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the GuideBook:

*a step by step
approach to
write case study
in architecture
design*

Nornawar Laili | Norliza

NA2708 .N67 2017



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Nornawar Laili bt Nordin

The guidebook : a step by step approach to write case study in
architecture design / Nornawar Laili, Norliza Johan.

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THE GUIDEBOOK :

*A step by step approach to write
case study in architecture design*

Nornawar Laili binti Nordin | Norliza binti Johan

PERPUSTAKAAN POLITEKNIK PORT DICKSON	
PESANAN KERAJAAN	—
NO. INVOIS	—
PEMBEKAL	SUMBANGAN
NO. PANGGILAN	HAJ706 . NG1 2017

First published 2017

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Polytechnic Port Dickson.

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THE GUIDEBOOK : A step by step approach to write case study in architecture design :

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Designed by : Norliza binti Johan

Printed in Malaysia by :

Unit of Architecture, Civil Engineering Department,

Polytechnic Port Dickson, KM 14, Jln Pantai,

71050 Sirusa, Port Dickson.

N.Sembilan Darul Khusus, Malaysia

Perpustakaan Negara Malaysia

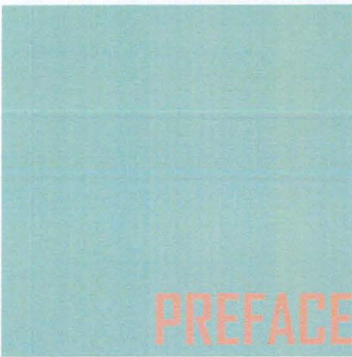
Cataloguing-in-Publication Data

THE GUIDEBOOK : A step by step approach to write case study in architecture design

/ (1st : 2017 : Port Dickson)

ISBN 978-967-5677-64-9

*The special wishes to our beloved family... a million thanks
for all your prayers, your never ending support to us and
the sacrifice... May you always be in Allah SWT blessings...*



PREFACE

Architectural Design course is a core course for Diploma in Architecture program in Malaysian Polytechnic. One of the tasks in the syllabus are case study. The case study is a study on a similar design assignments projects given to the students. By doing a case study, it can help students understand the various aspects to be taken into account during the design process. A case study is an in-depth investigation of a single individual, group, incident, or community. Other ways include experiments, surveys, or analysis of archival information.

The main goal of this Case Study Guidebook is intended to facilitate students to investigate and analyze data that they have been received by their literature reading. In addition, these Case Study Guidebook can prevent students who take the Architectural Design course, from 'copy and paste' information that they have obtained without analyze their data collection.

This guidebook is also designed to facilitate the work of data collection process becomes more organized, easy to understand, systematic, concise and shorten the time to complete the assignment. It also is an effort of author to help fellow lecturers to improve their method of teaching. In particular, this guidebook is expected to compare the perceptions of students before and after applying the practice to make a case study through the Guidebook, and introducing simple methods step by step to write a case study for architectural design.

ACKNOWLEDGEMENTS

The authors would like to thank the final year students (semester VI, 2016/2017) of the Unit of Architecture, Department of Civil Engineering, Polytechnic Port Dickson for their contribution of ideas. The authors also would like to thank fellow lecturers of Design 4 and the Head of Department Civil Engineering for their continuous encouragement and support until the completion of this book.

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CONTENT

About Case Study 1

The Purpose 2

Literature Case Study 3

How To Conduct? 4

General Information 5

01 Environment And Micro-climate 6

02 User Behavior And Requirements 10

03 Utility And Space Enhancement 14

04 Form And Function 18

05 Circulation 22

06 Site Planning And Landscape 26

07 Structural Details Such As Column And Beam Design, Steel And Composite Structures 31

08 Building Services Such As Fire Alarm System, HVAC, Water Supply Systems 34

09 Design Detailing Considering The Barrier-free Environment 38

10 Socio-economic Profile Of User Group 42

11 Parking Details And Standards 46

Lesson Learned 50

Analyzed Case Study 1 and 2 51

Conclusion 53

Rubric 54

Reference 55

ABOUT CASE STUDY

Case studies are an important and integral part of any design process. These delve into the depth of problem solving methodologies already adopted in past by designers. Case studies make it easier for students to take some decisions and refer to some precedent.

When students begin studying Architecture at a University, the first thing that they are supposed to become excellent at, is doing a documentation or a case study. It could be a case study of a small village, town, a villa, a bus-stop, or a high-rise commercial or residential building. A case study is an in-depth investigation of a single individual, group, incident, or community. Other ways include experiments, surveys, or analysis of archival information

THE PURPOSE

What is the purpose of conducting a Case Study?

As the term Case Study suggests, it is the study of a particular case that is similar to your topic of design project. Doing a case study will help you understand the various aspects that you have to consider while designing.

The problems that you are yet to solve or face, may have been already solved or attempted by somebody in past. Case study involves an in depth investigation of the approach towards solving these problems. It is also the study of approach towards solving certain problems.

Importantly, case study shall not be only restricted to successful and popular buildings. One must also investigate and analyse some failures to ensure that these do not get repeated when you are set to design something.

LITERATURE CASE STUDY

Literature case study consists of reading everything you can find on the subject. You can refer books in a library, use Google to look up research papers, check out Standard Code books and statutory laws or from technical journals.

A literature case study would give you a vague idea about your topic. There will be various questions arising in your mind after you are done with your literature case study. To find the answers to those questions, you will have to go for minimum two live case studies...

Always possibly go for more than two different case studies, because a comparative case study of two or more different cases is very important and helpful.

HOW TO CONDUCT?

Students, even before you set yourself out for any case study, ensure that you have correctly read and understood the design brief. You have a clear idea of requirements of the spaces, users, location and even submission schedule. This will help you in shortlisting appropriate case studies. Case studies shall not be only of the successful examples, but also of some failures.

Case studies shall be done for buildings set in different environments and climate, of different scales and by different architects preferably. Students must personally do at least two case studies of different nature in addition to some book case studies.

Now, assuming that you have understood the brief clearly, shortlisted the case studies you would like to do, then finalise two case studies.

GENERAL INFORMATION

This template has been developed to get at information specific to case study's process so that students or others may learn and implement these concepts into future projects.

Case Study 1

Building Name:
Building Location:
City:
State:
Country:
Project Size (ft², m²):
Building Type(s):
Project Type:
Delivery Method:
Building Architect:

Case Study 2

Building Name:
Building Location:
City:
State:
Country:
Project Size (ft², m²):
Building Type(s):
Project Type:
Delivery Method:
Building Architect:

01

Environment And
Micro-climate

ITEM TO ANALYZE

Environment and micro-climate

Analyzing the surrounding environment and the micro-climate of that place will help understand the reason of the orientation of the structure, the kind of roof chosen and the materials used in its construction.

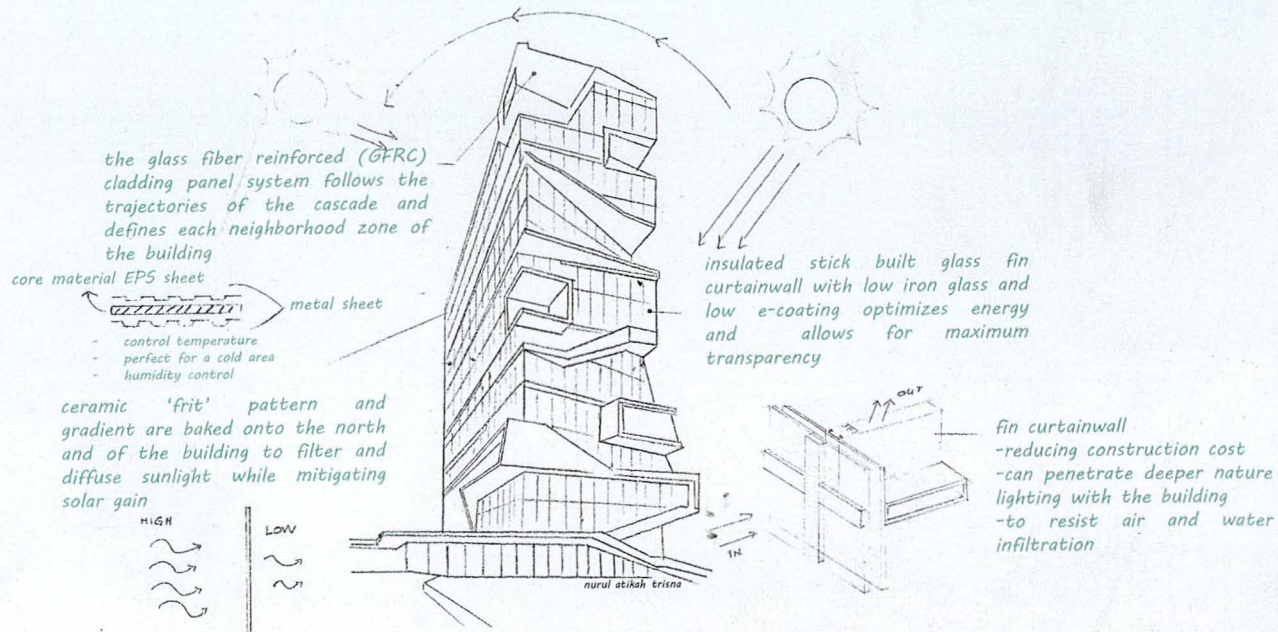
sketch here

FIGURE/ DIAGRAM

sketch here

ITEM		SCORE				
<i>Environment</i>		1	2	3	4	5
<i>Micro-climate</i>		1	2	3	4	5
	SCORE					
1	<i>Very poor</i>					
2	<i>Poor</i>					
3	<i>Satisfactory</i>					
4	<i>Good</i>					
5	<i>Excellent</i>					

EXAMPLE



02

User Behavior



00028959

PROBLEM STATEMENT

ITEM TO ANALYZE

User Behavior And Requirements

Studying the functioning of a particular place, is very important; without which you will not be able to figure out the requirements and the area that should be allotted for each of the requirements. Talking to people working at that place, will help you figure out if the requirements that are provided are adequate and the area that is allotted is sufficient for its efficient working.

sketch here

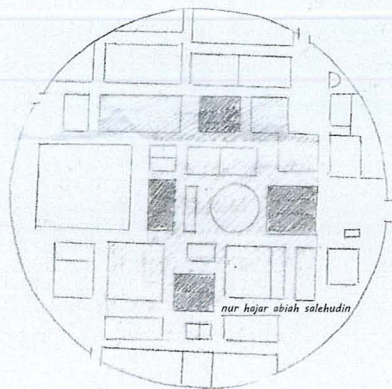
FIGURE/ DIAGRAM

Example

sketch here

ITEM		SCORE				
User Behavior	1	2	3	4	5	
	SCORE					
1	Very poor					
2	Poor					
3	Satisfactory					
4	Good					
5	Excellent					

EXAMPLE



PUBLIC ZONES

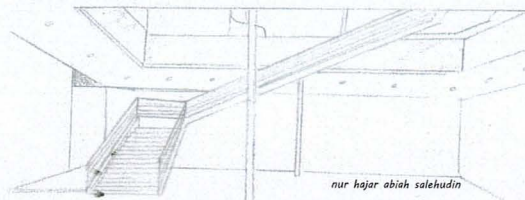
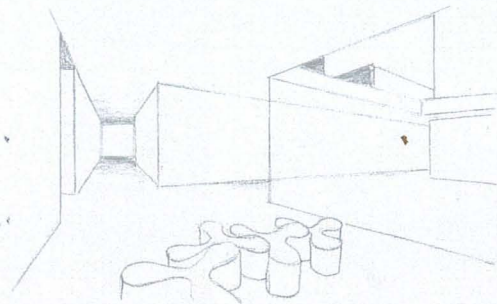
- its is a zone that creates a place and exchange material out meet the diverse needs of visitors
- people gather with no limits

EXHIBITION ZONES

- exhibition room follow the exhibition variety
- shows manner and respect

COURTYARD

- people resting the body and mind
- a gathered area



user behavior and environment

- only available for:
 - elder
 - teenagers
- do not provide services for disable, kids, and tourist

03

Utility And Space

03

ITEM TO ANALYZE

Utility And Space Enhancement

Study of Utilitarian facilities of a particular case. Various measures taken to enhance a particular space should be analyzed.

sketch here

FIGURE/ DIAGRAM

Example

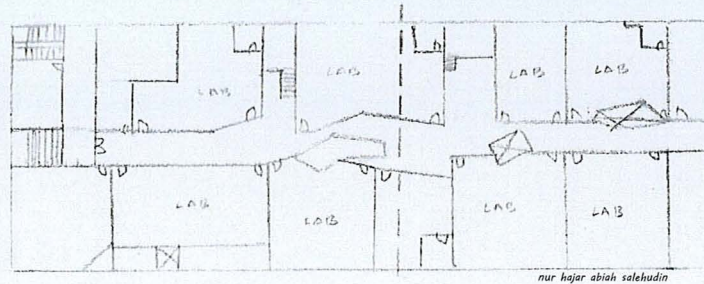
sketch here

ITEM	SCORE				
Utility	1	2	3	4	5
Space Enhancement	1	2	3	4	5

	SCORE
1	Very poor
2	Poor
3	Satisfactory
4	Good
5	Excellent

16

EXAMPLE



- place the laboratory in the basement to separate and to make it easier to be found.
- class at the ground floor plan
- cafeteria beside class.
- stage allow students to gather and it located at the ground floor plan.

04

Form And Function

04

ITEM TO ANALYZE

Form And Function

Analyzing the reason behind the form of that particular building... and how it merges with the surrounding environment. Form and Function go hand in hand. The form of the building should be able to convey the function of the building.

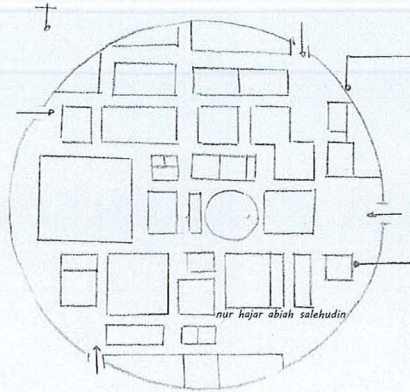
sketch here

ITEM		SCORE				
Form		1	2	3	4	5
Function		1	2	3	4	5

	SCORE
1	Very poor
2	Poor
3	Satisfactory
4	Good
5	Excellent

20

EXAMPLE



CIRCLE FORM:

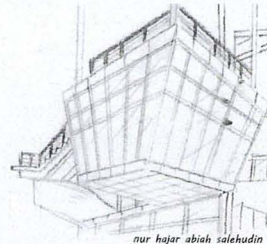
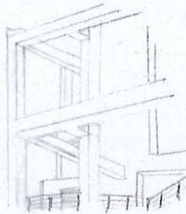
the site surrounded by three streets, is accessible from multiple directions, which to the actual plan of circularity

TRANSPARENCY:

the use of glass walls, inside and out, produce transparency and brightness

GEOMETRIC FORM:

makes the plan feel arbitrary, like a dense piece of city without a high street or plaza pleasing and disorientating



overhanging structures defy gravity, suspend preset notions of structural stability

05

Circulation

05

ITEM TO ANALYZE

Horizontal And Vertical Circulation

Horizontal circulation consists of elements such as the corridors and lobbies. Vertical circulation includes elevators, staircases, ramps etc. The efficiency of the placement of these services should be analyzed.

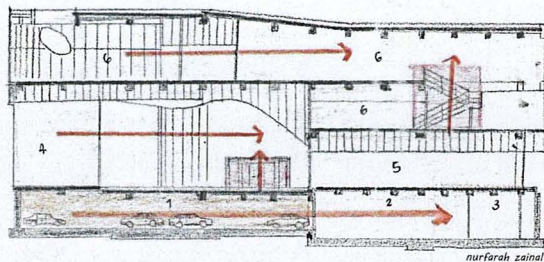
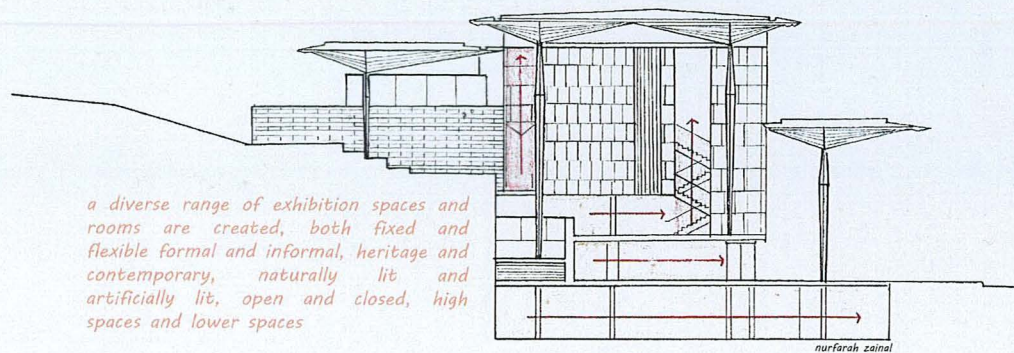
sketch here

FIGURE/ DIAGRAM

sketch here

ITEM		SCORE				
Horizontal Circulation		1	2	3	4	5
Vertical Circulation		1	2	3	4	5
	SCORE					
1	Very poor					
2	Poor					
3	Satisfactory					
4	Good					
5	Excellent					

EXAMPLE



- horizontal
- vertical
- 1. parking
- 2. electrical room
- 3. generator room
- 4. gift shop
- 5. science library
- 6. exhibition

06

**Site Planning
And Landscape**

06

PROBLEM STATEMENT

ITEM TO ANALYZE

Site Planning
And Landscape
Detailing

sketch here

ITEM		SCORE				
Site Planning	1	2	3	4	5	
Landscape Detailing	1	2	3	4	5	
	SCORE					
1	Very poor					
2	Poor					
3	Satisfactory					
4	Good					
5	Excellent					
28						

Hand-drawn site plan of a park area, likely a conceptual design for a park or urban space. The plan features several colored lines (red, blue, green) and handwritten labels in Indonesian.

Key labels and features include:

- Top Right:** "SKUDAI-PONTIAN" (likely a street or area name).
- Top Left:** "Lembaran Keluaran" (Exit Sheet).
- Left Side:** "JALAN PERMAINAN M. FERDIA" (M. Ferdia Play Road).
- Center:** "Open Space" (labeled in multiple locations).
- Right Side:** "Kantin" (Canteen), "Loket Masuk / Keluar" (Entrance / Exit Ticket Booth), "Pemandangan" (View), "Pedestrian" (Pedestrian), "Open Space / Park / Green Area" (labeled in multiple locations).
- Bottom Left:** "Open Space / Area / Recreation" (labeled in multiple locations).
- Bottom Center:** "Service Building" (labeled in multiple locations).
- Bottom Right:** "Kantin" (Canteen), "Open Space / Park / Green Area" (labeled in multiple locations).
- Bottom Edge:** "Jalan" (Road).

The plan shows a central area with various colored lines (red, blue, green) and dashed lines, possibly representing different zones or paths. The overall layout suggests a park or recreational area with various facilities and open spaces.

[illegible]

29

07

Structural Details

07

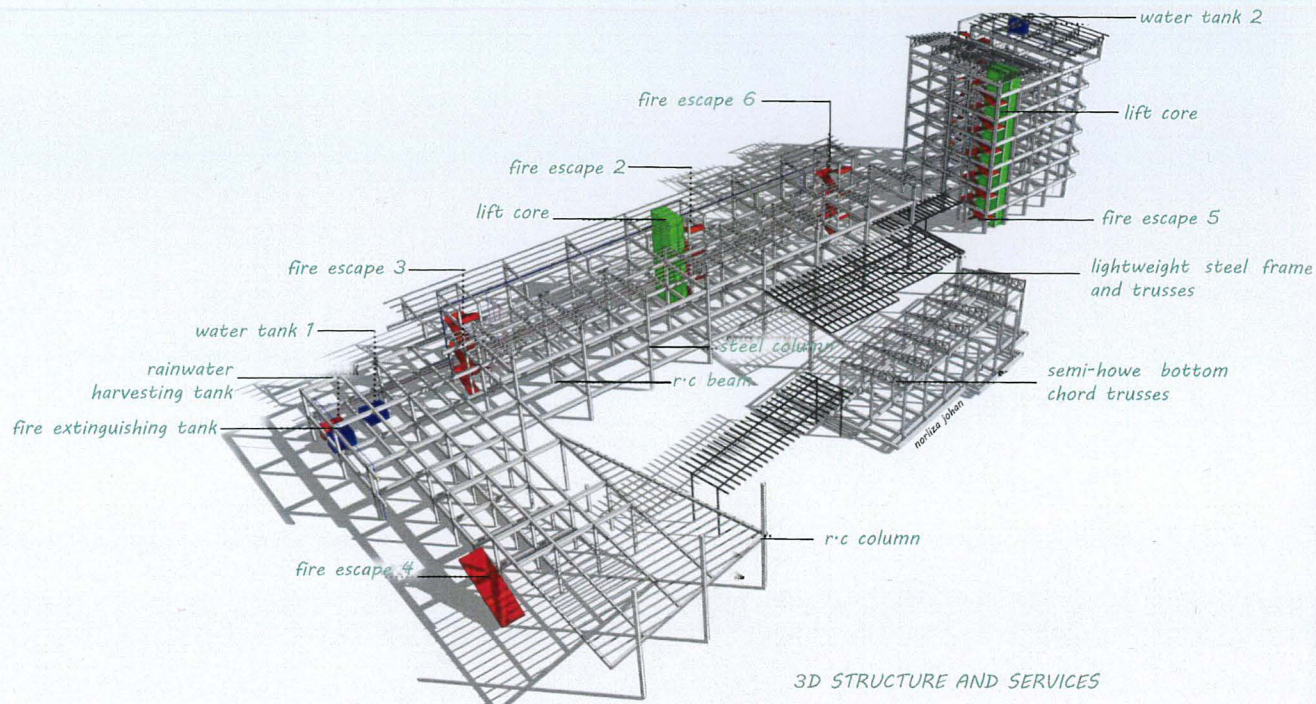
ITEM TO ANALYZE

Structural details
such as Column
and Beam Design,
Steel and
Composite
structures

sketch here

ITEM		SCORE				
Structural Detail		1	2	3	4	5
	SCORE					
1	Very poor					
2	Poor					
3	Satisfactory					
4	Good					
5	Excellent					
32						

EXAMPLE



08

Building Services

08

ITEM TO ANALYZE

**Building Services
Such As Fire Alarm
System, HVAC,
Water Supply
Systems**

The working of Fire Alarm system, HVAC and Water supply systems should be examined and their space requirements are to be analyzed.

sketch here

ITEM		SCORE				
Building Services		1	2	3	4	5
	SCORE					
1	Very poor					
2	Poor					
3	Satisfactory					
4	Good					
5	Excellent					

staff parking

staff entrance

substation

switch room

kitchen (cafeteria)

control room/
server room

storage

septic tank

drainage

service/
loading area

refuse chamber

service yard

service entrance

water tank, suction,
hose reel & pump

rainwater
harvesting tank

rainwater
harvesting tank

18.200 m

20'

33'

123'

15.240 m

20'

26.999 m

10.100 m

ENTRY

OFFICE LOBBY

CORRIDOR

TOILET

MEN'S TOILET

WOMEN'S TOILET

SUBSTATION

REFUSE CHAMBER

KITCHEN

COUNTER

CAFETERIA (INDOOR)

ENTRANCE LOBBY

ENTRANCE FROM SHOP HOUSE

COMMERCIAL AREA

BUILDING SERVICES

BUILDING SERVICES

09

**Barrier Free
Design**

09

ITEM TO ANALYZE

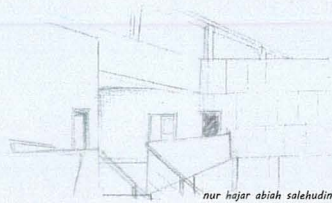
Design Detailing
Considering The
Barrier-Free
Environment

sketch here

*Implementation of the
Barrier-free architecture
for comfortable access to
disabled people. Most
public buildings have
mandatory accessibility
systems for the disabled.*

ITEM		SCORE				
<i>Design Detail</i>		1	2	3	4	5
	SCORE					
1	<i>Very poor</i>					
2	<i>Poor</i>					
3	<i>Satisfactory</i>					
4	<i>Good</i>					
5	<i>Excellent</i>					
40						

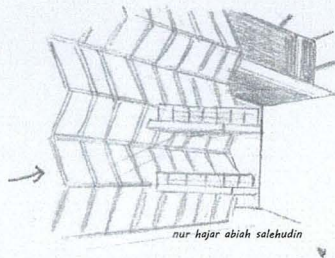
EXAMPLE



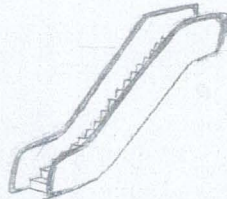
- in this building they did not provide any disabled used
- no provided disable park
- no lift to carry disabled to another floor level

synthesis :

- provide ramp that can fix to surrounding
- save energy resources and bus
- provide park for disable and wheel chair to borrow



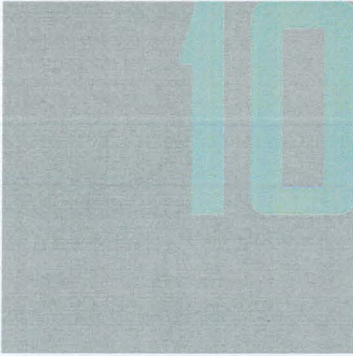
- many classroom have 'spill - out balconies' that open into the inner street



- censor escalator to balconies
- provide elevator for disabled

10

Socio Economic
Profile



ITEM TO ANALYZE

Socio-Economic Profile Of User Group

It might also be important to find out the socio-economic profile of the people using the services so as to determine their requirements and available resources.

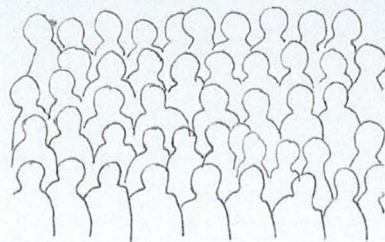
sketch here

ITEM		SCORE				
Socio Economic Profile	1	2	3	4	5	
	SCORE					
1	Very poor					
2	Poor					
3	Satisfactory					
4	Good					
5	Excellent					
44						

EXAMPLE



family



community group

11

Parking Details And Standard

ITEM TO ANALYZE

Parking Details And Standards

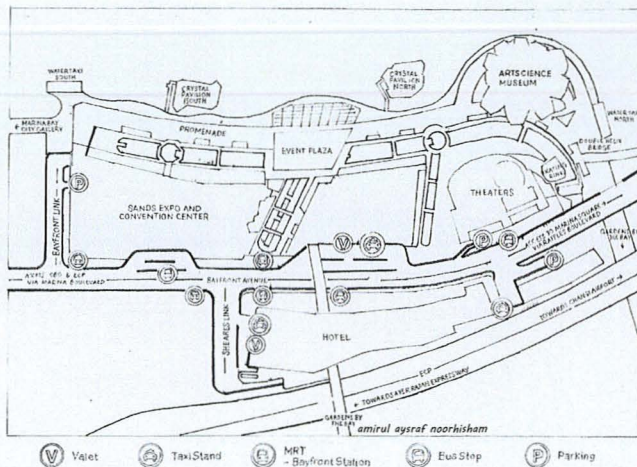
Measure the allotted parking area on site, say for ten cars, then calculate the average area for each car and compare it with the areas specified in TSS (Time Savers Standards).

sketch here

ITEM		SCORE				
Parking Detail	1	2	3	4	5	
	SCORE					
1	Very poor					
2	Poor					
3	Satisfactory					
4	Good					
5	Excellent					

48

EXAMPLE



MRT

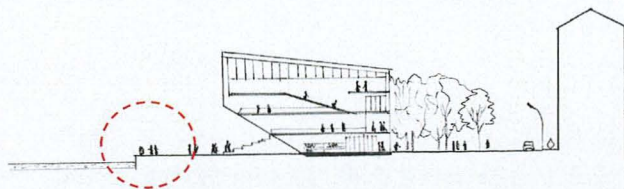
Bayfront Station - 10min walk
 Promenade Station - 15min walk
 Marina Bay Station - 15 min walk

TAXI

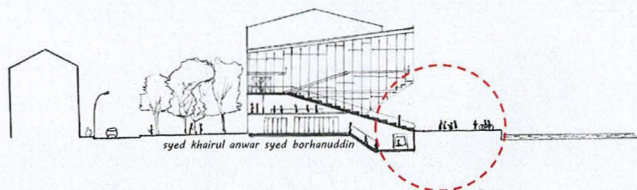
pick-up & drop off near the shops at Marina Bay Sands, along Bayfront Avenue via Raffles Boulevard or Marina Boulevard

CAR

the nearest carpark is the north car park at Marina Bay Sands. The car park entrance is located at sands expo & convention centre



- new cycle path run through the scheme that includes over 450 bicycle parking spaces



- road traffic will be redirected, so that it has direct access to the large underground car park beneath the building

goals that were met

images

goals that were not achieved

images

LESSON LEARNED

Describe goals that were met and goals that were not achieved (especially as they relate to the topics of accessible, aesthetic, , functional, structural system, space enhancement, secure/safe, and sustainable) and the reasons for these outcomes. Students can give their opinion and do some critique about their study building.

Once you have verified and ensured that the required information has been collected, move to the analysis part. Which focuses on answering many WHYS and finding out reasons for some design decisions. Ask as many questions as possible, even basic ones and write down the answers. Support answers with photographs or sketches if necessary.

There you start with your design exercise, which has to be one step ahead of case study you have just finished.

ANALYZED CASE STUDY

Analyzed both of the case studies according to the items given :

1.Environment &
Micro Climate

2.User Behavior
& Requirements

3.Utility & Space
Enhancement

4.Form & Function

5.Horizontal &
Vertical
Circulation

6.Site Planning &
Landscape Detailing

CASE STUDY 1

CASE STUDY 2

ANALYZED CASE STUDY

Analyzed both of the case studies according to the items given :

CASE STUDY 1

CASE STUDY 2

7. Structural Details

8. Building Services

9. Design Detailing
Considering
The Barrier-free
Environment

10. Socio-economic
Profile Of
User Group

11. Parking Details
& Standard

CONCLUSION

Conducting a case study is hard work. Sometimes, it is so small, it could be done in days, but on other occasions, it takes weeks to document and compile all the data. It involves going on-site, meeting and talking to people, lots of traveling, plenty of photography, and some fun. It is the most important of assignments you might get as an architectural students.

This is where you learn from actual stuff, as opposed to theoretical knowledge. Reading and documenting information would give you many insights and ideas and let you peek into the minds of professional architects and designers who have used years of experience and improvisation to design and create incredible structures.

RUBRIC

cut here

cut here

cut here

Student Name:
 Matric No:
 Class:
 Lecturer's Name:

ITEM	SCORE				
<i>Environment</i>	1	2	3	4	5
<i>Micro-climate</i>	1	2	3	4	5
<i>User behavior</i>	1	2	3	4	5
<i>Utility</i>	1	2	3	4	5
<i>Space Enhancement</i>	1	2	3	4	5
<i>Form</i>	1	2	3	4	5
<i>Function</i>	1	2	3	4	5
<i>Horizontal Circulation</i>	1	2	3	4	5
<i>Vertical Circulation</i>	1	2	3	4	5
<i>Site Planning</i>	1	2	3	4	5
<i>Landscape Detailing</i>	1	2	3	4	5
<i>Structural Detail</i>	1	2	3	4	5
<i>Building Services</i>	1	2	3	4	5
<i>Design Detail</i>	1	2	3	4	5
<i>Socio Economic Profile</i>	1	2	3	4	5
<i>Parking Detail</i>	1	2	3	4	5
PRESENTATION (20%)	4	8	12	16	20
TOTAL	_____/100				

For lecturer's reference

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00028959

TARIKH DIPULANGKAN
(DATE DUE)

04 NOV 2018

ISBN 978-967-5677-64-9



9 789675 677649