RESIDENTIAL BUILDING

PLANNING WITH PROPER SUNLIGHT

MAJOR PROJECT REPORT

Submitted in partial fulfillment for the award of the degree of

Bachelor of Technology

In

Civil Engineering

Submitted by:

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CERTIFICATE

This is to certify that The project report on "**RESIDENTIAL BUILDING PLANNING WITH PROPER SUNLIGHT"** submitted by **K. Nikhitha(R170959)** is the bonafide record of the work carried out by them, is accepted as the Project Report submitted in partial fulfillment for the award of the Degree of Bachelor of Technology in Civil Engineering during (2022-23) at IIIT – RK Valley, RGUKT-AP

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DECLARATION BY STUDENTS

We declare that this written submission represents our ideas in our words and where other ideas or words have been included , we have adequately cited and referenced the original sources. We have conformed to the norms and guidelines given in the Ethical code of conduct of the institute. Whenever we have used the materials from other source, we have given due credit to them by citing them in the text of the report and giving their details in the references. Further, we have taken permission from the copyright owners of the sources, whenever necessary.

Project report submitted
By
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Date:
Place: RGUKT,RK Valley

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With regards,
K.Nikhitha(R170959)

ABSTRACT

Now a days everyone affected by deceases.by searching all the things the main issue comes from lack of sunlight. Sunlight is the main resource to avoid deceases and to lead a healthy and happylife.By providing the main resource that is shelter with proper sunlight we can avoid many deceases.Building planning made with software has time&cost saving & so many benefits are there. by creating the 3D modelling using vray feature gives the photographic view to the viewer.

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AIM OF THE PROJECT

RESIDENTIAL BUILDING PLANNING WITH PROPER SUNLIGHT

INTRODUCTION

INTRODUCTION

The basics needs of human existences are food, clothing's & shelter. From times immemorial man has been making efforts in improving their standard of living. The point of his efforts has been to provide an economic and efficient shelter. The possession of shelter besides being a basic, used, gives a feeling of security, responsibility and shown the social status of man.

Every human being has an inherent liking for a peaceful environment needed for his pleasant living, this object is achieved by having a place of living situated at the safe and convenient location, such a place for comfortable and pleasant living requires considered and kept in view.

Now a days everyone affected by deceases, the main cause is that lack of Natural light (Sunlight).if the planning of the house is done with the proper sunlight every thing will be perfect and healthy in all aspects.

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The architect has to keep in mind the basic principles of planning, building bye laws, environment, ventilation, natural light etc;

RESIDENTIAL BUILDING

Requirement for residential accommodation are different for different classes of people & depends on the income &status of the individual a highly rich family with require a luxurious building, while a poor man we satisfied with a single room house for even poor class family.

A standard residential building of bungalow type with has drawing room, dining room office room, guest room, kitchen room, store, pantry, dressing room, bath room, front verandah, stair etc., for other house the number of rooms may be reduced according to the requirements of many available.

PLANNING

It is a process of thinking about and organization the activities required to achieve a desired goal.

BUILDING PLANNING

Building planning is the arrangement of various component or unit of a building in a systematic manner so as to form a meaningful and homogenous structure to meet it's functional purpose.

MINIMUM FLOOR AREA & HEIGHT OF ROOMS

	FLOOR AREA	HIEGHT (m)
LIVING	10sqm (100sqft)	
	(breadth min 2.7 m or 9')	3.3 (11')
KITCHEN	6sqm (60sqft)	3.0 (10')
BATH	2sqm (20sqft)	2.7 (9')
LATTRINE	1.6sqm (16sqft)	2.7 (9')
BATH & WATER CLOSET	3.6sqm (36sqft)	2.7 (9')
SERVANT ROOM	10sqm (100sqft)	3.0 (10')
GARAGE	2.5*4.8 m (8'*16')	3.0 (10')
MIN. HIEGHT OF PLINTH		
FOR MAIN BUILDING	-------	0.6 (2')
MIN. HIEGHT OF PLINTH FOR		
SERVANT QUARTES	-------	0.3 (1')
MIN. DEPTH OF FOUNDATION	-------	0.9 (3')
THICKNESS OF WALL	20cms to 30cms	------
	(9" to13.5")	
DAMP PROOF COURSE	2cms to 2.5cms	thick full width of
	(3/4" to1")	plinth wall

BASIC PRINCIPLES OF PLANNING

- Aspect
- Prospect
- Sanitation
- Privacy
- Grouping
- Flexibility
- Economy
- Circulation
- Furniture Required
- Roominess
- Location
- Function etc...

ARRANGEMENT OF ROOMS

- LIVING ROOM
- KITCHEN
- STORE ROOM
- BED ROOM
- SDY RTUOOM
- BATH & W C
- DRESSING ROOM
- VERANDAH
- STAIR CASE

LIVING ROOMS:

This is the area is for general use. Hence the living & drawing room should be planned near the entrance south east aspects. During colder day the sun is towards the south & will receive sunshine which is a welcoming feature. During summer sunshine ti the northern side & entry of sunrays from southern or south – east aspects do not arise.

KITCHEN:

Eastern aspects to admit morning sun to refresh & purity the air.

READING ROOM/ CLASS ROOM:

North aspects this makes more suitable since there will be no sun from north side for most part of the year.

BED ROOM:

Bed may also be provided with attached toilets, there size depends upon the number of beds, they should be located so as to give privacy & should accommodate beds, chair, cupboard, etc., and they should have north or – west south – west aspect.

BATH & W.C:

Bath and w.c are usually combined in one room & attached to the bed room and should be well finished. This should be filled with bath tub, shower, wash-hand basin, w.c, shelves, towels, racks brackets, etc., all of white glazed tiles. Floor should be mosaic or white glazed files.
Instead of providing all bed room with attached bath and W.C separated baths & latrines may also be provided

VERANDAH:

There should verandah in the front as well as in the rear. The front verandah serves setting place for male members & weighting place for visitors. The back verandah serve a ladies apartment for there sitting, working controlling, kitchen works etc., verandah project the room against direct sun, rain & weather effect. They used as sleeping place during the summer and rainy season & are used to keep various things verandah also give appearance to the building. The area of a building may vary from 10% to 20% of the building.

STAIR CASE:

This should be located in a easily accessible to all members of the family, when this is intended for visitors it should be in the front, may be on one side of verandah. It meant for family use only, the staircase should be placed the rear. The stairs case should be well ventilated & lighted the middle to make it easy & comfortable to climb. Rises & threads should be uniform through to keep rhythm while climbing or descending.

Some helpful points regarding the orientation of a building are as follows:-

- Long wall of the building should face north south, short wall should face.
- East and west because if the long walls are provided in east facing, the wall.
- Absorb more heat of sun which causes discomfort during night.
- A verandah or balcony can be provided to wards east & west to keep the rooms cool.
- To prevent sun's rays & rain from entering a room through external doors & windows sunshades are required in all directions.

ARCHITECTURAL SOFTWARES

ARCHITECTURAL SOFTWARE:

Softwares are used for Planning a building with accuracy(zero errors) and to save time & cost.
Different types of ARCHITECTURAL SOFTWARES are:

- AUTOCAD SKETCH
- UP AUTODESK REVIT
- RHINOCEROS 3D
- SMARTDRAW
- SWEETHOME 3D
- FREE CAD
- MAYA CHOAS
- VRAY
- AUTDESK CIVIL 3D
- ENSCAPE
- ALL PLAN
- AUTOCAD ARCHITECTURE
- PLANNER 5D
- LUMION etc....

SOTWARES USED:

AUTOCAD:

- Autocad is a commercial Computer aided design and drafting software
- application. Developed in 1982 december by Autodesk company.
- Many architects use Autocad as 2D drawing tool for creating floor plans, elevations and sections.

SKETCHUP:

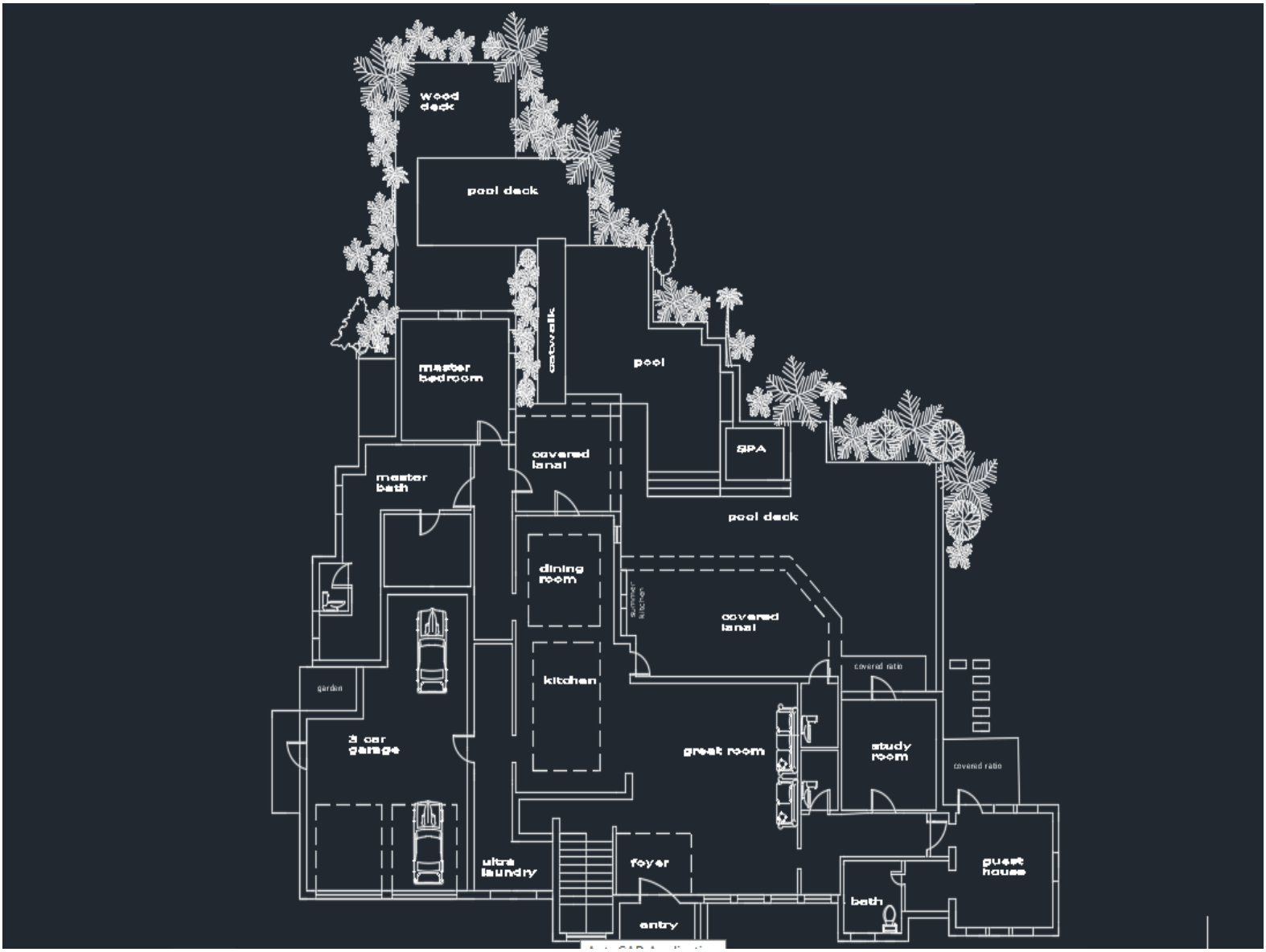
- Sketchup is a 3D modelling program that can be used to create 3D objects in a 2D environment.
- Whether you planned to model for 3D printing or other purposes, sketchup offers all the tools needed to produce professional and quality results even for a beginner.
  Sketchup was created in August 2000 as a 3D content creation tool andwas Envinsioned as a software program for design professional.

VRAY

- Vray is a 3D Rendering software that combine both real time and photorealistic rendering.

DRAWINGS

AUTOCAD PLAN

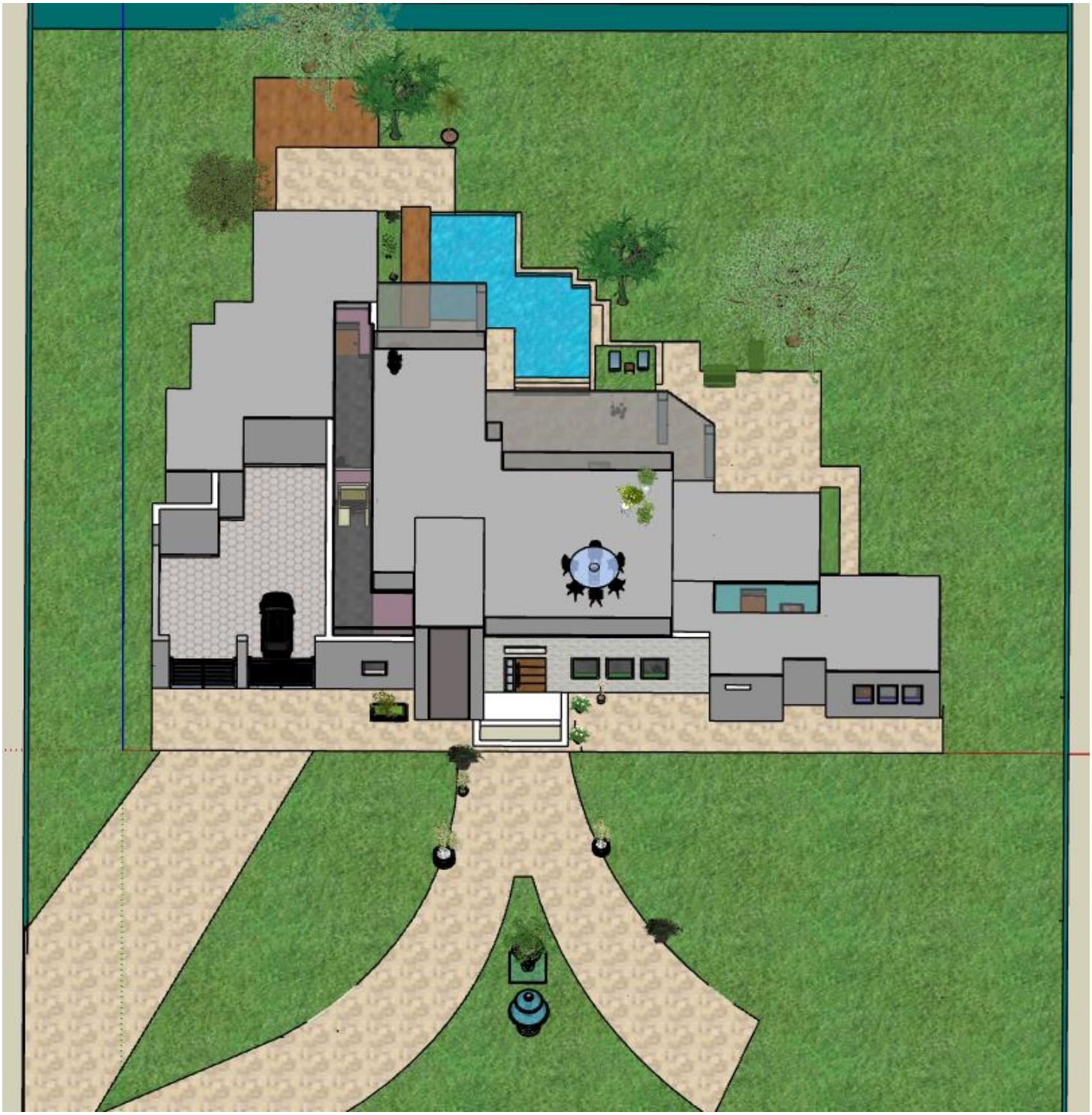


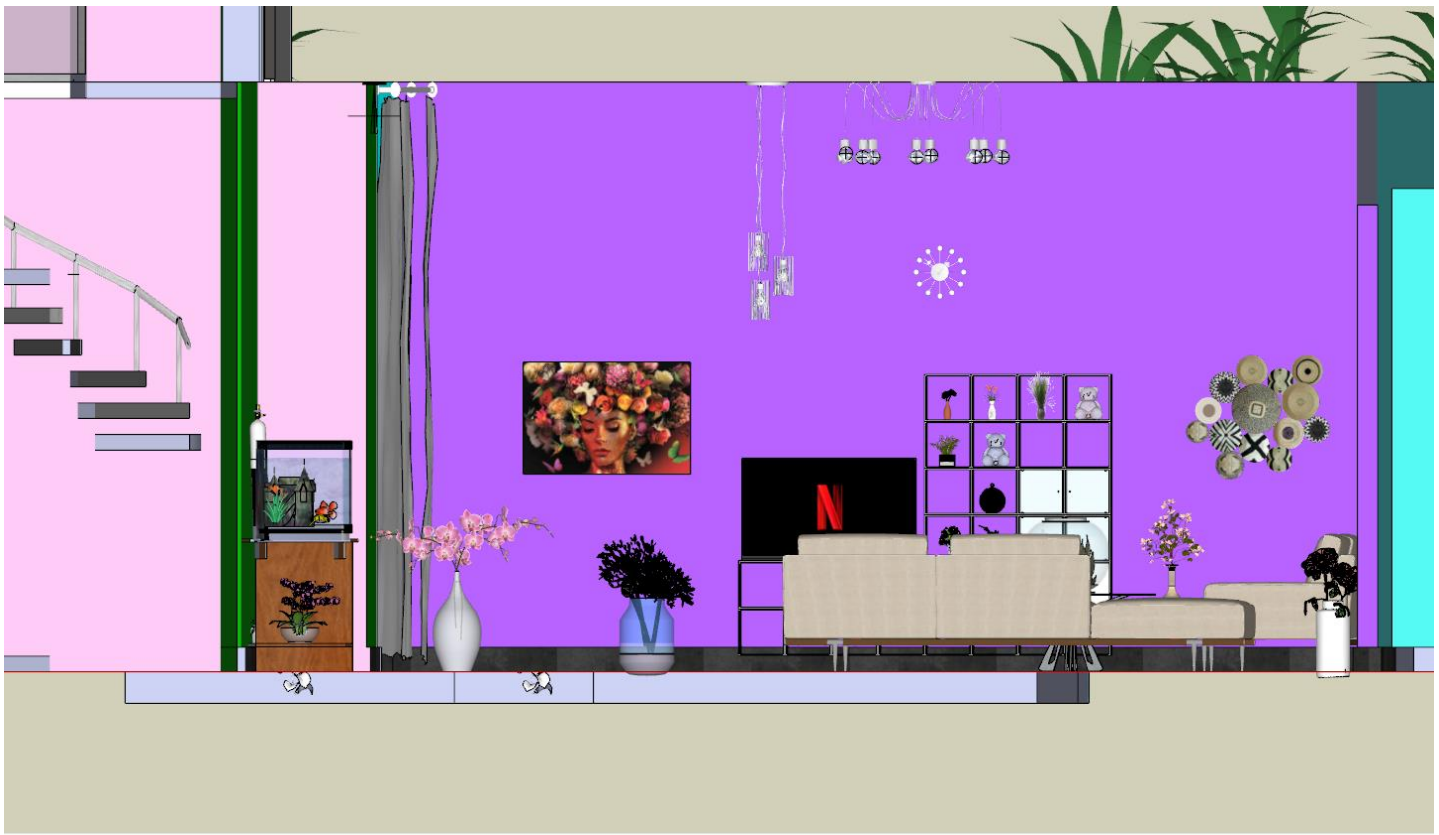
3D PLANNING IN SKETCHUP

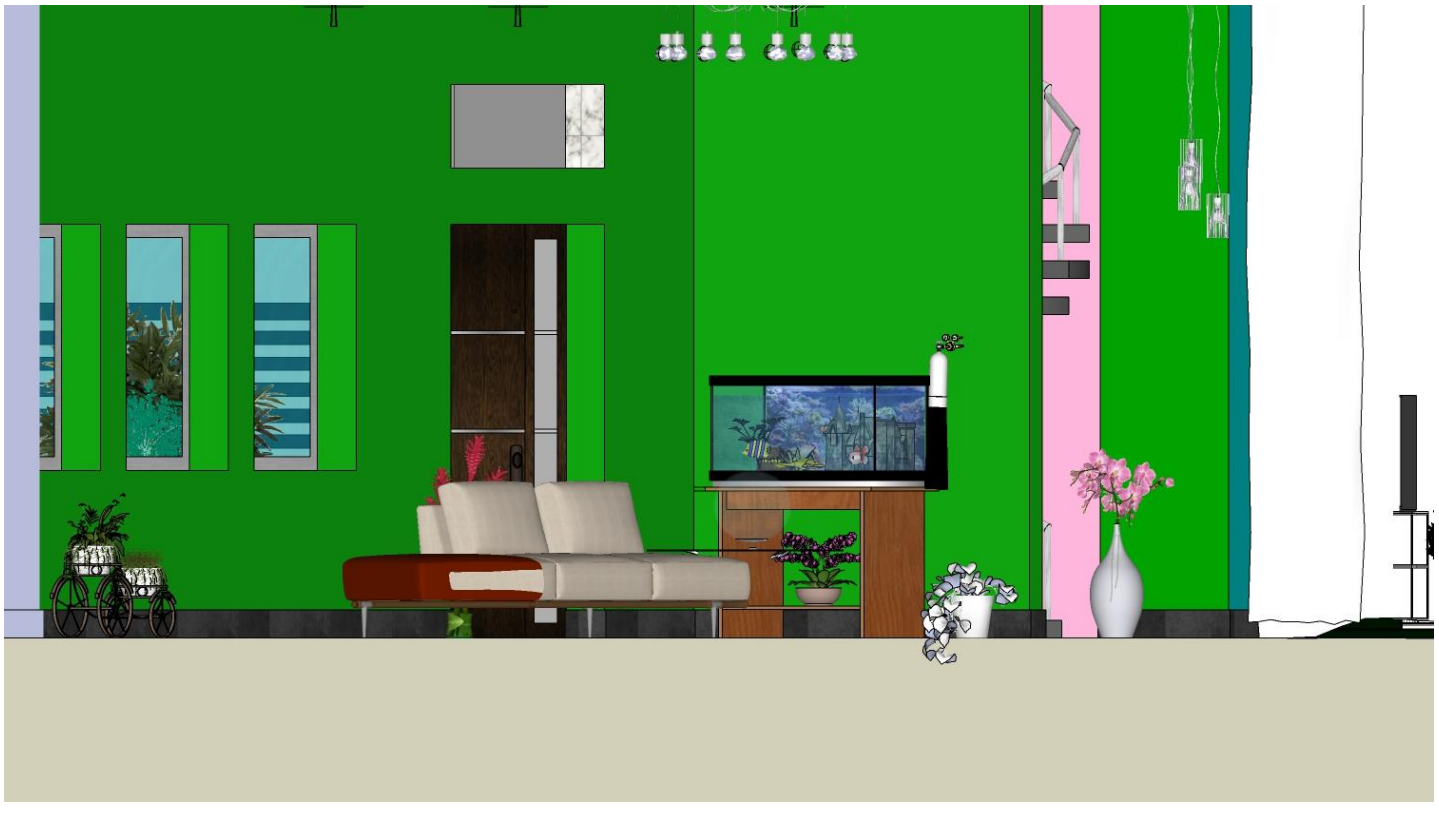
FRONT VIEW

BACK VIEW

TOP VIEW:-





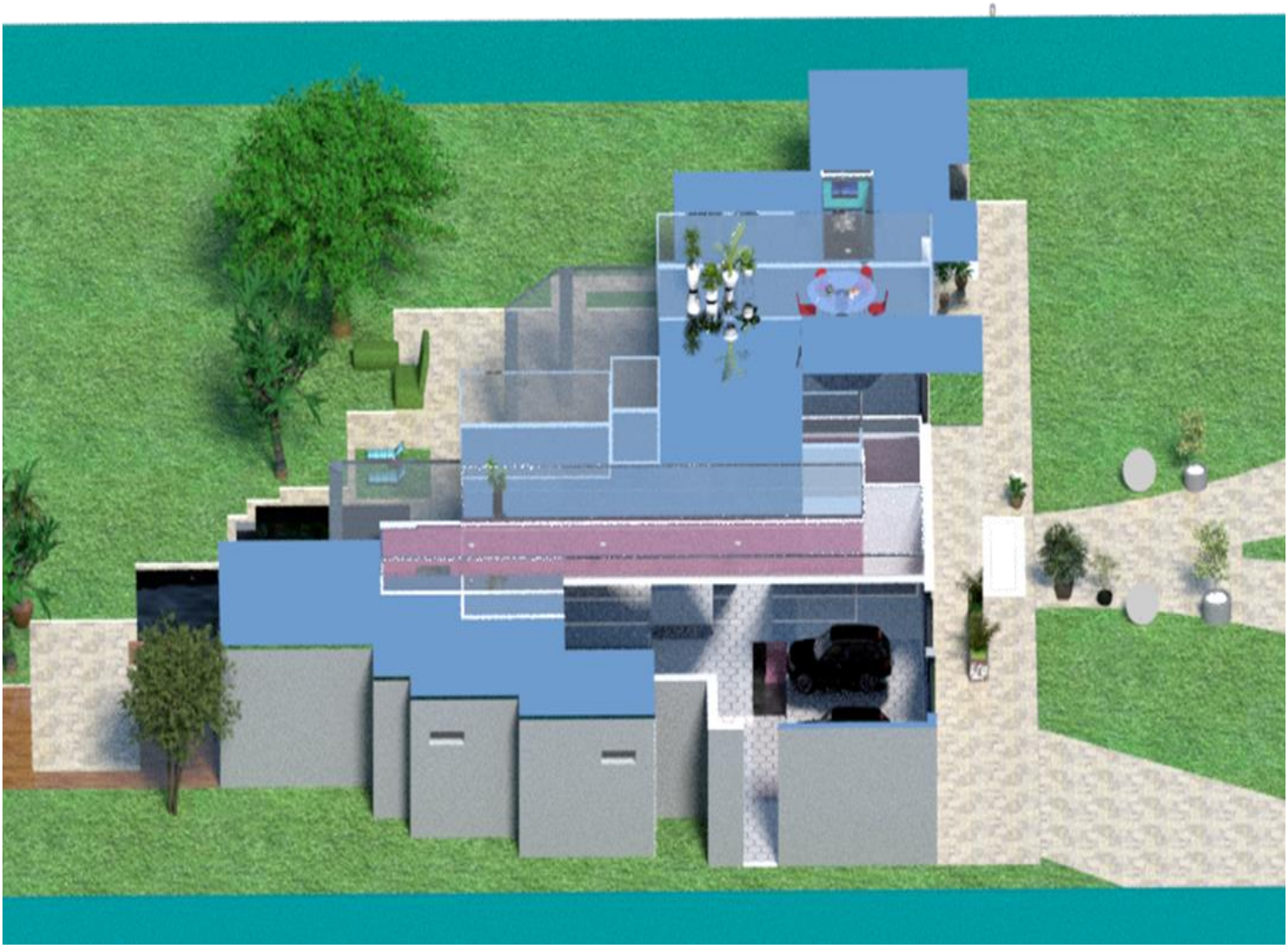


3D PLANNING AFTER VRAY

DAY VIEW:-

FRONT VIEW

SIDE VIEWS:-

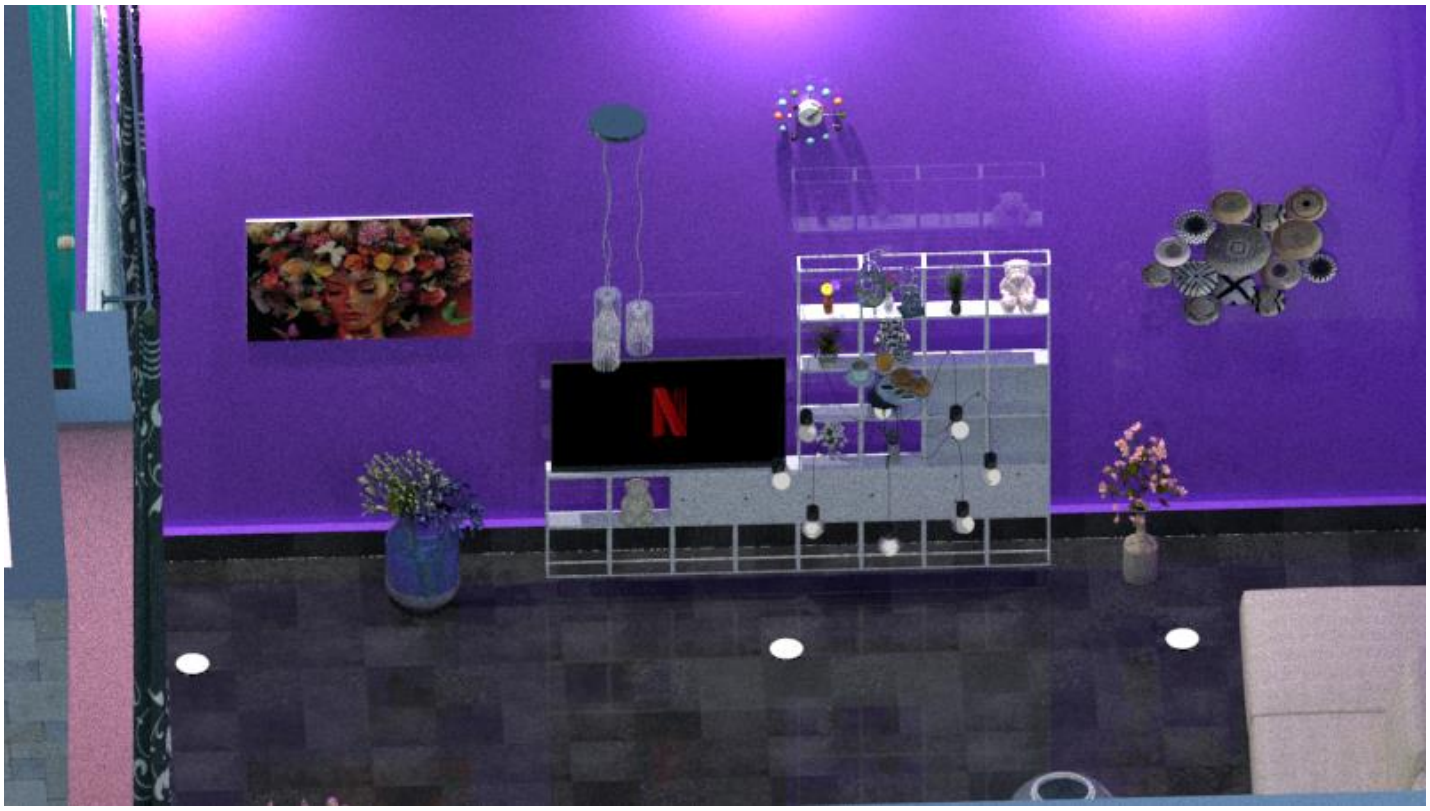


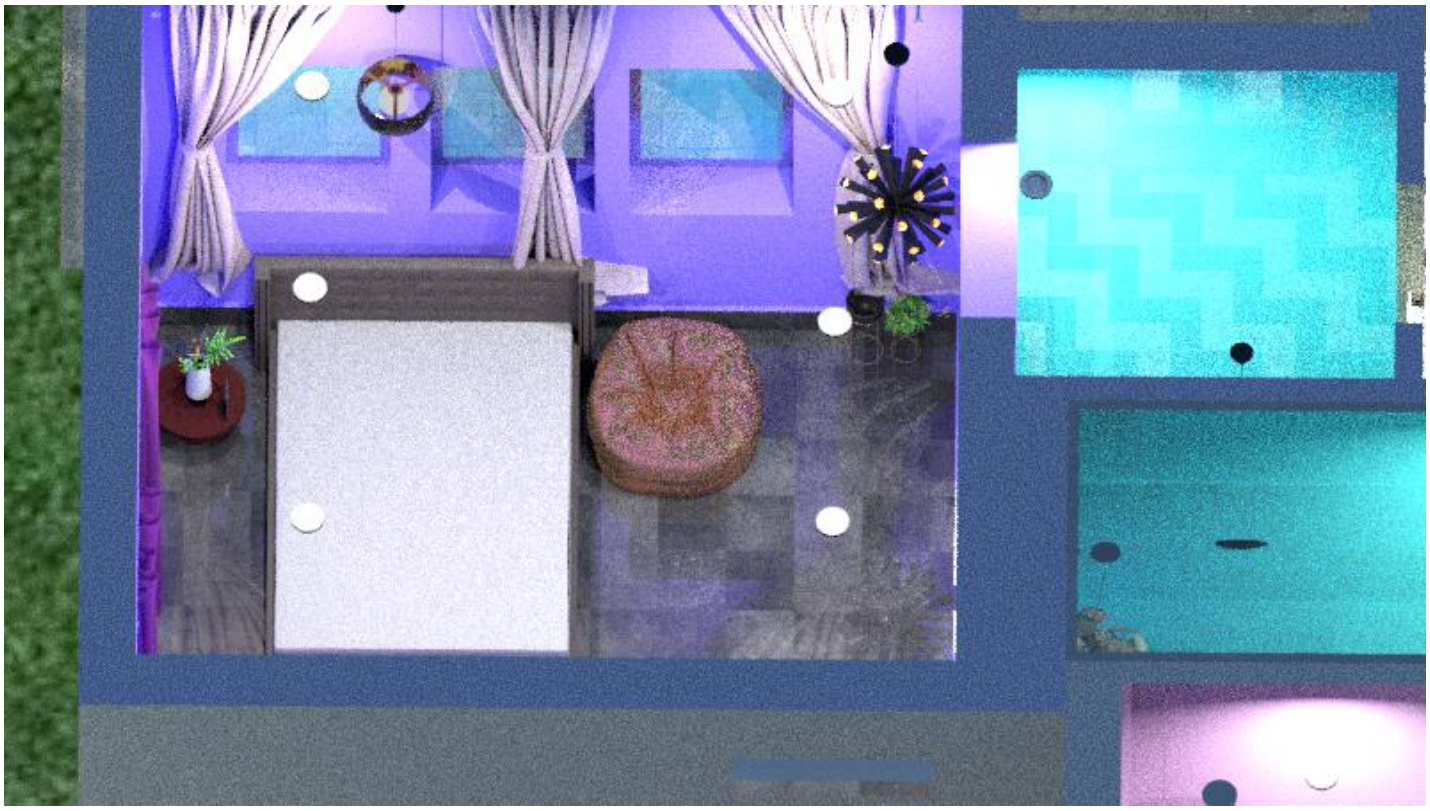
NIGHT VIEW:-

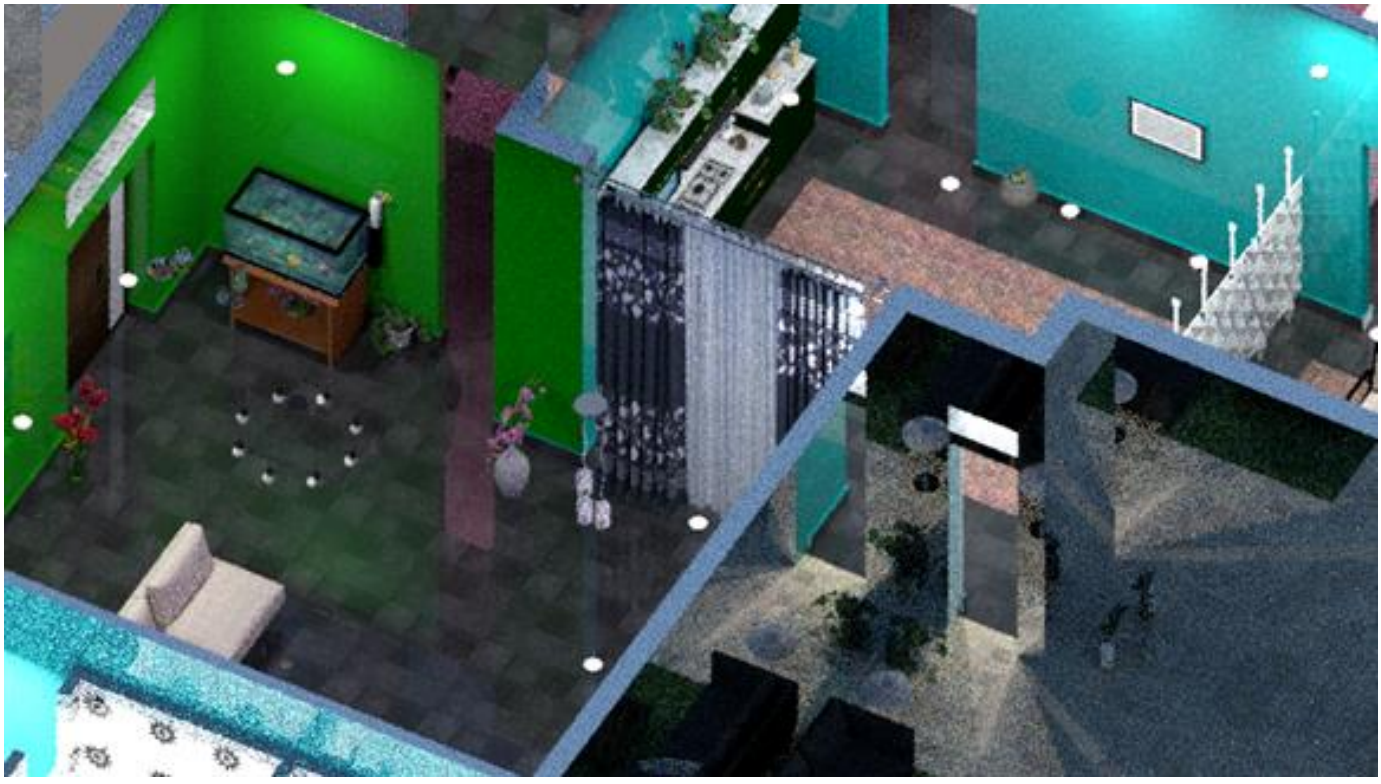
FRONT VIEW:

TOP VIEW

INTERIOR DESIGN:-







CONCLUSION

We can conclude that there is difference between the theoretical and practical work done. As the scope of understanding will be much more when practical work is done. As we get more knowledge in such a situation where we have great experience doing the practical work.The Sunlight effect on house is depends on Aspect, material used for doors and windows and the Projections of the house. The sketchup software which is used in this for 3D view and to get photographic view makes the viewers effective towards building and they come to know how the building looks like after construction.