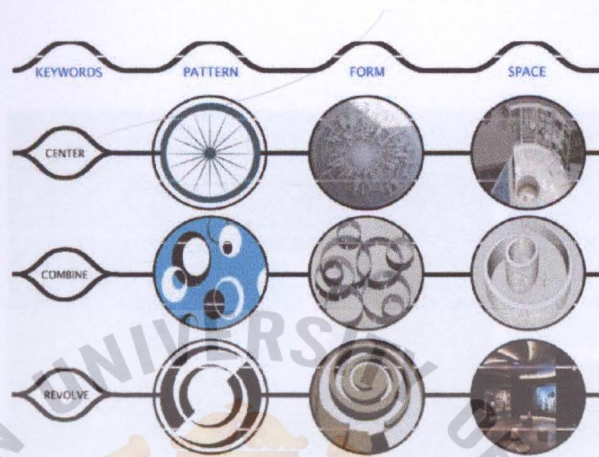


Figure 5.2 three main concepts

For the three main concepts will learn to the pattern, form, and space to be the reference of the idea and the way to present the main keywords. For all of these keywords, will going to help in design part in the sense of meaning.

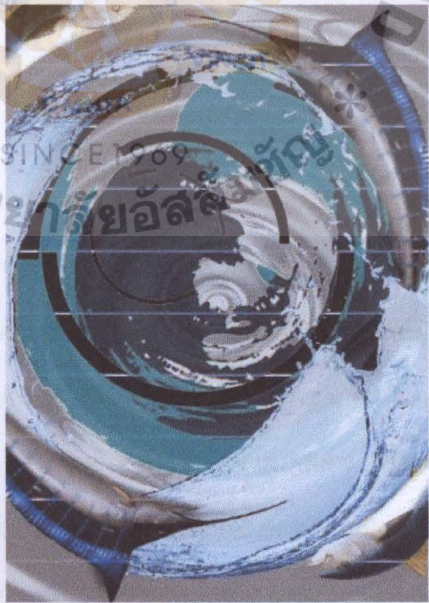


Figure 5.3 Collage concept

Moreover, the concept that transfer to be the collage to make better understanding and telling about the mood of the concept that

happening to the concept of center. For the collage model, there will be the picture and graphic that going to be the same way of movement and shape, which are mostly circle shape, to present the connection between the other things. And everything is in the position to move to the center of the collage.



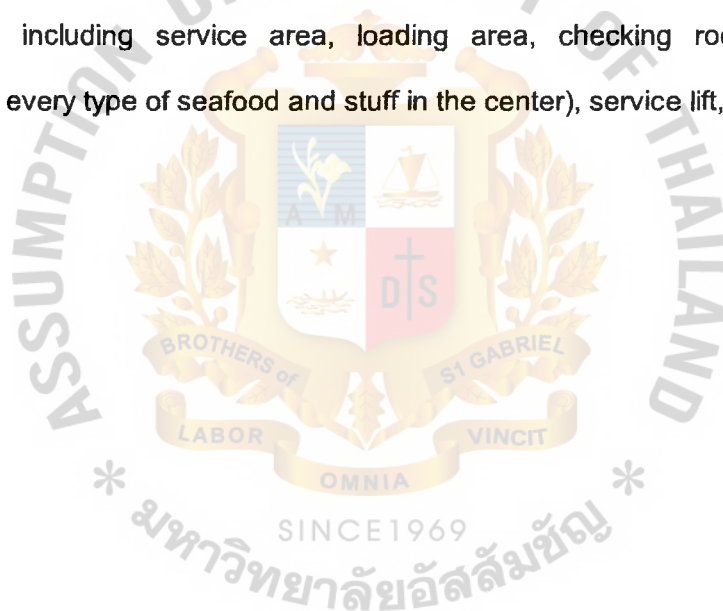
Figure 5.4 Conceptual model

The conceptual model is inspired from the movement of the group of fish and using the shape from the analyze above to create the conceptual model, by using the materials that can represent the mood and feeling of the movement, the color to represent and show the sense of sea to become the seafood business center. For the conceptual model will layover to each other and used different color to see it in new layer or volume of space and give all the shade and shadow to represent about the movement and space that combine in the center. Moreover, this conceptual model will apply to the planning to present the concept as a space layout.

5.2 Design Development

5.2.1 Planning Development

For the planning of the seafood business center will have total five floors, and have three entrances, one for main entrance and two for service entrances. For first floor plan will be the public zone for all people, at first, people entry to the building and walk pass the bridge to the reception, on the left side will be waiting area and fish and chips zone that people can spent their short time there with the view that present and give the feeling like, they are under the sea. For the right side will be fresh market zone connect to lift hall and dry market zone that people can buy and deal some business with the owner or fishery. And the back will be back of the house including service area, loading area, checking room, staff room, storage(for every type of seafood and stuff in the center), service lift, and M&E.



First floor Plan

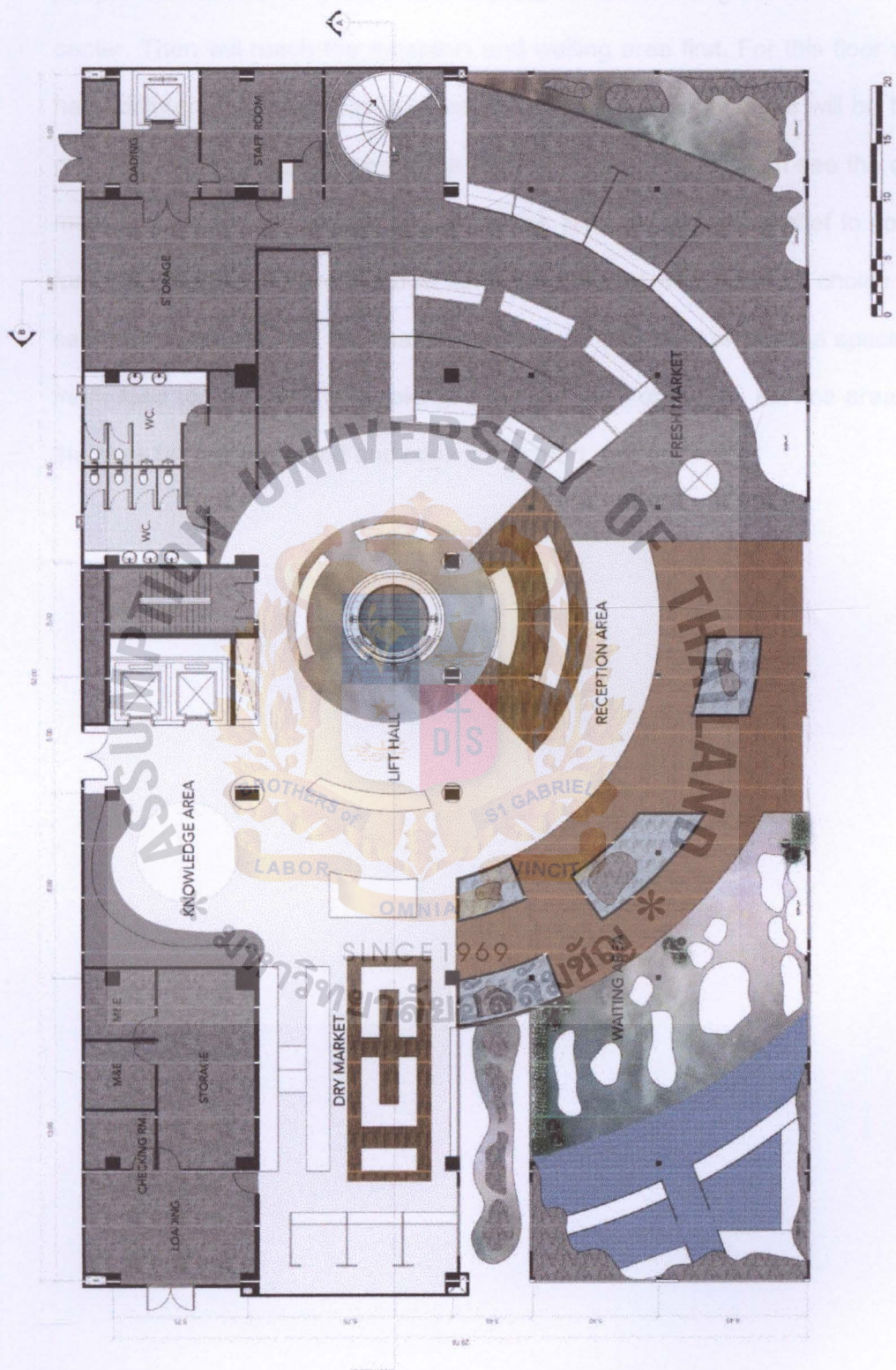


Figure 5.5 first floor plan

For the second floor plan, will be the area of gourmet market that people can access only from one elevator which is the glass circle in the center. Then will reach the reception and waiting area first. For this floor will have different types of gourmet foods, separated by the left zone will be the grilled seafood zone, bar, and some snack with the void that can see the dry market below. For the right zone will be the zone that have the chef to cook for customers and have various kinds of seafood and different choice of seafood. Moreover, this floor has the alive aqua zone that shows the specials fresh food to customer for cooking. And, the back of house, service area in the back for keep the food and cook some food.



Second floor plan

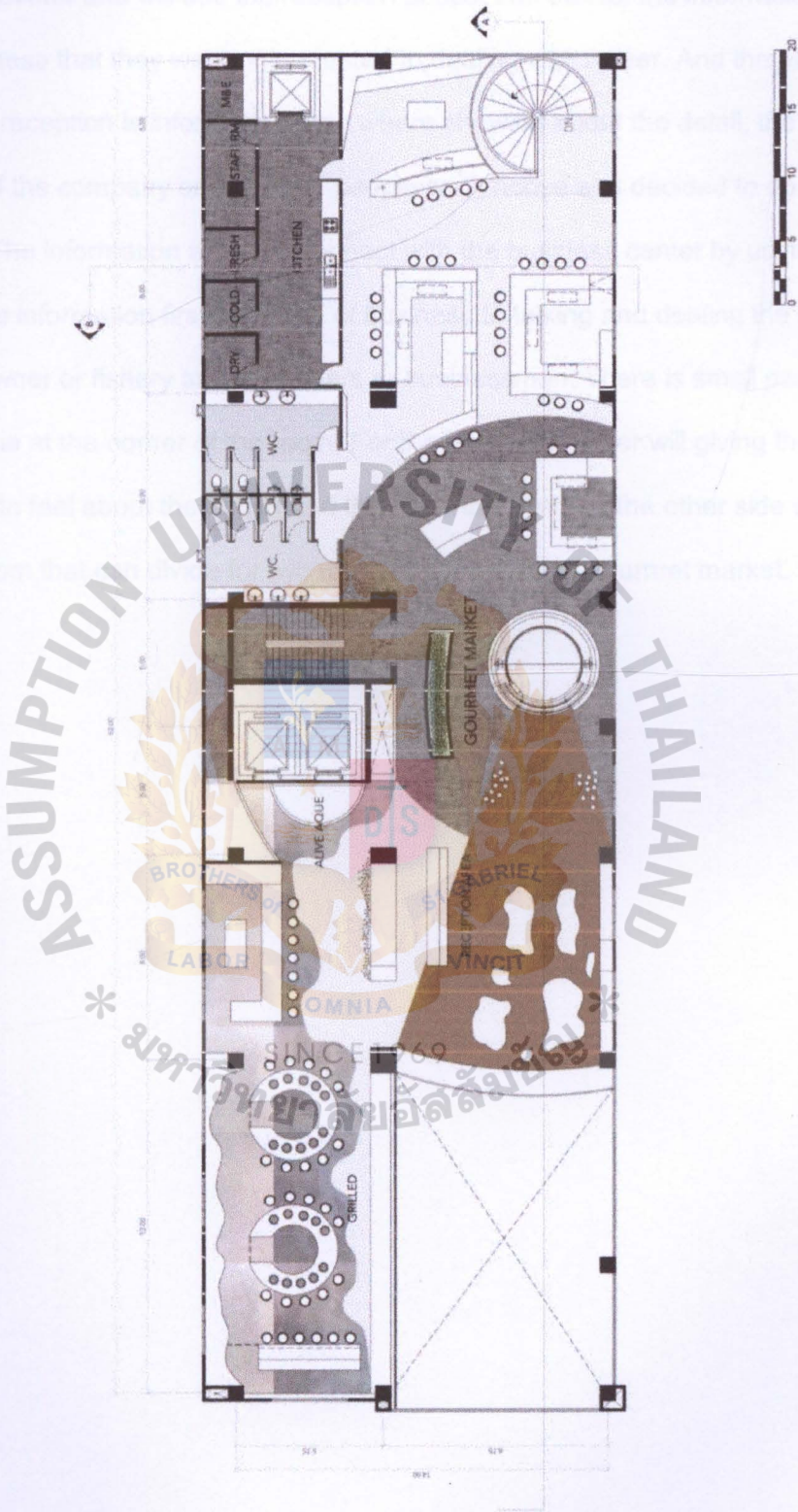


Figure 5.6 Second floor plan

For third floor plan, is business center and information area, can access by the back elevator and will see the reception people can ask for the information and some business that they want or interested to dealing with owner. And the area that next to the reception is information area where showing about the detail, the business of the company or owner for people can choose and decided to do the business. The information area will connect with the business center by using the route to see information first and area of business to talking and dealing the business between owner or fishery and customers or businessman. There is small pantry to serve people at the corner of the room. For the business center will giving the mood and sense to feel about the beach and the materials. And for the other side will be meeting room that can divide for two room with the view of gourmet market.



Third floor plan

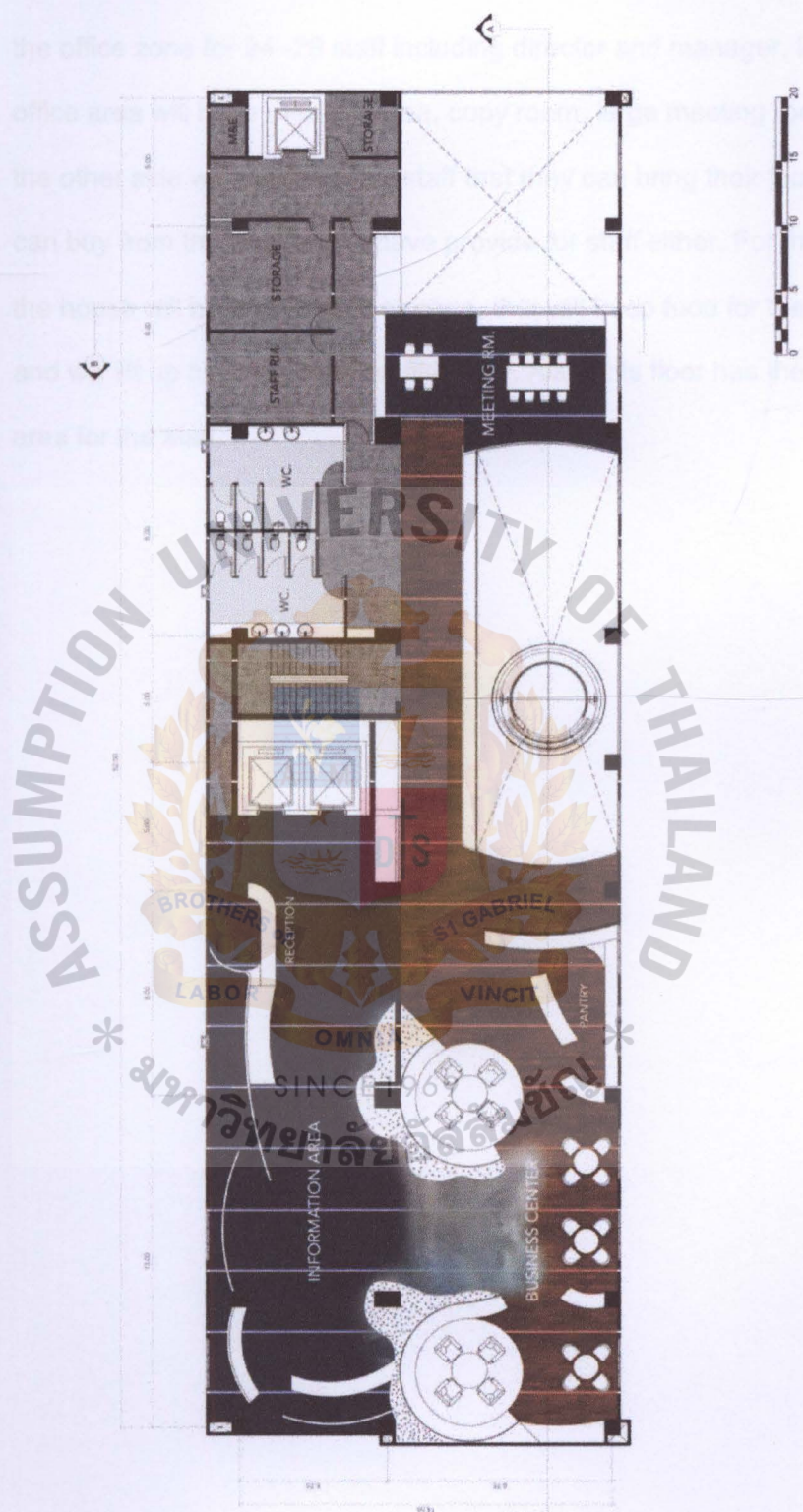


Figure 5.7 Third floor plan

For the fourth floor plan, this floor is only for the staff, will separate in the office zone for 24 -26 staff including director and manager. In the office area will have meeting area, copy room, large meeting room. And the other side will be pantry for staff that they can bring their food to eat or can buy from this center that have provide for staff either. For the back of the house will be the kitchen, storage, that will keep food for the fifth floor and will lift up to the kitchen on fifth floor. Also, this floor has the relaxing area for the staff.



Fourth floor plan

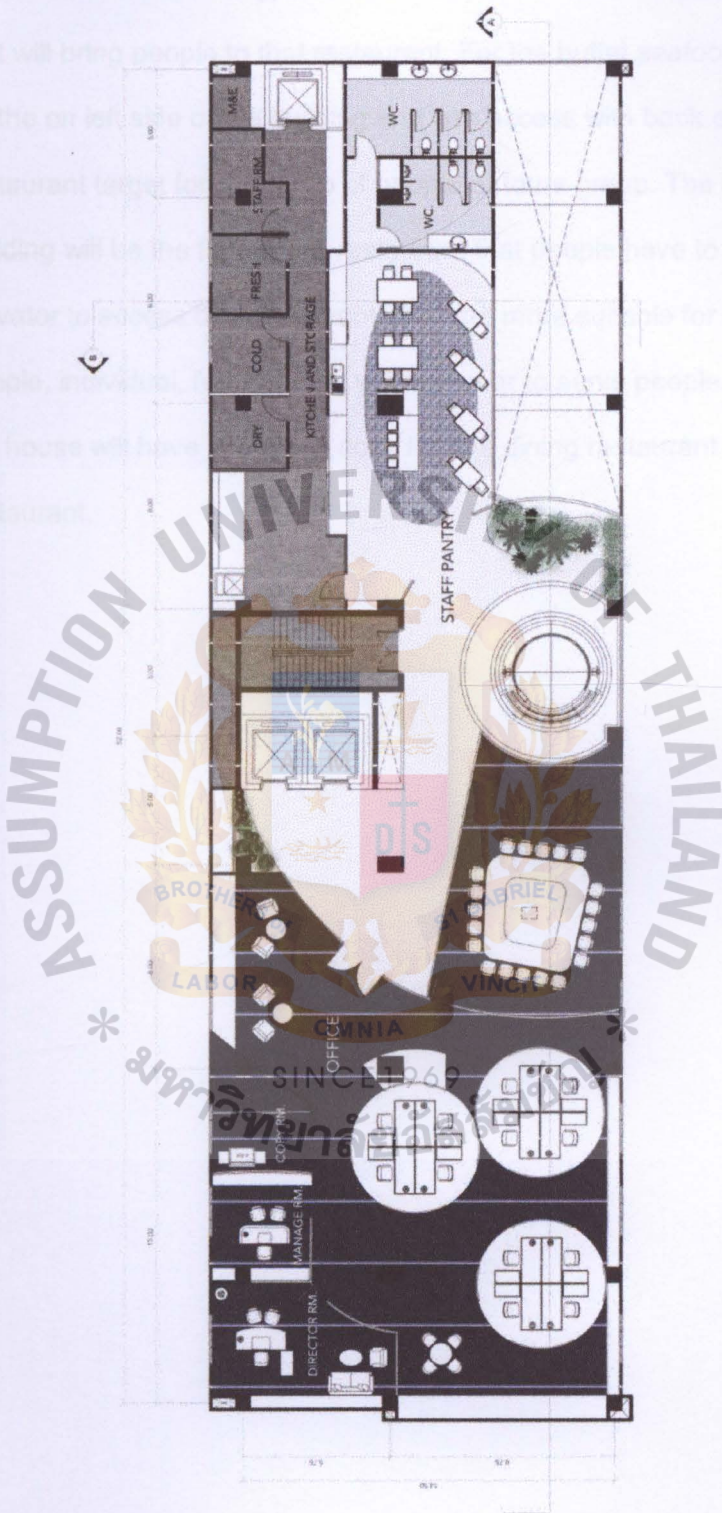


Figure 5.8 Fourth floor plan

For the fifth floor plan, is the restaurant that will separate by two restaurants in different type of food. People can use two side of the elevator that will bring people to that restaurant. For the buffet seafood restaurant will be the on left side of the building and can access with back elevator. This restaurant target for big group of people or tours group. The other side of the building will be the fine dining restaurant that people have to use the glass elevator to access this restaurant, this one more suitable for small group of people, individual, family. Also, will have bar to serve people. For the back of the house will have kitchen to cook for fine dining restaurant and buffet restaurant.



Fifth floor plan

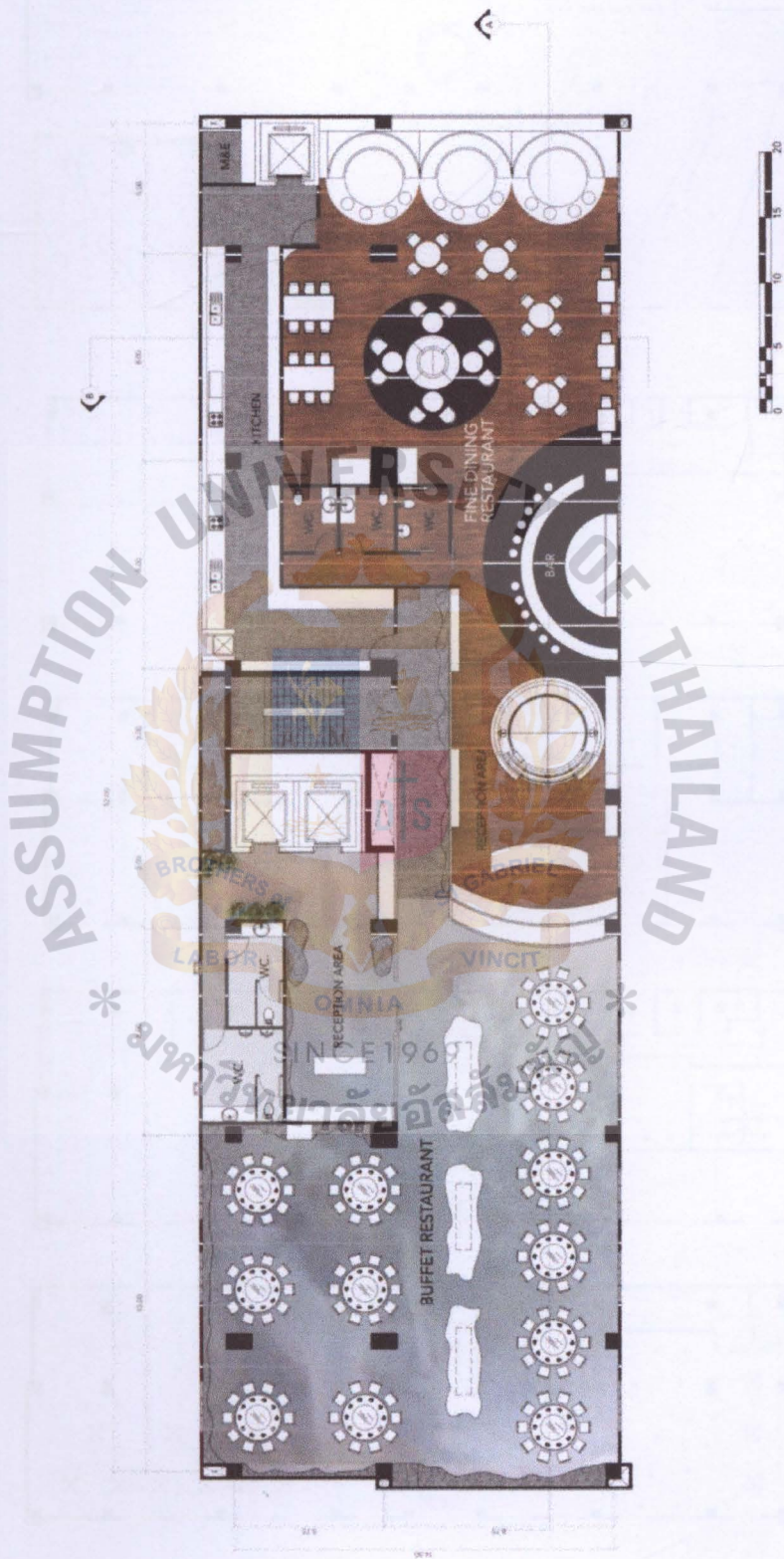


Figure 5.9 fifth floor plan

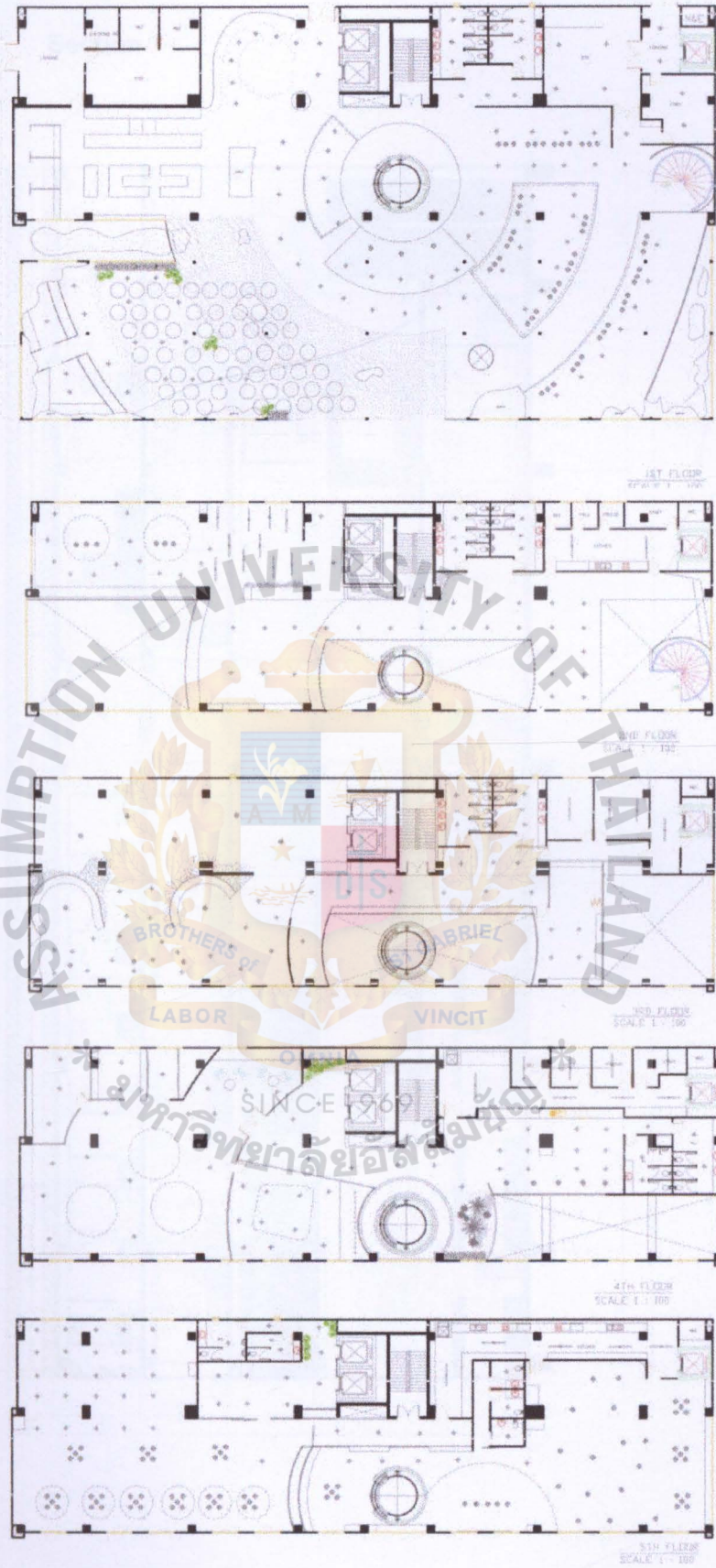


Figure 5.10 ceiling plan

Section

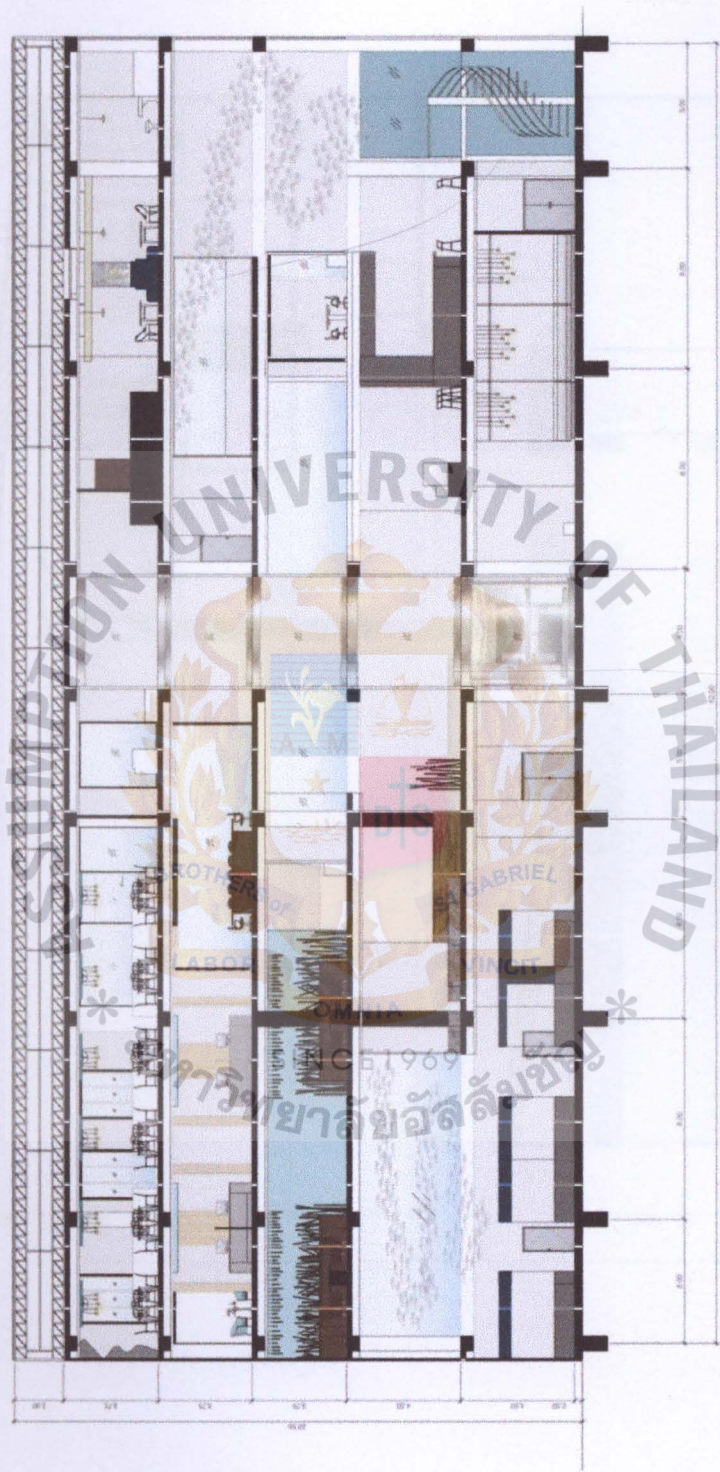


Figure 5.11 section A

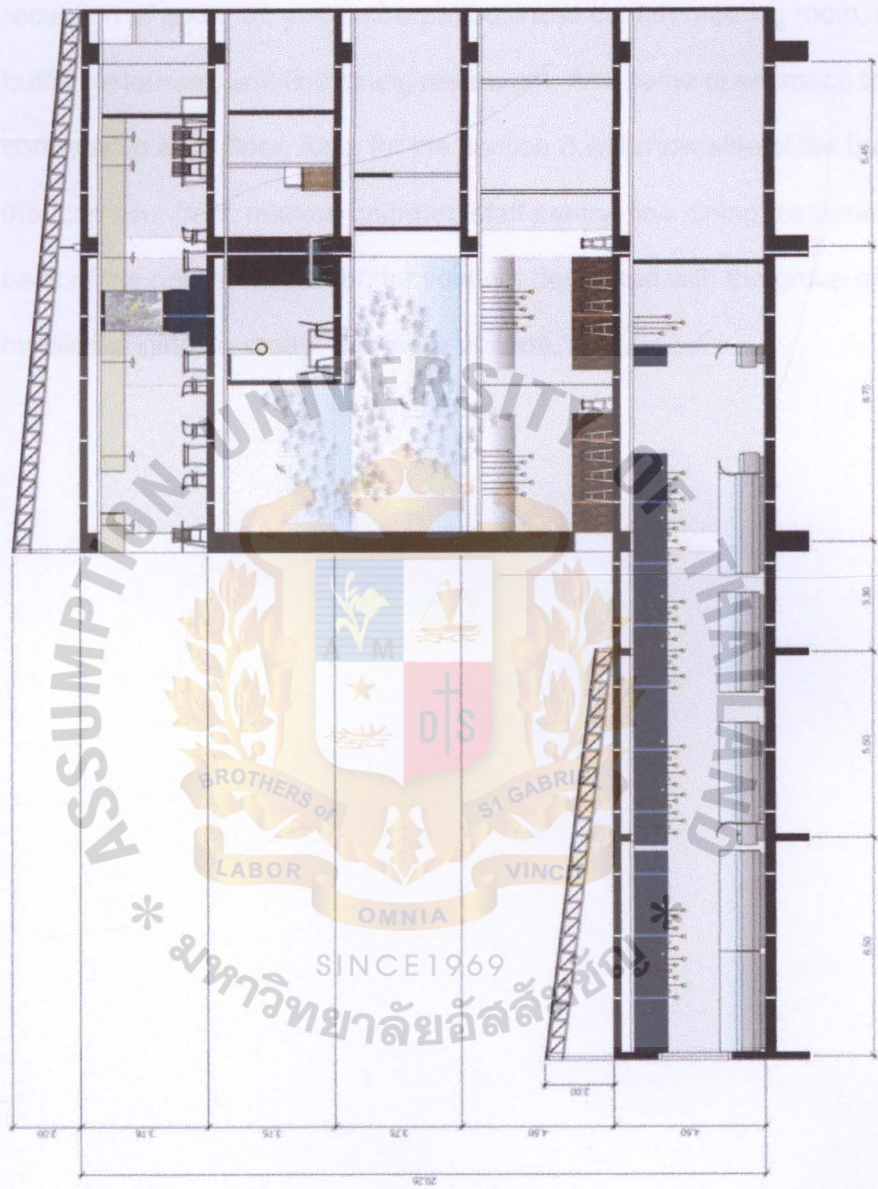
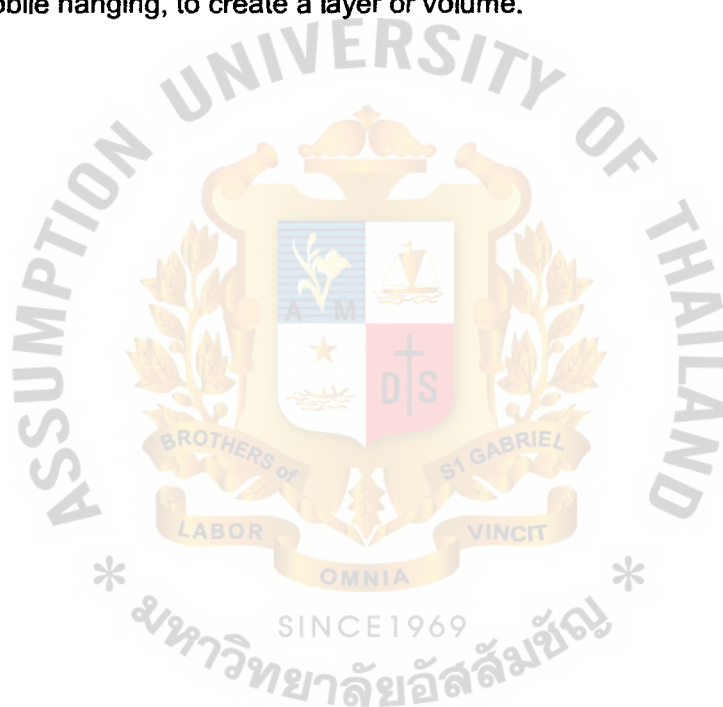


Figure 5.12 section B

The sections are showing the structure of the building column and beam. For the section A will show the front part of the building, cut in the center of building that can see in the area of fresh market, dry market, reception of gourmet, gourmet area, business center, meeting room, office, buffet restaurant, and fine dining restaurant. And some open space that connects to each floor. Also, for the section B will show side of the building that can see, fresh market, gourmet, staff pantry, fine dining restaurant, and back of the house. Moreover, for void will decorated with the group of fish mobile hanging, to create a layer or volume.



5.2.2 Design Scope Development

- Reception area and lift hall

Reception area will be the first area that people will see and feel welcoming and impress with the service. Reception will give all the information and suggestion for the customers with service. For lift hall will be the center of this building and can access to 2 and 5 floor. Which using the concept of center for the elevator that locate in the center of building and reception counter, ceiling, floor pattern will connect shape and form with the elevator to make it spread in shape of center.

Material

Floor : using white epoxy and engineering wood for part of counter reception.

Ceiling : drop ceiling and flat ceiling.

Wall : plastic partition wall and wood texture sticker for reception.

Lighting : down light at the ceiling and glass globe decorative pendant lamp.



Figure 5.13 reception area



Figure 5.14 lift hall

- **Waiting area**

Waiting area is the area that people can wait for the information or can be the meeting point. Also, people can grab some snack, fish and chips, and drink from the area that provided. This area will make the atmosphere to be like under the sea that decorated with the rock, to make it looks like the mountain, the seat in shape of the rock, ceiling in the shape of circle to connect with the concept of a group or be together. And the light effect on ceiling and wall is a shade of fish and octopus.

Material

Floor : epoxy with texture and green blue color inspire the sea.

Ceiling : cloudscapes painted ceiling.

Wall : white painted color and decorated with net which project the graphic on.

Lighting : down light at the ceiling.



Figure 5.15 waiting area

- **Market area**

Market area will be fresh market and dry market will selling fresh seafood, dry seafood, and seafood products. For those two areas will apply to the concept by using item and atmosphere of the sea and market. For the fresh area will use the spiral shape stair to be the center. And for dry market will use fish mobile to hanging on the ceiling in the forms of fish group swimming as in the center of this area.

Material

Floor : tiles, white epoxy, engineering wood

Ceiling : drop ceiling, white flat ceiling, hang some decoration items in circle form

Wall : white and grey painted color and decorate with rock that made from fiberglass.

Lighting : down light, pendent light, spot light.

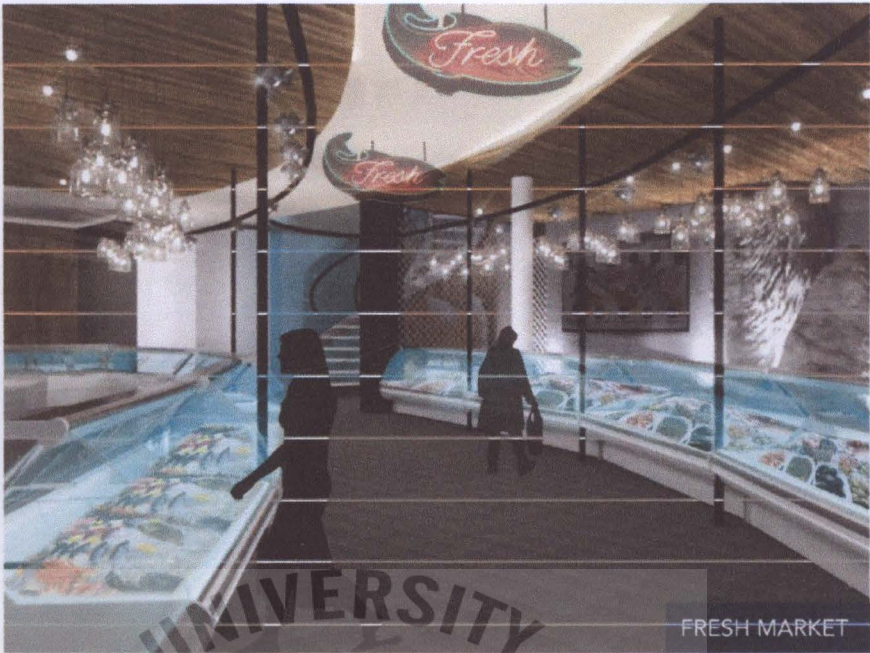


Figure 5.16 fresh market



Figure 5.17 dry market

- Stair hall

This stair connects to the gourmet area in second floor. And use the spiral shape stair to be the connect with concept. Also, show the item of fishery and environment of the beach on the wall that projector to the graphic. This area using spiral stair to the center for the concept.



Figure 5.18 stair hall

- Gourmet market

Gourmet market is the area that people can choose and eat whatever they want, this area will provide people to see how the chef cook, sit in front of them and people can cook by themselves in the grilled zone. Mainly will use wood for material and using the natural light to shine in.

Material

Floor : white and texture epoxy.

Ceiling : cloudscapes ceiling.

Wall : white painted color and rock made from fiberglass.

Lighting : LED striplight hide in the cloudscape.



Figure 5.19 gourmet market

- Information and business center

Information and business center is the area that customers who interested about doing business. This will give all information about the company or information of business. Which following the design concept by ceiling and partition that the ceiling will flows and have pendant lamps hanging at center of each other. For partition will put in curve shape and blue color to present wave of water.

Material

Floor : dark blue carpet and engineering wood

Ceiling : cloudscape ceiling and wood

Wall : partition for information and white painted color

Lighting : down light and pendent light.



Figure 5.20 information area



Figure 5.21 business center

- **Office and staff pantry**

This office will separate staff in group of four people and have the area for discussion, provide the copy room and meeting room. Also, the staff pantry can buy food inside or bring in. For office will use like piece of wood to be the circle shape for one group like one center.



Figure 5.22 office (entrance area)

Material

Floor : dark blue carpet and texture tiles with white epoxy

Ceiling : flat ceiling and drop ceiling.

Wall : white painted color

Lighting : down light and pendent light.



Figure 5.23 office (brainstorm area)



Figure 5.24 staff pantry

- Bar and Restaurant

There are two types of restaurant, buffet restaurant and fine dining restaurant. For the buffet restaurant will give the feeling of the sea, more relaxation and provide for group tour. Fine dining restaurant will have bar inside and give people in feeling of beach and pier with the color and materials. For bar and restaurant will play with ceiling in shape and form of circle and make it come out from the center point of it. For the furniture will use in white color. Also, bar and restaurant will let the natural light come in to be like lighting shining in the sea.

Material

Floor : texture epoxy and white and black epoxy

Ceiling : drop ceiling and cloudscape ceiling

Wall : white painted color with rock made from fiberglass

Lighting : down light and pendent light



Figure 5.25 buffet restaurant



Figure 5.26 bar



Figure 5.27 fine dining restaurant

5.3 Thesis final Presentation



Figure 5.28 Final presentation Board

Bibliography

Authors

- Chuck Anderson." The art of seafood case display" Accessed June 18, 2013.
<http://www.seafoodsource.com/blogs/behind-the-fish-counter/the-art-of-seafood-case-display>
- Davide Sign."Fish consumption survey":[://www.fao.org/3/a-az046e.pdf](http://www.fao.org/3/a-az046e.pdf).
- Deborah Robbe, *Expositions and Trade Shows*. New York,2000, 69-74.
- "Developer Might Ditch Plans For An Underground S.F. Flower Mart" Accessed May 12, 2015. <http://www.socketsite.com/archives/2015/05/kilroy-might-ditch-plans-for-an-underground-s-f-flower-mart.html>
- FAO Corporate Document Repository."Marketing". // www.fao.org/docrep/004/y2876E/y2876e1k.htm.
- "Fish Market, The Norwegian way". // www.mrwolfmagazine.com/fish-market-the-norwegian-way/
- "Hatchery Design"// www.fao.org/docrep/field/003/ac230e/AC230E03.htm.
- Hitesh Bhasin." *Types of Market* "Accessed November 29, 2016.
<http://www.marketing91.com/types-of-market/>
- "Marine Knowledge Hub". Accessed by March 25, 2010.
www.mkh.in.th/index.php/2010-03-22-18-05-14/2010-03-26-05-51-54
- Monica Jain. "Fish 2.0: Connecting fishermen and investors"<https://www.virgin.com/virgin-unite/leadership-and-advocacy/fish-20-connecting-fishermen-and-investors>
- "Pond Construction"// [www.agriculturenigeria.com/farming - production/aquaculture/pond-construction](http://www.agriculturenigeria.com/farming-production/aquaculture/pond-construction)
- Edward Kolbe, Donald Kramer, Joseph Junker."Planning Seafood Cold Storage".[://www.nsgd.gso.uri.edu/aku/aku06005.pdf](http://www.nsgd.gso.uri.edu/aku/aku06005.pdf).

“Taipei Flower Wholesale Market, Taiwan International Flower Trade Center Large site for cut flowers market. / H.P. Chueh Architects & Planners” Accessed 10 March, 2014. <http://www.archdaily.com/484063/taipei-flower-wholesale-market-taiwan-international-flower-trade-center-large-site-for-cut-flowers-market-h-p-chueh-architects-and-planners>

“Thai Frozen Foods” by Association.// [www. Thai-frozen.or.th/csr_tffa_04.php](http://www.thai-frozen.or.th/csr_tffa_04.php)

<http://www.eventues.com/event-planning-guide/types-of-meetings-and-events>

http://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_474896.pdf



