

PROFESSIONAL TRAINING REPORT

Submitted in partial fulfillment of the requirements for the award of
Master of Architecture degree in Sustainable Architecture

by

OVIYA K (40890012)

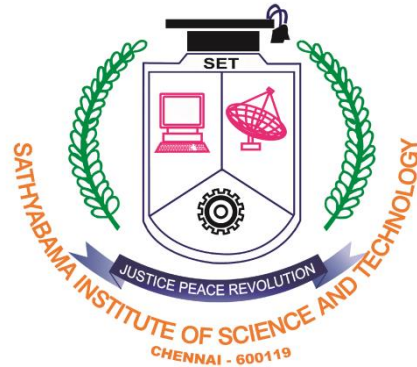


**SCHOOL OF BUILDING AND ENVIRONMENT
DEPARTMENT OF ARCHITECTURE**

SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Accredited with Grade "A" by NAAC
JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI - 600 119

DEC 2021 - JAN 2022

(Annexure I)



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
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(Est U/s(3) of UGC Act, 1956) Accredited with Grade "A" by NAAC (A Christian Minority Institution)

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHEMMENCHERY, CHENNAI – 600119. TAMILNADU.

PHONE: 2450 1443/9941912481 INTERNET: www.sathyabama.ac.in

E-mail: archhod@sathyabama.ac.in



SCHOOL OF BUILDING AND ENVIRONMENT
DEPARTMENT OF ARCHITECTURE
M. Arch (Sustainable Architecture)

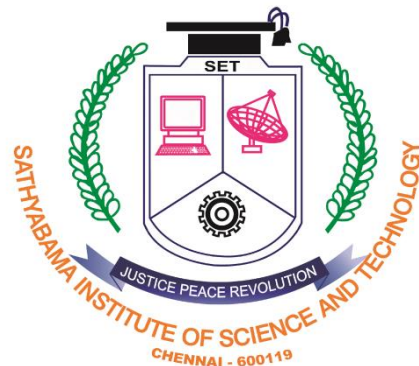
PROFESSIONAL TRAINING PORTFOLIO (S89A PT)
DEC 2021 - JAN 2022

Name of the Student : OVIYA K

Semester : IV

Reg No. : 40890012

Batch : 2020-2022



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E-mail: archhod@sathyabama.ac.in



SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

M. Arch (Sustainable Architecture)

BONAFIDE CERTIFICATE

This is to certify that the professional training (S89A PT) is the work of **OVIYA K (40890012)** who had undergone training in **GREEN EVOLUTION** and has been monitored by the continuous assessment during **Dec 2021 to Jan 2022**.

A handwritten signature in blue ink, appearing to read 'Devyani'.

DR.DEVYANI GANGOPADHYAY
DEAN,

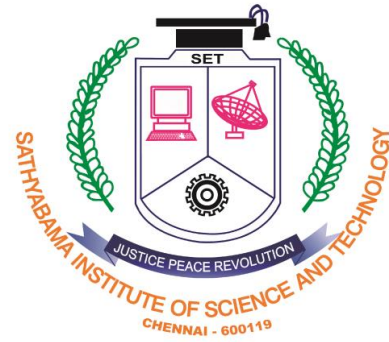
School of Building and Environment
Department of Architecture

Submitted for Viva voce Examination held on 05.02.2022

A handwritten signature in blue ink, appearing to read 'Sheetal'.

Internal Examiner

External Examiner



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E-mail: archhod@sathyabama.ac.in



DECLARATION

I **OVIYA K** hereby declare that the Professional Training Report **DEC 2021 – JAN 2022** done by me under the guidance of **Ar. ANUPAMA MOHANRAM (Co-Founder & Head – Architecture)** is submitted in partial fulfillment of the requirements for the completion of practical training session.

DATE : 21.01.2022

PLACE : Chennai

A handwritten signature in black ink, appearing to read 'Oviya K.', with the name '(OVIYA . K)' written in parentheses below it.

SIGNATURE OF CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **SATHYABAMA** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

I convey my thanks to **Dr. Devyani Gangopadhyay**, Dean and Head of Department , School of building and Environment, Dept. of architecture for providing me necessary support and details at the right time during the progressive training session.

I would like to express my sincere and deep sense of gratitude to **Ar. Anupama Mohanram, Co-Founder & Head – Architecture, Green Evolution** for her valuable guidance, suggestions and constant encouragement paved way for the successful completion of my project work. My sincere thanks to **Ar. Sheetal Amraotkar** Professional Training Coordinator for her motivation and guidance.

I wish to express my thanks to all Teaching and Non-teaching staff members of the Department of Architecture who were helpful in many ways for the completion of the project.

Also thanks to **Ar. Anupama Mohanram, Green Evolution, 21/2, Rukmini Road, Kalakshetra Colony, Chennai 600090**

CONFIRMATION LETTER

(Annexure –V)



To,
Oviya Kumanan
40. Chinnamani Street,
Jawahar Nagar,
Thirumangalam,
Madurai 625706

November 10th, 2021

Mobile: 8610208161
Email: oviyakumanan23@gmail.com

Dear Oviya,

We are pleased to offer you an internship with Green Evolution on the following terms and conditions:

1. **Designation:** Architectural Intern
2. **Internship period:** November 29, 2021 until January 21, 2022

4. General Rules and Regulations:

You will be governed by various rules and regulations/ service conditions framed by the company from time to time and attached herewith.

5. Documents to be furnished on Joining:

You will have to submit the attested copies of the following documents:

- i. Certificates showing your age/ date of birth, academic and professional qualifications,
- ii. Two recent passport size photographs,

6. Termination of Internship:

The company may terminate your internship if there is misalignment between your and our value system and culture as defined in the General rules and regulations, and if this misalignment affects either the internal working and performance or the image of our brands/ company/ group.

We welcome you to the organization and look forward to a mutually rewarding association. Please sign and return the duplicate copy of this letter, as token of your acceptance of this offer of appointment.

For Green Evolution Architectural Consultancy

A handwritten signature in blue ink, appearing to read "anupama", written over a light blue circular stamp.

Anupama Mohanram M.Arch, LEED AP

Co-Founder and Head of Architecture

Green Evolution Architectural Consultancy
No.43/2, 7th Cross Street,
Besant Nagar, Chennai - 600 090
Landline: 044 - 24411245

JOINING LETTER



(Annexure –VI)

December 24th, 2021

To:
The Head of the Department
Sathyabama Institute of Science and Technology
Rajiv Gandhi Salai, Jeppiaar Nagar,
Chennai-600 119
Tamil Nadu

Dear Madam/Sir,

This is to confirm that Oviya K, student of M.Arch (Sustainable Architecture) is undergoing an internship at our firm since December 02, 2021.

Thanks and Regards,

For Green Evolution Architectural Consultancy

A handwritten signature in blue ink, appearing to read "anupama".

Anupama Mohanram M.Arch, LEED AP

Co-Founder and Head of Architecture

COA reg No.: CA/2006/38052

Green Evolution Architectural Consultancy
No:43/2, 7th Cross Street,
Besant Nagar , Chennai - 600 090
Landline: 044 - 24411245

WEEKLY REPORT

(Annexure –VII)



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DEPARTMENT OF ARCHITECTURE M. Arch (Sustainable Architecture)

Continuous Assessment Report for Professional training

(Continuous Assessment progress report of the trainee architect for the period of 30 working days in the office to be submitted to HOD by the Trainee attending the training session)

1. Name of the office/organization: Green Evolution
: 21/2, Rukmini Road, Kalakshetra Colony, Chennai
600090 ph-9940051499 (Ar. Anupama Mohanram)
2. Address & Contact Number
3. Name of the student : Oviya K
4. Duration : From 02.12.2021 To 10.12.2021
5. Total No. of days : 7 days
6. Evaluation of Performance criteria shall be on

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month; which will be converted to the allotted 200 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture and methodology					
Active Participation in the Project activities					
Documentation and tracking of project					
Presentation Skills developed					
Understanding of construction details & techniques					
Participation and contribution in project meetings					
Understanding of codes and standards					
Schedule preparation & tracking activities					
Preparation / Management of drawings					
Learning / Application of software in Projects					
Preparation of concept for projects					
Site Management / Discussion with clients					
Overall Grading*					

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks :-----

8. Signature of the
Head of the Office /
Organization (With Seal)

8

Anupama

Green Evolution Architectural Consultancy
No: 43/2, 7th Cross Street,
Besant Nagar, Chennai - 600 090
Landline: 044 - 24411245

:

DEPARTMENT OF ARCHITECTURE M. Arch (Sustainable Architecture)

Continuous Assessment Report for Professional training

(Continuous Assessment progress report of the trainee architect for the period of 30 working days in the office to be submitted to HOD by the Trainee attending the training session)

1. Name of the office/organization: Green Evolution
: 21/2, Rukmini Road, Kalakshetra Colony, Chennai
600090 ph-9940051499 (Ar. Anupama Mohanram)
2. Address & Contact Number
3. Name of the student : Oviya K
4. Duration : From 13.12.2021 To 17.12.2021
5. Total No. of days : 5 days
6. Evaluation of Performance criteria shall be on

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month; which will be converted to the allotted 200 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture and methodology					
Active Participation in the Project activities					
Documentation and tracking of project					
Presentation Skills developed					
Understanding of construction details & techniques					
Participation and contribution in project meetings					
Understanding of codes and standards					
Schedule preparation & tracking activities					
Preparation / Management of drawings					
Learning / Application of software in Projects					
Preparation of concept for projects					
Site Management / Discussion with clients					
Overall Grading*					

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks :-----

8. Signature of the
Head of the Office /
Organization (With Seal)

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M. Arch (Sustainable Architecture)

Continuous Assessment Report for Professional training

(Continuous Assessment progress report of the trainee architect for the period of 30 working days in the office to be submitted to HOD by the Trainee attending the training session)

1. Name of the office/organization: Green Evolution
:21/2, Rukmini Road, Kalakshetra Colony, Chennai
2. Address & Contact Number :600090ph-9940051499 (Ar. AnupamaMohanram)
3. Name of the student :Oviya K
4. Duration : From 20.12.2021 To 25.12.2021
5. Total No. of days : 6 days

6. Evaluation of Performance criteria shall be on

* **Note:**Kindly grade the student as per his/her overall performance in the office during the assessment month; which will be converted to the allotted 200 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture and methodology		✓			
Active Participation in the Project activities		✓			
Documentation and tracking of project		✓			
Presentation Skills developed		✓			
Understanding of construction details & techniques		✓			
Participation and contribution in project meetings		✓			
Understanding of codes and standards		✓			
Schedule preparation & tracking activities					✓
Preparation / Management of drawings		✓			
Learning / Application of software in Projects		✓			
Preparation of concept for projects		✓			
Site Management / Discussion with clients					✓
Overall Grading*		A			

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks :-----

8. Signature of the
Head of the Office /
Organization (With Seal)

Anupama

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Besant Nagar, Chennai - 600 090
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:

DEPARTMENT OF ARCHITECTURE

M. Arch (Sustainable Architecture)

Continuous Assessment Report for Professional training

(Continuous Assessment progress report of the trainee architect for the period of 30 working days in the office to be submitted to HOD by the Trainee attending the training session)

1. Name of the office/organization :Green Evolution
:21/2, Rukmini Road, Kalakshetra Colony, Chennai
2. Address & Contact Number :600090ph-9940051499 (Ar. AnupamaMohanram)
3. Name of the student :Oviya K
4. Duration : From 27.12.2021 To 31.12.2021
5. Total No. of days :5days

6. Evaluation of Performance criteria shall be on

* **Note:**Kindly grade the student as per his/her overall performance in the office during the assessment month; which will be converted to the allotted 200 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture and methodology		✓			
Active Participation in the Project activities		✓			
Documentation and tracking of project	✓				
Presentation Skills developed		✓			
Understanding of construction details & techniques		✓			
Participation and contribution in project meetings		✓			
Understanding of codes and standards		✓			
Schedule preparation & tracking activities					✓
Preparation / Management of drawings	✓				
Learning / Application of software in Projects		✓			
Preparation of concept for projects		✓			
Site Management / Discussion with clients					✓
Overall Grading*		A			

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks :-----

8. Signature of the
Head of the Office /
Organization (With Seal)

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(Continuous Assessment progress report of the trainee architect for the period of 30 working days in the office to be submitted to HOD by the Trainee attending the training session)

1. Name of the office/organization : Green Evolution
: 21/2, Rukmini Road, Kalakshetra Colony, Chennai
2. Address & Contact Number : 600090 ph-9940051499 (Ar. Anupama Mohanram)
3. Name of the student : Oviya K
4. Duration : From 03.01.2022 To 08.01.2022
5. Total No. of days : 5 days
6. Evaluation of Performance criteria shall be on

* **Note:** Kindly grade the student as per his/her overall performance in the office during the assessment month; which will be converted to the allotted 200 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture and methodology		✓			
Active Participation in the Project activities		✓			
Documentation and tracking of project	✓				
Presentation Skills developed		✓			
Understanding of construction details & techniques		✓			
Participation and contribution in project meetings		✓			
Understanding of codes and standards		✓			
Schedule preparation & tracking activities					✓
Preparation / Management of drawings	✓				
Learning / Application of software in Projects	✓				
Preparation of concept for projects	✓				
Site Management / Discussion with clients					✓
Overall Grading*		A			

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks :-----

8. Signature of the
Head of the Office /
Organization (With Seal)

Anupama

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Besant Nagar, Chennai - 600 090
Landline: 044 - 24411245

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DEPARTMENT OF ARCHITECTURE

M. Arch (Sustainable Architecture)

Continuous Assessment Report for Professional training

(Continuous Assessment progress report of the trainee architect for the period of 30 working days in the office to be submitted to HOD by the Trainee attending the training session)

1. Name of the office/organization : Green Evolution
: 21/2, Rukmini Road, Kalakshetra Colony, Chennai
2. Address & Contact Number : 600090 ph-9940051499 (Ar. Anupama Mohanram)
3. Name of the student : Oviya K
4. Duration : From 10.01.2022 To 13.01.2022
5. Total No. of days : 4 days
6. Evaluation of Performance criteria shall be on

* **Note:** Kindly grade the student as per his/her overall performance in the office during the assessment month; which will be converted to the allotted 200 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture and methodology		✓			
Active Participation in the Project activities		✓			
Documentation and tracking of project	✓				
Presentation Skills developed		✓			
Understanding of construction details & techniques		✓			
Participation and contribution in project meetings		✓			
Understanding of codes and standards		✓			
Schedule preparation & tracking activities					✓
Preparation / Management of drawings	✓				
Learning / Application of software in Projects	✓				
Preparation of concept for projects		✓			
Site Management / Discussion with clients					✓
Overall Grading*		A			

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks :-----

8. Signature of the
Head of the Office /
Organization (With Seal)

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- Name of the office/organization** : Green Evolution
: 21/2, Rukmini Road, Kalakshetra Colony, Chennai
- Address & Contact Number** : 600090 ph-9940051499 (Ar. Anupama Mohanram)
- Name of the student** : Oviya K
- Duration** : From 17.01.2022 To 21.01.2022
- Total No. of days** : 5 days
- Evaluation of Performance criteria shall be on**

* **Note:** Kindly grade the student as per his/her overall performance in the office during the assessment month; which will be converted to the allotted 200 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of office culture and methodology		✓			
Active Participation in the Project activities		✓			
Documentation and tracking of project	✓				
Presentation Skills developed		✓			
Understanding of construction details & techniques		✓			
Participation and contribution in project meetings	✓				
Understanding of codes and standards		✓			
Schedule preparation & tracking activities					✓
Preparation / Management of drawings	✓				
Learning / Application of software in Projects	✓				
Preparation of concept for projects		✓			
Site Management / Discussion with clients					✓
Overall Grading*		A			

(A – 8.0, B – 7.0, C – 6.0, D – 5.5, E – 5.0, F – <5)

7. Any other Remarks :-----

8. Signature of the
Head of the Office /
Organization (With Seal)

Anupama

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No:43/2, 7th Cross Street,
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Landline: 044 - 24411245

WORK DIARY

(Annexure –VIII)

DATE	PROJECT NAME	WORK DONE	DATE	PROJECT NAME	WORK DONE
02.12.21	CGHSS MH road	Site survey (Making Requirement list from client)	04.01-05.01.22	CGHSS MH road	Revision in floor plans
03.12.21	CGHSS MH road	Site survey (Measurement of existing blocks)	05.01.22	Usha's residence	Revision in daylight simulation
06.12-10.12.21	CGHSS MH road	Drafting CAD plan for measurements taken	07.01.22	CGHSS MH road	Revision in Kitchen and dining floor plans
13.12.21	CGHSS MH road	Demolition site plan	10.01.22	CGHSS MH road	Revision in Block J floor plans
14.12.21	CGHSS MH road	Revision in demolition site plan	11.01.22	CGHSS MH road	CMS floor plan and section
15.12.21	CGHSS MH road	Revision in requirement list and demolition site plan	12.01.22	CGHSS MH road	Block J, Kitchen and dining section
16.12-17.12.21	CGHSS MH road	Proposed classrooms – Floor plans	13.01.22	CGHSS MH road	Block J elevation
20.12-25.12.21	CGHSS MH road	Proposed classrooms – Elevations	17.01-18.01.22	CGHSS MH road	Revisions in sections
27.12-31.12.21	CGHSS MH road	Proposed kitchen and dining – Floor plans, Elevations	19.01.2022	CGHSS MH road	Site visit (Measurement of existing blocks)
03.01.2022	Usha's residence	Daylight simulation	20.01-21.01.22	CGHSS MH road	Preparing list for BOQ and drafting CAD plan for measurements taken

Chief Architect Signature:



Office seal:

Green Evolution Architectural Consultancy
No:43/2, 7th Cross Street,
Besant Nagar , Chennai - 600 090
Landline: 044 - 24411245

Consolidated Certificate (Experience)

Annexure – IX



January 24, 2022

To:
The Head of the Department
Sathyabama Institute of Science and Technology
Rajiv Gandhi Salai, Jeppiaar Nagar,
Chennai-600 119
Tamil Nadu

Sub: Completion Letter for Professional Training

This is to certify that OVIYA K (40890012) of 4th Semester M.Arch has successfully completed her professional training at our firm from 02.12.2021 to 21.01.2021. During this time, she worked on documenting requirements and drafting initial design ideas for an ecofriendly renovation/refurbishment of a corporation school in Chennai.

Thanks and Regards,

For Green Evolution Architectural Consultancy

A handwritten signature in blue ink that reads "anupama".

Green Evolution Architectural Consultancy
No.43/2, 7th Cross Street,
Besant Nagar, Chennai - 600 090
Landline: 044 - 24411245

Anupama Mohanram
Proprietor
COA reg No.: CA/2006/38052

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01	Introduction about Green evolution	15
02	CGHSS, MH Road	16
	Site plan – with blocks to be demolished	17
	Site plan – with proposed changes	18
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	Block J – Solar radiation and LEED daylight analysis	22
	Kitchen and Block I – Floor plans and Elevations	23
03	Revised plans	24
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	Kitchen and Block I – Revised Floor plans and Elevations	27
04	Usha's residence	28
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	LEED daylight analysis	30-31

GREEN EVOLUTION

We design beautiful, energy efficient and earth friendly spaces that demonstrate the human ability to adapt and live in harmony with nature.

We think beyond brick, mortar and cement.

We design buildings, plan communities and develop responsive, humane environments through sustainable strategies, which result in longevity and value for investment.

Our integrity lies in the fact that we keep our clients' best interests in mind while following our core principles of Ethics & Environmental Sustainability.

The grey matter behind the green ideas

We believe in sustainable solutions that produce actual & measurable results.

Architecture & Design

Environmentally sustainable architecture is a simple, yet radical approach to designing the built-environment in a way that ensures we exist in harmony with nature, constantly conscious of our impact on the environment.

In tune with this philosophy, the architectural services that we provide are holistic in terms of environmental sustainability.

We use our SEARCH methodology to evolve designs that create synergy between the built and natural environment to enhance our quality of life while ensuring minimal impact to the earth.

Our designs are compliant with global green building standards.

1. Earth friendly campus Hand in Hand Academy, Kanchipuram
2. A holistically sustainable school The School KFI, Chennai
3. A green transformation Dr. Roshini's Residence, Chennai
4. Collaborative design services Various design firms, USA

Green Consulting

Our consulting practice offers solutions to improve the environmental performance of built/indoor spaces through efficient strategies.

We also help our clients achieve recognition for their environmental initiatives by stewarding their green building certifications. Being thought-leaders in the field of sustainability, we see ourselves as trusted advisors to our clients by providing practical eco-sensitive solutions.

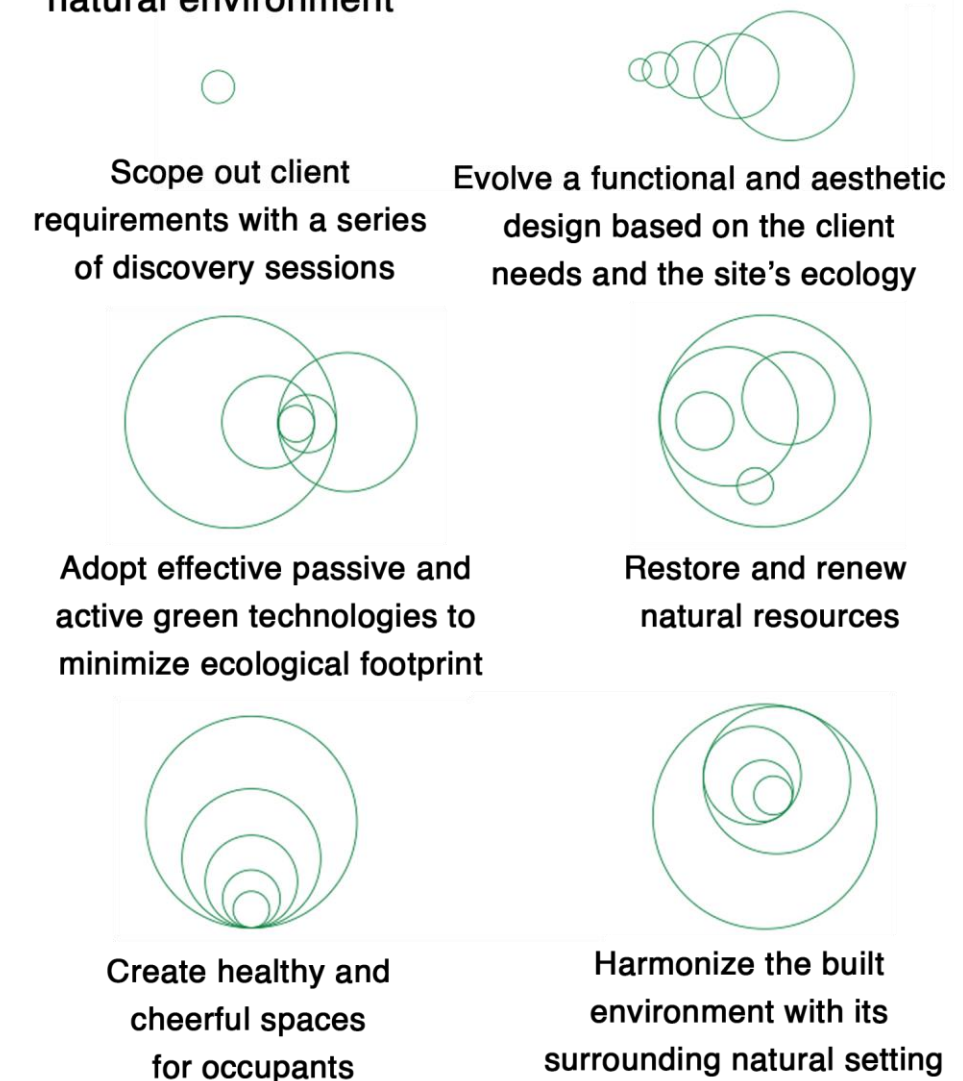
Green Evolution has always been an early adopter of the latest green technologies and rating systems. This helps our clients get the first mover advantage amongst their peers.

1. Shem Park, Yuga Homes - First IGBC Green Homes certified apartment in Chennai
2. LatentView Analytics - First IGBC Green Interiors certified office in Chennai
3. Babaji Vidhyashram - Third school in Chennai to achieve the IGBC Green Schools certification
4. Rajalakshmi School of Business - 2nd business school in Tamil Nadu to achieve a LEED certification

SEARCH

Sustainable Excellence through Architecture

SEARCH allows us to craft spaces that provide an enhanced quality of life and long-term cost savings for our clients without further deteriorating the natural environment



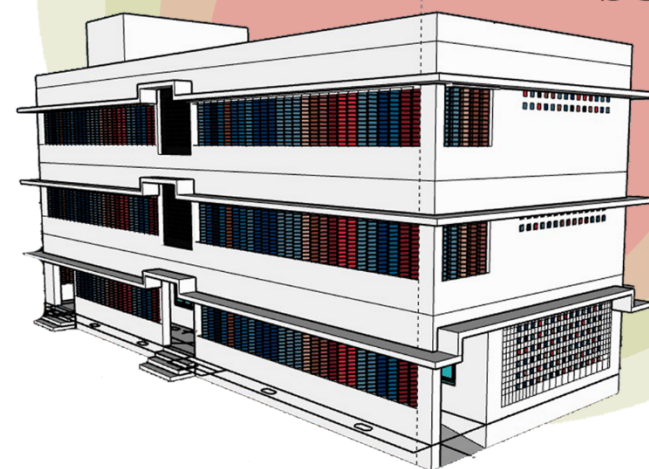
Key principles of sustainable design

1. Sensitivity to Site
2. Energy Efficiency
3. Water Conservation
4. Sustainable Resource Use
5. Good Indoor Environment Quality
6. Environmental Protection Measures During Construction



ABOUT THE FIRM

RENOVATION PROJECT
CORPORATION GIRL'S HIGHER SECONDARY
SCHOOL, PERAMBUR



Chennai Girls Higher Secondary School (CGHSS), MH Road is located in Perambur North, Chennai district, Tamil Nadu. This is a girl's only school and has campuses on either side of the School Road. The campuses share facilities such as an auditorium, library, labs, kitchen, and dining.

Client team – CHGSS
 Developer team – Smart city team
 Site location – Perambur, Chennai
 Project Status – Proposal stage
 Built up area – 2.1 acres
 List of Works done:

- Site measurement
- Renovation plan
- Existing floor plans
- Proposed blocks floor plans
- Proposed blocks elevations
- Proposed Block J daylight simulation





Exterior of the block with cracks



Leaking of walls



Debris in the site



Leaking of celing



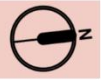
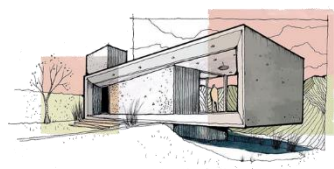
Cracks in ceiling

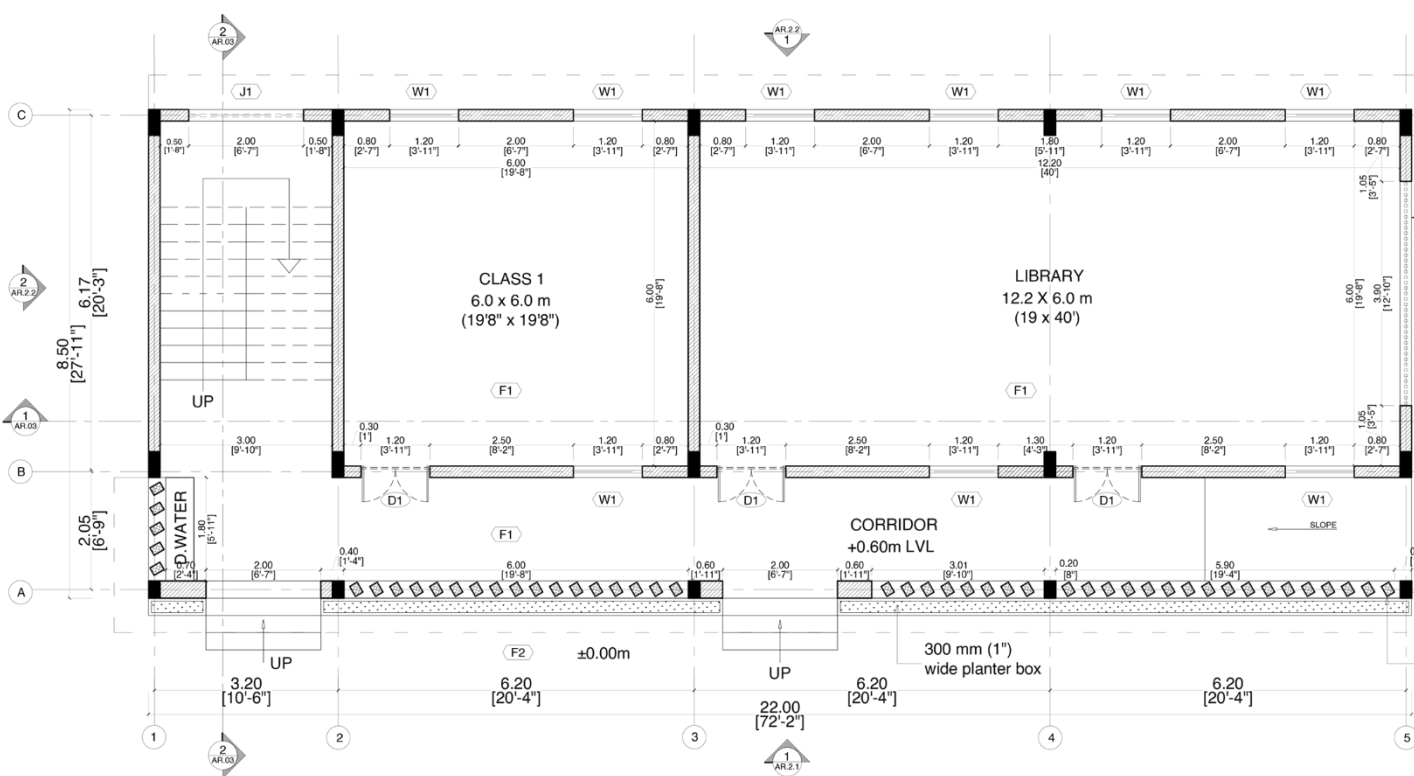


- NOTE:**
- TOILETS:**
- Floor tiles, wall tiles to be removed in all toilets and new wall and floor tiles to be added
 - Doors to be removed from all toilets and new doors to be added
 - Plumbing lines to be renovated in all toilets
 - Fill and raise toilet behind Block A
 - New roof sheet to be added next to block F
- TERRACE:**
- Waterproof terrace slab, with XPS insulation & lay tiles in all blocks
- COMPOUND WALL:**
- Compound walls to be renovated
- PAINT:**
- All blocks to be painted (both exterior and interior)
- OTHERS:**
- Canna bed for grey water recycling
 - Waste segregation sheds

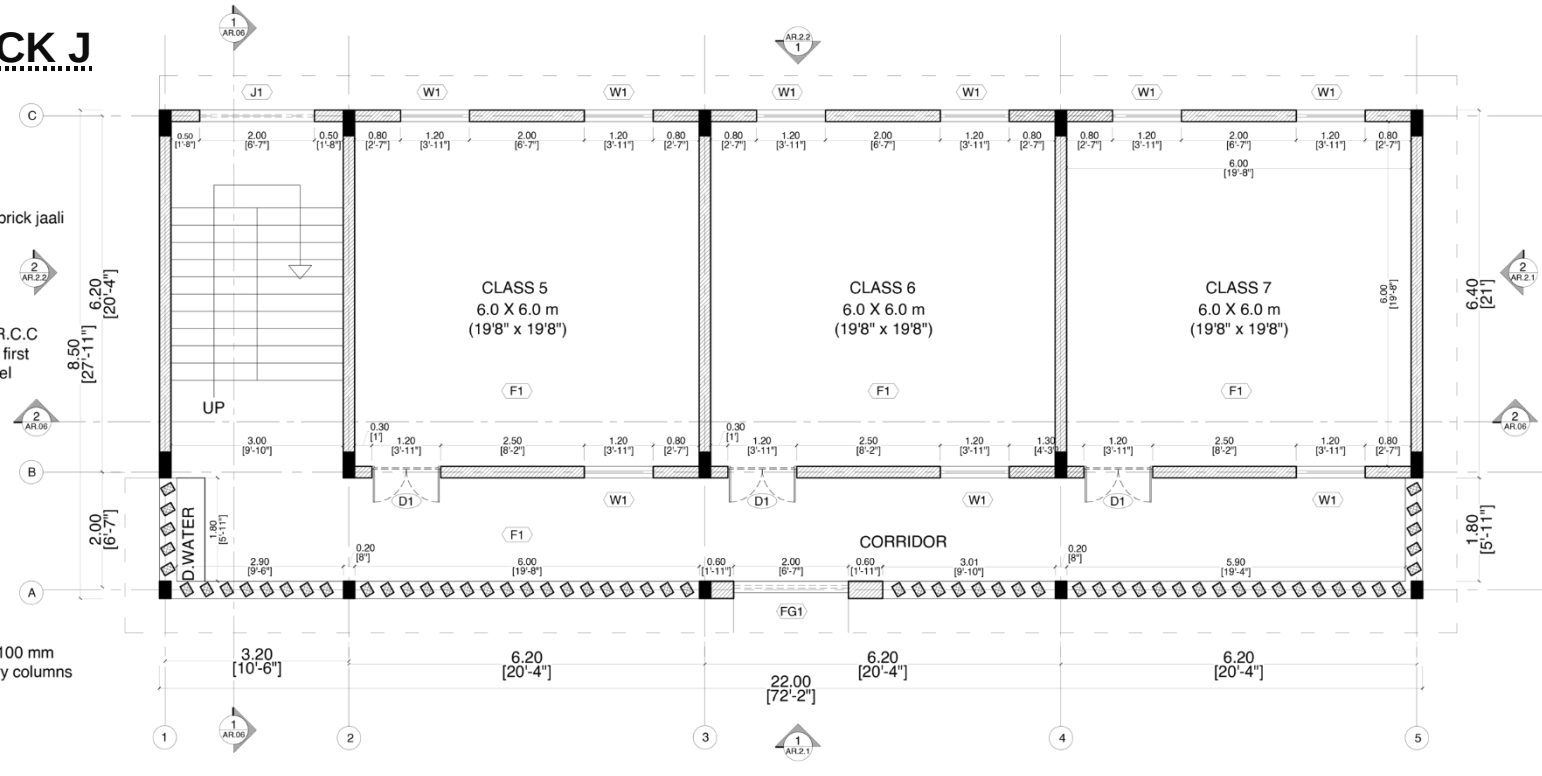
LEGEND	
	Pedestrian path, paved with brick tiles, raised by 8" HT from ground level
	Blocks to be renovated
	Blocks position to be changed
	New security cabin to be built
	Proposed terrace floor tile
	Proposed cycle shed
	Bougainvillea plant

1 PROPOSED SITE PLAN





1 GROUND FLOOR PLAN

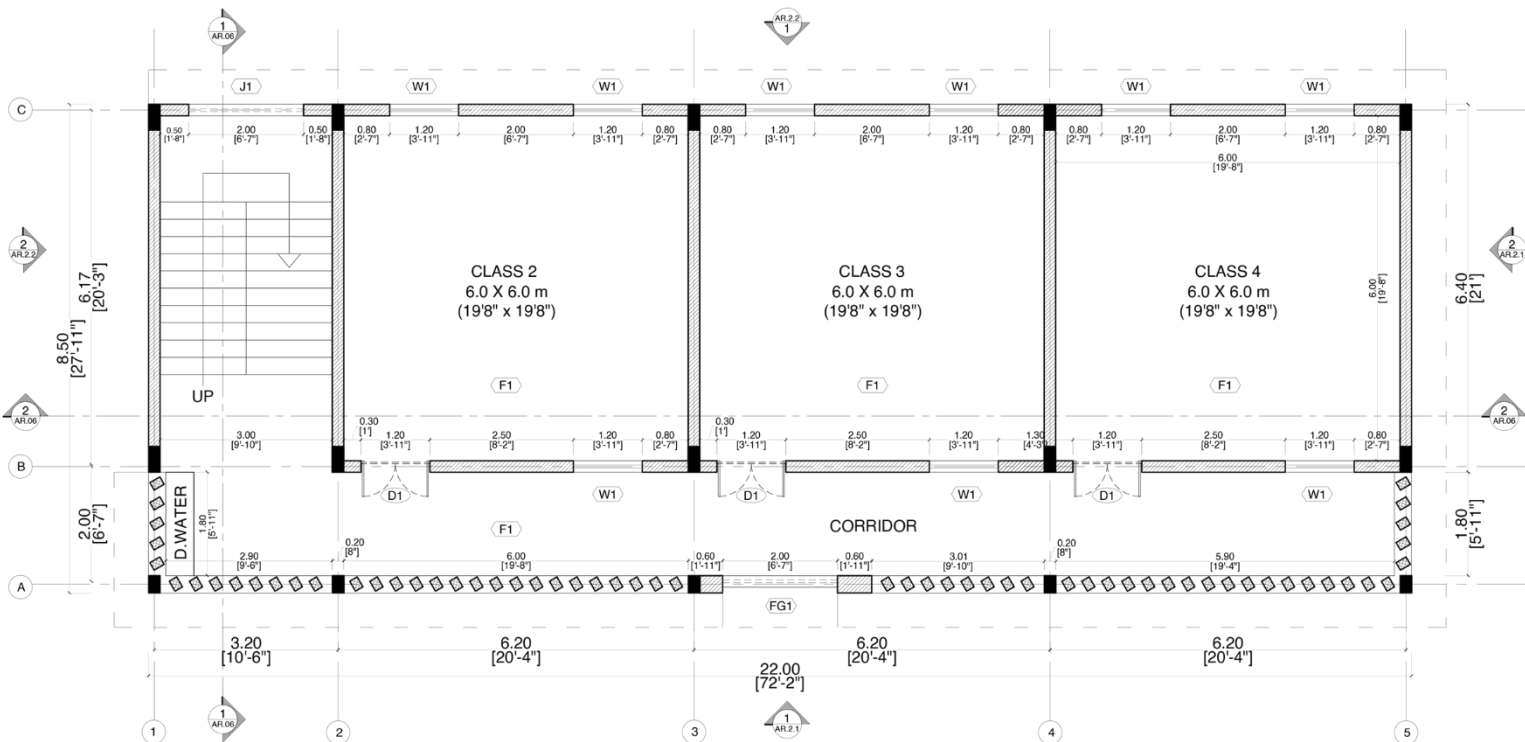


3 SECOND FLOOR PLAN

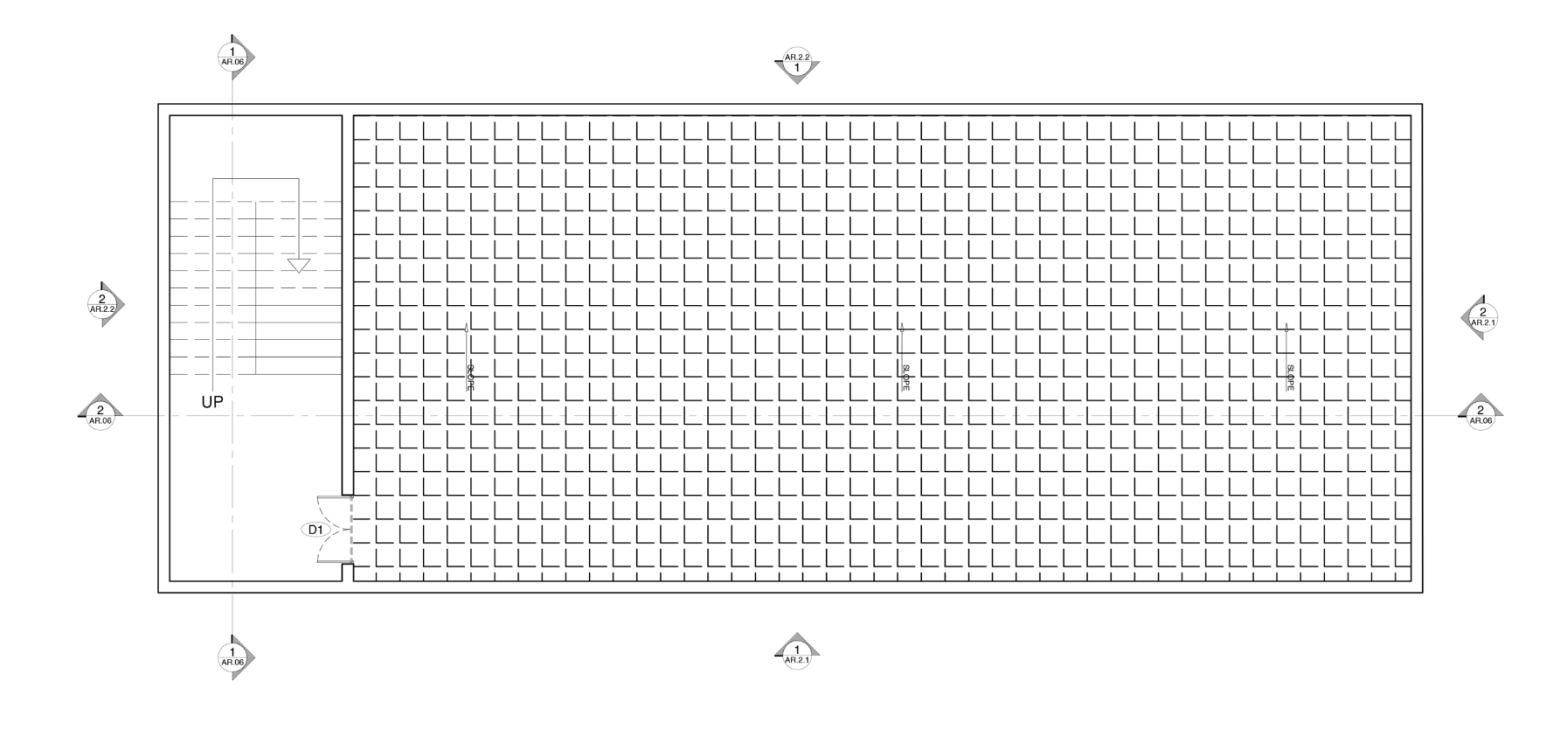
WINDOW				
TAG	SIZE	SILL LVL	LINTEL LVL	T.NO
W1	1.35m x 1.2m	0.75m	2.1m	27
FIXED GRILL				
FG1	1.7m x 2.00m	0.9m	2.6m	2
DOORS				
D1	1.2m x 2.1m			9
JAALIS				
J1	1.35m x 2.00m	0.75m	2.1m	3

FLOOR TYPE LEGEND	
F1	Grey kota stone or Light grey Kadappa stone
F2	Brick flooring

WALL TYPE LEGEND	
	200mm thk AAC masonry wall, plaster and paint finish on both sides
	200 x 150 x 100 mm size brick masonry columns

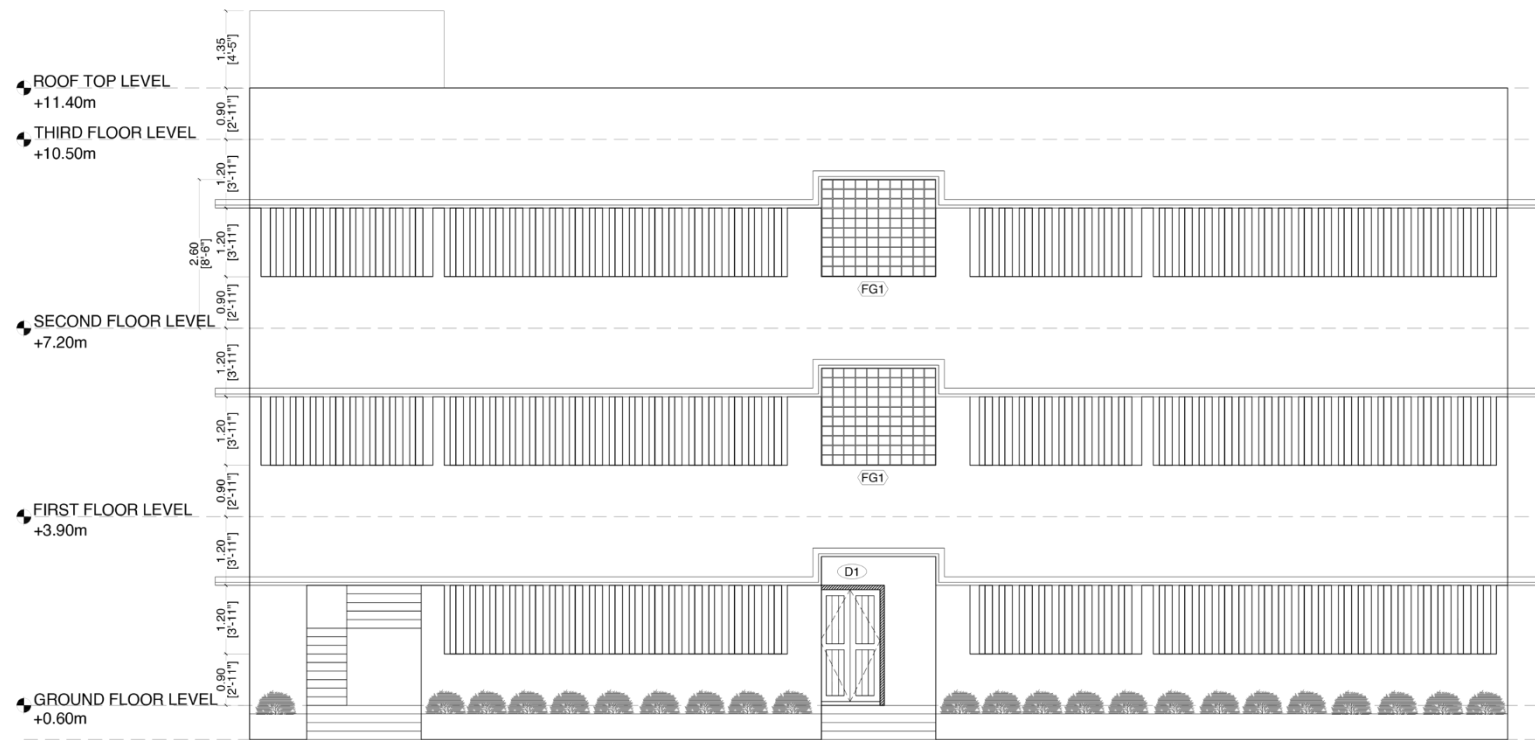


2 FIRST FLOOR PLAN

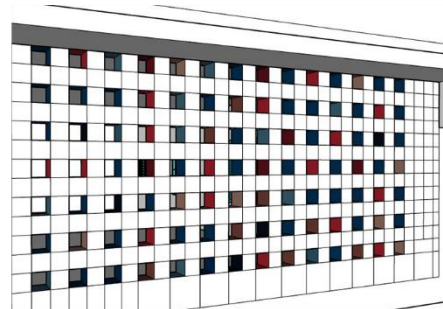


4 TERRACE FLOOR PLAN

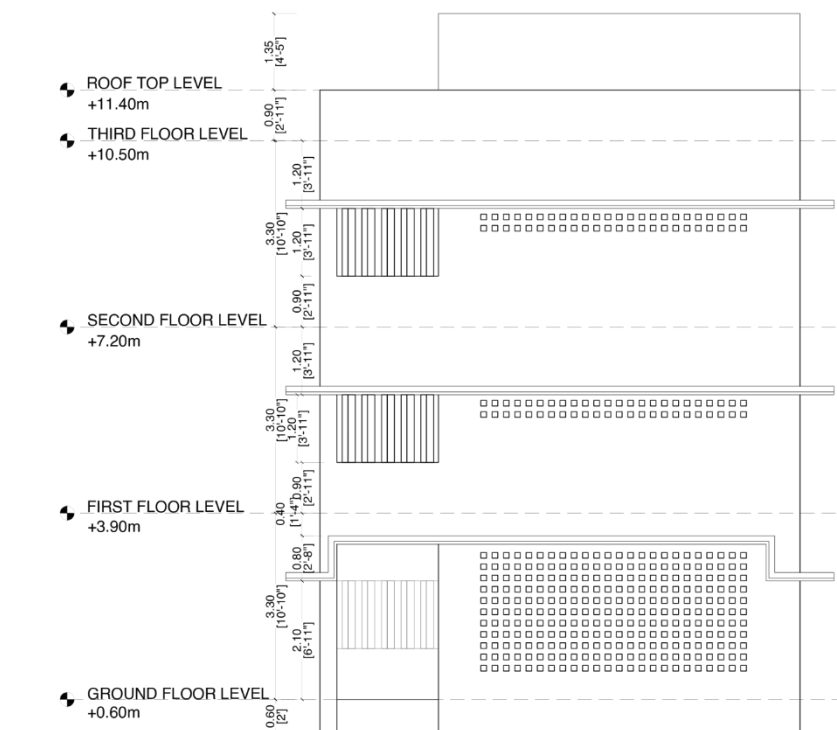
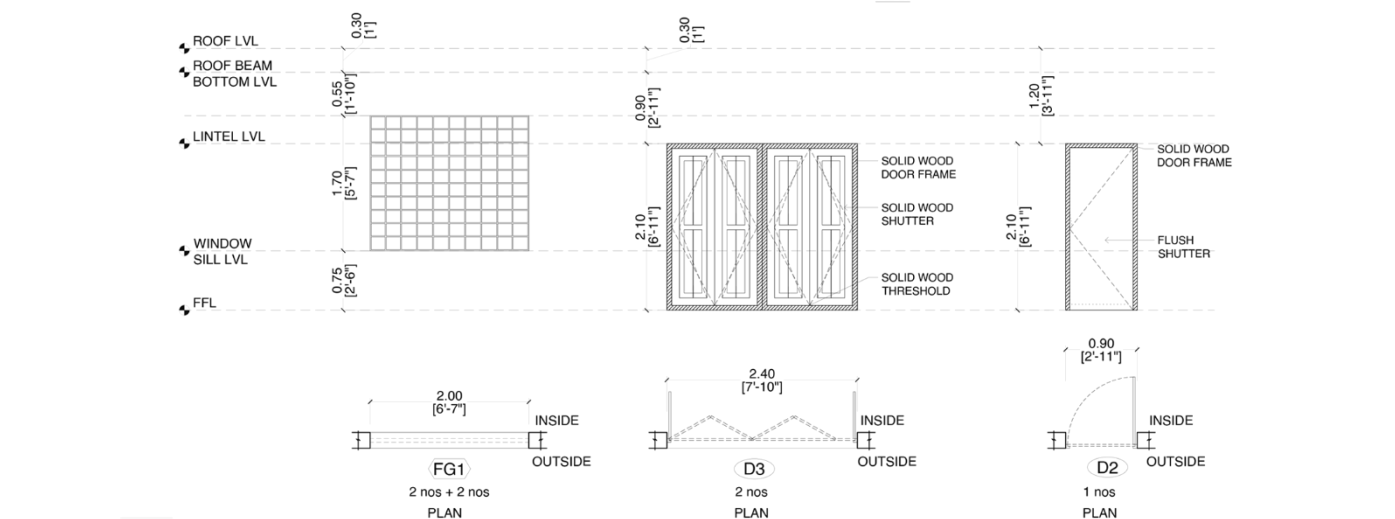
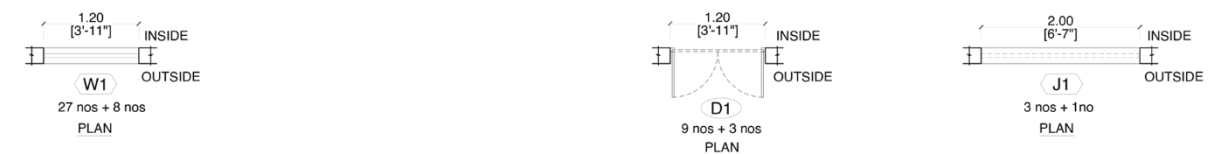
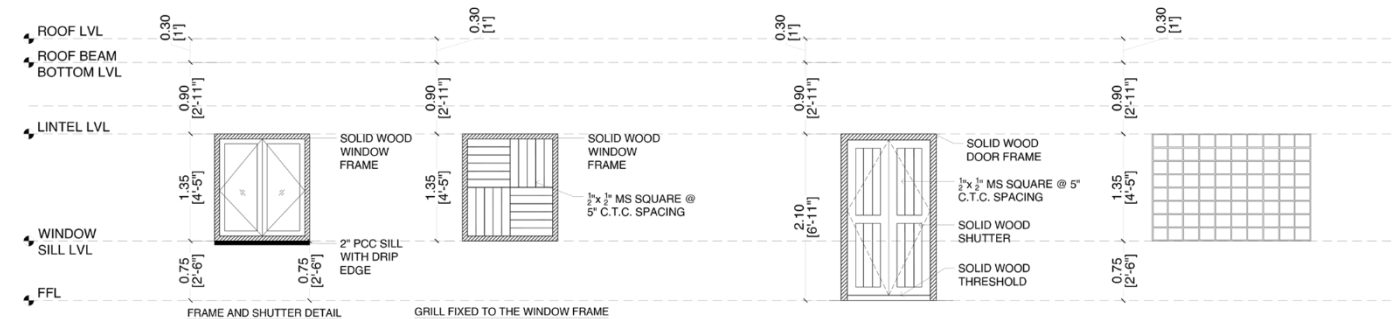




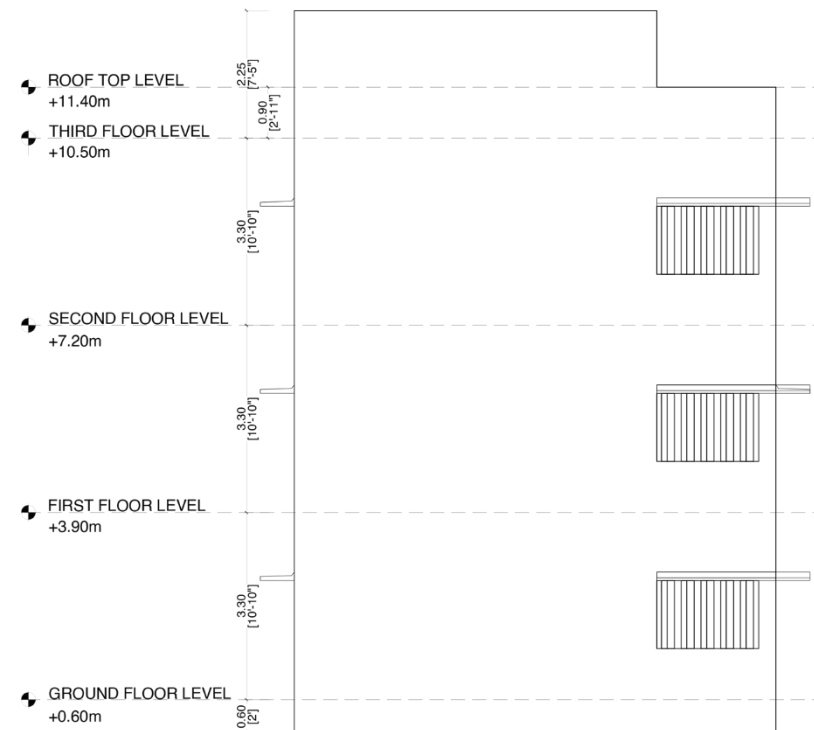
1 FRONT SIDE ELEVATION



2 BACK SIDE ELEVATION



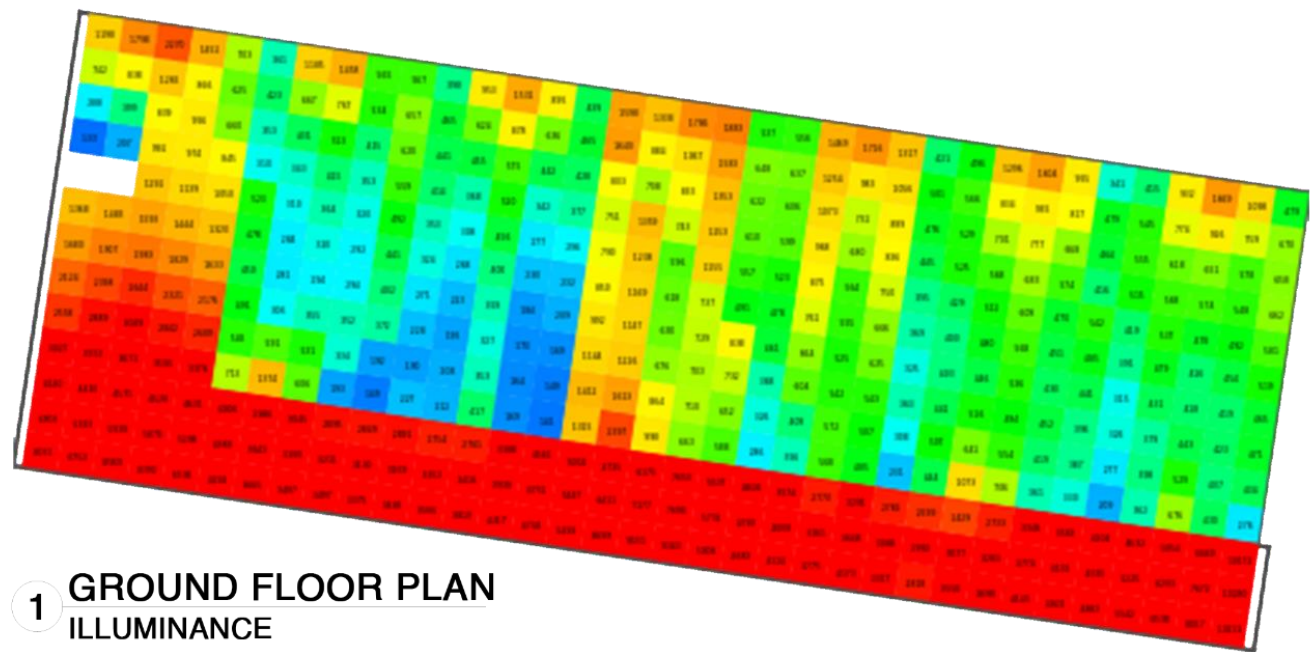
3 RIGHT SIDE ELEVATION



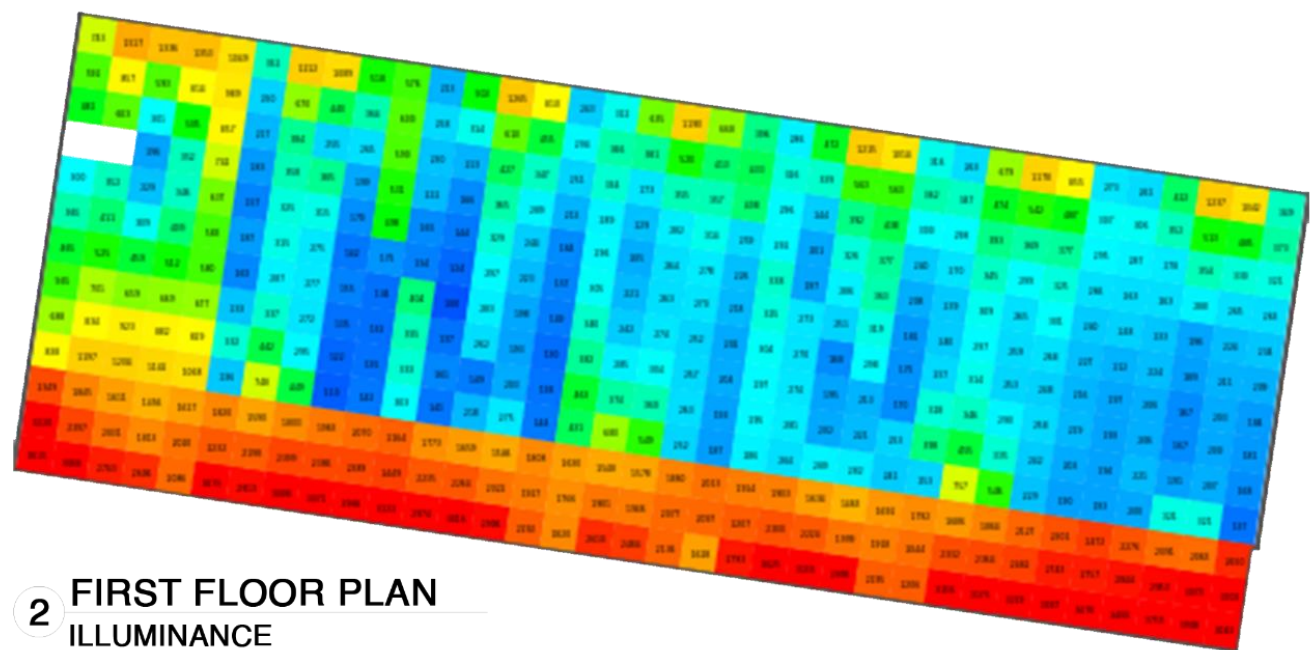
4 LEFT SIDE ELEVATION

5 JOINERY DETAILS

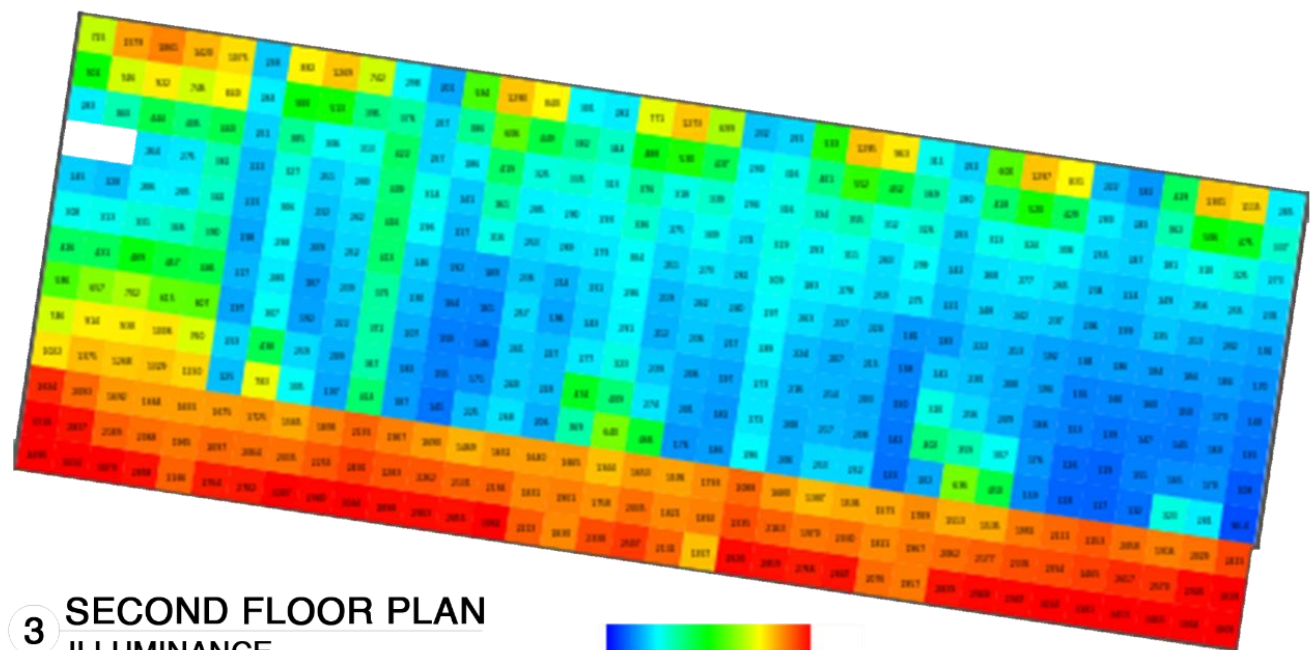




1 GROUND FLOOR PLAN
ILLUMINANCE



2 FIRST FLOOR PLAN
ILLUMINANCE

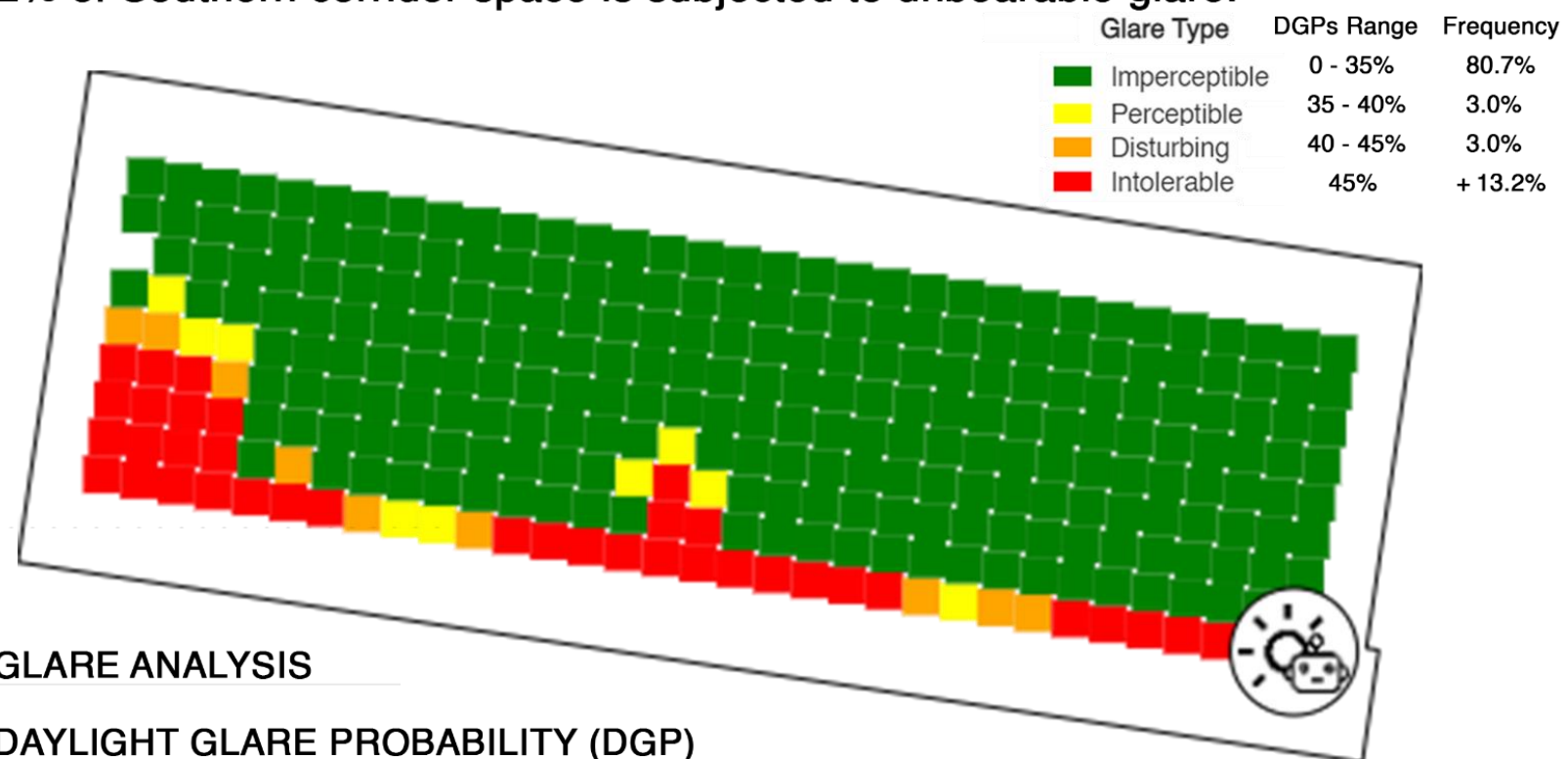


3 SECOND FLOOR PLAN
ILLUMINANCE



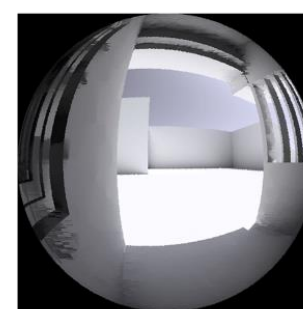
GLARE ANALYSIS.....

There is no or negligible glare in 80.7% of the classroom space, which is acceptable.
13.2% of Southern corridor space is subjected to unbearable glare.



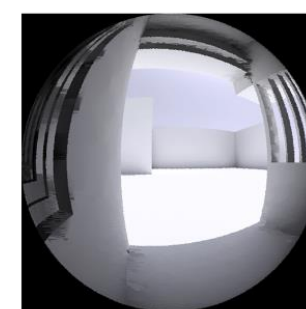
4 GLARE ANALYSIS

5 DAYLIGHT GLARE PROBABILITY (DGP)



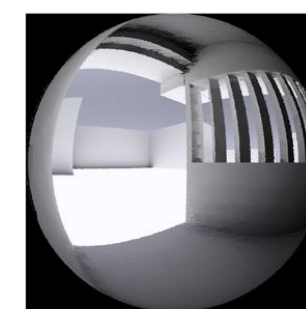
87.55% DGP

@ 09.00 am



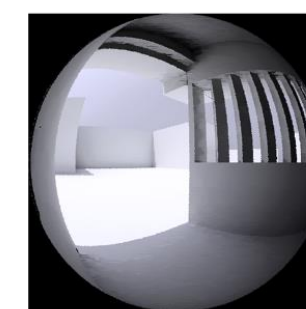
100% DGP

@ 10.00 am



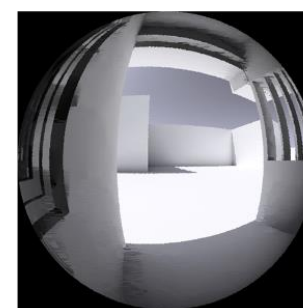
100% DGP

@ 11.00 am



100% DGP

@ 12.00 pm



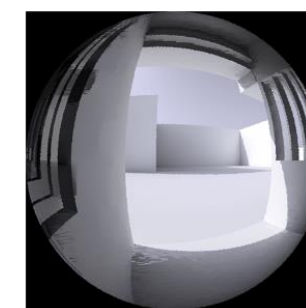
100% DGP

@ 01.00 pm



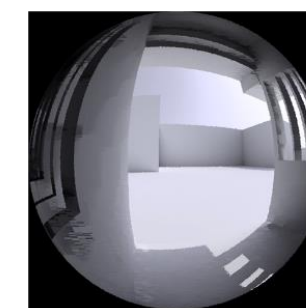
100% DGP

@ 02.00 pm



100% DGP

@ 03.00 pm



72.91% DGP

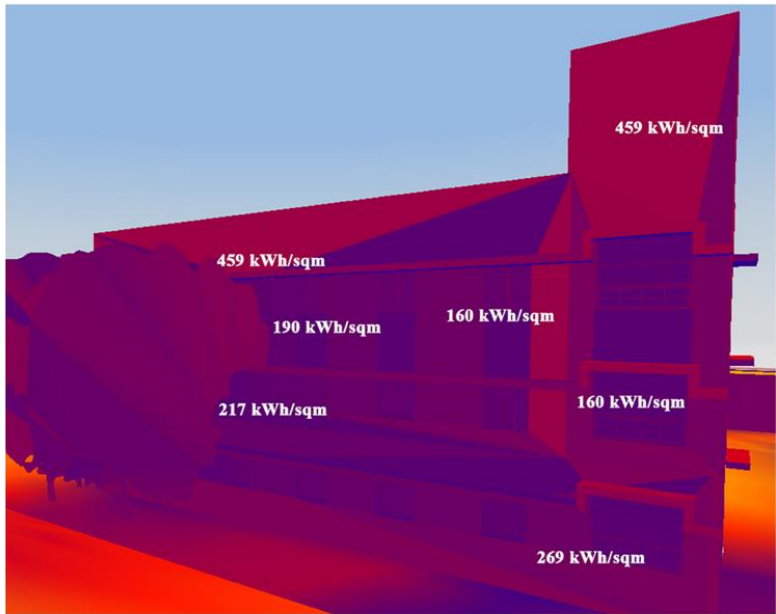
@ 04.00 pm

ILLUMINANCE ANALYSIS.....

Required lux for classrooms - 150 - 300 lux and Corridor - 70 - 100 lux
All classrooms receive more than minimum lux levels required - 150 - 400 lux
Corridors receives minimum of 1000 lux to maximum of 2000 lux

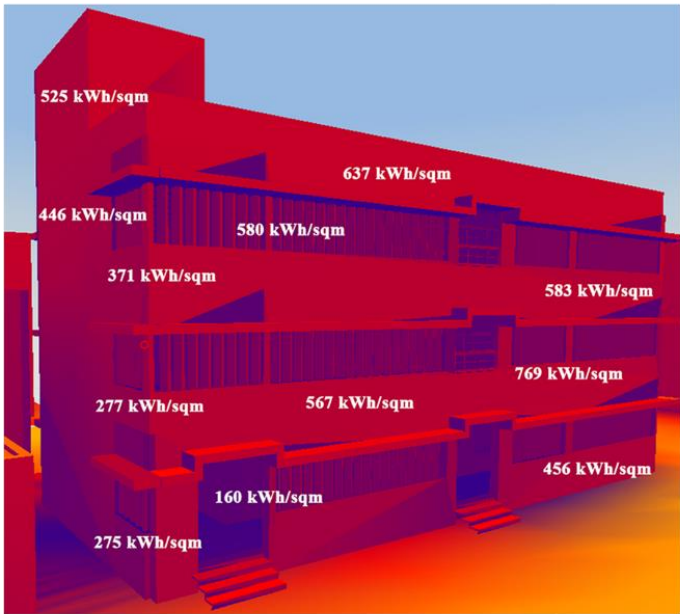


RADIATION ANALYSIS

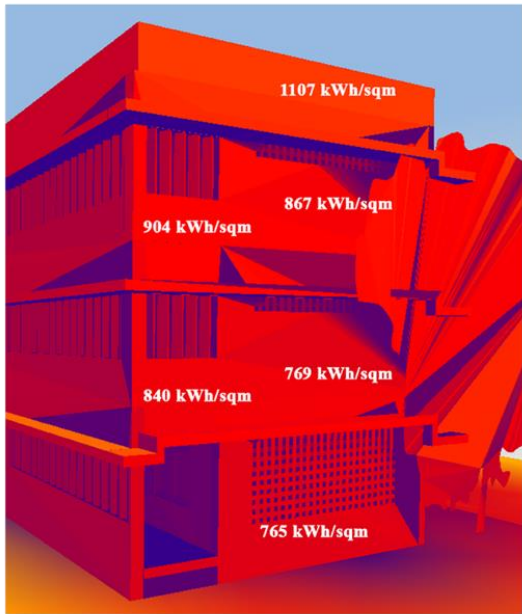


1 NORTH FACADE

The south facade, which gets solar radiation for a longer period of time throughout the day, is provided with a corridor. A daylight corridor is given with a succession of columns that are rotated 30 degrees from True North.



2 SOUTH WEST FACADE



3 EAST FACADE

The west facade is shadowed by a day care facility and gets the least amount of radiation 446kWh/sqm

The north facade has a large number of windows to provide glare-free north light.

Location - Perambur, Chennai
Building type - School

LEED v4.1 - Option 1

New Construction, Core and Shell, Schools, Retail, Data Centers, Warehouses and Distribution Centers, Hospitality

The average sDA300/50% value for the regularly occupied floor area is at least 40%	1 Point
The average sDA300/50% value for the regularly occupied floor area is at least 55%	2 Points
The average sDA300/50% value for the regularly occupied floor area is at least 75%	3 Points
Each regularly occupied space achieves sDA300/50% value of at least 55%	1 Point

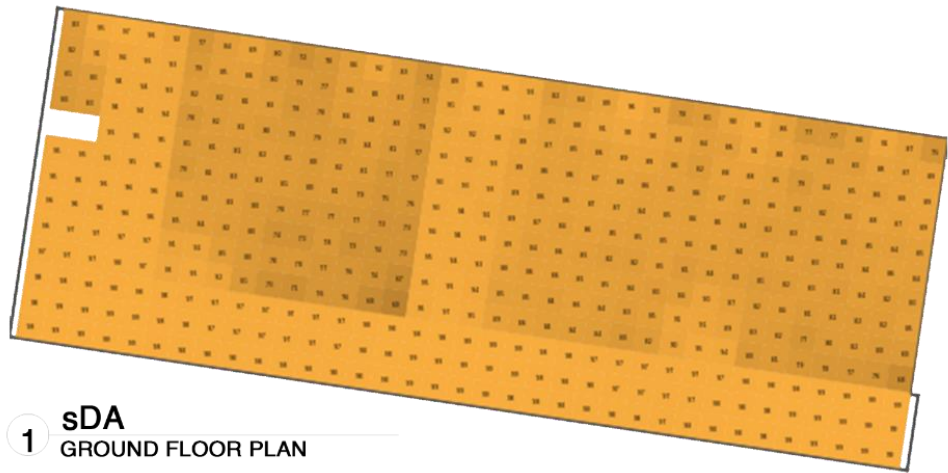
Result

LEED v4.1 Option 1
sDA = 99.78% ASE = 1.32%
3 points + 1 exemplary point

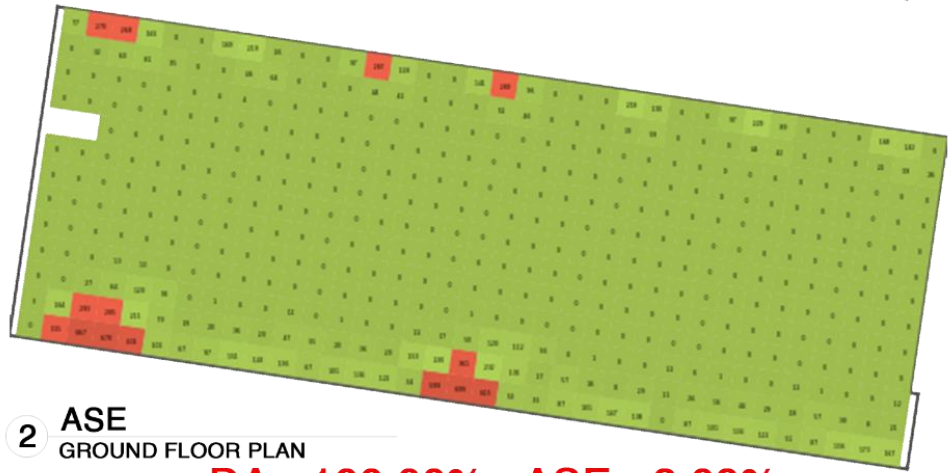
Legend



1 GROUND FLOOR PLAN

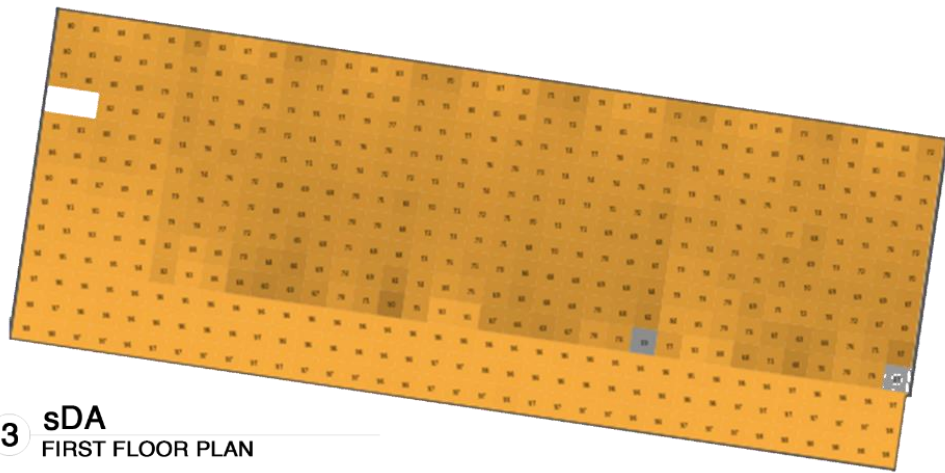


1 sDA GROUND FLOOR PLAN

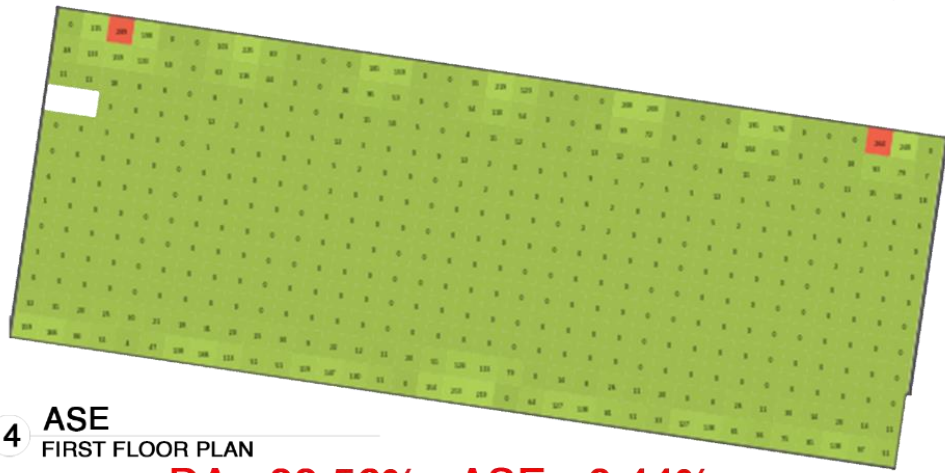


2 ASE GROUND FLOOR PLAN
sDA - 100.00% ASE - 3.09%

2 FIRST FLOOR PLAN

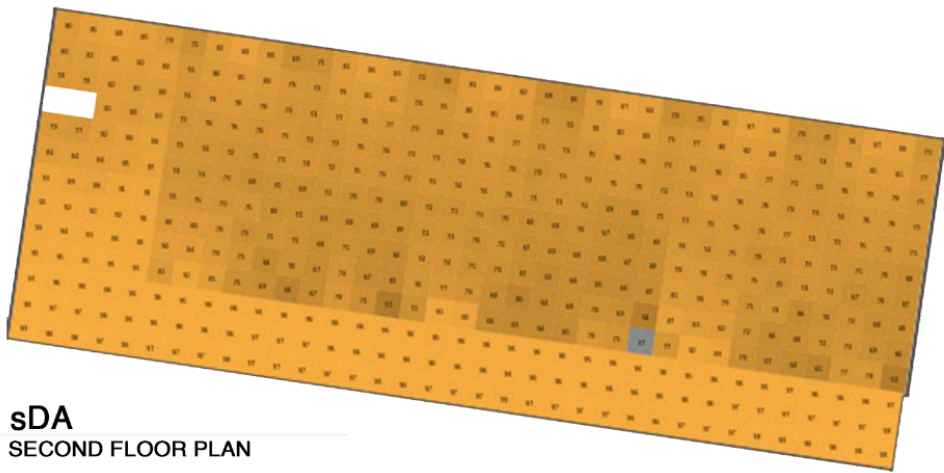


3 sDA FIRST FLOOR PLAN

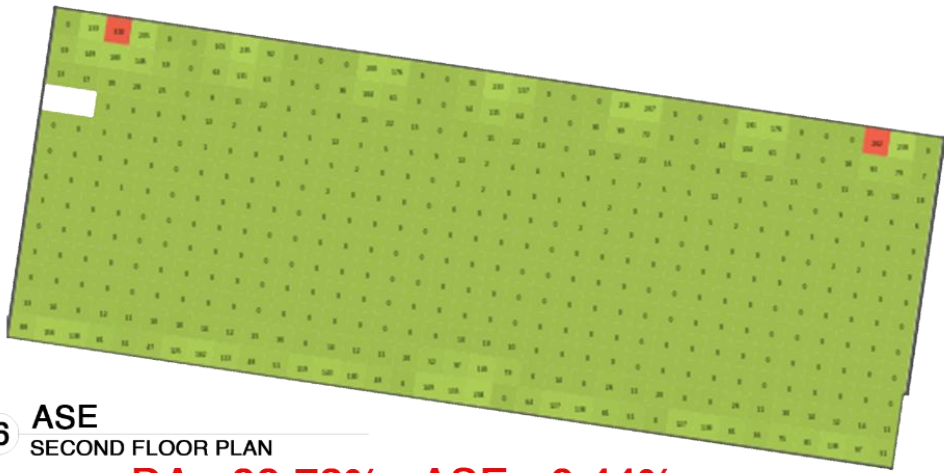


4 ASE FIRST FLOOR PLAN
sDA - 99.56% ASE - 0.44%

3 SECOND FLOOR PLAN



5 sDA SECOND FLOOR PLAN



6 ASE SECOND FLOOR PLAN
sDA - 99.78% ASE - 0.44%



DAYLIGHT SIMULATION - PJ_146- CITTIS CGHSS MH ROAD CAMPUS



[illegible][illegible]

Architectural elevation drawing of the building facade. The drawing shows the ground floor level at +0.60m, the first floor level at +3.90m, and the roof top level at +4.80m. The facade features two windows labeled W1, a large tree graphic, and a set of double doors labeled D3. A staircase is visible on the right side. The drawing includes a vertical scale bar on the left with dimensions in meters and feet.

ROOF TOP LEVEL
 +4.80m
 2.25
 [7'-5"]
 FIRST FLOOR LEVEL
 +3.90m
 3.30
 [10'-10"]
 GROUND FLOOR LEVEL
 +0.60m
 0.60
 [2'-0"]

1.35' [4'-5"]
 0.90' [2'-11"]
 3.30' [10'-10"]
 0.00' [2"]

ROOF TOP LEVEL
 +4.80m
 FIRST FLOOR LEVEL
 +3.90m
 GROUND FLOOR LEVEL
 +0.60m

W1
 D1

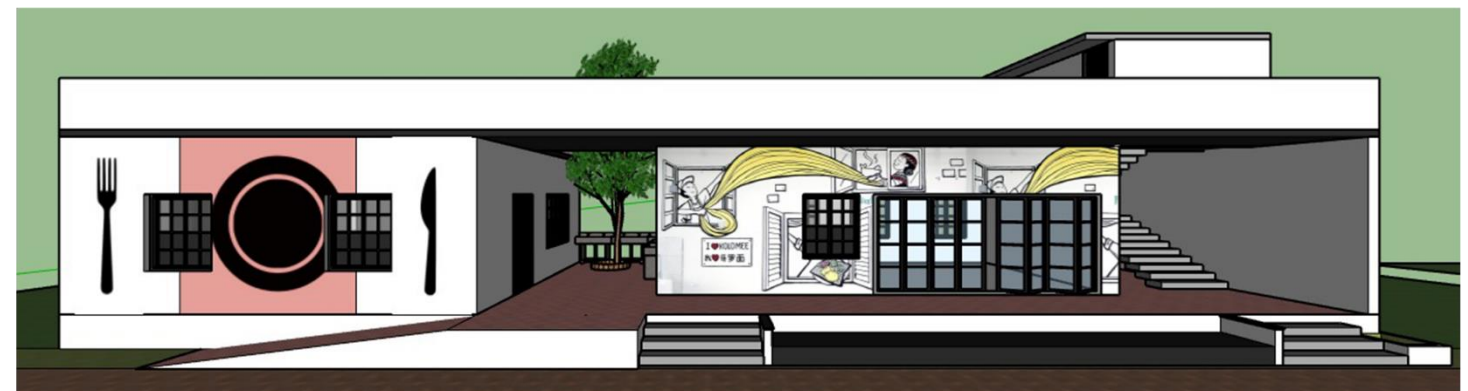
Architectural elevation drawing of the building facade. The drawing includes the following elements:

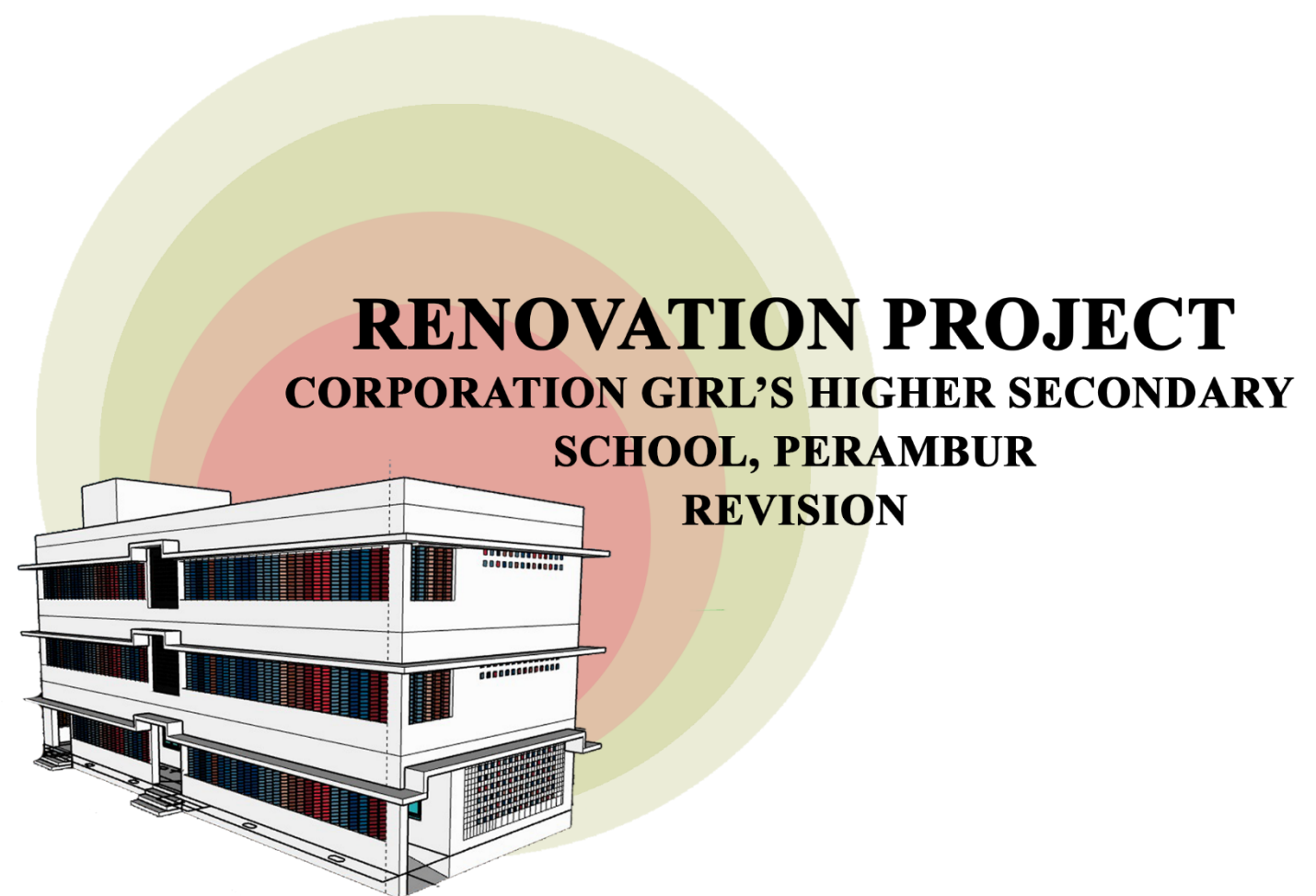
- Levels:**
 - ROOF TOP LEVEL: +4.80m
 - FIRST FLOOR LEVEL: +3.90m
 - GROUND FLOOR LEVEL: +0.60m
- Dimensions:**
 - Roof height: 1.35 [4'-5"]
 - Floor-to-floor height: 0.90 [2'-11"]
 - Ground floor height: 3.30 [10'-10"]
 - Ground floor width: 0.60 [2']
- Window Details:**
 - J1:** A large window with a grid pattern.
 - W1:** A window with a diagonal cross pattern.
 - FG1:** A window with a grid pattern.
- Other Features:** A tree is shown in the background, and a small section of the ground floor is shown at the bottom right.

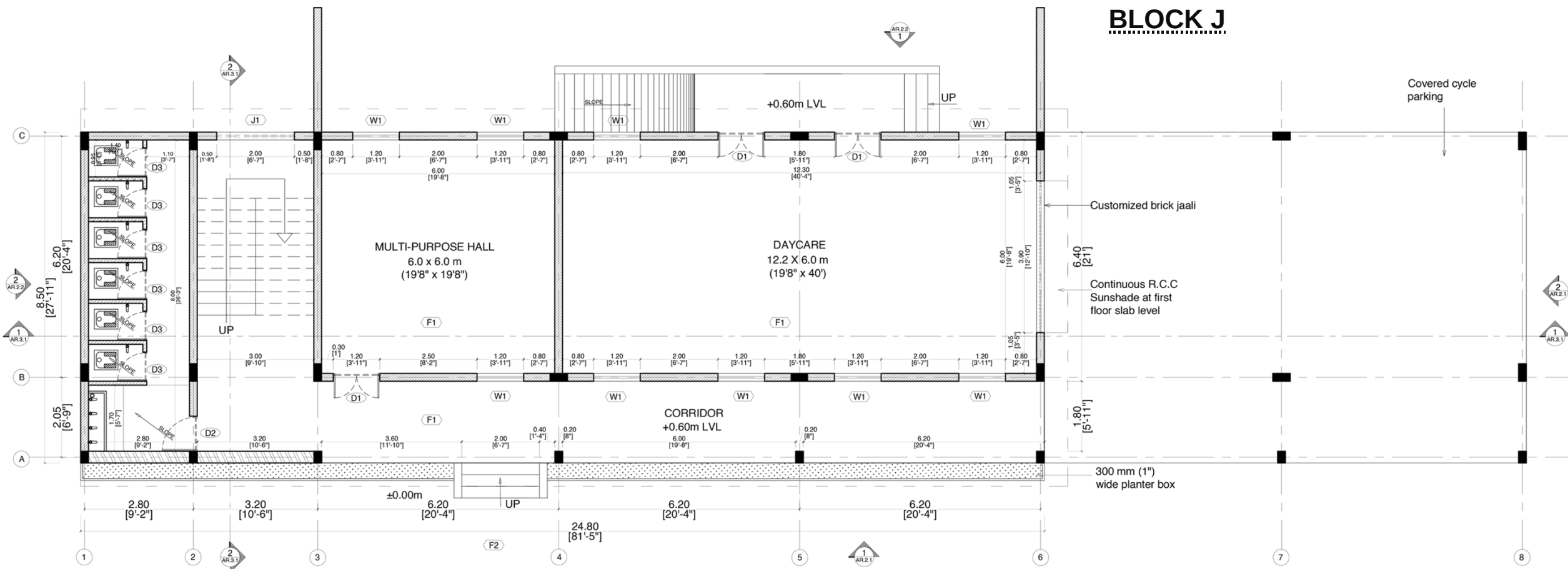
WINDOW				
TAG	SIZE	SILL LVL	LINTEL LVL	T.NO
W1	1.35m x 1.2m	0.75m	2.1m	8
FIXED GRILL				
FG1	1.7m x 2.00m	0.9m	2.6m	2
DOORS				
D1	1.2m x 2.1m			3
D2	0.9m x 2.1m			1
D3	2.4m x 2.1m			2
JAALIS				
J1	1.35m x 2.00m	0.75m	2.1m	1

WINDOW				
TAG	SIZE	SILL LVL	LINTEL LVL	T.NO
W1	1.35m x 1.2m	0.75m	2.1m	8
FIXED GRILL				
FG1	1.7m x 2.00m	0.9m	2.6m	2
DOORS				
D1	1.2m x 2.1m			3
D2	0.9m x 2.1m			1
D3	2.4m x 2.1m			2
JAALIS				
J1	1.35m x 2.00m	0.75m	2.1m	1

	_____	200mm (8") thk AAC masonry wall, plaster and paint finish on both sides
	_____	200 x 150 x 100 mm size brick masonry columns
	_____	100mm (4") thk AAC masonry partition wall, plaster and paint finish on both sides





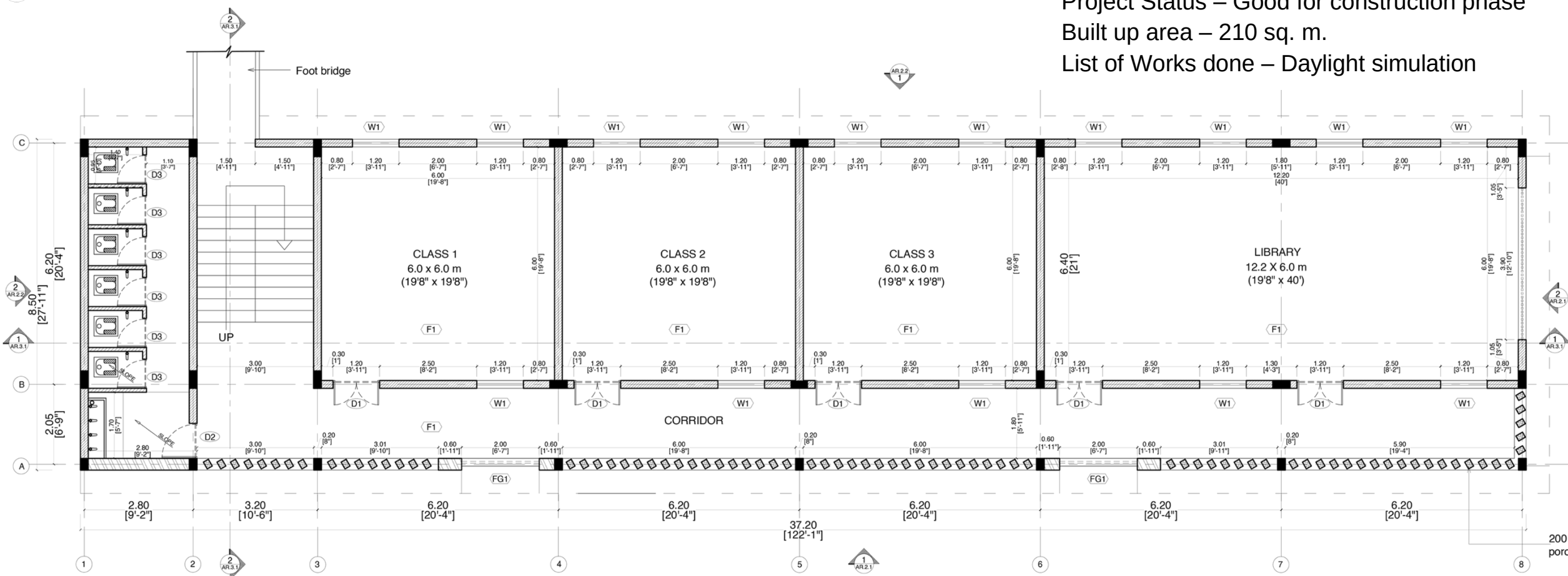


1 GROUND FLOOR PLAN

Client name – Usha Site location – Chennai
 Project Status – Good for construction phase
 Built up area – 210 sq. m.
 List of Works done – Daylight simulation

- NOTE:**
WALLS:
 8" (200mm) thk fly AAC masonry wall, plaster and paint finish on both sides
 4" (100mm) thk AAC masonry wall, plaster and paint finish on both sides
- FLOORING:**
 -Natural stone flooring in class rooms
 Option 1- Kadappa stone; Option 2- Kota stone
 -Staircases treads and risers to be rough finished for new stone floor finish
 -Brick tile flooring for spaces around the classrooms
- INTERIOR PAINT:**
 -Ceilings to be white washed with one coat primer
 -Walls to be painted with emulsion paint with low VOC

WINDOW				
TAG	SIZE	SILL LVL	LINTEL LVL	T.NO
W1	1.35m x 1.2m	0.75m	2.1m	24
FIXED GRILL				
FG1	1.7m x 2.00m	0.9m	2.6m	2
DOORS				
D1	1.2m x 2.1m			8
D2	0.9m x 2.1m			2
D3	0.75m x 2.1m			12
JAALIS				
J1	1.35m x 2.00m	0.75m	2.1m	1



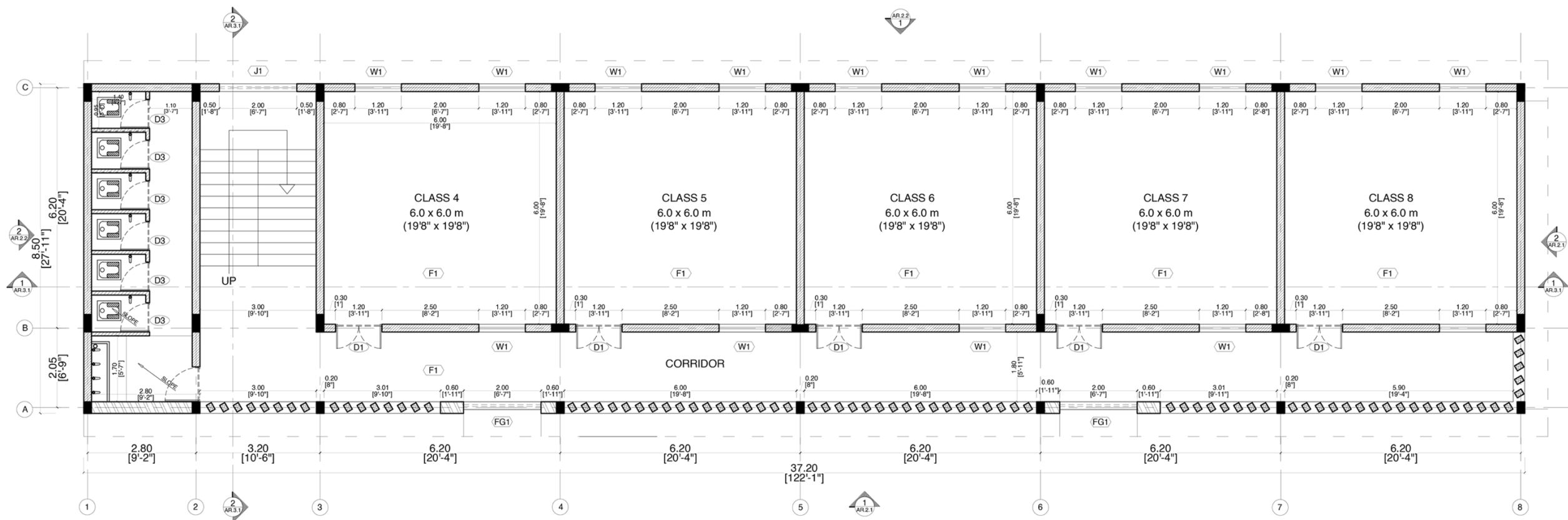
2 FIRST FLOOR PLAN

FLOOR TYPE LEGEND	
F1	Grey kota stone/ Kadappa stone
F2	Brick flooring

WALL TYPE LEGEND	
[Symbol]	200mm (8") thk AAC masonry wall, plaster and paint finish on both sides
[Symbol]	200 x 150 x 100 mm porotherm brick columns
[Symbol]	300 mm (9") thk brick masonry wall, plaster and paint finish on both sides



Revised floor plans



3 SECOND FLOOR PLAN

NOTE:
WALLS:
 8" (200mm) thk fly AAC masonry wall, plaster and paint finish on both sides
 4" (100mm) thk AAC masonry wall, plaster and paint finish on both sides

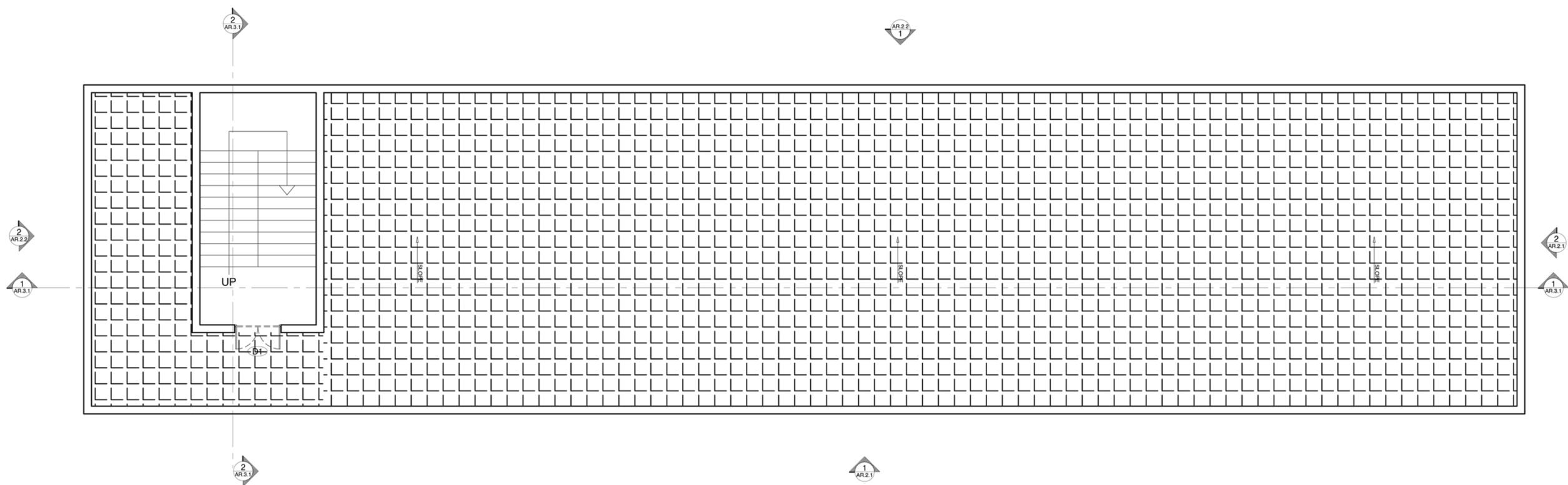
FLOORING:
 -Natural stone flooring in class rooms
 Option 1- Kadapa stone; Option 2- Kota stone
 -Staircases treads and risers to be rough finished for new stone floor finish
 -Brick tile flooring for spaces around the classrooms

INTERIOR PAINT:
 -Ceilings to be white washed with one coat primer
 -Walls to be painted with emulsion paint with low VOC

WINDOW				
TAG	SIZE	SILL LVL	LINTEL LVL	T.NO
W1	1.35m x 1.2m	0.75m	2.1m	24
FIXED GRILL				
FG1	1.7m x 2.00m	0.9m	2.6m	2
DOORS				
D1	1.2m x 2.1m			8
D2	0.9m x 2.1m			2
D3	0.75m x 2.1m			12
JAALIS				
J1	1.35m x 2.00m	0.75m	2.1m	1

FLOOR TYPE LEGEND	
F1	Grey kota stone/ Kadappa stone
F2	Brick flooring

WALL TYPE LEGEND	
	200mm (8") thk AAC masonry wall, plaster and paint finish on both sides
	200 x 150 x 100 mm porotherm brick columns
	300 mm (9") thk brick masonry wall, plaster and paint finish on both sides



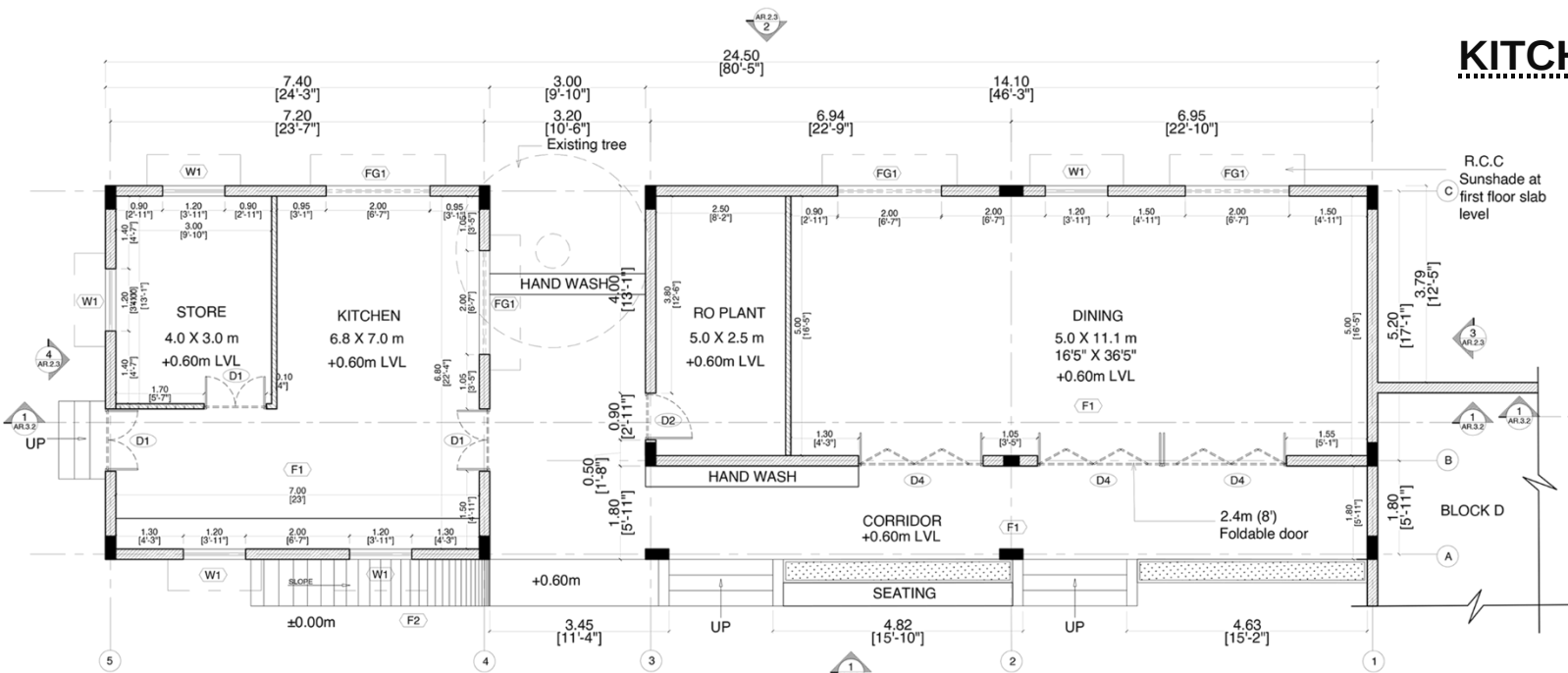
4 TERRACE FLOOR PLAN

Revised floor plans



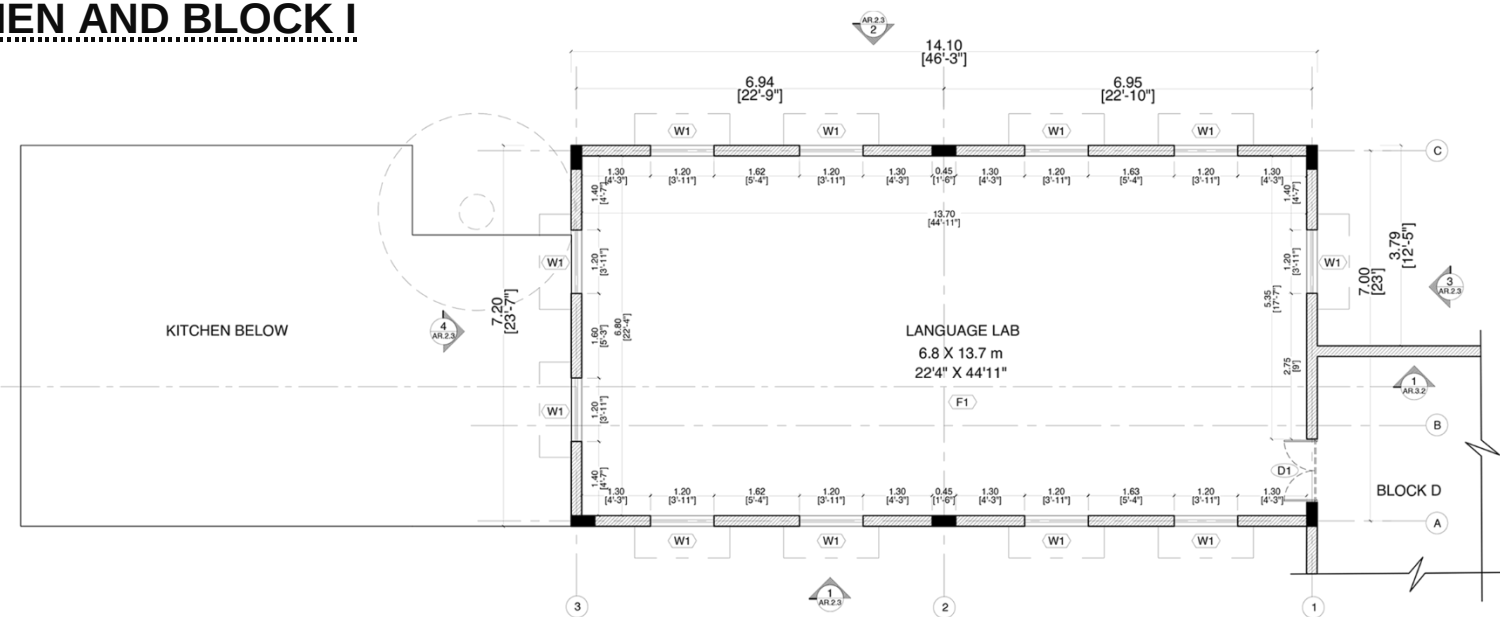
SMART CITY PROJECT - PJ_146- CITTIS CGHSS MH ROAD CAMPUS



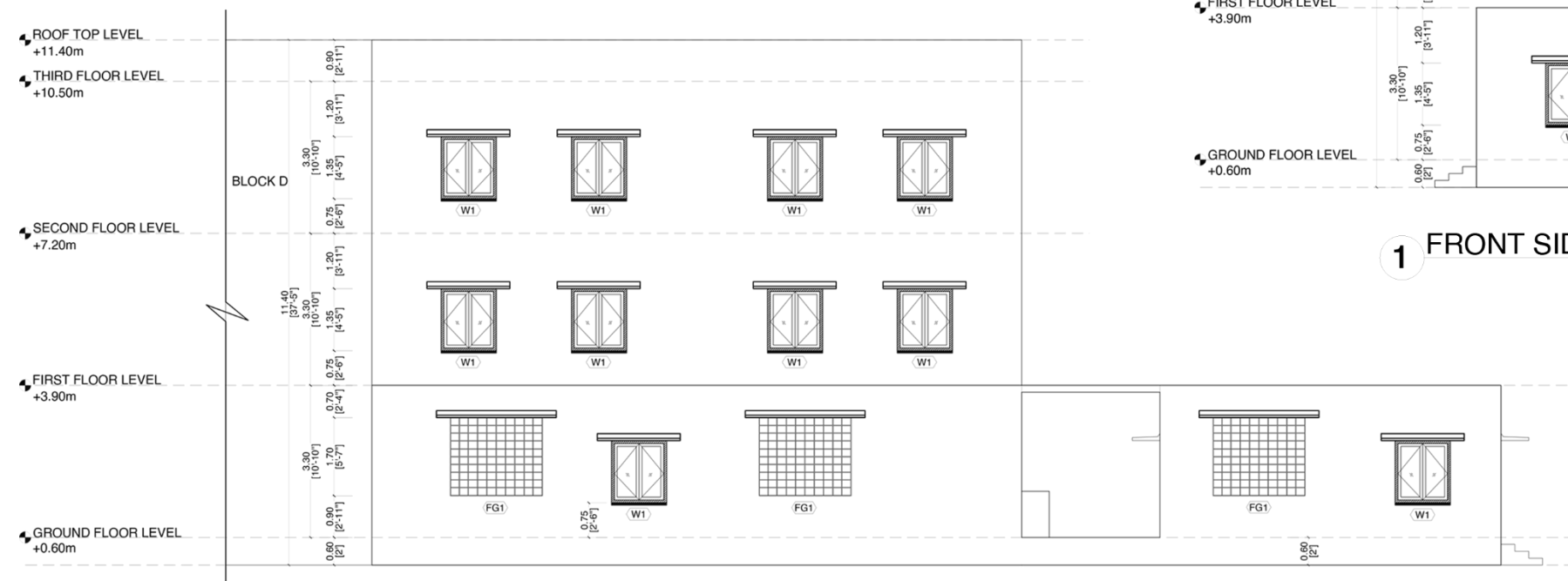
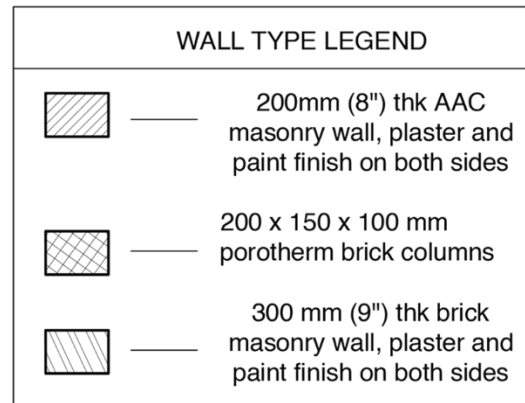


1 GROUND FLOOR PLAN

KITCHEN AND BLOCK I



2 TYPICAL (FIRST & SECOND) FLOOR PLAN



2 BACK SIDE ELEVATION

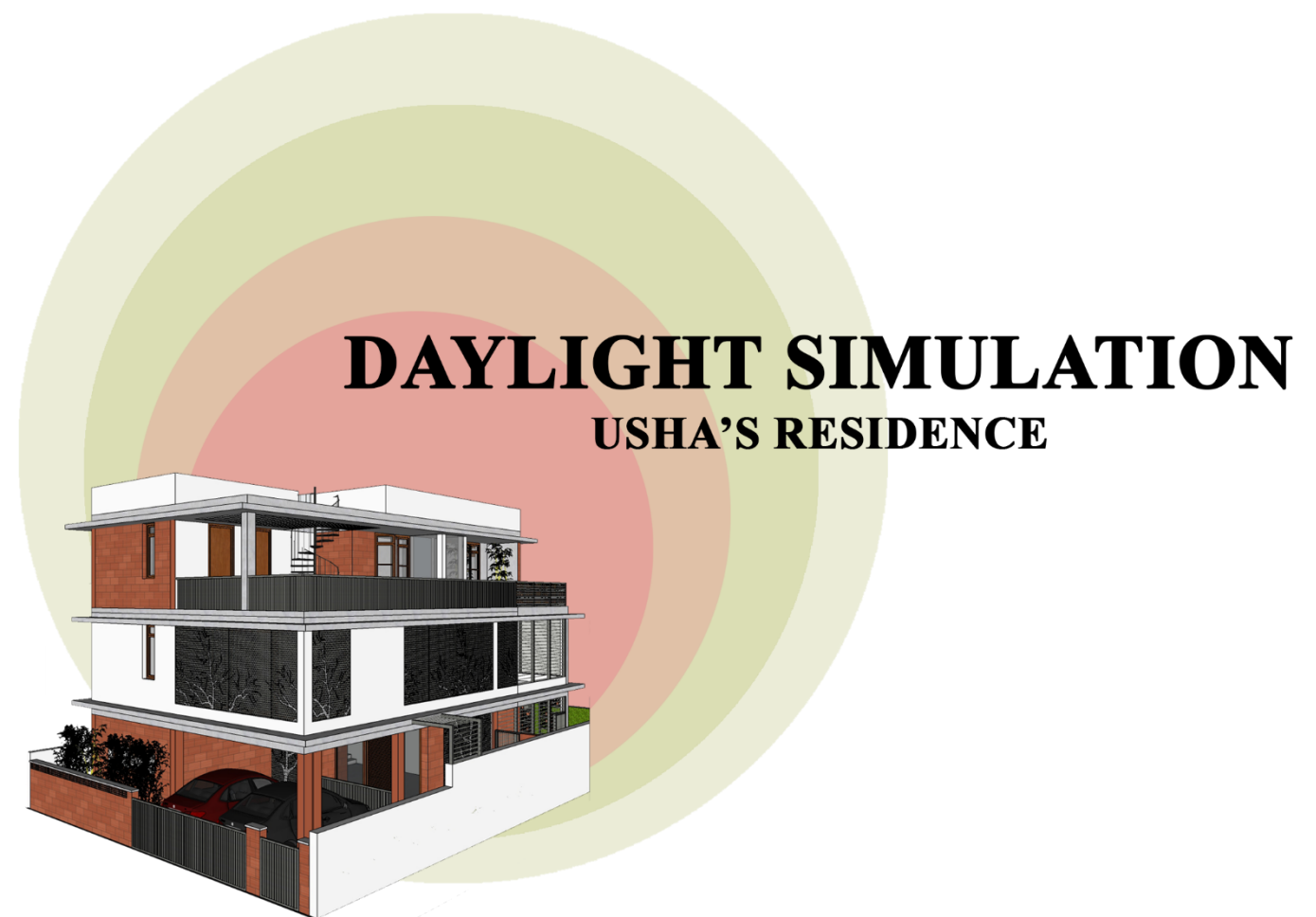


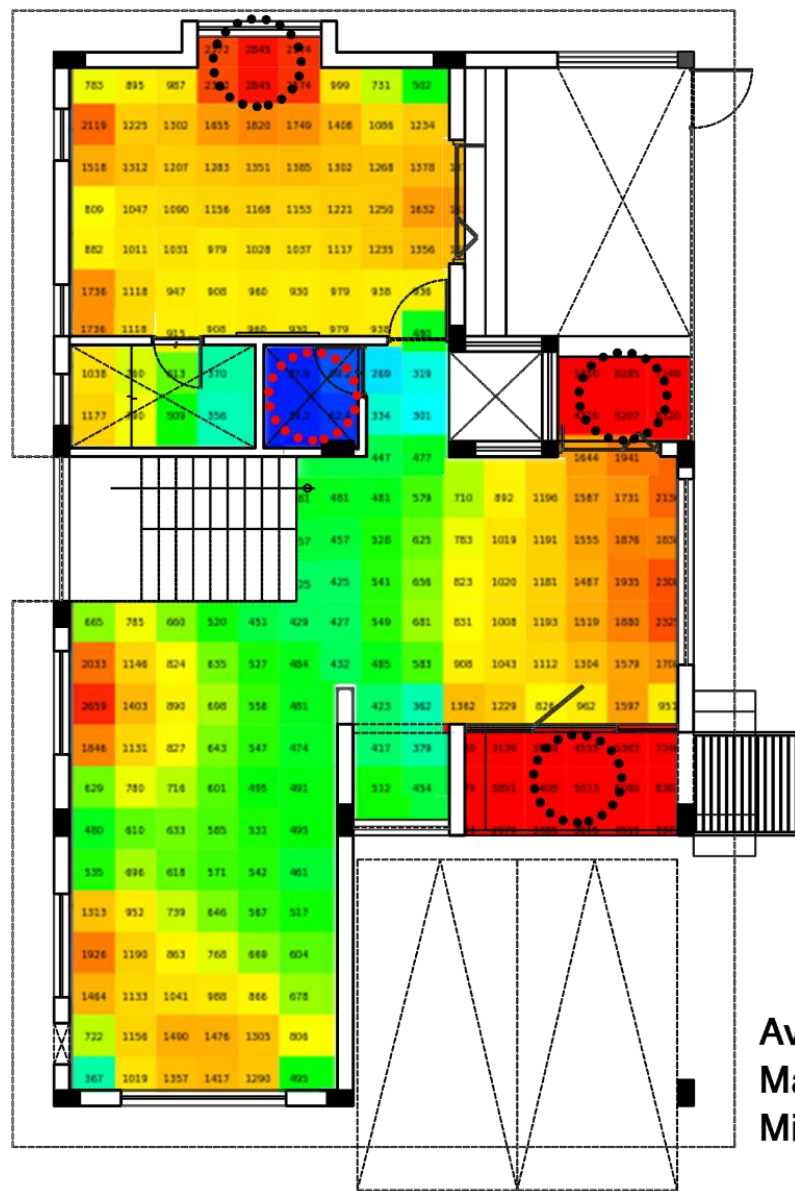
1 FRONT SIDE ELEVATION

WINDOW				
TAG	SIZE	SILL LVL	LINTEL LVL	T.NO
W1	1.35m x 1.2m	0.75m	2.1m	27
FIXED GRILL				
FG1	1.7m x 2.00m	0.9m	2.6m	2
DOORS				
D1	1.2m x 2.1m			9
JAALIS				
J1	1.35m x 2.00m	0.75m	2.1m	3

Revised floor plans







1 GROUND FLOOR PLAN

Recommended lux levels	Achieved lux levels
Bedroom – 100 lux	700-1100 lux
Kitchen – 200 lux	400-1000 lux
Living room – 150 lux	700-2000 lux
Dining - 100 lux	400-1000 lux
Toilet – 100 lux	500-700 lux

* All habitable rooms, such as the living room, kitchen, and dining room, are well-lit according to the SP-41 standards' recommended lux level.

* The western bedroom in ground floor is over-lit and should be shaded during the day to prevent from overheating.



Over-lit spaces



Under-lit spaces

Daylight illuminance

Recommended lux levels	Achieved lux levels
Bedroom 2 – 100 lux	700-1100 lux
Bedroom 3 – 100 lux	190-500lux
Home office – 300 lux	1500-2000 lux
Dressing - 200 lux	250 lux
Toilet – 100 lux	500-2000 lux

* The home office receives glare-free North light, which is essential for a healthy workplace environment.

* The western bedroom in first floor is over-lit and should be shaded during the day to prevent from overheating.



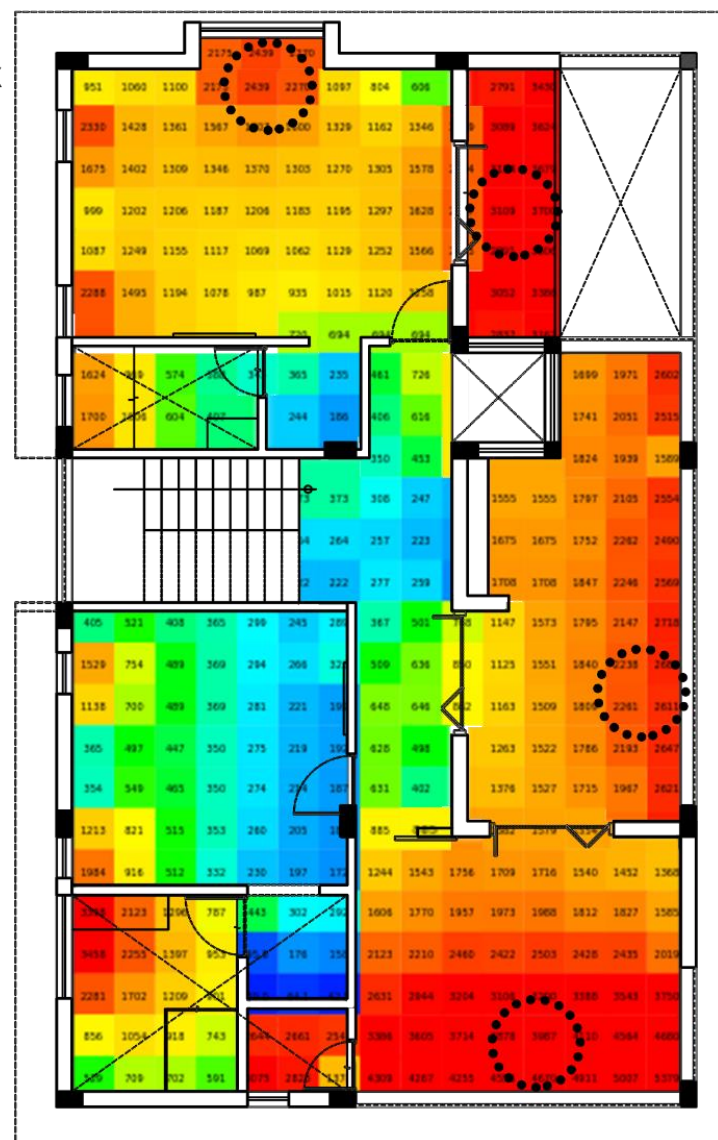
Over-lit spaces



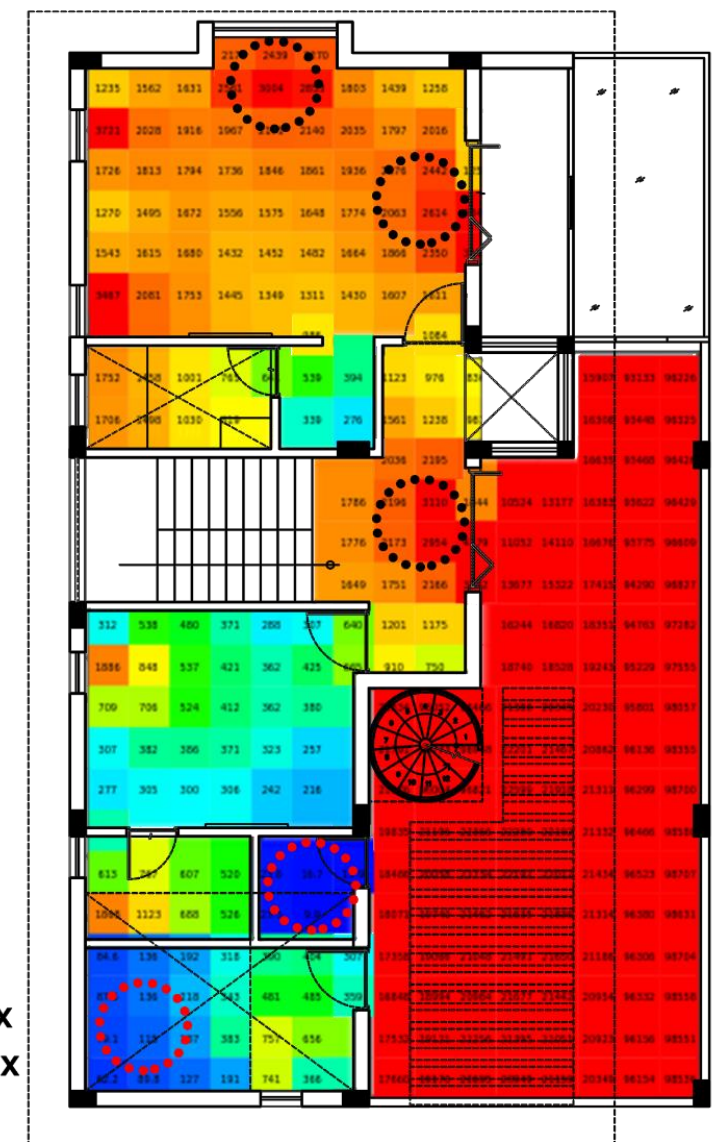
Under-lit spaces

Avg: 869.4 lux
Max: 6,277.5 lux
Min: 39.1 lux

Avg: 1,243.1 lux
Max: 8,475.8 lux
Min: 39.9 lux



2 FIRST FLOOR PLAN



3 SECOND FLOOR PLAN

Recommended lux levels	Achieved lux levels
Bedroom 4 – 100 lux	1400-2000 lux
Bedroom 5 – 100 lux	190-500lux
Dressing - 200 lux	250 lux
Toilet – 100 lux	500-2000 lux

* The western bedroom in second floor is over-lit and should be shaded during the day to prevent from overheating.

* To create a cozy, comfortable atmosphere, natural daylight is limited in the steam room

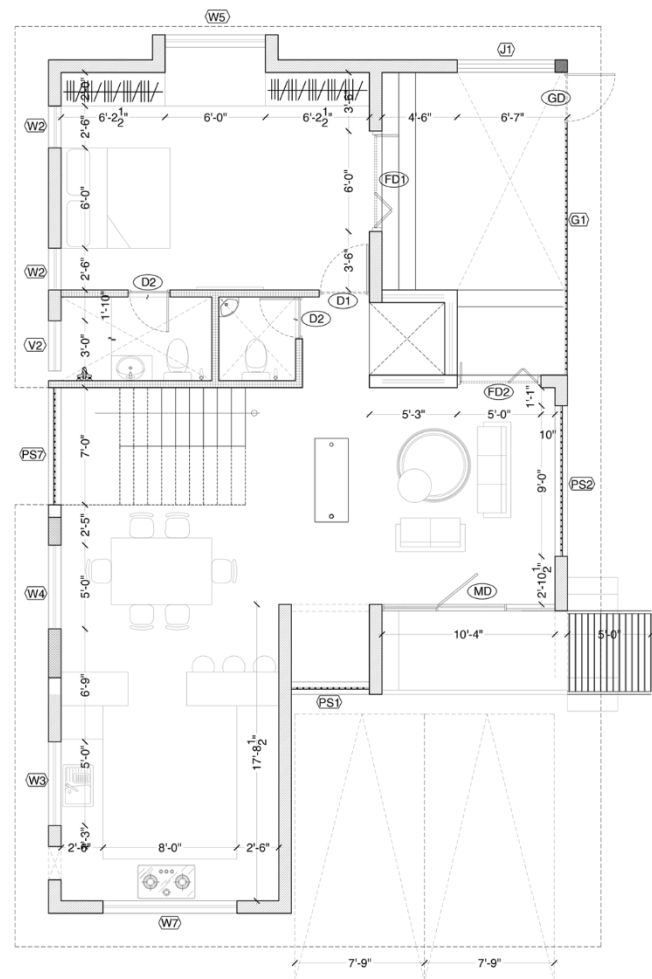


Over-lit spaces

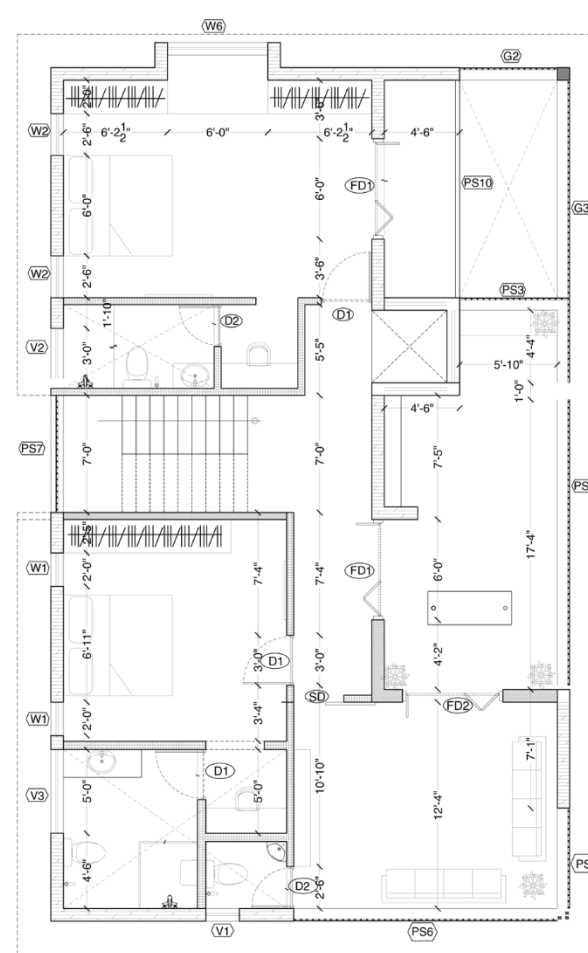


Under-lit spaces





1 GROUND FLOOR PLAN



2 FIRST FLOOR PLAN

Location - Chennai
Building type - Residence

LEED v4.1 - Option 1

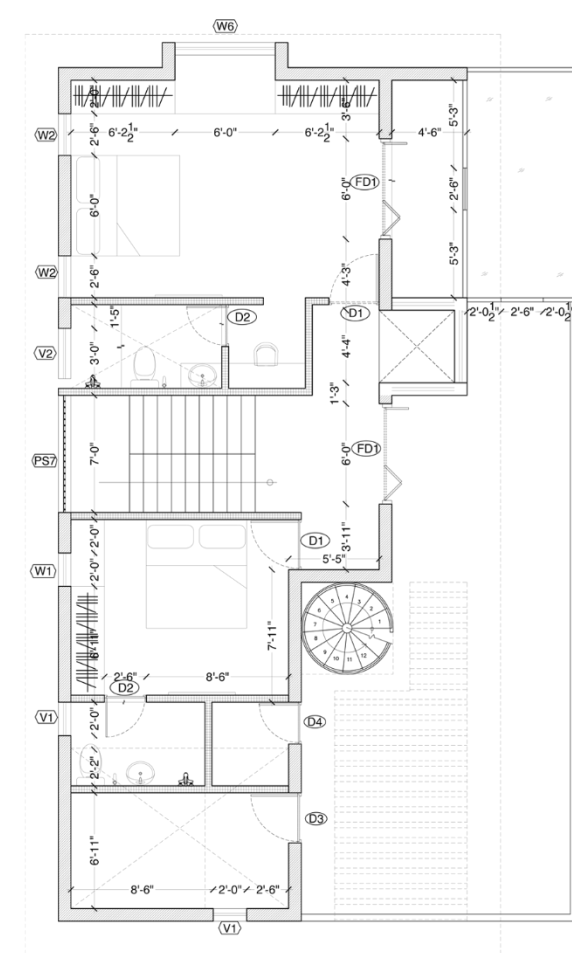
New Construction, Core and Shell, Schools, Retail, Data Centers, Warehouses and Distribution Centers, Hospitality

- The average sDA300/50% value for the regularly occupied floor area is at least 40% **1 Point**
- The average sDA300/50% value for the regularly occupied floor area is at least 55% **2 Points**
- The average sDA300/50% value for the regularly occupied floor area is at least 75% **3 Points**
- Each regularly occupied space achieves sDA300/50% value of at least 55% **1 Point**

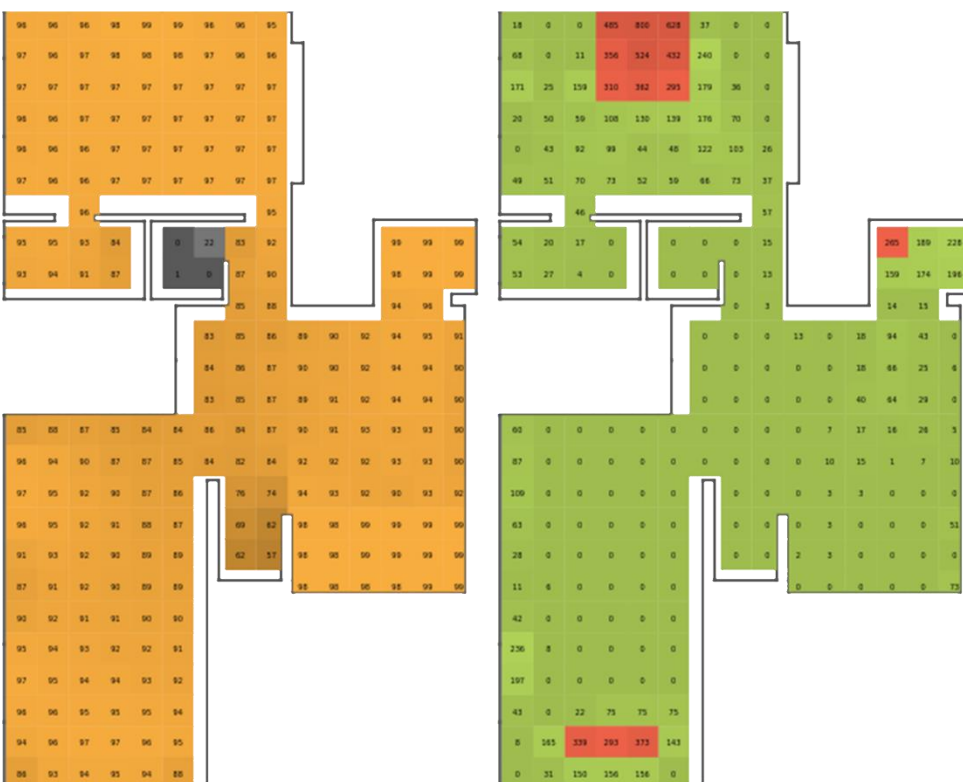
Result

LEED v4.1 Option 1
sDA = 97.79% ASE = 18.18%
3 points + 1 exemplary point

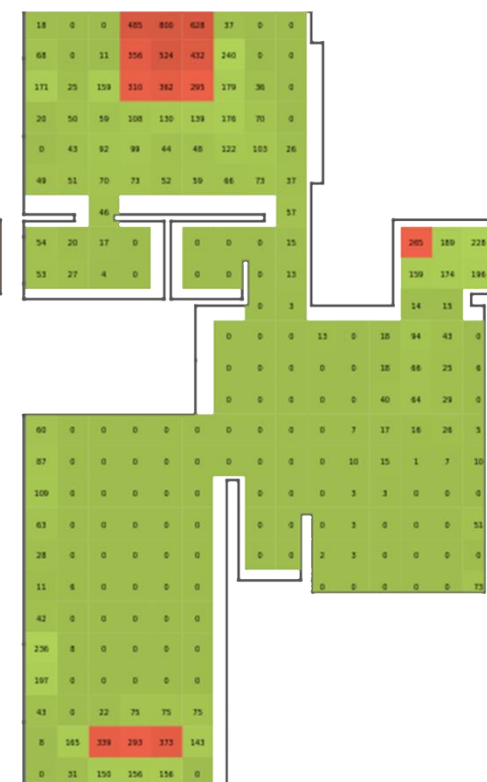
Legend



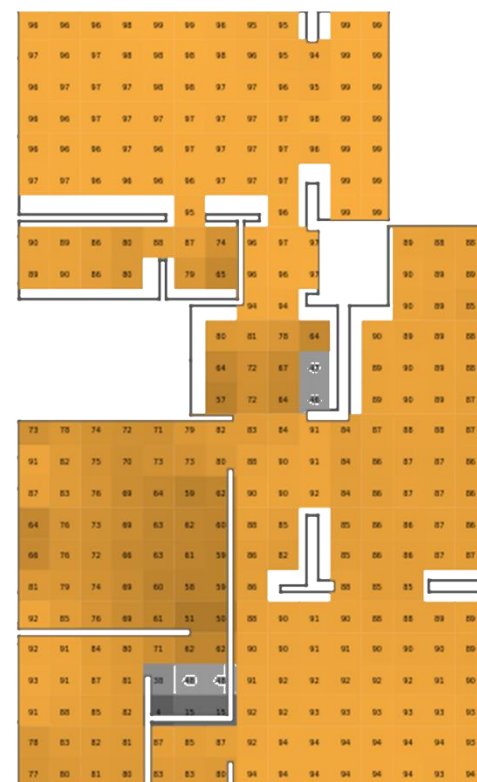
3 SECOND FLOOR PLAN



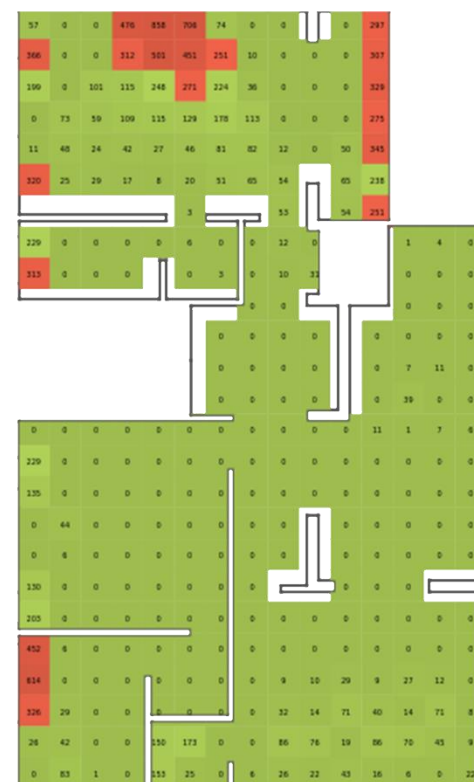
1 sDA GROUND FLOOR PLAN



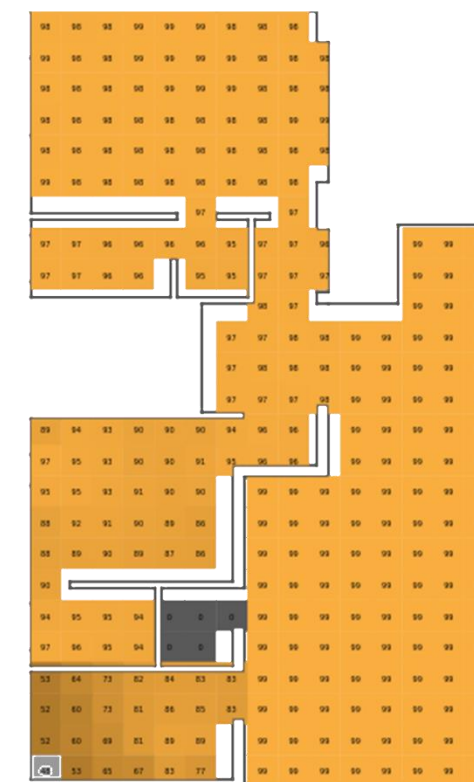
2 ASE GROUND FLOOR PLAN



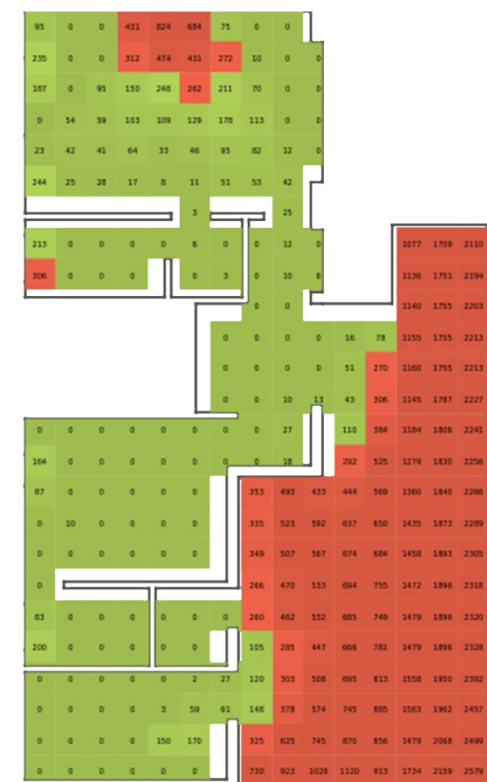
3 sDA FIRST FLOOR PLAN



4 ASE FIRST FLOOR PLAN



5 sDA SECOND FLOOR PLAN



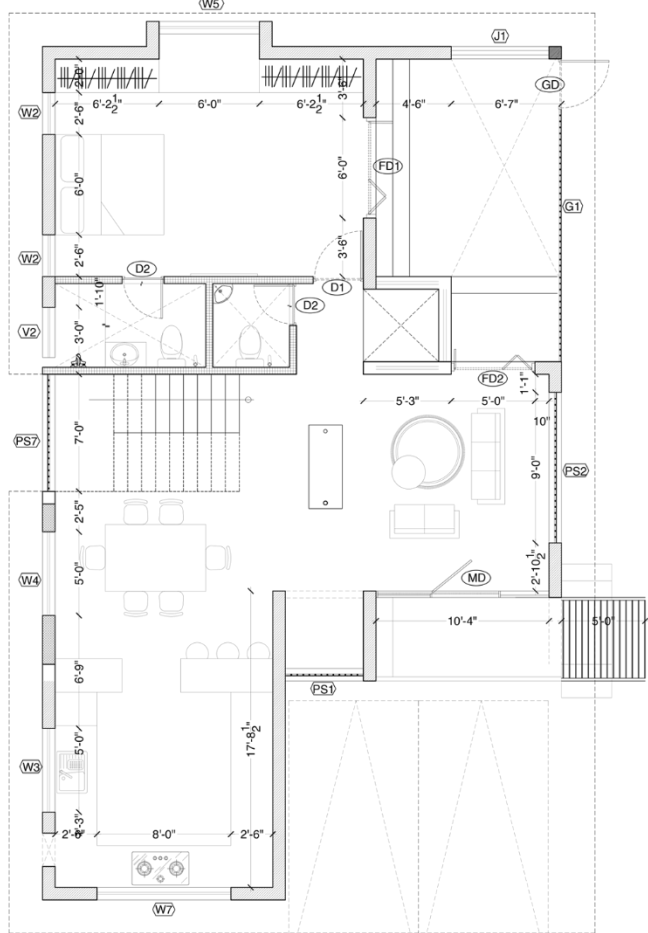
6 ASE SECOND FLOOR PLAN

sDA - 98.25% ASE - 5.68%

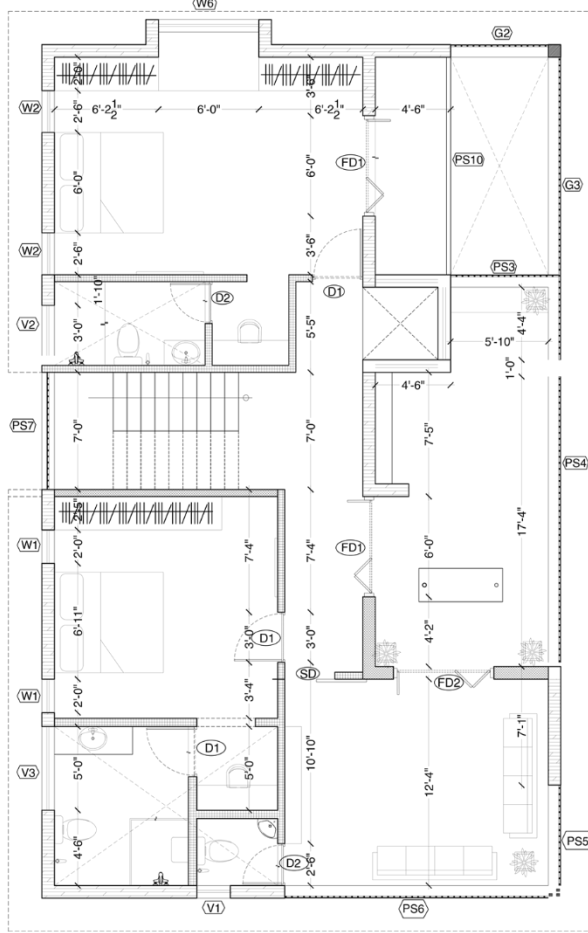
sDA - 97.35% ASE - 6.62%

sDA - 97.88% ASE - 40.64%





1 GROUND FLOOR PLAN



2 FIRST FLOOR PLAN

Location - Chennai
Building type - Residence

LEED v4.1 - Option 2

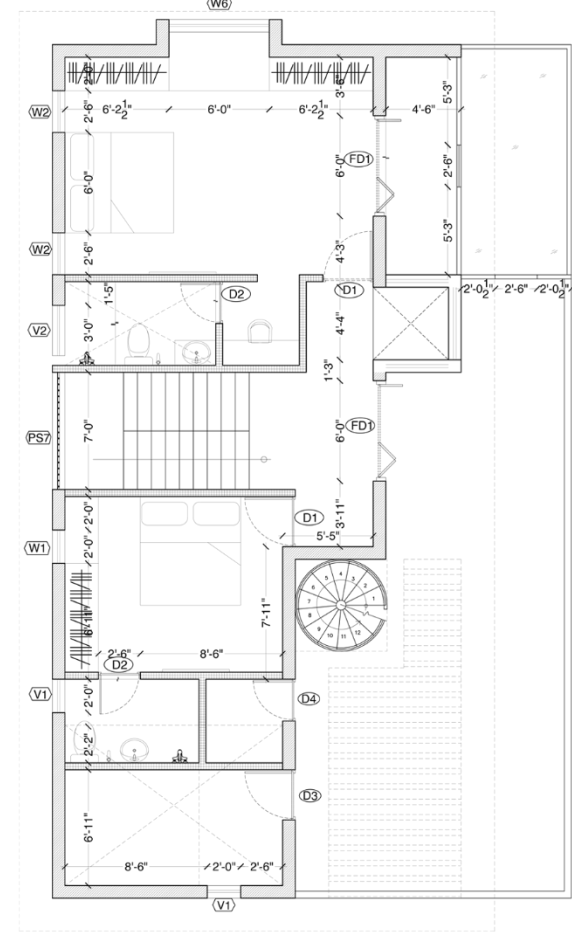
Procedure -
Demonstrate illuminance
levels are between
300 lux and 3,000 lux
at both 9 a.m. and 3 p.m.

New Construction, Core and Shell, Schools, Retail, Data Centers, Warehouses and Distribution Centers, Hospitality	
Percentage of regularly occupied floor area	Points
55%	1
75%	2
90%	3

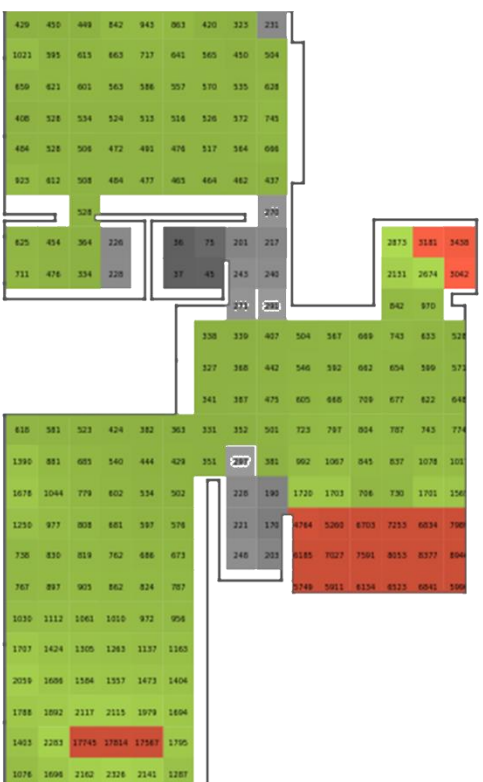
Result

LEED v4.1 Option 2
56.20% compliant - 1 point

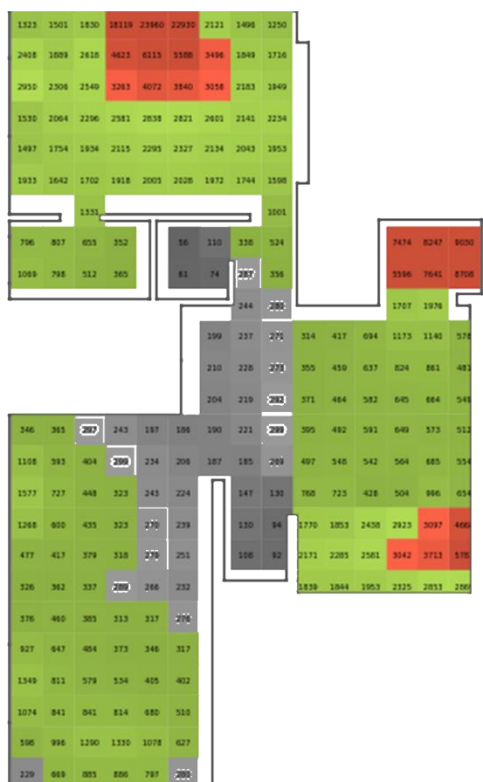
Legend



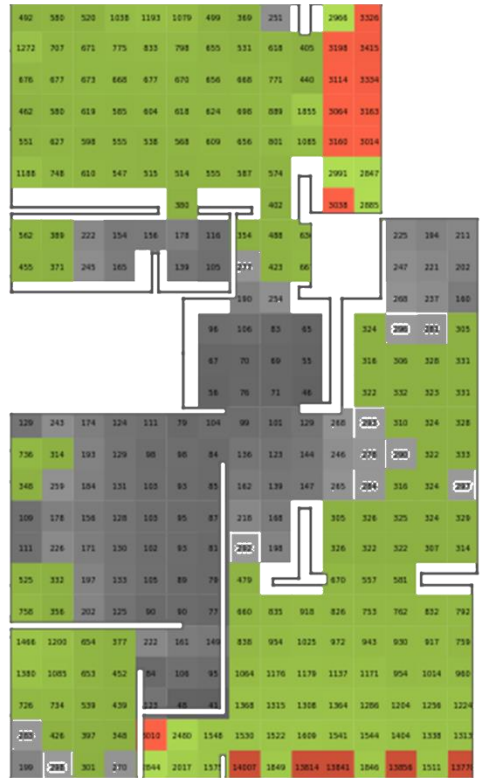
3 SECOND FLOOR PLAN



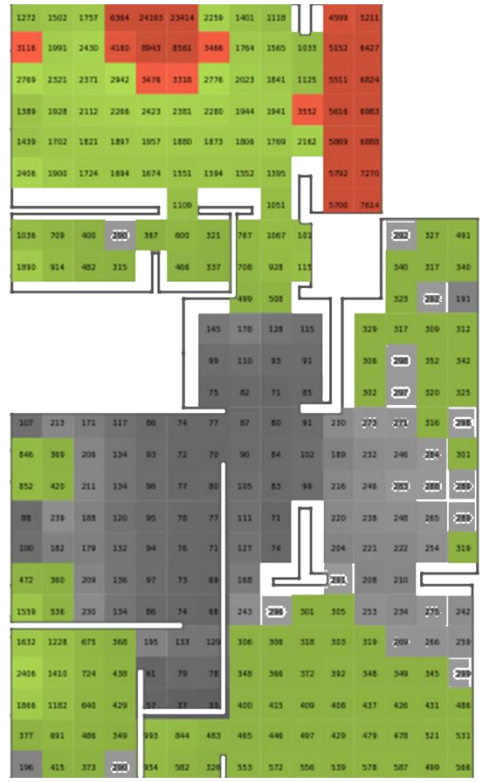
1 9.00 AM
GROUND FLOOR PLAN



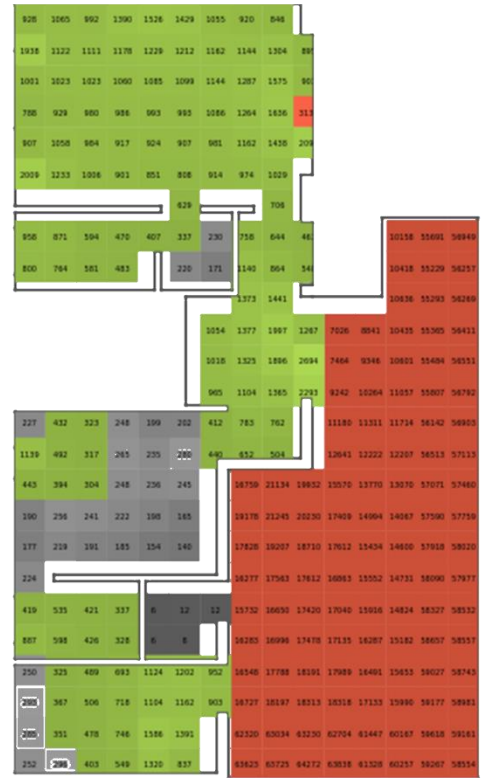
2 3.00 PM
GROUND FLOOR PLAN



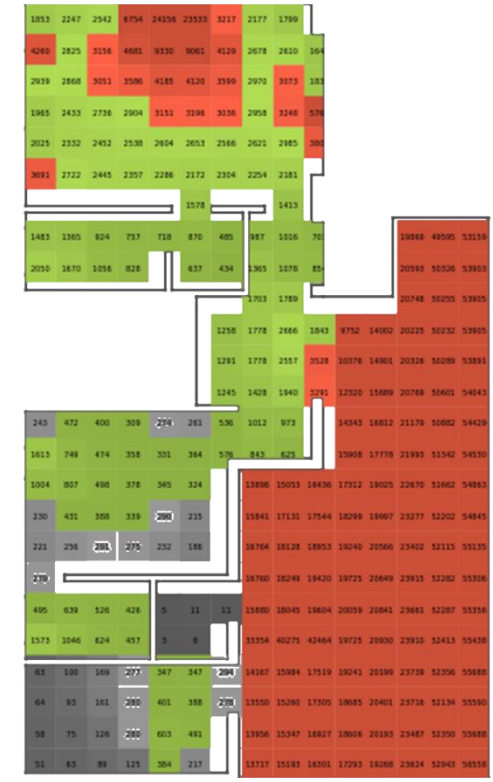
3 9.00 AM
FIRST FLOOR PLAN



4 3.00 PM
FIRST FLOOR PLAN



5 9.00 AM
SECOND FLOOR PLAN



6 3.00 PM
SECOND FLOOR PLAN

Area (m2) With Daylight Illuminance Levels Between 300 and 3000 Lux

68.81 (75.11% compliant)

62.69 (54.97% compliant)

46.33 (42.23% compliant)



DAYLIGHT SIMULATION - PJ_161- USHA RESIDENCE



