

CHAPTER 5

5.1. CONTEXTUAL CONCEPT

5.1.1 CHOSEN SITE

Site located on Sukun Raya Street (7°03'57.6"S 110°24'59.5"E) in Banyumanik district south Semarang city, as the regional regulations of Semarang city this site located on BWK VII in banyumanik covering of 2,509 (two thousand five hundred and nine) hectares, this area have a land use of Residential, Office, Retails, Services, Military area and was a part of national housing area since 1980's.

Around the site is a retails, high school and residential, on the southern side there's a little river that separating the site, and a residential area across the river that could be used as service or side entrance



Picture: 5.1 chosen site condition
Source: googlemaps.com



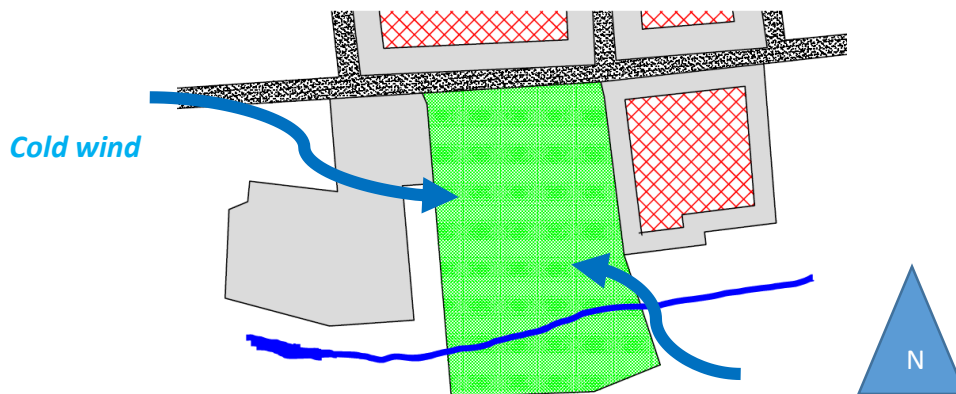
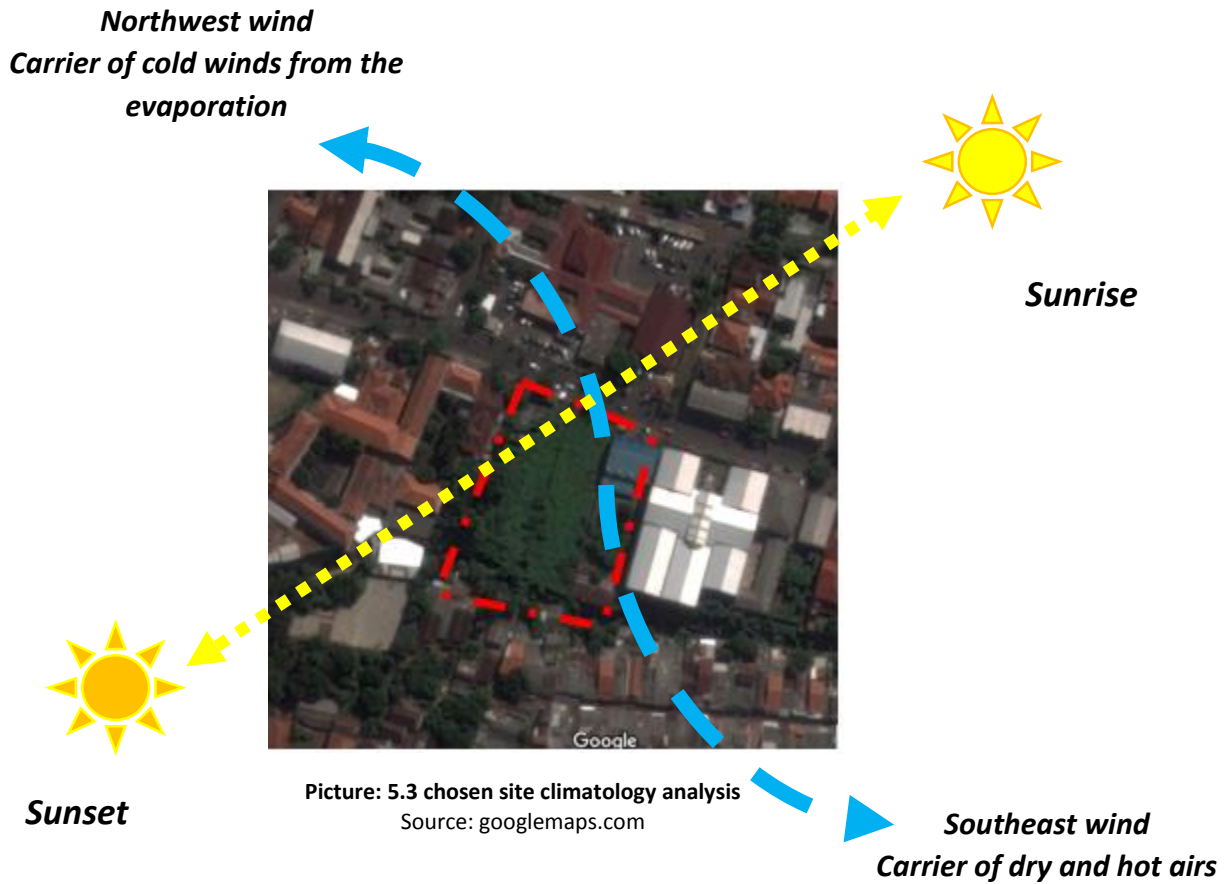
Picture: 5.2 chosen site
Source: googlemaps.com

- | | |
|----------------------------|---|
| a. Location | : Sukun Raya Street (7°03'57.6"S 110°24'59.5"E) |
| b. The width of the street | : 8 m |
| c. Surrounding Area | : Dense residential and retails area |
| d. Medical Facility | : Hermina Hospital and Banyumanik general Hospital |
| e. Land use | : Residential, Office, Retails, Services, Military area |
| f. Area | : 8567 m ² |
| g. Topography | : relatively flat |
| h. Land boundaries | : |
| • North | : Sukun Raya Street |
| • East | : Retails |
| • West | : High School |
| • South | : Residential Area |

5.1.2 ZONIFICATION

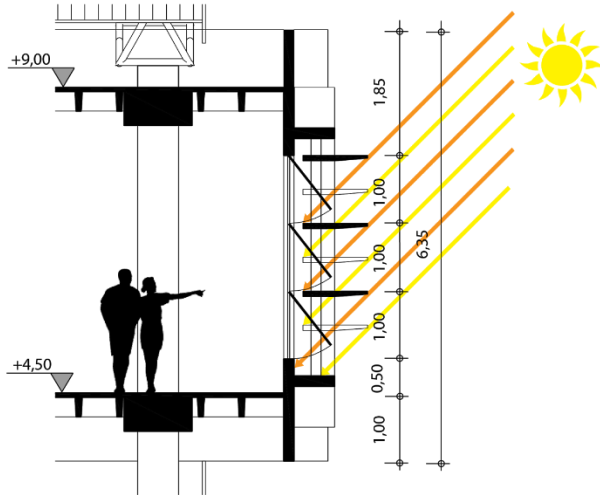
a. Climatology

Shown below are the personal analysis of the sun path and the wind path in the chosen site:



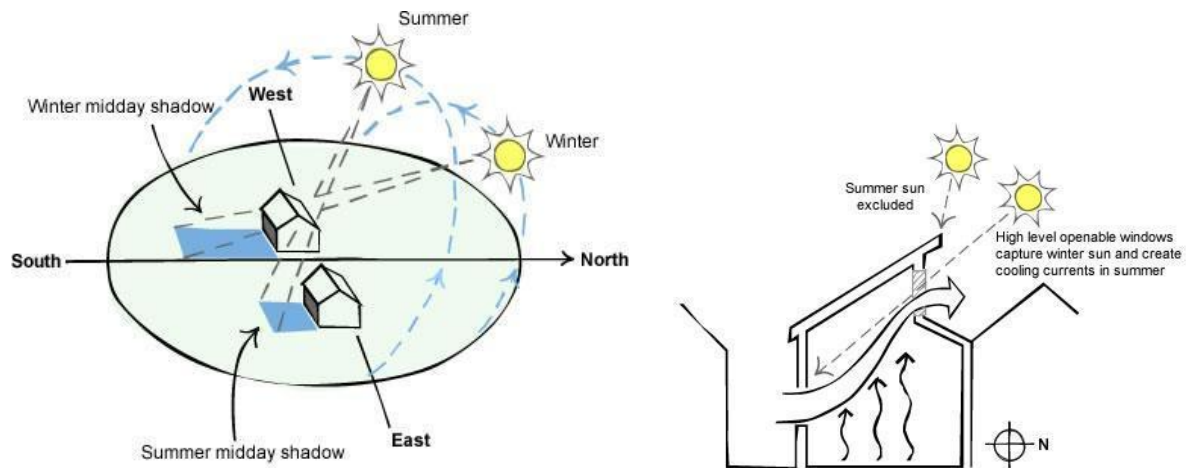
The hot dry winds can be anticipated with vegetation or shading in the building façade.

The application of *brise soleil* to basically deflecting the sunlight from its heat or brightness, this is a kind of sun-shading architecture technology.



Picture: 5.4 Brise soleil details
Source: google.com

And also the placement of the building to north and south in some parts of area so that it would preventing the sunlight and heat going directly to the spaces inside the building, that can be resulted in uncomfortable environment also inefficiency of air conditioning.



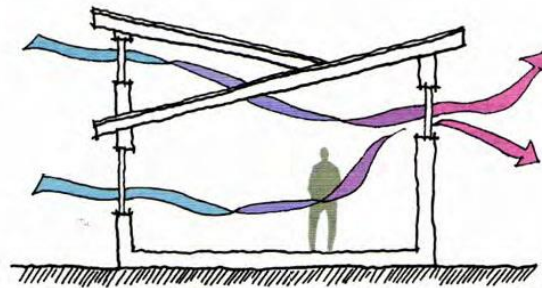
Picture: 5.5 chosen site climatology analysis
Source: google.com

Consideration:

1. The placement building that could prevent direct exposure to sun heat or light are needed to put into a consideration, to makes the users feels comfortable and making the a/c working efficiently, but that doesn't mean that the building are isolated from the sun light or heat since the elderly occupants need to sunbathe from time to time.
2. The application of cross ventilation system, this systems for making sure that the building got the ventilation system as natural as possible, reducing a/c electricity and provide a natural wind from the outside into building making it as one requirement of green / tropical architecture crossed of the list.
3. The application of the vegetation for the natural air filters in surrounding area such as shady trees or a vertical garden in some parts of area, to provide natural looks in the facility.

Results:

1. The application of *brise soleil* and cross ventilation system to be applied in the buildings, thus making the way of the sunlight and natural ventilation system for the buildings possible, The application of the vegetation for the natural air filters in surrounding area such as shady trees or a vertical garden in some parts of area, to provide natural looks in the facility.



Picture: 5.6 cross ventilation system for the building

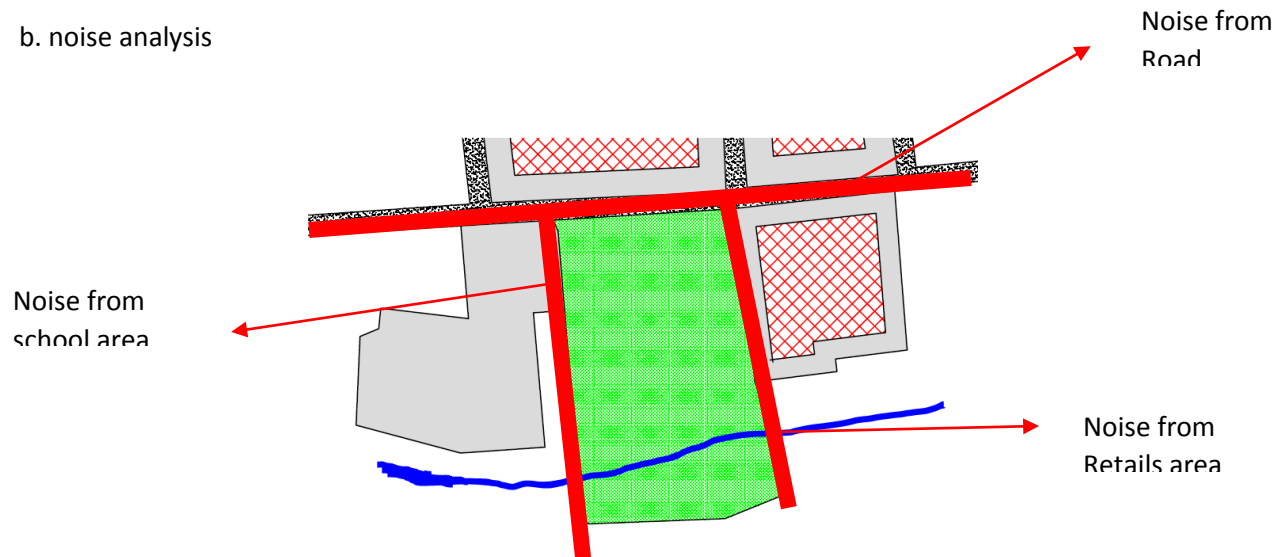
Source: google.com



Picture: 5.7 vertical garden wall system for the building

Source: google.com

b. noise analysis



Consideration:

1. To reduce the noise from the outer site, some technic could be applied in this site and one of them are vegetation, putting a lines of bamboo to make a living fence or as a noise reduction is one of the effective methods to do.
2. Built a soundproof spaces in the areas that needed.
3. To put a fire out by fire, no we don't use fire in this case but fight noise with another noise such as water streams, bird singing or other nature noises could be another way to disguise noise with convenient way.

Noise analysis:

1. Putting away the building masses with source of noise
2. Placing noise reduction system in a place it needed
3. Giving a distance between a space that need to be quiet with source of noise
4. The using of material that would be a soundproof
5. The application of vegetation that could be a sound barrier

Vegetation analysis:

1. Vertical gardens as façade that in harmony with surroundings
2. Vegetation as an emphasize natural element
3. Using the local vegetation

Results:

1. Trees could be functioning as a noise reduction barrier, in a forms of a shelter belt with a dense layering, could be a noise redactor as big as 95% from its original sounds.



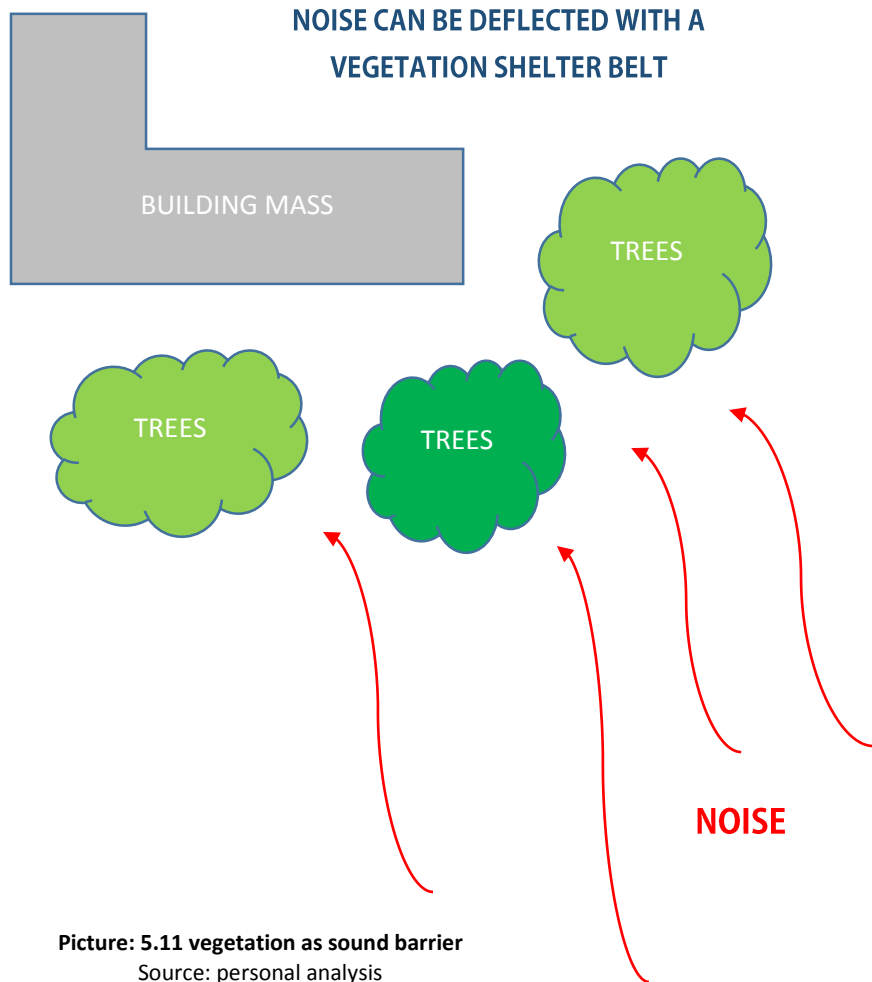
Picture: 5.8 ketapang trees
Source: google.com



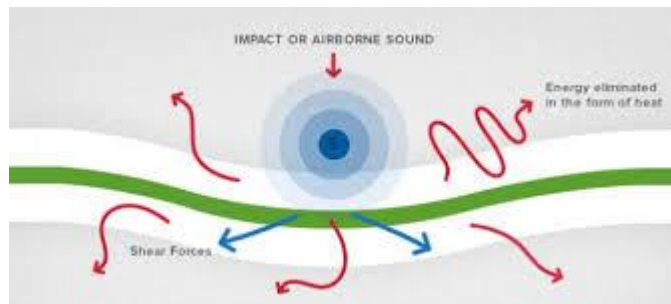
Picture: 5.9 kiara payung trees
Source: google.com

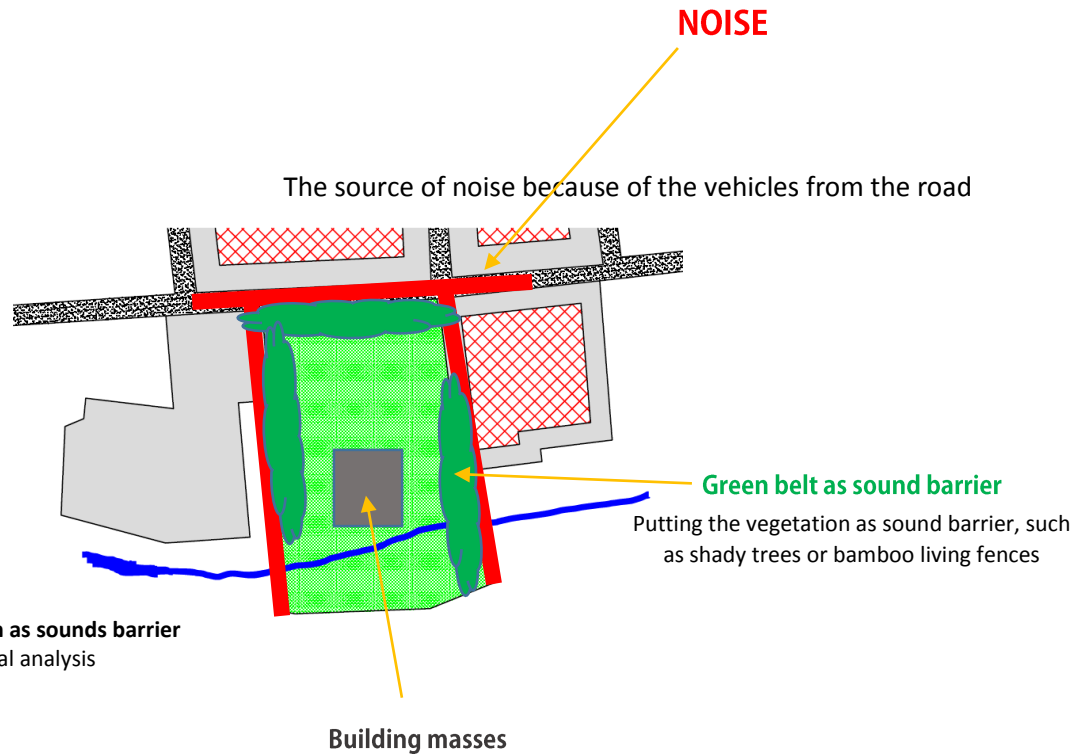


Picture: 5.10 bamboo living fence
Source: google.com



Picture: 5.11 vegetation as sound barrier
Source: personal analysis





Picture: 5.12 vegetation as sounds barrier
Source: personal analysis

Putting the building mass as far as possible from the noise source.

- Giving the shelter belt with shady trees or living fence such as bamboo trees will help noise reduction efficiently.
- Putting building mass away from source of noise also will reduce the sound from outer site.
- If the building need to close as noise source, vertical garden or soundproof material can be used.

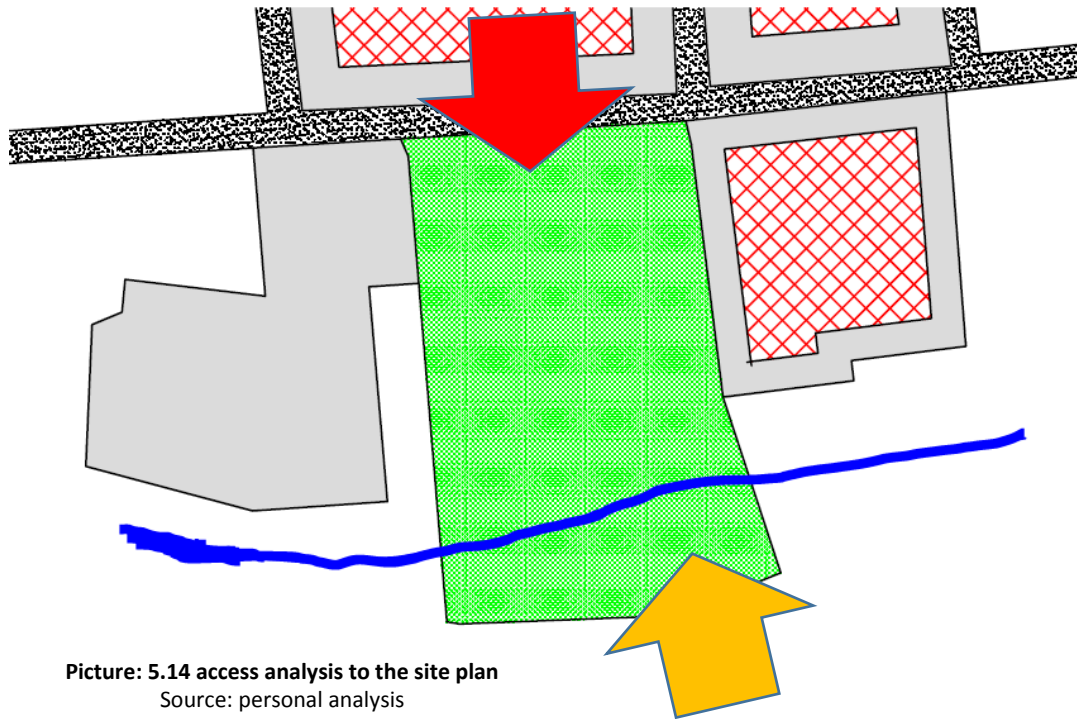
c. Accessibility analysis



Picture: 5.13 Access to site plan
Source: googlemaps.com



This north side of site could be used as a main entrance, since the heavy traffic from the Sukun Street that could be coming from national highway or ungaran freeway



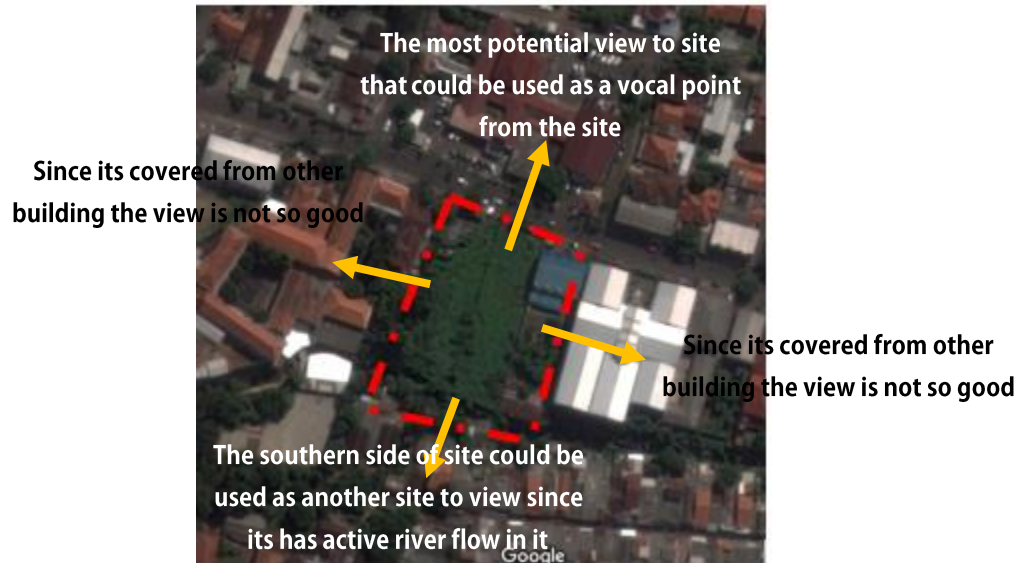
Picture: 5.14 access analysis to the site plan
Source: personal analysis

Well the southern side could be used as side entrance for the service or back entrance.

Given the importance of the easy way out and in from main entrance its logical that we put the main entrance in the north site of the building since it's just across the main sukun street with two way street and heavy traffics.

While side entrance located in the back to provide the privacy or the easiness circulation for vehicles that need it such as garbage truck, logistics etc.

d. View analysis



Picture: 5.15 view analysis to the site plan
Source: googlemaps.com

Consideration:

1. The façade would be used as a vocal point in the northern side of the site.
2. The other side of the site would need an inside view to outside since there are no potential view form outside the site.

Analysis result:

1. Making the building design as grand as possible to be a vocal point from the outside of the site.
2. Using a natural element inside the site to provide view from inside.
3. Garden could be used as another touch up to the design.

5.2 SPACING CONCEPT

5.2.1 Space regulations, connection and circulation

Based on previous chapter we discussed about space regulations, connection and circulation, thus it led to more specific space regulations as shown below:

Type of space	Sub-space	Space regulations					Features
		Natural light	Artificial light	Natural air	Artificial air	Safety utility	
Reception	Lobby	v	v	v	v	Non slippery flooring, hand rails,	Public
	Guest area	v	v	v	v		Services
	lavatory	-	v	v	v		Private
management	General manager office	v	v	v	v		Private
	Manager office	v	v	v	v		Private
	Supervisor office	v	v	v	v		Private
	Public relations office	v	v	v	v		Semi-private
	staffs	v	v	v	v		Semi-public
	Lavatory	-	v	v	v		

Table: 5.1 space regulations for managements and staffs
Source: personal analysis

Type of space	Sub-space	Space regulations				Safety utility	Features
		Natural light	Artificial light	Natural air	Artificial air		
Residential area cottages	Main bedroom	v	v	v	v	Handrails, fire extinguisher, smoke alarm, panic button, non-slippery floor.	
	Caretaker bedroom	v	v	v	v		
	Kitchen/dining room	v	v	v	v		
	Guest area	v	v	v	v		
	bathroom	-	v	v	v		
Residential area penthouse	Main bedroom	v	v	v	v	Handrails, fire extinguisher, smoke alarm, panic button, non-slippery floor.	
	Pantry	v	v	v	v		
	Guest area	v	v	v	v		
	Living room	v	v	v	v		
	Bathroom	v	v	v	v		
Residential room deluxe	Main bedroom	v	v	v	v	Handrails, fire extinguisher, smoke alarm, panic button, non-slippery floor.	
	Pantry	v	v	v	v		
	Living room	v	v	v	v		
	bathroom	-	v	v	v		
Residential room sharing	Main bedroom for two	v	v	v	v	Handrails, fire extinguisher, smoke alarm, panic button, non-slippery floor.	
	Living room	v	v	v	v		
	pantry	v	v	v	v		
	bathroom	-	v	v	v		

Residential sharing room subsidized	Bedroom for 5	v	v	v	v	Handrails, fire extinguisher, smoke alarm, panic button, non-slippery floor.
	Living room	v	v	v	v	
	lavatory	v	v	v	v	
Caretaker residential area	Bedroom	v	v	v	v	Handrails, fire extinguisher, smoke alarm, panic button, non-slippery floor.
	Living room	v	v	v	v	
	Pantry	v	v	v	v	
	Bathroom	v	v	v	v	

Table: 5.2 space regulations for residential area

Source: personal analysis

Type of space	Sub-space	Space regulations					Features
		Natural light	Artificial light	Natural air	Artificial air	Safety utility	
General Clinic	Consultation room	v	v	v	v	Non slippery flooring, hand rails,	
	Treatment	v	v	v	v		
	Waiting room	v	v	v	v		
Physiotherapy	Consultation room	v	v	v	v		
	Treatment	v	v	v	v		
	Waiting room	v	v	v	v		
Hydrotherapy	Consultation room	v	v	v	v		
	Waiting room	v	v	v	v		
	Whirlpool	v	v	v	v		
Psychiatric	Consultation room	v	v	v	v		
	Treatment	v	v	v	v		
	Waiting room	v	v	v	v		
Pharmacy		v	v	v	v		
Morgue		v	v	v	v		
Sterilization area		-	v	-	v		

Table: 5.3 space regulations for medical facility area
Source: personal analysis

Type of space	Sub-space	Space regulations					Features
		Natural light	Artificial light	Natural air	Artificial air	Safety utility	
Hall	Dancing hall	v	v	v	v	Non slippery flooring, hand rails,	
Dining room	Dining room	v	v	v	v		
	Kitchen	v	v	v	v		
	lavatory	v	v	v	v		
Classes	Painting	v	v	v	v		
	Knitting	v	v	v	v		
	Music	-	v	-	v		
Gathering	Halls	v	v	v	v		
Lavatory		v	v	v	v		

Table: 5.4 space regulations for social gathering area

Source: personal analysis

Information:

V = need it

- = doesn't need it

Thus as from those tables we now know the connections between spaces and rooms and activity:

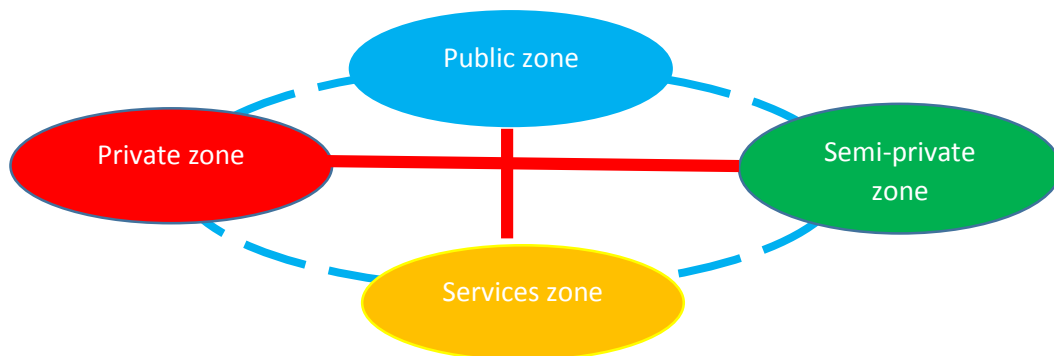


Diagram: 5.1 connection based activity

Source: personal analysis

Spatial organization as shown below:

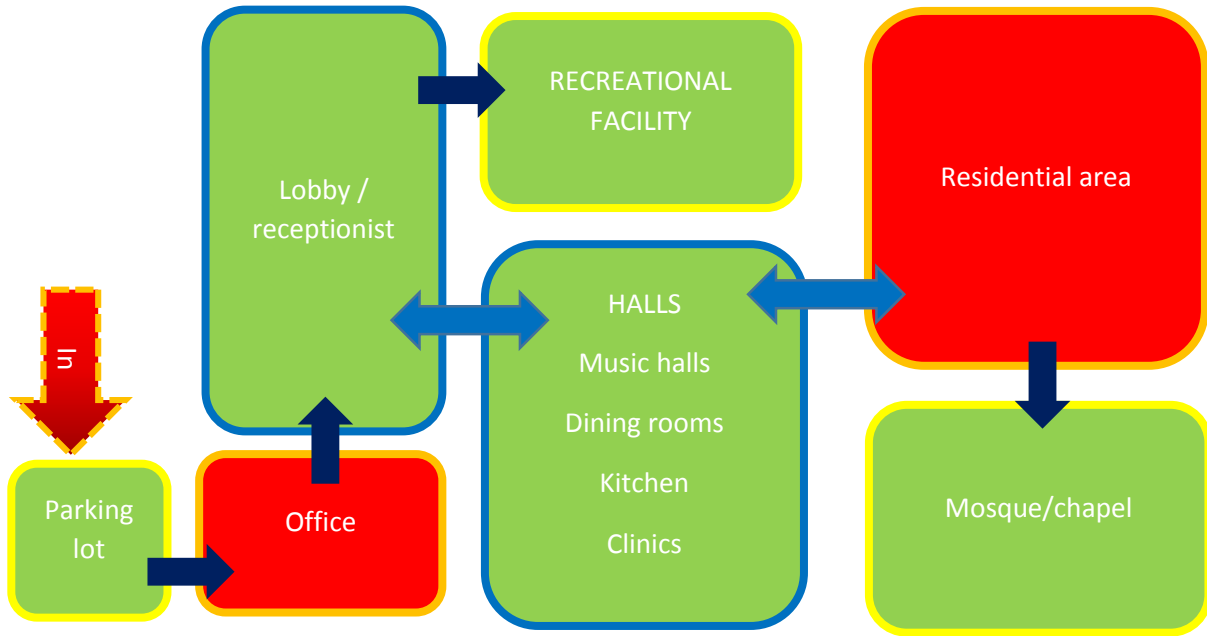


Diagram: 5.2 spatial organization
Source: personal analysis

5.2.2 Spaces programming

Based on the analysis from previous chapter we know that the area needs for the overall inside area are:

<i>Activity</i>	<i>Area m2</i>
<ul style="list-style-type: none"> • Management area • Residential area • Supporting area • Recreational area • Medical area 	<ul style="list-style-type: none"> • 560,16 • 3889,32 • 836,52 • 1038,9 • 375,6
Total	6700,5 m2

Table: 5.5 total indoor area needs
Source: personal analysis

5.3 ARCHITECTURAL CONCEPT

5.3.1 ELDERLY APARTMENTS WITH HOMEY CONCEPT

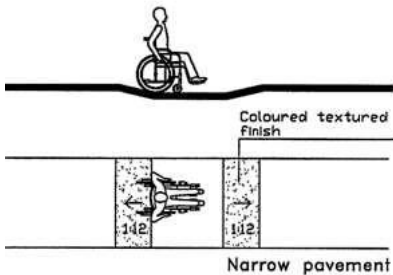
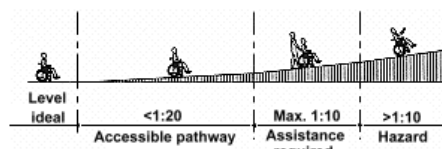
Elderly apartments used to known as nursing homes are place that looks too institutionalized for most of the occupants, this means that the conventional nursing homes are needs to be updated in their designs concept, not only for a shelter but a place for living.

The homey concept that would be applied in this elderly housing apartments would be in a forms of a several types of residential area because we need to think forward we need to makes the occupants feel comfortable, as Lord Best said “in old age, housing is not just about having a home, but it is to maintaining independence often with declining age.

The facility would filled with garden, recreational facility that would makes the occupants living a full life in their golden age.

The principal of the architectural planning for the elderly housing apartments are including with choice of materials and facility for the occupants.

Shown below are the table of home concept application for elderly housing apartments, based on principals of nursing homes design.

<i>Principal designing of nursing homes</i>	<i>Home concept</i>	<i>Application</i>
Physiology aspects		
<p>Safety and security</p>	<p>The house is the Shelter place that surrounds us with privacy, security, protection and defense from anything which can harm us comes from outside</p> <p>This is in conjunction with the safe feelings from homes, that would secure them from outside world</p>	 <p style="text-align: center;">Narrow pavement</p> <p>In the difference level of floors need to be painted with different color.</p>  <p style="text-align: center;">The ramp side needs to be less than 10 degrees to provide better handling for the user.</p>

Safe stairs criteria

