



BMW SPACE

Tachat Wuthitananun

A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of

Bachelor of Architecture

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BMW space is the project where the Bimmer and visitors can come to explore and experience the BMW world. And this project is determiner for the users who want to buy a high-end car, but didn't determine the brands yet and this project going to make them want to buy BMW.

The project intents to develop and fulfil the loophole of the architecture, because the showrooms in Thailand are not success in term of architectural form. It is act just a box to put the products without represent the identity of the brands. Therefore, this project is going to use architecture as a tool to adversities the brand image and identity.



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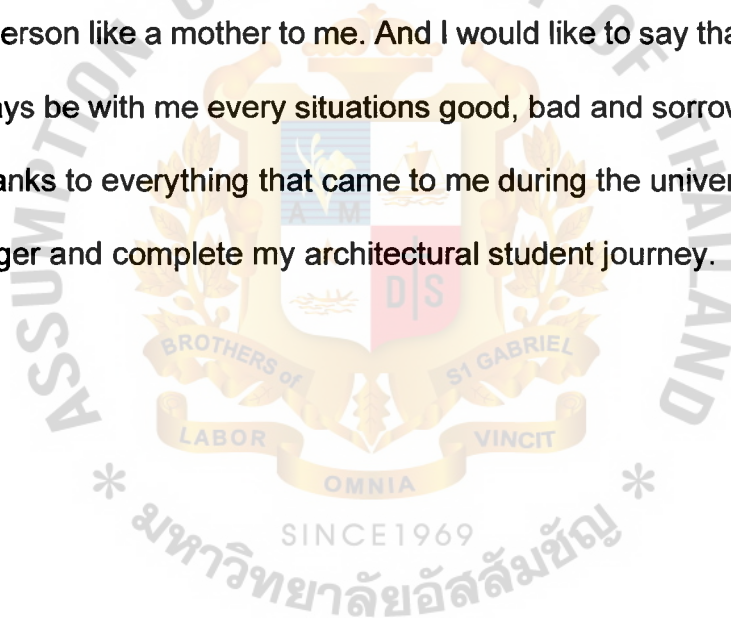


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Chapter 1: Introduction

1.1 Background of Interest

Architecture has important role to show the identity of something that it stand for. According to my primary survey, showrooms in Thailand are plain and cannot communicate the identity of the products in side of it. Sadly, this kind of architecture (showrooms) in Thailand become just a box to put the cars inside and show them pass the curtain wall.

Thus, it builds the big wall to brock interaction between visitors and brand. The user who will step on to this architecture is the only person who want to buy a product. Researcher identify this situation as a one way communication (user to products) and architecture does not seem to associate meaningfully with the products. However architecture can be meaningful and represented the products through itself.

To design an architecture to be able to communicate the identity of brand it needs to communicate by using space and form. Researcher believed that architecture should step closer to the meaning representation of the products. In order to, make more experiences to the users and make architecture more valuable because architecture is not just a box to keep the products. Moreover architecture can be an iconic to represent the standing point of the brand and attach the attention of people who pass by for advertising the brand.

BMW is the name of car brand and it is the leader of automotive factory. BMW represent the high-end and performance equipment due to high performance it is still governing Thai bummers' heart. In 2015 BMW group in Thailand hits the new statistics at 10,048 cars or 6.1% of circulation this is including BMW, MINI and Rolls-Royce.¹ At the same time the competitor brands are sell better than BMW. For the example, Mercedes-Benz in Thailand sold 12,776 cars or 12.78% of circulation in the same year.²

The growth rate of BMW in Thailand has effect the success and demand of Thai people. The trust of people to every series of BMW has dramatically grown. Mathew BMW Thailand CEO, said in an interview that its success is a result of the

¹"Autocar," BMW Celebation the success in 1 decade, accessed on September 6, 2016, www.autocar.in.th.

²"Autodeft " Mercedes-Benz made the new circulation in its history, number 1 in luxury car brand in Thailand for 15 years, Accessed on September 9, 2016. www.autodeft.com.

ultimate automobile, signature design, the worldwide fame of BMW. Moreover, BMW has created numerous activities to support in many ways. First, for advertisement: BMW Excellence Club and BMW Service Apprentice. Second, for social: Car 4 Water. Finally, BMW has collaborated with Chitralada School in an attempt to develop car repair skills among its students and to prepare them to step into the AEC.

BMW has dramatically grown and provide a lot of activities in Thailand. BMW is not the number 1 luxury car in Thailand because there is no place to merge all of BMW activities together and advertise the products. And there is no community center for BMW lovers. In addition, the growth rate of BMW in Thailand is growing up. At the same time, BMW's architecture typology in Thailand still the same. Thus, BMW needs the advertisable architecture and center for encourage about BMW and to be a tool to determine to buy a car.

According to my preliminary survey, the figure 1-3 show the architectural style which is a glass wall and flat slab. Behind the glass wall is the car display.



Figure 1.1 German Auto, Chaeng Wattana, Bangkok

Figure 1.3 Tangkuanwila Shopping



Figure 1.2 German Auto, Pattaya



Figure 1.3. Tangjairewka, Shoghla

This figure 1.4 and 1.5 show the all of BMW showrooms location in Thailand and Bangkok all of them are the retail store. And its architectures cannot communicate the identity of BMW.

BMW uses Thailand to be the base for manufacturing BMW cars and distribute it in the Asia. The factory is located in the industrial Estate Ampla City in Rayong. This factory manufactures BMW series 1, 3, 5 and 7 and BMW X X1, X3 and



Figure 1.4 BMW Showrooms map in Thailand

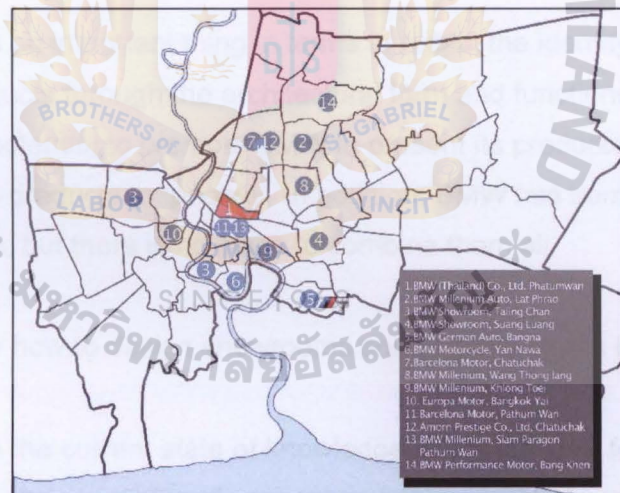


Figure 1.5 map of BMW Showrooms in Bangkok

The figure 1.4 and 1.5 show the all of BMW showrooms location in Thailand and Bangkok all of them are the retail store. And its architectures cannot communicate the identity of BMW.

BMW uses Thailand to be the base for manufacturing BMW cars and distribute it in the Asia. The factory is located in the industrial Estate Amata City in Rayong. This factory manufactures BMW series 1, 3, 5 and 7 and BMW X X1, X3 and

X5 and MINI cooper, which is ownership by BMW, is also built in Thailand. Moreover, BMW Motorrad also is manufactured in the factory.³



Figure 1.6 the BMW Factory in Rayong

According to these situations, it creates the loophole of designing and the attempt of this thesis is to fulfill that loophole in order to make BMW's architecture more associate and to be the center for selling of BMW to support business growth and the coming of bimmers in Asia.

1.2 Issue of Interest

Architecture is an important thing in terms of reflect the identity of the brand and advertise its products through the architectural form and functions. The BMW's architectures do not potential to promote BMW to present its products and there is no place to advertise the products to people. In addition, BMW has some activities to support their products, but there is no place to combine them all.

1.3 Objective

1.3.1 To study how to design showrooms and flagship stores in Thailand and internationally.

1.3.2 To study the current state of knowledge of architecture form.

1.3.3 To study the possibility of connecting between BMW and architecture.

1.3.4 To integrate those ideas to design the BMW center.

1.4 Hypothesis

Architecture would help present the identity of BMW and advertising the BMW-ness by means of phenomenology and architecture form.

³ "Headlightmag" Anniversary 15 years the BMW factory more investgat 1,100 MB, Accessed on September 9, 2016. <http://www.headlightmag.com/bmwmanufacturing15th-annivers-pr/>.

1.5 Thesis Statement

Architecture must be able to represent BMWness through phenomenology and architecture form.

1.6 Definition of Term

1.6.1 Architecture: the building that has a purpose to show the products.

1.6.2 Bimmer: the BMW lover call themselves as Bimmer.

1.7 Scope of Work

1.7.1 Study the architecture typology on trends of museum and showroom in Thailand and the world.

1.7.8 Study how to use architecture as a tool to commutate the identity of the brand.

1.8 Benefits of Research

To present the architecture work by using the theories and showroom to expand the knowledge.



Chapter 2: Literature Review

This chapter reviews the theories disseminated by architects and philosophers about using architecture to represent the brand identity and how to transfer the particularities of the product into architecture. This includes Lars Teichmann, Zaha Hadid, Daniel Libeskind, Sou Fujimoto, Peter Eisenman, Vasu Virassin, Srisak Phattanawasin and Pilaipan Sombutsiri suggestions. All of them are from different perspectives and experiences.

According to Lars Teichmann, visitors visit BMW exposes the heart of the plant to the public by avoiding any factory gates or fencing. The central building was designed to be predominantly functional, but it complies equally with representational requirements, presenting the brand in an almost cinematic way.⁴

This idea should appear in architecture by means of representation of brand in architecture space. Architects should not think only about functions but they need to think collaboratively with phenomenological approaches as an attempt to represent the brand within space.

Zaha Hadid suggests that "...learning is to do with a 'reductivist' quality only a few elements are significant. It's done with panache and no decoration. It's absolutely pure. The elements have to represent themselves and that could lead to a very pure structural system."⁵ At the same time, Pakorn Hamaphan, the architect responsible for Honda big wing at Udontanee, suggests that he decided to use steel for structure because steel is strong and can support a long span. Moreover, do not need to use a column. Steel can represent the poetic sense of motorcycle-ness because it uses the same material. Also architecture shows the products through the steel structure to represent the engine of motorcycle.⁶

Those suggestions are about architectural form, the ideas of using elements to represent identity. While Hamaphan's suggest that it can think further than using steel for structure to refer to motorcycle because most of motorcycles structure are made of steel, I argue that the identity of Honda's motorcycle can be more potentially

⁴ Gannon Todd, *Zaha Hadid BMW Central Building* (printed and bound in China), 11.

⁵ Broadbent Geoffrey, *Deconstruction A Student Guide* (London: The Academy Group), 88.

⁶ "Dsignsomething," HONDA BIG WING by NAT: Architecture and movement, Accessed on September 9, 2016. www.dsignsomething.com/2016/08/09/nat-motor/.

denoted through its shape and form rather than materials. Vasu Virassin suggests that he metaphorically created form and space from a movement of motorcycles and he believes it is of the meaningful. The intensity of meanings depends on a concept. He suggests another theory that architecture is not just making a fancy form, but rather it needs to be sculptural. When a concept is adopted, architecture can present itself more than mere building and functions.⁷ According to Srisak Phattanawasin, the art of constructional poetics is the skills to intertwine every architectural components like a poetry. The poetics of construction is needs to appear in architecture in order to reflect the construction system, craft and local materials.⁸

Those suggestions about reflecting in architecture, Virassin's suggestion about an architecture is not just making a cool form. It needs to have an essence of monument. Thus, architecture can be more than a box to put the products. It can represent the identity of the brand.

These are the suggestions about in between. Daniel Libeskind, defines between the lines on his Jewish museum that between the line are between two line of thought: one is a straight line, but broken into fragments; the other is tortuous and complex, but continuing indefinitely.⁹ Sou Fujimoto, I like to find something in between. Not only nature and architecture but also inside and outside. Every kind of definition has an in-between space. Especially if the definitions are two opposites, then the in-between space is more rich.¹⁰

For the definitions of 2 architects about in-between Fujimoto's suggestion is clearer than Libeskind. His definition is clear in terms of architectural aspect. He also suggests about inside and outside these are cover all about architectural form and space.

This is the suggestions about the product and its package. Pilaipan Sombutsiri, suggests that a good product deserves magnificent packaging and

⁷ "tcdconnect," VASLab : new generation of architect by Wasu Vichilasin wins the customer and Nich cars market go through bear economy " Accessed on September 9, 2016. www.tcdconnect.com/article/Know-What/376-vaslab-e0b8aae0b896e0b8b2e0b89be0b8b1e0b895e0b8a2e0b98ce0b8abe0b8b1e0b8a7e0b983e0b8abe0b8a1e0b988-e0b982e0b894e0b8a2e0b8a7e0b8aae0b8b8.

⁸ Phattanawasin Srisak, Development of Tectonics in Contemporary Architecture, 73.

⁹ Noever Peter, *Architecture in Transition between Deconstruction and New Modernism*, Bosch-Druck, 69.

¹⁰ "Dezeen," Every kind of architectural definition has an in-between space - Sou Fujimoto, Accessed on December, 21, 2016. <https://www.dezeen.com/2013/10/28/movie-sou-fujimoto-sctructures-between-nature-architecture/>.

communicate into the point. Moreover, charming public relations must be concerned.¹¹

According to Pilaipan Sombutsiri's suggestion, I have a vision on architecture as a packaging of something. Especially, showrooms it is not just a box, but it is a big packaging which can be attracted an attention of people. Thus, architecture need to have an attractive form in order to represent the products inside of it. This is the Peter Eisenman's suggestion about using architecture to represent the identity Peter Eisenman, "...A possibility for a multiplicity of meaning, one has to pull the sign and signifier apart. One has to pull apart the one-to-one relationship between structure, form, meanings, content, symbolism, etc. So that it is possible to make many meanings. This pulling apart is what I call a displacement."¹²

This suggestion is very clear because nothing can represent the brands better than its sign. Thus, designing architecture to represent the identity needs to use the sign of brands.

The suggestions of architects and philosopher can develop in order to design the BMW center in Thailand. Researcher divided into two topics which are space and form. According to the suggestions about architecture space, it appears in this project as a phenomenology of space by using the architecture elements for the example slope, narrow corridor and etc. It can control the feeling of visitor in the space this thesis will give a feeling to the visitor as they are driving an architecture not just walk in it.

Other suggestions are about architecture form, most of them are suggest to use the material to represent the car. But it is very shallow materials are not effect much on the space and form. Thus, this thesis use the metaphor to design the architecture form by using the space design to control the exterior.

¹¹ Summary of the forum "*Thai Museums: Realizing the Potential*", 21 July 2011, at The Siam Society, 6.

¹² Noever Peter, *Architecture in Transition between Deconstruction and New Modernism*, Bosch-Druck, 34.

Chapter 3: Data collection

The BMW history is very important in terms of designing architecture programs and exhibition and knowing the BMW history is very effective to screen the identity of the brand for designing the architecture form. This chapter divided into 3 topic BMW's history, Product lines and BMW's activates.

3.1 BMW's History

BMW was establish by Friedrich Karl Rapp in 1913 near the Oberwisenfeld (Olympic Park) in Munich, Germany. Rapp Motorenwerke was it first name. Rapp chose Oberwisenfeld to be his site because it close to Gustav Otto Flugmaschinenfabrik who has a contract to supply his four-cylinder aircraft engines. Rapp was sup-contracted by Austro-Daimler to manufacture the V12 aircraft engines. At first, Rapp Motorenwerke was manufacturing V12 aircraft engines for the Austrian government. Franz Josef Popp is the supervising aero-Daimler engines building at Austro-Daimler. Popp is not just an observer he was becoming the manager of the company. On March, 7, 1916 Rapp Motorenwerke became Bayerische Motoren Werke GmbH (Bavarian Motor Works).¹³



Figure 3.1 Friedrich Karl Rapp

¹³ Norbye, Jan P. *BMW - Bavaria's Driving Machines*. (Skokie, IL, USA: Publications International, 1984), 11.



Figure 3.2 Gustav Otto Flugmaschinenfabrik

BMW got the large orders from the Reichswehr (German army) for the BMW IIIa engine, but at that time BMW can manufacture a small number of engines, because the manufacturing facilities and skilled workers are not adequate to handle the mass production. Nevertheless, under the state controlled war economy, German government gives the support to BMW. Thus, BMW got the skilled workers and manufacturing facilities.¹⁴

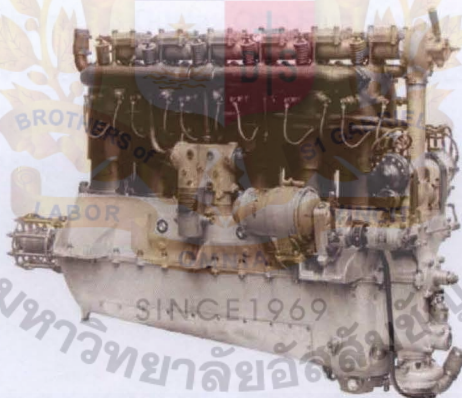


Figure 3.2 The BMW IIIa engine

Max Wiedmann is the Rapp's son in law was holding almost 80 percent of the Rapp Motorenwerke. After changing the brand name to Bayerische Motoren Werke GmbH. He opened the way for the founding of a public limited company and change the name to BMW AG and took all its manufacturing assets from BMW GmbH. The old BMW Company, BMW GmbH was rename Maschinenwerke Schleißheimerstrasse and wound up on November, 12, 1918. The share capital of BMW AG was subscribed by three groups of investors Bayerische Bank,

¹⁴ David Kiley, *Driven: Inside BMW, the Most Admired Car Company in the World*. (Hoboken, NJ US: John Wiley & Sons., 2004)

Norddeutsche Bank and Fritz Neumeyer. After World War I BMW was closed in 1918 and reopened in 1922 by Castiglioni bought the BMW name and engine building business. Castiglioni did not buy all of BMW's premises. He merged his company Bayerische Flugzeugwerke (Bfw) which is an aircraft company into BMW and established BMW's factories and headquarters at BFW's premises at Gustav Otto Flugzeugwerke.¹⁵



Figure 3.3 Gustav Otto Flugzeugwerke.

Nowadays, BMW's headquarters still located on Gustav Otto Flugzeugwerke which is BMW Welt and BMW museum.



Figure 3.4 BMW Welt and BMW museum.

After manufacturing aircraft engines for a long time BMW has create a new line of product which is *Motorrad* (motorcycle) in 1923. R32 is a name of the first BMW Motorrad and the concept of the original BMW Motorrad is a "boxer engine with longitudinally positioned cylinders and shaft drive".

¹⁵ "72 bikers," History of BMW, Last modified January, 13, 2017, accessed December, 21, 2016, https://en.wikipedia.org/wiki/History_of_BMW#cite_note-KileyUnknownpage-5.

BMW R32 1923



Figure 3.5 R32 Motorrad

BMW bought the Eisenach-based Dixi Automobil Werke AG from Gothaer Waggonfabrik in 1928 for making a new product line which is a car. The BMW 3/15 DA4 is the first BMW's car.



Figure 3.6 the BMW 3/15 DA4

During the World War II, BMW bought Spandau-based Brandenburgische Motoren werke for manufacturing the aero plane engines for the Luftwaffe which is German air force. BMW can produce the most powerful engines of that time which is the BMW 801 and BMW 003 jet engine. Moreover, BMW also created some military aircraft projects for the Luftwaffe for the examples BMW Strahlbomber, BMW Schnellbomber and BMW Strahljäger, but it never get built.¹⁶

BMW has a long history since World War I until World War II. BMW started manufacturing aircraft engines for German government. Then, BMW started making Motorrad all of them was making for the military purpose. After that BMW also manufacturing a car.

According to, BMW history researcher found the origin of BMW at first BMW is not a factory for manufacturing a car but it is a factory for manufacturing aero plan for the wars. Then, it started manufacturing *Motorrad* and the car after that.

¹⁶ "72 bikers," History of BMW, Last modified January, 13, 2017, accessed December, 21, 2016, https://en.wikipedia.org/wiki/History_of_BMW#cite_note-KileyUnknownpage-5.

Thus, researcher will use the history timeline of BMW to make an activities in the Museum by dividing into 3 parts. The first part of the BMW will shows the BMW aero plane and using the World War to be the theme of the first zone and the second zone will exhibit the BMW Motorrad and final zone going to exhibit BMW cars for making the visitors to realize the development of BMW.

3.2 BMW Product Lines.

BMW has 4 product lines BMW series, BMW M, BMW i, and *Motorrad* each group has a prominent point, but some types have the same lifestyle.

There are many products lines of BMW each lines was created for difference objectives. First, there are seven series of BMW 1, 2, 3, 4, 5, 6 and 7 this product line has a propose of driving in the urban.



Figure 3.7 BMW all series

The figure 3.7 shows the all the model of BMW series 1 to 7 this product line effects the luxury of BMW though the design of the cars and the interior.

Second, BMW M this product line was created for the racing track at first and it gets interest by the Bimmer but it is not comfortable for a normal road. Then, BMW developed this product line to be suitable for the normal road. For the concept of BMW M is "Born on the racetrack, at home on every road"



Figure 3.8 BMW M1

The figure 3.8 shows the model of BMW M1 which is the dream car of the Bimmer, but it is not suitable for the normal road because the engines and the comfortable of the driver.



Figure 3.9 BMW M Performance

The figure 3.9 shows the BMW M performance models in the exterior of BMW M looks similar with BMW series. But it differences in terms of engines and the experiences of driver. The identity of this product line is the combination between road car and track car. This point of BMW M makes M differences from other sport car brands which is give the comfortable and sportiness at the same time.

Third, BMW X is the SUV car or multi-purpose car which is match with alternative lifestyle. Mostly, the target user of the BMW X on adventure lover or family guys because, X series can carry more stuff than another product lines.



Figure 3.10 BMW X

The figure 3.10 shows all the exterior of BMW X which is bigger than others product lines of BMW.

Forth, BMW Z is the roadster car which means a car that can open the roof but roadster mostly use in North America.



Figure 3.11 BMW Z4

The figure 3.11 shows the exterior of BMW Z4 which is more sportiness than BMW M because of this product line has only a double seats.

Finally, BMW i this product line has focus on sustainable energy or clean energy. This product line mostly use electric energy. BMW want to emphasize the leader of car technology. Therefore, this i performance was born in order to reduce

and stop using the fuel. This project is under the concept LifeDrive concept which is compose by LIFE modul is the interior and DERIVE modul is electric motor and battery.

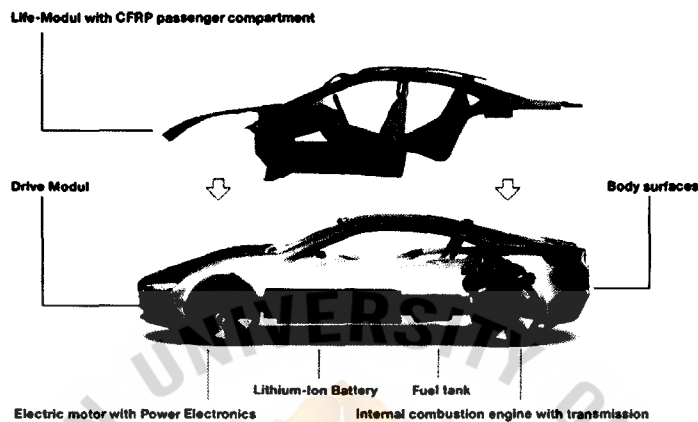


Figure 3.12 LifeDrive concept

Figure 3.12 shows the concept of i performance. It is separated into two parts LIFE modul and DRIVE modul. For this product line BMW use Carbon Fiber Reinforced Plastic (CFRP) which is the highest technology of BMW it is the same material with Super HiTech Vehicle as Fighter jet F22, formula 1 and Exotic Hyper cars for the example Pagani, Ferrari F12, Lamborghini Aventador. Because BMW what to reduce the weight of the car in order to fit the electric motor and battery.

The factors that make BMW i performance difference from other Super HiTech Vehicle is the process of making BMW i car which is use 100% of wind energy to make i performance cars.



Figure 3.13 BMW i8

Figure 3.13 shows the exterior of BMW i8 which is the combination of Super HiTech Vehicle and sustainable energy.

This is the BMW Motorrad lines which is divided in to six lines sport, tour, roadster, heritage, adventure and urban mobility. Each line have been created for the different life style. First, sport line this product line is focus on the racing activities and the rapidity.

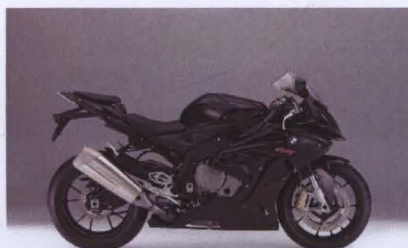


Figure 3.14 BMW s 1000 RR

Second, Tour line this product line has a different particularities from sport type because this line was design for riding for a long distance.



Figure 3.15 BMW K 1600 GTL Exclusive

Third, roadster line this product line different from the other line in terms of design because this line was designed to show its engines and this product line looks more street than the others line.



Figure 3.16 BMW R 1200

Forth, heritage line the design of this line is to show the classic life style this line the Bimmer can modify their Motorrad according to their life style.



Figure 3.17 BMW R NINE T

Fifth, adventure line this line was designed for the off-road activities. And the life style is for adventurous person.



Figure 3.17 R 1200 GS Adventure

The last line, urban mobility this type was designed for urban propose and this product line is very comfortable to use in the city.



Figure 3.18 C650GT

The BMW product lines was created to be the alternative choices for Bimmer can chose the BMW products according to their lifestyle. This thesis will focus on the lifestyle of Bimmer and represent it into the architectural programs.



Figure 3.19 lifestyle diagram

This diagram shows the BMW products which has the same lifestyle and researcher match them with the lifestyle to show in the temporary exhibition for presenting the identity of each type by dividing into 3 lifestyles urban, adventure and sport.

3.3 The BMW emblem.



Figure 3.20 the BMW emblem

According to the history of BMW, BMW was started produce an aircraft engines at the first time. Figure 3.14 shows the evolution of BMW emblem which is come from the propeller of areophane and the blue and white colors of it come from the Bavarian flag colors.



Figure 3.21 the development of the BMW emblem

Figure 3.15 shows the development of the BMW emblem and it always keeping the circle shape and the colors.

3.5 Case study.

BMW welt



Figure 3.22 the BMW Welt

This project located on Am Olympiapark 2, Munich, Germany. This project is focus on building technology facilities within the scope of the architecture led to a planning model with five thematic blocks.



Figure 3.23 the five thematic blocks

First, Hall is the interrelations of daylight and artificial light with ambient climate and acoustics influence people's feeling of well-being in the hall. Second, premiere the key task of the new BMW Welt is to send BMW cars in the Premiere section. Third, forum is a divided event area this space is suitable for 1,200 persons.

Forth, tower have been linking with the bridge from the tower to the forum. Finally, double cone is use for special events and exhibition space.¹⁷

In conclusion, BMW Welt mostly focus on the architecture high-technology which is can refer to the leader of car technology of BMW. Thus, architect reflect the idea of five thematic blocks into the architecture.

Honda big wing



Figure 3.24 Honda big wing, Udon Thani

This project located on Udon Thani, Thailand which is the big bike store. It was designed by M space. Architect want to create the driver vision by designing the building more dynamic and every corner is not be the same. And architect reflect the identity of big bike by using the Aluminum Composite.¹⁸

In conclusion, architect represent the identity of big bike by using the changing of perspectives on the corner and it is effect to the architectural form. At the same way, architect also represent the big bike by using the Aluminum Composite to be the main material of this project.

¹⁷ "Archdaily" BMW Welt / Coop Himmelb(l)au, Accessed on September 9, 2016.
<http://www.archdaily.com/29664/bmw-welt-coop-himmelblau>.

¹⁸ "Archdaily" Nat Motor Head Office / M space, Accessed on September 9, 2016.
<http://www.archdaily.com/566229/nat-motor-head-office-m-space>

Chapter 4: Contextual Position

Bangkok is the capital city of Thailand where the central business of Thailand are located. And it is a center of progress, for the example public transportation and tourist attraction. Thus, the thesis propose in Bangkok.

4.1 District Selection

The district selection consider the easy way to access and located nearby the main road in order to show the products to make an attraction of people who pass by and the site must be located nearby the public transportation such as BTS, MRT, Airport link or bus for the services propose user who repair their cars at this project they need to have these facilities in order to access the project without their private cars. Moreover, the site must be surrounded with others car showroom in order to attract the same type of uses.

4.2 Site Selection and site analysis

3.2.1 Site selection

Form the last chapter which mentioned about business area and accessibility of site I found the site which has a potential as following:

4.3 Alternative A

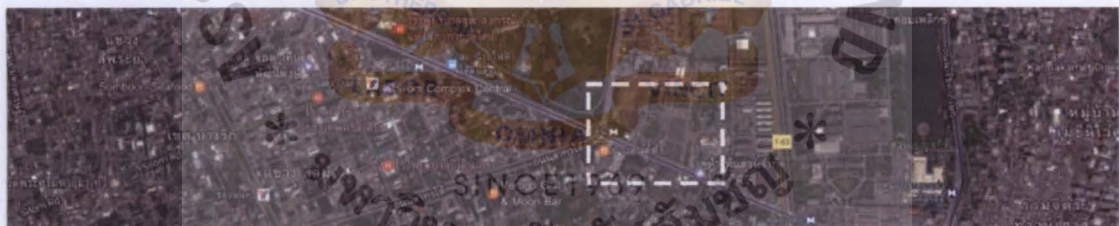


Figure 4.1 Top site view

Site area is located on Phatumwan District which is commercial area and surrounded by office, residential area and green area. Which means this area has a potential in terms of visualization and it is an opportunity for showing the products.

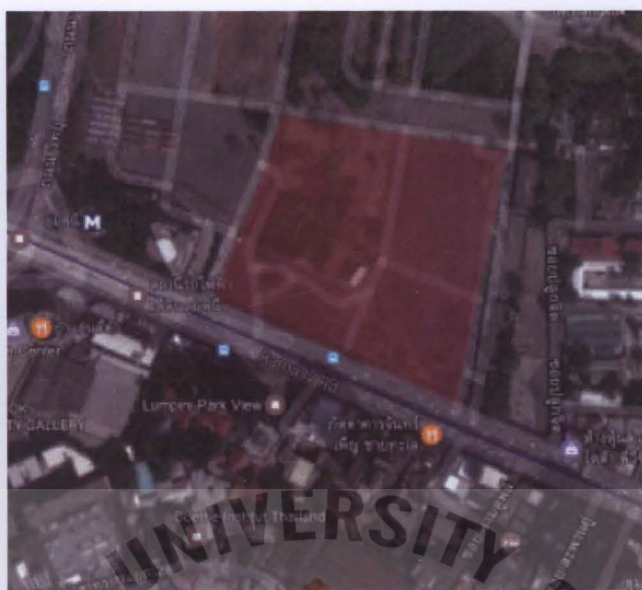


Figure 4.2 Top site view

The site area is 42,000 SQM which is too big for this project, Thus it needs to use a half of this site to fit all of the programs and leave another half for the future explanation.

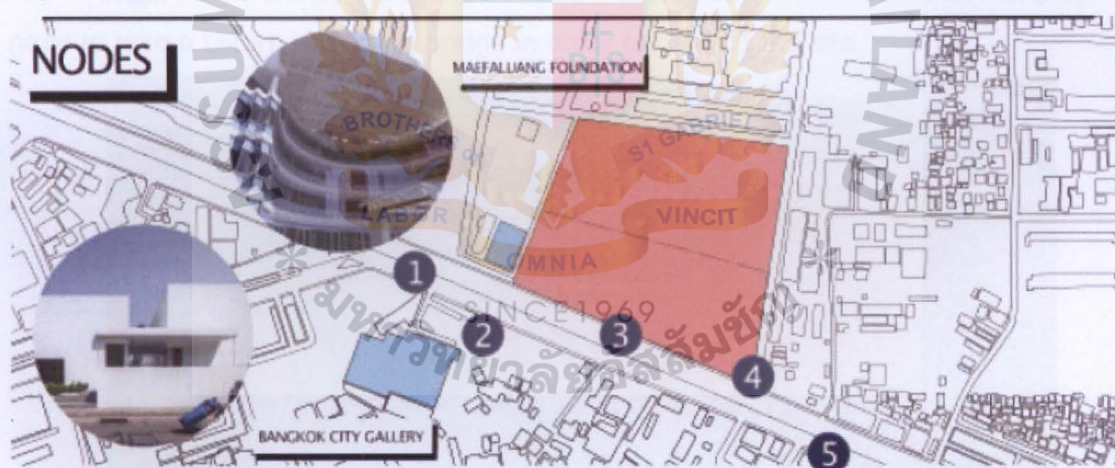


Figure 4.3 Nodes and views

Figure 4.20 shows there are 2 nodes around the site first node is Maefaluang foundation and the second is Bangkok city gallery. The numbers on the figure 24 shows the view of this site.



Figure 4.4 Site views

Figure 4.21 shows the RAMA V road if users come from Sathon district they need to take a U-turn under the bridge in order to get into the site.



Figure 4.5 Site views

Figure 4.22 shows the opposite site which is the location of Thonburi Phanich Lumpini Mercedes-Benz showroom which is a middle rise building.



Figure 4.6 Site views

Figure 4.23 shows the front of this site all the area cover by concrete. And there is a foot part in front of this site which users can walk comfortably.



Figure 4.7 Site views

Figure 4.24 show the sub road it has a street food along the road. This road can make a sub entrance and service entrance.

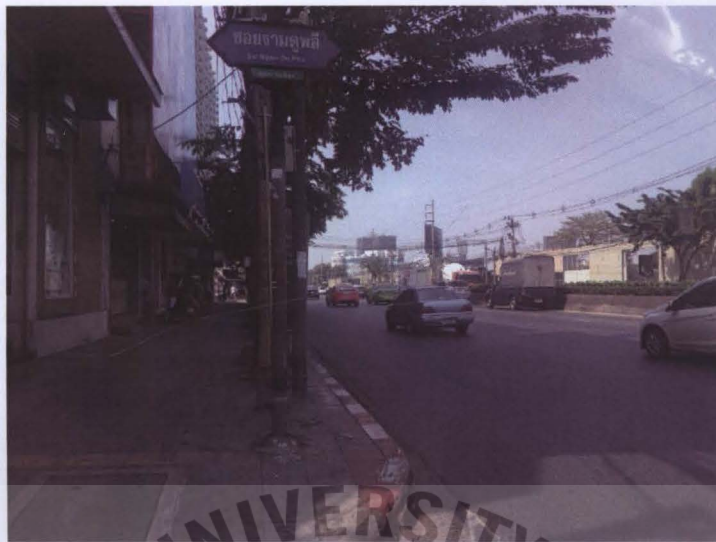


Figure 4.8 Site view

Figure 4.25 shows the sub road from Sathon district user can take exit from Soi Ngam Du Phli onto Rama V road and make a U-turn on to the opposite lanes in order to entrance the site.



Figure 4.9 Site accessibility

The figure 4.26 shows the site accessibility which user can entrance form the front of the site and sub-entrance can be located on the sub road.

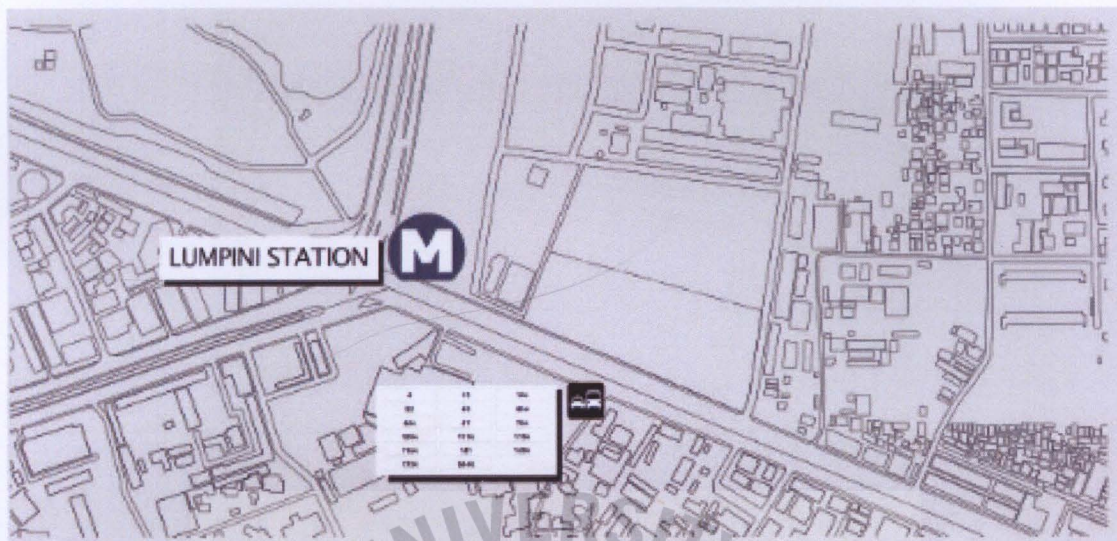


Figure 4.10 Public Transportation

Figure 4.27 shows the public transportation users can use Lumpini MRT station and walk into the site. Moreover, user can commute by Bus.

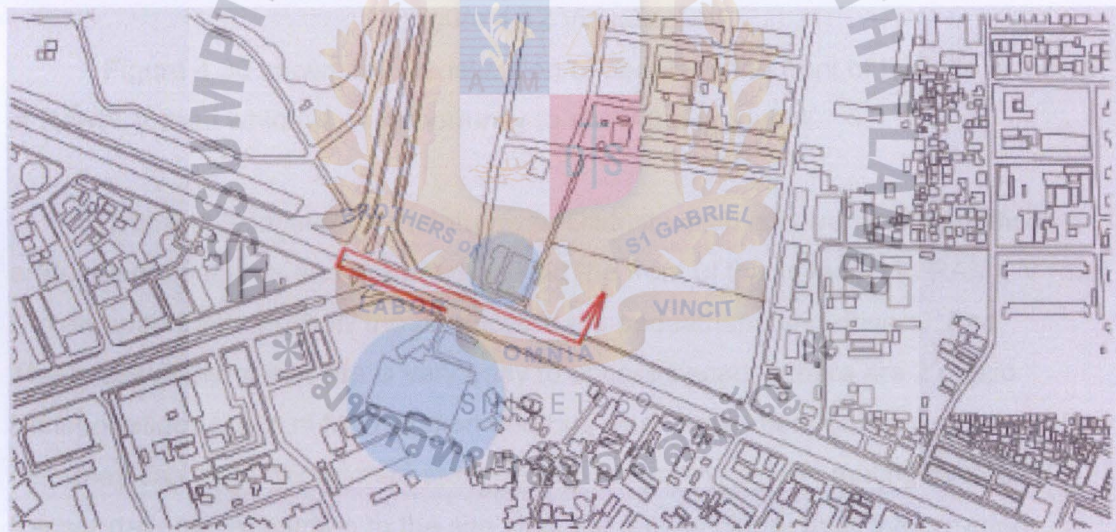


Figure 4.11 Noids transportation

This figure 4.28 shows the accessibility form noids form the Bangkok city gallery user can drive and make a U-turn into RAMA V road to entrance the site. And users can walk form Maefaluang foundation to the site.

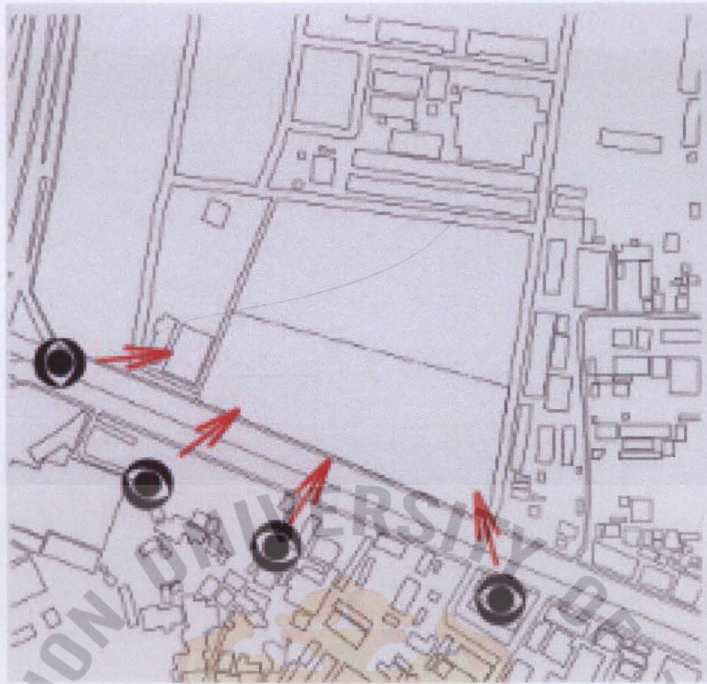


Figure 4.12 Visualization

Figure 4.30 shows the visualization of people at the front of this site is facing at RAMA V road which is an opportunity to show the products.

This site is located at Phantumwan District which is surrounded by offices area, residential area and green area. And the front of this is facing to RAMA V road it is an opportunity to show the products to the pedestrians and drivers. And The accessibility of this site is very easy to access because there are 2 public transportations Lumpini MRT station and bus when customers come to check up their cars they can go to department store nearby for waiting by commuting by public transportations. According to the site size, the land is bigger than the provided programs. Thus, this thesis use a half of site and another part leave for the future extension.

4.4 Alternative B

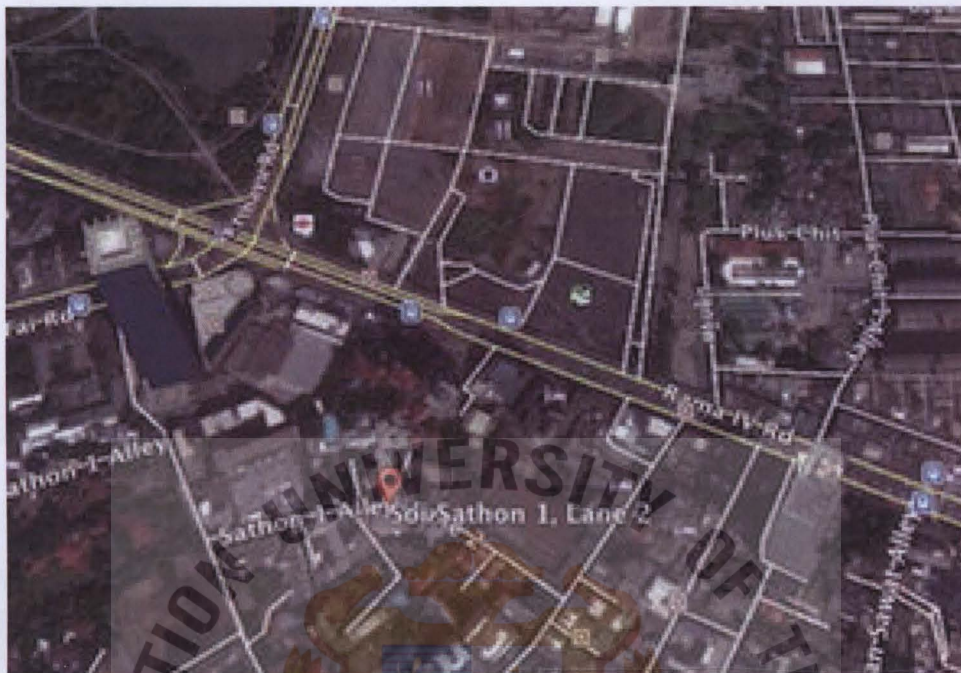


Figure 4.13 Site top view

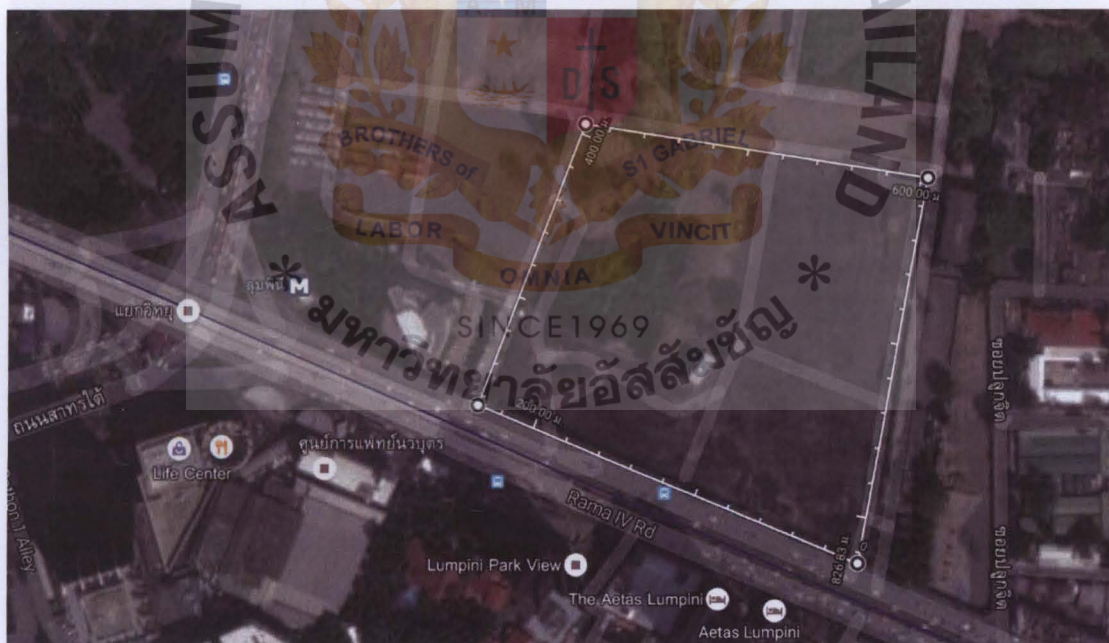


Figure 4.14 Site top view (Phantumwan district)



Figure 4.15 Site view

Figure 4.9 shows the front of this site it has a narrow footpath where people can walk but not comfortable.



Figure 4.16 Site view

Figure 4.10 shows the bus stop in front of the site where users can commute by using public transportation.

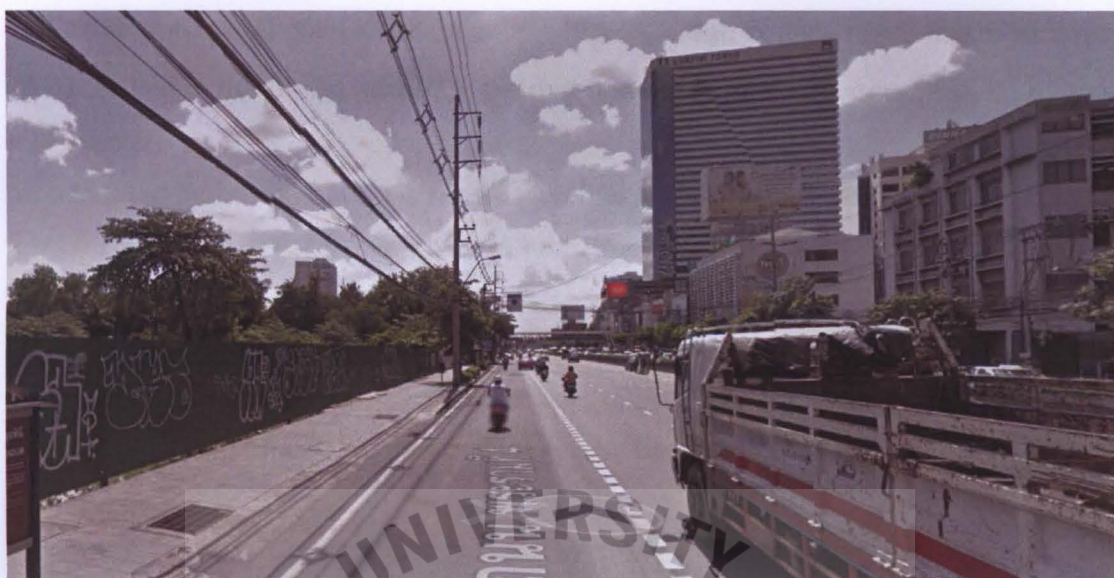


Figure 4.17 Site view

This site is located at Phantumwan district. It is the center of business area and in the operate site is the Mercedes-Benz showroom.

Law and regulation



Figure 4.18 Colors zoning

Phantumwan district is blue zone which is a high density residential area (พ.๕-

๔) According to the BMA Land Use, the meeting center and showroom can be built in this area (1d,2)

1c = located in the site of public road which has a boundary at least 30 m

2 = 500 surround the site need to have train station

FAR is 10 and OSR is 3

This site has a good potential to show the product because of the RAMA IV is on the front of this site and visitor can access directly from the RAMA IV road. The visitor who come without the personal cars they can come by using MRT Lumpini station

4.5 Alternative C



Figure 4.19 Site top view

This site is located at Din Daeng district. This site has the Thai cultural center station in front of this site. Thus, it is very easy to access the site. There is one department store in front of the site which is Esplanade Ratchadapisek.



Figure 4.20 Site view

Figure 4.14 shows the Karnchadapisek which is a one way road users who come from Esplanade Ratchadapisek need to make a U-turn in order to get into the site.



Figure 4.21 Site view

Figure 4.15 shows the high rise building in the opposite side which is RS tower.



Figure 4.22 Site view

Figure 4.16 shows the MRT station which is Thai cultural center. User can use this station to go to others station and if user come from this station they can walk into the site.

Law and regulation

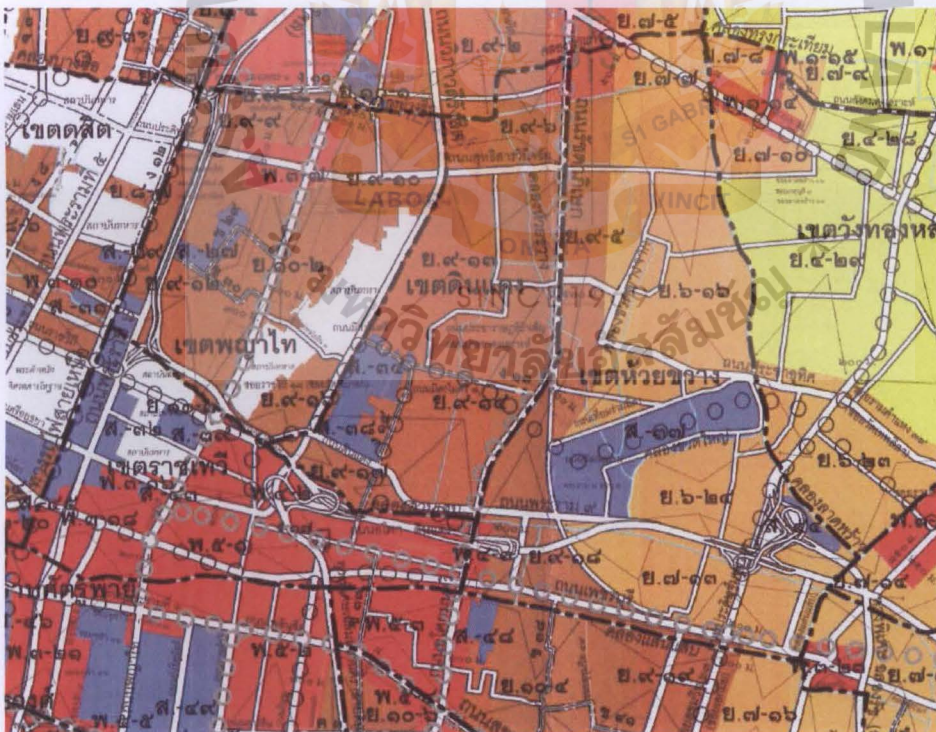


Figure 4.23 Colors zoning

Din-Daeng district is orange zone which is a high density residential area (ป.๙)
According to the BMA Land Use, the meeting center and showroom can be built in this area (1d,2)

1c = located in the site of public road which has a boundary at least 30 m

2 = 500 surround the site need to have train station

FAR is 7 and OSR is 4.5

This site located in the opposite site of Esplanade Ratchadapisek which is has a high density of user and easy to commute by using the MRT Thai cultural center station. However, this site is far from the center of Bangkok and it is not a district of user target.

4.6 Site analysis



Figure 4.24 Site top view

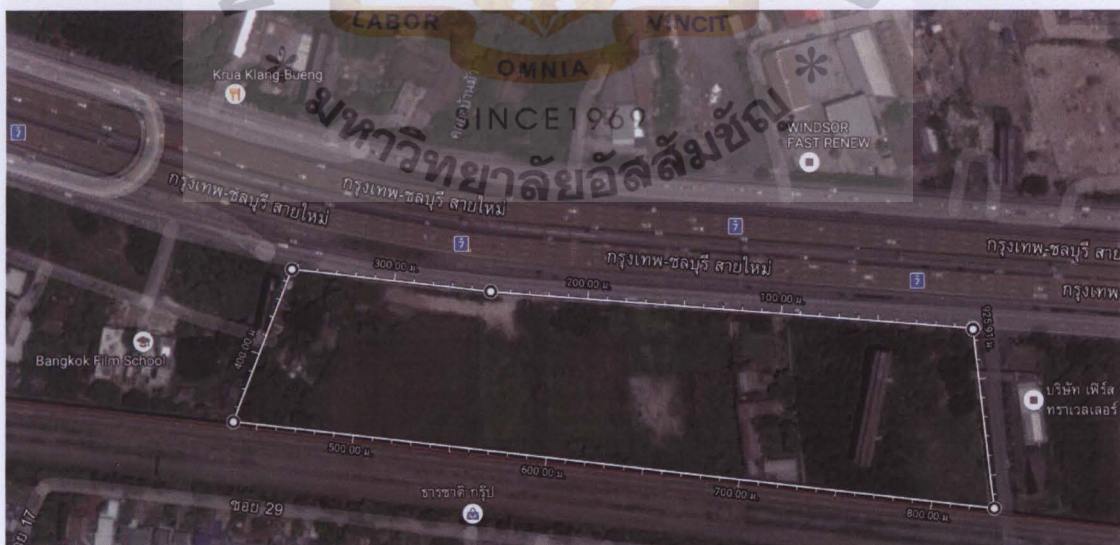


Figure 4.25 Site top view (Prawet District)

Figure 4.1 and 4.2 show boundary the land of the site which is a long narrow site. And the site is facing to the main road which is the opportunity to show the products.

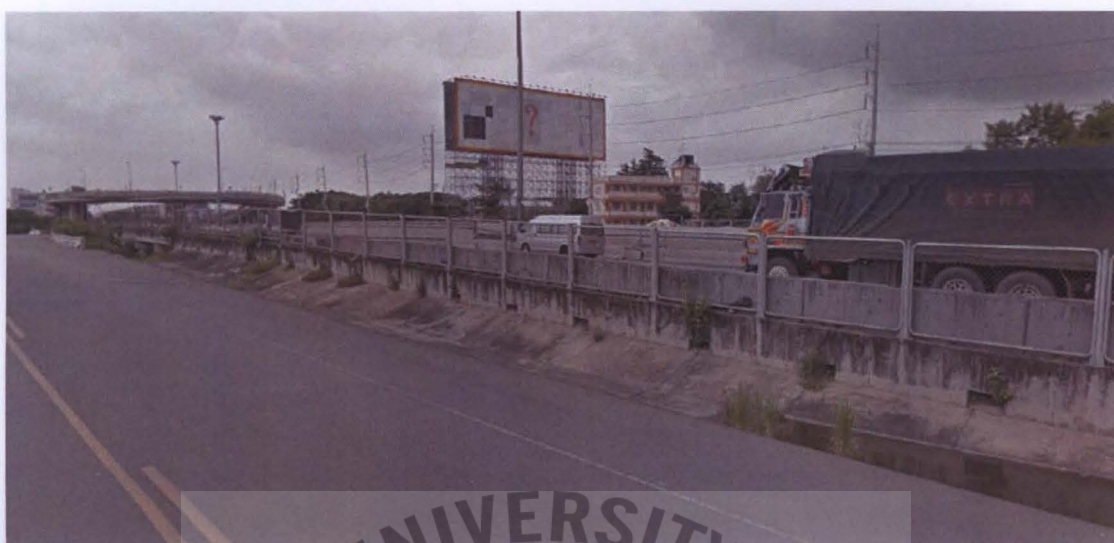


Figure 4.26 Site View

Figure 4.3 shows the front view of this site which is the location of the motorway which has high density of car. And in front of the site has a road expressway.



Figure 4.27 Site View

This figure 4.4 shows the area of the land and behind the site is the railway and airport link railway.



Figure 4.28 Site View

Figure 4.5 show the site context in the front of this site which is the location of bridge and public water pipe.

This site is located at Prawet district. There is one super showroom located nearby the site which is Nich car showroom and in the 500 M there is Hua-Mak Airport link. This site is good in terms of located beside the motorway. Thus, the drivers can see the products along the road. But this site cannot entrance in the front side.

Law and regulation

This site has a potential to be a good location for the motorway in front of this site it always has a car showroom and the location is located nearby Nich car which is a high-end showroom that can attract the same group of user. However, this site is weak in terms of accessibility, visitor can't access directly from the motorway.

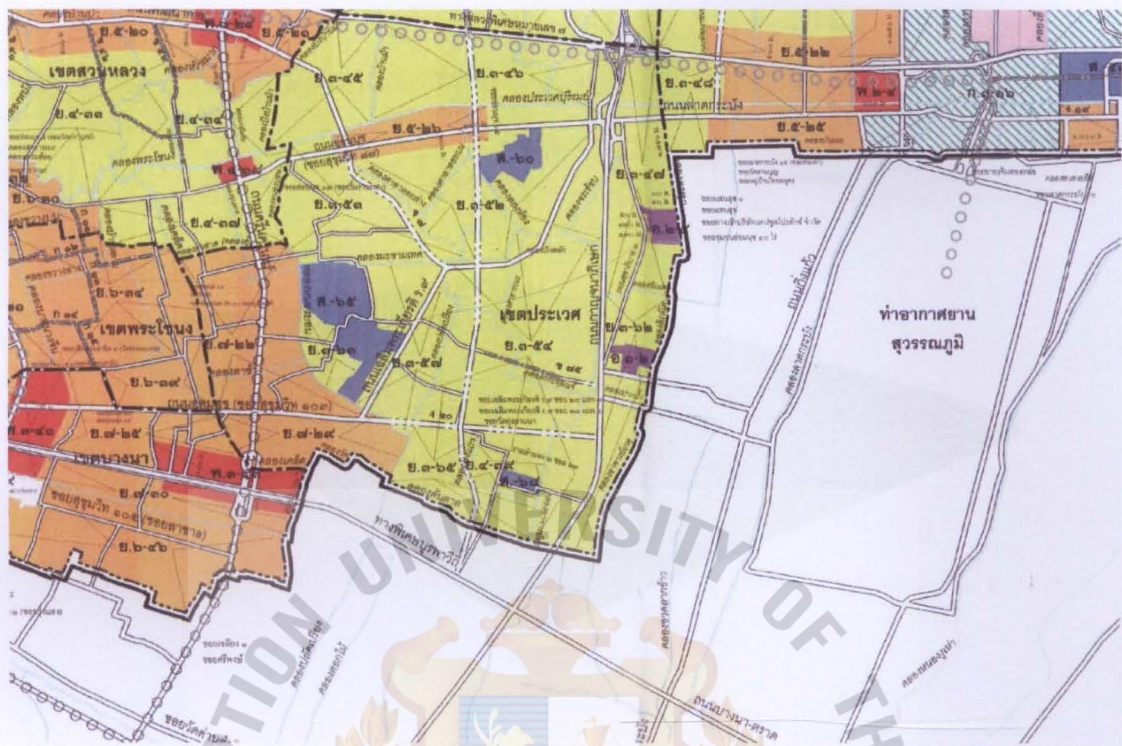


Figure 4.29 zoning colors.

Figure 4.6 shows the site location on the zoning colors. Prawet district is yellow zone which is a low density residential area (ย.๓-๔๔) According to the BMA Land Use, the meeting center and showroom can be built in this area (1d, 2) 1c = located in the site of public road which has a boundary at least 30 m 2 = 500 surround the site need to have train station FAR is 2.5 and OSR is 12.5

This site has a potential to show the products due to the motorway in front of the site it always has a car circulation all day and the site location is located nearby Nich car which is a high-end showroom that can attract the same group of user. However, this site is weak in terms of accessibility visitor can't access directly from the motorway.

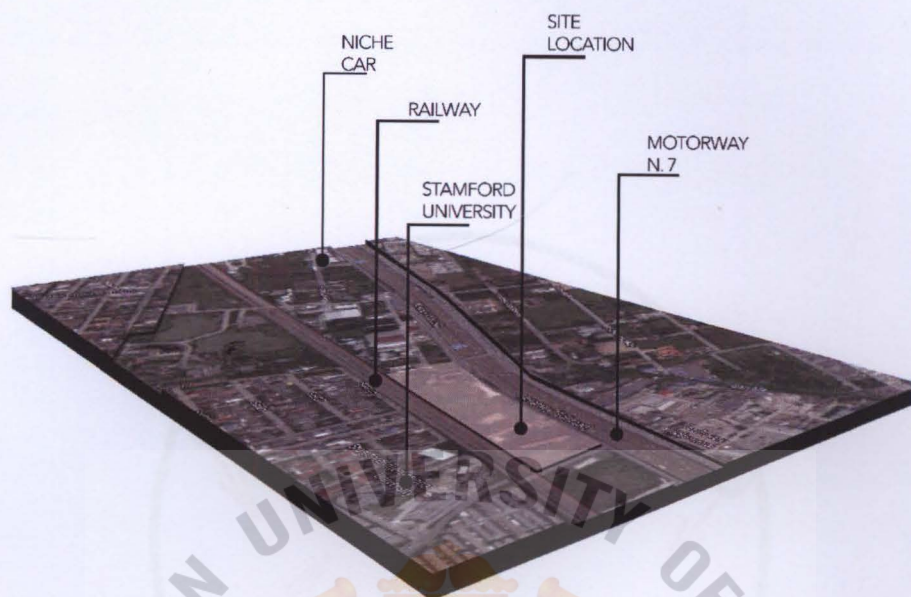


Figure 4.30 Site surrounding

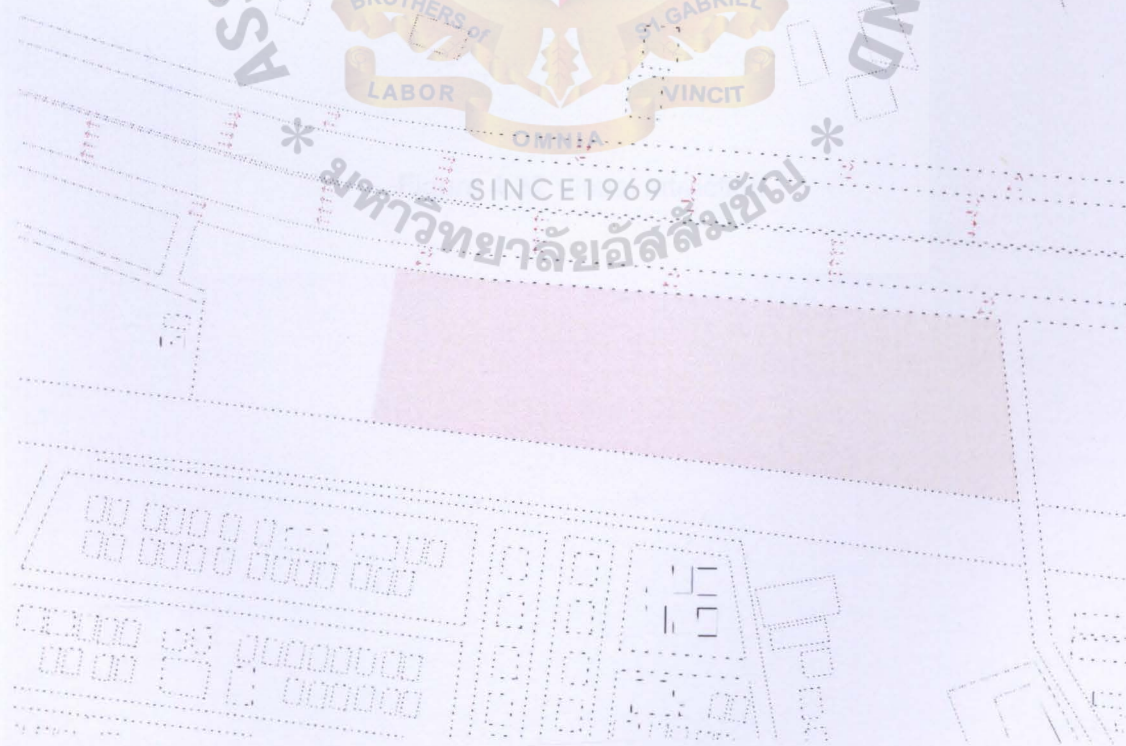


Figure 4.31 Site circulation

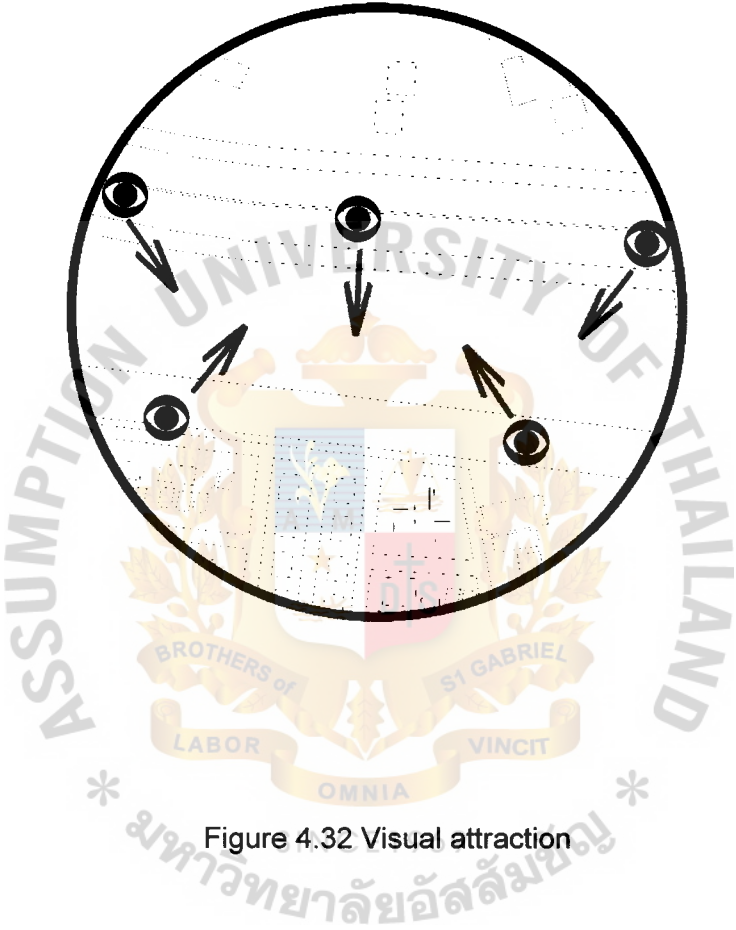


Figure 4.32 Visual attraction

Chapter 5: Potential Design Response

5.1 Design Scope

To provide the architecture which can represent and makes the experiences of products to the user.

5.2 User Programing

For the use programing I divided the programs into six parts which is showroom, garage, restaurant, museum, life style club and services.

SHOWROOM X MUSEUM X GARAGE X LIFE STYLE CLUB

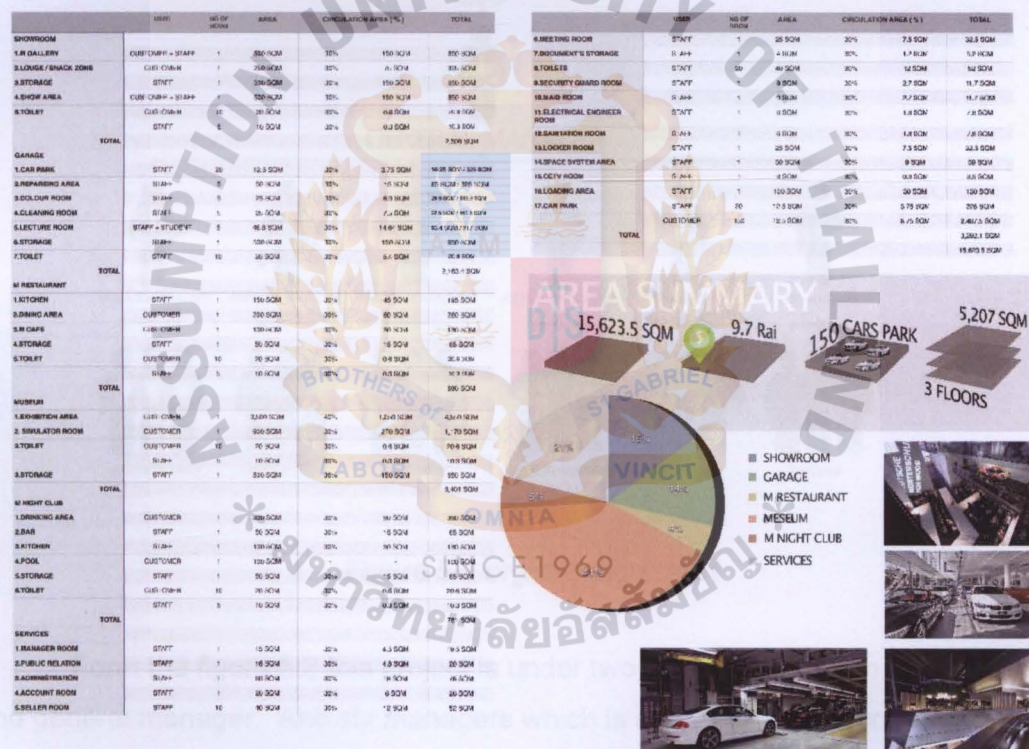


Figure 5.1 user programming

The figure 5.1 shows the lists of programs in details and all of the program is 15,623.5 SQM or 9.7 Rai. Museum will be the primary program of this project it is 41 % out of 100 % and the secondary program is showroom which is 15% out of 100 % 14 % of garage, 4% of restaurant, 3% of life style club and 21% of services.

1. Museum zone it composes with two functions permanent exhibition which is going to show the BMW's history timeline and temporary exhibition.
2. Showroom zone it composes with three functions M gallery, lounge and show area.

3. Garage zone it composes with three functions repair area, modify area and education area.
4. Restaurant zone this zone will be the German kitchen.
5. Life style club it compose with two functions bar and pool which is can make pool party at the night.

5.3 Organization Structure

The project is under control of the BMW Thailand and the figure 5.2 shows the organization chart diagrammatically.

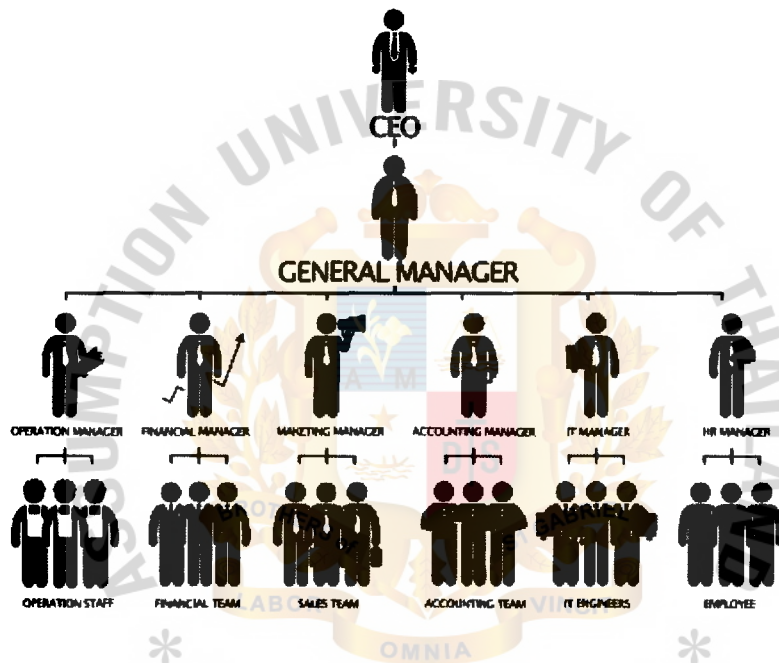


Figure 5.2 organization chart

Form the figure 5.2 this project is under two main sector which is chairman, and general manager. And six managers which is operation manager, financial manager, marketing manager, accounting manager, IT manager and HR manager.

5.4 Activities Spaces

The main program of this project is the museum. Thus, the important thing is the permanent exhibition and the exhibition is going to show the BMW's history timeline.



Figure 5.4 BMW history

The first room is going to show the BMW engines and aero plan by using the world war theme and when visitor walk past this room they will see the BMW Motorrad and get into the BMW cars which is the BMW famous product. Thus, visitor can travel follow the product line of BMW along the world history. When visitor get into the BMW cars exhibition room and this room going to exhibit every product lines of BMW car. The first room will exhibit the BMW series and when visitors walk pass this room they will see the BMW M performance exhibition room.



Figure 5.5 BMW M history

The figure 5.5 shows the activities inside the museum. According to its history. I separated the actives into five paths. First, Innovation path this part going to exhibit about the beginning of BMW M's engines since the first M car was born and this concept of this part is "BMW M is an engine for living in". Second, Racing track the users going to change form user to the viewer who watching the BMW M racing.

Third, Hall of fame this part is going to show ten legendary of M cars. Forth, Renovation this zone is the combination between garage and exhibition to use the activities of garage as exhibition. Finally, Test-drive part this part the user can use the simulator room in order to feel the BMW M experiences.

When visitors walk pass BMW M exhibition they will entrance the BMW i Performance room. For this room I will use the natural light to lead them to walk and see the come concept of BMW i performance which is LifeDrive concept.

5.5 Space Summaries

These table show the space summaries and it is include the circulation area and show the user and number of the room.

SHOWROOM						
1.M GALLERY	CUSTOMER + STAFF	1	500 SQM	30%	150 SQM	650 SQM
2.LOUGE / SNACK ZONE	CUSTOMER	1	250 SQM	30%	75 SQM	325 SQM
3.STORAGE	STAFF	1	500 SQM	30%	150 SQM	650 SQM
4.SHOW AREA	CUSTOMER + STAFF	1	500 SQM	30%	150 SQM	650 SQM
5.TOILET	CUSTOMER	10	20 SQM	30%	0.6 SQM	20.6 SQM
	STAFF	5	10 SQM	30%	0.3 SQM	10.3 SQM
TOTAL						2,306 SQM
GARAGE						
1.CAR PARK	STAFF	20	12.5 SQM	30%	3.75 SQM	16.25 SQM / 325 SQM
2.REPAIRING AREA	STAFF	5	50 SQM	30%	15 SQM	65 SQM / 325 SQM
3.COLOUR ROOM	STAFF	5	23 SQM	30%	6.9 SQM	29.9 SQM / 149.9 SQM
4.CLEANING ROOM	STAFF	5	25 SQM	30%	7.5 SQM	32.5 SQM / 162.5 SQM
5.LECTURE ROOM	STAFF + STUDENT	5	48.8 SQM	30%	14.64 SQM	63.4 SQM / 317 SQM
6.STORAGE	STAFF	1	500 SQM	30%	150 SQM	650 SQM
7.TOILET	STAFF	10	20 SQM	30%	5.4 SQM	20.6 SQM
TOTAL						2,163.4 SQM

Table 1: showroom and garage area summaries



M RESTAURANT						
1.KITCHEN	STAFF	1	150 SQM	30%	45 SQM	195 SQM
2.DINING AREA	CUSTOMER	1	200 SQM	30%	60 SQM	260 SQM
3.M CAFE	CUSTOMER	1	100 SQM	30%	30 SQM	130 SQM
4.STORAGE	STAFF	1	50 SQM	30%	15 SQM	65 SQM
5.TOILET	CUSTOMER	10	20 SQM	30%	0.6 SQM	20.6 SQM
	STAFF	5	10 SQM	30%	0.3 SQM	10.3 SQM
TOTAL						680 SQM
MUSEUM						
1.EXHIBITION AREA	CUSTOMER	1	3,500 SQM	40%	1,050 SQM	4,550 SQM
2.SIMULATOR ROOM	CUSTOMER	1	900 SQM	30%	270 SQM	1,170 SQM
2.TOILET	CUSTOMER	10	20 SQM	30%	0.6 SQM	20.6 SQM
	STAFF	5	10 SQM	30%	0.3 SQM	10.3 SQM
3.STORAGE	STAFF	1	500 SQM	30%	150 SQM	650 SQM
TOTAL						6,401 SQM
M NIGHT CLUB						
1.DRINKING AREA	CUSTOMER	1	300 SQM	30%	90 SQM	390 SQM
2.BAR	STAFF	1	50 SQM	30%	15 SQM	65 SQM
3.KITCHEN	STAFF	1	100 SQM	30%	30 SQM	130 SQM
4.POOL	CUSTOMER	1	100 SQM	-	-	100 SQM
5.STORAGE	STAFF	1	50 SQM	30%	15 SQM	65 SQM
6.TOILET	CUSTOMER	10	20 SQM	30%	0.6 SQM	20.6 SQM
	STAFF	5	10 SQM	30%	0.3 SQM	10.3 SQM
TOTAL						781 SQM
SERVICES						
1.MANAGER ROOM	STAFF	1	15 SQM	30%	4.5 SQM	19.5 SQM
2.PUBLIC RELATION	STAFF	1	16 SQM	30%	4.8 SQM	20 SQM
3.ADMINISTRATION	STAFF	1	60 SQM	30%	18 SQM	78 SQM
4.ACCOUNT ROOM	STAFF	1	20 SQM	30%	6 SQM	26 SQM
5.SELLER ROOM	STAFF	10	40 SQM	30%	12 SQM	52 SQM

Table 2: restaurant, museum, lifestyle club and services area summaries

6.MEETING ROOM						
	STAFF	1	25 SQM	30%	7.5 SQM	32.5 SQM
7.DOCUMENT'S STORAGE						
	STAFF	1	4 SQM	30%	1.2 SQM	5.2 SQM
8.TOILETS						
	STAFF	20	40 SQM	30%	12 SQM	52 SQM
9.SECURITY GUARD ROOM						
	STAFF	1	9 SQM	30%	2.7 SQM	11.7 SQM
10.MAID ROOM						
	STAFF	1	9 SQM	30%	2.7 SQM	11.7 SQM
11.ELECTRICAL ENGINEER ROOM						
	STAFF	1	6 SQM	30%	1.8 SQM	7.8 SQM
12.SANITATION ROOM						
	STAFF	1	6 SQM	30%	1.8 SQM	7.8 SQM
13.LOCKER ROOM						
	STAFF	1	25 SQM	30%	7.5 SQM	32.5 SQM
14.SPACE SYSTEM AREA						
	STAFF	1	30 SQM	30%	9 SQM	39 SQM
15.CCTV ROOM						
	STAFF	1	3 SQM	30%	0.9 SQM	3.9 SQM
16.LOADING AREA						
	STAFF	1	100 SQM	30%	30 SQM	130 SQM
17.CAR PARK						
	STAFF	20	12.5 SQM	30%	3.75 SQM	325 SQM
	CUSTOMER	150	12.5 SQM	30%	3.75 SQM	2,437.5 SQM
TOTAL						3,292.1 SQM
						15,623.5 SQM

Table 3: services area summaries

Chapter 6: Building technology

6.1 Building Structure

This project is the showroom which is can represent the identity of the brands. In order to represent it car has no columns and I want to use as less as possible of column. Thus, for the structure that use less of column is truss structure.

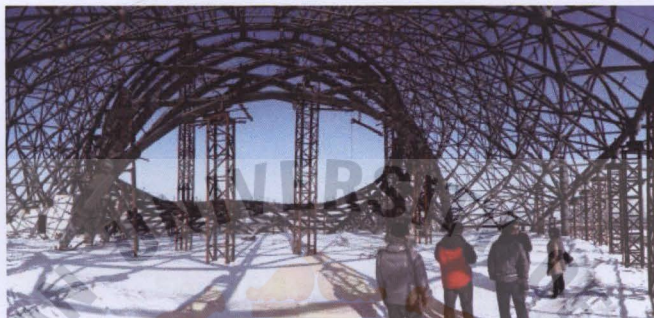


Figure 6.1 truss structure

Figure 6.1 shows the truss structure of Harbin Opera House by MAD studio this project is the free form project and architect design the truss structure follow the form. And the benefits of using truss structure are using less column and you will get more space and it is go to play with form because truss structure is very flexible it can design the structure follow the architectural form. And it also relate with the car structure.

6.2 Building System

This thesis separated the building systems into 4 parts air condition, escalator, lift and fire alarm system.

Air condition

This project need to turn on air condition all the time and almost every space need to turn on air condition. Thus, water chiller system is suitable for this project because this type of air condition is save energy more than the other and this type has a number of BTU more than the other type.

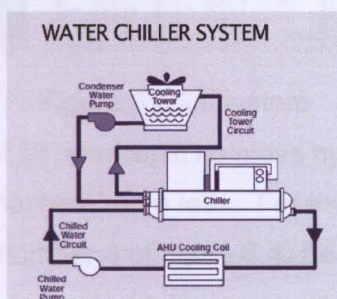


Figure 6.2 water chiller system

Figure 6.2 shows the system of water chiller. Water tank need to locate on the roof top or car park but need to avoid to locate the water tank the glass because during the machine works it makes a lot of steam into the air and it may make a fungus. The water will be pumped into the chiller machine and circulate into AHU and distribute the coldness into the building.

Escalator

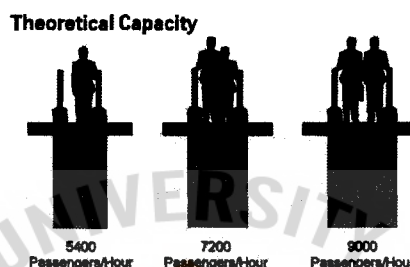


Figure 6.3 escalator system

There are 3 types of escalator first, cross over it has the wideness 60 cm which is one way circulation. Second, double crossover it has the wideness 80 cm. This type of escalator two persons can use at the same time. Finally, Double crosser it has the wideness 1 m which is a bigger site of escalator. According to this project which is showroom and museum the crossover 60 cm is enough for this project because the number of visitor is not much as department store.

Lift

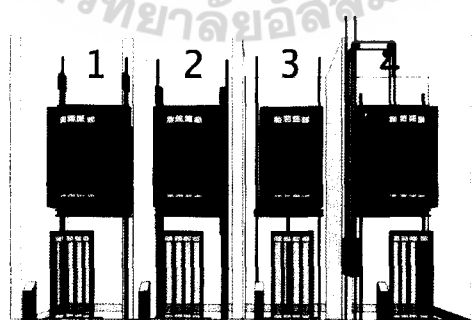


Figure 6.4 lift system

There are four types of lift telescopic holeless hydraulic, roped hydraulic, holed hydraulic and traction/machine room less. For this project is going to use Traction/machine room less (number 4 of figure 6.4) because this type of lift is don't have a machine room it will not affect with the architectural form.

Fire alarm system

There are two types of fire alarm system manual system and auto system.



Figure 6.5 pull station

Figure 6.5 show the manual system that need to use human to be activated.

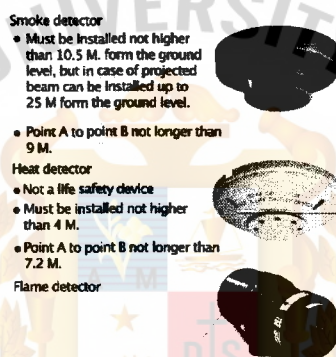


Figure 6.6 fire detector

There are three detector fist smoke detector, heat detector and flame detector. First, Smoke detector must be installed not higher than 10.5 m from the ground level, but in case of projected beam can be installed up to 25 m from the ground level and from point A to point B must not installed longer than 9 m. Second, heat detector this is not a life safety device this detector must be installed not higher than 4 m and from point A to point B must not installed longer than 7.2m.

Chapter 7: Design schematics

This chapter explains about the conceptual ideas of the project. Thus, there are two ideas about the architecture form the first one is negotiate the curves with is the idea from cornering while driving a car. Another idea is in between two line the idea form the identity of BMW and translate them into two lines and create the space and form.

1. Negotiate the curves

This thesis intends to design architecture that can represent the identity of the brands. Thus, the first schematic is about the curves. It calls negotiate the curves.

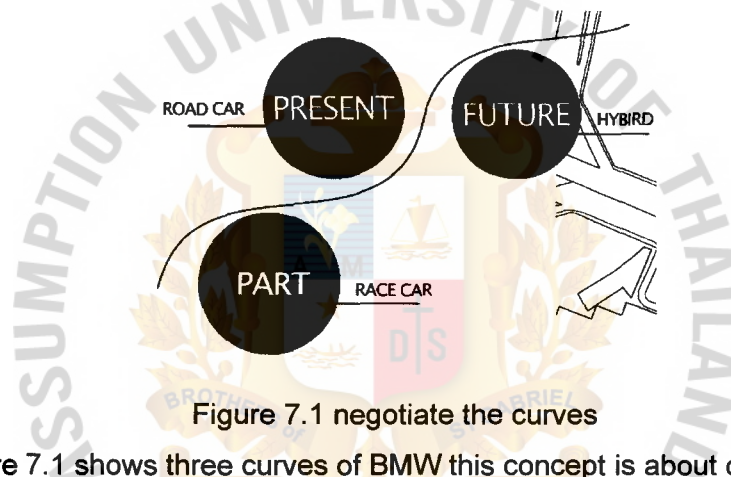


Figure 7.1 negotiate the curves

Figure 7.1 shows three curves of BMW this concept is about changing the perspectives of the driver when they cornering. Thus, I use this and turns it into architectural aspect and links it with BMW history which mean every curves of the building is going to change the perception of the user and in terms of architecture every curve will be the transition spaces and program will be changed according to the diagram.

2. In between two lines

This is another idea is about in between two lines the first line is straight line and another line is zigzag line.

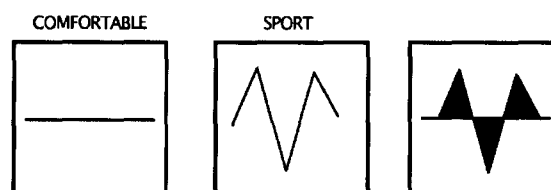


Figure 7.2 In between two lines

I got this idea from the mood lines which is every line has its own mood. And use this idea can combine with the BMW identity which is comfortable and sportiness.

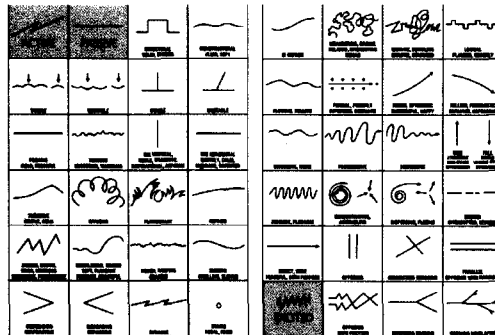
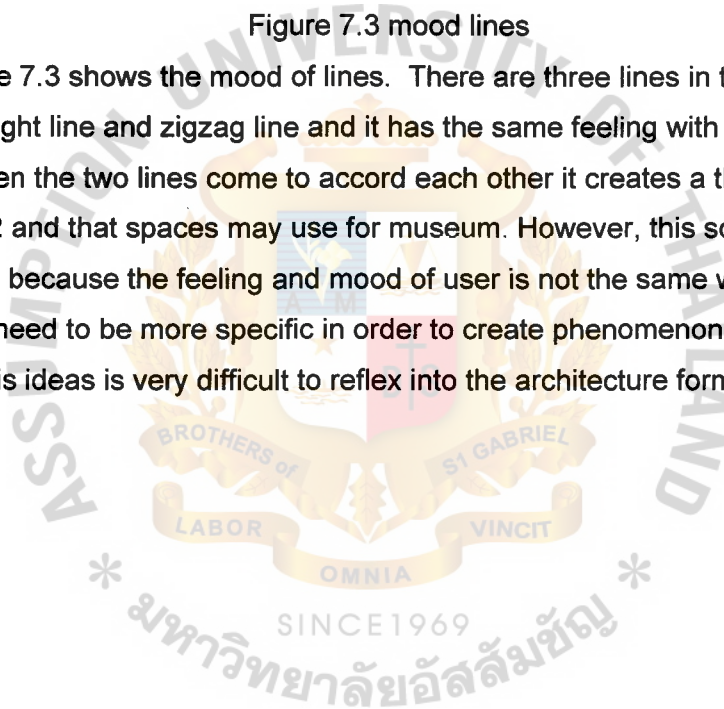


Figure 7.3 mood lines

Figure 7.3 shows the mood of lines. There are three lines in the highlight which is straight line and zigzag line and it has the same feeling with the BMW identity. When the two lines come to accord each other it creates a three spaces as the figure 7.2 and that spaces may use for museum. However, this schematics is not a good ideas because the feeling and mood of user is not the same way, thus architecture need to be more specific in order to create phenomenon in space. Moreover, this ideas is very difficult to reflex into the architecture form.



Chapter 8: Design summary

8.1 Diagrams

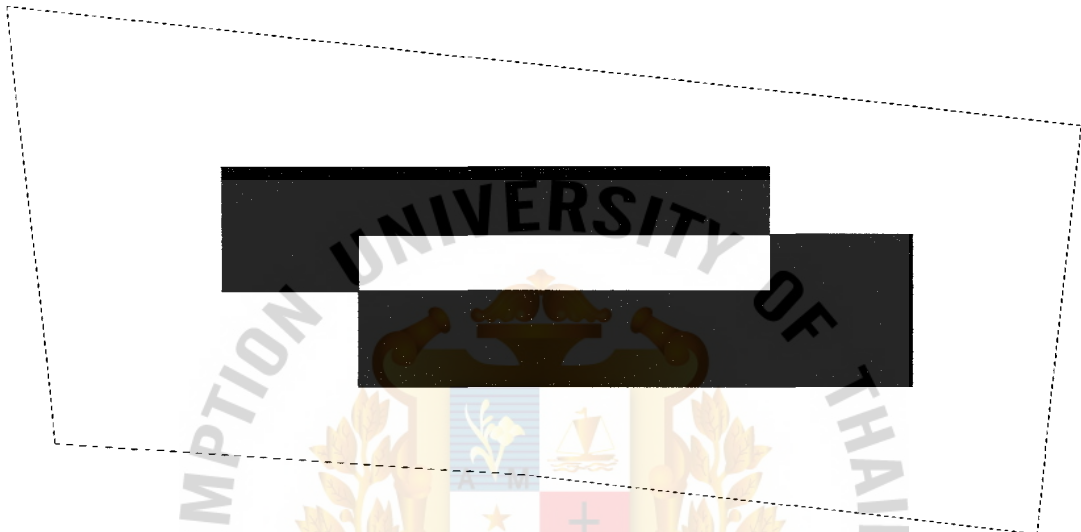


Figure 8.1 Form diagram

This diagram shows the possibility to layout the form and space by using the benefit of the site. The form is located along the site shape.

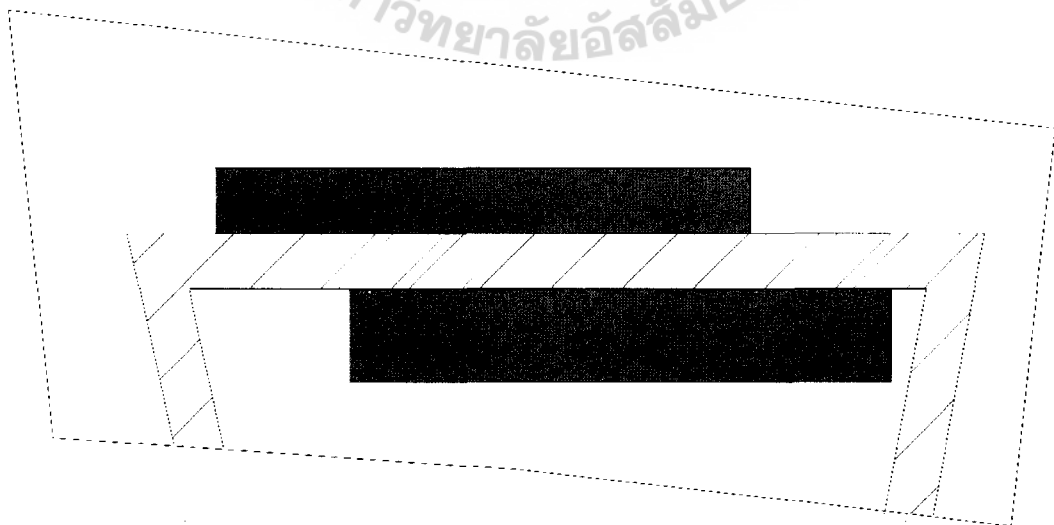


Figure 8.2 Form diagram

The road is located in the middle of the form in order to create the living showroom which user who living in the building can see the car on the road.

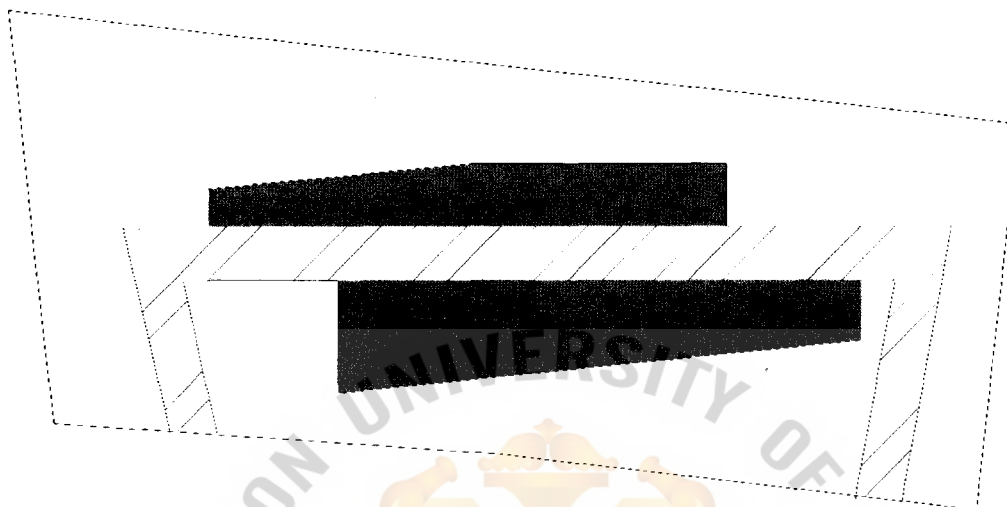


Figure 8.3 Form diagram

Shape the form to create more dynamic and create the visual interactions to the main road.

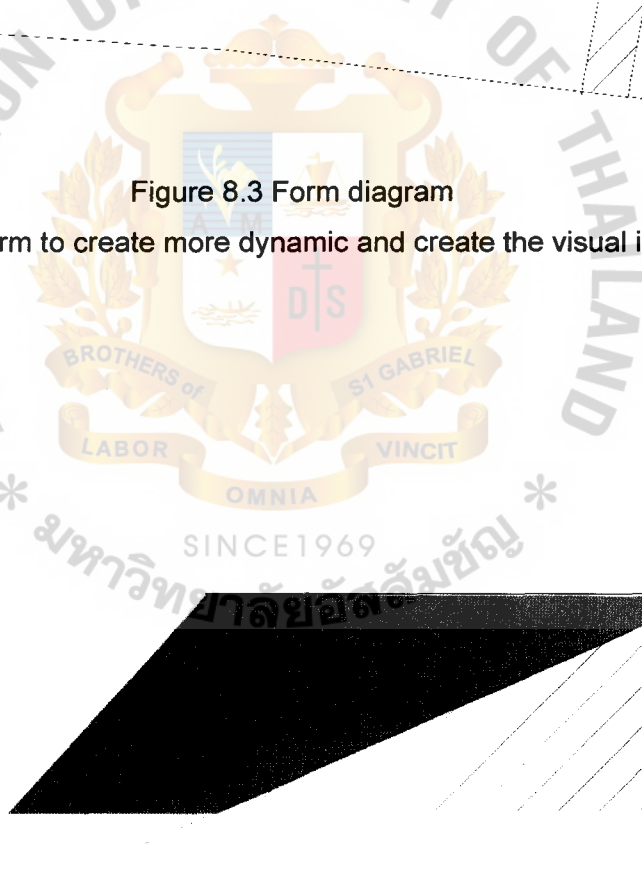


Figure 8.4 Form diagram

This diagram shows the idea of dynamics which is appear in the elevation of the building which starts with something concrete and upon it goes along it gets tapering and vanishes into thin air.

PRODUCT SEGMENTS

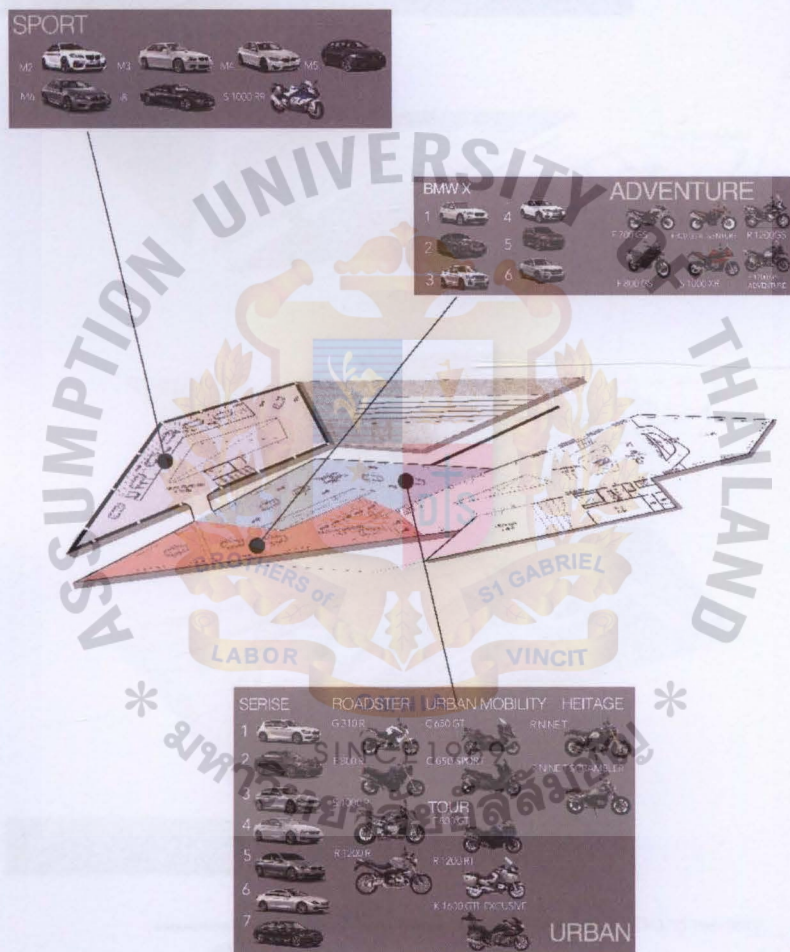


Figure 8.5 Product segments

According to, the BMW product segments are divided into 3 parts which are sport, adventure and urban each segment has a difference feeling. For the example, the circulation on the sport part has the narrow circulation which user need to walk faster than others segment, urban segment has a huge circulation which user can walk slowly to see the products on this segment. Finally, adventure segment the circulations have more dynamics than the others segment

USER SEQUENCE

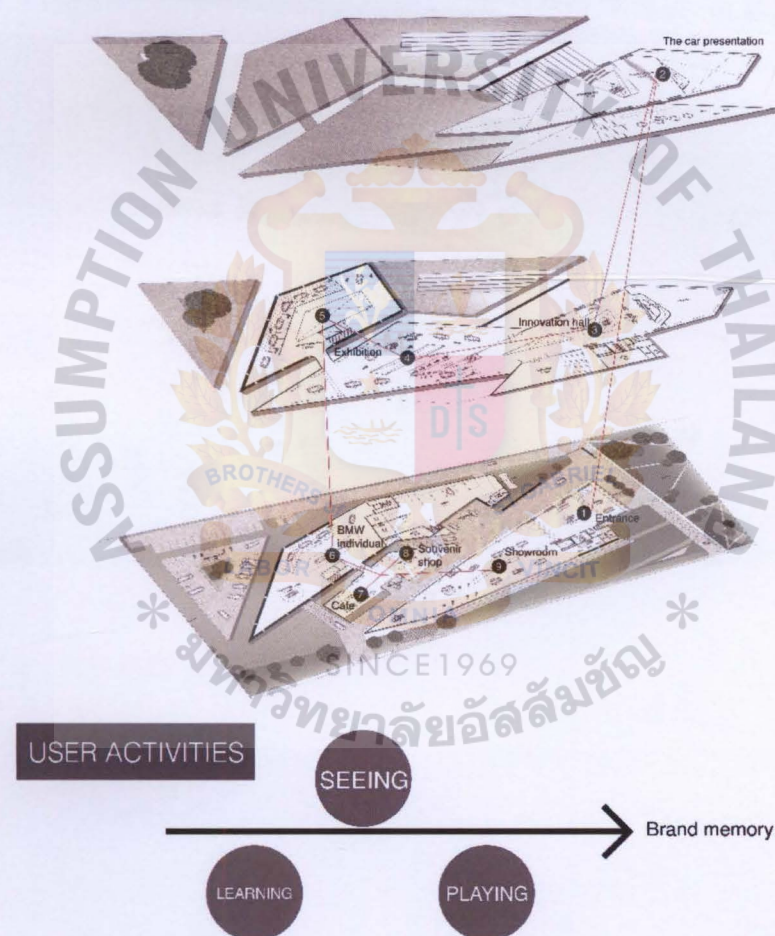


Figure 8.6 User sequence and activities

This diagram shows the user sequence that users need to start at the car presentation hall on the 3rd floor and go down to the 2nd floor to see the innovation hall and move to the exhibition area, then get into the BMW individual which users can make their own BMW cars and move forward to the café and souvenir shop and finish at the showroom which is located in front of the building.

Another diagram is the user activities in order to created brand memory user need to achieve 3 things learning (Innovation hall), seeing (exhibition) and playing (BMW individual).

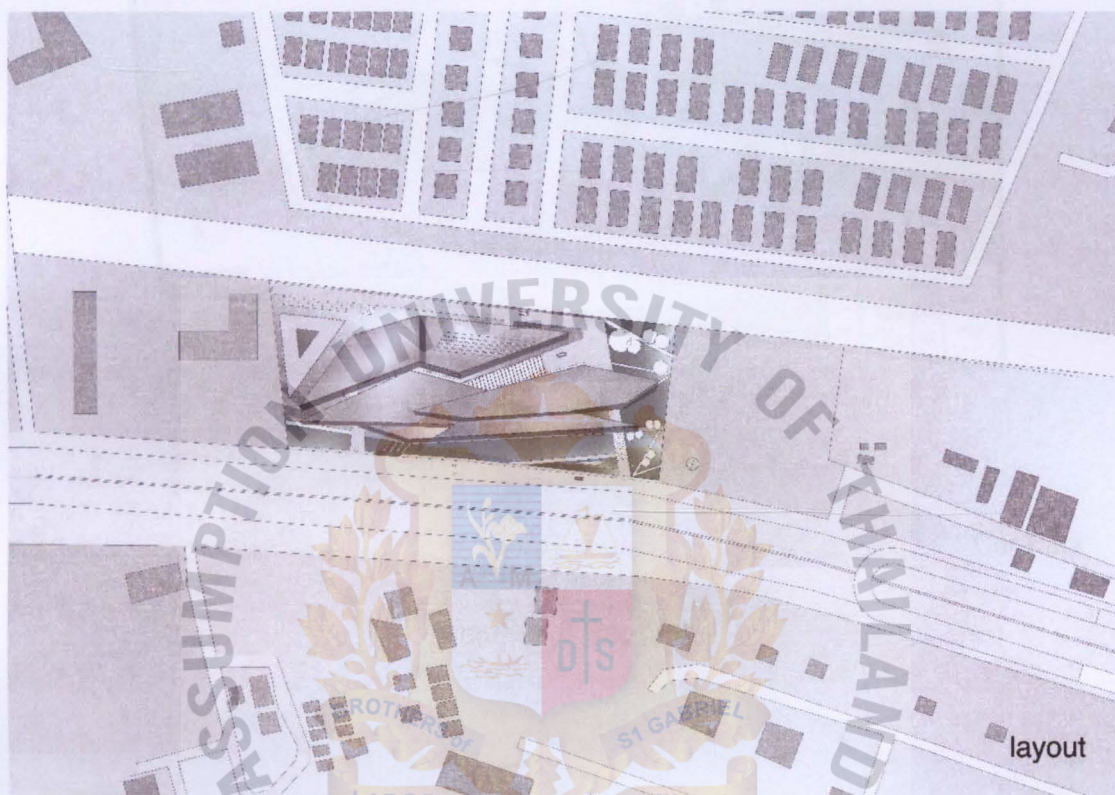
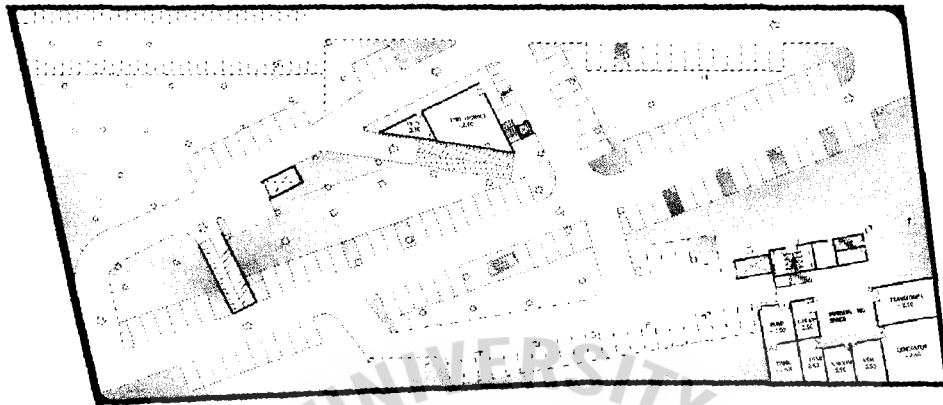


Figure 8.7 layout

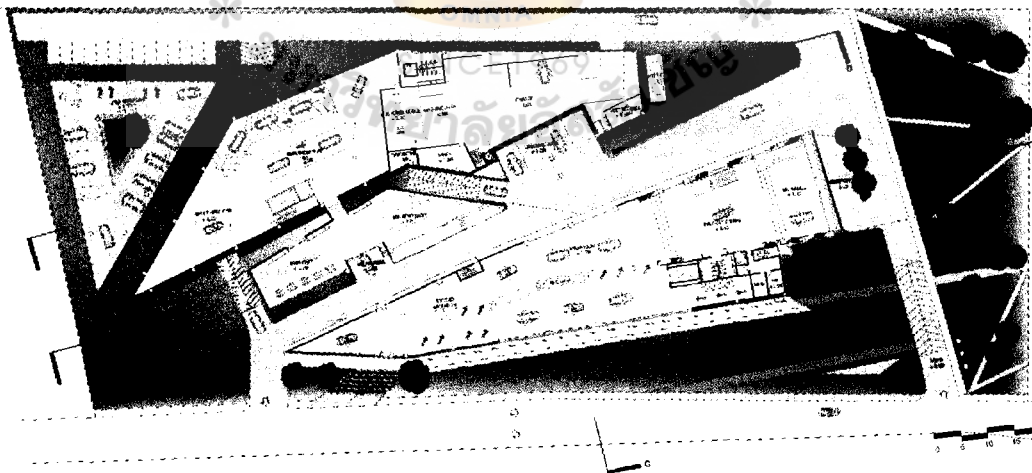
* มหาวิทยาลัยอัสสัมชัญ *
SINCE 1969

Figure 8.9 1st floor plan



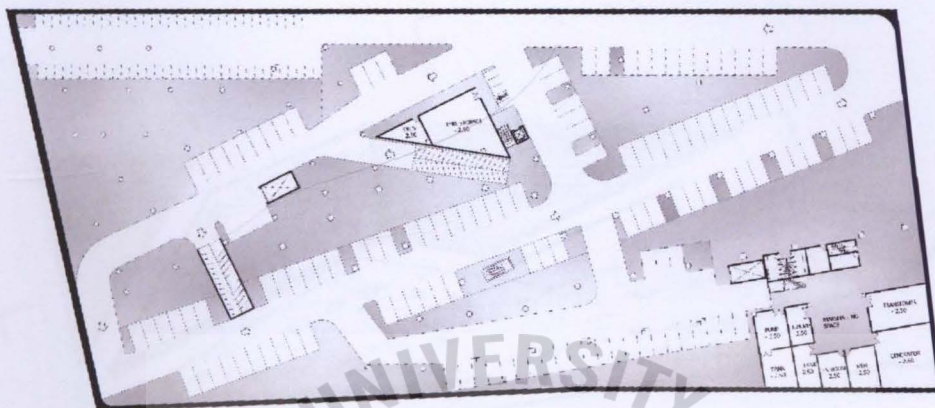
Car Park

Figure 8.8 Car park



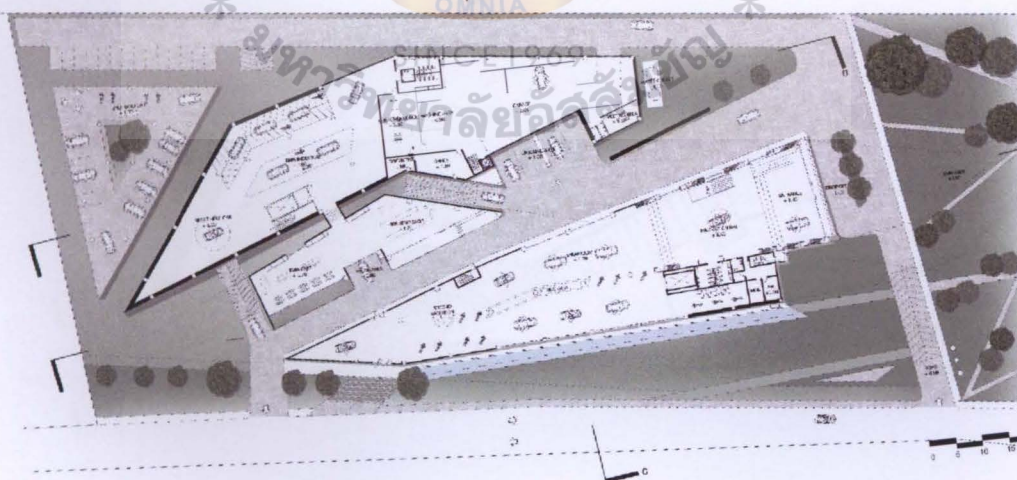
1st Floor Plan

Figure 8.9 1st floor plan



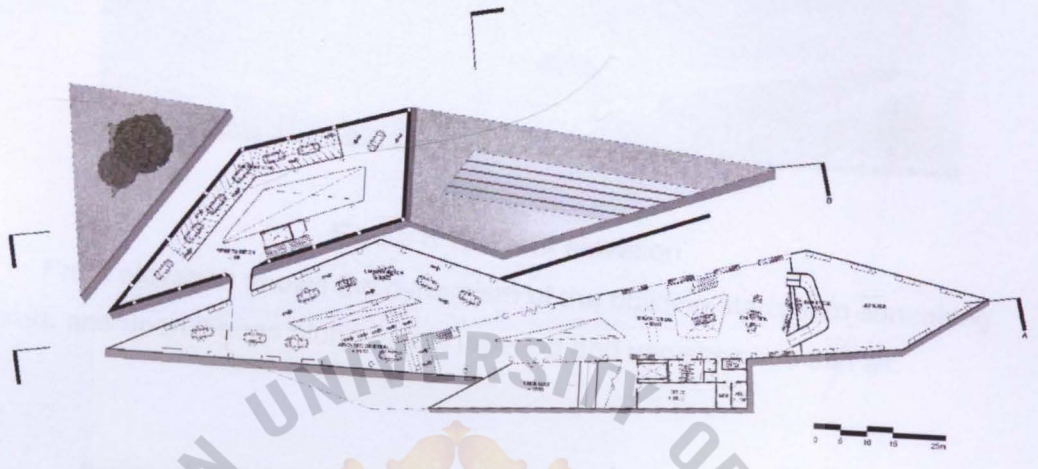
Car Park

Figure 8.8 Car park



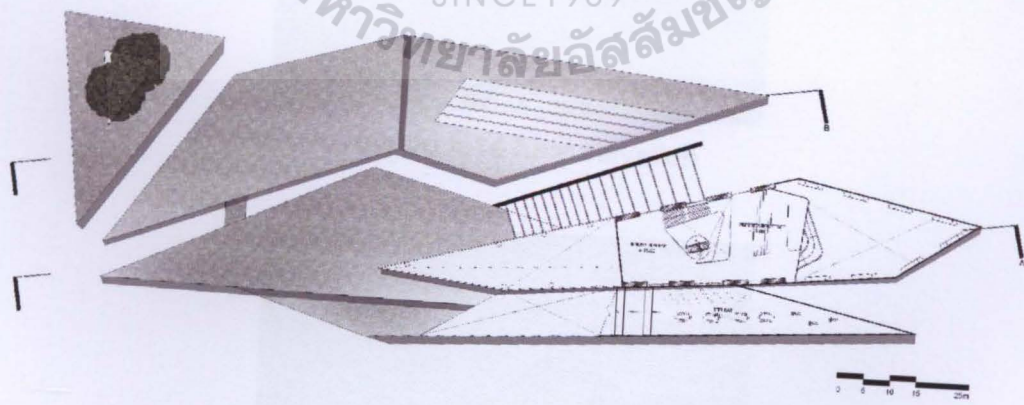
1st Floor Plan

Figure 8.9 1st floor plan



2nd Floor Plan

Figure 8.10 2nd floor plan



3rd Floor Plan

Figure 8.11 3rd floor plan



Figure 8.12 Front elevation

Front elevation shows the dynamism of the building starts with something concrete and upon it goes along it gets tapering and vanishes into thin air.



Figure 8.13 Back elevation



Figure 8.14 East elevation



Figure 8.14 West elevation

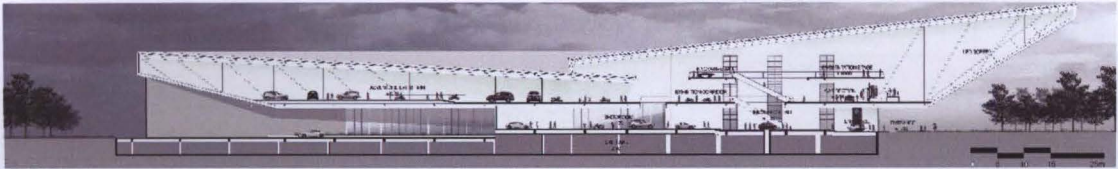


Figure 8.15 Section A

This section shows the functions on the middle of the building which are innovation hall, car presentation, exhibition and show room where user can explore the BMW world by learning, seeing and playing.



Figure 8.16 Section B

This section shows the road in the middle of the building where user can see the living show room and it is the transition between showroom and garage.



Figure 8.17 Section C

This section shows the space inside the exhibition area in the sport part and the circulation which connected between the exhibition and BMW individual.



Figure 8.18 Night view perspective

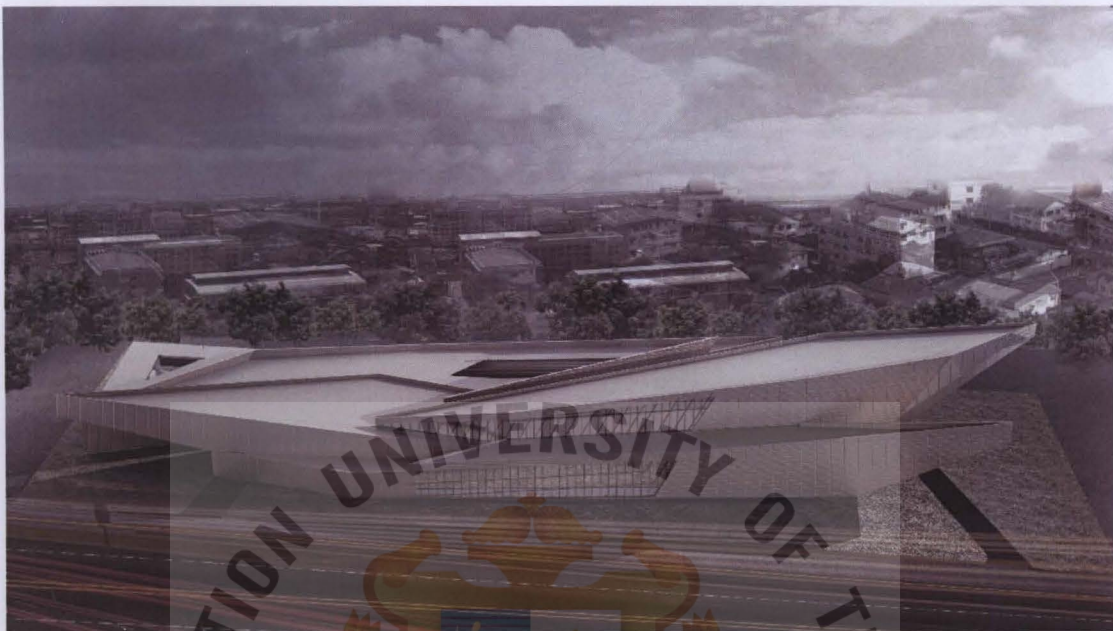


Figure 8.19 Exterior perspective

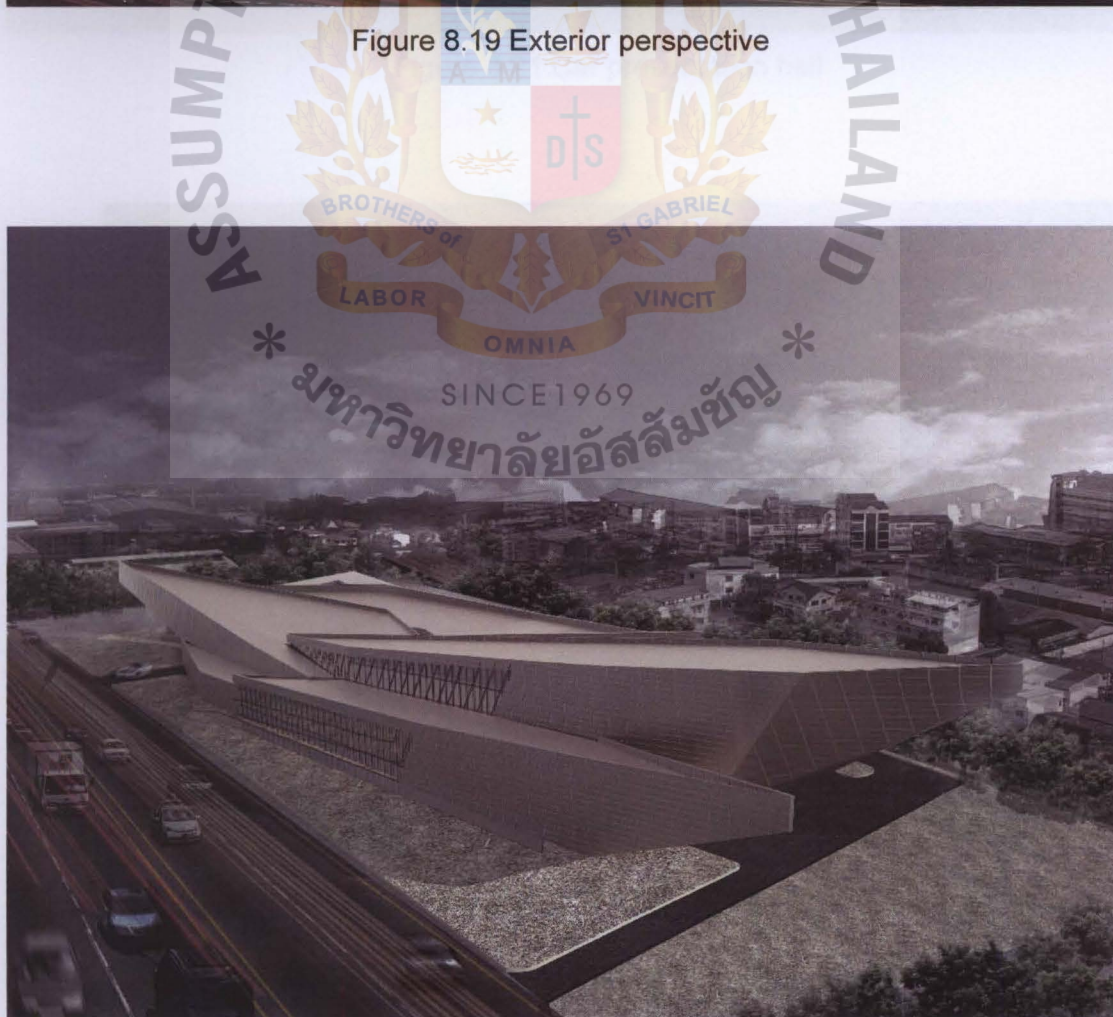


Figure 8.20 Exterior perspective

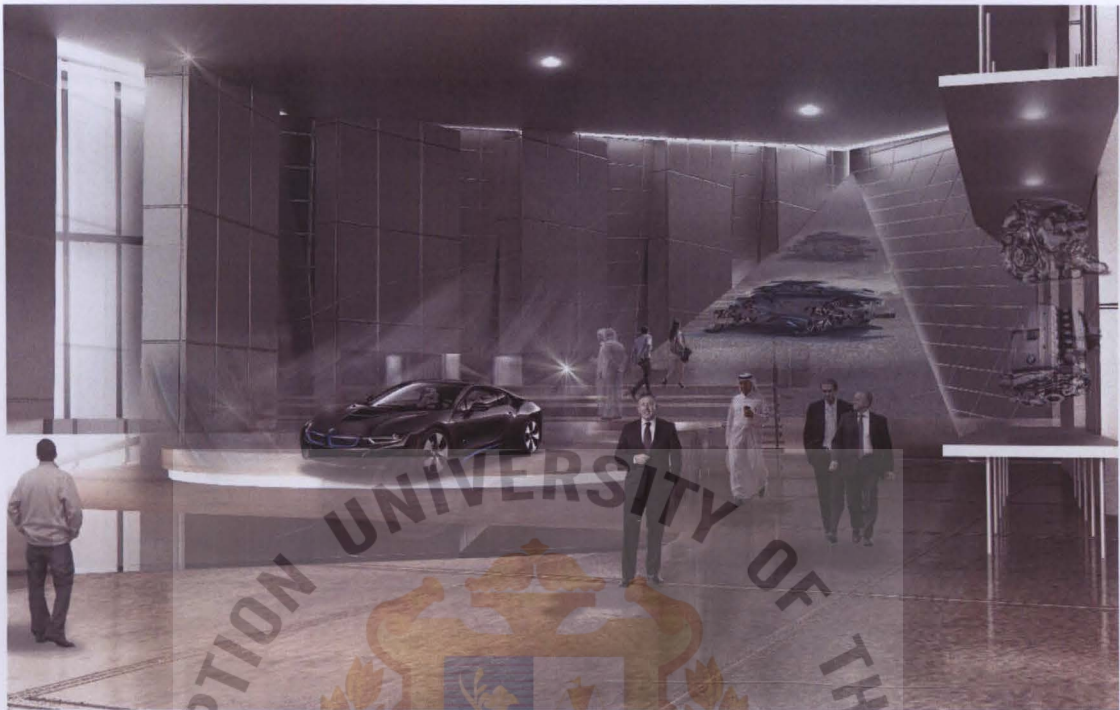


Figure 8.21 Car presentation hall



Figure 8.22 Showroom



Figure 8.23 Exhibition

Chapter 9: Thesis Conclusion

This thesis achieve the idea of combining the theory of form and space in order to represent the brand identity and using the space and a communication tool to communicate the feeling of the products each segments.

According to the site location, that located beside the motorway number 7 which is a high speed way and user can experience the dynamic of speed of car movement and from movement. The benefit of the location is good to show the product because it is the car high density place where people can see the products and the architecture that represent the identity of BMW.

The user can perceive the movement of the space by using the difference circulations on every segments and create the brand memory by using the activities

according to the senses of human. The phenomenology is considered into the space design.



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