ARCHITECTURE
PORTFOLIO

DIPLOMA IN ARCHITECTURE

YEAR 3 SEMESTER 1

REX TAI ZHENG HENG

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20
Diploma in Architecture Year 3

FOREWORD

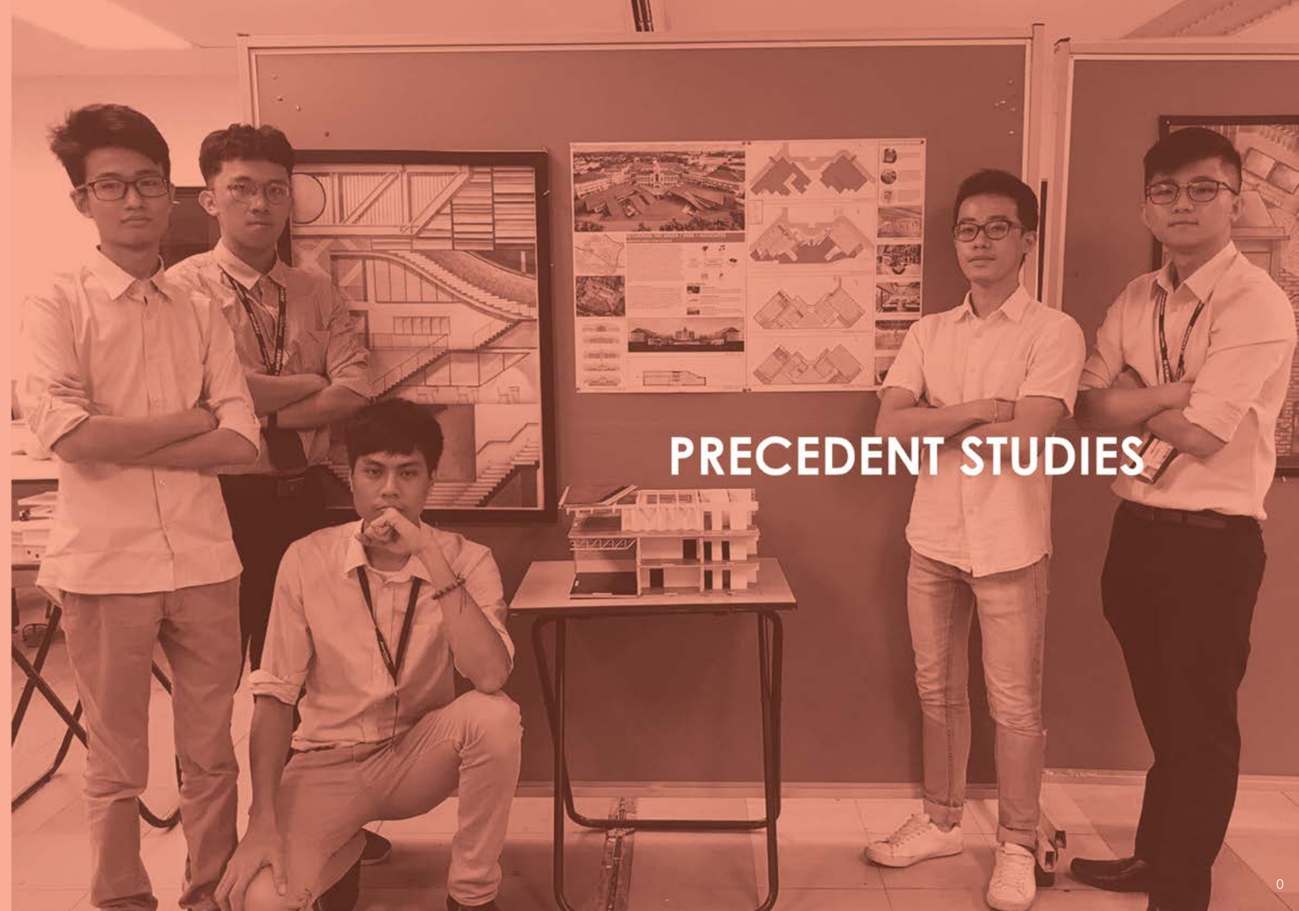
This portfolio is mainly about what i did in the past 3 months along this final semester of my diploma. From precedent studies, site analysis, master plan design to my final design proposal.

It was a rough final year and i am blessed that i manage to overcome it. I met a lot of obstacles that really challenge my physical and mainly mental strength. Forturnately i was not alone in this 3 months of battle, thanks to my lecturers and also my fellow course mates which drives my motivation to survive this.

Through out this semester, i had gain a lot of knowledge about being a better designer for a greater environment and society.

Although this semester there are a lot of things i could done better, but the only thing i could do is to let go the past, learn from my mistakes and move on to a greater future in architecture.

CONTENT



PRECEDENT STUDIES

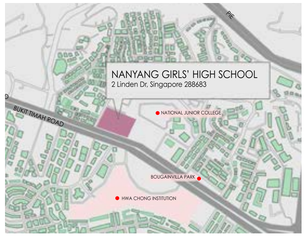
RETURNING THE GREEN / PARK + ASSOCIATES

NANYANG GIRL'S HIGH SCHOOL

Nanyang girl's high school was one of the singapore's top public school, that was founded in 1917. Nanyang girl's high school had move campuses several times before and recently located along dunearn road, in the heart of singapore since 1999. The existing building comprise an iconic clock tower flanked by two colonial-influenced building wings that form the backdrop for large green field and running track. Since 2005, an extension had been done that comprising 2 4-storey blocks to accommodate its flourishing enrolment. This extension project can be said as the first educational institution in singapore that has space belowground. The new building was comprising 3 main part of spaces, such as: academic blocks, activity hall and indoor sport hall block. The new Performing Arts Block houses 13 classrooms, a performing arts centre and a music room, and the new Indoor Sports Hall Block comprises a multi-purpose room, an indoor sports hall and an atrium in the basement between the two blocks. The roof terraces are visible at ground level, blending in as an extension of the school field. The distinctive façade of the school is preserved, through the 'returning to the green' building concept. To ensure that the athletes could continue with their training, the boarding school field was returfed and a new track was constructed there.

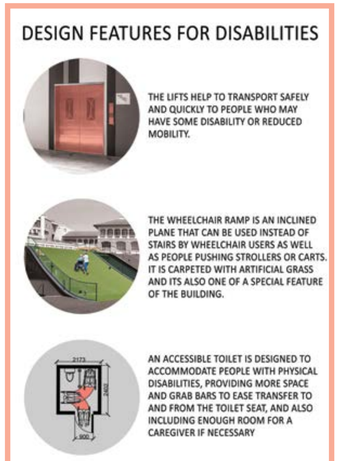
Concept/ Architectural Approach

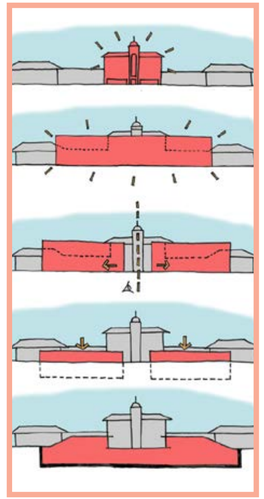
The design of new building was to have minimal impact on existing views to and from the adjacent road. Therefore, the new building was designed as merged into the landscape, a sunken architecture buried in nature. The architecture approach of new building was neither to emulate the old, not to overshadow the existing building. Besides, the two new building provide a good circulation between new and old building, with the curved turfing landscaped roofs that slope to meet ground. The courtyards ensure that belowground learning space can receive enough natural light and ventilation. The landscaped roof was functioned as an outdoor space that consist of a large green field and running track where the students spend their leisure and training time.



LOCATION PLAN, SCALE NTS

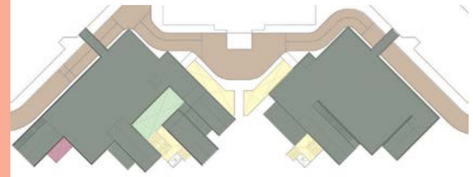
SITE PLAN, SCALE NTS





CONCEPT SKETCHES FOR THE SCHOOL DESIGN

SECTION 1 SCALE NTS



ROOF PLAN SCALE 1:1000

LEVEL 1 PLAN SCALE 1:1000

BASEMENT 1 PLAN SCALE 1:1000

BASEMENT 2 PLAN SCALE 1:1000

OPEN SPACE FOR STUDENT ACTIVITIES`

COURTYARD WITH FILLED WITH GREENERIES

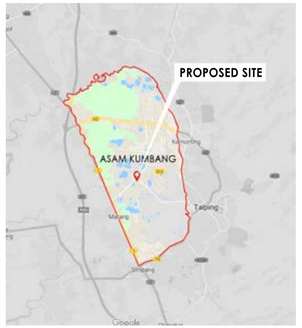
CLASSROOM NEXT TO AN ACCESS SLOPE

VIEW OF FACADE DESIGN

MULTIPURPOSE SPORTS HALL

PROPOSAL RENDERS

SITE ANALYSIS



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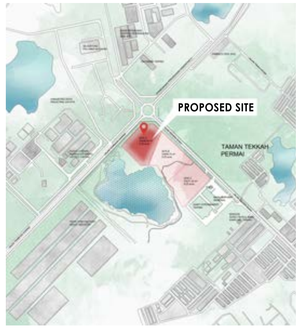
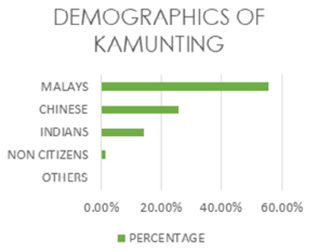
KEY PLAN
SCALE : NTS

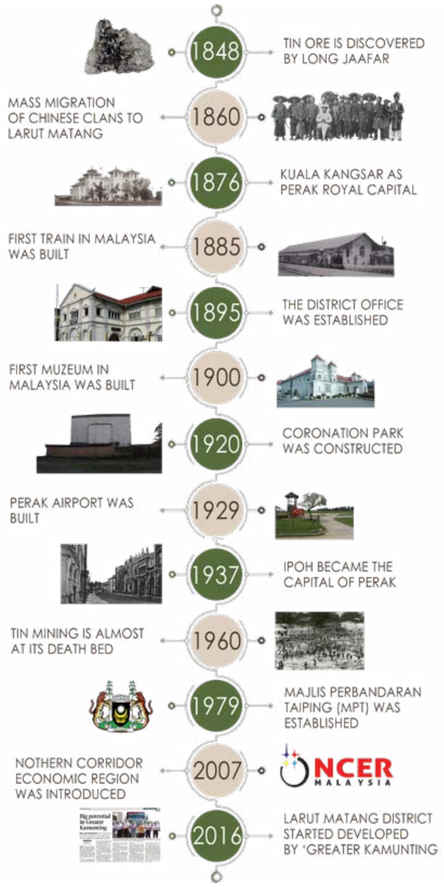


INTRODUCTION : ASSAM KUMBANG

THE HOUSES IN KAMPUNG BARU KAMUNTING ARE MOSTLY MADE OF WOOD AND SCATTERED AROUND THE VILLAGE RANDOMLY. THE COMMON MODES OF TRANSPORT ARE MOTORCYCLES AND CARS. THE NEAREST TOWN IS TAIPING WHICH IS 5 KM AWAY FORM THE VILLAGE. THE LOCAL AUTHORITY IS MAJLIS PERBANDARAN TAIPING. TODAY THE POPULATION OF THE VILLAGE IS ABOUT 3,000. MANY YOUTH FROM KAMPUNG BARU KAMUNTING HAVE LEFT FOR BETTER JOB OPPORTUNITIES ELSEWHERE. MOST OF THE RESIDENTS ARE YOUNG CHILDREN AND OLDER FOLKS OR THE "EVERGREENS". THE RESIDENTS OF KAMUNTING ARE MOSTLY MALAYS. THE PERAK DIALECT IS THE LANGUAGE OF INSTRUCTION FOR THE MALAYS IN KAMUNTING.

RACES	POPULATION
BUMIPUTERA	822
MALAY	51298
CHINESE	28907
INDIAN	13678
NON-MALAYSIAN	3524
OTHERS	251
TOTAL	98480



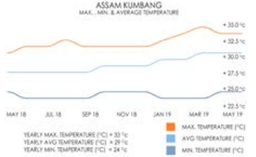


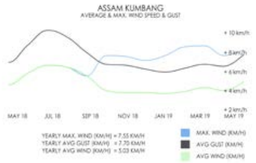
SUN PATH DIAGRAM

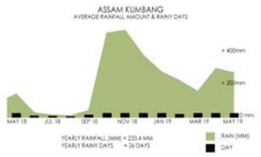
WIND FLOW DIAGRAM

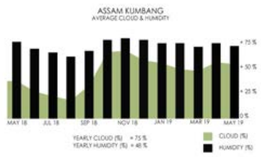
TOPOGRAPHY

ZONINGS







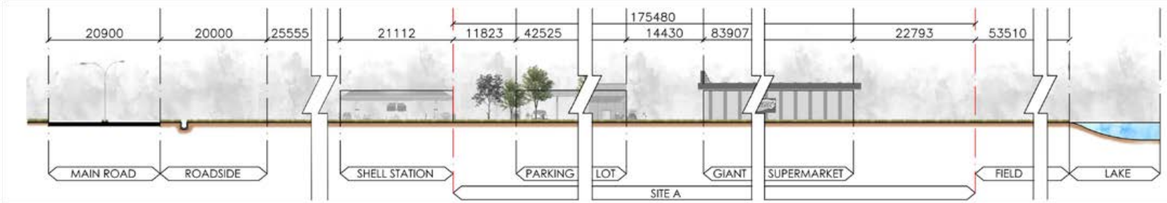


-COMMONLY **FLAT LANDS.**
-WATER BODIES ARE PREVIOUS **TIN MINING** GROUNDS.
-MAINLY **INDUSTRIAL** AREAS, FOLLOW ON BY **COMMERCIAL** AND **INSTITUTIONAL.**
-ARCHITECTURE STYLE MAINLY **LOW RISE** BUILDINGS,
INDUSTRIAL ELEMENTS, AND TRADITIONAL **BRICKS AND CONCRETE.**
- MAIN ACCESS IS **JALAN IZZUDIN SHAH** AND **JALAN TEMBAGA KUNING** INTERSECTING TOGETHER.
-ONLY PUBLIC TRANSPORT IS **RAPID KAMUNTING**
-ELECTRICAL CABLES, WATER SOURCE PIPES AND GAS PIPES ARE MOSTLY HIDDEN **UNDERGROUND.**

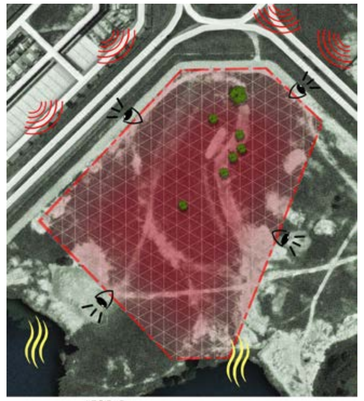
DISTANCES

- 0.78KM AWAY FROM SITE
- 0.80KM AWAY FROM SITE
- 4.10KM AWAY FROM SITE
- 1.90KM AWAY FROM SITE
- 4.90KM AWAY FROM SITE

SECTION A-A SCALE NTS



SECTION B-B SCALE NTS



THE ROUNDABOUT INTERSECTION BETWEEN JALAN IZZUDIN SHAH AND JALAN TEMBAGA KUNING IS DESIGNED FOR **IMPROVED TRAFFIC FLOW** TRAVELING AT SLOWER SPEEDS. (Newfoundland Labrador, 2019)

STONE MARKER INDICATES A **400MM DIAMETER GALVANIZED WATER PIPE** BY THE **LEMBAGA AIR PERAK (LAP)** BELOW THE GROUND LEVEL. (lembaga air perak, 2013)

STONE MARKERS, **TEST POST** AND **WARNING SIGNS** BY **GAS MALAYSIA** BERHAD INDICATES THERE'S AN EXISTING GAS PIPELINE UNDERGROUND. TEST POST ARE FOR TESTING THE **CORROSSION LEVEL** OF THE GAS PIPES (MIDF, 2016)

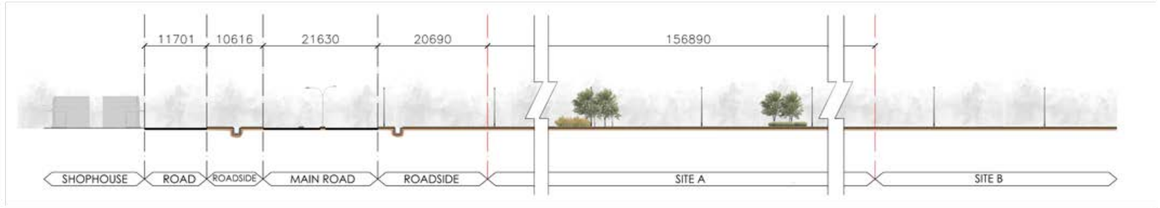
33KV CABLE SLABS ARE USED AS VISUAL WARNING INDICATORS FOR **ELECTRIC CABLES** BY **TENAGA NASIONAL BERHAD (TNB) LAID UNDERGROUND** WHILE AT THE SAME TIME PROVIDES MECHANICAL **PROTECTION** FOR UNDERGROUND LAID CABLES IN THE EVENT OF EXCAVATION WORK. (DSSB, 2016)

STREET LIGHTS WITH GALVANISED POLES OWNED BY TENAGA NASIONAL BERHAD (TNB) ARE INSTALLED ALONG THE ROADS, LIGHT UP THE STREETS DURING THE EVENING AND PROVIDE **BRIGHTER AND SAFER** ENVIRONMENT.

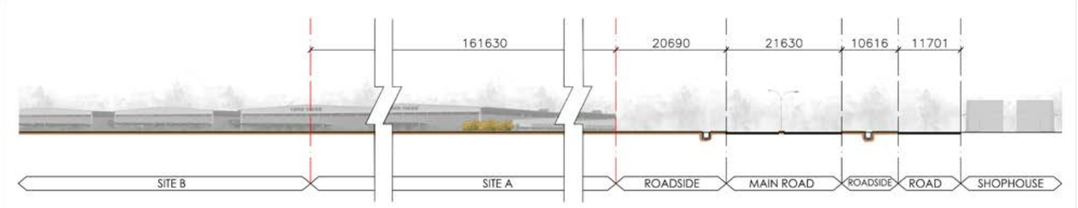
WATER TANK OWNED BY **LEMBAGA AIR PERAK (LAP)** IS UNDER CONSTRUCTION TO SUPPLY WATER FOR FUTURE DEVELOPMENTS. EXPECTED TO BE DONE ON 13TH SEPTEMBER 2019

EXISTING DRAINS ALONG THE SITE AND BESIDE THE ROADS PROVIDES **BETTER DRAINAGE SYSTEM** FOR THE SITE, **PREVENTING FLOODING** IN THE AREA.

TELECOMMUNICATION TOWERS ARE A COMBINATION OF STEEL STRUCTURES THAT ARE DESIGNED IN ORDER TO SUPPORT **ANTENNAS FOR TELECOMMUNICATIONS AND BROADCASTING. WIRELESS COMMUNICATION** FOR THE MOST PART, SUCH AS MOBILE NETWORKING, TELEVISION ANTENNAS AS WELL AS RADIO BROADCASTING IS CONNECTED USING TELECOM TOWERS.



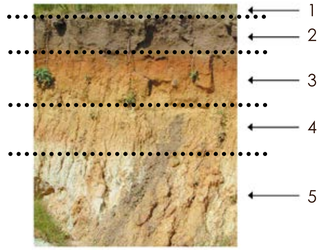
SECTION X-X SCALE NTS



SECTION Y-Y SCALE NTS

1.CLUSTERED TREES PACK
2.COW GRASS WITH DEAD BRANCHES
3.COW GRASS WITH DEAD TREES
4. SHRUB
5. WILTERED TREE 1
6. WILTERED TREE 2
7. MALAYSIAN OAK TREE

SOIL LAYERS



1. THE HUMUS LAYER (ORGANIC MATTER)
2. THE TOPSOIL LAYER (OUTMOST SOIL)
3. ELUVIATION LAYER (WHERE LEACHING OCCUR)
4. SUBSOIL (A MIXTURE OF SAND, SILT AND CLAY)
5. UNCONCOLIDATED PARENT MATERIAL (LOOSE)

BAUSITE ROCK FOUND IN SITE

MUDDY SOIL CONDITION

STRENGTH

- FLAT GROUND
- GOOD DRAINAGE SYSTEM
- GOOD LAKE VIEW
- EMPTY AREA, NO EXTRA EXCAVATION NEEDED

OPPORTUNITY

- JOB OPPORTUNITIES
- MAKE USE OF LAKE VIEW
- EDUCATIONAL OPPORTUNITIES
- DEVELOPMENT OF INFRASTRUCTURE SUCH AS PEDESTRIAN WALK

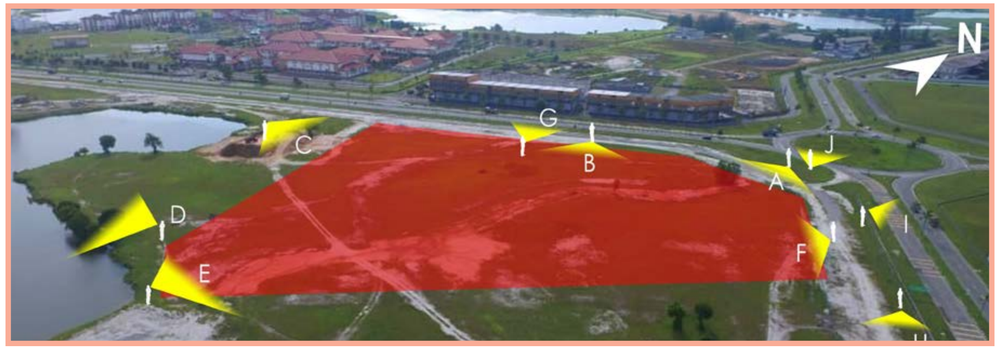
WEAKNESS

- INDUSTRIAL AREA
- HIGHLY EXPOSED TO SUN
- LESS TRANSPORTATION
- LONG DISTANCE TO TOWN

THREAT

- VERMIN AND PEST
- PEDESTRIAN HAS RISK WHILE WALKING
- GAS PIPE UNDERNEATH

VIEW A : FROM ROUND ABOUT AT NORTH



AERIAL VIEW : FROM SOUTH EAST,GIANT TAIPING

VIEW F : NORTH EAST TO SOUTH WEST

VIEW G : ABANDONED SHOPLOTS

VIEW B : PANAROMA VIEW FROM WEST

VIEW D : AT THE SOUTH OF THE SITE

VIEW C : FROM SOUTH WEST TO NOURTH EAST

VIEW E : PANAROMA VIEW OF THE WEST SIDE

VIEW H : VIEW TO SOUTH EAST ALONG JALAN IZZUDIN SHAH

VIEW I : ERECTING WATER TOWER

VIEW J : ROUND ABOUT AT NORTH INTERSECTING 2 MAIN ROADS

MASTER PLAN PROPOSAL

MASTER PLAN
SCALE 1: 1000

INTRODUCTION

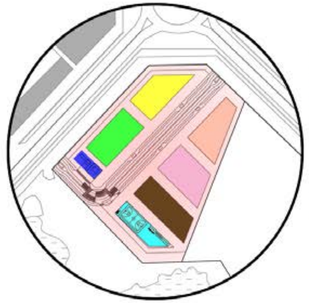
THE PROPOSED SITE FOR THIS SUSTAINABLE SMART SCHOOL IS LOCATED AT ASAM KUMBANG, LARUT MATANG, PERAK. OUR SITE IS LOT A WITH THE AREA OF 8.25 ACRES (33407.09SQM). THIS SITE IS GENERALLY FLAT AND IS LOCATED NEXT TO JALAN IZZUDIN SHAH, JALAN TEMBAGA KUNING AND A MAN-MADE LAKE PROVIDING A TRANQUIL VIEW.

DESIGN INTENT

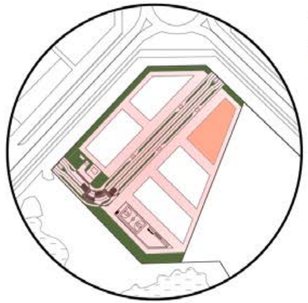
THE ARRANGEMENT OF THE SITES FOR THE 5 SCHOOLS IS TO CREATE A SMOOTHER TRAFFIC EVEN ON PEAK HOURS. THE 5 SCHOOLS IS ACCESSIBLE FROM 2 ENTRANCES, 1ST ENTRANCE FACING NORTH-EAST, AND THE 2ND ENTRANCES FACING NORTH-WEST. FOR VEHICLESACCESS, LOT A & B IS ACCESIBLE THROUGH THE 2ND ENTRANCE: WHILE LOT C, D & E IS ACCESSIBLE THROUGH THE 1ST ENTRANCE. THE ROAD PROVIDED WITHIN OUR SITE IS 2 LANE 1 WAY. COVERED PEDESTRIAN WALKWAY ARE PROVIDED ALONG THE ROAD TO ENCOURGE STUDENTS TO WALK OR CYCLE TO THE CAMPUS.

LOCAL AUTHORITY REQUIREMENTS

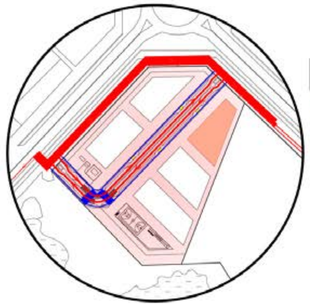
TYPE	REQUIREMENT
PLINTH AREA	60%
LANDSCAPE	40%
PLOT RATIO	1:6
HEIGHT	NO HEIGHT RESTRICTION
ROAD RESERVE	66'-100' WIDTH, RESERVE ROAD 40'-50' WIDTH
PARKING	1 CAR FOR EVERY 2 STAFF, 1 MOTORCYCLE FOR EVERY 30 STUDENTS
SET BACK	20FT FROM SIDES, 40FT FROM FACING ROAD, AND 60M FROM WATER BODIES



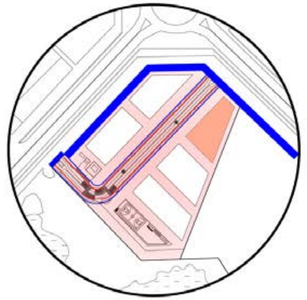
BUILDING FOOTPRINT
- SERVICE AREA
- COMMON AREA
- LOT A: AUTOMOTIVE SCHOOL
- LOT B: 2D ILLUSTRATION SCHOOL
- **LOT C: RADIO BROADCASTING SCHOOL**
- LOT D: SPORTS SCHOOL
- LOT E: HORTICULTURE SCHOOL
- EXISTING BUILDINGS



LANDSCAPE
- GREENARY

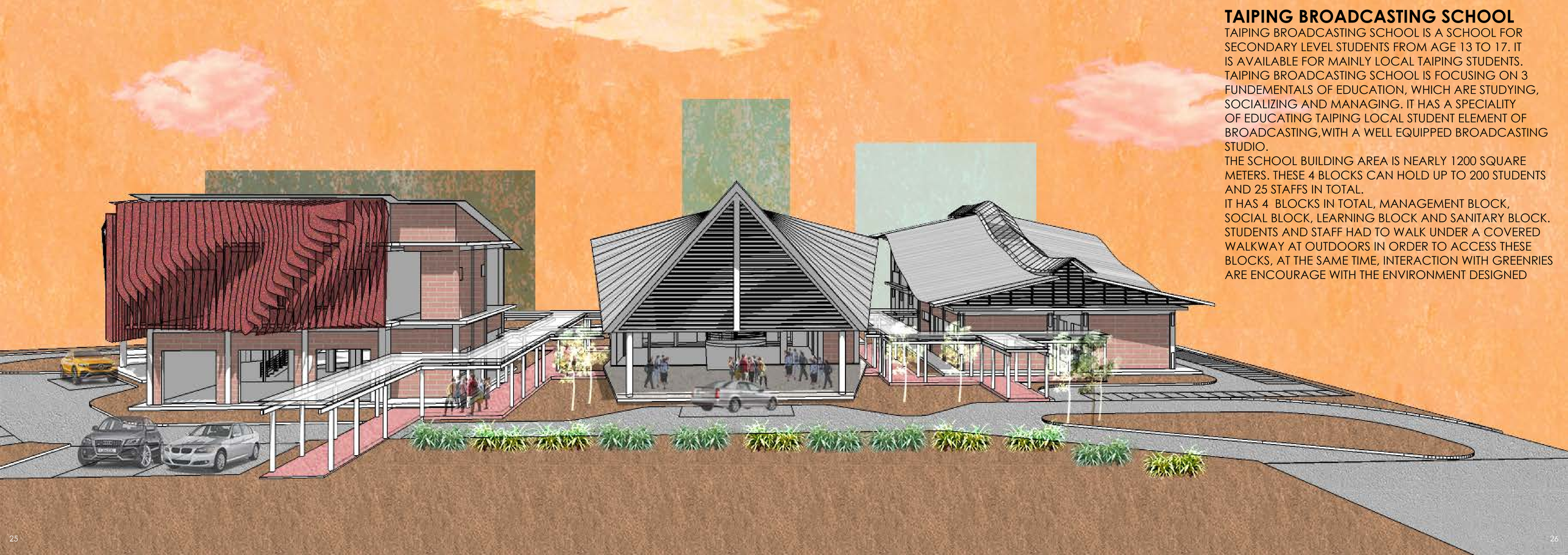


CIRCULATION
- VEHICLE ROUTE
- PEDESTRIAN WALKWAY
- BUS STOP



SERVICES & UTILITIES
- LAMP POST
- DRAINAGE SYSTEM
- MANHOLE


FINAL DESIGN
PROPOSAL

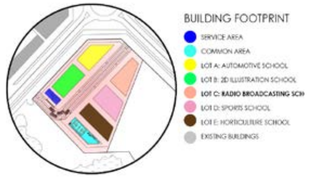


TAIPING BROADCASTING SCHOOL

TAIPING BROADCASTING SCHOOL IS A SCHOOL FOR SECONDARY LEVEL STUDENTS FROM AGE 13 TO 17. IT IS AVAILABLE FOR MAINLY LOCAL TAIPING STUDENTS. TAIPING BROADCASTING SCHOOL IS FOCUSING ON 3 FUNDEMENTALS OF EDUCATION, WHICH ARE STUDYING, SOCIALIZING AND MANAGING. IT HAS A SPECIALITY OF EDUCATING TAIPING LOCAL STUDENT ELEMENT OF BROADCASTING,WITH A WELL EQUIPPED BROADCASTING STUDIO.

THE SCHOOL BUILDING AREA IS NEARLY 1200 SQUARE METERS. THESE 4 BLOCKS CAN HOLD UP TO 200 STUDENTS AND 25 STAFFS IN TOTAL.

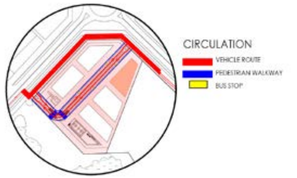
IT HAS 4 BLOCKS IN TOTAL, MANAGEMENT BLOCK, SOCIAL BLOCK, LEARNING BLOCK AND SANITARY BLOCK. STUDENTS AND STAFF HAD TO WALK UNDER A COVERED WALKWAY AT OUTDOORS IN ORDER TO ACCESS THESE BLOCKS, AT THE SAME TIME, INTERACTION WITH GREENRIES ARE ENCOURAGE WITH THE ENVIRONMENT DESIGNED



BUILDING FOOTPRINTS

THE CLOSET BUILDINGS AT THE SURROUNDING BUILDINGS ARE EDUCATIONAL BUILDIGNS FOR SECONDARY LEVEL STUDENTS, WITH AN AVERAGE HEIGHT OF 2 STOREYS, AROUND 10M.

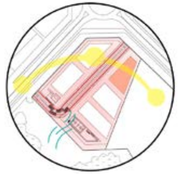
DESIGN IDEA :
BUIDING HEIGHTS SHOULD BE AROUND 10M.
AVOIDING TO BE TOO STAND OUT IN TERMS OF HEIGHT.



CIRCULATION

SINCE THE SITE IS AT A CORNER, IT HAS FLEXIBILITY IN TERMS OF CIRCULATION.
SERVICE ROAD AND JALAN SEMPURNA COULD BE USE FOR BOTH VEHICLES AND PEDESTRIANS.

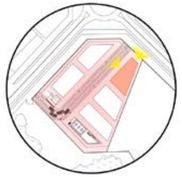
DESIGN IDEA :
USING THE SERVICE ROAD AS ENTRANCE & EASE OF DISPOSAL SERVICE.
JALAN SEMPURNA WILL BE AN EXIT. A ONE WAY INNER ROAD IS PROPOSED.



SUN AND WIND

THE SUN IS USUALLY OVERHEAD OF THE SITE. PROVIDING SUFFICIENT SUN LIGHT AND ENERGY.
THE WIND IS GENERATED BY LAKE BREEZE FROM THE SOUTH WEST.

DESIGN IDEA :
FILTER OUT THE OVERHEAD SUNLIGHT TO REDUCE GLARE.
OPENINGS FACING SOUTH WEST.

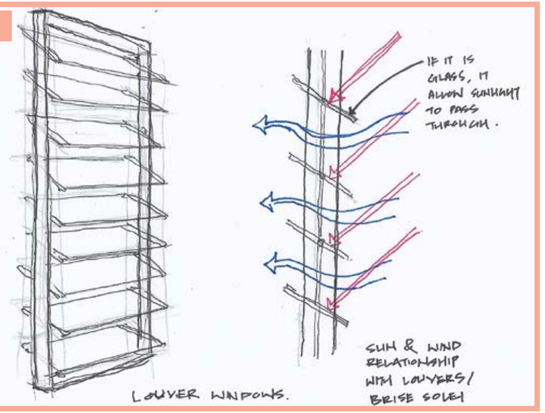


VIEWS

THE NATURE VIEWS ARE QUITE LIMITED, AS IT IS AWAY FROM THE BEST VIEW FROM QUITE A DISTANCE. THE BEST VIEWS ARE FACING THE ROADS.

DESIGN IDEA :
FRONT VIEW FOCUS ON THE DIRECTIONS OF THE ROADS.
MAKING USE OF URBAN LANDSCAPE.
TURNING THE SITE INTO A VIEW INSTEAD SEARCHING FOR VIEWS

1



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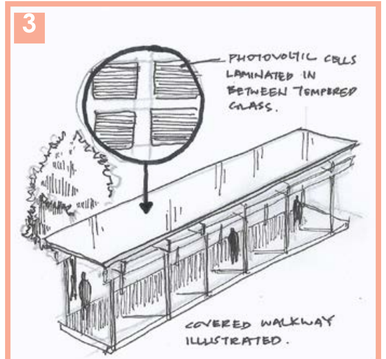

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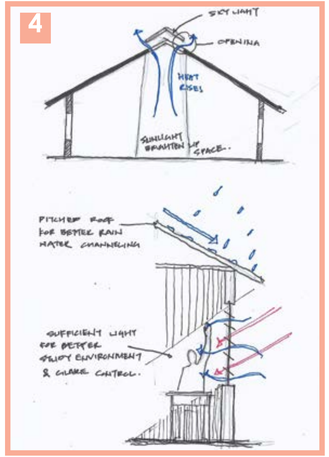
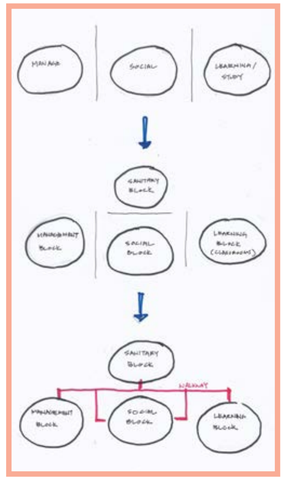


DESIGN IDEAS RELATE TO SITE CONTEX

THE SKETCHES PRODUCE ARE RELATED
TO THE VERNALUCLAR ARCHITECTURE IN ASSAM KUMBANG.

FROM TOP LEFT :
1. IDEA OF PROPOSING LOUVER WINDOWS, ALLUMINUM FRAMED FOR USAGE AND AESTHETICS
2 . IDEA OF CREATING RELATIONSHIP BETWEEN USERS AND LANDSCAPES
3 . PROPOSED PHOTOVOLTIC LAMINATED GLASS ROOFED WALKWAY
4. STACK VENTILATING, SKY LIGHT, RAIN WATER CHANNELLING, ETC

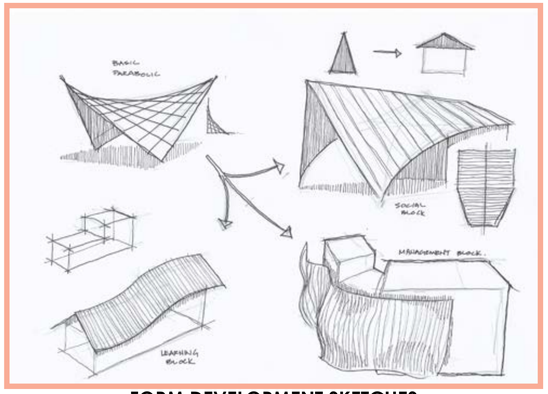


GENERAL IDEA DIAGRAM

STARTING FROM AN IDEA OF 3 CATERGORIES NEEDED IN SCHOOL, WHICH IS MANAGEMENT, SOCIALISING AND STUDYING.

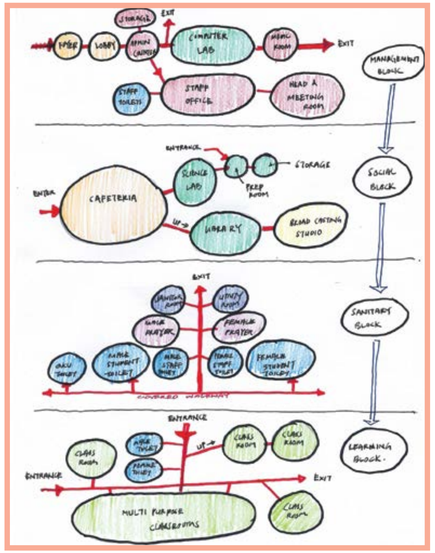
AFTER CREATING 3 BLOCKS, A SANITARY BLOCK IS ADDED FOR 'PRIVATE BUSINESES'

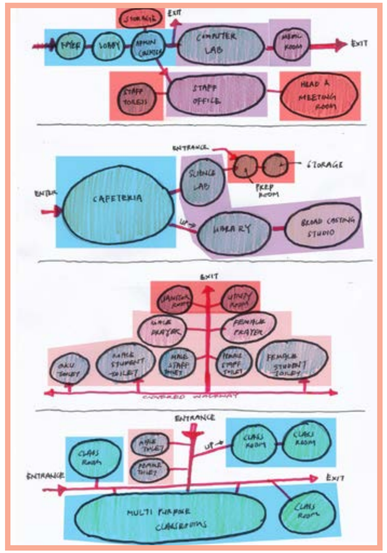
THE 4 BLOCKS ARE ALL CONNECTED WITH A COVEREDD PATHWAY FOR CIRCULATION. IT IS OPENED TO OUTDOOR TO GIVE STIMULATION FROM LANDSCAPE



FORM DEVELOPMENT SKETCHES

THE FORM OF THE 3 MAIN BLOCKS ARE INSPIRED BY A BASIC PARABOLIC FORM WHICH IS QUITE RELATED TO SOUND WAVES AND RELATED TO RADIO BROADCASTING. EACH BLOCKS DEVELOPT INTO DIFFERENT WAVE FORMS,DIFFERENCIATE THE BUILDINGS FOR EASY RECOGNITION. THE FORM OF THE PARABOLIC/PARAMETRIC WAVES ARE GENTLE, REFLECTING CALMNESS INTO PEOPLE'S MIND.





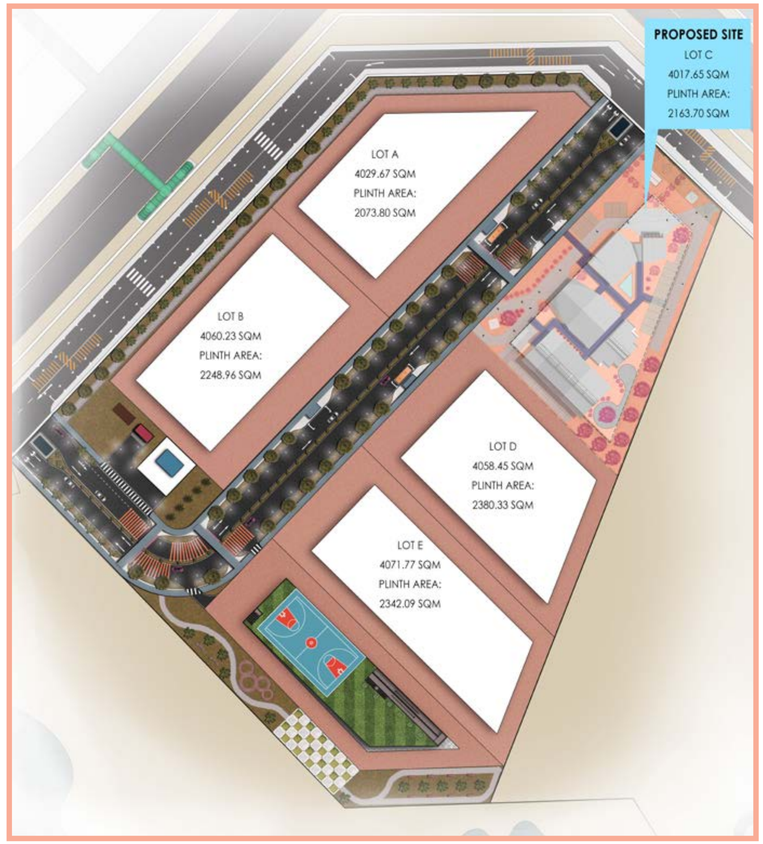
BUBBLE DIAGRAM & ZONINGS

MANAGMENT BLOCK ARE MOSTLY FOR STAFFS/ TEACHERS, AS FOR RUNNING THE SCHOOL SYSTEMS

SOCIAL BLOCK ARE OPEN TO PUBLIC AS ENCOURAGING INTERACTION WITHIN THE AREA OR HAVING ACTIVITIES INVOLVING GROUPS OF PEOPLE. THERE ARE ALSO LEARNING FACILITIES SUCH AS SCIENCE LAB AND THE MAIN SPACE, THE BROADCASTING STUDIO.

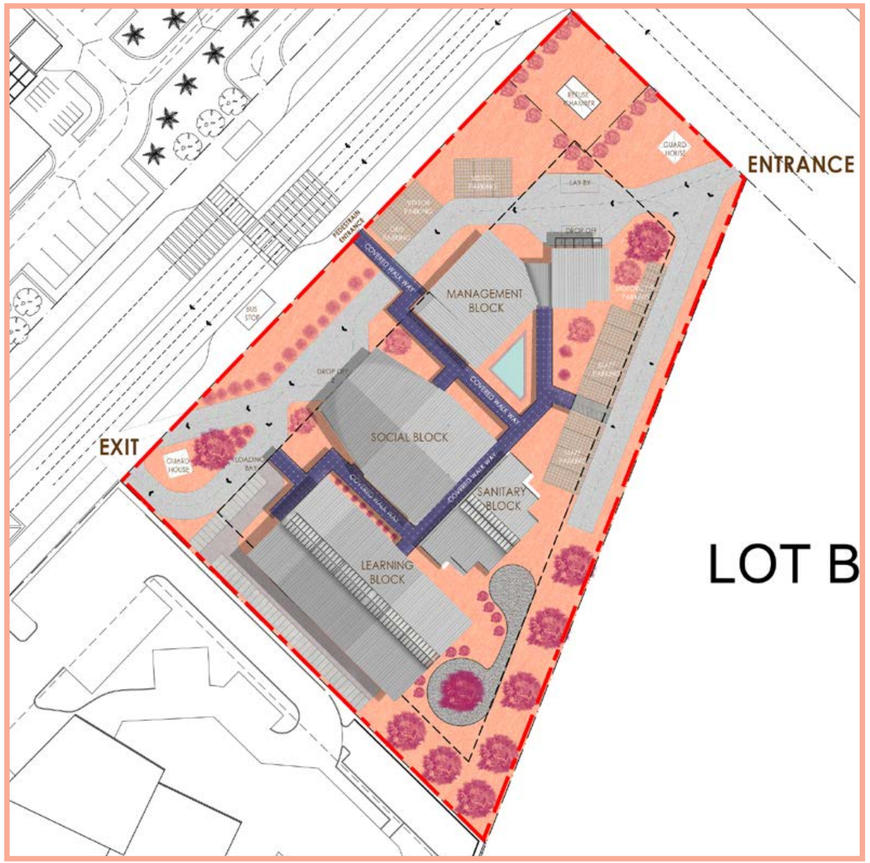
LEARNING BLOCK IS MAINLY CLASSROOMS, WHERE MOST STUDENTS SPEND MOST OF THIER TIME LEARNING UNLESS HAVIVNG CLASSES IN SOCIAL BLOCK.

SANITARY BLOCK WHERE SPACES ARE MORE PRIVATE. TOILETS, UTITLITIES AND PRAYER ROOMS ARE LOCATED THERE. IT ALSO ISOLATES MOST TOILET SMELLS FROM OTHER BLOCKS



N

LAYOUT PLAN
SCALE 1: 1000



LEGEND

COVERED WALK WAY

VEHICLE ACCESS AND PARKINGS

THE SITE IS LOCATED AT THE NORTH EAST CORNER OF THE LAYOUT PLAN. IT IS FACING THE SERVICE ROAD AND THE MAIN ROAD OF JALAN SEMPURNA 2.

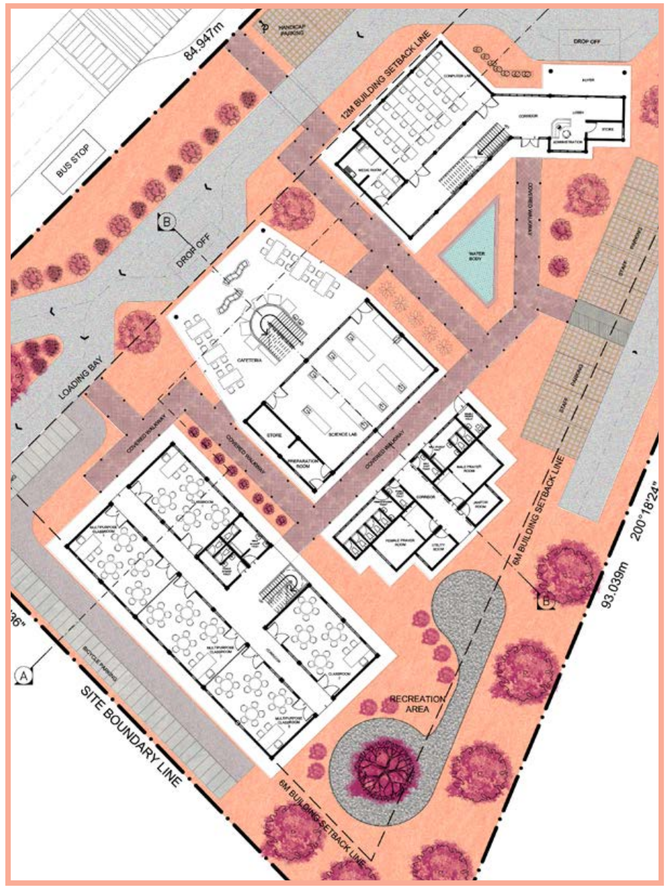
THE ENTRANCE OF THE SITE IS AT THE NOTRTH EAST CORNER. ONCE ENTER, SPLITTING 2 WAYS.HEADING SOUTH IS TOWARDS STAFF & MOTORCYCLE PARKINGS. GOING ALONG WEST WILL MEET THE DROP OFF POINT AND LAY BY IN FRONT OF THE MANAGEMENT BLOCK.

THE INNER ROAD LEADS TO A ROW OF SCHOOL BLOCKS AND ANOTHER SPLIT. TURNING RIGHT WILL BE EXIT, TURNING LEFT WILL LEAD TO A LOADING BAY AND AFTER THAT WILL BE THE EXIT.

PEDESTRIANS COULD ENTER FROM THE ENTRANCE NEAR THE BUS STOP AND WALK FREELY ALONG THE WALKWAY COVERED WITH LAMINATED PHOTOVOLTIC GLASS ROOF.

N

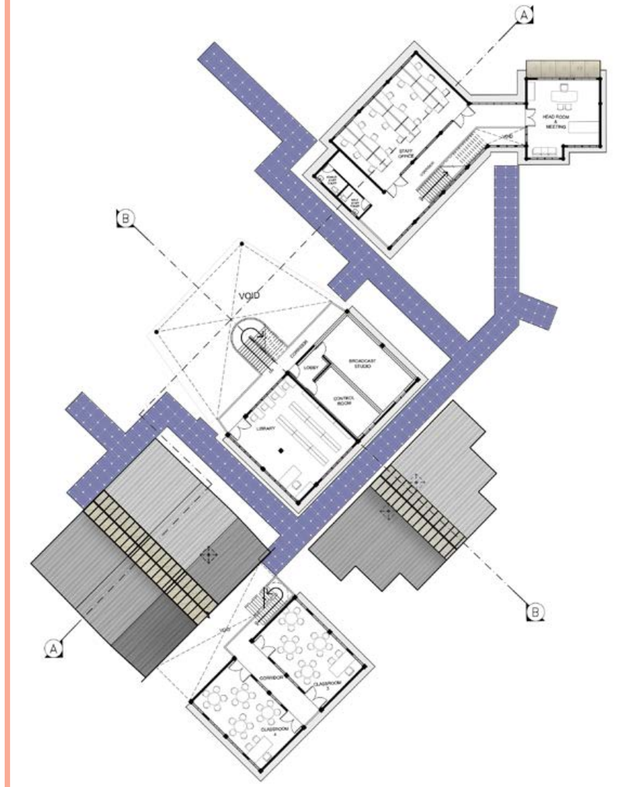
SITE PLAN
SCALE 1: 400



GROUND FLOOR	
SPACES	**AREA (m)**
MANAGEMENT BLOCK	
FOYER	6
LOBBY	12
ADMINISTRATION	8.2
STORE 1	4.5
COMPUTER LAB	60
MEDIC ROOM	15
TOTAL	105.7
SOCIAL BLOCK	
CAFETERIA	120
SCIENCE LAB	95
STORE 2	8.4
PREPARATION ROOM	8.4
TOTAL	231.8
SANITARY BLOCK	
MALE STUDENT TOILET	9.7
FEMALE STUDENT TOILET	14
MALE SATFF TOILET	3
FEMALE STAFF TOILET	3
DISABLE PEOPLE TOILET	3.7
MALE PRAYER ROOM	15
FEMALE PRAYER ROOM	15
JANITOR ROOM	6
UTILITY ROOM	6
TOTAL	75.4
LEARNING BLOCK	
MULTIPURPOSE CLASS-ROOMS (X4)	120 (40X3)
CLASSROOMS (X2)	80 (40X2)
MALE STUDENT TOILET	8.8
FEMALE STUDENT TOILET	8.8
TOTAL	217.6
TOTAL	630.5

N

GROUND FLOOR PLAN
SCALE 1: 250



FIRST FLOOR	
SPACES	**AREA (SQM)**
MANAGEMENT BLOCK	
HEAD & MEETING ROOM	36
STAFF OFFICE	60
MALE STAFF TOILET	3.7
FEMALE STAFF TOILET	3.7
TOTAL	103.4
SOCIAL BLOCK	
LOBBY	6
CONTROL ROOM	17.7
BROADCASTING STUDIO	32
LIBRARY	56
TOTAL	111.7
LEARNING BLOCK	
CLASSROOMS (X2)	80 (40X2)
TOTAL	80
TOTAL	295.1

CIRCULATION	
SPACES	**AREA (SQM)**
MANAGEMENT BLOCK	
GROUND FLOOR	51.5
FIRST FLOOR	52
	103.5
SOCIAL BLOCK	
GROUND FLOOR	6.2
FIRST FLOOR	25.5
	31.7
SANITARY BLOCK	
GROUND FLOOR	15
	15
LEARNING BLOCK	
GROUND FLOOR	66.2
FIRST FLOOR	23.7
	89.9
TOTAL	240.1

TOTAL BUILT-UP AREA

GROUND FLOOR + FIRST FLOOR + TOTAL CIRCULATION

630.5 + 295.1 + 240.1 = 1165.7 SQM

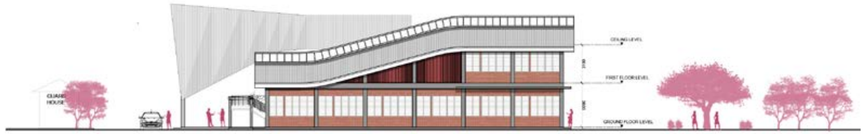
N

FIRST FLOOR PLAN
SCALE 1: 250

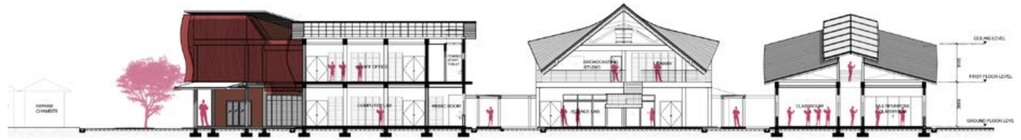
FRONT ELEVATION
SCALE 1: 250

REAR ELEVATION
SCALE 1: 250

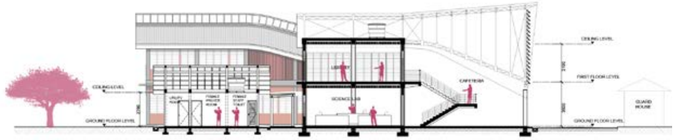
LEFT ELEVATION
SCALE 1: 250



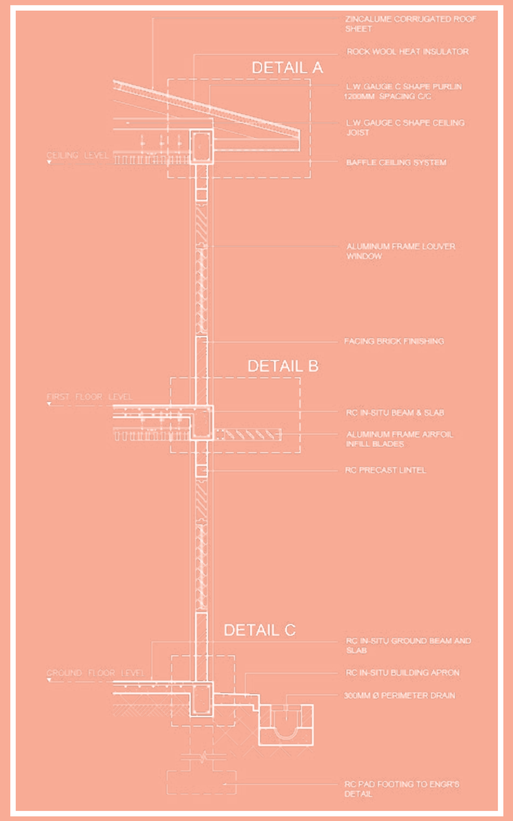
RIGHT ELEVATION
SCALE 1: 250



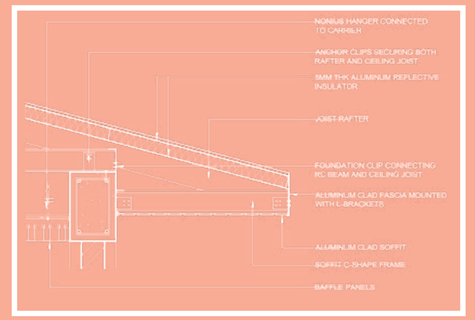
SECTION A-A
SCALE 1: 250



SECTION B-B
SCALE 1: 250

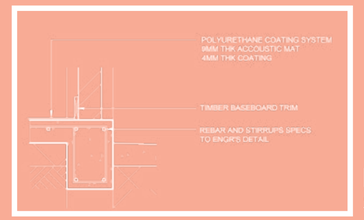


EXTERNAL WALL DETAIL
SCALE 1: 40

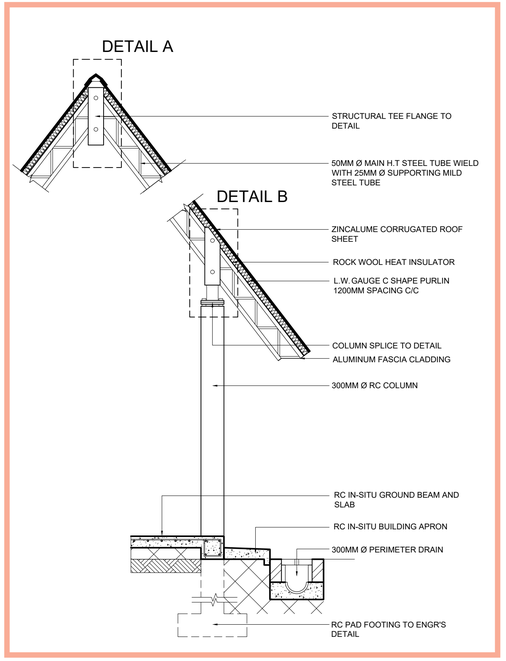


DETAIL A
SCALE 1: 20

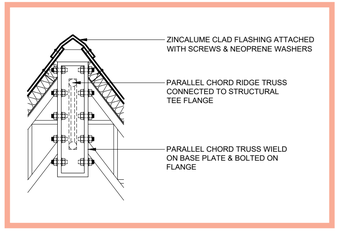
DETAIL B
SCALE 1: 20



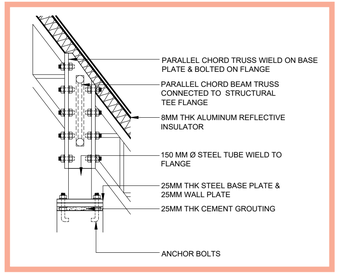
DETAIL C
SCALE 1: 20



MID SPAN DETAIL
SCALE 1: 40

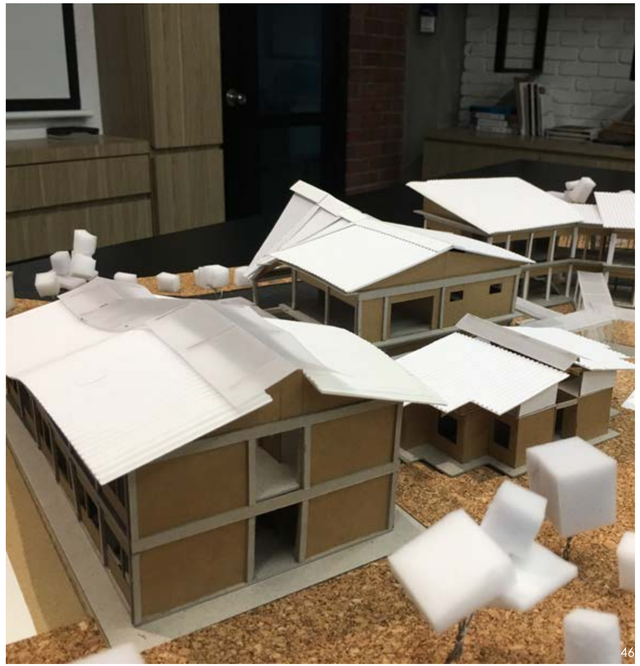


DETAIL A
SCALE 1: 20



DETAIL B
SCALE 1: 20


KELUAR

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