

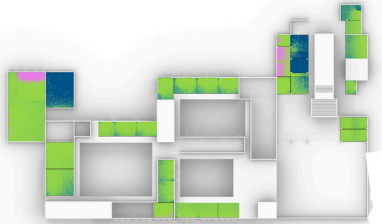
UDI

UDI.f UDI.s UDI.a UDI.e DA sDA ASE
 3.66% 32.98% 63.29% 0.06% 63.35% 69.00% 0.00%

Daylight 1

53.5% avg UDIa
 65.6% sDA_{300/50%}
 10.3% ASE_{1000.250}
 637 avg lux
 74.8% blinds open

Useful Daylight Illuminance All Areas Annual



RADIATION

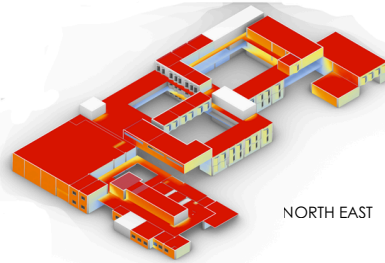
ANALYSIS

DESIGN SOLUTIONS

- NORTH-EAST LIGHT = SOFT & DIFFUSED, IDEAL FOR CLASSROOMS.
- TILTED WINDOW ORIENTATION MINIMIZES DIRECT MORNING GLARE.
- JAALI WALL ACTS AS A HEAT-BUFFER AND REDUCES SOLAR LOAD.

RESULT

- ENHANCES CROSS-VENTILATION BY FACILITATING AIR MOVEMENT THROUGH SHADED OPENINGS.
- REDUCES DEPENDENCY ON ARTIFICIAL LIGHTING DURING SCHOOL HOURS.
- SUPPORTS THERMAL COMFORT WITHOUT MECHANICAL COOLING.



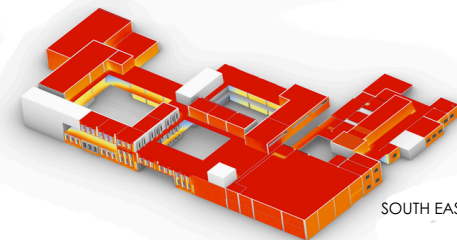
ANALYSIS

DESIGN SOLUTIONS

- LABS AS A HEAT BUFFER ON THE WEST SIDE REDUCE HEAT TRANSFER TO CORE ACADEMIC BLOCKS.
- TILTED NORTH-WEST WINDOWS BRING IN REFLECTED SOFT DAYLIGHT, NOT DIRECT GLARE.

RESULT

- LIMITS AFTERNOON SOLAR GAIN, MAINTAINING STABLE INDOOR TEMPERATURES.
- REDUCES DEPENDENCY ON COOLING SYSTEMS DURING PEAK HEAT HOURS.
- ENHANCES OVERALL THERMAL COMFORT ACROSS REGULARLY OCCUPIED CLASSROOM ZONES.
- MAINTAINS RHYTHMIC FAÇADE EXPRESSION WHILE SERVING ENERGY EFFICIENCY GOALS.



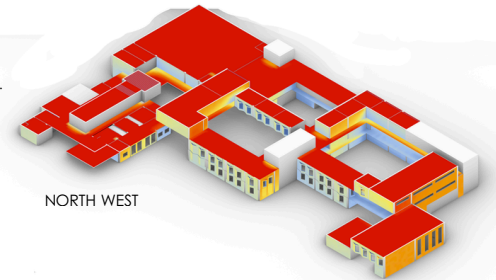
ANALYSIS

DESIGN SOLUTIONS

- TOILETS AND SERVICE ZONES USED AS A THERMAL BUFFER ON THE SOUTH-WEST SIDE.
- DEEP CHAJJAS BLOCK INTENSE LOW-ANGLE AFTERNOON SUN.
- REDUCED HEAT TRANSFER TO CLASSROOM CLUSTERS BEHIND THIS FAÇADE.
- POOL/OPEN WATER ZONE PROMOTES EVAPORATIVE COOLING, ENHANCING COMFORT IN OUTDOOR TRANSITION SPACES.

Total Solar Exposure
 All Outdoor Conditions
 All Surfaces 1121 kWh/m²-yr
 Monthly Plot

0 kWh/m² 1500 kWh/m²



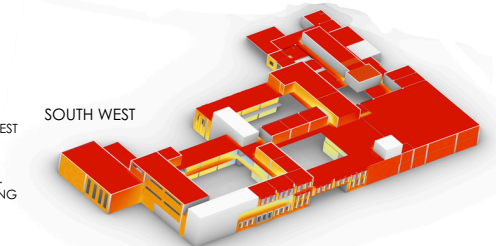
ANALYSIS

DESIGN SOLUTIONS

- AUDITORIUM POSITIONED ON SOUTH-EAST TO BUFFER CLASSROOM BLOCKS FROM HEAT GAIN.
- DEEP CHAJJAS ON ALL SOUTH-FACING WINDOWS REDUCE SOLAR INGRESS IN SUMMER.

RESULT

- ALLOWS WINTER SUNLIGHT, IMPROVING THERMAL COMFORT SEASONALLY.
- PREVENTS OVERHEATING DURING SCHOOL HOURS WITHOUT MECHANICAL COOLING.
- MASSING HIERARCHY SUPPORTS SOLAR PASSIVE PERFORMANCE AND ZONING LOGIC.



DAYLIGHT AUTONOMY

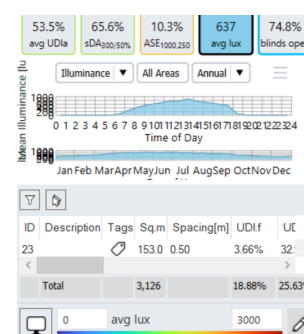
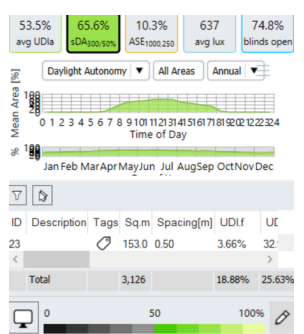
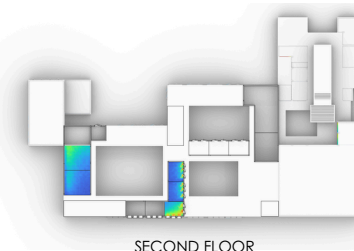
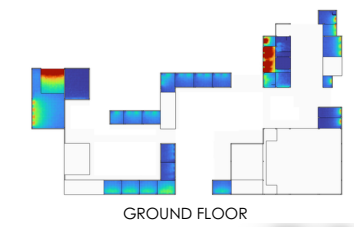
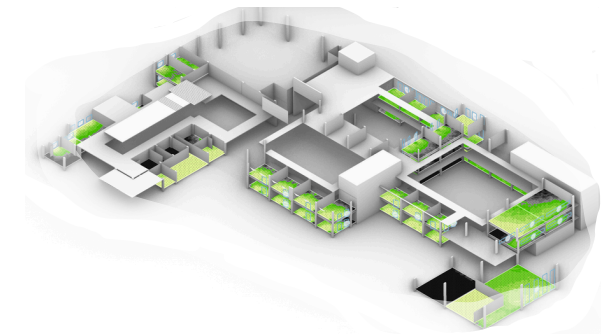
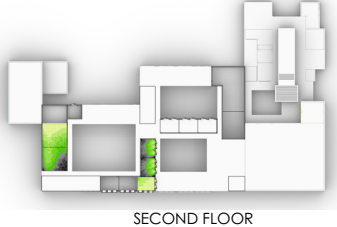
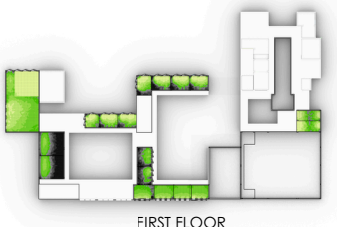
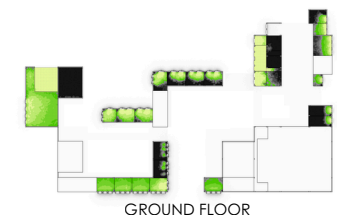
THE SPATIAL DAYLIGHT AUTONOMY(SDA) ANALYSIS CONFIRMS A HIGH LEVEL OF AMBIENT NATURAL LIGHT PENETRATION THROUGHOUT THE THREE-STORY STRUCTURE.

THE GROUND FLOOR DEMONSTRATES ROBUST DAYLIGHT PERFORMANCE, CAPITALIZING ON LARGE OPENINGS AND THE THERMAL MASS EFFECT TO BALANCE LIGHT AND THERMAL COMFORT.

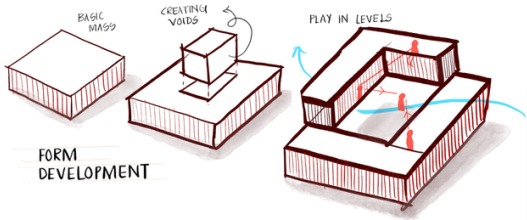
MOVING TO THE FIRST AND SECOND FLOORS, THE ACHIEVED DAYLIGHT AUTONOMY PERCENTAGES CONSISTENTLY EXCEED THE RECOMMENDED BENCHMARK INDICATING THAT CLASSROOMS AND CIRCULATION AREAS RECEIVE AT LEAST 300 LUX FOR OVER 50% OF THE SCHOOL'S OPERATIONAL HOURS. THIS OPTIMAL DAYLIGHTING MINIMIZES THE NEED FOR ARTIFICIAL LIGHTING DURING THE DAY, TRANSLATING DIRECTLY INTO A SIGNIFICANT REDUCTION IN ELECTRICAL ENERGY CONSUMPTION (BY UP TO 60-70% IN LIGHTING LOADS) AND ENHANCING THE OVERALL VISUAL AND PHYSIOLOGICAL WELL-BEING OF THE STUDE. (INCORPORATING STRATEGIES LIKE LIGHT SHELVES, EXTERNAL SHADING, OR JAALI SCREENS)

ILLUMINANCE

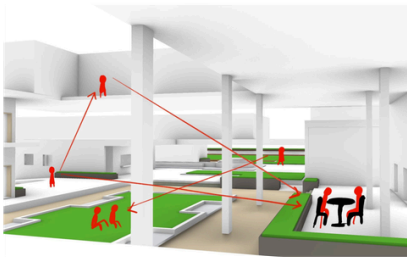
ENSURING OPTIMAL VISUAL COMFORT THROUGH CONTROLLED ILLUMINANCE. THE ANNUAL SIMULATION RESULTS FOR ALL OCCUPIED AREAS (3,126SQ.M) SHOW AN AVERAGE ILLUMINANCE OF 637 LUX. THIS VALUE IS SIGNIFICANTLY ABOVE THE TYPICALLY REQUIRED RANGE (E.G., 300-500 LUX FOR CLASSROOMS), CONFIRMING A BRIGHTLY LIT AND STIMULATING LEARNING ENVIRONMENT. CRUCIALLY, THE HIGH LEVEL OF LIGHT IS DELIVERED WITH A CONTROLLED RISK OF GLARE, AS EVIDENCED BY THE LOW ANNUAL SUNLIGHT EXPOSURE OF JUST 10.3%. THIS CONFIRMS THAT LESS THAN 10.3% OF THE SPACE IS EXPOSED TO TOO MUCH DIRECT SUNLIGHT (OVER 1000 LUX FOR 250 HOURS PER YEAR). FURTHERMORE, THE ANALYSIS INDICATES A SUCCESSFUL STRATEGY FOR MANAGING BRIGHTNESS, WITH A HIGH PERCENTAGE OF THE AREA BENEFITING FROM NATURAL LIGHT EVEN WHEN BLINDS ARE OPEN (74.8%). OVERALL, THE ILLUMINANCE PROFILE DEMONSTRATES A SUCCESSFUL BALANCE—PROVIDING ABUNDANT LIGHT FOR VISUAL TASKS, REDUCING RELIANCE ON ARTIFICIAL LIGHTING, AND MAINTAINING VISUAL COMFORT TO SUPPORT STUDENT CONCENTRATION AND WELL-BEING.



DESIGN APPROACH

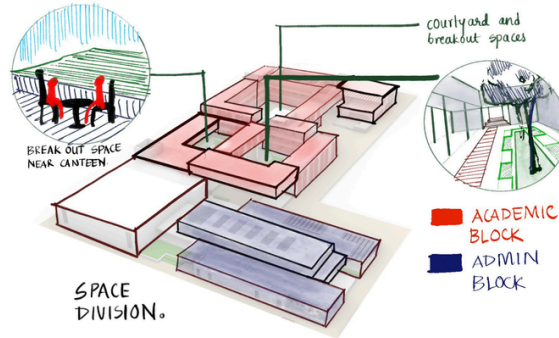


SPATIAL JUSTIFICATION TO CONTEXT



CONTEXT GRID FOLLOWED

VISUAL INTERACTION CREATED BY PLACING COURTYARDS BETWEEN MAJOR SPACES

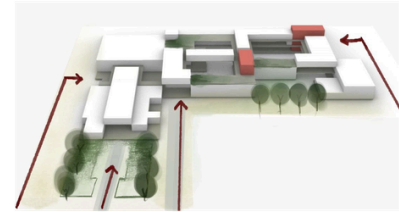
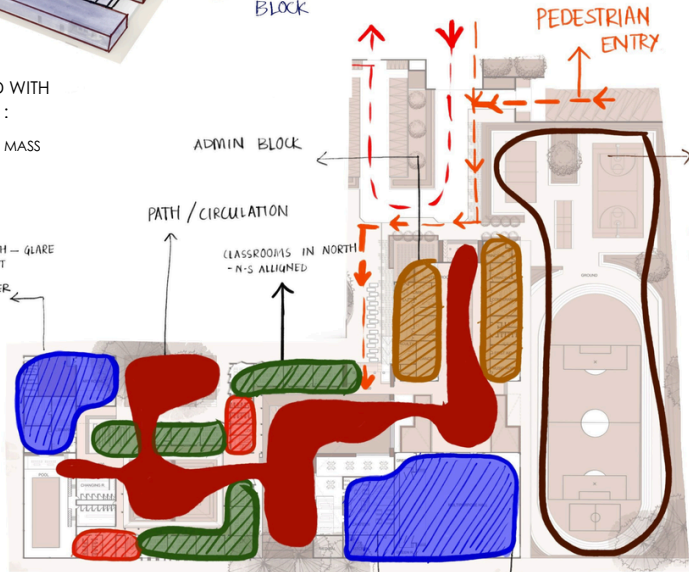


PLAY OF MASS AND VOID WITH REFERENCE TO CONTEXT :

OPEN SPACES INFRONT OF BUILD MASS TO MAINTAIN AIR FLOW AND TO CREATE OPENNESS

LIBRARY IN NORTH - GLARE FREE LIGHT
SECLUDED CORNER - SILENCE

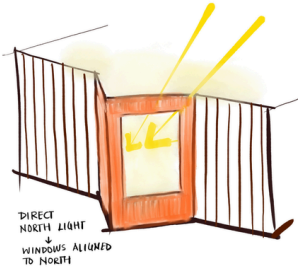
ZONING



APPROACH TO THE SITE



TILTED WINDOWS ON EACH SIDES

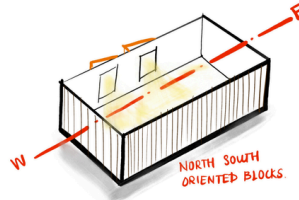


NORTH

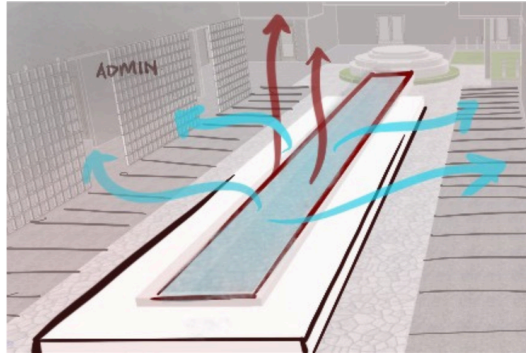
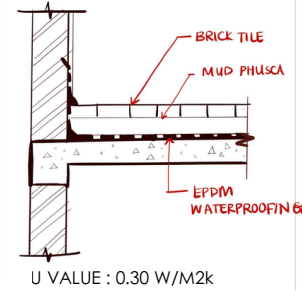
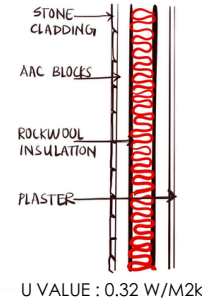


EAST AND WEST

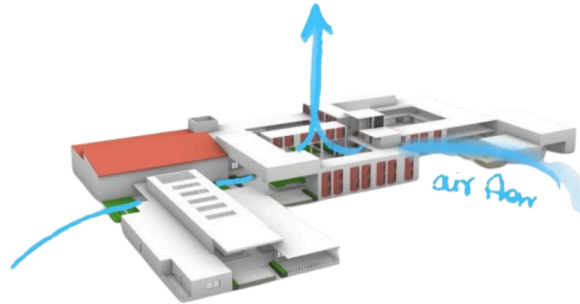
PASSIVE STRATEGIES



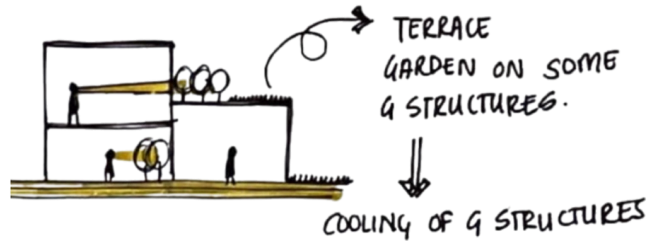
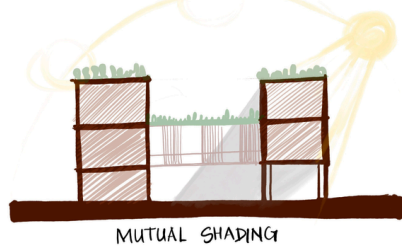
ORIENTATIONS OF ROOMS



MULTIPLE COURTYARDS AS SHADING DEVICE



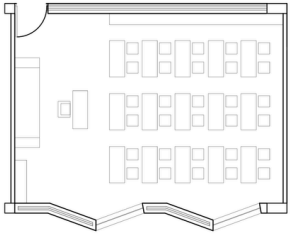
WIND DIRECTION OF PROPER AIR FLOW



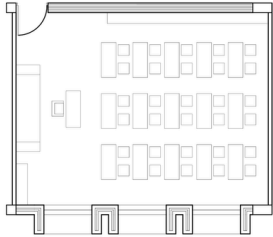
DOUBLE SKIN JALLI



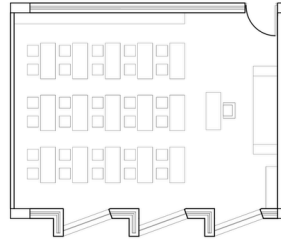
CLASSROOM DETAILS



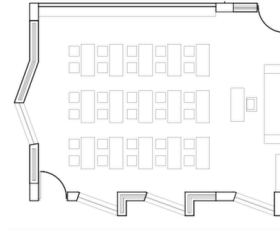
NORTH SIDE



SOUTH SIDE



EAST SIDE



WEST SIDE



Untitled

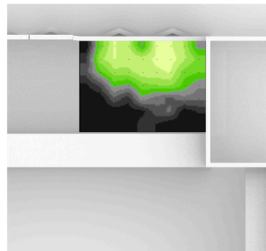
42.7% avg UDIa 42.9% sDA1000.50% 0.0% ASE1000.250 333 avg lux - blinds open

Daylight Autonomy: All Areas Annual

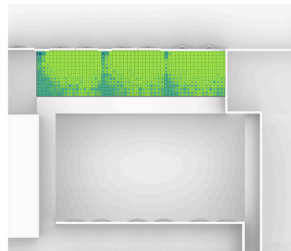
UDI Area [%]

ID	Description	Tags	Sq.m	Spacing[m]	UDI f	UDIs
19			50.6	1.00	4.66%	52.68%
Total			51		4.66%	52.68%

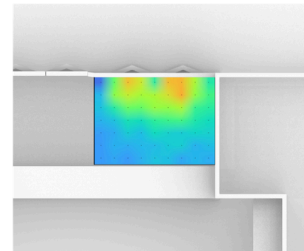
0 50 100%



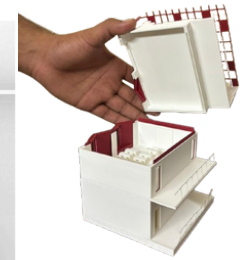
DAYLIGHT



UDI



ILLUMINANCE



PHYSICAL MODEL OF A CLASSROOM UNIT



U VALUE CALCULATION

WALLS

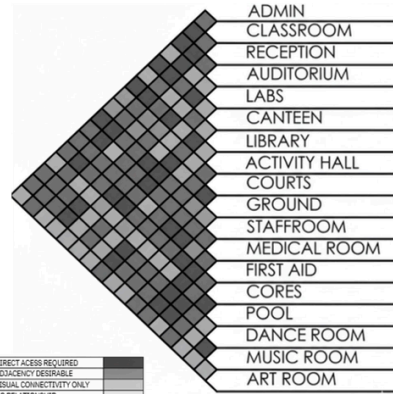
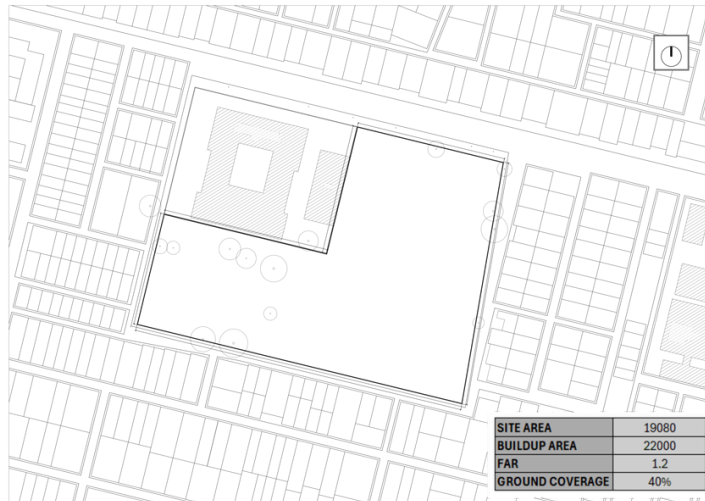
	MATERIAL	THERMAL CONDUCTIVITY (W/MK)	DENSITY	THICKNESS	R VALUE
1	EXTERNAL PLASTER	1.004	1900	15	0.01
2	AAC BLOCKS	0.29	850	100	0.34
3	EXTRUDED POLYSTYRENE	0.025	48	40	2.4
4	AIR CAVITY	3	1	60	0.01
5	AAC BLOCKS	0.29	850	100	0.34
6	INTERNAL PLASTER	1.004	1900	12	0.01

U VALUE 0.32 W/M2K

ROOF

	MATERIAL	THERMAL CONDUCTIVITY (W/MK)	DENSITY	THICKNESS	R VALUE
1	REINFORCED CONCRETE	1.68	2300	150	0.09
2	EXTRUDED POLYSTYRENE	0.025	48	75	2.8
3	EPDM	0.4	1400	10	0.02
4	TILE	1.1	2100	25	0.03
5	LIMENSTONE CEMENT PLASTE	0.7	1400	10	0.34

U VALUE 0.30 W/M2K



MATRIX DIAGRAM OF SPACES

AREA PROGRAMME

	SPACES	AREA (IN M2)
1	ADMIN	600 m2
2	CLASSROOM	48x32 m2
3	RECEPTION	67m2
4	AUDITORIUM	1200m2
5	LABS	
5.1	COMPUTER	130m2
5.2	PHYSICS	90m2
5.3	CHEMISTRY	85m2
6	CANTEEN	120m2
7	LIBRARY	200m2
8	ACTIVITY HALL	1000m2
9	COURTS	1400m2
10	GROUND	3100m2
11	STAFFROOM	30m2
12	MEDICAL ROOM	30m2
13	FIRST AID ROOM	25m2
14	CORES	110m2
15	POOL	200m2
16	DANCE ROOM	60m2
17	MUSIC ROOM	60m2
18	ART ROOM	50m2

PVWatts Calculator

RESULTS

1,108,131 kWh/Year*

Month	Solar Radiation (kWh/m2/day)	ACEnergy (kWh)
January	5.55	90,190
February	6.47	91,875
March	7.08	107,682
April	7.03	100,956
May	6.70	98,262
June	6.02	88,243
July	5.06	79,844
August	5.19	81,720
September	6.21	95,534
October	6.21	95,697
November	5.53	91,287
December	5.42	88,215
Annual	6.07	1,108,132

Location and Station Identification

Requested Location	Jalpur	Lat:	1ng:
Weather Data Source	26.95, 75.85	26.95° N	3.1 m
Latitude	75.85° E		
Longitude			

PV System Specifications

DC System Size	704.4 kW Standard																												
Module Type	Fixed (roof mount)																												
Array Type	14.08% 26° 180°																												
System Losses	1.2 96% 0.4																												
Array Tilt	From weather file																												
Array Azimuth																													
DC to AC Size Ratio																													
Inverter Efficiency																													
Ground Coverage Ratio																													
Albedo																													
Bifacial	No (0)																												
Monthly Irradiance Loss	<table border="1"> <thead> <tr> <th></th> <th>Jan</th> <th>Feb</th> <th>Mar</th> <th>Apr</th> <th>May</th> <th>June</th> </tr> </thead> <tbody> <tr> <td></td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> </tr> <tr> <th></th> <th>July</th> <th>Aug</th> <th>Sept</th> <th>Oct</th> <th>Nov</th> <th>Dec</th> </tr> <tr> <td></td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> <td>0%</td> </tr> </tbody> </table>		Jan	Feb	Mar	Apr	May	June		0%	0%	0%	0%	0%	0%		July	Aug	Sept	Oct	Nov	Dec		0%	0%	0%	0%	0%	0%
	Jan	Feb	Mar	Apr	May	June																							
	0%	0%	0%	0%	0%	0%																							
	July	Aug	Sept	Oct	Nov	Dec																							
	0%	0%	0%	0%	0%	0%																							

Performance Metrics

DC Capacity Factor	18.0%
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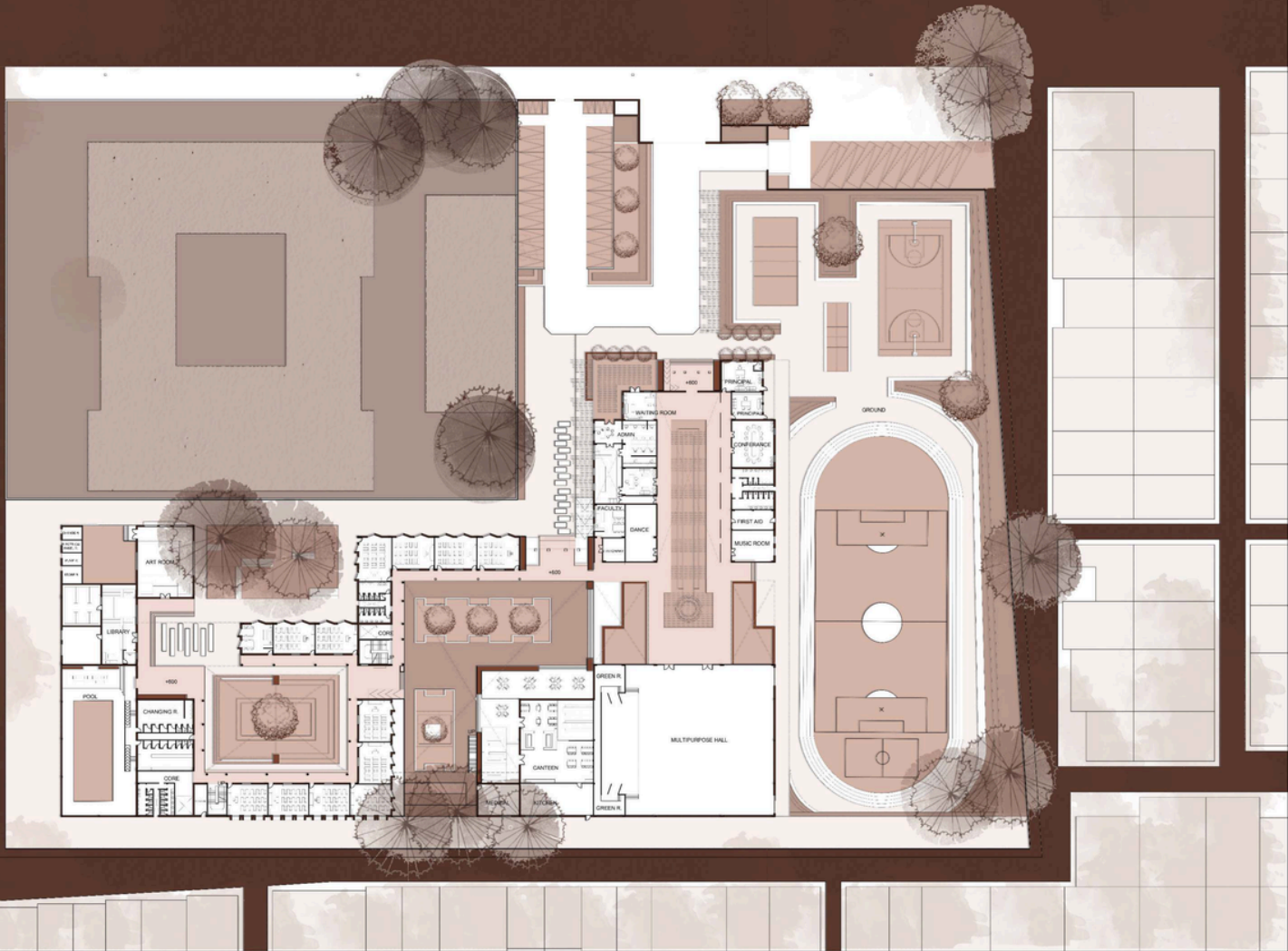
PV CALCULATION

SOLARPANNELSTOBE USED INARE OF 4563 M2 ARE CALCULATED AND ARE 1100 IN NUMBER

EPI BECOMED 50.3

EECBC SUPPER PLUS





SUBJECT:
ARCHITECTURAL DESIGN- V

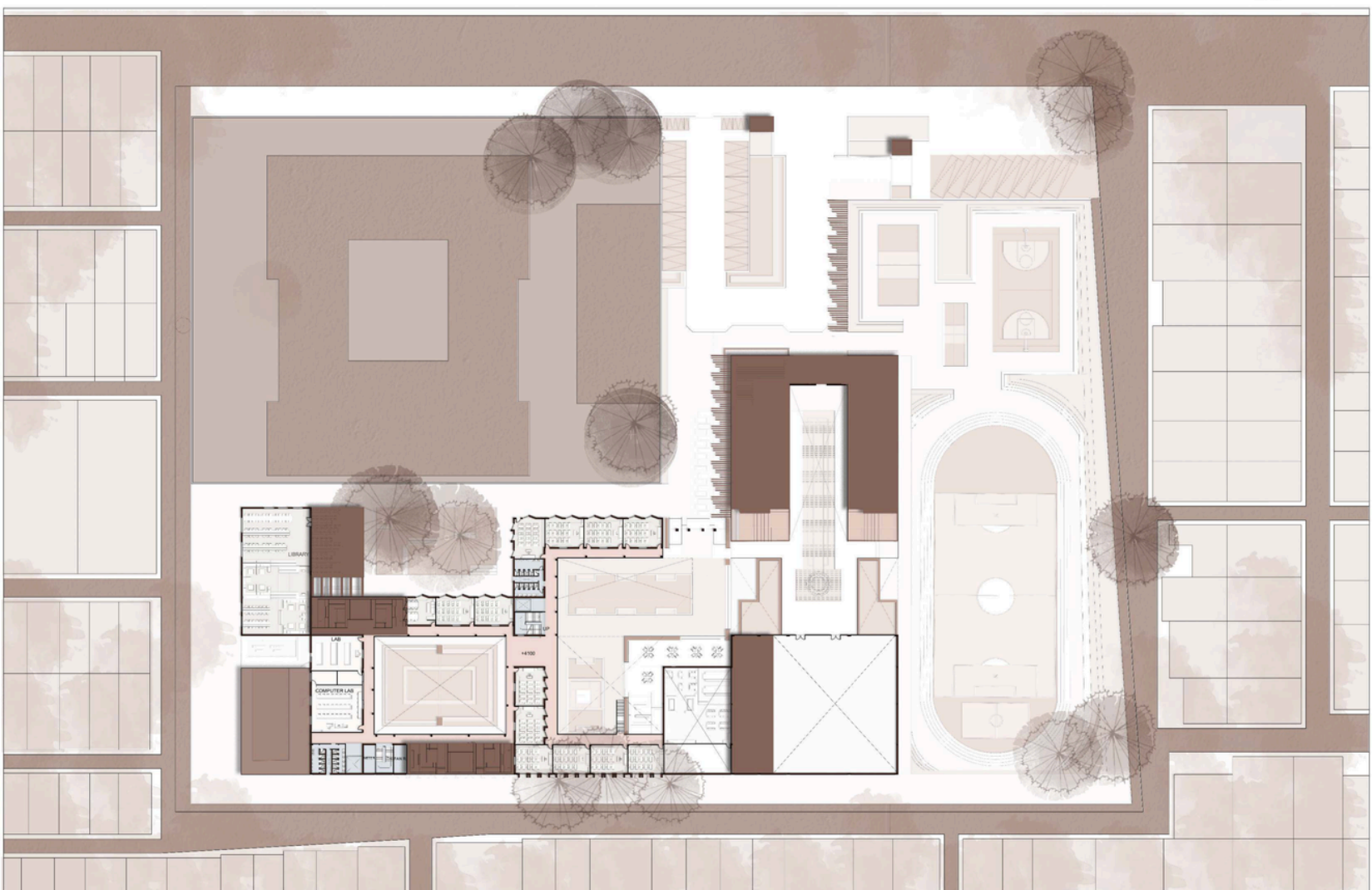
SHEET TITLE:
GROUND FLOOR PLAN



SCALE:
1: 250

INSPIRE **LI**
AWARDS

SHEET NO:
7



SUBJECT:
ARCHITECTURAL DESIGN-V

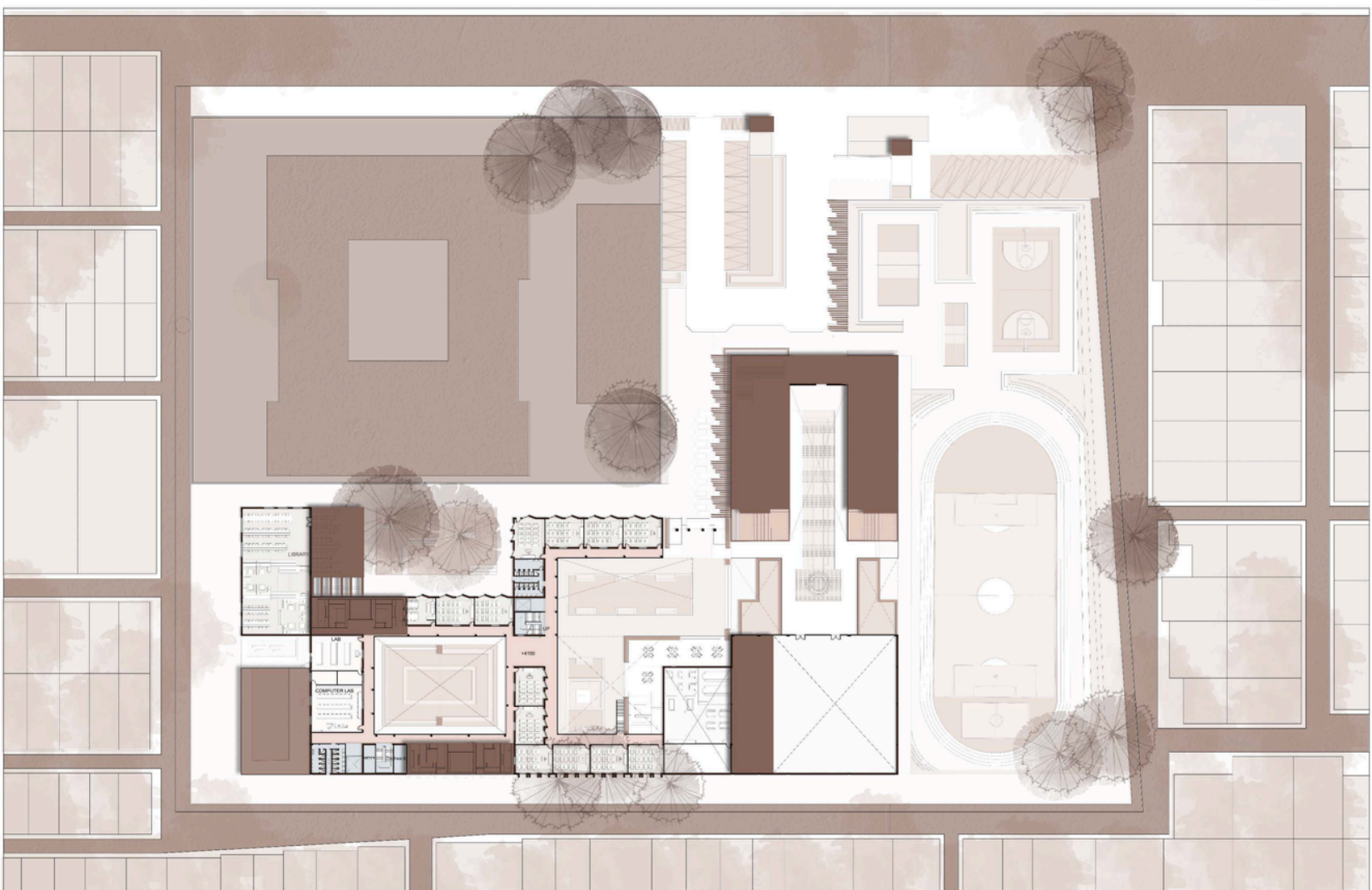
SHEET TITLE:
FIRST FLOOR PLAN



SCALE:
1: 250

INSPIRE **LI**
AWARDS

SHEET NO:
8



SUBJECT:
ARCHITECTURAL DESIGN-V

SHEET TITLE:
FIRST FLOOR PLAN



SCALE:
1: 250

INSPIRE **LI**
AWARDS

SHEET NO:
8



SUBJECT:
ARCHITECTURAL DESIGN- V

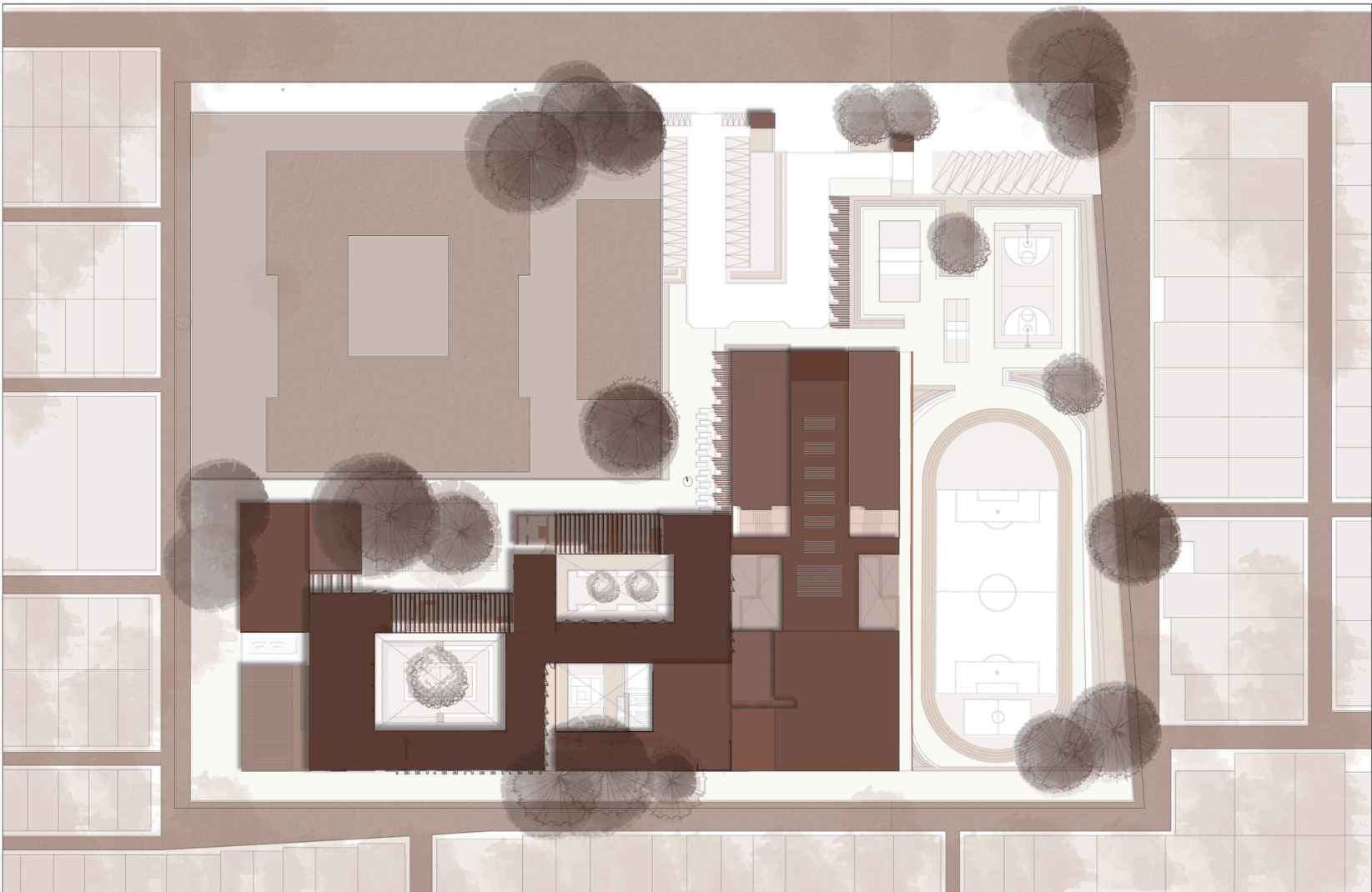
SHEET TITLE:
SECOND FLOOR PLAN



SCALE:
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INSPIRE **LI**
AWARDS

SHEET NO:
9



SUBJECT:
ARCHITECTURAL DESIGN-V

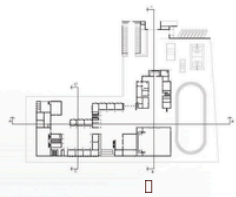
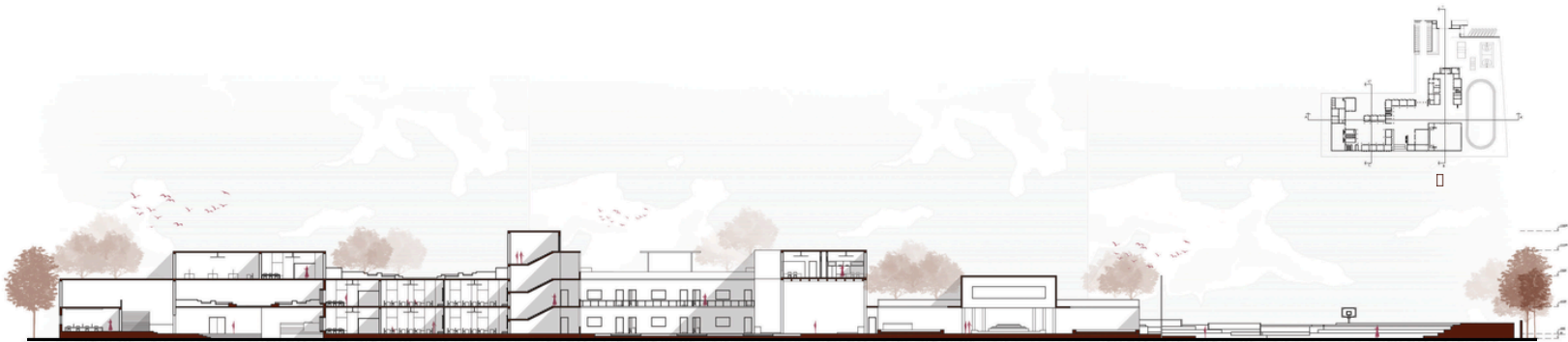
SHEET TITLE:
ROOF FLOOR PLAN



SCALE:
1: 250

INSPIRE **LI**
AWARDS

SHEET NO:
10



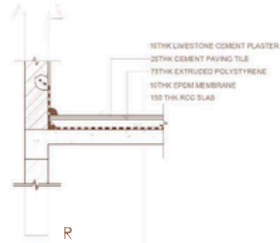
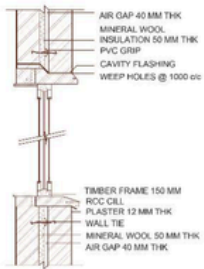
SUBJECT:
ARCHITECTURAL DESIGN-V

SHEET TITLE:
SECTIONS

SCALE:
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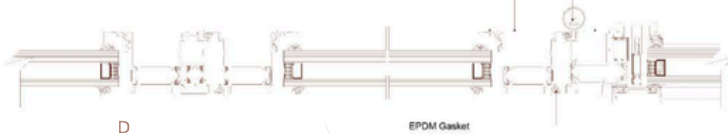
INSPIRE 
AWARDS

SHEET NO:
11

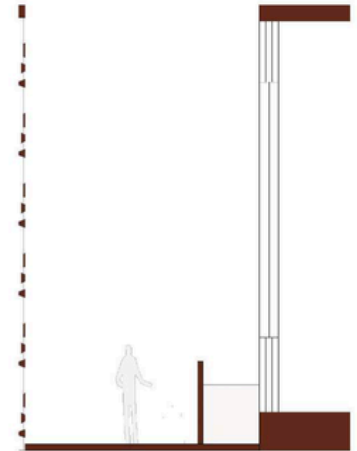


I

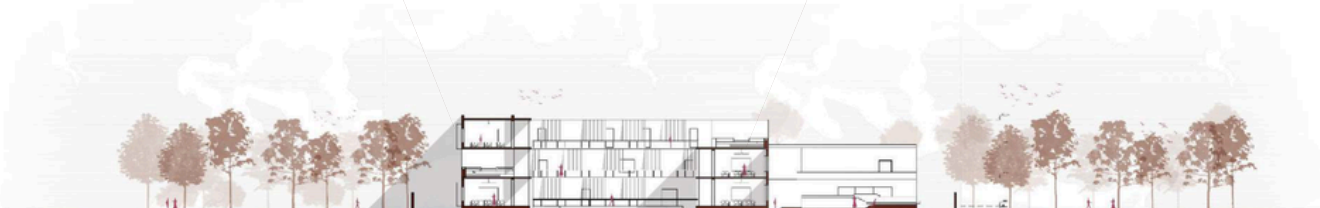
Schuco RS 65 Series
Aluminium Frame Profile
Hinge
Schuco RS 65 Series
Aluminium Inside Opening
Door Vene Profile
Schuco RS 65 Series
Glazing Bead



D

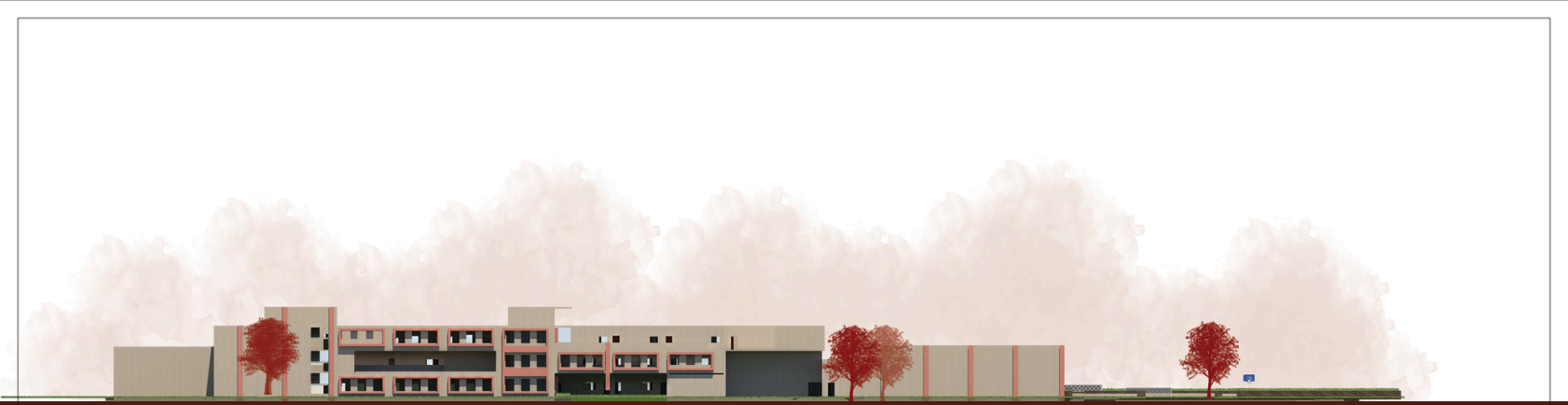


E



S





SUBJECT:
ARCHITECTURAL DESIGN- V

SHEET TITLE:
ELEVATIONS

INSPIRE **LI**
AWARDS

SHEET NO:
13