

PROFESSIONAL TRAINING REPORT

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

by

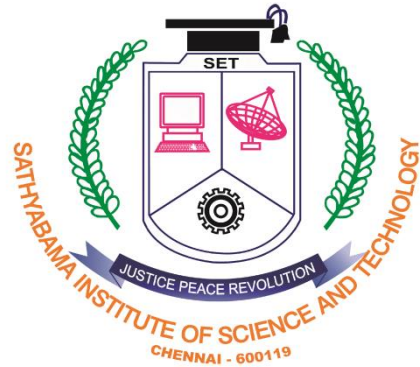
RA. SANTHOSH / 40890015



**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

(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)**

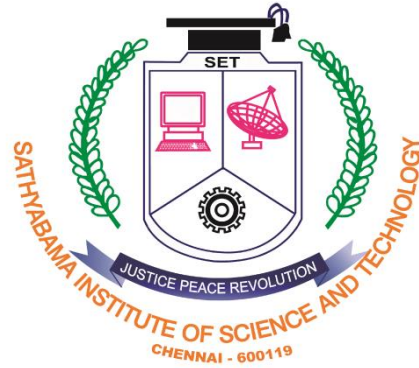
**PROFESSIONAL TRAINING PORTFOLIO
JAN 2022**

Name of the Student : Ra. Santhosh

Semester : III

Batch : 2020-2022

Reg No. : 40890015



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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

M. Arch (Sustainable Architecture)

BONAFIDE CERTIFICATE

This is to certify that the professional training is the work of **RA. SANTHOSH / 40890015** had undergone training in **Madras Terrace Architects** and has been monitored by the continuous assessment during **Dec 2021 to Jan 2022**.

DR.DEVYANI GANGOPADHYAY

DEAN,

School of Building and

Environment

Department of Architecture

Submitted for Viva voce Examination held on _____

Internal Examiner

External Examiner



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E-mail: archhod@sathyabama.ac.in



DECLARATION

I **RA. SANTHOSH** hereby declare that the Professional Training Report **29th Nov 2021 – 1st Jan 2022** done by me under the guidance of Ar. **ARCHANA Y** is submitted in partial fulfillment of the requirements for the completion of practical training session.

DATE : 29.01.2022

PLACE : Chennai

A handwritten signature in blue ink, reading 'Ra. Santhosh', is written over a faint, tilted rectangular box.

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. ARCHANA Y / Architect / Madras Terrace Architects** for his 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. Archana Y / Madras Terrace Architects, Pantheon Road, Chennai -8**

MADRAS TERRACE ARCHITECTS

#334/335, Fountain Plaza, 6th Floor, Pantheon Road, Chennai - 8
www.MadrasTerrace.com | info@MadrasTerrace.com | 044 - 43587799

Nov 26, 2021

To:

Ra Santhosh,
G-3, Vinoth Apartments,
2nd Main Road, Baba Nagar
Villivakkam
Chennai - 600 049

CC:

Prof. Sheetal Amraotkar
Assistant Professor,
Professional Training Coordinator,
Masters Sustainable Architecture Program
and:
Dr. Devyani Gangopadhyay
Dean, School of Building & Environment,
Sathyabama Institute of Science and Technology,
Chennai 600 119

Subject: Internship

Dear **Santhosh,**

This refers to your application and our subsequent discussions; we are pleased to provide you an Internship in our organization.

These are the terms and conditions of the training:

Duration of Training: 30 Working Days at a minimum

Start Date: Dec 1, 2021

Nature of Work:

The nature of work assigned to you shall be within the boundaries of Comprehensive Architectural Services as practiced by our Firm. This shall include, though not restricted to site analysis, design, drafting, execution and allied research as may be required by our Firm to conduct its business satisfactorily. You will be working for at least 1 project and may be required to do additional work as required by our Firm.

If your performance during the Internship is good and if the work in your Internship has contributed to the firm, you may be provided a Stipend of Rs.3000/-.

Work Timings:

The Firm shall observe standard working timings from 9.30 am to 7.00 pm, Monday to Fridays. Saturdays are typically half a day at work. We expect you to spend a good amount of time at a Project Site and prepare a Site Report. Holidays shall be as per the standard list of holidays. In case of Leave, you shall inform the concerned senior personnel in the office, the moment you plan your Leave. Leave days and Holidays are not counted towards Internship. And we expect you to maintain a daily log of your work.

Intellectual Property, Confidentiality and Rights:

You shall not, either during your engagement with the Firm or thereafter divulge to any person whatsoever information concerning the business which comes to your knowledge during the course of your training or use any of the same for your own benefit.

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Any invention, improvement or design conceived by you while in our training which is within the existing or contemplated scope of the business of the Firm shall become the Firm's exclusive property.

During training with the Firm you must not be engaged, concerned or interested in any other business, trade or occupation which would or might in any way be in competition with the Firm's business.

You must not act contrary to the interest of the Firm or any relationship with another person or accepting gifts or benefits which would put you in a position where you may be tempted to act for personal gain, to the detriment of the Firm.

Use of software for official use:

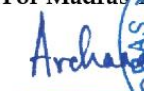
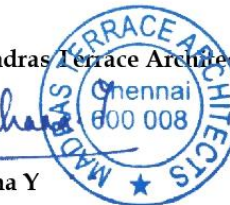
As a Firm we use only licensed or open source. Licensed software will be used for some specific use such as CAD and 3D Modeling. During your academic training with the Firm, you will need to follow the same policy. The Firm is not responsible for use of any other unauthorized or unlicensed software available with you, or for any deviation from this policy by you on your personal accord.

Unless specified to the contrary to the above, you will be governed by all the rules and regulations of the firm which are generally applicable to all employees which are current or which may come into force from time to time.

Kindly reply to this letter as a token of your acceptance.

Congratulations and wishing you all the very best!

For Madras Terrace Architects

Archana Y

Architect / Managing Partner

COA Registration No: CA/2009/46794





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Completion Certificate

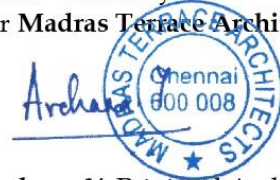
To
The HOD - Architecture,
Sathyabama Institute of Science and Technology,
Jeppiar Nagar
Chennai 600 119.

Dear Sir/Madam,

Sub: Completion certificate - Internship : **Santhosh . Ra**

This is to certify that **Santhosh. Ra**, M. Arch student of your institution has completed his professional training period successfully at our firm **Madras Terrace Architects** from **Nov 29, 2021** to **Jan 1, 2022**.
The student's work during his tenure at the office is Satisfactory.

Yours Sincerely
for **Madras Terrace Architects**



Archana Y, Prinicipal Architect | Partner



WEEKLY REPORT

(Annexure –VII)



SATHYABAMA
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DEPARTMENT OF ARCHITECTURE M. Arch (Building management)

Continuous Assessment Report for Professional training

(Continuous progress report of the trainee architect/Project Manager 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 : Madras Terrace Architects
2. Address & Contact Number : Fountain Plaza, 6th floor, Pantheon Road, Chennai-8
3. Name of the student : Ra. Santhosh
4. Duration : From 29.11.21 To 04.12.21
5. Total No. of days : 06

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*	D
------------------	---

(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)



DEPARTMENT OF ARCHITECTURE M. Arch (Building management)

Continuous Assessment Report for Professional training

(Continuous progress report of the trainee architect/Project Manager 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 : Madras Terrace Architects
2. Address & Contact Number : Fountain Plaza, 6th floor, Pantheon Road, Chennai-8
3. Name of the student : Ra. Santhosh
4. Duration : From 06.12.21 To 11.12.21
5. Total No. of days : 06

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			✓		
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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*	D
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(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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1. Name of the office / organization : Madras Terrace Architects
2. Address & Contact Number : Fountain Plaza, 6th floor, Pantheon Road, Chennai-8
3. Name of the student : Ra. Santhosh
4. Duration : From 13.12.21 To 18.12.21
5. Total No. of days : 06

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
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Active Participation in the Project activities			✓		
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Participation and contribution in project meetings			✓		
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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*	D
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(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):



DEPARTMENT OF ARCHITECTURE

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(Continuous progress report of the trainee architect/Project Manager 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 : Madras Terrace Architects
2. Address & Contact Number : Fountain Plaza, 6th floor, Pantheon Road, Chennai-8
3. Name of the student : Ra. Santhosh
4. Duration : From 20.12.21 To 25.12.21
5. Total No. of days : 06

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.

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Site Management / Discussion with clients					✓

Overall Grading*	D
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(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
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1. Name of the office / organization : Madras Terrace Architects
2. Address & Contact Number : Fountain Plaza, 6th floor, Pantheon Road, Chennai-8
3. Name of the student : Ra. Santhosh
4. Duration : From 27.12.21 To 01.01.22
5. Total No. of days : 06

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.

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Site Management / Discussion with clients					✓

Overall Grading*	D
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(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)



WORK DIARY

(Annexure –VIII)

DATE	PROJECT NAME	WORK DONE
29.11.21 to 4.12.21	Mrs. Geetha Vedaraman Residence	Site Visit and Site survey
06.12.21 to 11.12.21	Mrs. Geetha Vedaraman Residence	Drafting and 3d modelling
13.12.21 to 18.12.21	Mrs. Geetha Vedaraman Residence	3d Walkthrough and Site supervision
20.12.21 to 25.12.21	Mrs. Geetha Vedaraman Residence	Daylighting stimulation and Site supervision
27.12.21 to 01.01.22	Mrs. Geetha Vedaraman Residence	Site supervision

Chief Architect Signature:



Office seal:

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5.	DRAWINGS	
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7.	Lighting analysis – on site	
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11.	Alteration in walls for Daylighting	

About the firm

Madras Terrace provides a personal touch to **Architecture and its Works**.

At the core of Madras Terrace, is Green Sustainable Architecture, simple Design, Quality in Execution, providing an Eco-Friendly Environment and making our clients enjoy their living experience.

Specialize in Architecture & Design but also do turnkey project execution that ranges right from approval until handover; therefore making sure that the design & detailing get implemented well.

We are also deeply involved in Redesigning Water Management in Chennai through an initiative called Water as Leverage executed along with a consortium of experts called City of 1000 Tanks.

We also do Interiors, Renovations, as well as do Maintenance for our customers, thus providing a full range of Architectural services as needed.

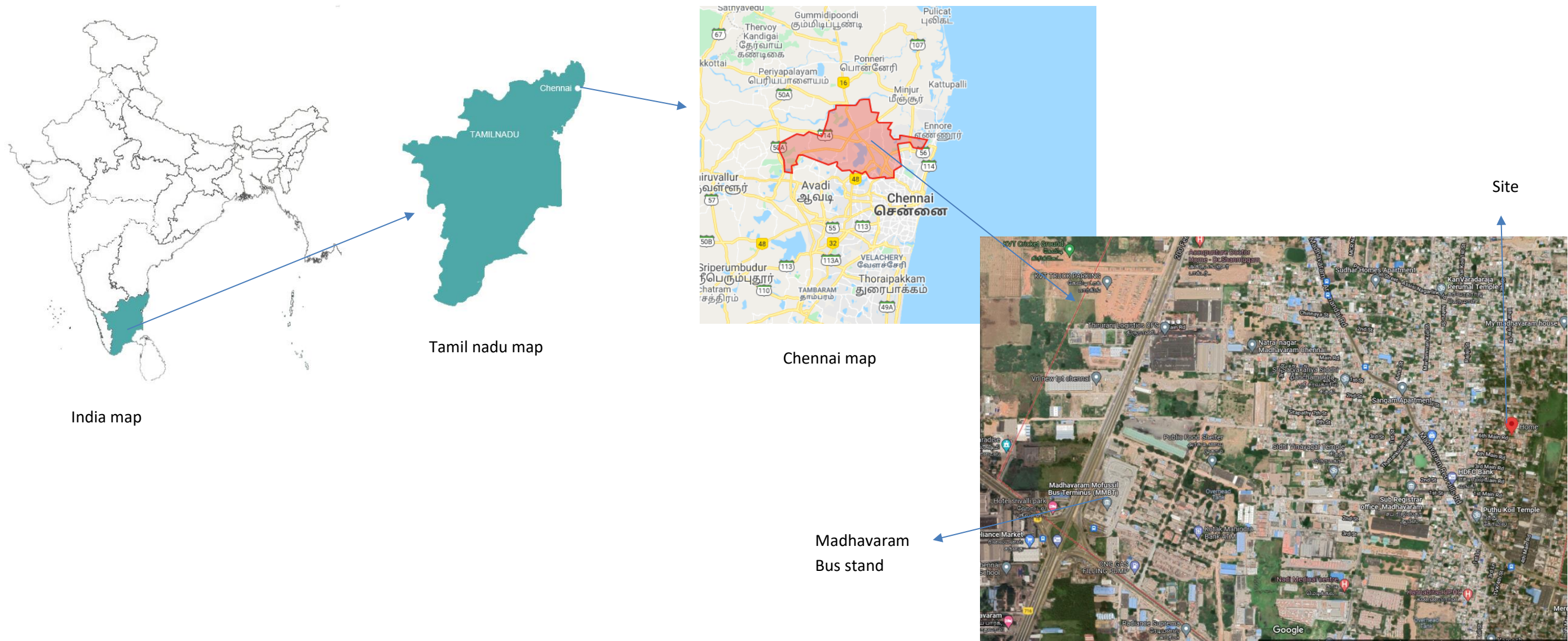
The principle behind our architecture is in the appropriateness of a design in relation to its context, its environment, the customer needs, and in the evolution of 3-dimensional planning. Our architecture, therefore, takes a holistic approach rather than one drafted on paper. This translates to a successful practice where the team gets well-grounded in their fundamental knowledge of Architecture & its Execution.



Renovation of Mrs. Geetha Vedaraman Residence

Project details

- Type of Project : Residence Renovation
- Location : 15, 23b, 6th Main Rd, Rajaji Nagar, Madhavaram, Chennai, Tamil Nadu 600060
- Existing : Residence
- Build on : 1987 – 45 years old building
- Area : 40X 60ft
- Existing trees : Neem, Coconut tree at Front and backside of the site
- Proximity analysis:



Site Photos (Before Renovation)



Front elevation



Back side

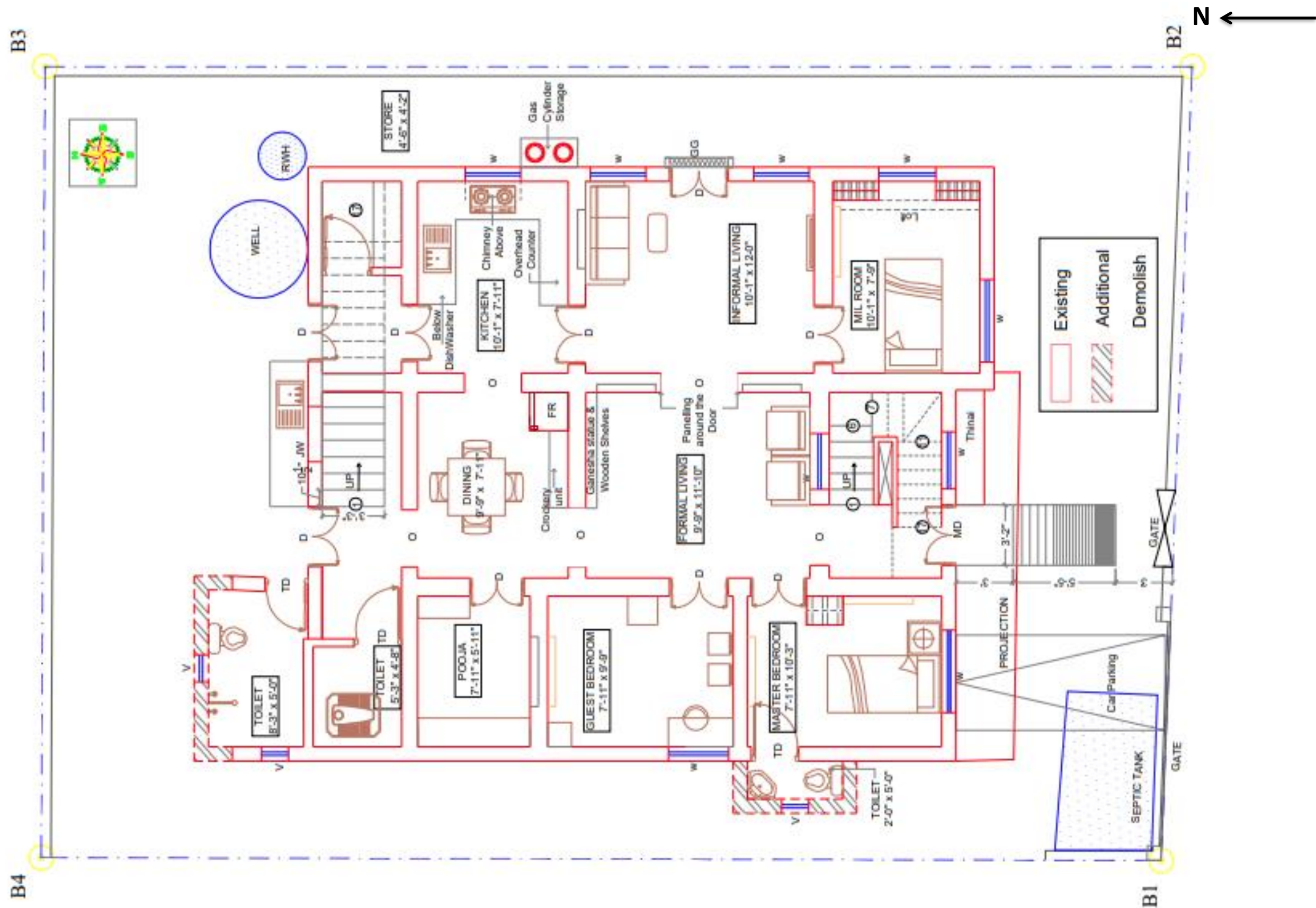


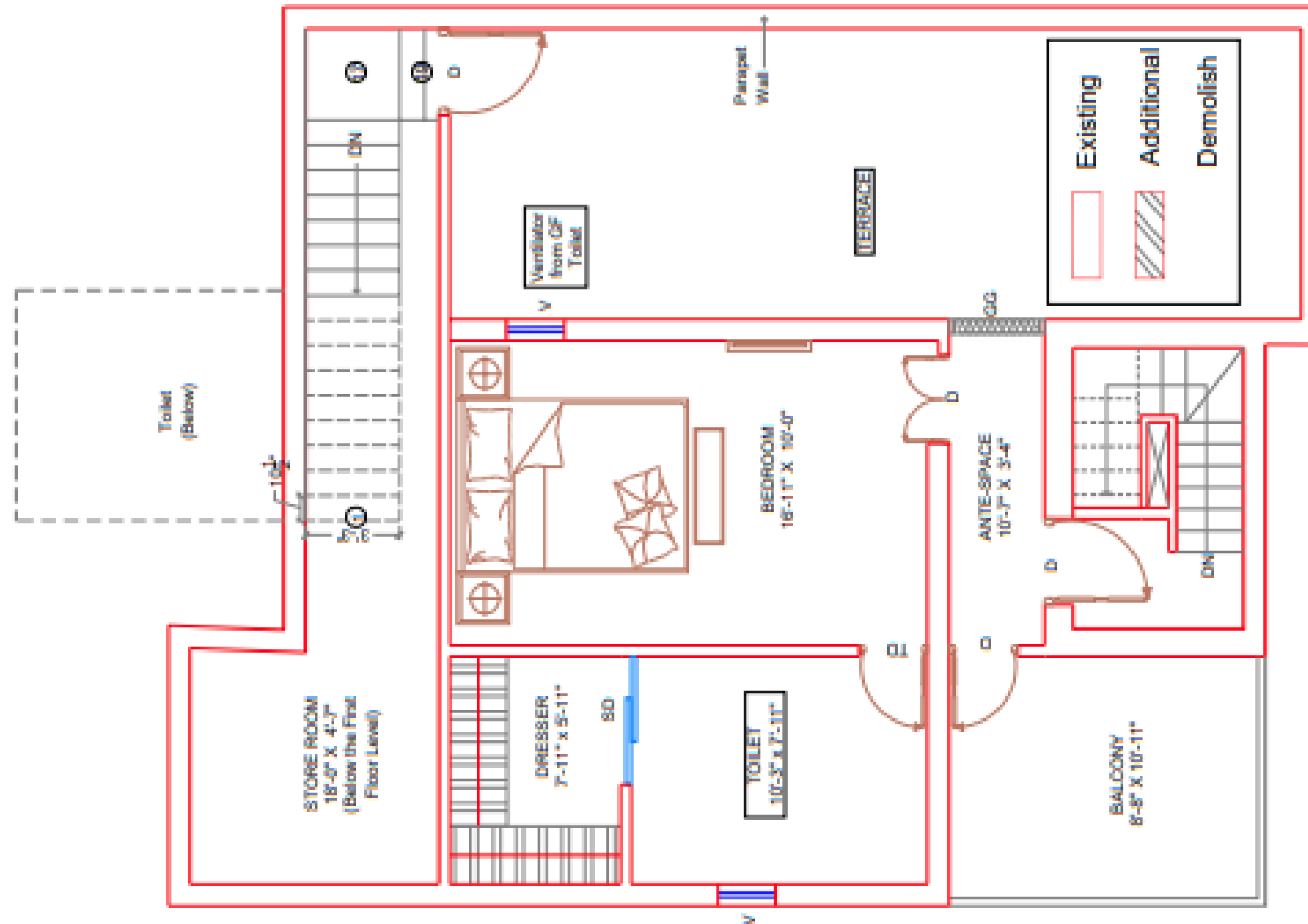
Bedroom



Informal living room

Drawings





First Floor Plan

Why renovation of Mrs. Geetha Vedaraman Residence instead of demolish & rebuild?

Most likely - water floods the ground floor or water leaks from the roof. It is really frustrating on both occasions. It is very easy to say, "*Just demolish & rebuild like the way our neighbour has done!*"

Before making that decision to rebuild in a knee-jerk reaction, it is good to consider if the renovation is feasible. Why?

Because it is good for the environment and good for the pocket too. A lot of environmental resources go into demolition and reconstruction. And good renovation is generally possible in 20-40% of the cost of construction.

Finally remember, new construction means not just direct costs but there are hidden costs as well, such as new Approval, new Electricity & Sewage connections, Rental and Shifting costs, etc.

Here are some things to consider if Renovation is feasible:

- Is ground floor level more than 1 foot below the road level?
- Is the ground floor level below the mean level of the storm water drain?
- Is the roof leaking in multiple places?
- Is the weathering course damaged beyond repair?
- Are the steel rods in the roof corroded beyond 25%?
- Have Termites eaten the bricks?
- Are the Toilets on the Ground Floor getting flushed back?
- Has Rain Water Harvesting been done properly up to the weathered rock and still rain floods the compound?
- Are the Living areas / Bedrooms leaking?

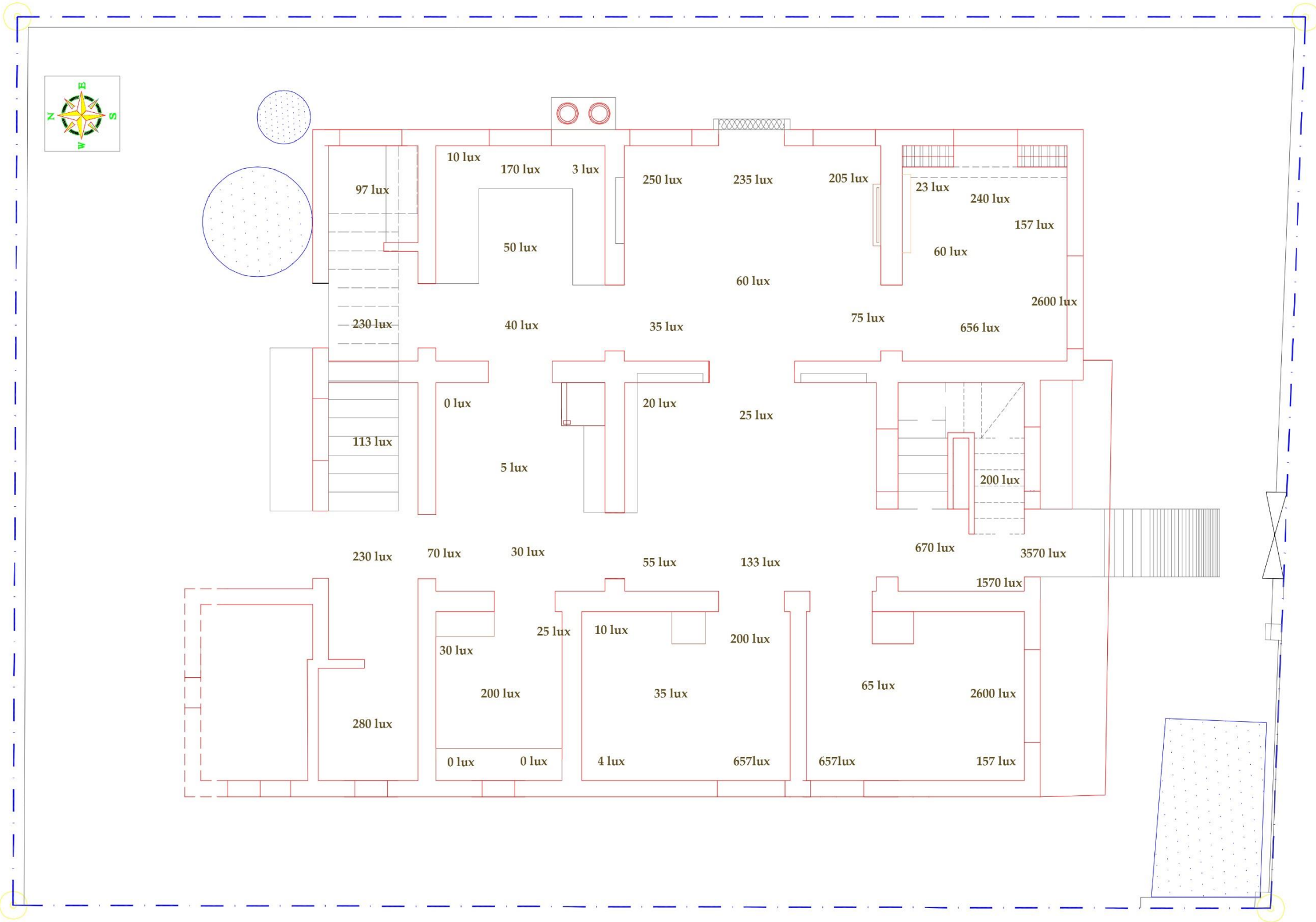
If the answer is YES for most of the above questions then rebuild is a better option.

But if the answer is NO for most of them, then just go with Renovation and contribute to the environment and save some money too.

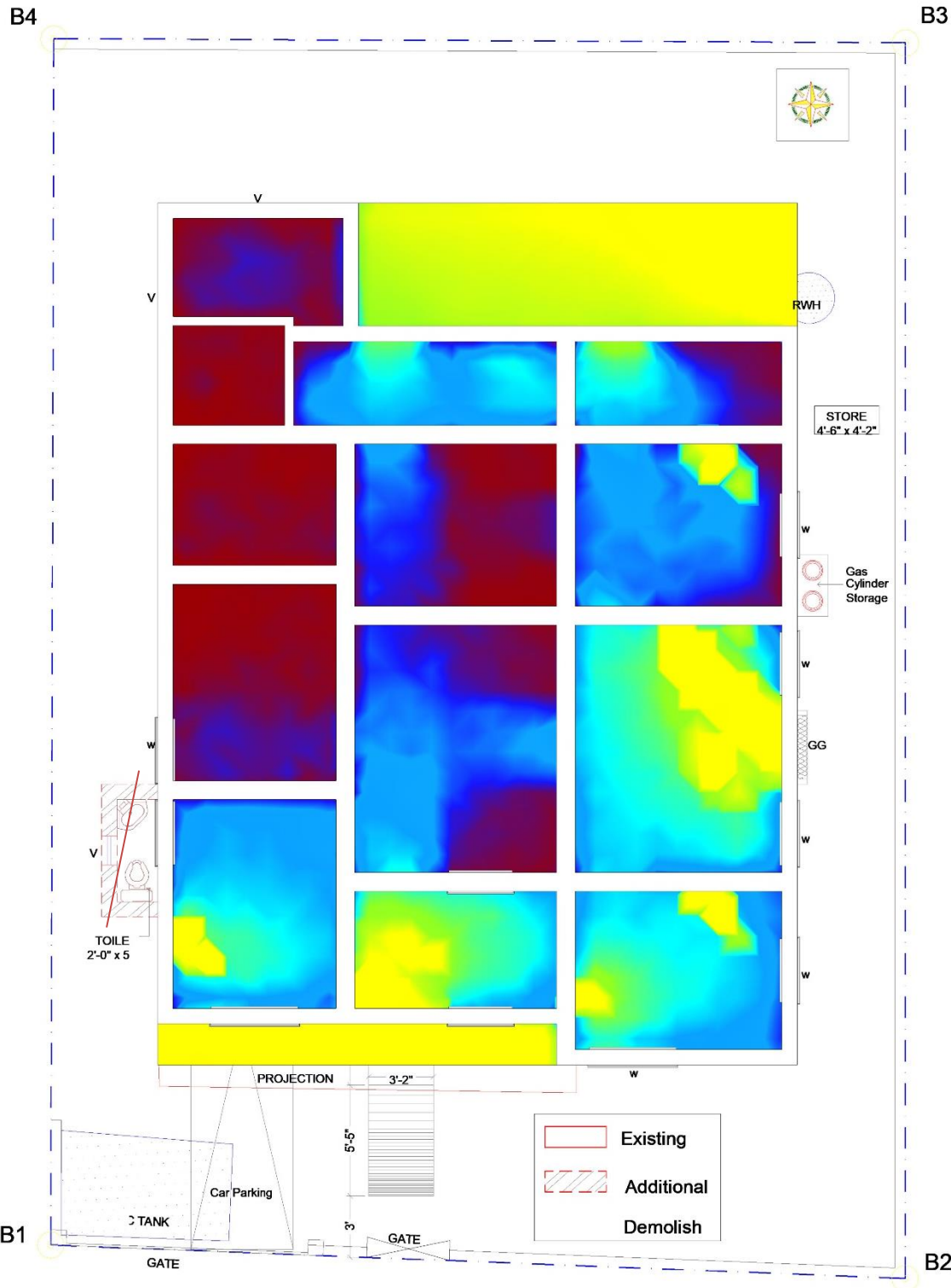
In these Residence most of the questions answer were No. So Renovation is the best option than Rebuild

Lighting Analysis - Lux level calculated on site using mobile app

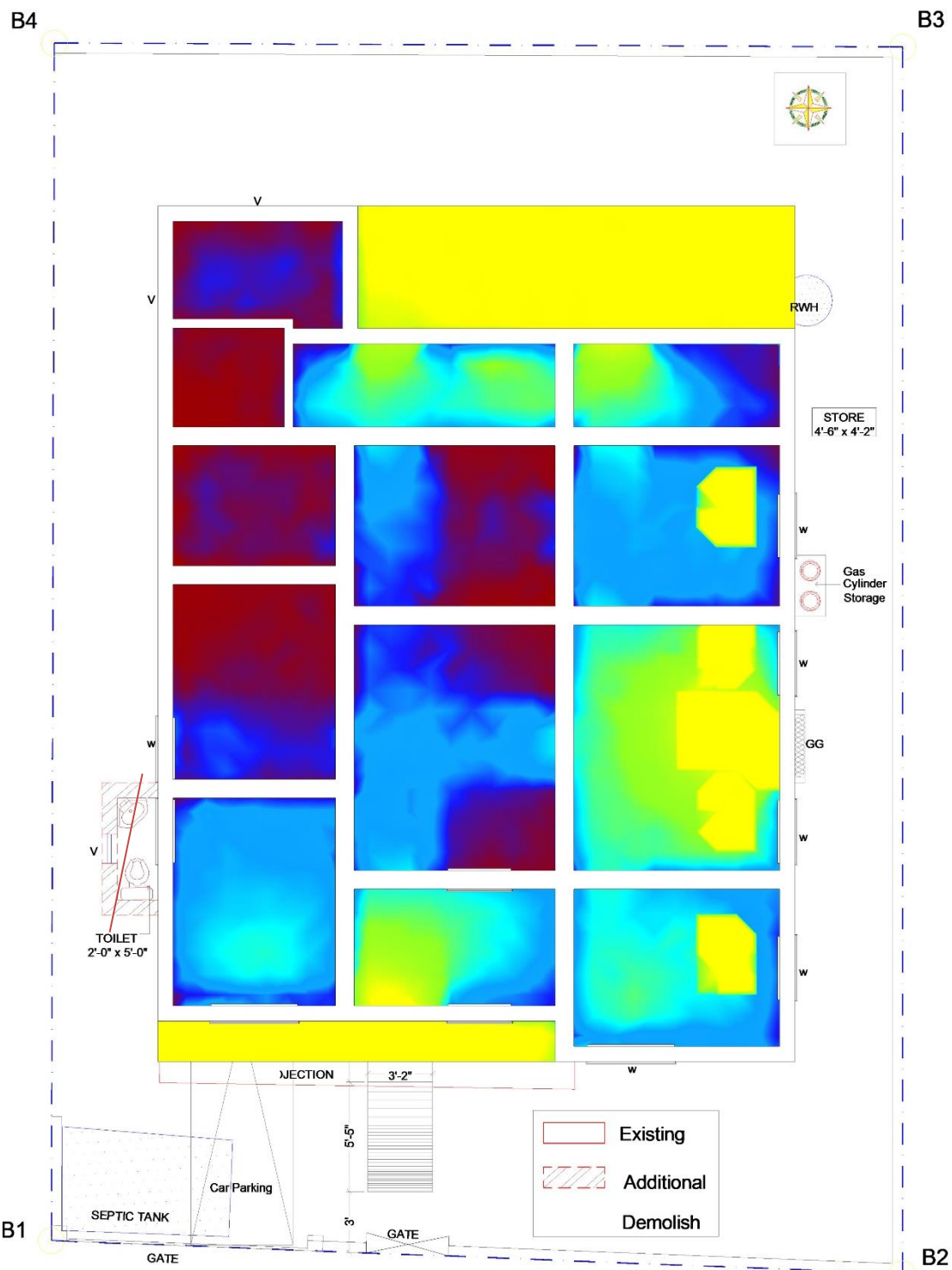
N ←



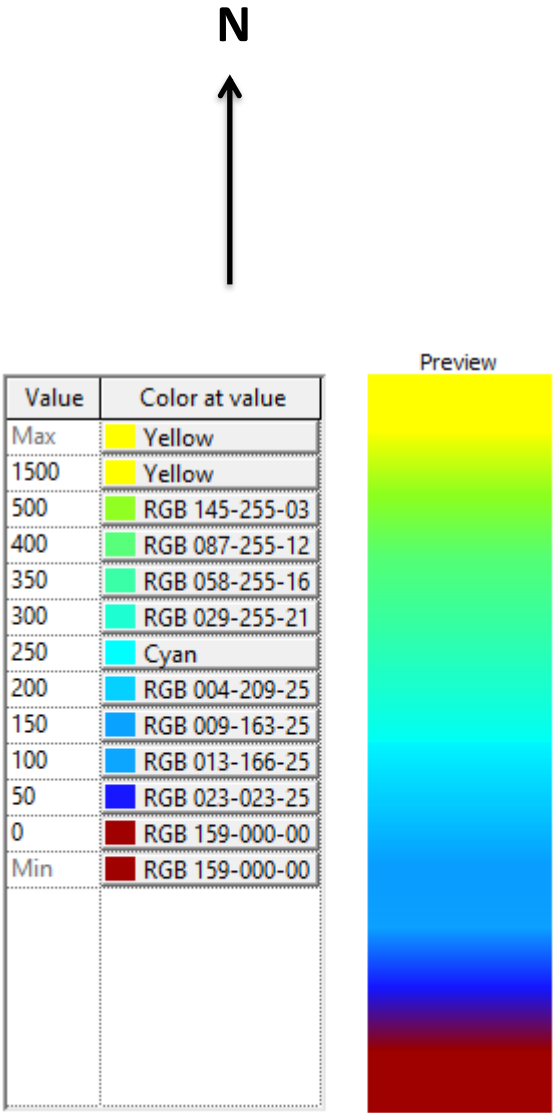
Using Software - Revit



December month Report



June month Report



Legend

Sustainability in Renovation

Passive Design

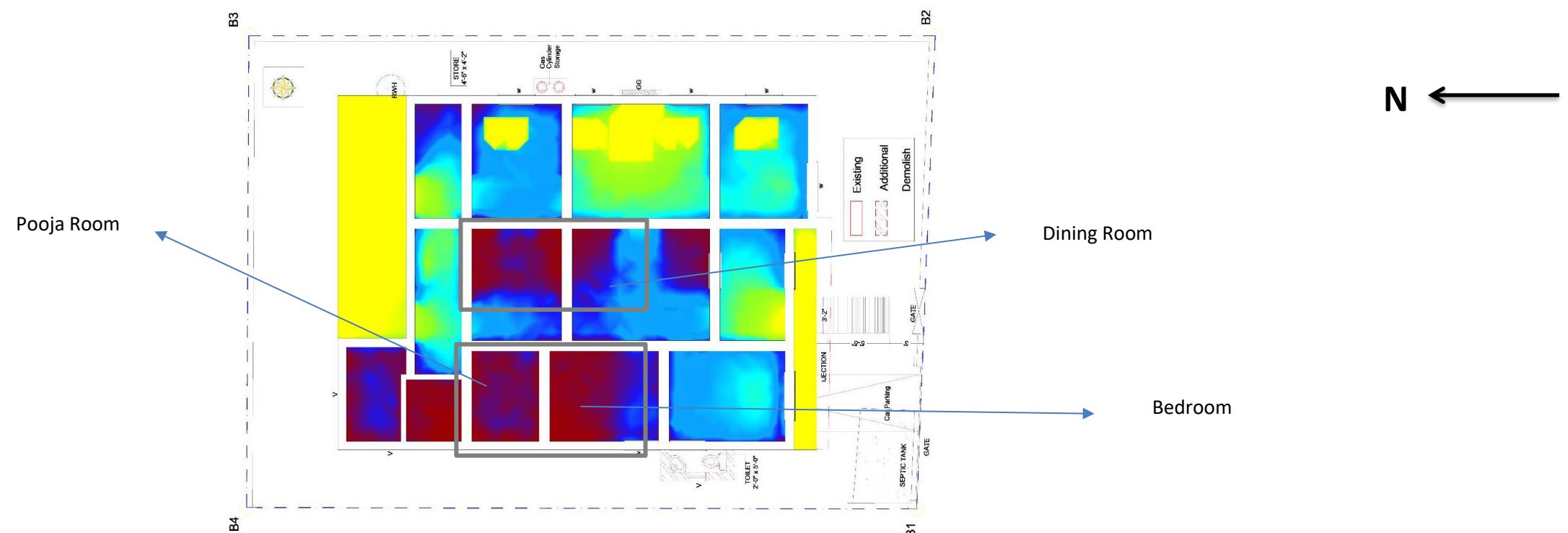
Passive design is an understanding of the seasonal weather patterns to design a space that requires minimal heating or cooling to be comfortable all year round. Passive design elements include orientation, insulation, double glazing, thermal mass, airflow, designing sunshade and adding elements.

In renovation of this projects, window glass can be changed as double glazing glass or some other glasses like Low Emissivity (Low-E) Coatings, Reflective Coatings, Gas filled glazing, Heat Absorbing Tints, Triple-glazed etc., which stops the heat and allows only the light to enter into the room.

Energy efficiency, capture and use

Passive daylighting strategies promotes the quantity and even distribution of daylight throughout a building by collecting natural light and reflecting it into darker areas of the building.

In this residence some areas like Bedroom which is located at west, Pooja room, Dining room and Kitchen does not receive enough daylighting. In these case consumption of electricity at day time will be more.



NEED FOR DAYLIGHT - lighting consumes about 25% - 40% of electricity in any building. Use of daylight can save or reduce it to half of its total energy consumption.

Some Daylighting strategies are:

- Allow daylight penetration high in a space. Windows located high in a wall or in roof monitors and clerestories will result in deeper light penetration and reduce the likelihood of excessive brightness.
- Reflect daylight within a space to increase room brightness. Ex: Light shelf
- Slope ceilings to direct more light into a space. Sloping the ceiling away from the fenestration area will help increase the surface brightness of the ceiling further into a space.
- Filter daylight. The harshness of direct light can be filtered with vegetation, curtains, louvers, or the like, and will help distribute light.
- Understand that different building orientations will benefit from different daylighting strategies; for example, light shelves-which are effective on south facades-are often ineffective on east or west elevations of buildings.

Water use and re-use

Renovations provide a unique opportunity to re-engineer the plumbing to suit the water-scarce world in which we live. The specific design of water system would depend on needs and the rainfall.

If we look at the four types of water we generally have available, the options for a new approach to water use in the home becomes clearer.

- Mains water

A clean water which is used for Bathing, Cooking, washing vegetables

- Rainwater

Can be used as a chlorine-free supply of freshwater for use in the home washing machine and flushing toilets and in the garden to keep those vegetables growing.

- Greywater

If treated, it can be used to flush toilets, water gardens and even to wash clothes.

- Blackwater

Blackwater (toilet water) requires biological or chemical treatment and disinfection before re-use. This can be done in your backyard - but you will need to get the right advice and the right system to avoid any health risks.

Considering the four types of water availability, the water system can be designed while renovating this residence.

Materials selection, use and re-use

Select building materials with the least environmental impact

1. Re-use existing materials from any demolition (this also minimizes waste).
2. Use recycled materials and those with minimal environmental impact.
3. Use renewable resources
4. Design for an extended lifespan (aim for over 100 years).
5. Design and build for de-construction, re-use, adaptation, modification and recycling.
6. Minimize the distance materials travel and select materials that assist passive-design heating and cooling of the house.

Recycled materials and Renewable materials can be used to construct the extension of house (First floor)

With up to 40 per cent of all waste coming from building sites, it will save the environment to minimize the waste coming from your renovation in some of the following ways:

- Re-use existing building materials in the construction.
- Recycle material that you cannot use. Ensure your builders separate and recycle all waste coming from the renovation including masonry, concrete, wood and metals.

Paints, composite wood, glues, carpets and many other building products can contain high levels of toxic chemicals (formaldehyde, benzene, trichloroethylene, etc.). These chemicals are released slowly and contribute to 'Sick Building Syndrome', which causes symptoms ranging from allergies, headaches and fatigue through to nervous-system disorders, cancer and death. Seek equivalent products that don't contain these chemicals.

Site Photos (while Renovation)



Front view



Back side view

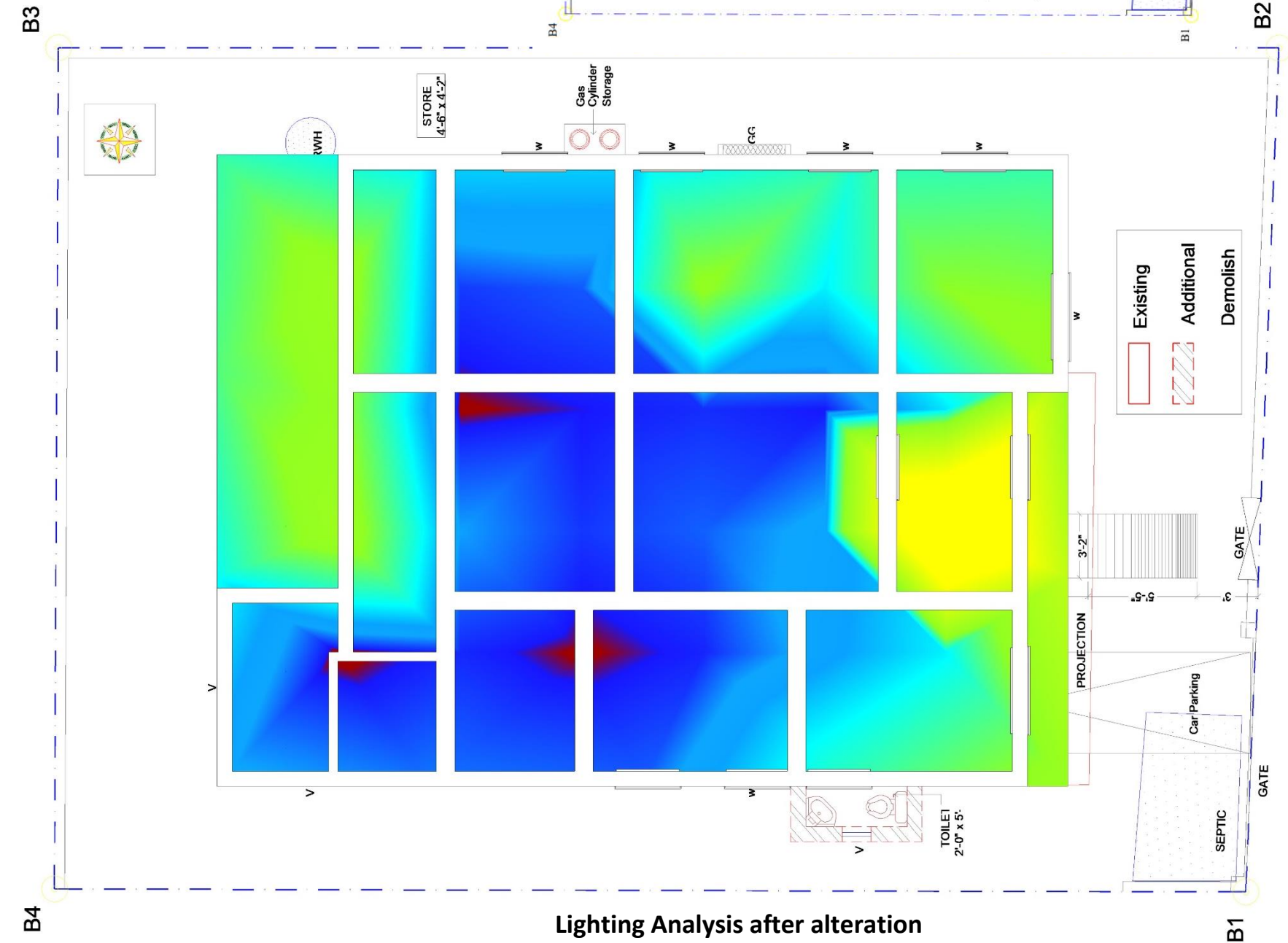


Formal living room



Formal living room

Alteration in walls
For Daylighting



Lighting Analysis after alteration

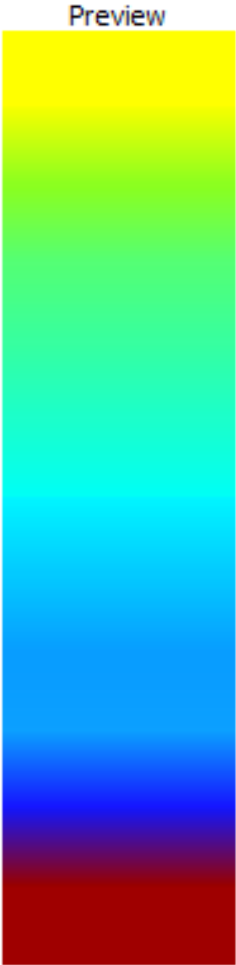
Providing Jalli walls

Increasing the window size

Additional window

N ←

Value	Color at value
Max	Yellow
1500	Yellow
500	RGB 145-255-03
400	RGB 087-255-12
350	RGB 058-255-16
300	RGB 029-255-21
250	Cyan
200	RGB 004-209-25
150	RGB 009-163-25
100	RGB 013-166-25
50	RGB 023-023-25
0	RGB 159-000-00
Min	RGB 159-000-00



Legend