

**DESIGNING OFFICE CUM RESIDENTIAL
UNIT: FACILITATING PROFESSIONALS TO
WORK FROM HOME**

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DESIGNING OFFICE CUM RESIDENTIAL UNIT: FACILITATING PROFESSIONALS TO WORK FROM HOME

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CHAPTER I

INTRODUCTION

Everyone dreams of simple, unassuming and safe space to live a life at minimum cost which is functional and satisfactory to the inmates of the space, where one can express one's own choice and individuality. The vocabulary of design is constantly being reinterpreted, and in the context of the modern age, reflects new materials and new technologies. It is important to note that architecture, space planning, and the decorative arts are inevitably a reflection of a way of life. Before attempting to reconstruct ancient buildings and spaces, one must be aware of how these structures or spaces were used, and how man, woman, and society in general behaved in them (Kubba, 2003).

Modern research shows that the physical work environment can often play a pivotal role in attracting and retaining personnel, which is why professional planners and designers expend so much effort trying to understand and resolve their clients' needs. A recently conducted survey of 200 corporate decision-makers for Productive Workplaces lists four major ways in which interior design impacts office productivity and efficiency. They are access, comfort, flexibility, privacy (Kubba, 2003).

Nowadays a crisis named Coronavirus outbreak has disrupted the lives of Individuals. The coronavirus has changed how we work, play and learn schools are closing, sports leagues have been cancelled, and many people have been asked to work from home. ⁽¹⁾ It has been forced to work from home since early March in an effort to stop the spread of COVID-19. Every economic shock leaves a legacy. The deadly coronavirus will be no different. This time it's a public health emergency that's shaking up the world economy. In just a few weeks, Coronavirus has changed how we meet and greet each other, how we work and how our children are educated. ⁽²⁾

Offices around the world are empty. Our work environment is suddenly being reinvented. Many others are hoping to make their home office more of a permanent work space in the future. Professionals are actively discussing how they can make remote work more of an option in the future. ⁽³⁾

India's young workforce often has emigrated from other cities and lives in shared spaces. They typically do not have a quiet workplace at home supported by adequate power back up and reliable high-speed internet. There are not enough tools available to measure their availability, productivity and engagement from the remote work location. ⁽³⁾

Once this crisis is over, a number of companies will go back to their old habits. However, for many, the new reality of working from home as a viable alternative is here to stay. The world of work is changing like never before and dining room tables have become actually offices for many. Remote working is an idea whose time has come. ⁽³⁾

Working from home is a luxury only few of us can afford, but it's also a challenge to set up an office without spoiling the design aesthetics of the house, especially when space is at a premium. Many a home these days is found doing double duty - that of an office as well. Professionals of all hues, from lawyers to graphic designers to freelancers, are increasingly working out of homes. But a home with its infinite distractions is not the easiest place to 'work'. ⁽⁴⁾

The outcomes of these arrangements consist of both positive and negative. The working from home provides to employees more opportunity to focus on their work tasks. The regular face to face contacts with co-workers significantly reduce, when working away from the office. In the absence of physically monitoring, the employees have greater discretion in how, under what condition and when they complete allocated tasks. This also increases flexibility among the employees over performance of work. Work from home enables more autonomy in job, which is likely to be associated

with more productivity. Decreased control by colleagues or the supervisors is an important drawback of work from home. This is true for both the organization and the employee. Most of the IT companies included work from home in their leave policy of employees in order to increase the productivity (Jacobs, 1993).

One of the primary reasons for this shift is the change in lifestyle over the past few decades. This is usually seen in younger generations, there is change in the way in which people desire to live. Urban living provides the platform for people to balance their busy work lives with a more active and social way of life. Workplaces which are close to home and public transport not only reduce transit time, increasing time for leisure, but significantly reduces the reliance on private vehicles. It is also suggested that living in high-density communities offers occupants an increased sense of security, particularly for the elderly, single women and younger people (Jacobs, 1993).

However, the space planner is brought in after completion of the building shell and asked to work within the constraints of an existing space, or in the case of new construction, a shell. A well-designed work environment is one that is dynamic and can be modified to address new conditions and work habits in line with the organization's continuous development and growth. Importantly, these lessons need to inform not only how we can adapt in the near term, but how we create future design strategies. Because we expect to see an ebb and flow of COVID-19 cases over the next year or more, these ideas are intrinsically long-term. When we first were advised to work from home, many saw this as a small hurdle in time before returning to office normalcy. Naturally, stopgap measures ensued like propping up laptop monitors and using couches for office chairs. But we know now that this is a kind of new normal, and so an investment in our workspace at home needs to be made while balancing it with the rest of our space (Lindberg, 2020).

The concept of the workplace is shifting from ideas of a physical location to a state of mind. Physical location of a working place has been gradually losing its importance due to growth of information technology. Modern working life adapted the system of work from home. Work from home referred as the concept of working in a concern where the employees do not have to commute to a central and single place of work. It is also called telecommuting and remote work. The development in information and communication technologies has made it very easier to complete the tasks outside of the workplace because of good internet connectivity as well as reasonable price, more user-friendly computers, laptops and other similar gadgets. This made working from home easier as well as feasible to perform tasks and likely reduced the employer costs of providing such arrangements. Today it is the need of an hour to have a working place at home from where it becomes easy to continue work during such crisis. The residential design aims to facilitate the fulfilment of special needs and life objectives of users into their environments. In fact, "good design directly impacts the quality of life" (Brawley, 2001).

Residential interior space designing is a creative art which can transform an ordinary house into a very happy lively home. The purpose of interior designing is to make the home liveable according to the needs and requirement of the family and the space characteristics. The interior designer should be able to satisfy the functionalism, expressiveness and beauty. It is not the decorating of the house; but it is the total designing of the house. The design should be such that it should be able to express the personality, aesthetic taste of the family living in through proper designing of the space, proper selection of furniture pieces, accessories and furnishing. (E.g. light, color, texture, furniture (Calkins, 1988). While designing the residence a need is felt today to have an office at home for making a pleasant and comfortable place conducive to the profession.

One should know the needs and preferences of professionals who prefer to work from home before proposing a design of office combined with residential unit.

JUSTIFICATION

In India, interior designers have concentrated on designing of commercial building and residences separately, but little efforts has been given on designing the interior space for professionals like doctors who mostly prefer to plan residential unit with small clinic and teachers plan small classes or tuition room with their residence.

Review of literature revealed that much need to be explored on Residences combined with offices which motivated the researcher to study this important topic. This research will be beneficial for the Department of Family and Community Resource Management since interior designing is a course been offered to the students pursuing the graduate and post graduate programme. The research would also be meaningful to the students studying interior designing as they would get knowledge about the utilization of space for designing Office cum Residential Unit. Many studies have been conducted in relation to residential and commercial areas but very few researches specifically on Designing Office cum Residential Unit. The present study will focus on design development for office cum residential unit which is the need of our due to the prevailing scenario and people prefer to work remotely from home. Therefore, this study would offer guidance on how to create a residential space look elegant, without neglecting any of the areas as well as combine the Office area for ease of working during the difficult times when we are forced to work from home. The study will be helpful for the Professionals, interior designer, architects and civil engineer for the development of their design and proper utilization of the space. The need and preferences of the client were considered for designing an office cum residential unit. The designing of the residential unit with an office area will be helpful in creating more conducive atmosphere to work from home.

With this background the present study is undertaken with the following objectives.

OBJECTIVES

1. To find out the needs and preferences of the client for designing an Office cum Residential unit.
2. To propose the design for office cum Residential unit for facilitating Professionals to work from home.

CHAPTER II

REVIEW OF LITERATURE

The review of literature is an essential part of any research. This chapter provides the literature related to the present research topic. An effort has been made to collect the review related to the present research by referring various sources. The review of literature consists of technical writing and data from previous scientific papers, journal articles, books, reports and other theses on the same subject (Kamath and Udipi, 2010). In order to make the review clear, the present chapter is classified into two sections:

Section 1- Theoretical Orientation

Section 2- Empirical Studies

2.1. Theoretical Orientation

2.1.1. Definition of profession and its characteristics

2.1.2. Advantages and disadvantages of having office at home for professional

2.1.3. Important points to consider while designing office combined with residence

2.1.4. Planning Guidelines for designing office combined with residence

2.1.5. Functional and Aesthetic Aspects

2.1.6. Designing a professional office at home

2.1.7. Materials used for designing office cum residential area

2.2. Empirical Studies

2.2.1. Studies Conducted outside India

2.2.2. Studies Conducted within India

2.3 Market survey

2.4. Conclusion

2.1. Theoretical Orientation

Theoretical orientation is the section which describes about the theoretical content related to the topic of the study. These are discussed independently in the succeeding description.

2.1.1.1 Definition of profession

Definition of profession is given by various authors, they are as follow: Australian Council of Professions, (2003) defined “profession as a disciplined group of individuals who adhere to ethical standards and who hold themselves out as, and are accepted by the public as possessing special knowledge and skills in a widely recognised body of learning derived from research, education and training at a high level, and who are prepared to apply this knowledge and exercise these skills in the interest of others”.⁽⁵⁾

It is inherent in the definition of a Profession that a code of ethics governs the activities of each Profession. Such codes require behaviour and practice beyond the personal moral obligations of an individual. They define and demand high standards of behaviour in respect to the services provided to the public and in dealing with professional colleagues. Further, these codes are enforced by the Profession and are acknowledged and accepted by the community.⁽⁶⁾

Professions are based on scientific and philosophical facts acquired through scholarly endeavour. Individuals who enter a profession do so for reasons that distinguish them from other work or vocations. They understand that their work renders a unique public service with a scientific or philosophical basis and/or body of knowledge that requires an extended period of academic and hands-on preparation. Professions are also based on specialized skills necessary for the professional to perform the public service (Boone, 2001).

UK Inter-professional Group defines a profession as an occupation in which an individual uses an intellectual skill based on an established body of knowledge and practice to provide a specialised service in a defined area, exercising independent judgement in accordance with a code of ethics and in the public interest.⁽⁷⁾

A Professional' is someone who derives their income from their specific knowledge or experience – as opposed to a worker, hobbyist or amateur without formal education. This meaning still carries through today to areas such as sport. However, in the Professions, a “Professional” has a broader meaning, typically around some moral or ethical foundation within the practice of a specific and usually established expertise.

A Professional is a member of a Profession. Professionals are governed by codes of ethics and profess commitment to competence, integrity and morality, altruism and the promotion of the public good within their expert domain. Professionals are accountable to those they serve and to society.⁽⁸⁾

The term 'Profession' defined as the occupation which requires some specialised study and training, and the purpose of which is generally to provide skilled services and guidance in lieu of a definite fee or remuneration. A profession is a calling and implies acquisition of a fond of knowledge, range skills and their application in service of humanity. Their services are rendered by a professional may be direct as like the teachers and doctors or indirect as is in the case of teacher educators i.e. teacher of a teacher.⁽⁹⁾

“A profession is a group of people in a learned occupation, the members of which agree to abide by specified rules of conduct when practicing the profession”.⁽¹⁰⁾

Professionals are accountable to those they serve and to the society. The term professional refers to anyone who earns their living from performing an activity that requires a certain level of education, skill, or training. There is typically a required standard of competency, knowledge, or education that must be demonstrated (often in the form of an exam or credential), as well as adhering to codes of conduct and ethical standards. There are many different types of professionals like Accountant, Teacher, Technician, Labourer, Physical, Commercial Banker, Engineer, Lawyer, Psychologist, Pharmacist, Dietician, Research Analyst, Midwife, Mechanic, Dentist, Electrician, Consultant, Investment Banker, Programmer.⁽¹¹⁾

2.1.1.2. The Characteristics of a Profession

Professional characteristics refer to the qualities of a person. Professionalism includes standards for behaviour and the employee's ability to embody the company's values and do what their employer expects from them. It ensures that customer relationships are maintained; employee interactions are positive and meets its goals and objectives.

Great responsibility

Professionals deal in matters of vital importance to their clients and are therefore entrusted with grave responsibilities and obligations. These inherent obligations, professional work involves circumstances where carelessness, inadequate skill, or breach of ethics would be significantly damaging to the client and/or his fortunes.

Accountability

Professionals hold themselves ultimately accountable for the quality of their work with the client. The profession may or may not have mechanisms in place to reinforce and ensure adherence to this principle among its members.

Based on specialized, theoretical knowledge

Professionals render specialized services based on theory, knowledge, and skills that are most often peculiar to their profession and generally beyond the understanding and/or capability of those outside of the profession.

Institutional preparation

Professions typically require a significant period of hands-on, practical experience in the protected company of senior members before aspirants are recognized as professionals. After this provisional period, ongoing education toward professional development was compulsory. A profession may or may not require formal credentials and other standards for admission.

Autonomy

Professionals have control over and, correspondingly, ultimate responsibility for their own work. Professionals tend to define the terms, processes, and conditions of work to be performed for clients.

Clients rather than customers

Members of a profession exercise discrimination in choosing clients rather than simply accepting any interested party as a customer.

Direct working relationships

Professionals consistently work directly with their clients rather than through intermediaries or proxies.

Ethical constraints

Professionals are bound to code of conduct or ethics specific to the distinct profession. Professionals also aspire toward a general body of core values, which are centred upon an uncompromising and unconflicted regard for the client's benefit and best interests. ⁽¹²⁾

2.1.2. Advantages and disadvantages of having office at home for Professional

Advantages of having office at home for professional

The advancement of technology has brought the change for future to work remotely. This allows professionals to save money on office space, and has shown to increase productivity and overall happiness. Here are some of the main advantages of having office at home for professional.

Flexibility

The flexibility to determine one's own work hours to some extent is the most important aspect. One can also determine its environment, lighting, temperature, setting, and mood; basically work in the framework that suits best and makes happiest and most productive.

Less distraction

The distractions, unnecessary interruptions, unimportant meetings can all be avoided if one is safely at home and sealed off in its own environment.

Proximity to home and family

The physical proximity to family and the convenience of being at home are tremendously comforting. For parents it can be especially pacifying to know that they are very near to their children and available should they be needed for any reason. This also applies in the case of elderly care.

Less stress

The stress of transportation is extremely counterproductive and can lead to dissatisfying the workers, who are already exhausted and worn before they have even begun their day. This is especially true when the workplace is far from the office. These helps to support ones mental and physical health. The time savings can allow to focus on priorities

outside of work, like getting extra sleep in the morning, spending more time with family, getting in a workout, or eating a healthy breakfast.

More productivity

Removed from the stresses and distractions of the workplace and working independently in preferred environment at their own space, professionals are often happier and more productive.

Better health

The long commutes, when a day spent getting to and from the workplace both physical and mental health are adversely impacted; the former as the exercise hours are usually the first to go and the latter due to the stresses associated with both the commute and the workplace itself. By working at home the commuting time saved enables one to resume physical exercise (ideally from home), as well as to take care of one's general physical and mental well-being. ⁽¹³⁾

Disadvantages of having office at home for professional

There are certain disadvantages for having office at home like family demands more attention, difficulty in concentration, stress, overworking, lack of motivation etc., which is explained as follow:

Children and family demand more attention

The majority of the people face the problem of children or family demanding more attention from them while they work and many of them either end up working late or not being able to give full attention towards it.

Difficulty concentrating on work

This is also a major factor that many people face while working from home it find difficult to concentrate on work and constantly get distracted one way of the other. While the family is just one factor that breaks their concentration, other concentration killers include noise from family or neighbourhood activities or them getting distracted just

by looking outside the window and observing the beautiful view of their backyard or their children playing.⁽¹⁴⁾

Stress

When there is some problem, one might feel stressed. In the office usually it would not happen, because the colleagues could help to solve the problems.

Overworking

Sometimes one might lose a boundary between work and home. They might forget that they are still working and now need to take a break.

Lack of Motivation

Motivation drives people to power on and achieve their goals. Working at an office with employees with a common goal and purpose, or having a liveliness talk with a senior at work, can be great sources of external motivation. Whereas, working from home lacks that kind of environment. Lack of motivation can make an employee's life difficult, and one might have a hard time continuing work.

Lack of community and teamwork

Some employees are quite excited about the idea of working alone, without the distractions of the workplace, some might find it difficult to spend long hours and collaborate with only a computer screen and no face to face interaction and communication with team members.⁽¹⁵⁾

2.1.3. Important points to consider while designing office

While designing office combined with residence there various important points to consider before planning the space. The various important points are explained below:

Furniture Layout

The furniture layout can be planned according to the requirement of the professional, the working desk main table, storage space, waiting area,

conference area etc. consider all work-related items, equipment, accessories, and space in office while at the same time maximizing ones desk and storage space. The working desk supports with laptop or desktop computer and all work-related office items according to the professional preferring for most of the day. An L-shaped desk to efficiently accommodate all of one's office equipment and supplies and keep them easily within arm's reach. If one have the space and require more area to work as well as meet with clients, a U-shaped desk allows for a very professional presentation while providing a more storage and surface area.

Office Space

The space of the office should be according to the professional work, which would be done over there. According to the furniture requirement and placement the space would be occupied with clearance space between them. The ideal space in one's home was free from work-time distractions and has a door, both of which make it easy to divide work time and space with its personal time and space to create greater work balance.

Lightings

Good lighting is so important. Daylight is the most evenly balanced source of white light available, in that sunlight contains an almost equal proportion of each color of the spectrum. A high-quality task light is essential and sufficient light is required in office. If home office is in a basement or a room without windows, look for daylight-replicating light sources that provide quality, energy-efficient, full-spectrum lighting. For most eye comfort, a yellow-cast illumination is best. It is the color of brightness, and midway through the color progression from cool to warm. Don't place overhead lighting directly above computer screens, and don't put a computer screen directly in front of a light source. It causes glare and eyestrain.

Privacy

While considering the office spaces, privacy comes in the top of the list of priorities. Portable room dividers or screens to help shield ones work area from nearby household activities. A bookcase that effectively doubles as a room divider and ample storage was another practical alternative, if a separate room was there for office than it would be best area for working.

Equipment

The speed and efficiency are important when having office at home. It requires a separate phone line for its office to ensure there's no conflict between home and business lines. Make sure that one's phone, landline or mobile, has the capability for messaging, conferencing and speaker functions. The latest equipment's can be planned according to the professions requirement and the budget.

Ergonomics

Mostly spending a lot of time sitting at desk and working. When looking for one's perfect chair, be sure to prioritize ergonomics to ensure one's body was appropriately supported and positioned throughout the workday. One can explore the possibility of footrests, ergonomic mouse instruments shaped to fit its hand and soft keyboard pads that allow relaxation for the wrist. Ergonomically designed office equipment enhances the experience towards its desk while making ones time at work that much less stressful. It's important that the time to be spend at work should be comfortable. If one feel good in one's chair, and at ones desk, within easy reach of the essential items that make ones work possible, that one's time spent will be more efficient and productive.⁽¹⁶⁾

Consideration of Budget

While designing office combined with residence budget is basic investment and important, one don't want to waste money on unneeded items. While one don't want to sacrifice with its comfort (i.e.,

one should buy a good chair, working desk etc.), the budget was very important for starting an office, if the equipment's which are less required should not be purchased. The low cost furniture's are also available in the market which is made from the particle board. ⁽¹⁷⁾

2.1.4. Planning Guidelines for designing

The various guidelines for planning a design is described as follow:

- Once the project has been established, presented, and approved by the client, the interior designer develops the concepts and information into physical reality. According to the space and budget will be proceeding for the proposing designs and development.
- The designer now has the goals, data, objectives, and other pertinent guidelines to proceed with creating spatial concepts and interrelationships that will be responsive to the users' needs. They plans according to client needs and the requirement.
- The designer will design process in space planning, which means arranging the spaces to satisfy the program and the needs/desires of the client. One speak of "planning" the space rather than "designing" the space since the primary concern at this point is solving the functional, physical, and psychological needs of the client.
- This phase goes beyond addressing the aesthetic or visual issues of texture, color, or fabric. Although it was difficult to shape and manipulate spatial concepts for use by human beings without thinking of all the elements in a holistic "design" sense, this first stage of the design process which intends to establish order and functional relationships of the space and its inhabitants.
- In planning a new residence with office or remodelling an existing one, the designer should address certain basic issues which is given below

These issues for design decisions include:

1. The user's needs, characteristics, aspirations, and activities
2. The context of the residence with office: location, orientation, and relationship to the physical and societal patterns
3. The economics or budgeted money for the project
4. The aesthetic influences with respect to beauty and character that the designer and the client exert (Kilmer & Kilmer, 2013).

2.1.5. Functional and aesthetic aspects

- **Functional aspects**

Most buildings are designed for people, and since people needs change with the times, location, and tradition, the criteria for designing a home, office, restaurant, or commercial space will vary. This is particularly true when it comes to planning interior spaces. The next step is to ensure the best possible inter-relation between the various functional areas. The various areas and their correlation will be predetermined by the architect or by existing spaces. Nevertheless, designers and space planners often have to knock down walls and put up new ones as required.

A space planner must first get a feeling for the spaces he plans to design. A bubble diagram helps determine the best relationship of the various areas. A space that serves no physical (utilitarian) or psychological function should be eliminated because it is wasted space. The bubble diagram should also reflect the relative sizes of the various spaces. A designer should always start with an overall concept or theme and work towards the details (i.e. from the general to the particular). This is true whether we are designing a multi-storey skyscraper, a bungalow or a simple piece of furniture. The designer should allow the eye to be led through the space to experience it gradually.

- **Aesthetic Aspects**

The aesthetic aspects of space planning and interior design consist essentially of Principles (Unity and Harmony, Balance, Proportion, Scale, Rhythm, Emphasis, Variety and Contrast), and Elements (Space, Form, Line, Texture, Pattern, Light, and Color). These two fundamental design ingredients are essentially the same as those of many other design disciplines, particularly architecture and painting, and have changed little over the years. Each contributes in one way or another to the perception and success of the overall design; the whole equals more than its individual components. Most designers today would agree that no matter how aesthetically pleasing a design is, the real and final test is how well it functions. Such guiding factors or applications are known as Principles of Design. Various principles of design are Balance, Scale & Proportion, Rhythm, Emphasis and Harmony.

Design Principles

- **Balance**

The balance in space planning and interior design, which is mainly concerned with visual weight (as opposed to actual weight), coordinated in such a way so as to create a sense of equilibrium. Equilibrium is a fundamental force in everyone. This sense of equilibrium produces a psychological impact on our brain cells. Thus, how important or heavy a form appears to be, as opposed to its actual weight, is what concerns us.

- **Rhythm**

Rhythm is the repetition of an element in a regular sequence; it directs the eye and helps it to move about a space. Rhythm is essentially a disciplined movement and can be either passive or dynamic.

There are essentially four types of rhythm:

1. Rhythm created by repetition is the most common and can be seen everywhere, particularly on fabrics, plates, wallpaper, and in

nature. It can involve color, line, texture, pattern, or form. Repetitive rhythm is achieved by repeating a color or pattern on a wall, on curtains or even in a painting. This type of rhythm is passive and must be handled sensitively or it becomes boring.

2. Progressive rhythm is an ordered, gradual change in the size, direction, or color of an object or space. It is more subtle, dynamic, and inventive than simple repetition and can be achieved by succession in size from large to small (or vice versa) or in color by succession from dark to light (and vice versa).
3. Rhythm by alternation or rhythm by line is the regular, undulating, and continuous flow of a line or space.
4. Rhythm by radiation is created when an object's lines or motifs extend outward from a central axis, in a light fixture.

- **Emphasis**

Emphasis relies on the principle of dominance and subordination. This concept (sometimes referred to as the center of interest), is used by the designer to focus attention on a particular area or object in a given space. If we desire to give this object or space a feeling of prominence, we should place great emphasis on it. Each room or area should have only one dominant element, with all other elements subordinate to it. This will give it a feeling of unity and order. A lack of emphasis in a room makes it monotonous and boring. Emphasis is a vital element to the success of an interior.

- **Scale and proportion**

Proportion and scale are two distinct terms. Unfortunately, many people, even designers, do not differentiate and use the two interchangeably. When we think of proportion, we think of good and bad whereas scale implies large or small. Scale generally refers to the human being as a unit of measurement or to a part of an element as related to another part or to the whole.

Moreover, the casual observer in a room or building does not often notice harmonious proportions. Scale is a relative quality. It is the relation of the size of an element to that of another element within the same perceived space. When dealing with furniture, interior design, and architecture, the human being makes an excellent unit of measurement. Scale thus becomes the relation of an element's size to that of an average human being. Color, texture, and pattern must also be considered as they have a direct bearing on scale. Strong colored, large patterned and coarse textured objects will appear larger than objects of soft, light colors, small patterns and smooth textures.

Scale can help in the creation of unity and harmony. This can be achieved through similarity or contrast. Scale is the relative proportion that the representation of an object bears to other objects. It is also the relationship of the various elements in space to each other and to the whole. These elements include the width and height of openings, doors and their mouldings, windows and their surrounds, a fireplace, furniture, and rugs. The size of a room has a strong bearing on the scale of furniture, its relation to the walls and to other furniture and other elements such as pictures, mirrors, drapes, rugs or lamps. These must all be related to each other and to the average human being, the standard unit of measurement.

- **Harmony**

Every design requires a unifying theme to hold it together. When choosing furnishings, colors, and materials, you should be consistent and try to make certain everything blends. Elements should not appear to be a mere afterthought. It should be emphasized, however, that these are only general guidelines. When the designer/planner feels confident enough, he or she may well break these rules and get away with it.

Elements of Interior Design

- **Line**

Line is one of the most fundamental elements of design because it can enclose space and convey form through outline and contour. Without line, which in theory has only one dimension and technically consists of a series of points, we cannot perceive form or shape. There are basically two types of lines: straight and curved. Straight lines can be either horizontal, vertical, or diagonal. Psychologically, straight lines can portray an impression of strength, firmness and simplicity. Lines of transition tend to lead the eye from one point to another. Lines also express direction, create pattern and can connote texture.

- **Shape and form**

Space is the distance, interval, or area between, around, or within things, and is either two or three-dimensional. It is the most essential element in space planning. There are basically three kinds of space: flat space, perceptual or implied space, and actual space. Flat space is an implied two-dimensional space, consisting of height and width. Shape and form are the terms that are used inter-changeably with some differences. When lines are joined to enclose space, they result in an outline, a contour, a shape. Like space, form can be two-dimensional or three-dimensional. As designers, our main emphasis will be on the three-dimensional aspects because these make up our main environment. Paintings and photographs are examples of two-dimensional form, which often depicts recognizable objects that have the perception of depth, height and width.

- **Color**

Colour is one of the basic elements of design. An interior of any place can be made impressive, pleasant, or vice-versa by use of colour. The source of colour is light. If there is no light, there will be no colour.

Color is a potent psychological force and is often utilized in hospitals and other institutions for specific effects. At the University of California, San Francisco Medical Center hospital, intensive care units that were

painted in bright yellows and oranges were found to make patients feel better and in still a desire to recuperate faster. Blue, on the other hand, is used in hospital recovery rooms following surgery because it is an emotionally sedative color. Color also has many applications in education settings.

- **Texture**

Texture is a term that refers to the surface quality of an object, i.e. its roughness or smoothness, coarseness or fineness. A distinction should be made between actual tactile textures and visual textures. Actual texture can be felt by touching. By contrast, visual textures are simulated textures. They have a uniform surface to the touch, yet the material reveals a textural pattern below a relatively smooth surface. Here, texture is the result of the brain translating this visual perception to texture. Visual texture also plays a vital role in the pictorial arts such as painting and photography, where the eye can distinguish between lustrous, shiny, dull, rich or weak surfaces that cannot be experienced by touch alone.

- **Pattern**

The term pattern refers to "any sort of extrinsic surface enrichment and applies to both 2-dimensional and 3-dimensional objects". Pattern makes the eyes of the observer move from one place to another on the surface of the object. When a design is used as a unit or motif and repeated in a bigger design, a pattern is created. There are two types of patterns – i) Applied Pattern and ii) Integrated Pattern. Since pattern is a unit of design, it also can be of naturalistic, geometric, abstract or stylized in nature. Pattern as opposed to plain design is the easiest way of designating surface enrichment. It is closely related to texture and form, and is a repetition of a motif. Pattern is formed by the use of line, form, light and color. The use of pattern should be controlled. Too much pattern can break up a room, making it appear very busy and uncomfortable. At the same time, a room with no pattern at all can be dull and lack character.

- **Light**

Lighting serves two basic needs to illuminate a task and to establish a mood. It shapes the look and feel of a space by highlighting certain areas and playing down others. The sun is still the primary source of light and natural lighting is preferred because of its soft and changing qualities, as well as a point of reference to tell the weather and time of day. Some of the factors in the emotional impact of light are:

- Darkness brings fear to many.
- Everyone can feel blue at times.
- Bright colors and images can lift our spirits.
- Dark colors can be depressing—or soothing (Kubba, 2003).

2.1.6. Designing a Professional Office

The commercial interior designer specializing in offices will design many small, professional offices. The project design office for professionals such as accountants, lawyers in a limited practice, consultants, real estate brokers, insurance agents, and even architects, to name just a few. Although these offices can be many different sizes, this discussion is limited. Naturally, the space needs and configuration will vary with the actual office functions and type of professional. They can also be branches of larger corporations. Financial resources for leasehold improvements and furniture will likely be more limited than for the corporate facilities discussed in other sections of this chapter. Key issues for this type of facility will be functionality, excellent space allocation, and design and specifications on a budget.

This type of office will include the following spaces:

1. A reception/waiting area.
2. One or two secretaries, one of whom will be the receptionist.
3. The owner or principle of firm.
4. One or two additional professionals as employees.
5. A small conference room may be needed depending on the specialty.
6. Space for storage of supplies, a copy machine, file cabinets, and refreshment supplies. These can be in one space or in separate areas, based on client preferences. The office may be required to

include at least one unisex accessible toilet facility within the suite (Piotrowski, 2016).

2.1.7. Materials used for designing office cum residential area

- **Wall**

Walls are important elements for any design scheme because they define spaces, segregate activities, and mark out personal domains within the home or office. Their importance is highlighted by the enormous variety of treatments available that draw attention to the walls themselves.

In addition to the obvious paint, the market is saturated with all types of wall covering material, including fabrics, leather and carpet, in addition to the paper and vinyl wall coverings of the past. For high traffic areas, there are ceramic and clay tiles, metal panels, plastic laminate, and rubber, as well as rougher cinderblock, brick, and glass block.

- **Paint**

Color is a key element in most contemporary interiors, and it is one of the simplest and least expensive ways of providing an acceptable finish to our home, office or store, which is widely used. The white color is highly reflective and hard on the eyes, which is why softer colors are now preferred in many applications. Special colors can be mixed on the job by skilled painters.

- **Wallpaper**

Wallpaper offers a large variety of textures, patterns, and imagery, often making it a workable alternative to paint. Wallpapers are traditionally made of either paper, cloth, or paper-backed PVC. Vinyl papers are water and steam-proof, washable and tougher than normal paper, which makes them suitable for use in kitchens, bathrooms, office and utility areas. Wallpaper also remains popular because it is a practical way of hiding surface imperfections. The vinyl type is frequently used in commercial applications as well as in the home.

- **Marble, Stone and Brick**

Marble is widely used in monumental spaces and prestige locations. It is available in varied colors and veining patterns.

- **Cladding**

Wall cladding makes practical intellect in many situations, and allows the character of raw materials to be explored in the context of contemporary wall decoration. Wood is the classic cladding material, and often reflects a feeling of luxury. Plain pine cladding, readily available in groove boards, can be painted or left natural with a coat of matte varnish to seal the wood.

- **Plywood and veneer panels**

When intelligently applied, it looks impressive on walls. Tiling is a tried and tested formula for areas of heavy wear or maximum exposure to water and heat, typically kitchens, bathrooms and areas around pools. The material comes in a vast variety of colors, shapes, textures, patterns, and sizes, from the tiny mosaic to the large squares and rectangles. Mirror is an ideal material for small areas where an illusion of increased space is desired.

- **Other Materials**

Although fabric is traditionally popular as a material for wall covering, and is available in a variety of colors and textures, vinyl and other plastic sheet materials have increased in popularity and are now in wide use as wall covering. Many simulate other materials such as grass or cloth.

Flooring

Flooring tends to set the tone of the interior whether in the home, the office, or the mall. Although aesthetics plays an important role in any design solution, flooring must be practical in today's environment. Today's designer has an enormous range of flooring types, colors and patterns from which to choose. Flooring can pull a design together or visually fragment it. The use of one continuous material increases the

flow and homogeneity and suggests that areas share equal importance and are equally accessible. The material itself often gives a clue to the activity of the space, since it is the one material that is always in contact with the users.

- **Wood**

Wood is widely used floor material that has maintained its popularity over the centuries. It is practical, both functionally and aesthetically, and works in most environments. Its warm mellow tone, soft touch, and easy maintenance, it is mostly preferred in residential applications. It lasts well, comes in a variety of formats, and makes an excellent base for decorative rugs. Wood usually comes in hardwood strip, block, parquet, or board form. The most common species used are beech, maple, ash, birch, pine, or oak. Most of the types of strip flooring comes in tongue-and-groove so that the planks fit together without leaving any gaps.

- **Carpet**

Carpet denotes a more relaxed, contemplative, and higher status area because it is softer underfoot and quieter. Moreover, designers combine various colors, textures and patterns of carpet to create visual delight. Corporations can also incorporate product colors and company logos in their flooring designs. Carpet also has low maintenance costs compared with other commercial floor coverings. The carpet provides acoustical benefits by absorbing airborne sound, reducing surface noise generation, and helps block sound transmission below the floors. The current trend in carpeting is for increasing specification of nylon fibre carpets for its superior long-term performance, including their improved resistance for staining, soiling, matting, crushing, texture loss, and abrasive wear compared to other fibres.

- **Vinyl and Linoleum**

Vinyl comes in an infinite variety of colors and patterns, often with designs that simulate other more expensive types of flooring such as wood, tile, and marble. It is a wholly synthetic material and contains a varying percentage of PVC, which gives it a certain flexibility. Also, it is inexpensive, and comes in sheet or tile form.

Linoleum is also available in sheet or tile form and comes in a comprehensive range of colors and patterns. It has improved the performance, because it is made up of entirely natural ingredients hard tiles and mosaic.

Hard tiles including ceramic, terracotta, and quarry tiles are generally machine-made, which gives them a precise size, and are particularly suited to areas where water is often present, like kitchens and bathrooms. Tiles of baked clay, such as the popular quarry tile, are similar to masonry materials and require a sturdy subfloor. The small scale of mosaic tiles gives them an almost soft appearance. They consist of small cubes of terracotta, marble, ceramic, or stone and are bedded in mortar. Mosaic is best restricted to small areas like bathrooms.

- **Marble, Granite, and Terrazzo**

Marble and granite are more widely used. Both materials have prestigious connotations and are primarily used in banks and foyers of commercial buildings and some custom dwellings.

Terrazzo is a relative newcomer to the American domestic scene. It has been popular in Mediterranean countries from early times. Terrazzo is an aggregate of marble or granite chips mixed into a cement mortar and either laid in place or as slabs or tiles. It is mixed in the ground and polished to a smooth surface after it has set. Both formats are expensive and require professional installation.

- **Other materials—Stone, Brick, Concrete, Rubber, Cork, Metal, Rugs**

Stone is a traditional material which has been used for thousands of years in many countries around the world. It can bring an unmatched depth of richness and character to the interior or exterior. Natural stone comes in a variety of formats, colors, patterns, and textures. However, the thicker, larger flags or tiles are heavy and need a solid subfloor to bear their weight. Slate and limestone are the stones most frequently used by designers. Several types of hard wearing brick are available for indoor use. These should be laid on concrete, and should be sealed for a stronger finish and to prevent dust, etc. Brick is also used for exterior paving and in restaurants, offices and residential patios. Concrete is basically a structural material and can provoke strong reactions when used in commercial or domestic settings.

Although generally regarded as acceptable only in utility areas, the material has considerable machismo when properly used. Studded rubber flooring was introduced to residential applications with the arrival of high tech, and enjoyed a brief spurt of popularity. It has now reemerged and is available in a variety of colors, and in sheet or tile, with either a smooth finish or in relief. Cork is a warm material and soft to the touch. It is produced in tile or sheet form and is sealed with polyurethane. Metal flooring is another material that has certain applications. It is used for raised floors and in some commercial applications (kubba, 2003).

Ceiling

False ceilings, sometimes called drop ceilings, are usually hung or dropped underneath the main roof slab. Not only are they used for aesthetic reasons at times, but they also are provided for controlling temperatures, installing lights, and even concealing electrical or networking cables. With a lot of technological advancements in place today, the trend of having simple ceilings is no more.

In market there different materials which used for ceiling like gypsum board ceiling, metal ceiling, plaster of paris ceiling, glass ceiling, wooden ceiling etc.

- **POP, Plaster of Paris Ceiling**

This is the most popularly used ceiling board. Made from heated gypsum, it softens to form water that instantly hardens to give POP. This material is applied to a wood base or fibreboard and then hangs as a false ceiling. It has attractive looks and a long-lasting lifespan. Even better, it excellently insulates thermal heat. This type of ceilings will not only hide the ugly construction pieces, ventilation channels and drains but also provides smooth finishes.

- **Wooden or Plywood Ceiling**

Many homeowners find pleasure in natural beauty and tranquillity in the interiors. One best way of achieving the rustic appearance in the ceiling is to use wooden beams. Nowadays the plywood ceilings are most common with its natural design and textures. This can be provided with different finishes that add to its attractiveness. The material can either be from hollow blocks, panels, boards or even plywood. Generally, they suit well cool climatic and easily installed with screws or nails.

- **Gypsum Ceiling**

Gypsum ceilings are either constructed from gypsum sheets, boards, or even ceiling tiles. The material is available in large sizes of 600 mm × 600 mm. The material is versatile, tough, and economical. It is sterilized calcium sulphate, lightweight and quite easy to install. Often positioned like square planks all of them are supported by a metal frame or aluminium frames. Gypsum board ceilings are finished using paints, wallpapers, and laminates.

- **Metal Ceiling**

Metal is durable and shiny. This enhances the beauty of the interior of a home. The forms used as ceilings come as planks, tiles, and panels.

And the most popular one include aluminium and galvanized iron. These metal tiles and panels are placed on a noticeable steel grating having cross-sections and T-sections. They are hung underneath the ceiling using rods. This creates an extraordinary look and a contemporary feel. Fixing and installing these metal slips is easy and takes fewer efforts. The concealed parts are accessed without troubles because the panels are removable and reattached. It ends with low construction, fixing, and maintenance costs.

- **PVC Ceiling**

Considering PVC as a ceiling material is one of the best decisions. It is lightweight, moisture-resistant and inhibits the soaking of water on the ceiling. They are easy to clean. Its surface is bright and hygienic, thus effortless to maintain. They are easily installed, durable, waterproof, maintenance-free, and termite-proof. It is non-porous and non-absorbent, the material allows you to fit in flush-fitting, access hatches, lighting, sprinklers, and air vents. There are various color options for you to choose what blends well with your interior decor. The surface can be polished or painted.

- **Glass Ceiling**

Glass is known to be a brittle, non-crystalline, and clear material. This transparency leaves any space looking larger where it is used. Therefore, it works well as the ceiling in libraries and restaurants, libraries, etc. Glass is a good heat insulator and glass false ceilings look remarkable. This type of ceiling leaves any residential or commercial unit with a better aesthetical appearance⁽¹⁴⁾.

Furniture

Furniture refers to movable objects intended to support various human activities such as seating (e.g., chairs, stools, and sofas), eating (tables), and sleeping (e.g., beds). Furniture is also used to hold objects at a convenient height for work (as horizontal surfaces above the ground, such as tables and desks), or to store things

(e.g., cupboards and shelves). Furniture can be a product of design and is considered a form of decorative art. It is made from many materials, including metal, plastic, wood, cane, glass etc. ⁽¹⁹⁾ which described below.

- **Wood**

Wood is definitely one of the most popular furniture materials and it has been the leading material in manufacture for ages. For centuries now, anything from storage units to tables has been made of wood, which makes its integration into the interior simple as ABC.

- **Cane**

Cane is another material type that has been used for centuries. Today, it is relatively less common, yet it is still possible to find plenty of light and stylish furniture solutions made of cane. Note, though, that it is interior demanding and requires matching décor.

- **MDF**

MDF is a budget friendly solution for modern homes. It has the same basic look as wood, but it is a way cheaper material. Sure, it is not as durable as wood, but it is definitely one of the dominant materials in today's furniture market.

- **Glossy MDF**

Another way to produce stylish MDF furniture is to cover it with a thick shiny lacquer finish. The models look bright and stylish. They combine elegance and simplicity, and they are most suitable for modern interiors.

- **Glass**

Tempered glass is another modern approach to interior decoration. Few furniture items will be made of glass exclusively; yet, plenty of tables, storage units and even computer desks may feature glass as the primary manufacturing material.

- **Steel**

Stainless steel, chrome, metal and other materials of the kind dominate in modern, hi tech interiors. Similar to glass, few furniture

items will be made of metal exclusively but many of them can have metal inserts both functional and decorative ones.

- **Plastic**

One of the most budget options, which looks better outside than inside. Inside, even the highest quality ABS plastic usually looks plain.

- **Leather**

Leather – both faux and genuine one – is widely used for soft furniture upholstery. Depending on your interior theme, it can be a part of contemporary or classic interiors.

- **Fabric**

Fabric is a softer and more practical material used for the upholstery especially for chairs, sofa, lounge etc. The fabric is also used for bed back of the bed.⁽²⁰⁾

Section 2- Empirical Studies

2.2.1. Studies Conducted outside India

Yu (2009) conducted a study on “Sensory study in restaurant interior design”. The aim of the study was to impart sensory design strong theory background, physiological and psychological theory about sight, smell, hearing, and haptic. These senses do not act separately, but work as a unit to deliver humans a comprehensive perception of a space. The main purpose of this research was to create a restaurant sensory design framework, which is applicable for designers to design a restaurant. A case study is followed to illustrate how to use the framework while designing a restaurant. All items in the framework are analysed and applied in redesign, and redesign drawings are accomplished using computer software. King Buffet, a Chinese restaurant in Ames, Iowa is chosen as the subject for case study. By comparing the original interior space pictures and redesign renderings, distinct advantages of redesign are demonstrated, which display the significance of sensory design and a feasible application of framework. The final redesign showed distinct advances compared to the original design, which revealed importance of sensory design.

Koyama, et.al. (2010) conducted a study on “Effects of Interior Colour, Lighting and Decors on Perceived Sociability, Emotion and Behaviour Related to Social Dining”. The aim of the study was to find out how colour, lighting and décors have effects on customers’ perceived sociability, emotion and behavioural intention on social dining occasions. Experimental method was used and 162 senior students of chiba university, japan were involved. The results showed that the restaurant with monochromatic colours, dim lighting and plain décors yielded a statistically significant difference in the psychological factors with almost any other interior conditions on romantic dining, as opposed to in case of casual dining.

Kilman (2016) conducted “A Case Study on Small House, Big Impact: The effect of tiny houses on community and environment”. The tiny house is a legitimate housing alternative which is in America, United States. It build a stronger ecological ethic as well as stronger community values. Through its small space, the tiny home challenges owners to reconsider how they value physical goods, personal relationships and the environment, all while providing a greater amount of economic freedom. Tiny house living can prove to be a challenging endeavour; however, it is a perfect to fit and a viable housing solution. Tiny houses and the industry behind them are still in their infancy, but businesses and infrastructure are growing fast, which might mean living small will be a big thing in the future. This growth is essential for the tiny house movement; in order for smaller dwelling units—in this case 1,000 sq. ft. or smaller—to be taken seriously, the benefits to the society as a whole need to be demonstrated to a wider audience. As that happens, the core tenets behind living tiny can be translated to a broader housing community. Tiny houses can mean big things for our economy, the environment, and the communities; it could be just a matter of time before the culture legitimizes the mind-set behind them.

Zhou and Chen (2017) conducted a study on “Convertible furniture design” in china. In this study, it introduce a system that allows unskilled users to Design convertible furniture objects. By using a set of

desired furniture units as inputs, our system generates a group of suggested convertible furniture objects, which can collapse into a compact form. The geometric problem involves connecting the furniture units via junctions so they occupy the smallest space in their compact form while still fulfilling the desired function in the expanded form. This optimization problem is non-trivial because of the very large discrete search space of the connected structures. Furthermore, there is a huge continuous space of geometric parameters where the connected units make contact due to the complex dependencies of their movements. They propose an efficient algorithm based on a tree selection approach and pre-computed junction-dependent configuration space to accelerate the optimization process in a high dimensional, mixed discrete– continuous search space. It evaluated the system based on a wide range of inputs and a series of convertible furniture objects were generated. The Experimental results demonstrate that system can provide design suggestions as well as inspiring creativity among users.

Evans (2018) conducted a case study on Overcoming Barriers to Tiny and Small Home Urban Integration: A Comparative Case Study in the Carolinas. Although interest in tiny and small house living continues to grow, proponents of downsized living face a myriad of challenges, from restrictive land use policy to current lending and finance practices. Through a comparative case study, this article examines the crafting of tiny house policy in Asheville, North Carolina, and South Carolina, United States. The analysis has resulted in a better understanding of driving factors behind tiny house integration measures, challenges to accommodating tiny and small homes, stakeholder concerns, and best practices. The findings aid planners and policy makers interested in accommodating tiny and small home infill.

Ott (2020), conducted study on Tiny Offices: Extensions Separating Home from Workspaces. According to them working from home comes with a flexible schedule, not to mention savings on travel costs, and one can be closer to family. But distractions can make working from home inefficient. It becomes critical to separate the spaces used for

living from the ones used for working. Building an addition is, in most cases, the perfect solution. Either upwards on top of an existing house or in the backyard, these extensions mean a barefoot commute, a potential view of the backyard, and a place to work without interruptions. It has included the feature shelves, cabinets, and desks which can be carefully integrated into the design.



(Source:<https://www.archdaily.com/947157/tiny-offices-extensions-to-separate-the-home-from-the-work-spaces>⁽²¹⁾)

Plate 1: Tiny Offices: Extensions Separating Home from Workspaces

(Mastermind studio 2020) had undertaken the project: interior of office combined residence in total area 2865m², at Thailand. They wanted to reflect this relationship in term of architectural design so idea of the space was the office space for personnel at 1st floor and private office for owner at 2nd floor was linked by open-well void. 3rd floor was the family's common space comprise of living, indoor / outdoor dining area, snooker room, fitness which all activities can be divided or joined by full span sliding partition.



(Source: <https://www.archdaily.com/office/mastermind-studio>⁽²²⁾)

Plate 2: Interior Project of office combined residence by Mastermind Studio

2.2.1 Research studies conducted within India

Al-Bahar (2008) conducted a study on the interior design in the traditional residential building in Zabid city. The objectives of the research were to study the residential building of Zabid city and to conclude whether the style of construction of building and furniture is Islamic or Arabic or neither of these. It was observed that the construction of the house was strong, the interiors were modified to suite the modern times such as colour of the walls use if electricity instead of traditional ways of lighting. The planning of the houses was almost similar consisting of separate entrance for males and females, a courtyard, a reception / guest room for male's members, a summer room mainly used by female members, a kitchen, bath and lavatory and a room to store water. The material of construction was stones for foundation backed bricks and mud for walls with gypsum, wood and that for roof and doors and windows, interiors had beautifully carved and arched roof and doors and windows and alcoves to store various items. Geometric and floral designs were mainly used for the decoration. No human figures were used as they are forbidden in Islamic religion. Through repetition of shape a harmony was created in

each of the rooms these houses have been declared traditional houses and efforts are being made by UNESCO also to preserve them.

Umrajkar, (2010) conducted a study on “Effect of selected general lighting fixtures on visual acuity of elementary school children’s. The main purpose of the study was to gather the required data related to physical aspects of the room and to judge the quality of selected physical aspects of selected physical components of the room where the respondents sit to study in their homes. To collect required information of general lightings fixtures used in the room where the respondents sit to study and to measure the quantity of illumination of that room. The present study was experimental in nature, the sample was forty five respondents from two schools of Vadodara city namely maharani kanya vidhyalaya and parivar vidhyala elementary school children’s through purposive sampling technique. Data were collected by questionnaire method for assessing existing conditions and illuminances. Visual performance and visual comfort of the students were assessed by visual acuity test comprising of Snellen’s test. Multi stage purposive sampling technique was adopted to select the samples. It was found that overall quality of physical components was low and in less than one half of the cases it was high. Average luminance was found to be low compared to standard requirements in the homes of the respondents.

Varghese et al., (2011) conducted a study on “Design of Multipurpose Modular, Flexible and Space-Saving Dining Table” of Bangalore city in Karnataka, India. A majority of Indian middle class population are living in small flats and homes this is mostly because of their economy scale as well as the lack of space availability for living. But in the present scenario furniture occupies a majority of the space in the home interior. To overcome this problem, the furniture should be modular or should have a multipurpose than their primary function. This study is to design and develop a multipurpose modular flexible, space saving dining table for Indian middle class homes. The study was conducted to understand

the lifestyle, need and comfort as well as different activities associated with specific home interior and furniture. Several furniture design stores were visited in order to understand the present market scenario, demand and needs of the customers. Existing dining furniture was analysed in detail including its components and parts and their assembly and sub-assemblies. Final concept was selected using weighted ranking method by evaluating all the concepts. Drawings were developed for final concept, a prototype was made and ergonomic validation was done. Packed, the proposed concept is found to occupy just less than 25% of its deployed area. Researchers thereby believe that the proposed design will largely suit the constrained space conditions of the urban segment in India.

Dasgupta (2012) conducted a study on “Assessing and Redesigning The Interiors of Selected Anganwadis from Vadodara city” with aim to assess the existing status of interior of selected Anganwadis from Vadodara city, to identify the need and preferences of Anganwadis as perceived by the Anganwadi worker with regard to the various aspects of interior of selected Anganwadi, to redesign the interior space of selected Anganwadi and provide detailed working drawing for the same. The data was collected through observation schedule, questionnaire and interview schedule. This research study had two research design, case study and descriptive survey. The researcher purposively selected twenty Anganwadis from different areas of Vadodara city for conducting descriptive survey. Out of twenty Anganwadi three Anganwadi were selected by the researcher for redesigning the interiors. The study revealed that the most of the Anganwadis had poor interiors. They had faded paint chipping off from various places, uneven and dull floors, less walking space, lack of enough sitting arrangements, less storage space, no furnishings and accessories, no proper display boards or blackboard, lack of play material and no place and play materials for outdoor games. The Anganwadi had poor light and ventilations. The researcher redesigned three Anganwadis using specific colour schemes. In existing rooms,

display board and black board were added, lighting and storage cabinets were added and seating arrangements was improved. Existing presentation and working drawings, modified presentation and working drawings, electrical layout, tiling layout for modified drawings were developed. Cost estimation for the modification in the selected Anganwadis was also presented.

Parmar (2012) conducted a study on “Meditation Rooms Existing Status and Need Based Designing” with the objective of observe and evaluate the status of our selected meditation rooms from Vadodara city with respect to the specific parameters namely backgrounds of living walls (surface, windows, doors), flooring (surface), ceilings (surface), furniture lighting (artificial and natural) music, symbols. The main purpose of the study was to Analyse the opinion of selected meditators regarding existing meditation rooms and to obtain their suggestion regarding desired modifications in the specific parameters, to prepare the need based working designs and to provide cost estimate the redesigning of the selected community meditation room. Case study method was adopted. The data were collected from 40 users of four meditation centres of Vadodara city through questionnaire and observation sheet for all the four meditation rooms to obtain details of the existing parameters. The findings of the study revealed that the opinion of the investigator as well as the respondents was found to be more unfavourable for the maximum number of parameters of Case-1 Meditation centre A than the rest of the three cases. The remaining three cases had leaser number of unfavourable parameters than case 1. So case 1- was selected for redesigning and the parameters which were found to be unfavourable were redesigned with the help of proposed drawings prepared in AutoCAD 2008. Which regard to the colour preferences of the colour of the wall based on the Psychologists colour theory, yellow, green was found to be most preferred by the respondents followed by green blue and yellow respectively.

Bhattacharjee (2014) designed the project of Architect Residence cum Office Building at New Alipore in Kolkata, West Bengal, India. It accommodates Residence of the Architect and office of BA-KPB & Consultants. It was a 3 storied building covering 6000 sq. ft. area. A Hierarchy of spaces have been created within the building. The central atrium around the staircase rises up to the top of the building and establishes communication between the different parts of the house and at the same time allows movement of breeze within the house. No mechanical ventilation is required. It is a Green and sustainable house.

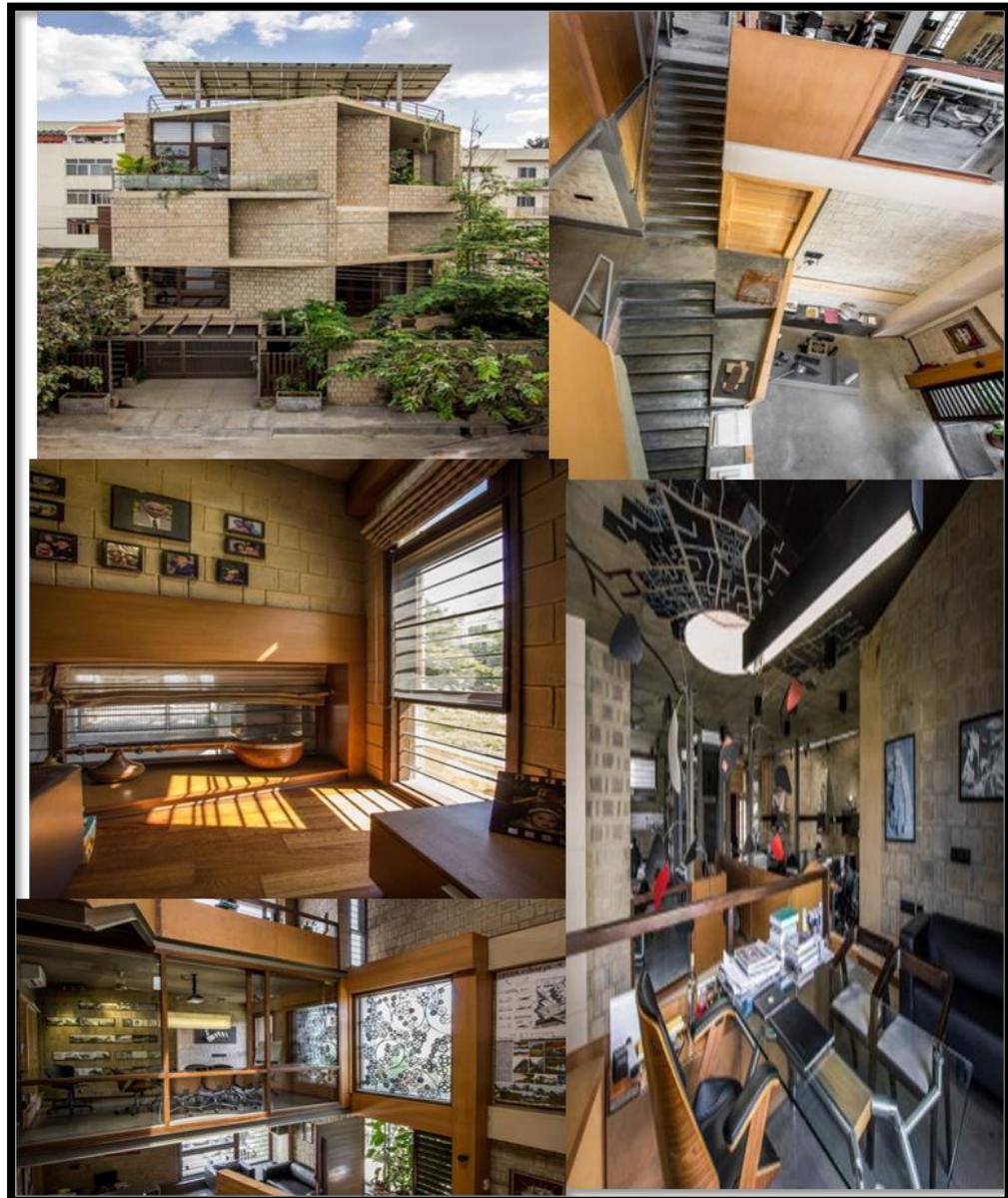


(Source:<https://worldarchitecture.org/architecture-projects/pfze/architects-residence-cum-office-building-at-new-alipore-2c-kolkata-project-pages.html>
(23))

Plate 3: Project of Architect Residence cum Office Building at New Alipore in Kolkata, West Bengal, India

Praxis (2014) designed the project Architect's office cum home in Bangalore, India. The total area was 260 Sq.mt and built up area 510 Sq.mt. An exposed brick building, where the brick was used as the core material as well as the surface of the wall, needs intelligent detailing and craftsmanship. The core idea was setup like simple rules no plaster or paint, sill or lintel or projecting sunshades, and lastly, no tiles. Other strategies were put in place to make the building ecologically friendly rainwater was harvested, a natural ventilation system was designed using skylights and vents, ample daylight was diffused into the interior with clever location of windows and skylights

and solar power for electricity and water heating were incorporated. All this was done elegantly to keep the architecture consistent with the idea of beauty in rawness.



(Source: <https://architecturelive.in/place-mayapraaxis-architects-office-cum-home-bengaluru/> ⁽²⁴⁾)

Plate 4: Project of Architect's office cum home in Bangalore, India

Astonkar and Kherde (2015) conducted a study on "Design & Development of multipurpose, space saving seating arrangements using Ergonomics". In India majority of Indian middle class populations are living in small flats and homes this is mostly because of their economy scale as well as the lack of space availability for living.

Moreover, high population density leads many other problems such as high gap between rich and poor, not proper comfort due to Ergonomics. These are common problem in now days. Space saving seating arrangements is one of the options to solve these problems. In this paper, the researcher introduced the innovative designs for space saving seating arrangements developments with waste material (vehicles used tubes & tyres) today one can find a wide array of chairs reflecting the current understanding of ergonomic experts and designers as how to best support traditional tasks. But seating work is changing. Traditional jobs involving only one primary, forwards oriented task are giving way to new approaches to work and a wide variety of task postures and positions. This paper helped people to understand the importance of Ergonomics with anthropometric principles of multipurpose space saving seating arrangements in different places.

Nadaraj & Pulikal (2016) developed the project office cum residence at Thiruvananthapuram, Kerala, India. The house that stands on a meagre 5 cents plot also has an office space besides all the required facilities. The elevation exudes the mesmerizing charm of the contemporary architectural style. Meanwhile, the natural stone cladding and the breathing wall which facilitates cross ventilation act as eye-catching design features as well. The interior designed in the open theme look incredibly vaster. A sit-out, living and dining areas, three bedrooms, kitchen with an adjacent work area, office space and an open terrace have been arranged in 2570 Sq.Ft. area.

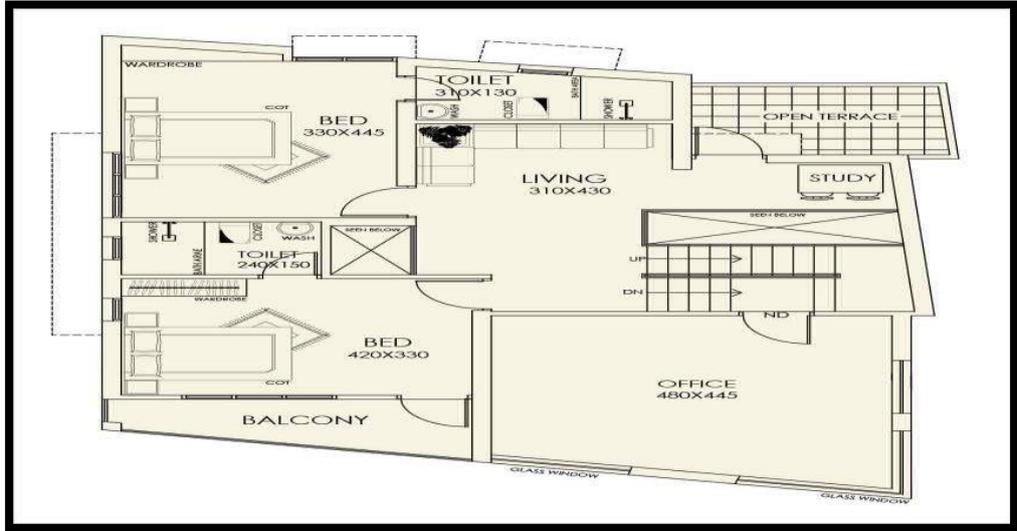


Plate 5: Floor Plan of ground floor

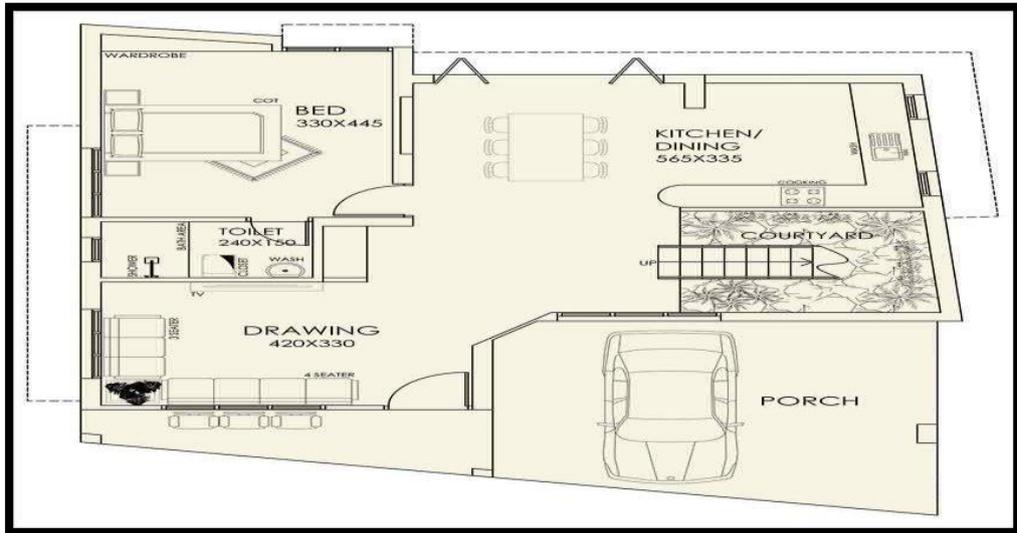


Plate 6: Floor Plan of First floor



(Source:<https://www.onmanorama.com/lifestyle/decor/2020/06/26/home-cum-office-5-cents-trivandrum-house-true-winner.html> ⁽²⁵⁾)

**Plate 7: Project office cum residence at Thiruvananthapuram,
Kerala, India.**

Patel (2017) conducted a study on “Extent of problems faced by the homemakers regarding existing modern kitchen” with the objectives to find out the problems faced by the homemakers with existing modern kitchen, to observe various aspects of existing modern kitchens, to prepare guidelines regarding planning of modern kitchen, and to propose design for a modern kitchen. Descriptive research design was adopted for conducted study. The purposive sampling method was used to select the samples. Questionnaire and observation sheet were used. Looking into the intensities for the various problems of the respondents, it was observed that for effects on human body and working mechanism, problems faced were to moderate extent and for countertop, storage, materials used and lighting and ventilation problems faced were to low extent. The study was conducted to find out the extent of problems faced by the homemakers in using existing modern kitchen with different aspects like effects on human body,

counter top, storage, working mechanism, materials used and lighting and ventilation. The overall data for problems related to addicts on human body revealed that majority of the respondents faced problems to moderate extent. Lastly it was conducted on the basis of mean that the respondents who had small shed family, had higher extent of problems related to lighting and ventilation than other groups.

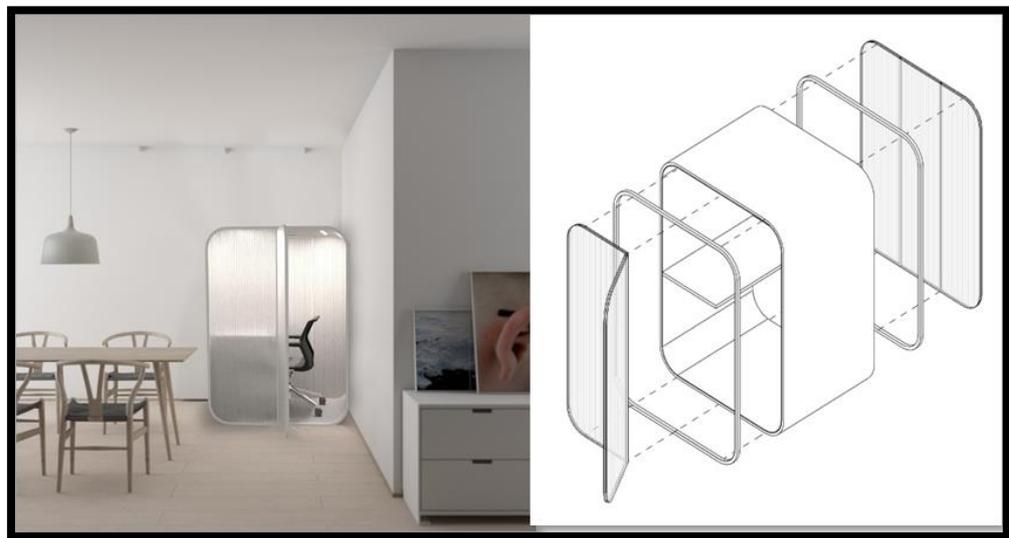
Surana (2018) had undertaken the project on office combined with residence interiors of Mahapragya architects in Solapur City, India. The contemporary tropical urban living within plot area of 380.90sq.m. G+3 storey structure was planned to suit multifunctional purpose - An architectural design Studio on first floor, a house for small family on the second floor and the recreational space - amphitheatre & terrace garden on the top floor.



(Source:<https://www.archdaily.com/899228/mahapragya-mahapragya-architects>²⁶⁾)

Plate 8: The project on office combined with residence interiors of Mahapragya architects in Solapur City, India.

Marko Brajovic (2019) highlighted that the present moment demonstrates possible tendencies of how we will work in the immediate future. In the cities, eventually it will be from home, and this will improve our quality of life and performance. But working from home brings new challenges. It is not simply transforming the child's room or corner of the vacant house into an office. The future is to create a safe, controlled and equipped work space, which integrates organically with the home environment. And the opportunity is even greater, because it implies a redefinition of what it means to work when we can make times more flexible, invest in personal development within the work context.



(Source: <https://www.archdaily.com/946633/atelier-marko-brajovic-creates-home-office-capsule-that-fits-in-any-house> ⁽²⁷⁾)

Plate 9: Flexible working unit

Pandya (2019) conducted a study on “Design Assessment of selected Gymnasium of Vadodara city in context to Satisfaction of users.” The study was focused on finding out the extent of satisfaction of selected gymnasium users and to assess the existing interior space of selected gymnasium and redesigning interior space of selected gymnasium of Vadodara city. The study was limited to five selected gymnasium of Vadodara city. The sample were randomly selected having gym-membership since past 6 months of the selected gymnasium. The descriptive research design was used to collect data from five

gymnasium of Vadodara city viz. Sama, Gotri, Harni, Karelbaug and Subhanpura selected through convenience random sampling. The data were collected through an interview and observation schedule on a sample of 150 who were users of selected gymnasium. The owner of one gymnasium agreed for considering redesigning of the gymnasium thus a redesigning was proposed for the same. Designs were proposed for floor, walls, ceiling, lighting, door, windows, sound and acoustics, indoor environment and functional areas. The cost estimation was also given for the same.

Shah (2020), studied on designing the interiors of selected anganwadis under the CSR project of sun pharmaceutical industries limited. The main purpose of the study was to assess the spaces provided for interior designing and anganwadi, to identify the requirements of clients viz the general manager, CSR activities of sun pharmaceutical limited and anganwadi workers regarding interiors of anganwadi. The study was conducted in two provided spaces of the panchmahal district of Gujarat, namely ujeti and kashipura which were developed under the CSR project of sun pharmaceutical industries limited. In the research study, project method was adopted as a research design. The observation and interview schedule was used as a tool for research. General Manager of CSR activities of sun pharmaceutical limited and the anganwadi worker was started as a sample for the study.

Panchal (2020), developed the project on “Redesigning of interiors of selected café in Vadodara city. The study aims to assess the needs & requirements of client with regards to interiors of selected café and to redesign the interiors space of selected café and provide detailed working drawing with cost estimation for the same. It was descriptive in nature. The observation sheet and interview schedule was used as a tool for research. The designing of the present project was carried at the selected café of Manjalpur area in Vadodara.

The detailed aspects of interior design of the selected café was observed and recorded. The redesign was done on the basis of the

need and preferences of the client. The designing included the interior aspects namely, Floor, Wall, Ceiling, Lighting, Doors, Furniture and accessories

2.3. Market survey

Table1: Market survey of wall paint colours available in the local market.

Sr. No.	Name of the products	Brand and shop name	Size of the product	Picture of the product	Cost of the product
1.	Royale Wall paint	Brand: Asian paint Shop: Asian Paints - Shree Mahakali Traders Address: 7, cactus park society, New Sama Rd, near giriraj farsan, Near Abhilasha Char Rasta, Vadodara, Gujarat	20, 10, 4 & 1 litre.	 <p style="text-align: center;">Plate 10: Asian Paint-Royale Wall Paint</p>	₹8996/- per 20 litre

		390002			
2.	Silk glamor Wall paint	<p>Brand: Berger Paints</p> <p>Shop: Narandas & Sons - Asian & Berger Paints Dealer in Vadodara & India</p> <p>Address: Near, Narandas House, Gendi Gate Rd, Mandvi, Vadodara, Gujarat 390001</p>	20, 10, 4 & 1 litre.	 <p>The image shows a Berger paint can on the left with the logo 'Berger' and the tagline 'Paint your imagination'. To the right is a fan of color swatches with the Berger logo at the top. The entire image is enclosed in a black border.</p>	₹10336/- per 20 litre

Plate 11: Berger Paint- Silk glamor Wall paint

Table2: Market survey of tiles and stones available in the local market.

Sr. No.	Name of the products	Brand and shop name	Size of the product	Picture of the product	Cost of the product
1.	Floor tiles	Brand: Simpolo and Italian Shop: Bathworld Address: 116 to 120, 1st Floor, Glacier Complex, Jetalpur Road, Vadodara - 390020, Near Kashi Vishweshwar Mahadev Temple, Next to Pizza Bell	2'0" x 2'0" 2'0" x 1'0" 3'0" x 3'0" 4'0" x 4'0"	 <p data-bbox="1086 1241 1751 1332">Plate 12: Simpolo and Italian brand Flooring Tiles</p>	₹100/- to ₹350/- Per sq. ft. (according to design and patterns price differs)

2.	Wall tiles	Brand: Shop: Shree Chamunda Tiles Address: Kiran motor line, channi road, Bh. Kiran motors Vadodara-390024.	2'0" x 1'0" 2'0" x 2'0"		₹90/- to ₹250/- Per sq. ft. (according to design and patterns price differs)
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Plate 13: Wall Tiles

3.	Stones	Brand: Shop: Shree Chamunda Tiles Address: Kiran motor line, channi road, Bh. Kiran motors Vadodara-390024.	4'0" x 8'0"	 <p>Plate 14: Stones</p>	₹75/- to ₹450/- Per sq. ft. (according to design and patterns price differs)
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Table 3: Market survey of bathroom fittings available in the local market.

Sr. No.	Name of the products	Brand and shop name	Size of the product	Picture of the product	Cost of the product
1.	Bathroom fittings and Sanitary ware	Brand: Jagaur, Kohler & soncera Shop: Shree Chamunda Tiles Address: Kiran motor line, channi road, Bh. Kiran motors Vadodara-390024.		 <p data-bbox="1025 1050 1720 1088">Plate 15: Bathroom fittings and Sanitary ware</p>	₹800/- to ₹50000/- Per piece (according to design and patterns price differs)

Table 4: Market survey of lights available in the local market.

Sr. No.	Name of the products	Brand and shop name	Size of the product	Picture of the product	Cost of the product
1.	Hanging lights	Shop: Mahesh Lights Address: A/13 Shrenik Park, Cow Circle, Akota, Vadodara - 390020, Opposite Jain Derasa.		 <p data-bbox="1025 1141 1406 1181">Plate 16: Hanging Lights</p>	₹500/- to ₹12000/- Per piece. (cost vary according to patterns)

2.	Ceiling lights	<p>Brand: Neptune</p> <p>Shop: Mahesh Lights</p> <p>Address: A/13 Shrenik Park, Cow Circle, Akota, Vadodara - 390020, Opposite Jain Derasa.</p>	 <p>The image displays four Neptune Lights product advertisements for ceiling lights, arranged in a 2x2 grid. Each advertisement includes the Neptune Lights logo, the product name, a brief description, a photograph of the light fixture, and technical specifications.</p> <ul style="list-style-type: none"> IRIS SF: Backlite Surface Down Light. Power: 8W, 15W, 22W. Body Color: Black & White. JAZZ: Led Down Light (SMD). Power: 12W, 18W. CCT: 3K, 4K, 6K. Body Color: Black & White. AQUA: Led Down Light. Power: 12W, 18W, 24W. CCT: 3K, 4K, 6K. Body Color: WHITE. GRACE: Led Spot Light. Power: 12W, 18W. CCT: 3K, 4K, 6K. Body Color: Black & White. 	<p>₹150/- to ₹1200/- Per piece. (cost vary according to patterns)</p>
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Plate 17: Ceiling Lights

3.	Wall lights	<p>Shop: Mahesh Lights</p> <p>Address: A/13 Shrenik Park, Cow Circle, Akota, Vadodara - 390020, Opposite Jain Derasa.</p>		 <p>Plate 18: Wall Lights</p>	<p>₹300/- to ₹1200/- Per piece. (cost vary according to patterns)</p>
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Table 5: Market survey of laminate and veneer available in the local market.

Sr. No.	Name of the products	Brand and shop name	Size of the product	Picture of the product	Cost of the product
1.	Laminate	Brand: Century laminates Shop: Smith Enterprise Address: 7, Sapna Shopping Centre, RC Dutt Rd, Aradhana Society, Vishwas Colony, Vadodara, Gujarat 390007	4'0" x 8'0"	 <p>Plate 19: Laminate</p>	₹30/- to ₹100/- Per Sq.Ft. (cost vary according to patterns)

2.	Veneer	Brand: Natural veneer Shop: Smith Enterprise Address: 7, Sapna Shopping Centre, RC Dutt Rd, Aradhana Society, Vishwas Colony, Vadodara, Gujarat 390007	4'0" x 8'0"	 <p data-bbox="1032 762 1402 794">Plate 20: Natural Veneer</p>	₹50/- to ₹300/- Per Sq.Ft. (cost vary according to patterns)
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Table 6: Market survey of fabric materials of available in the local market.

Sr. No.	Name of the products	Brand and shop name	Size of the product	Picture of the product	Cost of the product
1.	Curtain fabric	Brand: Sarom Shop: Khandelwal drape shop Address: 77 emerald, Nr. vins hospital, productivityroad, Vadodara Gujarat 390007		 <p data-bbox="1052 1029 1411 1061">Plate 21: Curtain Fabric</p>	₹500/- to ₹3000/- Per Sq.mt. (cost vary according to patterns)

Table 7: Market survey of artifacts of available in the local market.

Sr. No.	Name of the products	Brand and shop name	Size of the product	Picture of the product	Cost of the product
1.	Artefacts	<p>Brand: Living Essence</p> <p>Shop: Home town</p> <p>Address:3rd Floor, Vadodara Central Mall, Sarabhai Marg, Genda Circle, Vadodara - 390023, Near Genda Circle</p>		 <p>The image is a collage of four photographs showing various home decor artifacts. The top-left photo shows a display of colorful vases and bottles on a white shelf. The top-right photo shows a collection of ornate lanterns and decorative items. The bottom-left photo shows a display of various vases and planters. The bottom-right photo shows a display of modern-style planters with gold and black finishes.</p>	<p>₹500/- to ₹5000/- Per Sq.mt. (cost vary according to patterns)</p>

Plate 22: Artefacts

2.4. Conclusion

The theoretical review of literature collected focused on definition of profession and its characteristics, advantages and disadvantages of having office at home for professional, important points to consider while designing office combined with residence, planning guidelines for designing office combined with residence, functional and aesthetic aspects, designing a professional office at home and materials used for designing office cum residential area.

The related researches conducted outside India focused on various topics namely on effects of interior colors, lighting and decors on perceived sociability, emotion and behavior related to social dining, residential satisfaction and construction, interactive furniture layout using interior design guidelines, small house and big impact: the effect of tiny houses on community and environment.

The related researches conducted within India focused on various topics namely on the interior design in the traditional residential building in Zabid city, Effect of selected general lighting fixtures on visual acuity of elementary school children's, Design of Multipurpose Modular, Flexible and Space-Saving Dining Table", Assessing and Redesigning The Interiors of Selected Anganwadis from Vadodara city, Meditation Rooms Existing Status and Need Based Designing, assessing kitchen sink centre of middle class households of Vadodara city, Architect Residence cum Office Building at New Alipore, Kolkata India, Design & Development of multipurpose, space saving seating arrangements using Ergonomics, office cum residence in Thiruvananthapuram, India, Extent of problems faced by the homemakers regarding existing modern kitchen, office cum residence interiors of Mahapragya architects in Solapur City, India, Design Assessment of selected Gymnasium of Vadodara city and Redesigning of interiors of selected café in Vadodara city. Hence, it is clear from the

existing researches that dearth of researches were found focusing on Designing Office cum Residential Unit: Facilitating Professionals to Work from Home. Therefore, the researcher was interested in carrying out research on this less explored topic. Thus, the researcher found it essential to investigate the above problem.

CHAPTER – III

METHODOLOGY

Research methodology is a science to study how research is done systematically and scientifically (Kothari, 2014). The research design and operational definitions of the terms used in the study are explained briefly in this chapter. The present study aims to design an office combined with residence for facilitating professionals to work from home. The tool and sampling technique are also described. The methodological procedure carried out is described here under the following heads:

3.1. Research Design

3.2. Operational Definitions

3.3 Sample and sampling procedure

3.4. Locale of the live project

3.5. Unit of Inquiry

3.6. Selection and Construction of the Tool

3.7. Description of tool

3.8. Establishment of Content Validity

3.9. Details regarding the live project

3.10. Phase I: Identification of client's needs and preferences

3.11. Phase II: Design Development

3.12. Phase III: Cost Estimation

3.1. Research design

A research design is arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedures (Kothari, 2014). The present live project aimed to Design Office cum Residential Unit for professionals to work from home. An action designing project was undertaken to fulfil the desired goal of the client by developing several designs and drafts which can be used to achieve the desired goal. It was fulfilled by a systematic approach by organizing design ideas, materials and drafting 2D and 3D designs. Initially the client's existing problem was evaluated and solved by drafting ideas and designs, the cycle went on until the desired goal was achieved and the clients were satisfied.

3.2. Operational Definition

Certain terms were operationally defined for the present study. They were as follows:

- **Office:** For the present study office is defined as a place, with basic facilities where an organization's employees perform administrative and Professional work carried out in order to support and realize goals and objectives.
- **Professionals:** For the present study professional refers to anyone who is engaged in a specific activity as one's main paid occupation and earns their living from performing an activity that requires a certain level of education, skill, or training.
- **Residential Unit:** For the present study residential unit is defined as a single house or a single apartment or other housing units used for living by the family.
- **Office cum Residential Unit:** For the present study office cum residential unit is defined as area which is used for both office and residence.

3.3. Sample and sampling procedure

The sample of the selected live design project was a residential unit in Surat city, Gujarat. Purposive sampling technique was adopted for selecting the area.

3.4. Locale of the study

The present live design project was conducted in Surat city, Gujarat, India.

3.5. Unit of Inquiry

The unit of inquiry was the owner of the residential unit of Surat city, Gujarat India.

3.6. Selection and Construction of tool

Selection of the tool

In the light of the objectives framed for the present study interview schedule was developed to find out the needs and requirements of the client for the interior of the selected office cum residential unit.

Interview schedule was used due to the following reasons:

- The researcher gets the detailed information about the preferences of the respondent.
- More information in greater depth can be obtained.
- It ensures complete and detailed data.

Construction of the tool

Interview schedule was selected as tool for the live Design project. On the basis of objectives framed and literature reviewed the tool was constructed. Various sources such as books, journals and electronic media were used to make the tool for the present research. The feedback from the professionals like interior designers and architects also assisted in making the tool for the present live project.

3.7. Description of the tool

Client Profile

The interview schedule was prepared on the basis of indication supported by the review of literature. Care was taken while preparing the tool to include all questions that would elicit the needs and preferences of the clients of the residential project for obtaining the objectives of the study. The interview schedule was divided into three sections which are described as follows:

Section I – Client profile

This section contained information regarding the background information of the client. The information included the name of the client, age, gender, address, contact no, profession, education, type of house, type of family, total monthly income of family, total number of family members, no. of Children in the family, no. of adults in the family and family details.

Section II – Information about the live project

This section consisted of information regarding the office cum residential unit. The information was collected regarding the project address, total built up area, total carpet area, budget for the office and residence as preferred by the client.

Section III – Needs and requirements of the client

This section contained the information regarding the needs and requirement of the client towards different levels of the floor. The information was collected regarding needs and requirement of different floor levels like ground floor, first floor, second floor, and third floor.

Section IV – Preferences of the client with regards to the live project

This section contained information regarding the needs and preferences of the client's for the designing and development of the different interior aspects. The components included preference for the designs based on a theme, timeframe and various aspects of interiors namely floor, ceiling, walls, furniture and furnishings.

3.8. Establishment of Content Validity

The tool of the present research was subjected to establishment of content validity. To establish the content validity, the tool was given to the Architects and Interior Designers of Vadodara City. The judges were requested to judge whether the content of the tool were relevant, irrelevant, clear and ambiguous and is fulfilling the objectives of the research. The suggestions were incorporated in the final tool for data collection.

3.9. Details regarding the live project

During the research process, the researcher contacted the owner of the residence. The purpose of research was explained so as to get the true responses. The data was gathered by the researcher between July 2020 to August 2020. The interview schedule was used for data collection. On the basis of the needs and preferences of the owner with regards to the designs selected for interior aspects namely; floor, wall, ceiling, furniture and furnishings the designs were prepared.

3.10. Phase I: Identification of client's Needs and Preferences

The interview schedule was used for the identification of the needs and preferences of the client with regards to the various aspects of the interior such as floor, wall, ceiling, lighting, doors, electrical equipment, furniture and furnishings were included in Interview schedule. The interview schedule also allowed the designer to collect information on the requirements of the client's needs and preferences for office cum residential unit.

3.11. Phase II: Design Development

On the basis of needs and preferences of the client and information collected regarding structure and various aspects of interiors was designed. For creating various visual projections AutoCAD 2016 software was utilized for the present research. The schedule of the drawings were as follows:

Table 7: Schedule of proposed drawings for the office cum residential unit.

Sr.No.	Schedule of Drawings	No. of Drawing
1	Ground Floor drawings	
1.1	Floor plan with furniture placement - Ground floor	1
1.2	False ceiling layout	1
1.3	Electrical layout	1
1.4	Plan of office	1
1.5	Wall elevation A&C - Office	1
1.6	Wall elevation B&D - Office	1
1.7	Plan of sitting Area	1
2	First Floor drawings	
2.1	Floor plan with furniture placement – First floor	1
2.2	False ceiling layout	1
2.3	Electrical layout	1
2.4	Plan of kitchen and Dining	1
2.5	Wall elevation A&B – kitchen	1
2.6	Elevation – Island and dining	1
2.7	Door design	1
3	Second Floor drawings	
3.1	Floor plan with furniture placement - second floor	1
3.2	False ceiling layout	1
3.3	Electrical layout	1
3.4	Plan of Sons bedroom	1
3.5	Wall elevation A&C – Son’s bedroom	1
3.6	Wall elevation B – Son’s bedroom	1
3.7	Plan of Daughter’s bedroom	1
3.8	Wall elevation A&C – Daughter’s bedroom	1
4	Third Floor drawings	1
4.1	Floor plan with furniture placement - third floor	1
4.2	False ceiling layout	1
4.3	Electrical layout	1

4.4	Plan of Attached Bathroom	1
4.5	Wall elevation A&B - Attached Bathroom	1
4.6	Wall elevation C,D&E - Attached Bathroom	1
4.7	Wall elevation F - Attached Bathroom	1
4.8	3D view – Third floor	1

3.12. Phase III: Cost Estimation

In the successful implementation of any design project, finance plays a vital role. The cost estimation was prepared by calculating the cost of each work as per the proposed design along with the material used and the labour cost involved.

CHAPTER IV

FINDINGS AND CONCLUSION

The detailed presentation of the data makes the understanding more scientific and specific. The data was collected through interview schedule. This chapter is divided into three sections.

SECTION – I

4.1.1 Background Information of the client

4.1.2 Information regarding the live design project

4.1.3 Need and Preferences of the client for his office cum residential unit

SECTION - II

4.2 Proposed drawings of office cum residential unit

SECTION - III

4.3 Cost estimation of office cum residential unit.

Section I

This section dealt with the information about the client profile and details about live design project. The designer first arranged introductory meeting with client and thereafter, an interview schedule was developed to know the background information of the client, Information regarding the live design project and needs and preferences of the client for his office cum residential unit.

4.1.1 Background information of the client

This section dealt with the background information of the client. It included background information of the owners such as name, age, gender, address, contact number, profession, education, type of house, type of family, total monthly income of family (Rs.), total number of family members, number of children in the family, number of adults in the family and family details comprised of age, gender and preferences of other members of the family.

The owner of the office cum residential unit was Mr Saiyed Afzal Hussain, The plot of office cum residential unit was situated in Antroli area, Surat city, Gujarat. The owner was fifty five years old and studied till graduation. His profession was financial consultant and his preference was to have office cum residential unit. The total monthly family income was ₹3, 00,000/-.The client was staying in nuclear family having four members. His wife was fifty two years old and they had two children's. The daughter was twenty eight years old and she was working as beauty aesthetics. The son was twenty six years old and working as business man.

4.1.2. Information regarding live design project

This section dealt with the information regarding live design project. The site was located in Antroli area, Surat city of Gujarat. The plot area of the live design project was 1852.821 Sq.Ft. The total carpet area of all the floors was 3668.33Sq.Ft. The budget given by the client

was ₹90, 00,000/-. The specific requirements given by the client regarding office area was to plan office at ground floor and should be nearby entrance. The owner didn't want to keep any drawing creatures designs of human faces, eyes, nose, birds, and animals. The owner wanted to keep a religious Arabic proverb near its working desk.

4.1.3. Need and Preferences of the client for his office cum residential unit.

This section dealt with the needs and preferences of the client for an office cum residential unit. The data gathered from the interview schedule revealed that the client required a separate office and a swimming pool area on the ground floor. The client required two entry ways, i.e., a main entrance at the front of the residential unit and a second entry from the backside of the residence. The main entry should be planned near the drawing room of the first floor and the second entry from the kitchen area of the first floor. An internal stair case should be planned till the top floor and other spiral stair case to be planned on the front side from the ground level till the first floor. The seating area, changing room and bathroom should be planned near the swimming pool area. The seating area of the swimming pool was to be planned near the internal stair case of the residence.

The client's requirement for the first floor was to have a foyer with a drawing room, a kitchen cum dining area with a utility room and a separate store room. The location of the kitchen should have proper ventilation, so that smoke and fumes formed during cooking should have proper air circulation. The kitchen cum dining area should not be perceptible from the drawing room and the placement of the store room should be near the utility area. The green space behind the kitchen area should be planned with a swing and a coffee table. The master bedroom should be planned with an attached bathroom near the drawing room. The common bathroom with separate basin area should be planned near the kitchen and drawing room.

For the second floor the client required three bedrooms and a family seating room. The daughter's bedroom should have an attached bathroom and balcony. The open family seating area to be planned near the staircase and guest bedroom should be without an attached bathroom. The common bathroom should be planned near the guest bedroom. The son's bedroom should be planned with an attached bathroom and separate walking-in-wardrobe.

For the third floor the client required a store room and a guest bedroom with an attached bathroom. The open terrace should be planned with a pergola and seating space.

The client did not preferred designs based on a certain theme. The time frame of the project was less than twelve months. Some specific preferences of the client for the various aspects of interiors for various rooms are described below:

Ground Floor

Office: The client required matt wooden flooring without grouting for the office area. Wooden effect with natural shade of lighting fixture for a false ceiling and colour of the wall to be painted light colour was preferred by the client. The client desired that window's to be planned on three sides of the wall with roller curtains of light-coloured and entry door should not be planned from the center of the wall. The window should be 4 feet wide with safety M.S. bars. The furniture preference for the office area was to have an overhead fixed storage above the lintel level, a storage cabinet with open shelf on the backside of the office table, an office table, a wooden seater sofa which can accommodate five to eight members in the office. More storage space was required, and it should be laminate based with wooden walnut color finish. The owner wanted one Split AC and a ceiling fan above the office table, one printer placement near the office table, and some extra plug sockets points in switch boards. The counter top of the table was preferred of natural stone with storage below the table. The owner did not want to place any living creature designs like human faces, eyes,

nose, birds, animals etc. The religious Arabic proverb to be designed near the working desk.

Swimming Pool: The flooring requirement for the ground floor was matt finish, and the colour shade should be different from the flooring used in other rooms of the residence. The bathroom floor tiles should be finished with matt finish, avoiding accidents. The walls of the entire residence are to be evenly finished with Birla putti and royal paint of the Asian paint brand. The colour preference for the swimming pool area was ivory, grey, blue, green, brown, white and metallic. The false ceiling was preferred in bathrooms, swimming pool area and seating space with different types of designs according to the current trends. Track lights were preferred for the ceiling, which was designed above the swimming pool area. The furniture near the swimming pool should be moveable, durable, trendy and stylish. The client needed one wall designed with tile cladding with niches and lighting fixtures, other walls were preferred to have tiles till 3 feet level. The column should be covered with tiles till the ceiling level.

Common bathroom: The preference for the bathroom flooring was matt finish tiles, for avoiding accidents. The Jaguar or Kohler brand fittings and sanitary ware was preferred by the owner. In the bathroom the WC should not be facing towards the north direction. The client wanted enhancing bathroom accessories such as toothbrush holder, napkin stand, hand wash dispenser, towel rack, soap disk and some artificial plants for enhancing the look of the bathroom. The ventilation window should not be too large, the exhaust fan should be added to circulate and clean the inner air of the bathroom. The tiling of the wall till the ceiling level with space grouting was preferred by the client. Separate storage was not required in the common bathroom. The bathroom door should be planned with wooden veneer finish, and the hooks were required on the backside of the door for hanging clothes.

First floor

Drawing room: The client preferred Italian tiles or vitrified tile with same tile skirting of flooring. The false ceiling of the foyer and drawing room should be divided in two parts, i.e., gypsum base ceiling parallel to the main door and other part of ceiling was designed. The walls of the entire residence are to be evenly finished with Birla putti and royal paint of an Asian paint brand. The colour preference for the drawing room was ivory, grey, brown, white, black, beige and metallic colour. A partition door should be designed to provide privacy between the drawing area and the dining space. The main entrance from the drawing area was preferred directly without having a separate partition or wall in the foyer space. The foyer area should be planned as it enhances the entire drawing room, and a chest of drawers near the entry was required for storing footwear. The main entry door should be minimum 4 feet, so that large furniture or equipment could be easily brought inside the house and the safety door should not be a single leaf door. The furniture preference for the drawing room was TV cabinet with back panelling, C- Shape continuous sofa seating with one side corner table, Center table with storage and shoe rack. The client preferred light-coloured roman curtains and some decorative artefacts near the furniture for enhancing the area. The proper ventilation should be planned for the drawing room.

Kitchen cum dining: The client preferred an island type of kitchen with a dining area. The kitchen should be designed such that it can fit with the utensils, groceries and other household equipment. The modular type furniture for the kitchen was preferred in the kitchen with the tendon, soft closure concept of hettich or hafele brand. The overhead storage was preferred by the client with crockery unit and openable shutters. The storage was required to be designed with drawers and open space below the island counter. The owner preferred seven seater dining table with a stone finish on the countertop and a counter material of the main platform of black granite. The client preferred Italian tiles or vitrified tile with same tile skirting of flooring.

The false ceiling of gypsum material was preferred with indirect lights. The walls of the kitchen and dining should be evenly finished with Birla putti and royal paint of the Asian paint brand. The colour preference for the kitchen and dining was ivory, grey, brown, white, black, beige and metallic colour. Hanging lights to be placed above the dining table was preferred by the client. The window was preferred not to be planned near or above the hob area, but the dining area should have a large glass window for a pleasant view. The store room and utility area should be planned in the kitchen working area for easy access. The store room should not be open, it should be closed with a door, and it needs to be designed with a proper amount of ventilation. The shelves and storage cabinets should be planned according to the space. The placement of air-conditioning was not required in the kitchen.

Master Bedroom: The client preferred to have a false ceiling attached with bed back panelling. The flooring preferred by the client was Italian tiles or vitrified tile with same tile skirting of the flooring. The colour of the walls should be light-shaded and one wall to be designed with texture, graphics or wallpaper. The window should be planned on adjacent walls, i.e., one on the backside of the bed and other near the balcony, for proper ventilation. The single leaf door should be planned in such a way that it screens the bed when the door is opened. The furniture required for the master bedroom was a double bed with side tables, wooden finish openable wardrobe with provision of storage for accessories, personal belongings, furnishings, party shoes, seasonal clothes, and a small locker, party wear clothes and a separate dressing unit. The client wanted a queen-size bed and storage below the bed with a hydraulic system. The bed sheets and comforter for bed should be planned according to the colour combination. The air-conditioning and ceiling fan were required. The client preferred light shade roman curtains and some decorative artefacts near the furniture for enhancing the area.

Attached Bathroom: The client preferred the walls and floor of the bathroom to be covered with tiles. The floor tile should be matt finish, for avoiding accidents. The attached bathroom should consist of a wash basin, shower area and a water closet. A separate shower area with a glass partition was preferred. The Jaguar or Kohler brand fittings and sanitary ware was preferred by the owner. In the bathroom, the WC should not be facing towards the north. The client wanted bathroom accessories to be designed like toothbrush holder, napkin stand, hand wash dispenser, towel rack, soap disk and some artificial plants for enhancing the areas of the bathroom. The ventilation window should not be too large, an exhaust fan with louvers was preferred for air circulation. The false ceiling was not preferred in the attached bathroom due to the less height. The bathroom door should be planned of wooden veneer finish and backside laminate.

Second Floor

Daughter's bedroom: The client wanted wooden tiles for flooring. The false ceiling preferred by the client was a gypsum base with concealed and indirect lights. The colours preferred for walls and furniture were turquoise blue, sea blue, grey, white, ivory, beige and olive green. The furniture required for the daughter's bedroom was a queen-sized bed with side tables, TV cabinet, wardrobe with provision of storage for accessories, personal belongings, party shoes, seasonal clothes, and a small locker, party wear clothes and a separate dressing unit with storage. The client wanted a queen-size bed and storage below the bed with openable hydraulic system. The bed sheets and comforter for bed should be planned according to the colour combination. The air-conditioning and ceiling fan were required. The client preferred roman curtains and some decorative artefacts near the furniture for enhancing the area. The window should be planned on adjacent walls, i.e., one on the backside of the bed and the other near the balcony, for proper ventilation. The single leaf door should be planned in such a way that it screens the bed when the door is opened.

Attached Bathroom: The client wanted the walls and floor to be covered with tiles. The false ceiling preferred by the client was gypsum base cement sheet finished with concealed and indirect lights. The colour preference for tiles and false ceiling was grey, sea blue, turquoise, black, white, silver and copper. The floor tile should be matt finish, for avoiding accidents. The false ceiling was preferred in the bathroom. The bathroom should consist of a wash basin, shower area and a water closet. The shower area with a glass partition was preferred. The wet area and dry area should be separate. The Jaguar or Kohler brand fittings and sanitary ware was preferred by the owner. In the bathroom, the WC should not be facing towards the north. The client wanted bathroom accessories to be designed like toothbrush holder, napkin stand, hand wash dispenser, towel rack, soap disk and some artificial plants for enhancing the areas of the bathroom. The ventilation window should not be too large. The bathroom door should be planned of wooden veneer finish and backside laminate. The entrance of the bathroom should be slightly raised than the bedroom floor through a stone or by adding a tile thickness. The furniture should be designed to store clothes, accessories, or utility articles, the material should be waterproof. The owner wanted furniture to be suspended from the floor.

Sons Bedroom: The client preference for flooring was Italian tiles or vitrified tiles. The colour preference for walls and furniture finish was wooden effect, ivory, beige, white, metallic colors, and grey. The client preference for false ceiling was wooden effect and gypsum base with concealed and indirect lights. The furniture required for son's bedroom was a king-size bed with side tables, back panelling, TV cabinet, study table, walk-in-wardrobe with provision of storage for accessories, personal belongings, party shoes, seasonal clothes, and small locker, party clothes with dressing unit to accommodate all the needs and requirements. The separate dressing unit should have the provision of diffused light in front of a full-length mirror. The client preferred to have a side table drawer or a storage shelf near the bed for storing

accessories or magazines or any other daily utility items. The client wanted a queen-sized bed and storage below the bed with a hydraulic system. The bed sheets and comforter for bed should be planned according to the colour combination. The air-conditioning and ceiling fan were required. The client preferred roman curtains and some decorative artifacts near the furniture for enhancing the area. The window should be planned on adjacent walls. The single leaf door should be planned in such a way that it screens the bed when the door is opened.

Attached Bathroom: The client wanted the walls and floor to be covered with tiles. The false ceiling preferred by the client was gypsum base cement sheet finished with concealed and indirect lights. The colour preference for tiles and the false ceiling was ivory, brown, copper, bronze, and white. The client preference for wall was Italian glossy finish tiles combination with highlighter and floor tile should be matt finish, for avoiding accidents. The designer tiles should be designed with some niches and lighting effects. The bathroom should be consisting of a wash basin, shower area and a water closet. The separate shower closet with a glass partition was preferred. The wet area and dry area should be separate. The Jaguar or Kohler brand fittings and sanitary ware was preferred by the owner. In the bathroom, the WC should not be facing towards the north. The client planned bathroom accessories to be designed like toothbrush holder, napkin stand, hand wash dispenser, towel rack, soap disk and some artificial plants for enhancing the areas of the bathroom. The ventilation window should not be too large, the exhaust fan. The bathroom door should be planned of wooden veneer finish and backside laminate. The entrance of the bathroom should be slightly raised than the bedroom floor through a stone or by adding a tile thickness. The furniture should be designed to store clothes, accessories, or utility articles, the material should be waterproof. The owner wanted furniture to be suspended from the floor.

Guest bedroom: The client preference for flooring was Italian tiles or vitrified tiles. The colours preferred for the guest room were olive green, grey, oak yellow, white, brown, black and ivory. The guest room should have windows planned in such a way that it allows fresh air and natural light to enter the room. The client preference for a false ceiling was gypsum base with concealed and indirect lights. The bed placement should be such that it maintains privacy. The provision for storage should have a space for keeping bags and luggage. A dressing table should be designed as a separate unit near the wardrobe. The bed should be queen-size with below-storage. The bed sheets and comforter for bed, to be designed according to the colour combination. The artefacts and accessories should be added to the room for enhancing the designs.

Common bathroom: The client wanted the walls and floor to be covered with tiles till the ceiling level. The colour preference for tiles was oak yellow, grey, white, black, metallic finish, beige and ivory. The floor tile should be matt finish, for avoiding accidents. The common bathroom should consist of a wash basin, shower area and a water closet. The Jaguar or Kohler brand fittings and sanitary ware was preferred by the owner. In the bathroom, the WC should not be facing towards the north direction. The client wanted bathroom accessories to be planned like toothbrush holder, napkin stand, hand wash dispenser, towel rack, soap disk and some artificial plants for enhancing the look of the bathroom. The ventilation window should not be too large, the exhaust fan should be added for air circulation and ventilation. Extra storage facility was not required in the common bathroom. The bathroom door should be planned of wooden veneer finish and hooks were required on the backside of the door for hanging clothes.

Family Room: The client's preference for flooring was Italian tiles or vitrified tiles. The false ceiling should be planned of gypsum base with concealed, indirect light and hanging light was required to enhance the area. The preference for furniture was L-shaped sofa seating, a

movable center table and a TV unit. A French window was to be planned to get a view of the front garden and avail the fresh air and sunlight during the day time. The client preferred pleated curtains and some decorative artifacts near the furniture for enhancing the area and some Arabic religious frames on the walls with focus lights. The colour preference for walls and furniture was neutrals shade colors, black, white, brown, metallic, ivory, beige and white.

Third Floor

Open terrace: The client preferred an open terrace with some green space and a pergola with the capacity of 8 to 10 people. The client preferred some artificial grass in some of the areas and artificial movable pots. The parapet wall should be planned of glass near the pergola seating area. The lighting for the open terrace was preferred water-proof light fixtures. The pergola should be planned in front of the guest bedroom. The floor tile preference for open terrace was rustic effect tiles with artificial green grass design. The colour preference for parapet and walls was ivory, beige, white, grey and for flooring tiles was grey, dark grey, orange, green.

Guest bedroom: The client's preference for flooring was Italian tiles or vitrified tiles. The false ceiling should be planned of gypsum base with concealed and indirect light. The furniture was not required in the guest bedroom. The colour preference for walls was ivory, beige, white, grey and brown. The client preferred roman curtains and windows should be planned on opposite walls for proper ventilation. The single leaf door should be planned.

Attached bathroom: The attached bathroom tiles should be glossy finish. The client preferred the walls and floor should be covered with tiles till the ceiling level. The colour preference for tiles was yellow, grey, black, beige and ivory. The floor tile should be matt finish, for avoiding accidents. The attached bathroom should consist of a wash basin, shower area and a water closet. The client wanted storage below the basin. The Jaguar or Kohler brand fittings and sanitary ware

was preferred by the owner. In the bathroom, the WC should not be facing towards the north direction. The client wanted bathroom accessories to be planned like toothbrush holder, napkin stand, hand wash dispenser, towel rack, soap disk and some artificial plants for enhancing the look of the bathroom. The ventilation window should not be too large, the exhaust fan should be added for air circulation and ventilation. Extra storage facility was not required in the common bathroom.

Section II

4.2 Proposed drawings of office cum residential unit

The designs of office cum residential unit are given below:

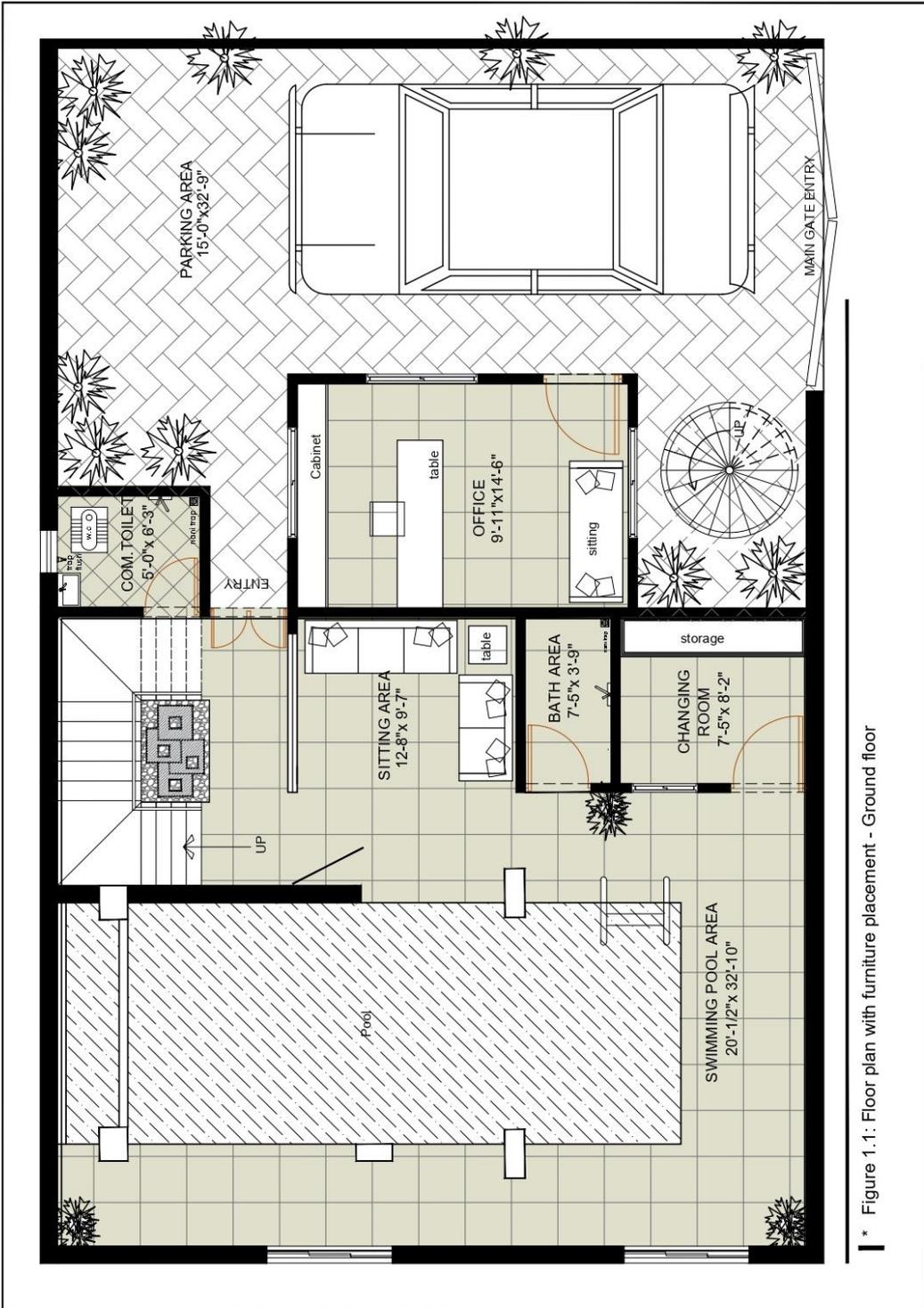
Table 8: Schedule of proposed drawings for the office cum Residential unit.

Sr.no	Schedule of Drawings	No. of Drawing
1	Ground Floor drawings	
1.1	Floor plan with furniture placement - Ground floor	1
1.2	False ceiling layout	1
1.3	Electrical layout	1
1.4	Plan of office	1
1.5	Wall elevation A&C - Office	1
1.6	Wall elevation B&D - Office	1
1.7	Plan of sitting Area	1
2	First Floor drawings	
2.1	Floor plan with furniture placement – First floor	1
2.2	False ceiling layout	1
2.3	Electrical layout	1
2.4	Plan of kitchen and Dining	1
2.5	Wall elevation A&B – kitchen	1
2.6	Elevation – Island and dining	1
2.7	Door design	
3	Second Floor drawings	
3.1	Floor plan with furniture placement - second floor	1
3.2	False ceiling layout	1
3.3	Electrical layout	1

3.4	Plan of Sons bedroom	1
3.5	Wall elevation A&C – Son’s bedroom	1
3.6	Wall elevation B – Son’s bedroom	1
3.7	Plan of Daughter’s bedroom	1
3.8	Wall elevation A&C – Daughter’s bedroom	1
4	Third Floor drawings	
4.1	Floor plan with furniture placement - third floor	1
4.2	False ceiling layout	1
4.3	Electrical layout	1
4.4	Plan of Attached Bathroom	1
4.5	Wall elevation A&B - Attached Bathroom	1
4.6	Wall elevation C,D&E - Attached Bathroom	1
4.7	Wall elevation F - Attached Bathroom	1
4.8	3D view – Third floor	1

I) GROUND FLOOR

The ground floor consisted of a paved parking area, an office, a common bathroom, a stair case, a swimming pool area, a changing room and sitting space near the swimming pool. The size of the office was 9’11”X 14’6”. The office consisted of a working table with a chair, a sitting bench and storage. The size of the paved parking area was 15’0”X 32’9”. The size of the sitting area besides the swimming pool was 7’0”X 9’7”. The sitting room was having three seater and two-seater sofa. The size of the swimming pool area was 10’8”X 27’9”. The common bathroom consisted of a wash basin, a water closet and a shower. The size of the common bathroom was 7’5”X 3’9” and the size of the changing room of the swimming pool was 7’5”X 8’2”.



* Figure 1.1: Floor plan with furniture placement - Ground floor

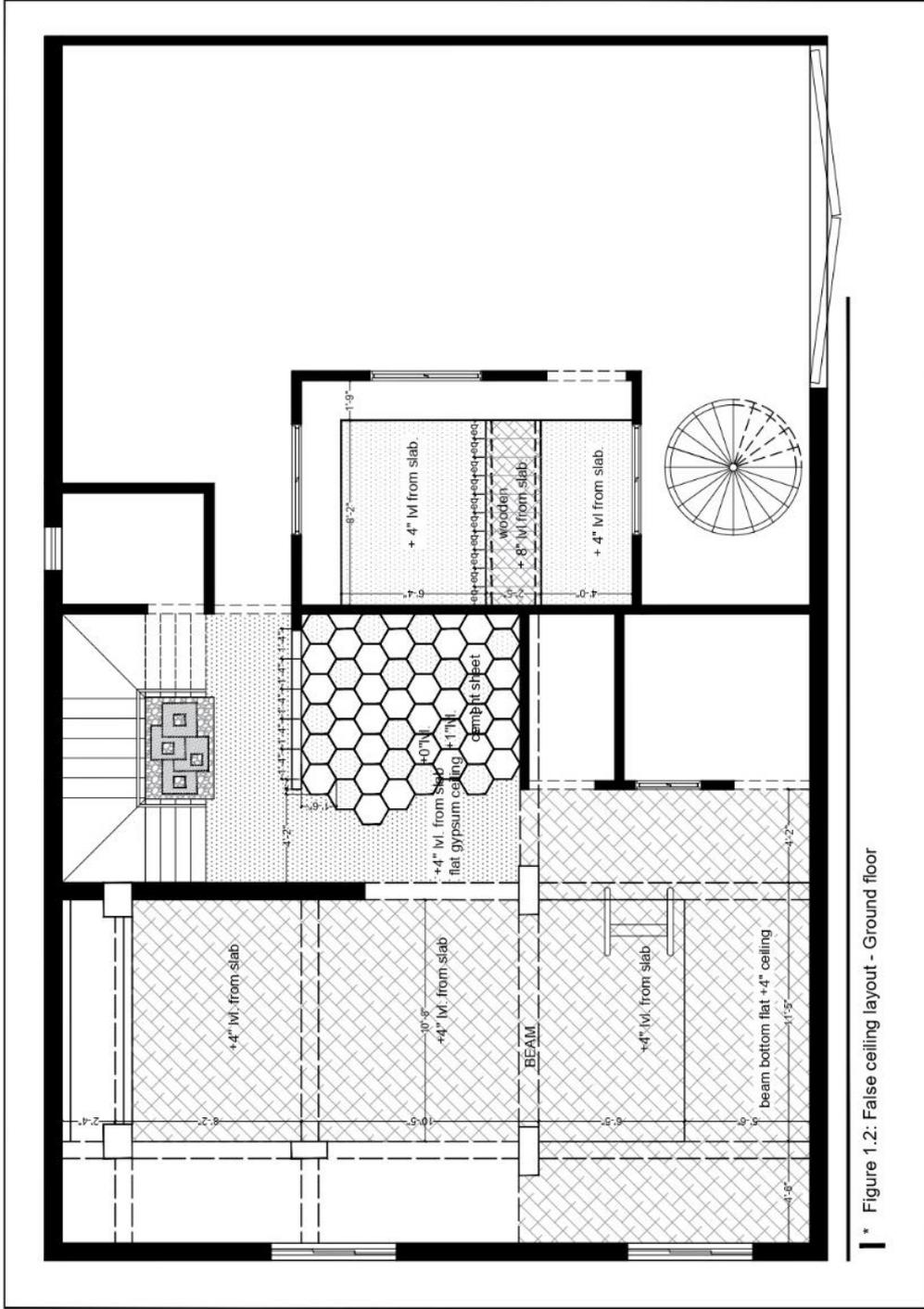
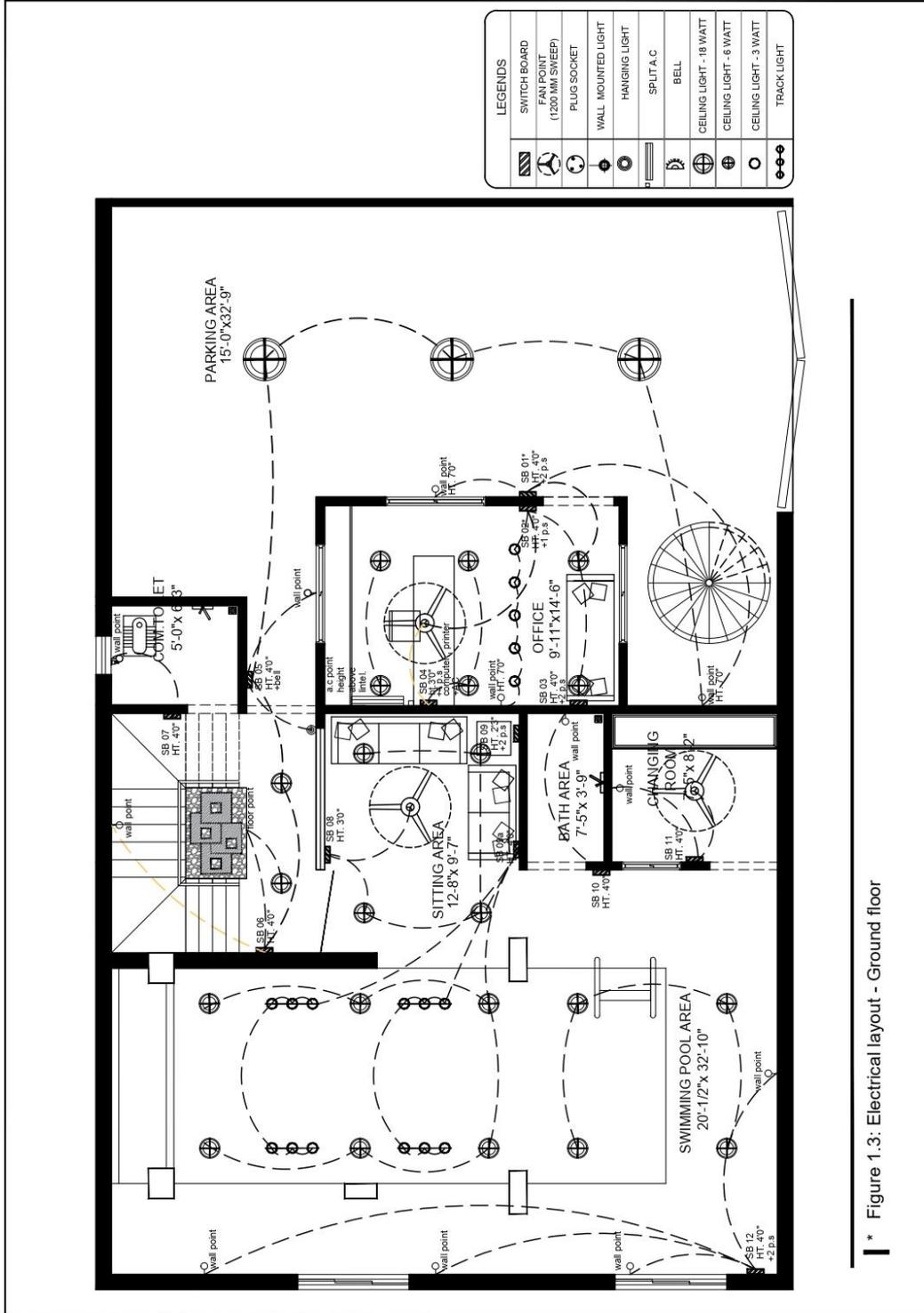


Figure 1.2: False ceiling layout - Ground floor



FALSE CEILING LAYOUT

The false ceiling levels were represented by straight lines and dotted lines with indirect lightings. The 4" drop flat ceiling was designed for the swimming pool. The ceiling was made of gypsum base, which gives an aesthetic finished touch to the swimming pool and office area. The ceiling of the seating area was designed of cement sheet with 4mm grooves. The ceiling of the office room was planned with a wooden panel designed in the center of the office room.

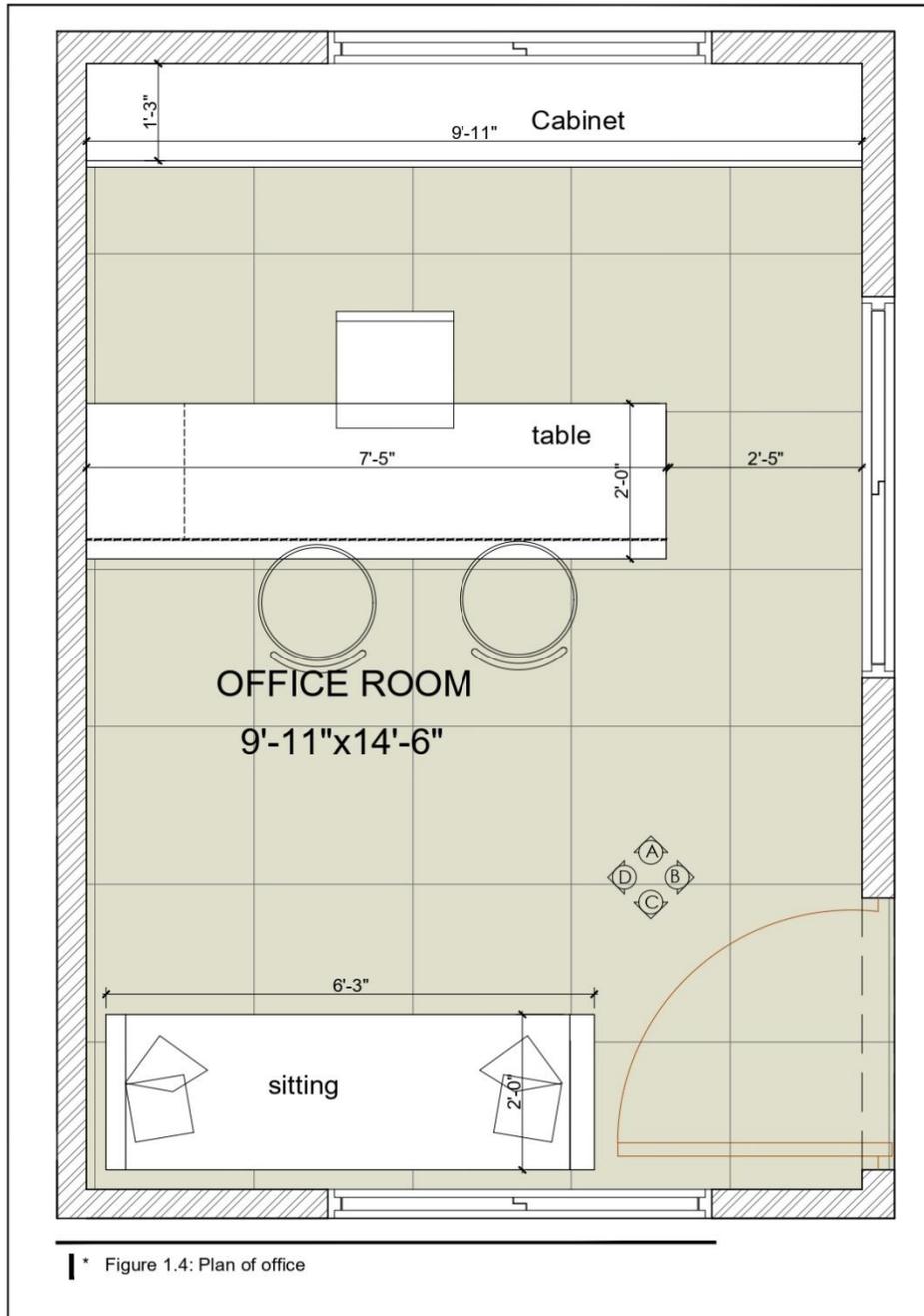
ELECTRICAL LAYOUT

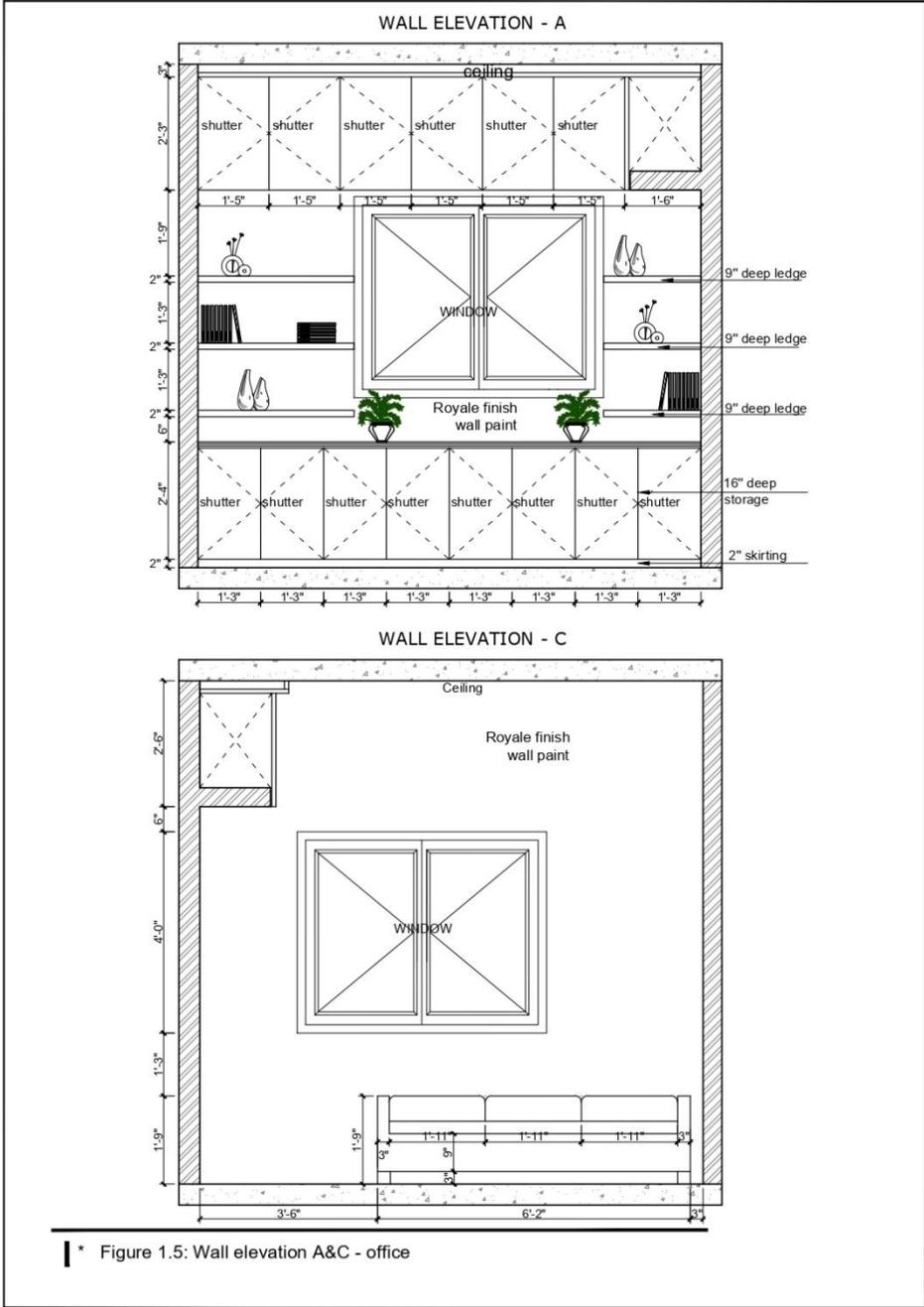
The electrical layout was represented by the lines and symbols of the electrical wiring. This Figure 3 shows 1 air-conditioning, 3 fan, 6 wall points at the internal area, 2 wall points at the outdoor area and 1 wall point at the stair case, 1 bell point, 1 MCB (Miniature circuit breaker), 11 switchboards at the height of 4'0", 1 switchboard at the height of 3'0" and 1 switchboard placed at the height of 2'3" from the floor. An Internet point was planned near the working desk in the office room. On the ground floor ceiling there were twenty-six LED lights of square shape having 12 watts and twenty-one LED lights of round shape having 3 watts. The indirect rope light was planned in a vertical gap with 4" dropped ceiling.

Table 9: Electrical wiring – Ground floor

Switch board	Connection
Office room	
SB 01 – 4'0"	CL -3, WP – 2, CL– 1*, PS- 2
SB 02 – 4'0"	CL – 3, CL – 1*, Fan*, PS – 1, WP - 1
SB 03 – 4'0"	PS – 2
SB 04 – 3'0"	CL – 4, CL – 1*, Fan*, PS – 4, AC
Entrance	
SB 05 – 4'0"	CL – 1*, Bell
Passage	
SB 06 – 4'0"	CL – 1, CL – 1*, FP – 1, WP – 1*
SB 07 – 4'0"	CL – 1, exhaust fan
Sitting area	
SB 08 – 3'0"	CL – 4, 1 fan
SB 09 – 2'3"	CL – 3, FP - 1

SB 09a – 4'0"	CL – 6, Track – 4, WP - 4
Swimming pool	
SB 10 – 4'0"	WP - 1
SB 11 – 4'0"	WP – 1, 1 fan
SB 12 – 4'0"	CL – 4, WP – 4, 2PS





OFFICE

Wall elevation - Office

The size of the office was 9'11"X 14'6", which was designed considering the needs and preferences of the client. The office room consisted of office table, office chair, three seater sitting, storage behind the office table and overhead cabinets. The flooring was designed of wooden effect tiles, which emphasizes the look and 3"skirting was done all around the office room. The royal finish paint was used in ceiling and walls of the office.

Wall Elevation – A

Wall A contained a low-height fixed storage and overhead storage above the lintel. The backside storage had eight shutters for storing files and other items. Above that, the three open shelves were planned on both the sides of the window. The materials used for the storage cabinet were laminate wood. A window was planned in the centre of the wall, and its size was 4'0" X 5'0". The sill level of the window was at 3'0" from the floor. The window had a 1"stone frame with MS bars inside.

Wall Elevation – B

This wall contained the entry door and the window of the office. The size of the door was 7'0" height and 3'0"wide. The size of the window was 5'0 X 4'0". The sill level of the window was at 3'0" from the floor. The main entry door and window had a stone framing of 3". The door was made of wood with veneer finished.

Wall Elevation – C

Wall C contained a wooden sitting and a window above it. The size of the window was 5'0 X 4'0" and it had a stone framing. The size of the wooden sitting was 6'3"X 1'8"X 3'0". The sitting bench was made of wood.

Wall Elevation – D

This wall contained a designer fixed wooden panel designed till the ceiling. The 3" wooden panel was planned in the centre of the wall and size of panel was 9'0"X 2'0". Besides, the wooden panel an office table was designed and size of the office table was 7'0"length, 2'0" width and 2'6"height. Above it a religious Arabic proverb was designed, which was made of 8mm MDF finished with metallic polish. The materials used on shutters were laminate and the table top was of corian stone. The size of the owner's chair was 2'0"X 1'6"X 3'0". The royal finish paint was used in ceiling and walls of the sitting area.

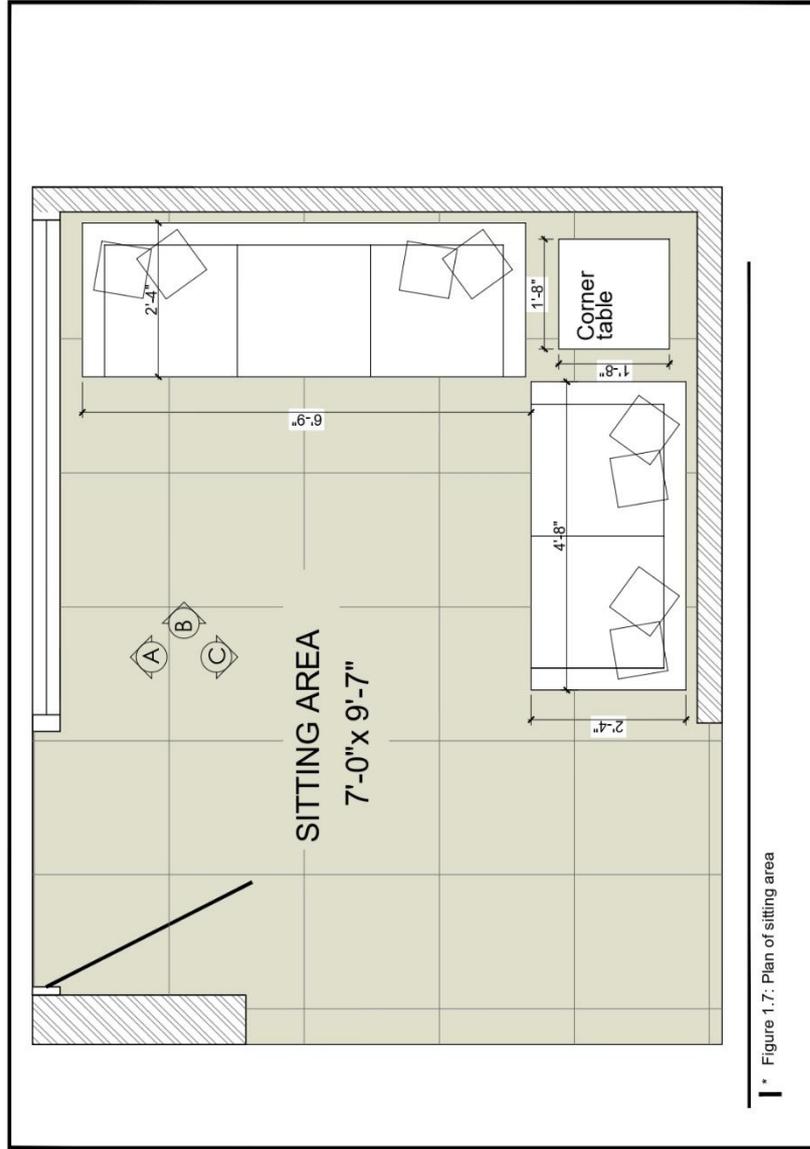
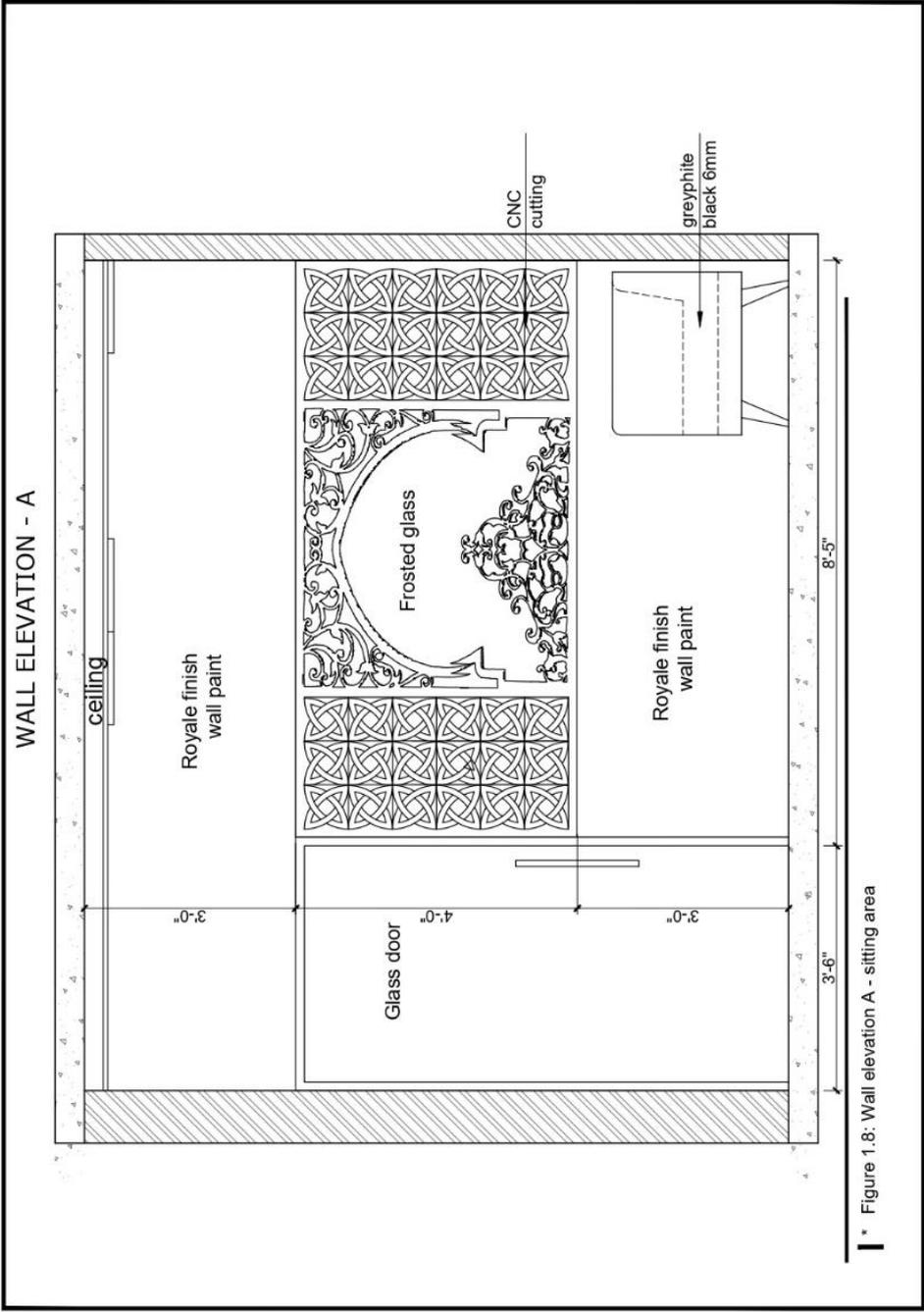
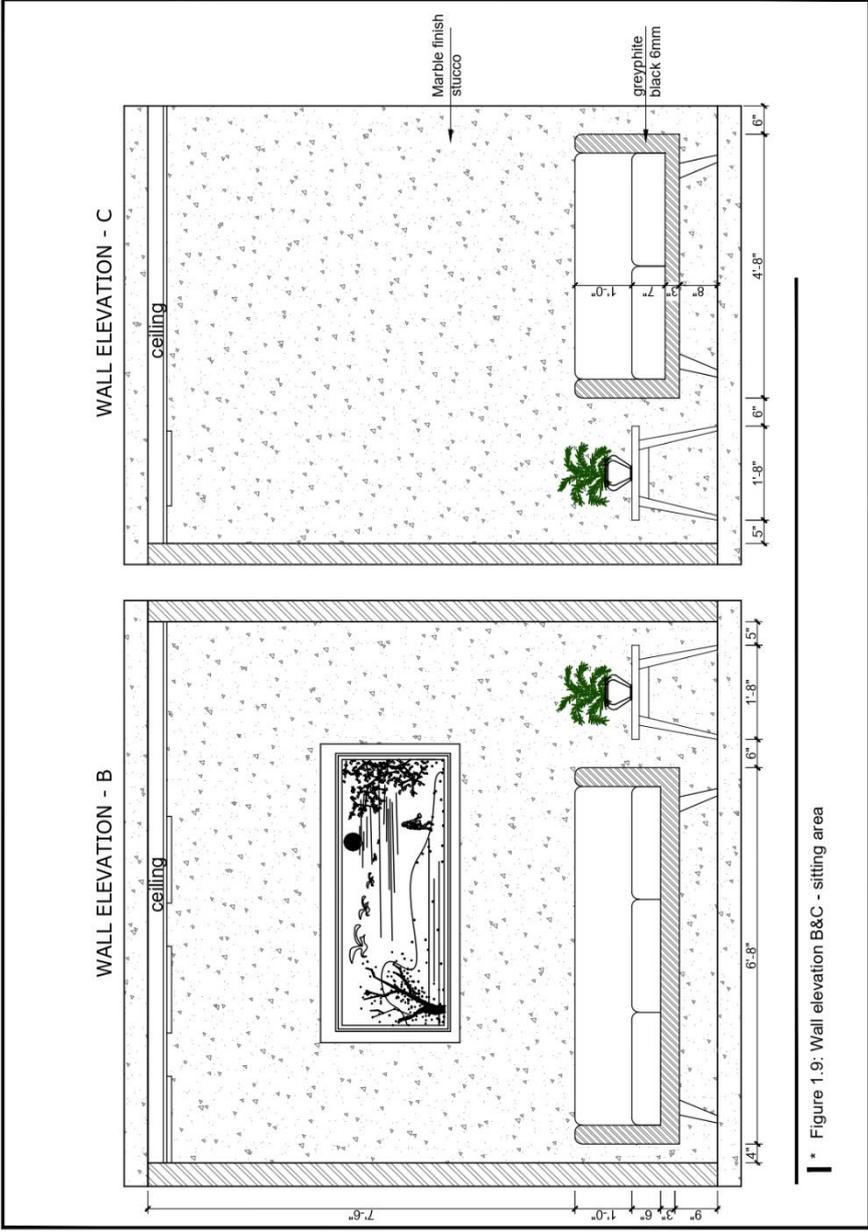


Figure 1.7: Plan of sitting area



* Figure 1.8: Wall elevation A - sitting area



* Figure 1.9: Wall elevation B&C - sitting area

SITTING AREA

Wall elevation - sitting area

The size of the sitting area was 11'11"X 9'7". The furniture in the sitting area were three seater sofa, two seater sofa and one centre table, which were designed considering the needs and preferences of the client. The flooring of the sitting area was matt finish grey-coloured tile which emphasize the look and 3"skirting was done all around the sitting area. The size of the tile was 2' X 2'.

Wall Elevation – A

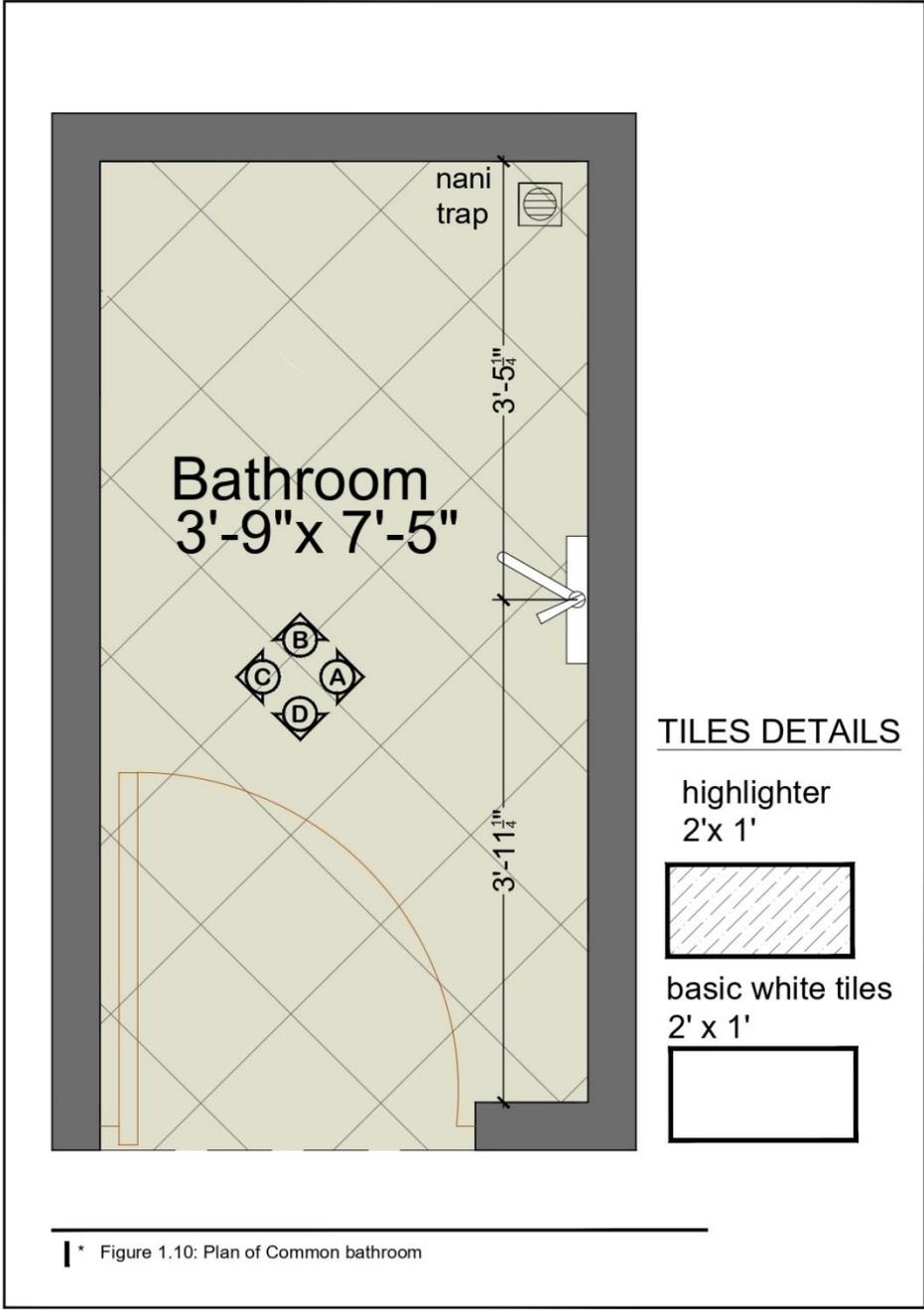
This wall contained an entry door and a partition. The size of the glass door was 3'6" wide and 7'0" height. The partition was carved and designed with CNC cutting and frosted glass which was fixed between the partitions. The materials used for the partition were 19mm MDF and frosted toughen glass.

Wall Elevation - B

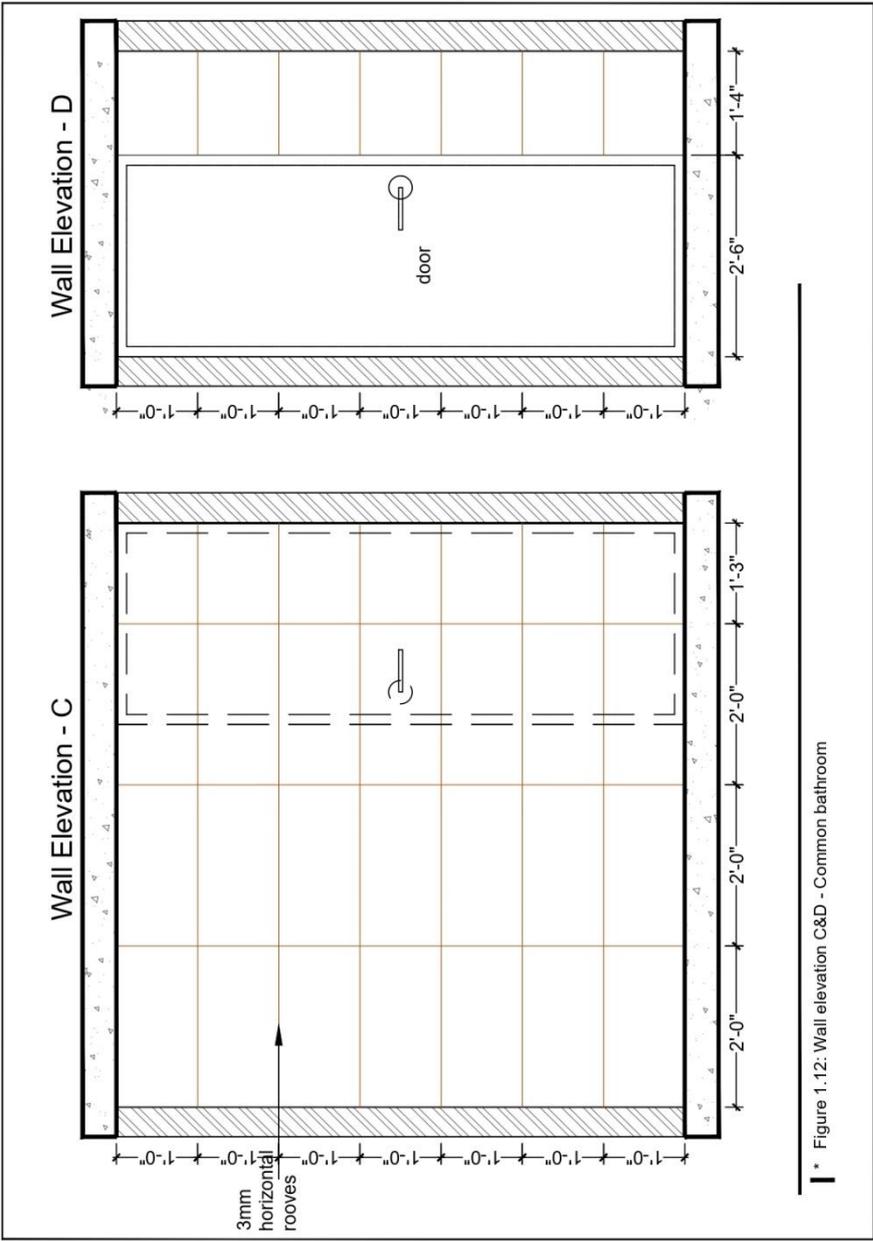
Wall B contained 3 seater sofa 5'9" in length and 2'4" in depth. The back wall was enhanced with stucco marble finish texture. The material used for the sofa was natural cane finish rattan wicker 6mm of rehau brand and the cushions were Bentley of sarom brand. The wall frames were planned above the sofa to enhance the sitting area.

Wall Elevation - C

Wall C contained a 2-seater sofa 4'0" in length and 2'4" in depth. The back wall was enhanced with stucco marble finish texture. The material used for the sofa was natural cane finish rattan wicker 6mm of rehau brand, and the cushions were Bentley of sarom brand.



* Figure 1.10: Plan of Common bathroom



* Figure 1.12: Wall elevation C&D - Common bathroom

COMMON BATHROOM

Wall elevation - common bathroom

The size of the common bathroom was 3'10"X 7'4". The bathroom had only shower area. The total height of the bathroom was 7'0". The ceramic tiles are fixed in the bathroom on four sides of the wall till the ceiling level. The royal finish paint was used in ceiling of the common bathroom.

WALL ELEVATION - A

The dark-beige-coloured ceramic tiles were fixed on the walls till the ceiling. This was the main wall where all the plumbing fixtures were fixed. The horizontal brick pattern was designed with 3mm horizontal spacers applied all around the bathroom. The size of the dark-coloured ceramic tile was 2' X 1'. The lintel level was at 7'0" from the floor level. The spout was planned at 1'10"height, the diverter at 3'0" and the shower at 6'6"from the floor. In the corner 4"X 4"shape stainless steel nahni trap was installed in the bathroom.

WALL ELEVATION – B

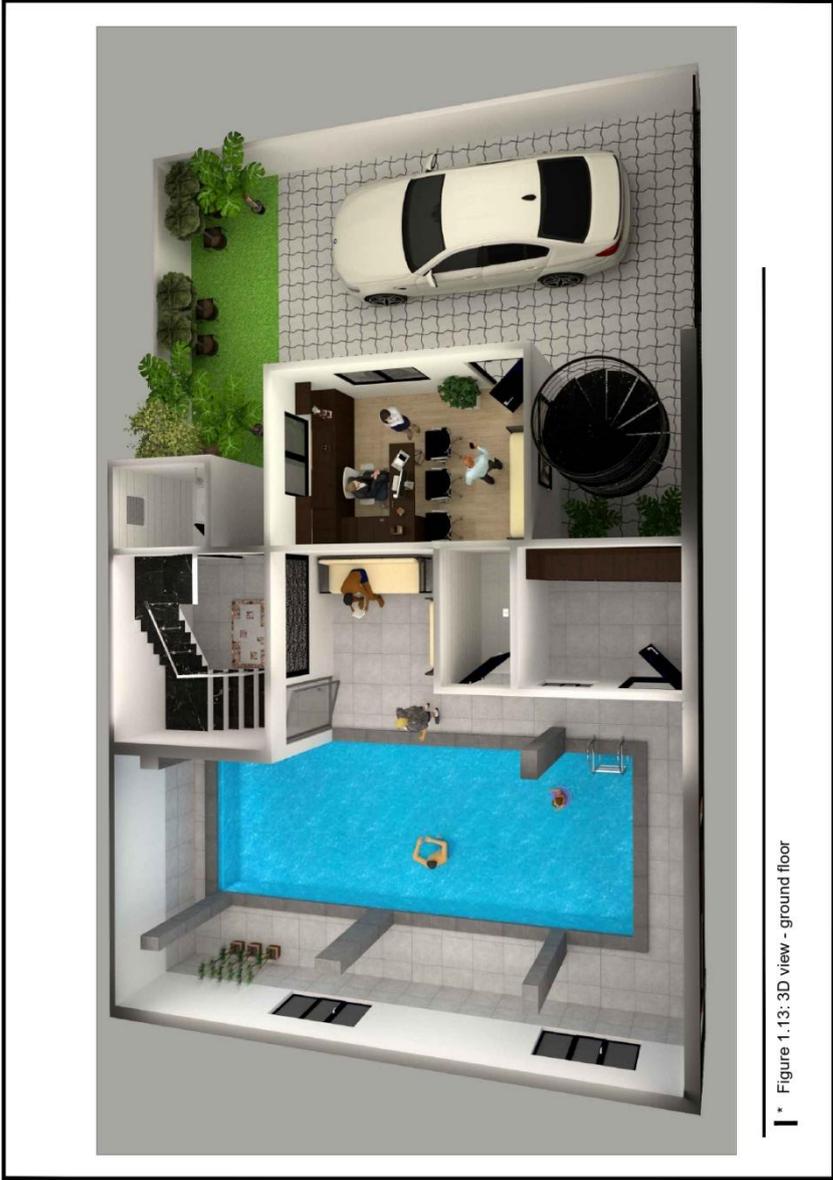
The wall elevation B contained an entry door of the bathroom. The size of the door was 7'0" in height and 2'6" in width. The door has stone framing and was made up of a flush door with matt finish veneer.

WALL ELEVATION - C

The white-colour ceramic tiles were fixed on the walls till the ceiling level of the bathroom.

WALL ELEVATION – D

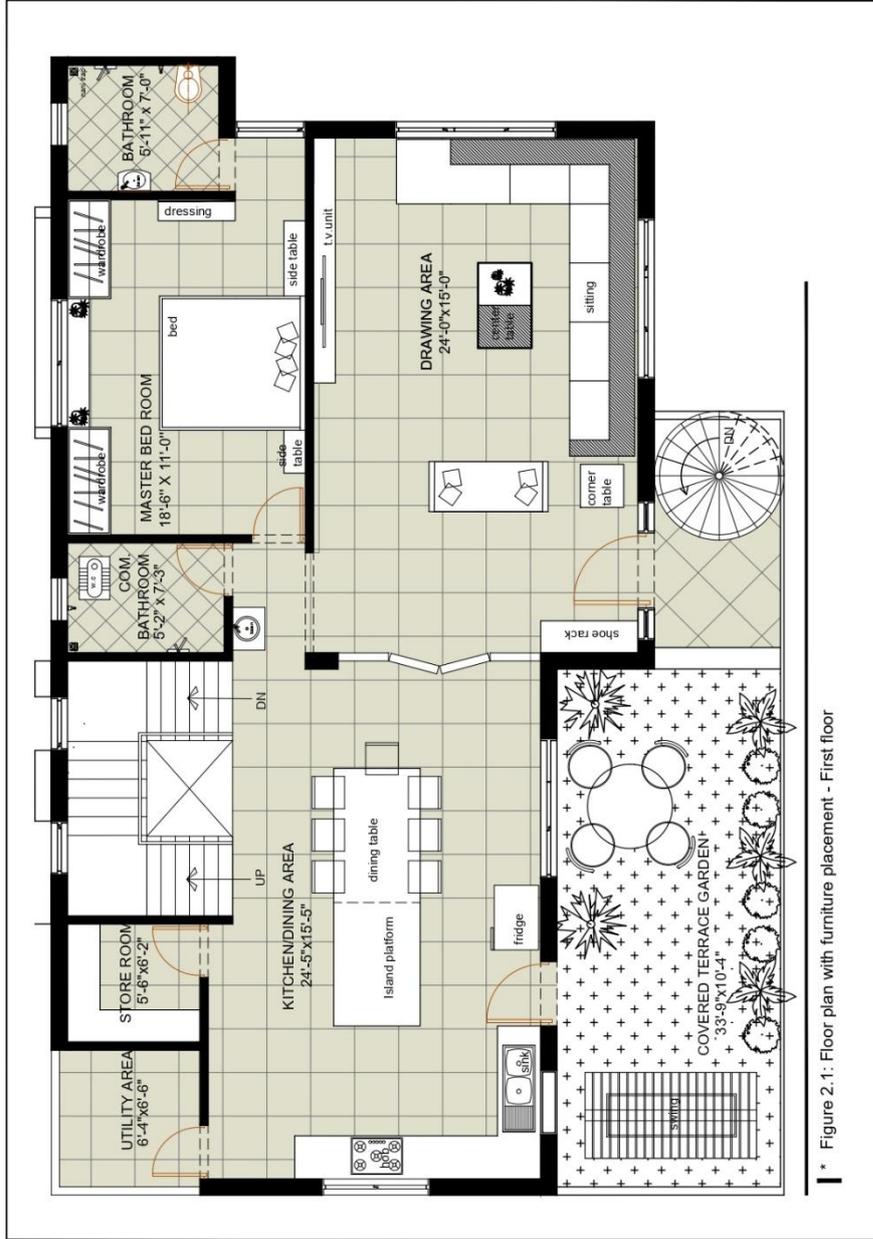
The white-colour ceramic tiles were fixed on the walls till the ceiling. The towel rack was planned at 5'0" height from the floor and 4" x 4" glass shelves in the corner for keeping the bathroom utility things.



* Figure 1.13: 3D view - ground floor

II FIRST FLOOR

The first floor consisted of a drawing room, a kitchen cum dining, a store room, a utility area, a master bedroom with attached bathroom, and an outdoor area. The main entrance was from the drawing room, the drawing room was of 24'0"X 15'0" size. The drawing room consisted of a C-shaped sofa sitting with a centre table, TV unit on the opposite wall, storage for footwear near the entrance door, a partition between the kitchen cum dining and the drawing room. The kitchen and dining room were of 24'5"X 15'5" size. The kitchen of L-shaped counter having island attached with 7 seater dining table.. The size of the utility room was 6'6"X 6'6" and the store room was of 5'6"X 6'2". The common basin unit was designed nearby the drawing room, kitchen and master bedroom. The size of the common bathroom was 5'2"X 7'3". The master bedroom consisted of two wardrobes, a double bed with two side drawers, a dressing unit and a TV unit. The size of the master bedroom was 18'6"X 11'0" and the size of the attached bathroom was 5'11"X 7'0". The bathroom consisted of a washbasin, shower area and a water closet



* Figure 2.1: Floor plan with furniture placement - First floor

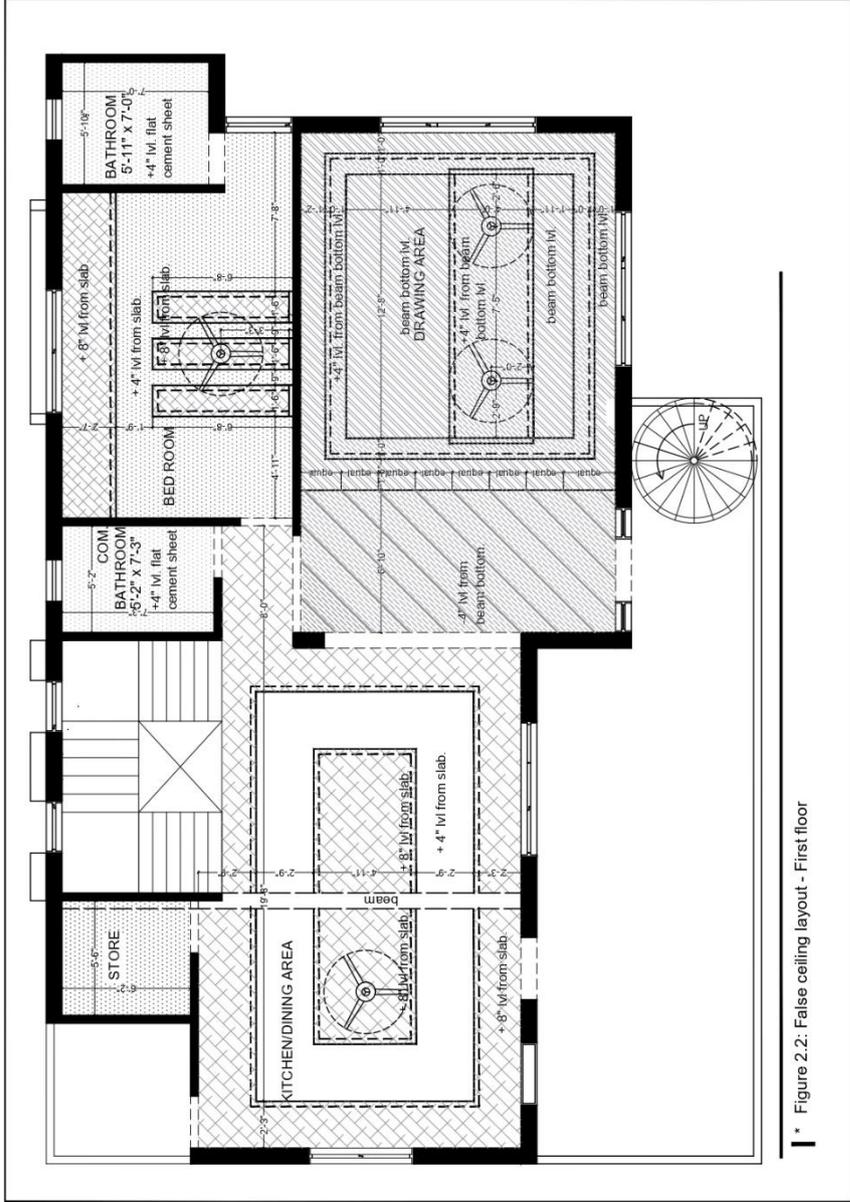
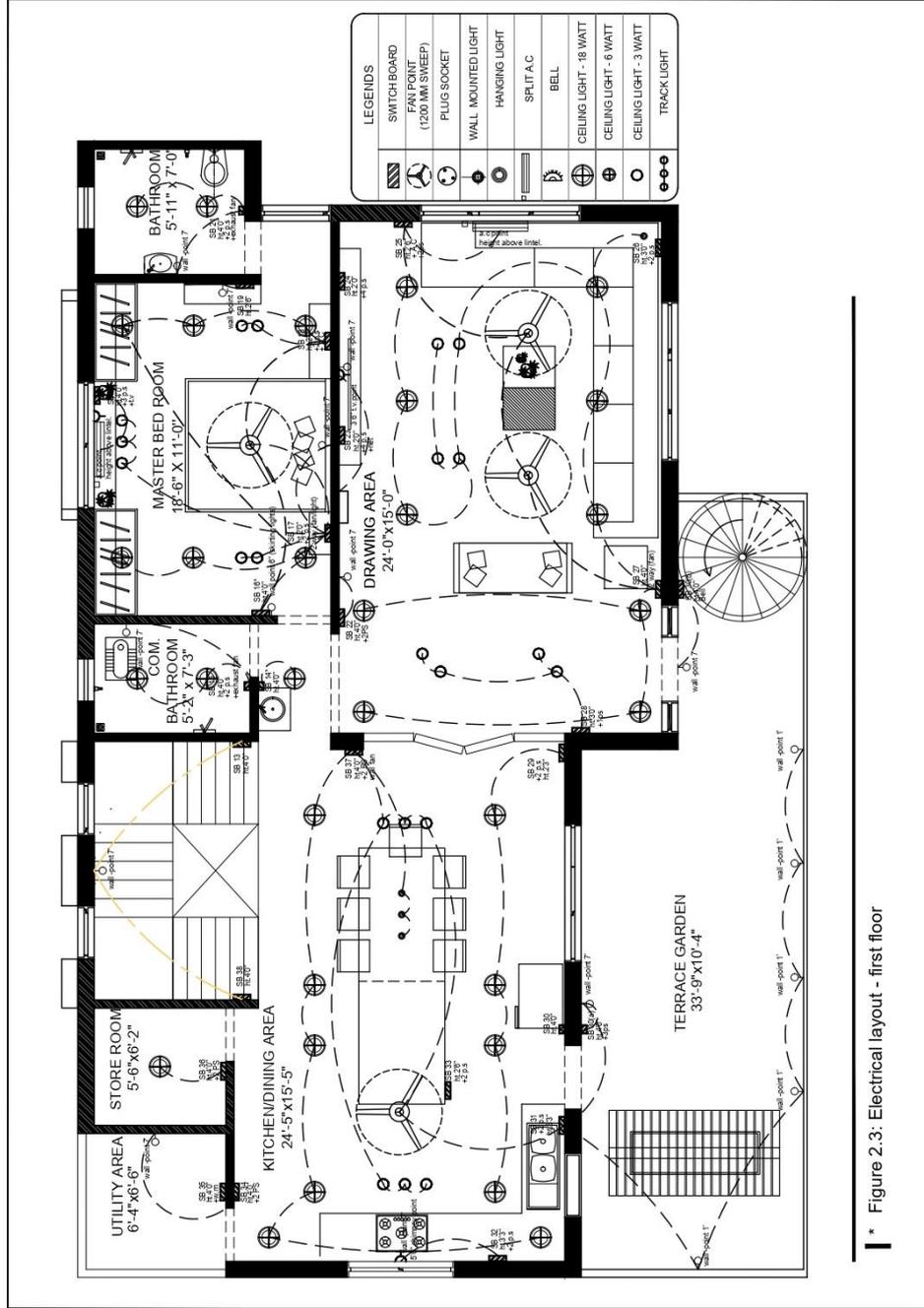


Figure 2.2: False ceiling layout - First floor



* Figure 2.3: Electrical layout - first floor

FALSE CEILING LAYOUT

The false ceiling levels were represented by straight lines and dotted lines with indirect lightings. The 8" and 4" drop flat ceiling was designed for the master bedroom and kitchen. The ceiling of the master bedroom and kitchen was made of gypsum base, which gives an aesthetic finished touch. The ceiling of the foyer was designed of cement sheet with 4mm grooves. The drawing room ceiling was made of gypsum board with 4" and 8" drop ceiling from the slab. The plain cement sheet was planned in the common bathroom and attached bathroom above the 9' height.

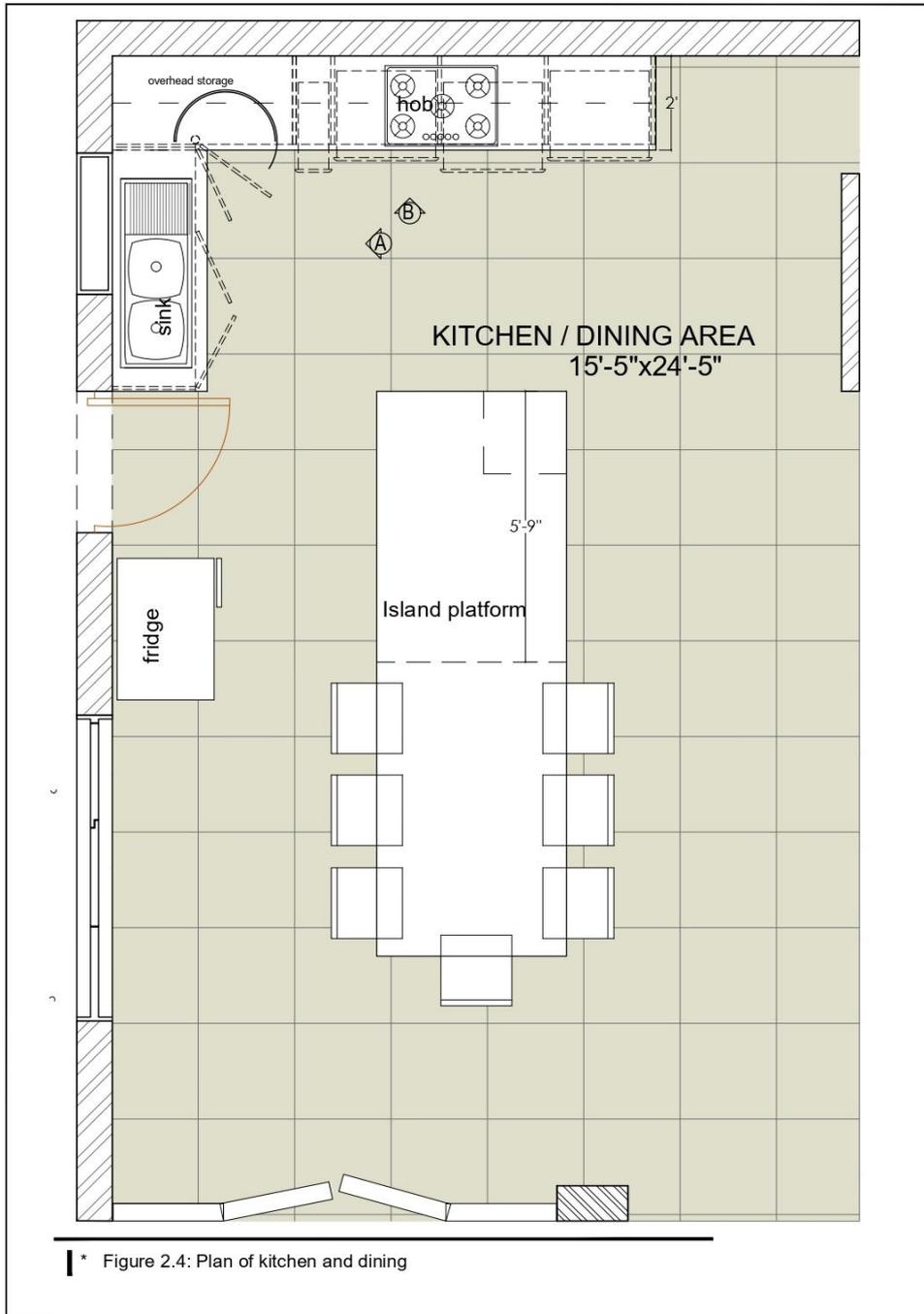
ELECTRICAL LAYOUT

The electrical layout was represented by the lines and symbols of the electrical wiring. This Figure 10 shows 2 air-conditioning, 4 fan, 1 wall fan point, 6 wall points in internal area, 10 wall points in outdoor area and 1 wall point at the stair case, 2 hanging light point, 1 bell point, 1 MCB (Miniature circuit breaker), 11 switchboards at the height of 4'0", 6 switchboard at the height of 3'0" and 6 switchboard placed at the height of 2'3" from the floor. An Internet point was planned near the TV panel in the drawing room. On the first floor ceiling there were thirty one LED lights of square shape having 12 watts and eighteen LED lights of round shape having 3 watts. The indirect rope light was planned in a vertical gap with 4" dropped ceiling.

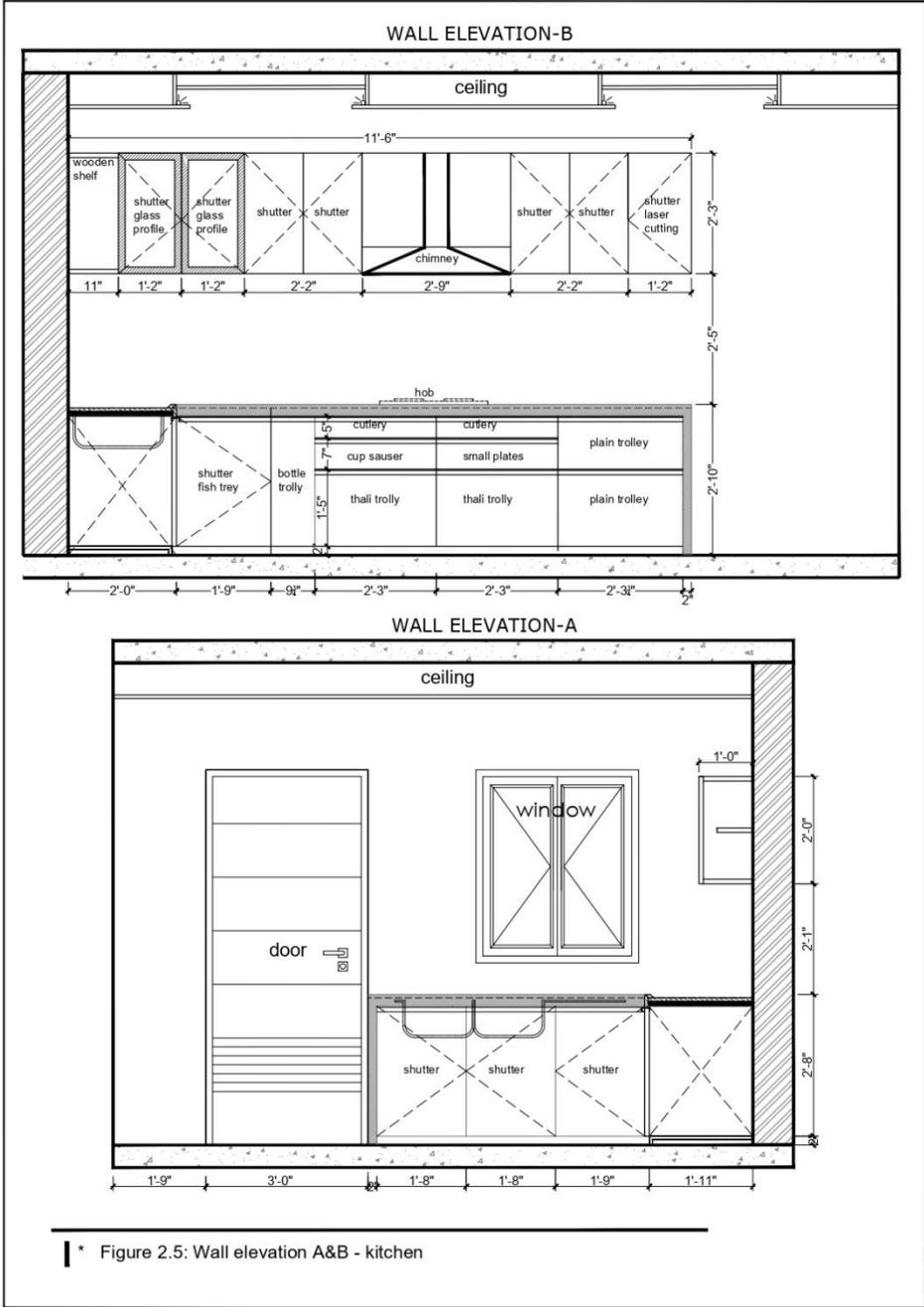
Table 10: Electrical wiring – First floor

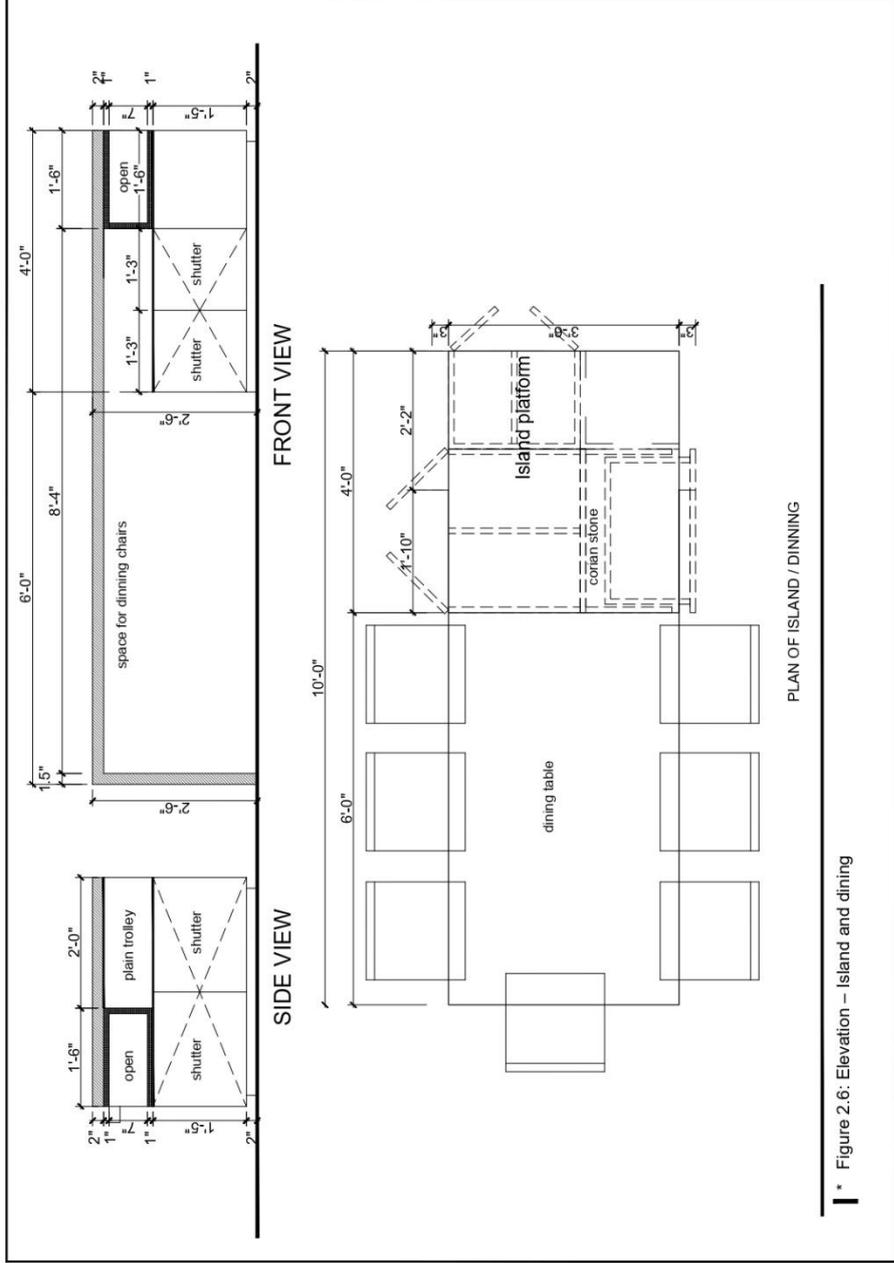
Switch board	Connection
Common bathroom	
SB 13 – 4'0"	CL – 1*
SB 14 – 4'0"	CL – 1, WP - 1
SB 15 – 4'0"	CL – 1, PS – 2, exhaust fan
Master bedroom	
SB 16 – 4'0"	WP – 1, CL – 2*, Fan*,
SB 17 – 2'0"	CL – 1*, CL – 7, WP – 1, PS - 2
SB 18 – 2'0"	CL – 4, CL – 1*, Fan*, PS – 2, AC
SB 19 – 2'6"	WP - 2

SB 20 – 4'0"	PS – 3, TV, Internet
SB 21 – 4'0"	PS – 2, Exhaust fan
SB 22 – 4'0"	WP – 1, PS - 2
SB 23 – 2'0"	WP – 1, TV, Internet, PS - 4
Drawing room	
SB 24 – 2'0"	PS - 4
SB 25 – 2'6"	PS - 2, AC, Fan – 2*
SB 26 – 3'0"	PS - 2
SB 27 – 4'0"	CL – 10, Fan – 2*, 2PS , Hanging light
SB 28 – 3'0"	CL – 8,PS - 1
SB 29 – 4'0"	PS – 2, CL – 4
SB 30 – 4'0"	Fridge
SB 30a – 4'0"	PS – 3, WP – 6
SB 30b – 4'0"	Bell , WP -1
SB 31 – 3'3"	PS – 2, RO
SB 32 – 3'3"	Chimney, WP – 1, PS - 2
SB 33 – 2'6"	PS – 2
SB 34 – 4'0"	PS - 2
SB 35 – 4'0"	Washing machine, WP - 1
SB 36 – 4'0"	CL - 1
SB 37 – 4'0"	CL – 12, Wall fan, hanging, PS - 2
SB 38 – 4'0"	WP - 1



* Figure 2.4: Plan of kitchen and dining





* Figure 2.6: Elevation – Island and dining

KITCHEN

Wall elevation - Kitchen and Dining

The kitchen is one of the important parts of the house. The kitchen was combined with dining area which is planned near the drawing room. The size of the kitchen and dining was 24'5"X 15'5". The flooring of the kitchen and dining was of vitrified tiles which emphasized the look and 3"skirting was done all around. The false ceiling was made of gypsum, which gives an aesthetic finish touch to the kitchen and dining area, which was also helpful to fix artificial lights into it. The royal finish paint was used in ceiling and walls of the Kitchen and dining.

Wall Elevation – A

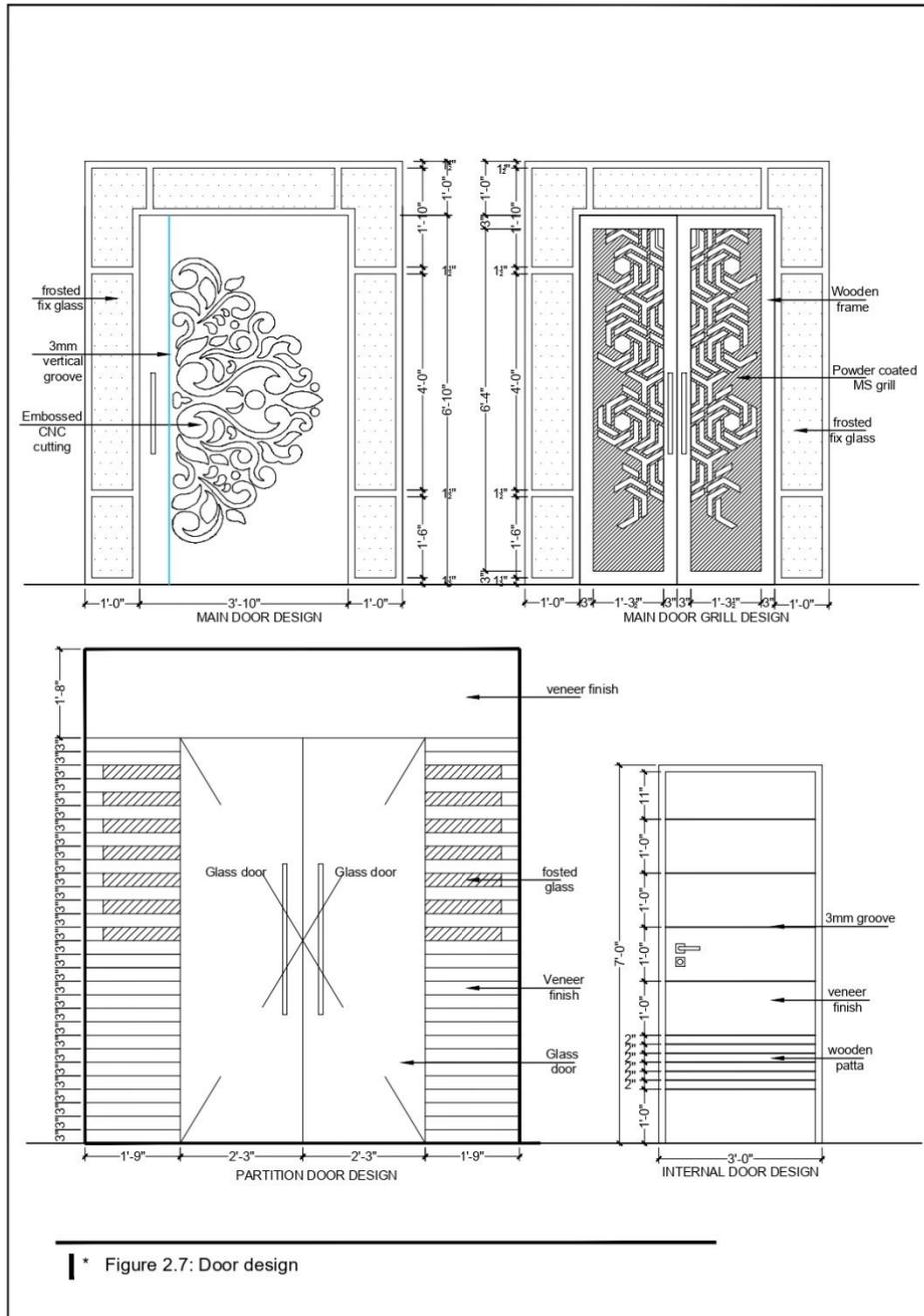
This wall contained the platform with sink and fridge. The entry door was placed between the fridge and sink platform. The size of the door was 3' wide and 7' high. The platform was made up of black granite with 2" thickness. The total counter space was limited with 9'4" length, 2'9" height and 2'0" depth. The counter had 2" skirting and the total height of the cabinets was 2'5". From the left side of the kitchen L- platform a double bowl stainless steel sink was planned and below the sink openable shutters were designed for placing an R.O tank, a dustbin and detergent. The window was placed above the sink counter and size of the window was 3'0" length and 4'0" height.

Wall Elevation – B

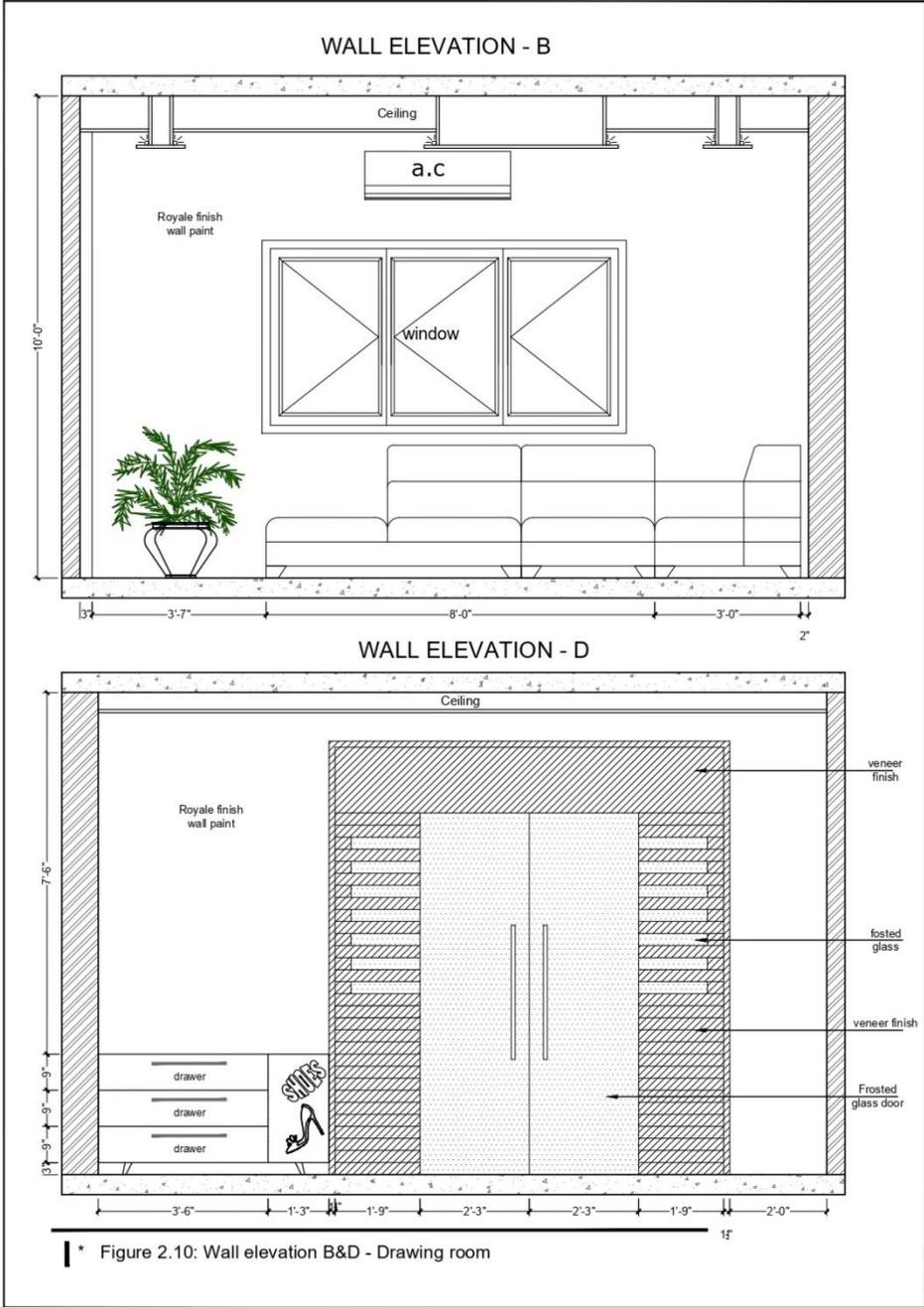
This wall contained a main platform of the kitchen with hob area. The height of the platform was 2'9"and the depth of the platform was 2'3", which was designed according to the standard female height and reach. The island shape of the kitchen was planned with an L shape kitchen. To start from left to right, there were an openable shutter cabinet of 1'8"and at the corner an organizer of 1'9" size was planned. Besides it 10 "Bottle pull out trolley was designed, where small bottles can be placed. To start from the top, which had a 5"cutlery trolley, a 7"cup and saucer and last trolley for big plates. In

the right most corner there were two plain trolleys. All the base cabinets, drawers, pull-out shelves and overhead/ wall cabinets have aluminium profile concealed handles which was comfortable for use. The drawer's and shutters were finished with PU mirror Polish. Each division of the storage unit were differentiated with 1" of wooden plank in between. Above the counter, the chimney and overhead cabinets were planned at 2'6" height from the counter. There were openable shutters on the both sides of the chimney for storage. In the left corner there was an open shelf for keeping some decorative items. The overhead cabinet was 12" deep and 2'0" in height, which contained two open-top hydraulic shutter and 2 cabinet shutters. The glass shutters were fixed with 1" aluminium profile frame.

The island platform was 3'6" length, 4'0" width and 2'6" height. It was designed in the center of the kitchen with combined seven seater dining. Below the island platform shutters and trolley pull-out were planned. The drawers and cabinet had 1" concealed profile handles. The material used for the main platform was black granite and for island platform was corian stone. The platform had 2" skirting all around the furniture and finished with the floor tile. The false ceiling was made of gypsum boards, the levels of the ceiling were 4" and 8" down from the slab. The dining table was combined with an island platform. The dining table was planned for 7 seater. The dining table top was of Italian stone and the base of the table was made up of teak wood. The dining chairs were made of upholstered material all around the chair with wooden legs.

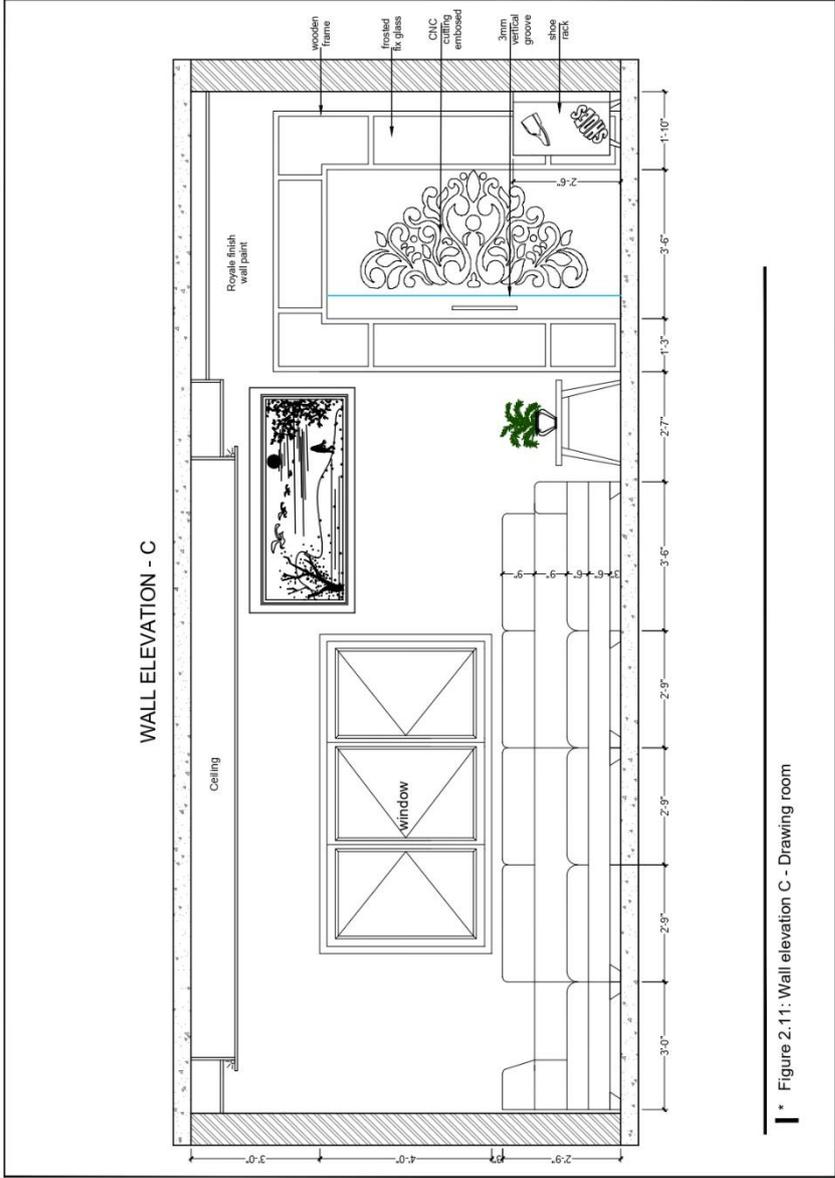


* Figure 2.7: Door design



* Figure 2.10: Wall elevation B&D - Drawing room

WALL ELEVATION - C



* Figure 2.11: Wall elevation C - Drawing room

DRAWING ROOM

Wall elevation - Drawing room

The drawing room was the first room after the foyer, which attracts the guests and shows owners personality and taste of design. The size of the drawing room was 24'0"X 15'0". The flooring of the drawing room was planned of vitrified tiles which emphasized the look and 3"skirting was done all around the drawing room. The false ceiling was made of gypsum board which gives an aesthetic finish touch to the drawing room, which was helpful for fixing the artificial lights into it.

Wall Elevation A

This wall contained a fixed TV unit. The size of the TV unit was 19'4" length, 1'3" wide and 10'0" height. The TV panel was made up of teak wood, plywood with veneer finish and PU finish. The column was placed according to the structure design, which comes in between the panel and it was covered with the decorative wooden panelling.

Wall Elevation B

This wall contained an L-shaped sofa and window in the center. The size of the window was 5'0" in length and 4'0" in height. The sill level was 3'0" from the floor level. The window had a 1"stone frame with MS bars inside. The decorative artificial plants were placed in the corner, which enhance the drawing room.

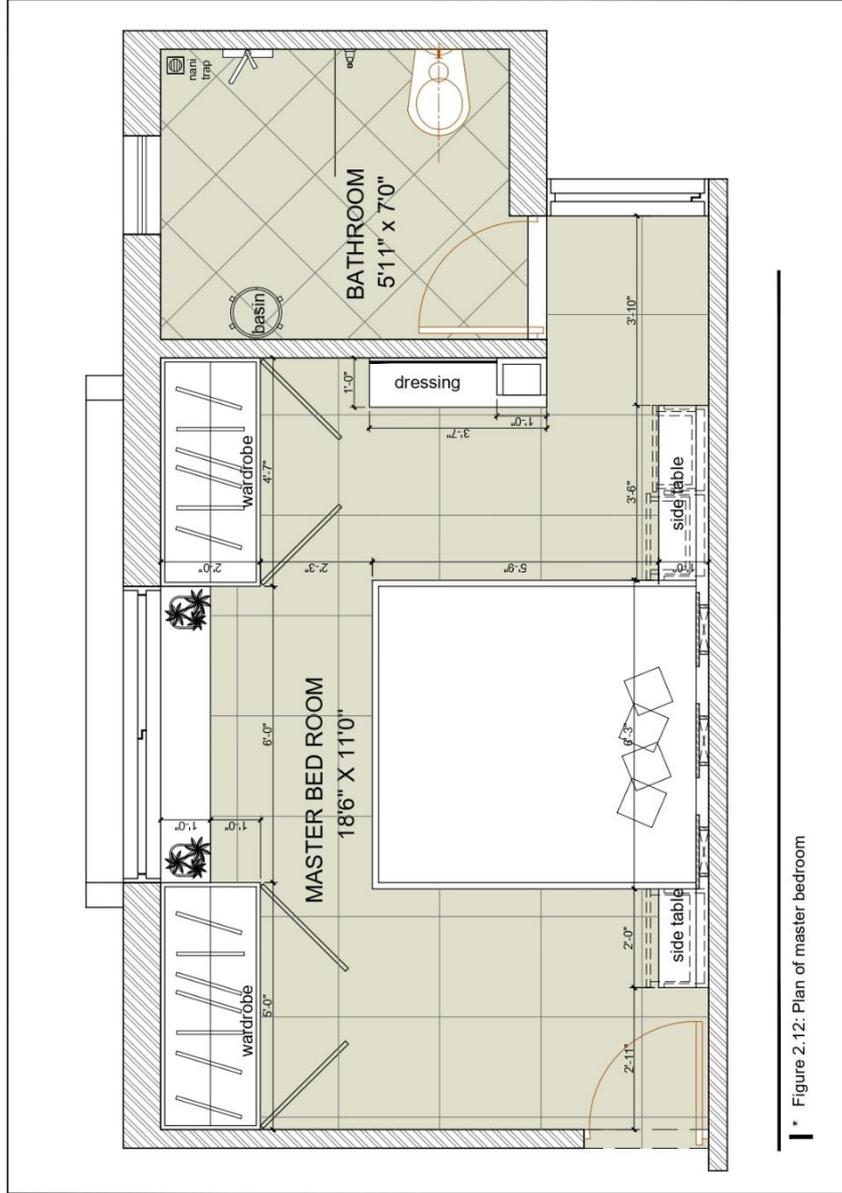
Wall Elevation C

Wall C contained the L-shaped sofa and corner table. This wall also contained the main entrance door of the residence. The size of the main entrance door was 7'0" high by 3'6"wide. The main entrance door had a stone frame of 3". The door was made of veneer finish plywood with semi-gloss polish. The designer 3D motif sheet was designed on the main door with an antique handle. The door frame was made of wood. The size of the sofa was 14'9 " length and 3'0" depth. The material used for the sofa was leather fabric with a wooden base and outer with foam. Above the sofa window was placed. The size of the window was 5'0" length and 4'0" height. The sill level was

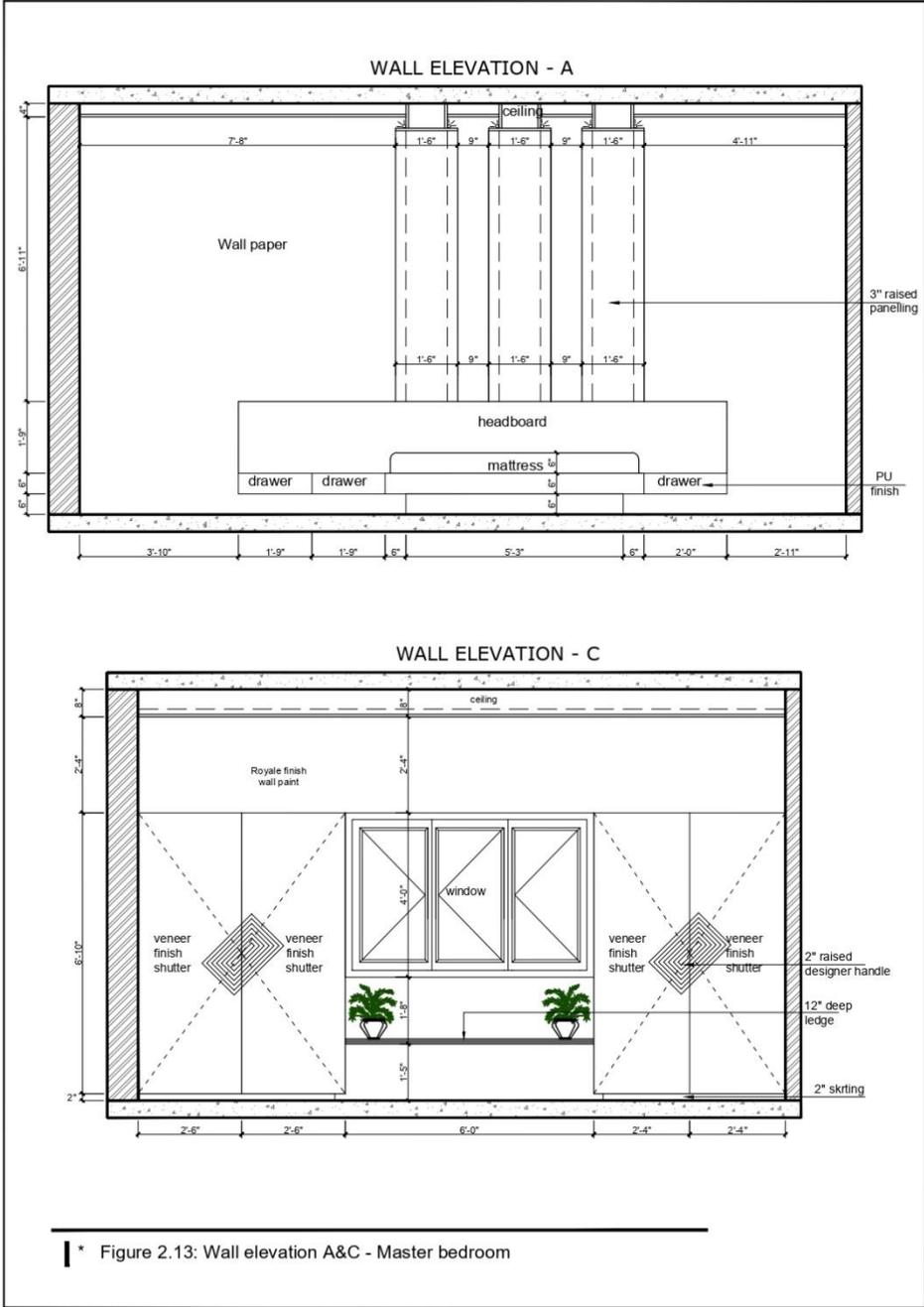
3'0" from the floor level and had 1" stone frame around with MS bars inside. Above the window wall clock was placed.

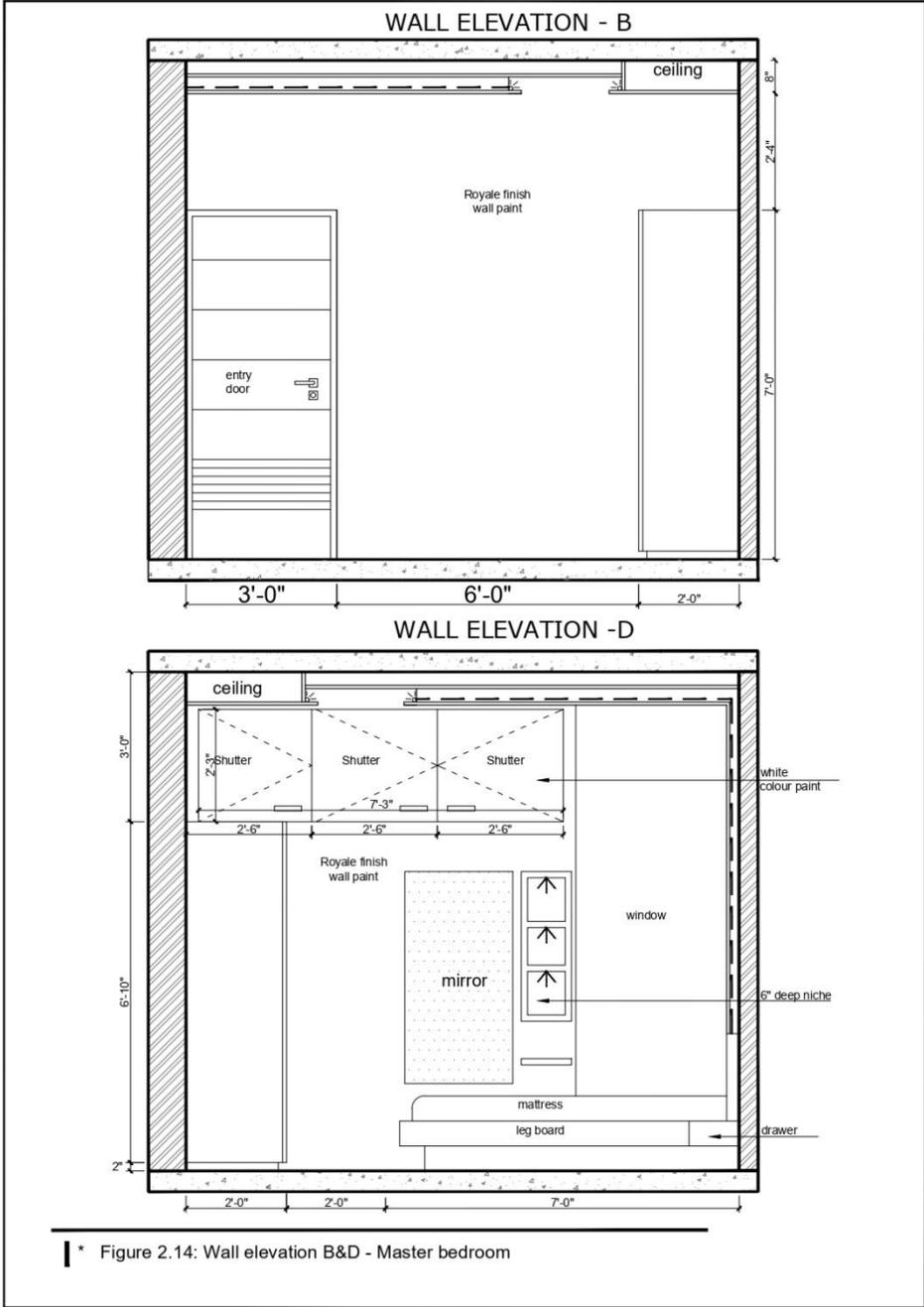
Wall Elevation D

This wall contained the shoe rack and partition. The left end of this wall where shoe rack was planned to give an aesthetic look like foyer unit. The size of the foyer unit was 4'9" length x 2'6" height. The foyer unit was made of veneer finish plywood and some decorative CNC cutting was made of MDF with deco finish. The partition was planned between drawing room and dining room which was made up of wood and frosted glass. The size of the partition was 8'0" length and 10'0" height. The two glass doors were planned in between the partition, which were made of veneer finish plywood and frosted glass.



* Figure 2.12: Plan of master bedroom





MASTER BEDROOM

Wall elevation - master bedroom

The master bedroom was planned with attached bathroom. The size of the master bedroom was 18'6" x 11'0". The flooring of the master bedroom was of vitrified tiles which emphasizes the look and 3"skirting was done all around the drawing room. The size of the tile was 2' X 2'. A royal finish paint was used in the master bedroom.

Wall Elevation A

This wall was the main wall of the bedroom which contained the bed with 2 side drawers. The bed of 6'0" x 6'0" size with mattress was planned in this room along with back wooden panelling designed with ceiling design. The size of the bed was 6'0" length, 6'0" width and 1'3" height from the floor. Two side tables with drawers were given to store the bedtime things accessible at night. The decorative artificial green planters and artifacts were placed on the side units. The bed and side tables are made up of veneer finished plywood. The backside wall of the bed was emphasised with 3D look wallpaper.

Wall Elevation B

This wall contained entry door of the bedroom, which was planned in such a way that it screens the bed when the door was opened. The size of the door was 3'0" x 7'0".The bedroom door has a stone frame of 3". Door frame was made up of black granite stone and bedroom door was made up of veneer finished plywood.

Wall Elevation C

Wall C was an opposite wall of the bed which contained wardrobe and TV unit. The wardrobe with adequate storage was planned on both the sides of the window. The size of the wardrobe was 5'0" x 2'0" x 7'0" and made up of wooden veneer finish with 2" raised designer handles. The window was planned in the centre of the wall, the size of the window was 5'0" length and 4'0" height. The window had 1" stone frame all around with MS rods inside as design. The sill

level of window was at 4' from the floor. Below the window 5' wide TV unit was planned.

Wall Elevation D

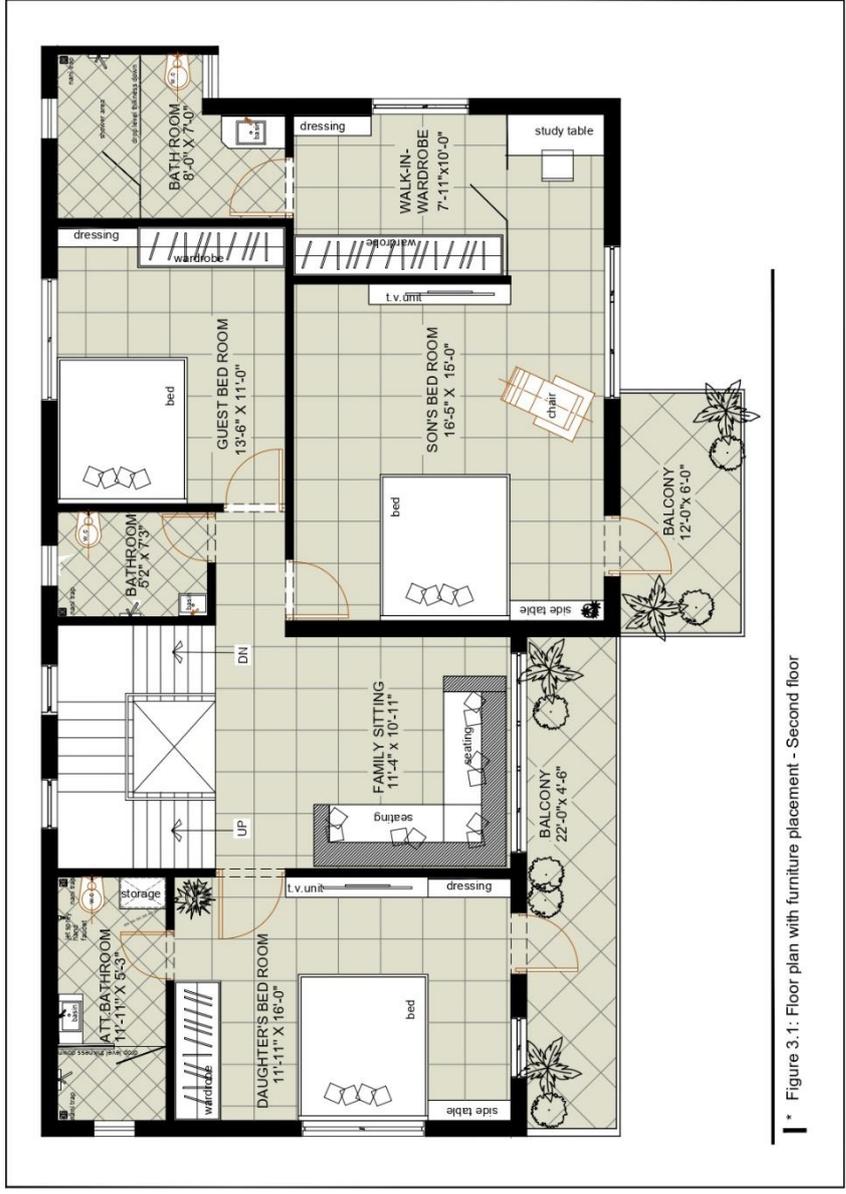
This wall contained a separate dressing unit which was planned with fixed mirror and open shelves. The artefacts niches were designed in the dressing for putting vase with dry flowers or any other decorative items can be placed to enhance the beauty of the bedroom. The loft was planned above the lintel level, where overhead three cabinets were designed of wooden.



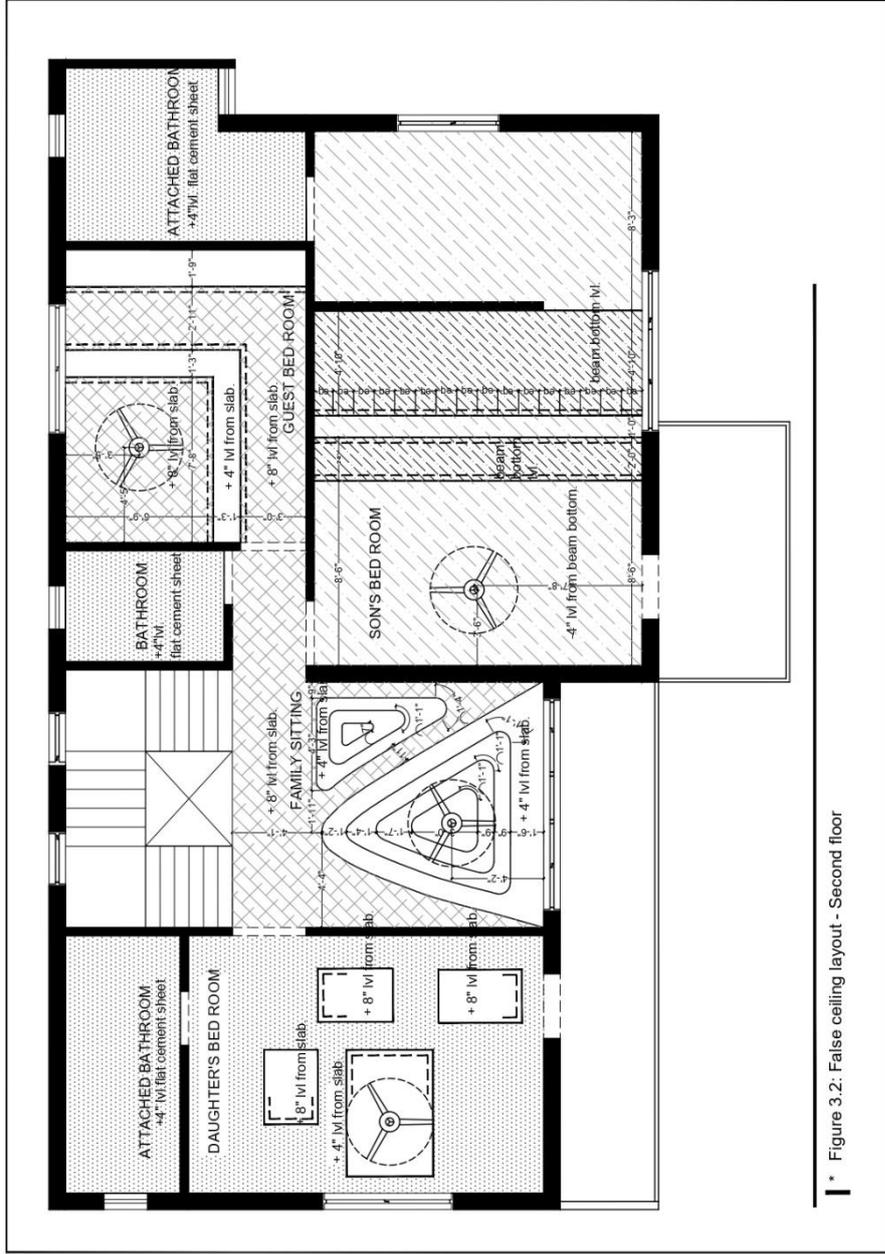
Figure 2.15: 3D view - First floor



* Figure 2.16: 3D view 1 - First floor



* Figure 3.1: Floor plan with furniture placement - Second floor



* Figure 3.2: False ceiling layout - Second floor

III SECOND FLOOR DRAWINGS

The second floor consisted of sons' bedroom with attached bathroom, guest bedroom, common bathroom, a family sitting room, and daughter's bedroom with attached bathroom. The size of the son's bedroom was 16'5"X 15'0" and the walk-in wardrobe was of 7'11"X 10'0" size. The son's bedroom consisted of a king-size bed with side tables, TV panel, study table with storage, wardrobe and dressing unit. The guest bedroom was adjacent to the son's bedroom. The size of the guest bedroom was 13'6"X 11'0". The guest bedroom consisted of a queen-size bed, a dressing unit and a wardrobe. The common bathroom was of 5'2"X 7'3" size. The common bathroom consisted of a wash basin, shower area and a water closet. The family sitting consisted of an L-shaped sofa and centre table. The size of the family sitting was 11'4"X 10'11". The daughter's bedroom was adjacent to the family sitting with an attached bathroom. The size of daughter's bedroom was 11'11"X 16'0". The daughter's bedroom consisted of a queen-size bed with side tables, wardrobe, TV unit and dressing table. The size of the attached bathroom was 11'11"X 5'3". The attached bathroom consisted of a shower area, a wash basin, a water closet and a storage cabinet.

FALSE CEILING LAYOUT

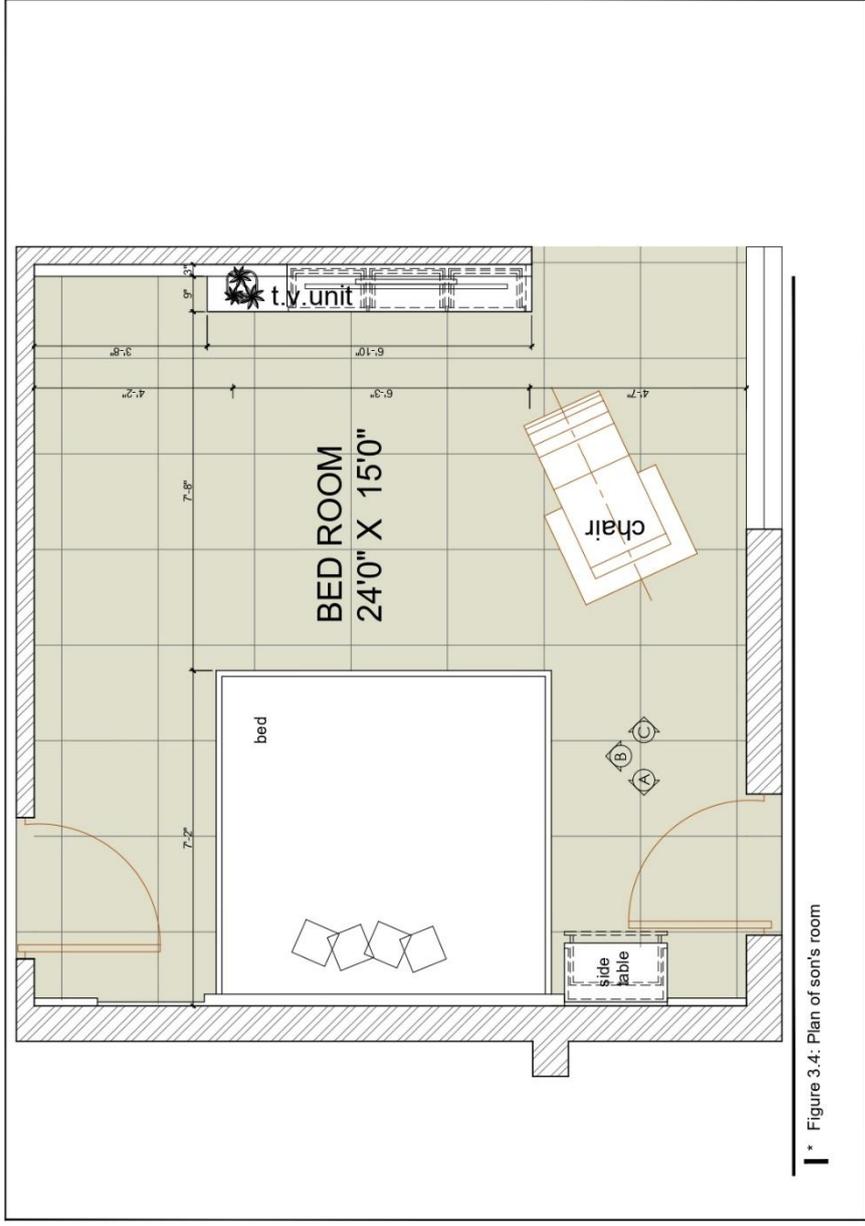
The false ceiling levels were represented by straight lines and dotted lines with indirect lightings. The 8" and 4" drop flat ceiling was designed for the guest bedroom. The ceiling of guest bedroom, daughter's bedroom, family sitting and son's bedroom was made of gypsum base, which gives an aesthetic finished touch. The ceiling of son's bedroom was designed from beam bottom level to the main slab. The seating area ceiling was planned of curvature design and daughter's bedroom ceiling with cross boxes. The plain cement sheet was planned in the common bathroom and attached bathroom above the 9' height.

ELECTRICAL LAYOUT

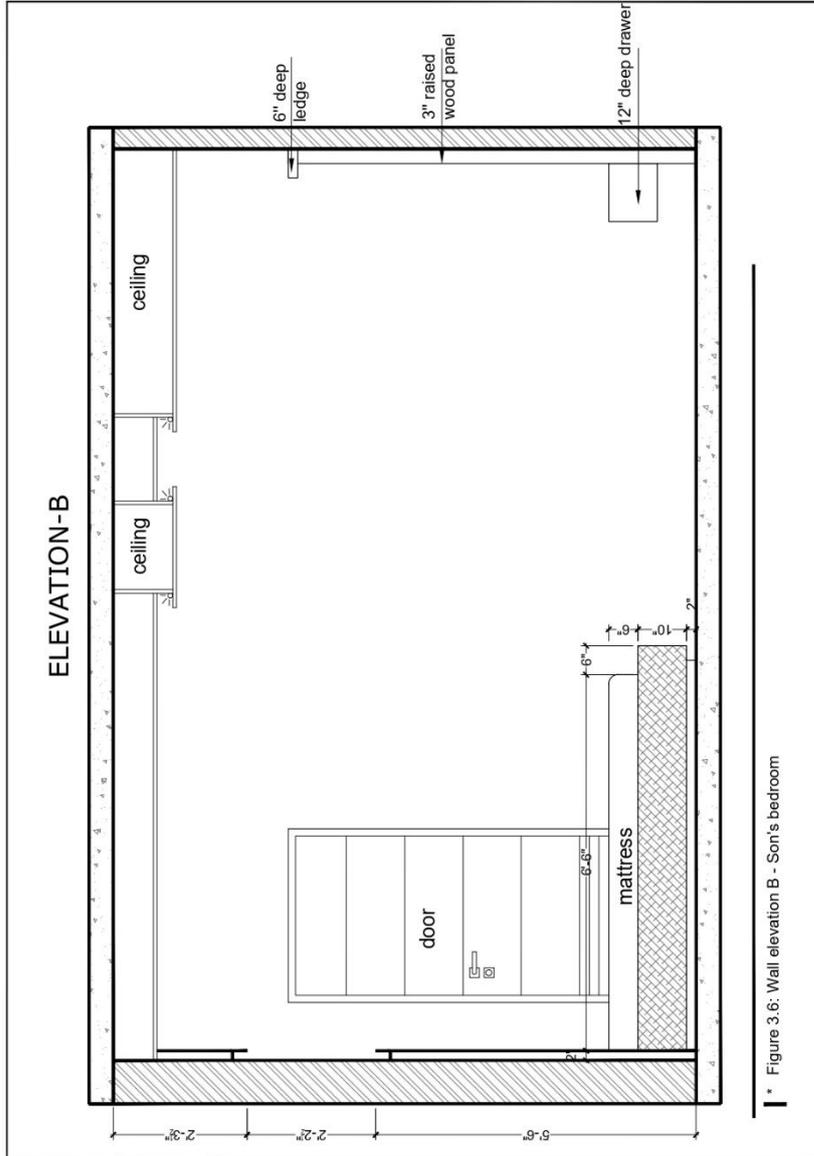
The electrical layout was represented by the lines and symbols of the electrical wiring. This Figure 17 shows 3 air-conditioning, 5 fan, 2 exhaust fan point, 12 wall points in internal area, 3 wall points in outdoor area and 1 wall point at the stair case, 2 hanging light point, 1 MCB (Miniature circuit breaker), 12 switchboards at the height of 4'0", 8 switchboard at the height of 3'0" and 7 switchboard placed at the height of 2'0" from the floor. An Internet point was planned near the study table in the brother's bedroom. On the second floor ceiling there were thirty five LED lights of square shape having 12 watts, twelve LED lights of having 6 watts and nine LED lights of round shape having 3 watts. The indirect rope light was planned in a vertical gap with 4" dropped ceiling.

Table 11: Electrical wiring – Second floor

Switch board	Connection
Office room	
SB 01 – 4'0"	CL - 3, WP – 2, CL – 1*, PS - 2
SB 02 – 4'0"	CL – 3, CL – 1*, Fan*, PS – 1, WP - 1
SB 03 – 4'0"	PS – 2
SB 04 – 3'0"	CL – 4, CL – 1*, Fan*, PS – 4, AC
Entrance	
SB 05 – 4'0"	CL – 1*, Bell
Passage	
SB 06 – 4'0"	CL – 1, CL – 1*, FP – 1, WP – 1*
SB 07 – 4'0"	CL – 1, exhaust fan
Sitting area	
SB 08 – 3'0"	CL – 4, 1 fan
SB 09 – 2'3"	CL – 3, FP - 1
SB 09a – 4'0"	CL – 6, Track – 4, WP - 4
Swimming pool	
SB 10 – 4'0"	WP - 1
SB 11 – 4'0"	WP – 1, 1 fan
SB 12 – 4'0"	CL – 4, WP – 4, 2PS



* Figure 3.4: Plan of son's room



SONS BEDROOM

Wall elevation - Son's Bedroom

The son's bedroom was planned besides the guest room. The size of the son's bedroom was of 24'0" x 15'0". The flooring of the son's bedroom was of vitrified tiles which emphasizes the look and 3"skirting was done all around the drawing room. The size of the tile was 2' X 2'. A royal finish paint was used in ceiling and walls of the son's bedroom.

Wall Elevation - A

The bed was planned of 6'0" x 6'0" mattress sized with one side drawer. The wall behind the bed was used to accent the room with decorative wooden and brown glass panel. The 3" raised bed back was made of leather fabric cushioning. The size of the bed was 6'0" length, 6'0" width and 1'3 height from the floor. One side table with two drawers were given to store the bedtime things accessible at night. The designer leather finished fabric was designed all around the leg board. The side table was made of veneer finished plywood. The back panelling was designed till ceiling height with indirect lighting. The material used for the bed panelling was plywood finished veneer and brown back paint glass.

Wall Elevation – B

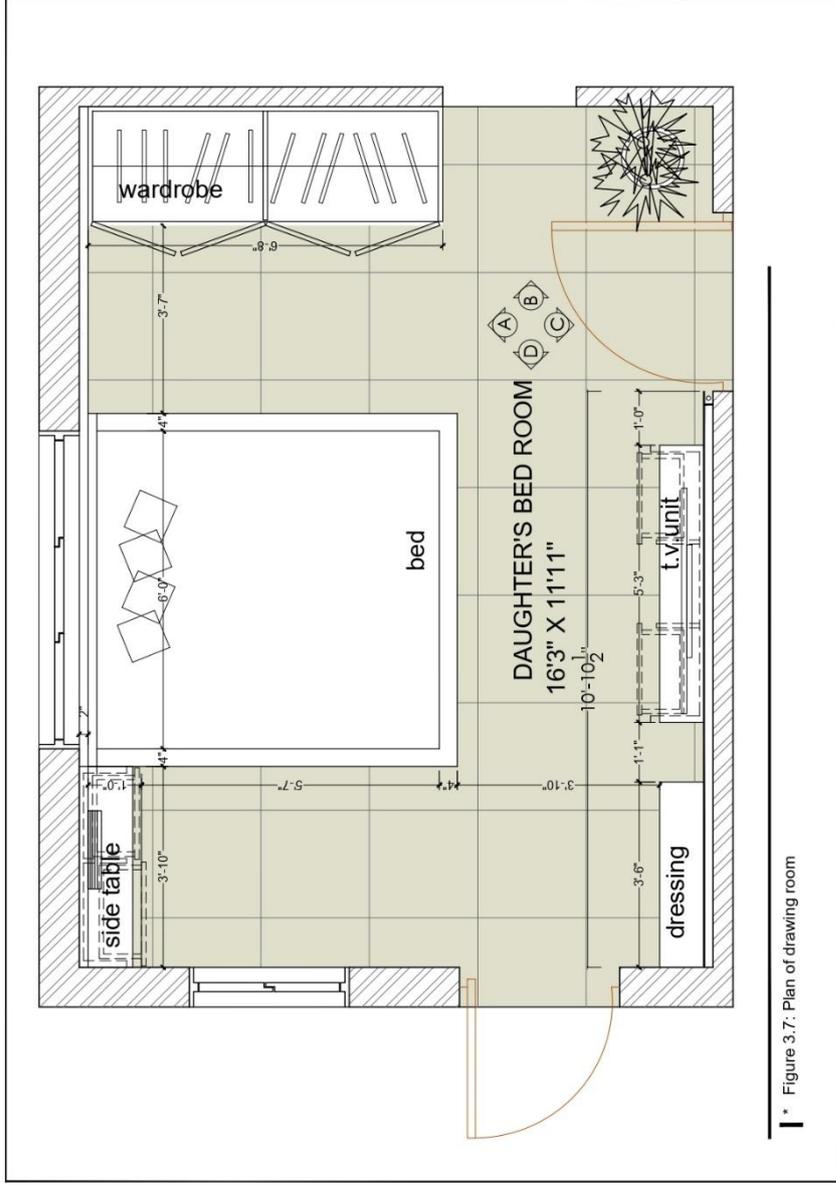
This wall contained a door of the bedroom, which was planned in such a way that it screens the bed when the door was opened. The size of the door was 3'0" x 7'0". The bedroom door had a stone frame of 3". Door frame was made up of black granite stone. The bedroom door was made of plywood finished veneer.

Wall Elevation – C

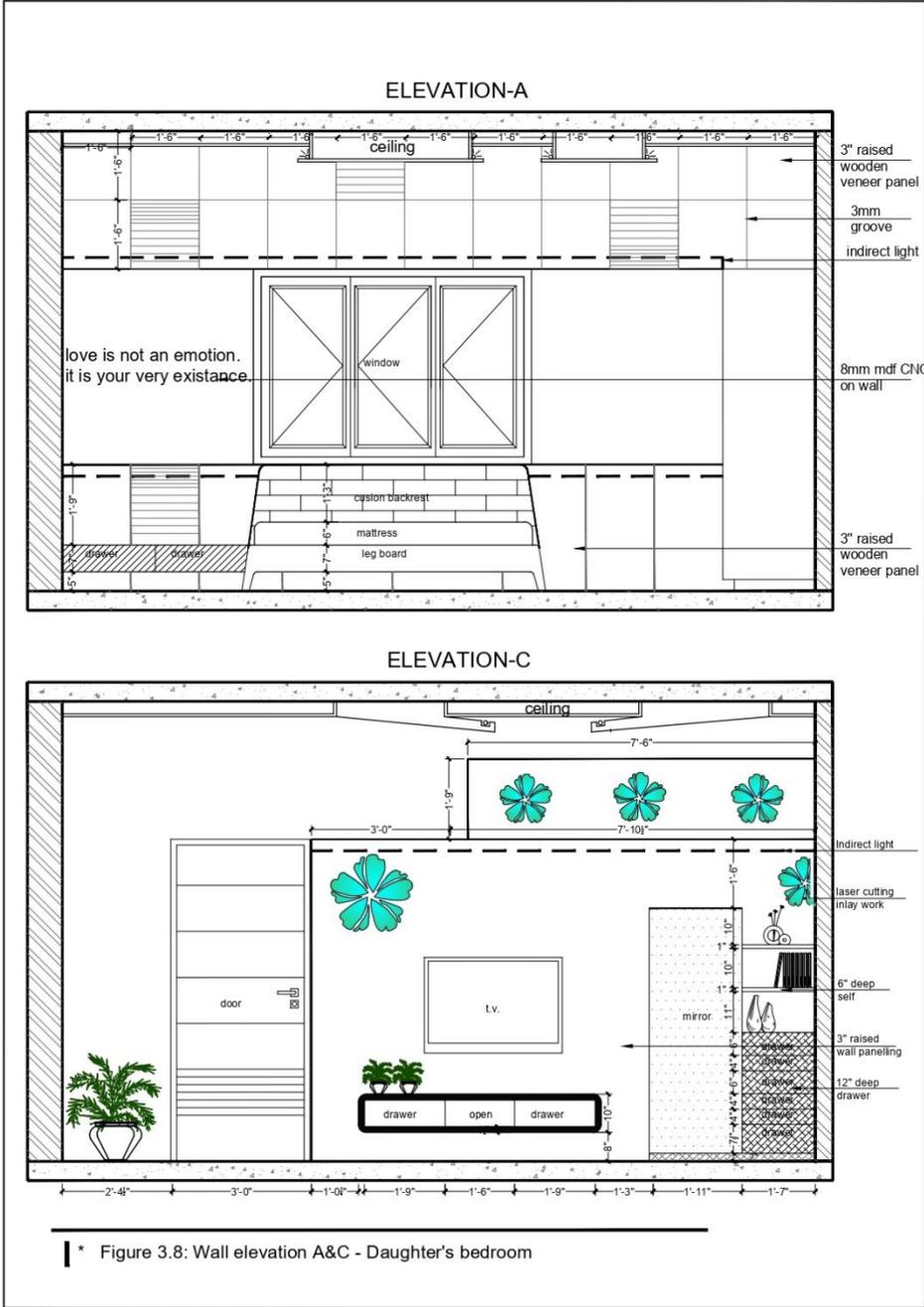
This wall contained TV unit. The designer TV unit was designed opposite to the bed for watching TV with the comfort from the bed. The TV unit has two drawers and one open self for storing things. The size of the TV unit was 10'6" length and 7'0" height. The TV unit had three drawers for storing the things. The material used for TV panel was plywood finished veneer and PU metallic polish.

Wall Elevation – D

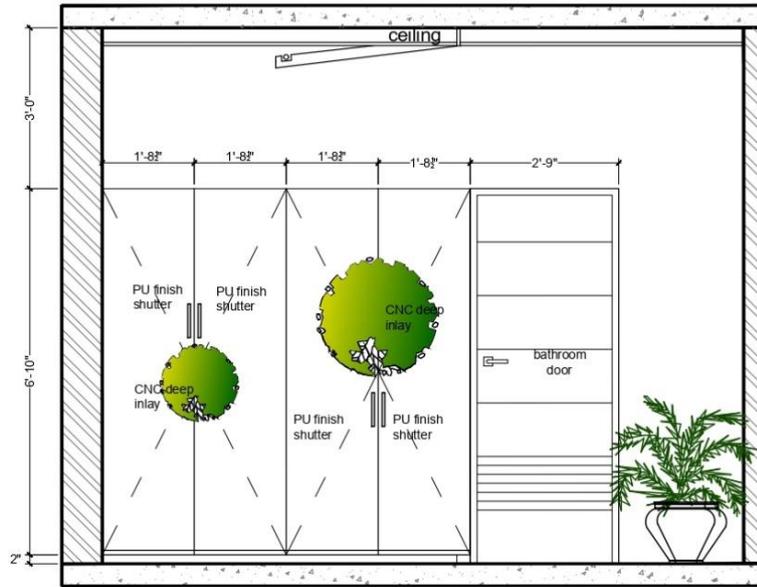
This wall contained the window and balcony door. A provision of window was planned in the centre of the wall, the size of the window was 5'0" length and 4'0" height. The window had 1" stone frame with MS rods inside as designed. The sill level of window was 4'0" from the floor. A standing balcony was planned to include nature and stay connected with the environment. The size of the balcony door was 3'0" wide and 7'0" in height. The walk in wardrobe was of 7'11" x 10'0" size. The entry door was planned from the center of the glass partition. The glass door was 7'0" height and 2'6" wide. A wardrobe with enough storage and as per the availability of space was planned and a study table was placed with overhead storage. The size of the study table was 4'6" length, 2'0" depth and 2'6" height. The size of the wardrobe was 10'2" in length, 2'0" in depth and 7'0" in height. The opposite of the wardrobe a dressing unit was designed of plywood finished veneer and size of the dressing unit was 7'0" height and 4'0" length and 1'0" depth.



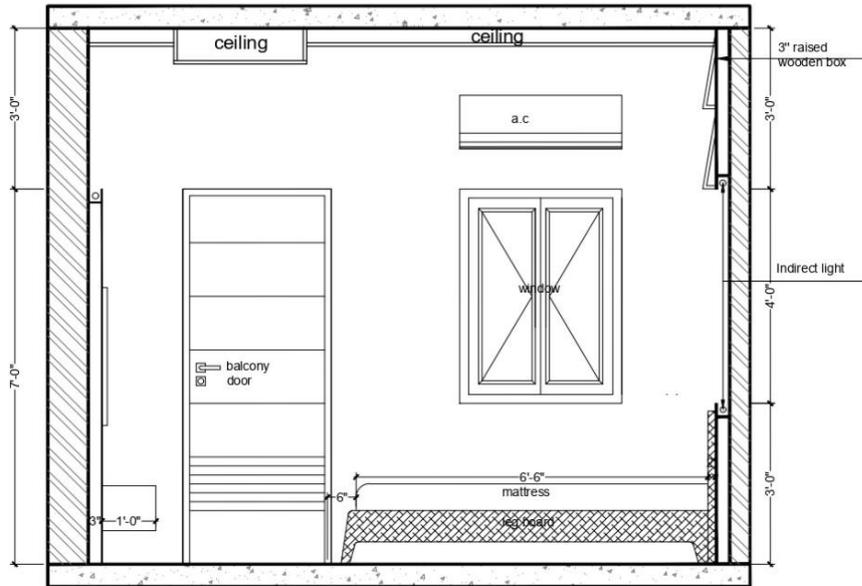
* Figure 3.7: Plan of drawing room



ELEVATION-B



ELEVATION-D



* Figure 3.9: Wall elevation B&D - Daughter's bedroom

DAUGHTERS BEDROOM

Wall elevation - Daughter's bedroom

The daughter's bedroom was planned besides the family sitting room. The size of the bedroom was 16'3"X 11'11". The master bedroom consisted queen size bed with side tables, TV unit, dressing table and wardrobe. The flooring of the son's bedroom was of vitrified tiles which emphasizes the look and 3"skirting is done all around the daughter's bedroom. The size of the tile was 2' X 2'. A royal finish paint was used in ceiling and walls of the daughter's bedroom.

Wall Elevation – A

Wall A contained a bed with side drawers. The bed was planned of 6'0" x 6'0" mattress size with both side drawers. The wall behind the bed was used to accent the room with decorative wooden and bed back with leather cushions. The size of the bed was 6'0" length, 6'0" width and 1'3" height from the floor. Two side tables with drawers were given to store the bedtime things accessible at night. The bed was designed of plywood finished veneer. The back panelling was designed till ceiling height with indirect lighting. This wall also contained a window in the centre and size of the window was 5'0" height and 4'0" height at the sill level 3'0" from the floor. The window had a 1"stone frame with MS rods inside as designed

Wall Elevation - B

Wall B contained the wardrobe and bathroom door. The wardrobe was designed of four shutters with sufficient storage. The wardrobe was 6'9" wide and 7' tall. The size of the bathroom door was 2'6" length and 7'0" height.

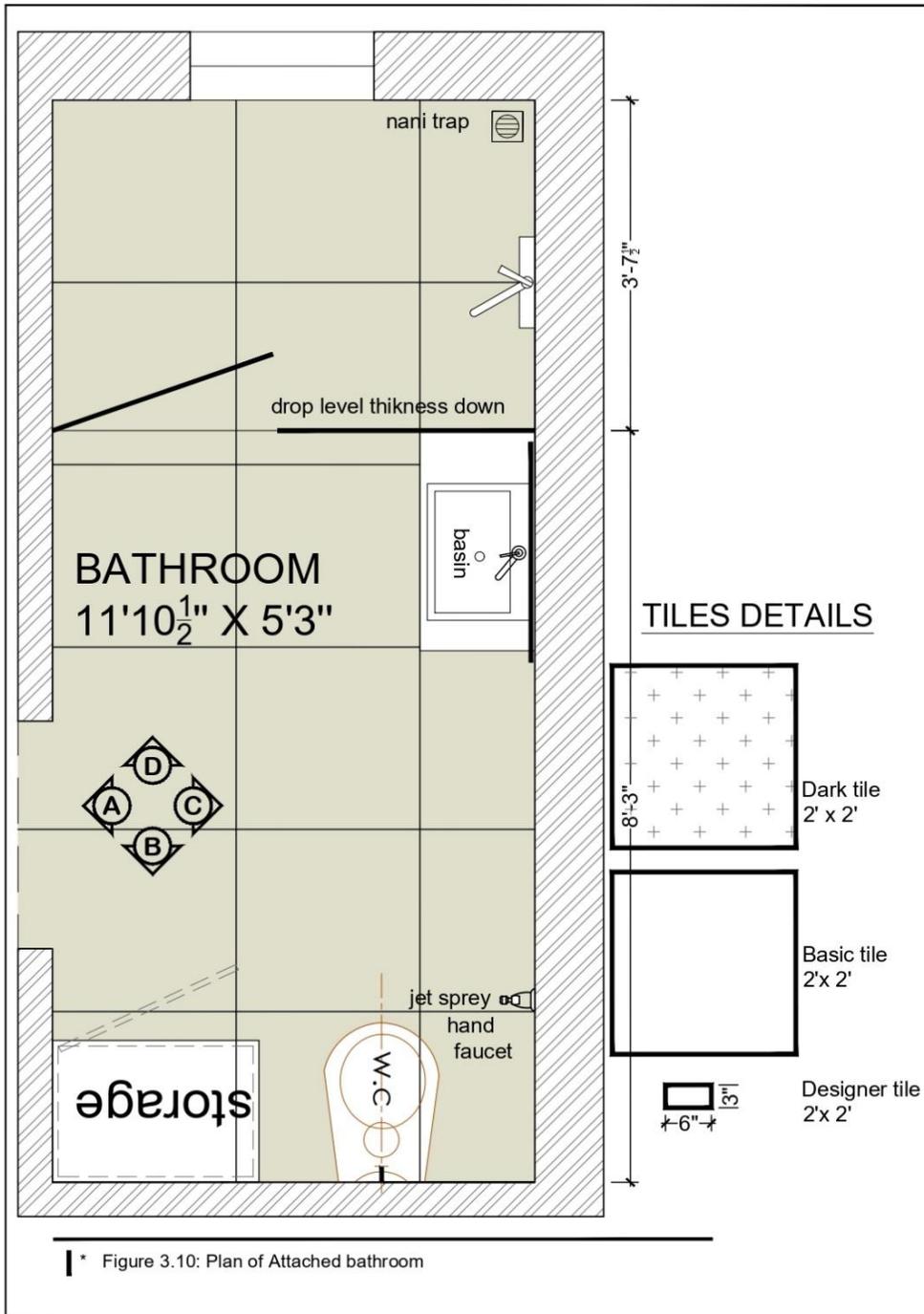
Wall Elevation - C

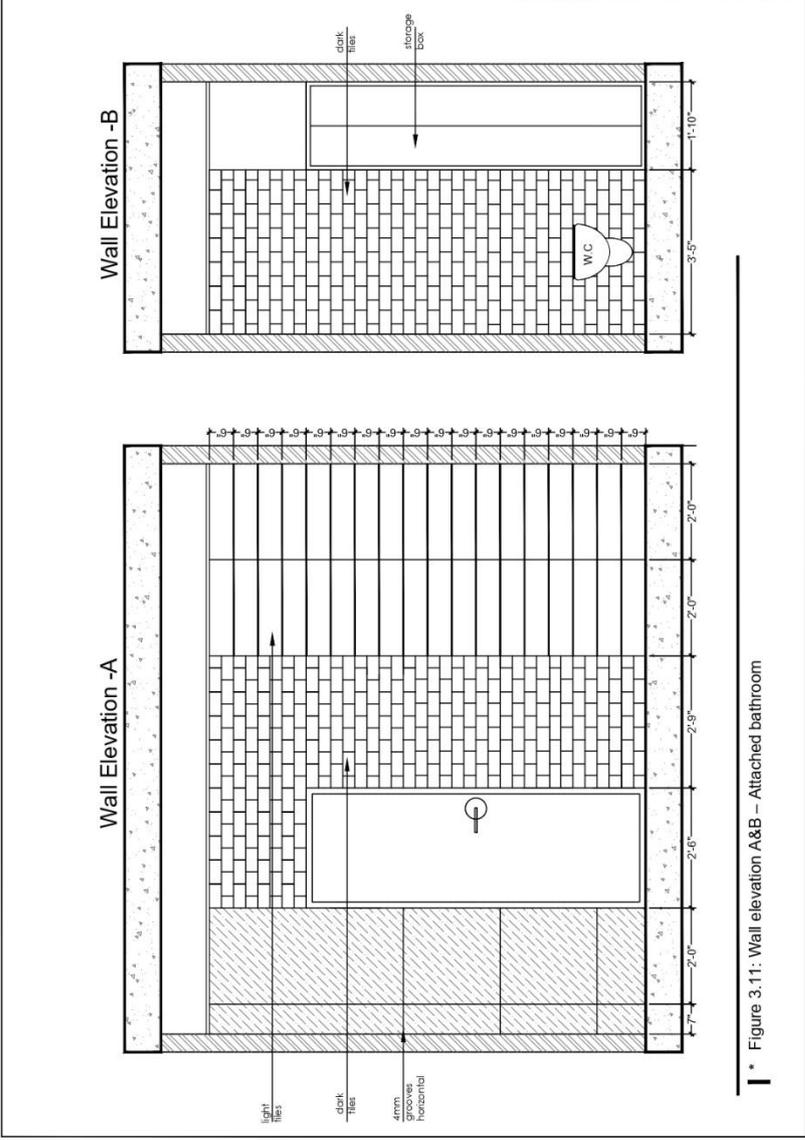
This wall contained an entry door of the bedroom, which was planned in such a way that it screens the bed when the door was opened. The size of the door was 3'0" x 7'0".The bedroom door has a stone frame of 3". Door frame was made up of black granite stone.The door was designed of plywood finished with veneer. The designer TV unit

was designed, opposite to the bed for watching TV with the comfort of the bed. The TV unit had 2 drawers and one open self for storing things. Continuity with the TV panel dressing unit was designed with a full-length mirror and drawers.

Wall Elevation - D

A standing balcony was planned to include nature and stay connected with the environment. The size of the balcony door was 3'0" wide and 7'0" height. This wall also contained the window. The size of the window was 5'0" length and 4'0" height, the sill level of window was 4'0" from the floor. The window had a 1" stone frame with MS rods inside as designed.





* Figure 3.11: Wall elevation A&B – Attached bathroom

ATTACHED BATHROOM

Wall elevation - Attached Bathroom

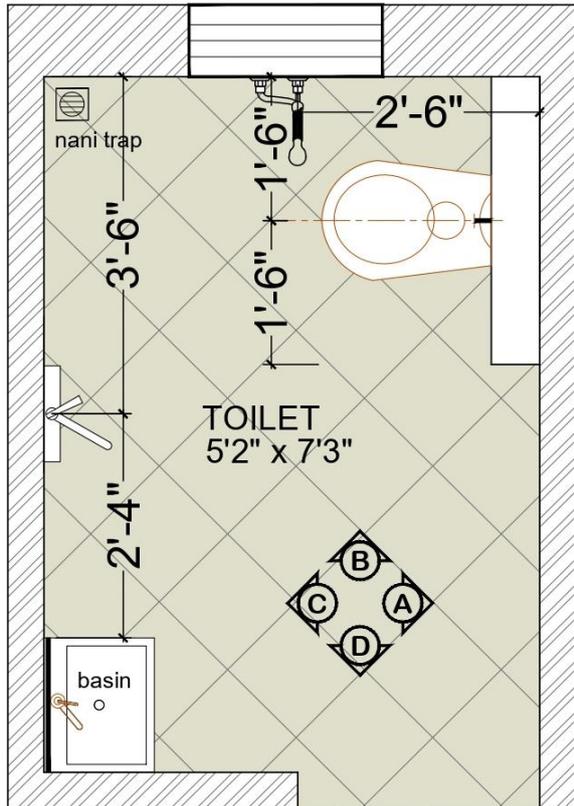
The size of the attached bathroom was 11'10" x 5'3". The attached bathroom had a shower area, a wash basin and a water closet. The total height of the bathroom was 9'0". The ceramic tiles are fixed in the bathroom on all sides of the wall till the ceiling level. The matt finish ceramic flooring was installed in the bathroom. A royal finish paint was used in ceiling of the bathroom.

WALL ELEVATION – A & B

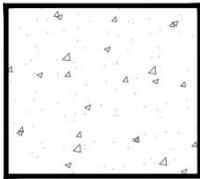
The wall elevation E contained an entry door to the bathroom. The size of the door was 7'0" height and 2'6" width. The door had a 1" stone frame and was made up of a flush door with veneer finished. The lintel level was at 7'0" from the floor level. The light grey-coloured ceramic tiles were fixed on the wall till the ceiling.

WALL ELEVATION – C & D

This was the main wall where the plumbing fixtures were fixed for the shower area and wash basin. The counter of the basin height was 2'6" from the floor and the basin bowl was 5" tall. The basin area was placed beside the shower area. The basin had a pillar tap and a bottle trap of s.s material was used for drainage of the wash basin. The white-coloured corian stone was used for the counter top of the basin. The mirror was placed above the wash basin on the wall. The shower was placed at 8'0" height, diverter at 3'6" and mixer was planned at 2'0" height from the floor. The 4" x 4" nahni trap was placed on the floor in the corner of the shower area and other near water closet corner. The dark grey-coloured ceramic tiles were fixed on the walls till the ceiling. The glass shelf were placed in the corner of size 6" x 6" for keeping bathroom utility things. The size of the light-coloured ceramic tile was 2' X 2'. The health faucet and the metro pole were placed beside the water closet. The water closet wall was highlighted with designer tiles till ceiling. The ventilation was 2'0" X 2'0" glass louvered window with exhaust fan.



TILES DETAILS

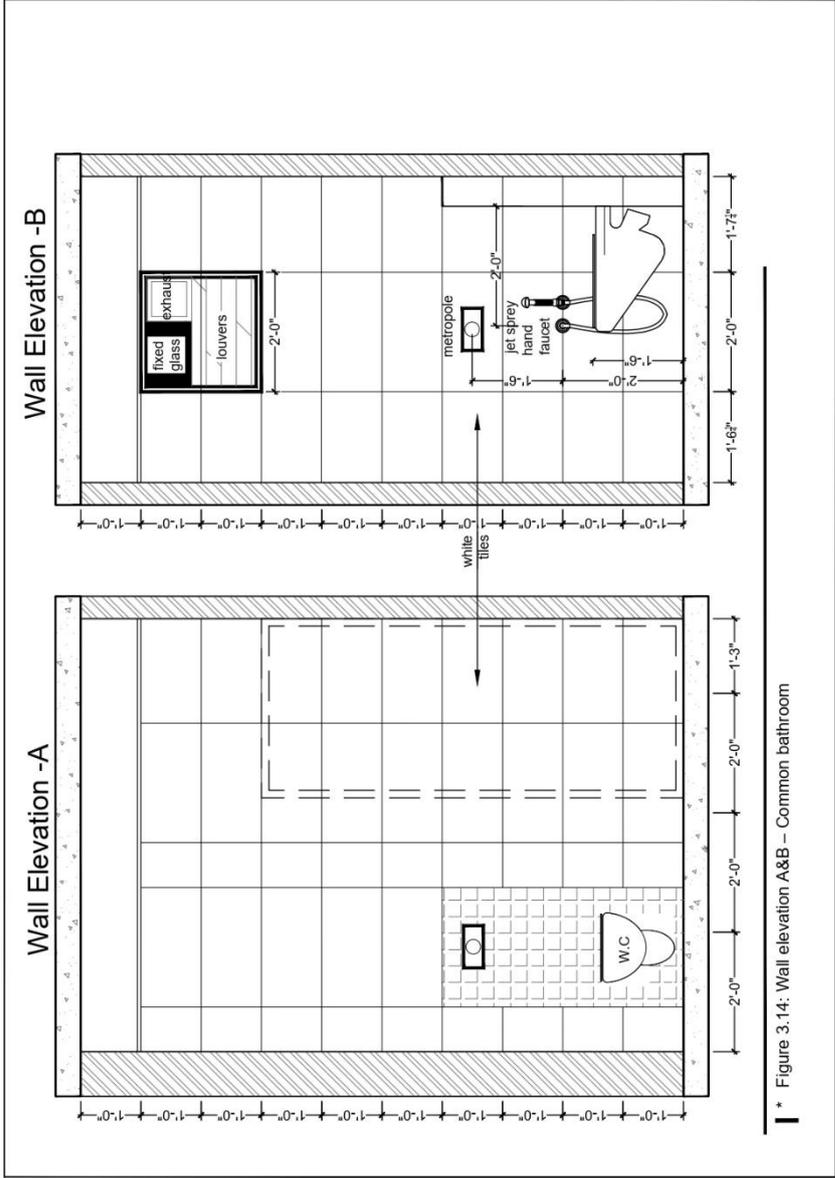


highlighter
2'x 2'

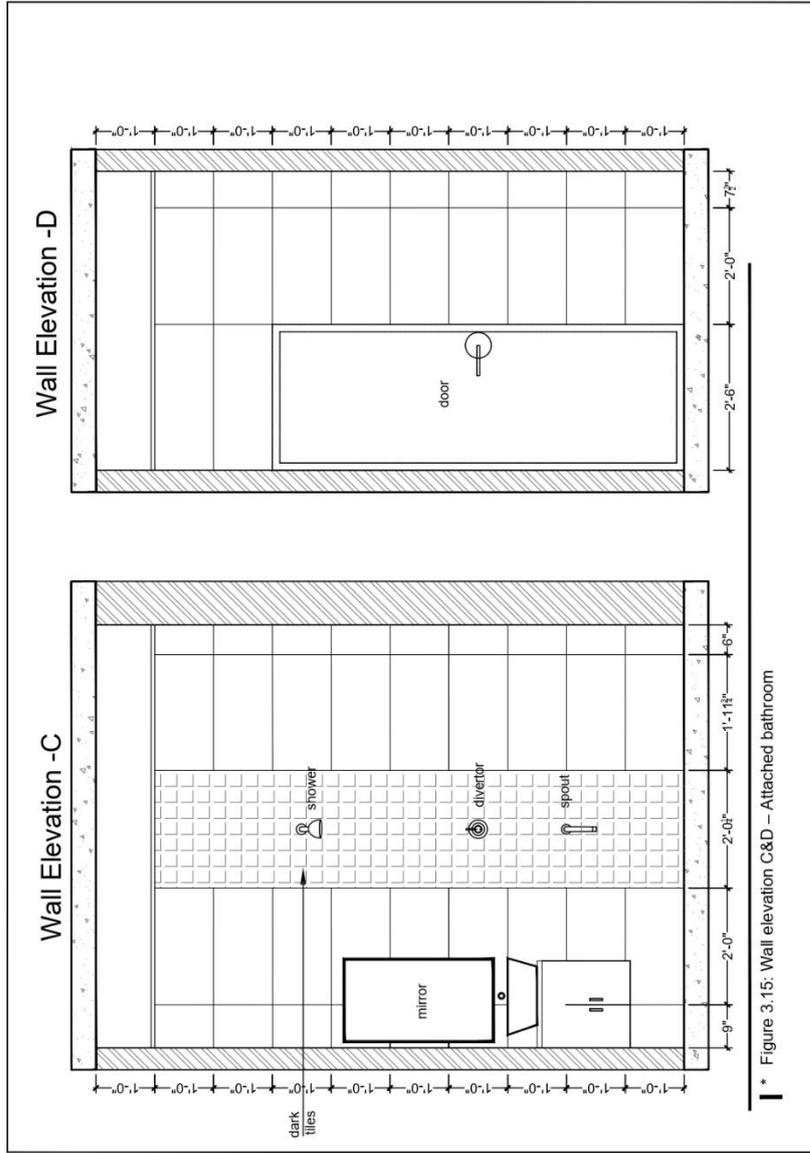


basic white tiles
2' x 2'

* Figure 3.13: Plan of Common bathroom



* Figure 3.14: Wall elevation A&B – Common bathroom



* Figure 3.15: Wall elevation C&D – Attached bathroom

COMMON BATHROOM

Wall elevation - Common Bathroom

The size of the attached bathroom was 5'1" x 7'2". The common bathroom had a shower area, a wash basin and a water closet. The total height of the bathroom was 9'0". The false ceiling was made of cement sheet which gives an aesthetic finishing touch to the bathroom. A royal finish paint was used in ceiling of the bathroom. The ceramic tiles were fixed in the bathroom on all sides of the wall till the ceiling. The Matt finished ceramic flooring was installed in the bathroom.

WALL ELEVATION – A & B

The light ivory-coloured ceramic tiles were fixed on the walls till the ceiling. The size of the light-coloured ceramic tile was 2' X 1'. The water closet was placed on this wall. The 4" wide ledge wall was used to place a wall-mounted water closet. The health faucet and the metro pole were placed beside the water closet. The nahni trap was placed on the floor in the corner of the water closet. The water closet ledge wall was highlighted with designer tiles till 4'0" from the floor. The ventilation was 2'0" X 2'0" with glass louvered window. The glass shelf were placed in the corner 6" x 6" size for keeping bathroom utility things.

WALL ELEVATION – C & D

This wall contained main wall of the plumbing and entry door of the bathroom. The size of the door was 7'0" height and 2'6" width. The door had a 1" stone frame and was made up of wood. The light ivory-coloured ceramic tiles were fixed on the wall till the ceiling. This was the main wall where the plumbing fixtures were fixed of the wash basin and shower area. The counter of the basin height was 2'6" from the floor and the basin bowl was 5" tall. The basin had a pillar tap and a bottle trap of s.s material which was used for drainage of the wash basin. The black-coloured granite was used for the counter top of the basin. The mirror was placed above the wash basin on the wall. The shower area was placed beside the wash basin area. The mixer was planned at 2'0" height and the shower was at 8'0" height from the floor.

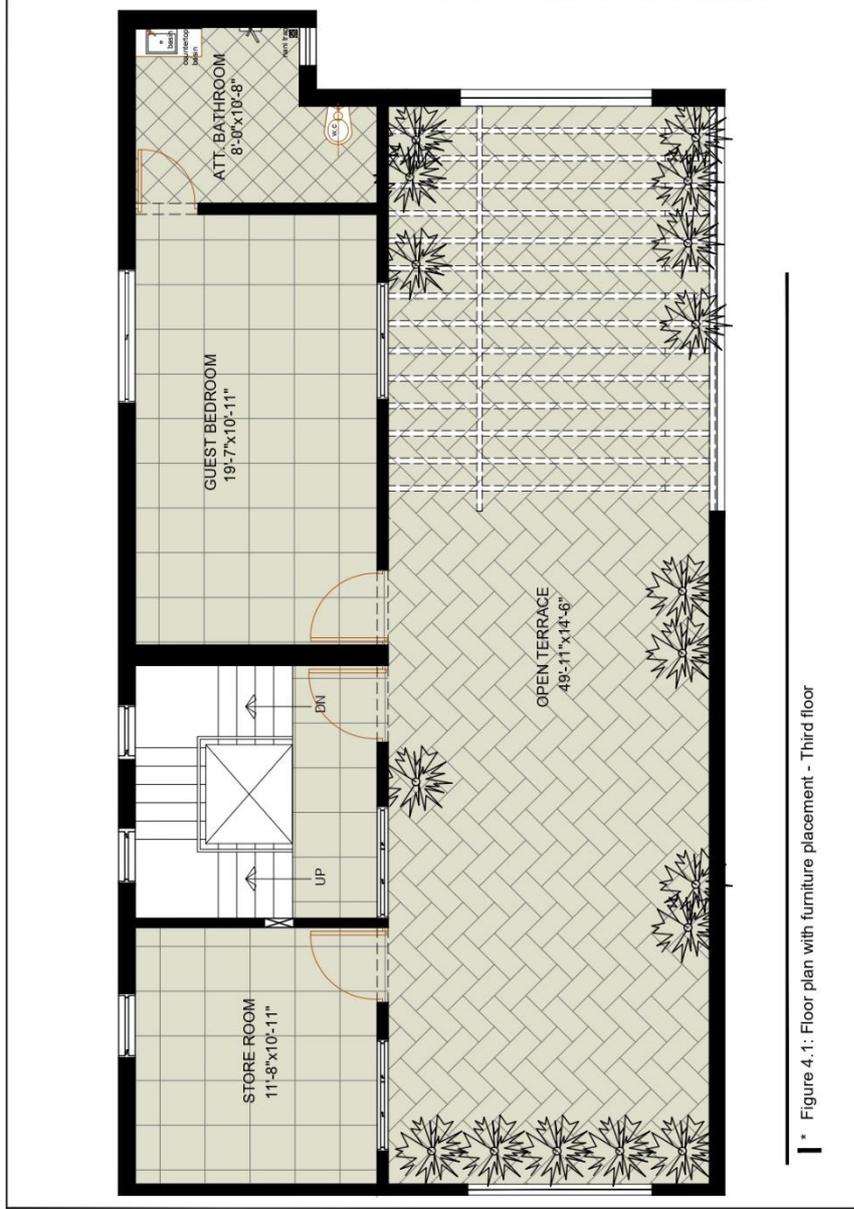
The nahni trap was placed on the floor in the corner of the shower area. The size of the light ivory-coloured ceramic tile was 2' X 1' and designer tiles 2' X 1'. The pattern was highlighted with designer tiles on the shower wall. The lintel level was 7'0" from the floor level.



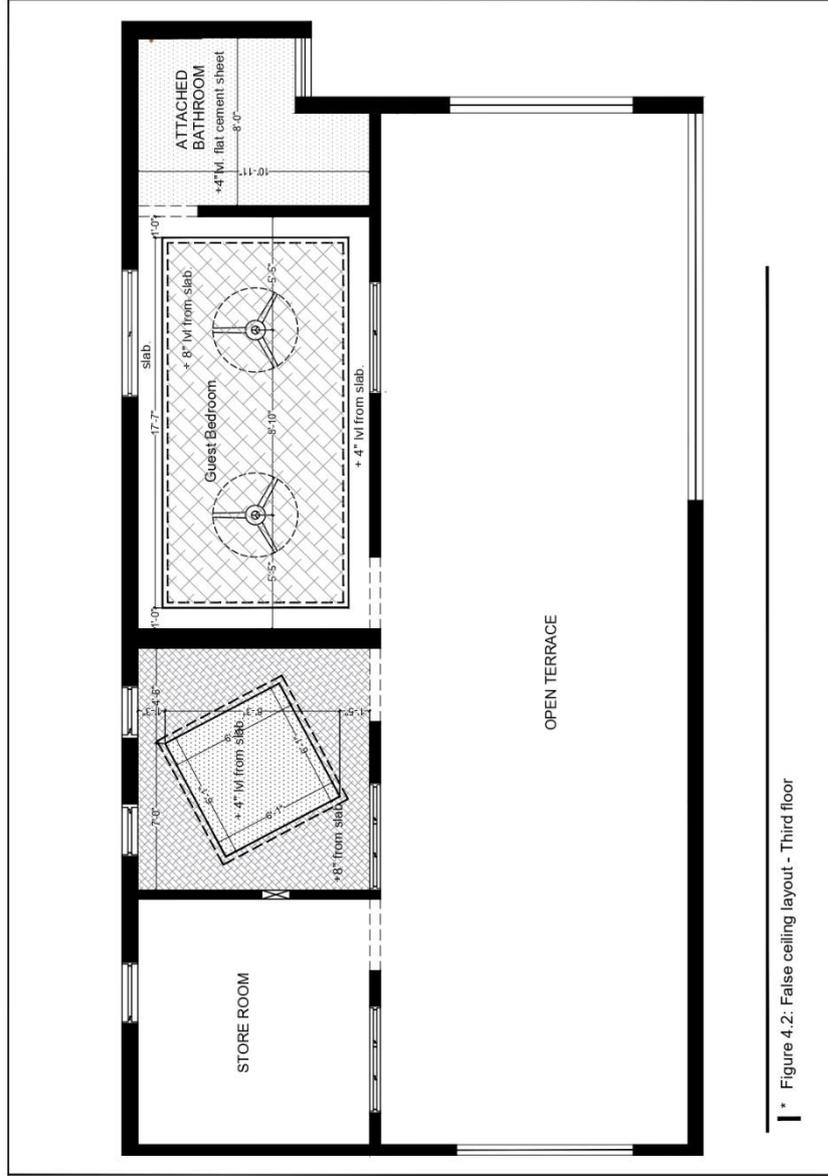
* Figure 3.16: 3D view - Second floor



Figure 3.17: 3D view 1 - Second floor



* Figure 4.1: Floor plan with furniture placement - Third floor



* Figure 4.2: False ceiling layout - Third floor

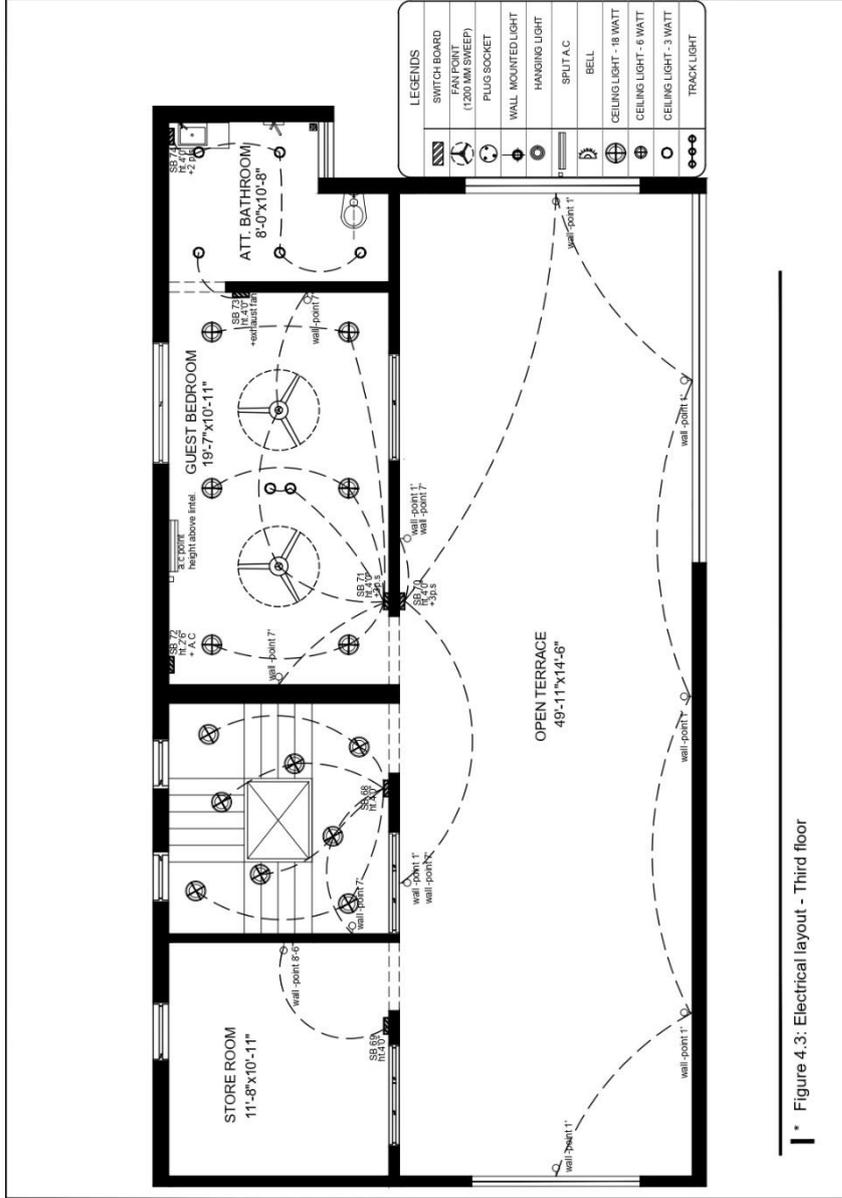


Figure 4.3: Electrical layout - Third floor

IV THIRD FLOOR DRAWINGS

The third floor consisted of a store room, a guest room with attached bathroom and an open terrace. The store room was of 11'8"X 10'11" size. The guest room with attached bathroom was situated near an open terrace pergola sitting. The size of the guest room was 19'7"X 10'11". The attached bathroom consisted of a wash basin, a water closet and a shower area. The size of the attached bathroom was 8'0"X 10'8". The open terrace was of 49'11"X 14'6" size, and it was open to the sky.

FALSE CEILING LAYOUT

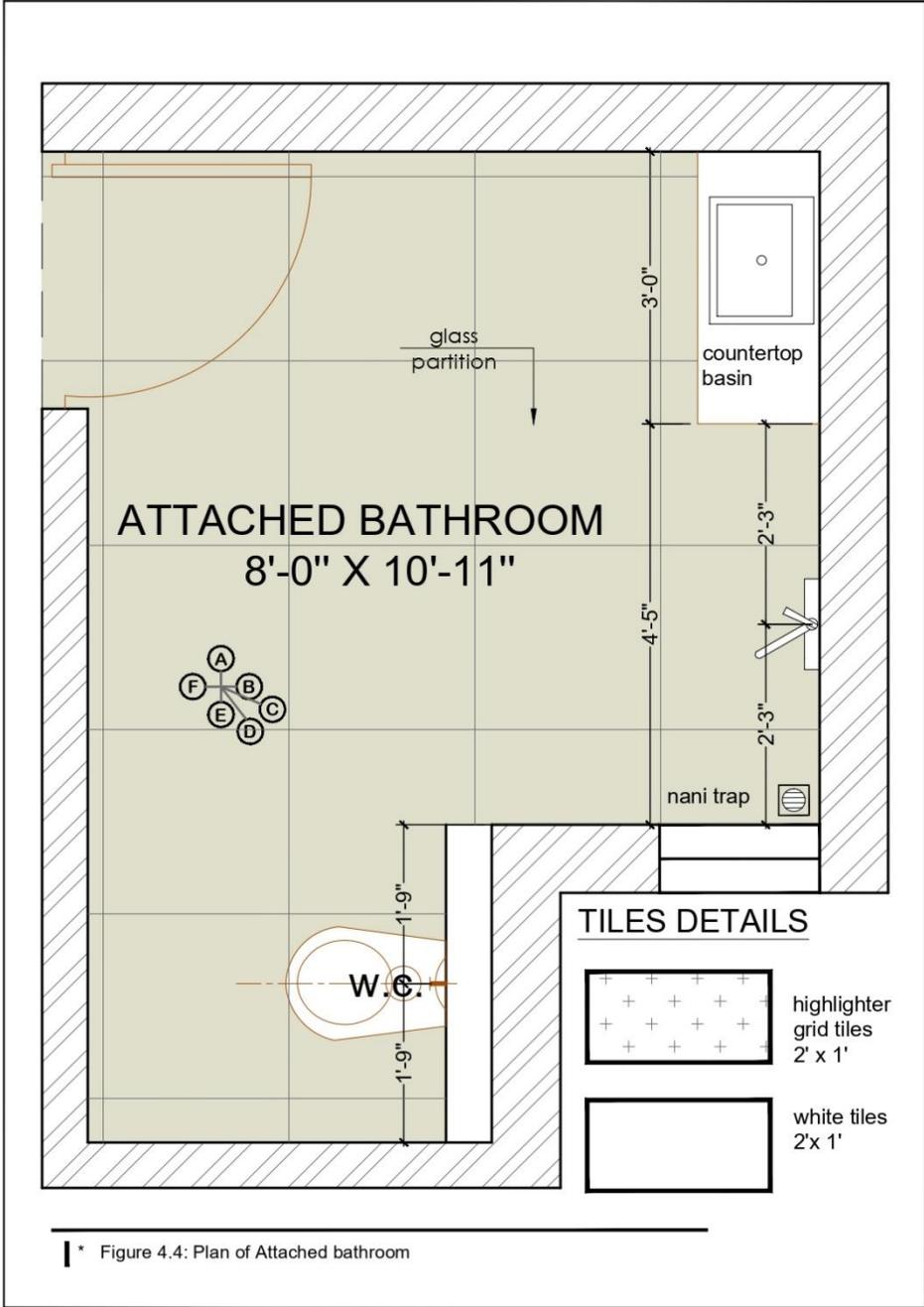
The false ceiling levels were represented by straight lines and dotted lines with indirect lightings. The 8" and 4" drop flat ceiling was designed for the guest bedroom and staircase. The ceiling of the guest bedroom and staircase was made of gypsum base, which gives an aesthetic finished touch. The plain cement sheet was planned in the common bathroom and attached bathroom above the 9' height.

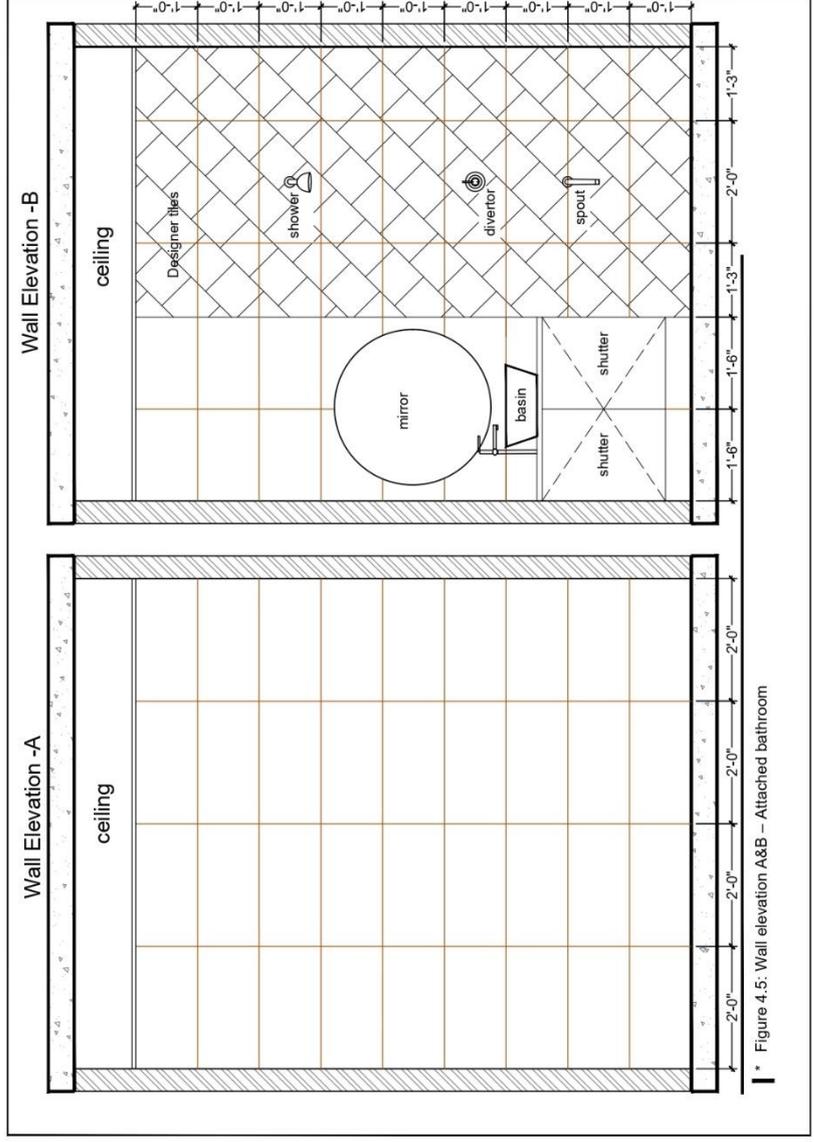
ELECTRICAL LAYOUT

The electrical layout was represented by the lines and symbols of the electrical wiring. This Figure 25 shows 1 air-conditioning, 2 fan, 3 wall points in internal area, 9 wall points in outdoor area and 1 wall point at the stair case, 1 MCB (Miniature circuit breaker), 6 switchboards at the height of 4'0", 1 switchboard at the height of 3'0" from the floor. On the third floor ceiling there were seventeen LED lights of square shape having 12 watts and two LED lights of round shape having 3 watts. The indirect rope light was planned in a vertical gap with 4" dropped ceiling.

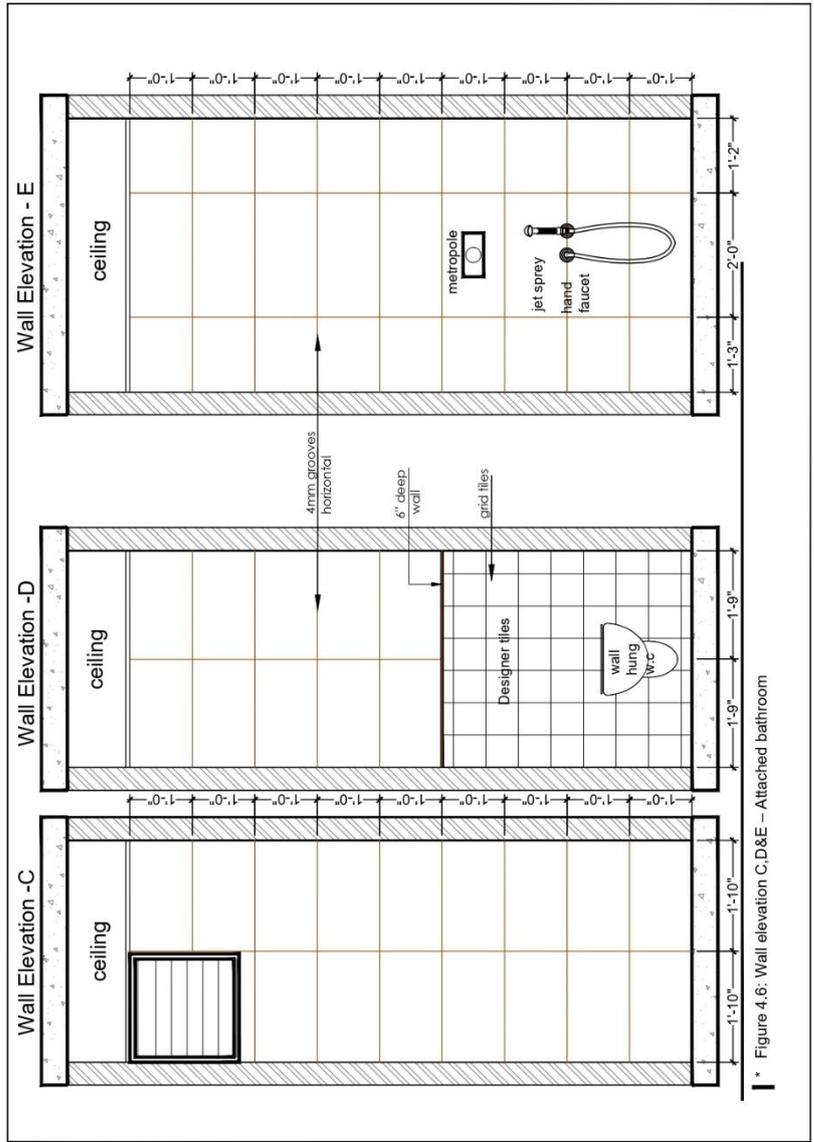
Table 12: Electrical wiring – Third floor

Switch board	Connection
Office room	
SB 01 – 4'0"	CL - 3, WP – 2, CL – 1*, PS - 2
SB 02 – 4'0"	CL – 3, CL – 1*, Fan*, PS – 1, WP - 1
SB 03 – 4'0"	PS – 2
SB 04 – 3'0"	CL – 4, CL – 1*, Fan*, PS – 4, AC
Entrance	
SB 05 – 4'0"	CL – 1*, Bell
Passage	
SB 06 – 4'0"	CL – 1, CL – 1*, FP – 1, WP – 1*
SB 07 – 4'0"	CL – 1, exhaust fan
Sitting area	
SB 08 – 3'0"	CL – 4, 1 fan
SB 09 – 2'3"	CL – 3, FP - 1
SB 09a – 4'0"	CL – 6, Track – 4, WP - 4
Swimming pool	
SB 10 – 4'0"	WP - 1
SB 11 – 4'0"	WP – 1, 1 fan
SB 12 – 4'0"	CL – 4, WP – 4, 2PS

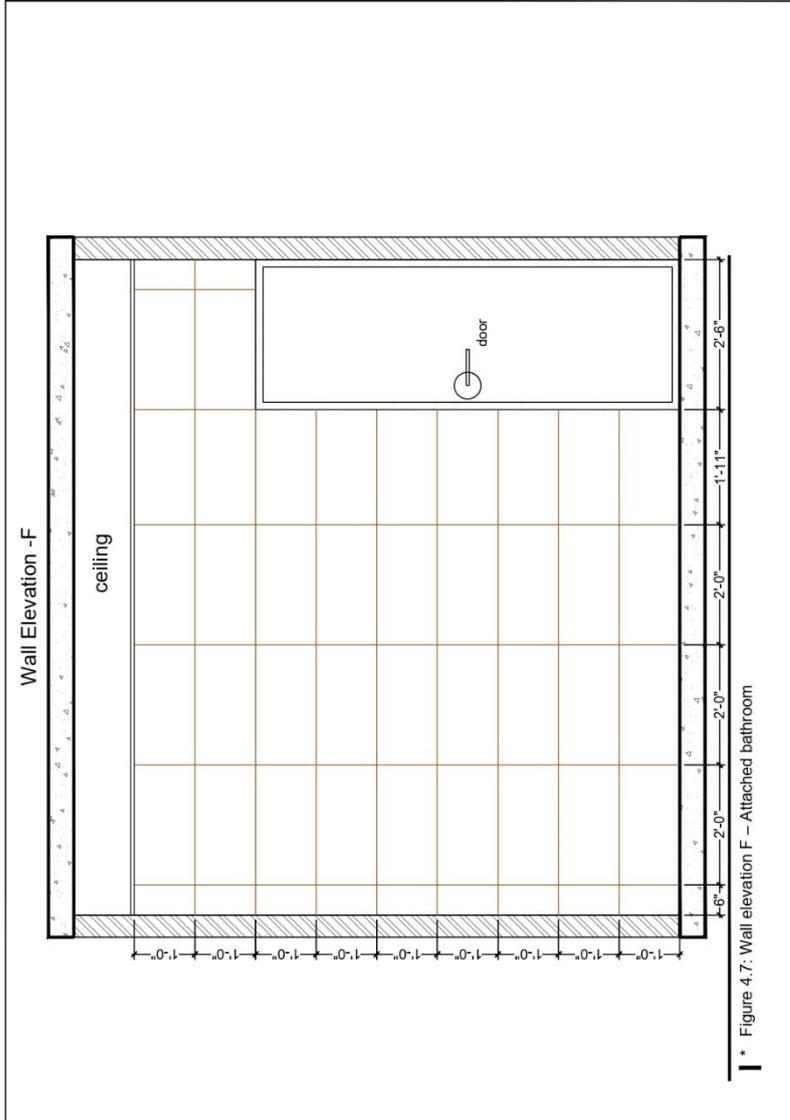




* Figure 4.5: Wall elevation A&B – Attached bathroom



* Figure 4.6: Wall elevation C,D&E – Attached bathroom



* Figure 4.7: Wall elevation F – Attached bathroom

ATTACHED BATHROOM

Wall elevation - Attached Bathroom

The size of the attached bathroom was 8'0"X 10'11". The bathroom had a shower area, a wash basin and a water closet. The total height of the bathroom was 9'0". A royal finish paint was used in ceiling of the bathroom. The ceramic tiles were fixed in the bathroom on all sides of the wall till the ceiling.

WALL ELEVATION - A

The white-coloured ceramic tiles were fixed on the walls till the ceiling level of the bathroom. The size of the white-coloured ceramic tile was 2' X 1'.

WALL ELEVATION – B

The dark-grey-coloured designer ceramic tiles were fixed on the shower area and white coloured basic ceramic tiles were fixed on the basin area till the ceiling. This was the main wall where the plumbing fixtures were fixed of the basin counter and shower area. The counter of the basin height was 2'6" from the floor and the basin bowl is 5" tall. The basin had a pillar tap and a bottle trap of s.s material was used for drainage of the wash basin. The black-coloured granite was used for the counter top of the basin. The mirror was placed above the wash basin on the wall. The shower area was placed beside the wash basin area. The mixer was planned at 2'0" height and the shower was 8'0"height from the floor. The nahni trap was placed on the floor in the corner of the shower area. The size of the white-coloured ceramic tile was 2' X 1' and designer tiles 2' X 1'. The pattern was highlighted with designer tiles on the shower wall. The lintel level was 7'0" from the floor level.

WALL ELEVATION - C

The white-colour ceramic tiles were fixed on the walls till the ceiling level of the bathroom. The ventilation was 2'0" X 2'0" glass louvered window.

WALL ELEVATION – D&E

The water closet was placed on the wall. The 4” wide ledge wall was used to place for a wall-mounted water closet. The health faucet and the metro pole were placed beside the water closet. The nahni trap was placed on the floor in the corner of the water closet. The water closet ledge wall was highlighted with designer tiles till 4’0” from the floor.

WALL ELEVATION – F

The wall elevation E contained an entry door of the bathroom. The size of the door was 7’0” height and 2’6” width. The door had a 1” stone frame and was made up of a flush door with veneer finish. The white-coloured ceramic tiles were fixed on the wall till the ceiling.



Figure 4.8: 3D view - Third floor

SECTION III

Cost estimation of office cum residential unit.

Cost estimation was prepared considering the actual price and labour cost. The details of the cost estimation of the live design project are given in the following tables.

Table 13: Cost estimation for flooring, ceiling and wall treatments for the office cum residential unit.

Interior Components	Material	Colour	Company	Total area (A) (In Sq.ft)	Material Cost (B)	Labour cost (C)	Total cost [A X (B + C)]
Flooring							
Ground floor							
Office	Wooden tiles	Natural wood	Kajaria	193.79	190/-Sq.ft	90/- Sq.ft	₹54,261/-
Internal area	Glazed Vitrified tiles	Light grey	Kajaria	662	280/-Sq.ft	90/- Sq.ft	₹2,44,940/-
Swimming pool	Ceramic swimming pool tile	Blue and light blue	Somany	747	250/-Sq.ft	90/- Sq.ft	₹2,53,980/-
Parking area	Kota stone	Grey		617	60/- Sq.ft	90/- Sq.ft	₹92,550/-
First floor							
Internal area	Vitrified tiles	White	Kajaria	1060	255/-Sq.ft	90/- Sq.ft	₹3,65,700/-
Balcony	Vitrified matte tiles	Light grey		290	195/-Sq.ft	90/- Sq.ft	₹82650/-
Utility area	Kota stone	grey		46	60/- Sq.ft	100/-Sq.ft	₹7360/-

SECOND FLOOR							
Interior Design Aspects	Material	Colour	Company	Total area (A) (In Sq.ft/ R.ft)	Material Cost (B)	Labour cost (C)	Total cost [A X (B + C)]
Internal areas	Vitrified tiles	White	Kajaria	785	255/-Sq.ft	90/- Sq.ft	₹2,70,825/-
Daughter's bedroom	Wooden glazed tiles	Light Grey	Somany - Renegade natural	230	260/-Sq.ft	90/- Sq.ft	₹80,500/-
Third floor							
Internal areas	Vitrified tiles	White	Kajaria	386	255/-Sq.ft	90/- Sq.ft	₹1,33,170/-
Open terrace	Matte tiles	Rustic	Kajaria	780	220/-Sq.ft	90/- Sq.ft	₹2,41,780/-
Staircase	granite	Zade black		840	450		₹3,78,000/-
					Total		₹22,05,716/-
Ceiling							
Ground floor	Gypsum	White	Gyproc	896	60/- Sq.ft		₹53,760/-
	Cement sheet	Plane sheet	Shera	158	85/- Sq.ft		₹13,430/-
First floor	Gypsum	White	Gyproc	960.4	60/- Sq.ft		₹57,624/-
Second floor	Gypsum	White	Gyproc	901	60/- Sq.ft		₹54,060/-
	Cement sheet	Plane sheet	Shera	293.3	85/- Sq.ft		₹24,930.5/-
Third floor	Gypsum	White	Gyproc	215	60/- Sq.ft		₹12,900/-
	Cement	Plane sheet	Shera	74.1	85/- Sq.ft		₹6298.5/-

	sheet					
					Total	2,23,003/-

Interior Components	Material	Colour	Company	Total area (A) (In Sq.ft)	Material Cost (B)	Labour cost (C)	Total cost [A X (B + C)]
Walls							
Ground Floor	Royal finish	White	Asian paint	3516	24/- Sq.ft		₹84,384/-
	Stucco marble finish	Purple	Asian paint	750	30/- Sq.ft		₹22,500/-
First Floor	Royal finish	White	Asian paint	6511.4	24/- Sq.ft		₹1,56,274/-
Second Floor	Royal finish	White, beige and grey	Asian paint	6520.5	24/- Sq.ft		₹1,50,012/-
	Wall paper	Purple	Asian paint	193.3	3600 x 3 (3role)		₹10,800/-
Third floor	Royal finish	White and light grey	Asian paint	634.3	24/- Sq.ft		₹15,223.2/-
					Total		₹4,39,192/-
*The cost estimation was based on the market price of the material and labour cost as per year 2020 – 2021.							

Table 14: Cost estimation of lighting fixture for the office cum residential unit.

Light fixtures	Quantity	Cost	Total cost in Rs.
Ground floor			
Neptune lights - Aqua LED down light (12w)	22 No.	₹375/piece	₹8250/-
Neptune lights - Aqua LED down light (18w)	3 No.	₹550/piece	₹1650/-
Neptune lights - Aqua LED down light (3w)	10 No.	₹220/piece	₹2200/-
Track light LED (20w)	12 No.	₹450/piece	₹5400/-
Wall designer light	3 No.	₹850/piece	₹2550/-
5050 strip light	50mtr	60/- mt	₹3000/-
Fan	3 No.	₹1850/piece	₹5550/-
First floor			
Neptune lights - Aqua LED down light (12w)	32 No.	₹375/piece	₹12000/-
Neptune lights - Aqua LED down light (3w)	18 No.	₹220/piece	₹3960/-
Hanging light	2 No.	₹2200/piece	₹4400/-
Chandelier	1 No.	₹12000/piece	₹12,000/-
Spot light (3W)	8 No.	₹150/piece	₹1200/-
Wall designer light	5 No.	₹850/piece	₹4250/-
5050 strip light	90mtr	60/- mt	₹5400/-
Fan	4 No.	₹1850/piece	₹7400/-
Second floor			
Neptune lights - Aqua LED down light (12w)	35 No.	₹375/piece	₹13125/-
Neptune lights - Aqua LED down light (6 w)	11 No.	₹250/piece	₹2750/-
Neptune lights - Aqua LED down light (3w)	9 No.	₹220/piece	₹1980/-
Hanging light	2 No.	₹1550/piece	₹3100/-
Spot light (3W)	8 No.	₹150/piece	₹1200/-
5050 strip light	85mtr	60/- mtr	₹5100/-
Fan	5 No.	₹1850/piece	₹9250/-
Second floor			

Neptune lights - Aqua LED down light (12w)	14 No.	₹375/piece	₹5250/-
Neptune lights - Aqua LED down light (6 w)	5 No.	₹250/piece	₹1250/-
Neptune lights - Aqua LED down light (3w)	2 No.	₹220/piece	₹440/-
Hanging light	1 No.	₹17000/piece	₹17,000/-
5050 strip light	20mtr	60/- mt	₹1200/-
Fan	2 No.	₹1850/piece	₹3700/-
		Total	₹1,44,555/-
*The cost estimation was based on the market price of the material and labour cost as per year 2020 – 2021.			

Table 15: Cost estimation of Bathrooms for the office cum residential unit.

Items	Material	Colour	Dimension	Total Sq.Ft./R.Ft	Quantity	Rate per Sq.Ft/Unit (Labour + Material Cost)	Total Cost (in₹)
Ground floor							
Common Bathroom							
Highlighter	Grid tiles - kajaria	Ivory	2'0" x 1'0"	28		350/-	9800/-
Basic tiles	Glaze tiles	light beige	2'0" x 1'0"	210		255/-	53550/-
Flooring	Matt tiles	ivory	1'0" x 1'0"	55		155/-	8525/-
Fittings	Jagaur	C.p					45,900/-
Plumbing	Finolex						35,000/-
							152,775/-

Items	Material	Colour	Dimension	Total Sq.Ft./R.Ft	Quantity	Rate per Sq.Ft/Unit (Labour + Material Cost)	Total Cost (in₹)
First floor							
Attached Bathroom - master bedroom							
Highlighter	wooden tiles	Golden brown	3'9" x 7"	31		680/-	13950/-
Basic tiles	buttachino	White	4'0" x 2'0"	170		450/-	59500/-
Flooring	Plane tiles	White	4'0" x 2'0"	60		165/-	9900/-
Fittings	Jagaur	C.p					52,780/-
Sanitary ware	Soncera	White					
	Wall hung W.C - Amazon		1'9" x 1'2" x 1'2"				4880/-
	LINO -12035		1'3" x 1'3" x 1'4"				7840/-
Plumbing	Finolex						49,000/-
							2,46,850/-
Common Bathroom							
Highlighter	Grid tiles - kajaria	oak yellow and blue	2'0" x 1'0"	28		340/-	9520/-
Basic tiles	Glaze tiles	ivory	2'0" x 1'0"	210		215/-	45,150/-
Flooring	Matt tiles	ivory	1'0" x 1'0"	55		125/-	6,875/-
Fittings	Jagaur	C.p					32,600/-

Sanitary ware	Soncera	White					
	W.C - floor mounted		3'3" x 2'3"				2,200/-
	Basin	Golden brown	1'6" x 1'6"				5,500/-
Plumbing	Finolex						44,000/-
							1,45,845/-
Second floor							
Daughters Bathroom							
Highlighter	nitco	Aqua blue	6" x 3"	340		443/-	1,50,620/-
Basic tiles	Glaze tiles	light grey	2'0" x 1'0"	100		488/-	48,800/-
Dark tiles	Glaze tiles	dark grey	2'0" x 1'0"	100		488/-	48,800/-
Flooring	Matt tiles	grey	1'0" x 1'0"	70		188/-	13,160/-
Fittings	Jagaur	C.p					83,000/-
Sanitaryware	Soncera	White					
	W.C - floor mounted		3'3" x 2'3"				5,800/-
	Basin	white and grey	2'6" x 1'6"				8,300/-
Plumbing	Finolex						67,000/-
							4,25,480/-
Brothers bathroom							
Highlighter	nitco	copper	9" x 9"	105		630/-	66,150/-
Basic tiles	Glaze tiles	ivory	4'0" x 2'0"	260		450/-	1,17,000/-
Dark tiles	Matt tiles	brown	2'0" x 2'0"	95		219/-	20,805/-
Fittings	Jagaur	C.p					1,30,000/-
Sanitaryware	Soncera	White					

	W.C - floor mounted		3'3" x 2'3"				4,880/-
	Basin	bronze	2'6" x 1'6"				7,700/-
Plumbing	Finolex						65,000/-
							4,11,535/-
Third floor							
Attached Bathroom							
Highlighter	Grid tiles - kajaria	grey and black	2'0" x 1'0"	60		210/-	12600/-
Basic tiles	Glaze tiles	White	2'0" x 1'0"	266		155/-	41230/-
Flooring	Matt tiles	grey	1'0" x 1'0"	95		125/-	11875/-
Fittings	Jagaur	C.p					20600/-
Sanitary ware	Soncera						
	W.C - floor mounted	White	3'3" x 2'3"				2200/-
	Basin	White	1'9" x 1'9"				5500/-
Plumbing	Finolex						29,600/-
							123605/-
						TOTAL	15,06,090/-
*The cost estimation was based on the market price of the material and labour cost as per year 2020 – 2021.							

Table 16: Cost estimation of Furniture units for the office cum residential unit.

Ground Floor							
Items	Material	Colour	Dimension	Total Sq.Ft./ R.Ft [A]	Quantity [B]	Rate per Sq.Ft/ Unit (Labour + Material Cost) [C]	Total Cost (in ₹) [A x B x C]
Office							
Cabinet	Veneer	Brown	9'11"x 2'6"	23.6	1	1850/-	43,660/-
Overhead Cabinet	Veneer	Brown	22'11" x 2'3"	51	2	1850/-	1,88,700/-
Table	Veneer, glass and corian stone	Brown	7'6" x 2' 6"	20	1	2200/-	44,000/-
Main chair	Leather	Black	1'9" x 1'9"		1	12000/-	12,000/-
Chair	Leather	Black	1'9" x 1'9"		2	6500/-	13,000/-
Sitting	Wooden	Brown	6'3"x 2'4"	15	1	2000/-	30,000/-
							3,31,360/-

Items	Material	Colour	Dimension	Total Sq.Ft./ R.Ft [A]	Quantity [B]	Rate per Sq.Ft/ Unit (Labour + Material Cost) [C]	Total Cost (in ₹) [A x B x C]
Sitting Area							
3+2 seater sofa	Cane	Grey and ivory	9'9" x 2'6"	10	1	10400/-	1,04,000/-
Center table	Cane	Grey	3' x 2'	6	1	1650/-	9900/-
Partition	Wooden	Brown	7'9" x 4'0"	31.6	2	2000/-	1,26,400/-
							2,40,300/-
Changing room							
Wardrobe	Veneer	Golden brown	8'2" x 7'0"	57.4	1	1950/-	1,11,930/-
First Floor							
Drawing room							
Sofa	Upholstery and leather fabric	Grey	14'9"+11'0"+5'0"	31	1	5500/-	170500/-

Items	Material	Colour	Dimension	Total Sq.Ft./ R.Ft [A]	Quantity [B]	Rate per Sq.Ft/ Unit (Labour + Material Cost) [C]	Total Cost (in ₹) [A x B x C]
centre table	Veneer and PU polish	Brown and white	4'0" x 2'3"	9.2	1	2450/-	22,540/-
TV panel	Veneer, PU polish and teak wood.	Brown and white	19'4" x 9'7"	188.1	1	1850/-	3,47,985/-
corner table	Veneer and Glass	brown	2'0" x 2'0"	4	1	2450/-	9,800/-
shoe rack	Veneer and PU polish	Black	4'9" x 1'6"	8	2	1850/-	29,600/-
Partition	Veneer and Glass	Brown	8'3" x 9'0"	74.7	1	2000/-	1,49,400/-
							7,29,255/-
Kitchen / Dinning							
Dining table	Corian stone and wood	Ivory and Brown	6'3" x 4'0"	25	1	2000/-	50000/-

Items	Material	Colour	Dimension	Total Sq.Ft./ R.Ft [A]	Quantity [B]	Rate per Sq.Ft/ Unit (Labour + Material Cost) [C]	Total Cost (in ₹) [A x B x C]
Chairs	Wooden and upholstery	Brown and Ivory	1'6" x 1'6"		6	6800/-	40800/-
Kitchen Counter -1	Mirror PU Polish	Black and Peach	11'6"x2'10" x 2'0"	64.86		4800/-	311328/-
Kitchen Counter -2	Mirror PU Polish	Black and Peach	5'1"x 2'0"x2'10"	28.65		4800/-	137520/-
Island table	Wooden	Brown	4'0" x 5'9"	23	1	4800/-	110400/-
Overhead cabinet			11'6"x2'3" x 1'0"	25.87		4200/-	108654/-
							6,50,048/-
Store room							
Cabinet	laminate	Golden brown	8'0" x 7'0"	56	1	1850/-	1,03,600/-
Cabinet	laminate	Golden brown	4'5" x 7'0"	31.5	1	1850/-	58,275/-
							1,09,375/-
Master bedroom							
Wardrobe -1	Veneer	Brown	5' 0" x 7'0"	35	1	1950/-	68,250/-
Wardrobe -2	Veneer	Brown	4'8 x 7'0"	32.62	1	1950/-	63,570/-

Items	Material	Colour	Dimension	Total Sq.Ft./ R.Ft [A]	Quantity [B]	Rate per Sq.Ft/ Unit (Labour + Material Cost) [C]	Total Cost (in ₹) [A x B x C]
Bed	Veneer and PU polish	Brown and ivory	6'0" x 6'0"	36	1	1800/-	64,800/-
Side table-1	Veneer	Brown	3'6" X 1'0"	3.5	1	1250/-	4375/-
Side table-2	Veneer	Brown	2'0" X 1'0"	2	1	1250/-	2500/-
Dressing unit	Veneer and mirror	Brown	3'6" X 1'0"	3.5	1	1250/-	4375/-
Overhead cabinet	colour painted	White	7'3" x 2'3"	16.31	1	1850/-	30,174/-
							2,38,044/-
Second floor							
Daughter's bedroom							
Wardrobe -1	PU polish	Brown and blue	6' 8" x 7'0"	47.6	1	1950/-	92,820/-
Bed	Veneer	Brown and ivory	6'0" x 6'0"	36	1	1800/-	64,800/-
Back panelling 1	Veneer	Brown	16'3" X 3'0"	48.9		1250/-	61,125/-
Back panelling 2	Veneer	Brown	14'3" X 3'0"	43		1250/-	53,750/-
Side table-1	Veneer	Brown	3'9.5" X 1'0"	3.9	1	1250/-	4875/-
Dressing and TV panel	Veneer, PU polish and mirror	Brown and blue	10'11" X 8'0"	81	1	1850/-	1,49,850/-
							4,27,220/-
Brothers bedroom							
Wardrobe -1	PU polish	Brown and blue	10' 1" x 7'0"	70.7	1	1950/-	1,37,865/-

Items	Material	Colour	Dimension	Total Sq.Ft./ R.Ft [A]	Quantity [B]	Rate per Sq.Ft/ Unit (Labour + Material Cost) [C]	Total Cost (in ₹) [A x B x C]
Bed	Veneer	Brown and ivory	6'0" x 6'0"	36	1	1800/-	64800/-
Back panelling	Veneer and back painted glass	Brown and copper	15'0" X 9'3"	139.5	1	1250/-	174375/-
Side table-1	Veneer	Brown	2'2" X 1'0"	2.2	1	1250/-	2750/-
TV panel	Veneer, metallic polish	Brown and copper	3'6" X 1'0"	3.5	1	1850/-	6475/-
Dressing unit	Veneer	Brown	10'6" x 7'0"	74.2	1	1850/-	137270/-
Study table	Veneer and metallic polish	brown and copper	4'6" X 2'6"	11.9	1	1850/-	22015/-
							5,45,550/-
Guest bedroom							
Wardrobe -1	Veneer	Brown and blue	7' 2" x 8'0"	57.6	1	1950/-	112320/-
Bed	Veneer	Brown and ivory	6'0" x 6'0"	36	1	1800/-	64800/-
Dressing unit	Veneer	Brown	3'10" X 6'6"	20.4	1	1850/-	37740/-
							2,14,860/-

Doors							
Internal door - 1	sag wood	Natural wood shade	3'0" x 7'0"	21	9	543/-	102627/-
Internal door - 2	Sag wood	Natural wood shade	2'6" x 7'0"	17.5	12	543/-	1,14,030/-
Main door	Veneer & mirror metallic polish	Brown & copper	5'0" x 7'10"	35.5	1	2000/-	71000/-
							2,87,657/-
Windows							
Window - 1	Wood and glass	brown	5'0" x 4'0"	20	15	450/-	1,35,000/-
Window - 2	Glass and wood	brown	2'0" x 4'0"	8	9	450/-	32,400/-
Window - 3	Wood and glass	brown	3'0" x 4'0"	12	2	450/-	10,800/-
French window	Aluminium	white	8'0" x 7'0"	56	1	500/-	28,000/-
Ventilation window	Glass and m.s	black	2'0" x 2'0"	4	8	250/-	8000/-
							2,14,200/-
						TOTAL	40,99,799/-
*The cost estimation was based on the market price of the material and labour cost as per year 2020 – 2021.							

Table 17: Cost estimation of Furnishing and Accessories for office cum residential unit.

Furnishings	Material	No. of items	Cost per piece	Total cost in ₹
Curtains				
Ground floor	Sarom	7		₹65800/- (Labour cost included)
First floor	Sarom	10		₹109860/- (Labour cost included)
Second floor	Sarom	10		₹120560/- (Labour cost included)
Third floor	Sarom	6		₹24,095/- (Labour cost included)
Mattress, bed sheets and comforters				₹7,43,000/- (Labour cost included)
			Total	₹10,63,315/-
Accessories				
Small Planters		15	1099	₹16485/-
Artificial plants		8	2600	₹20800/-
Artifacts designer		21		₹140000/-
Big planters		15	5500	₹82500/-
Artificial pots with dry sticks		9	4800	₹43200/-
Bathroom accessories set		8	5200	₹41600/-
			Total	₹3,44,585/-
			FINAL TOTAL	₹14,07,900/-
*The cost estimation was based on the market price of the material and labour cost as per year 2020 – 2021.				

Table 18: Total Cost estimation of the all Interior components of office cum Residential unit.

Sr. no.	Interior Design Components'	Total cost (in ₹)
1	Floor	₹22,05,716/-
2	Ceiling	₹2,23,003/-
3	Walls	₹4,39,192/-
4	Lighting fixtures	₹1,57,555/-
5	Bathrooms	₹15,06,090/-
6	Furniture	₹40,99,799/-
7	Furnishings	₹10,63,315/-
8	Accessories	₹3,44,585/-
	Grand total	₹10,039,255/-

Note: The cost estimation was based on the market price of the material and labour cost as per year 2020 – 2021.

PICTURES OF COMPLETED LIVE DESIGN PROJECT

Ground floor



Plate 23: Office – Side View



Plate 24: Office-Front View



Plate 25: Main Entrance of the house

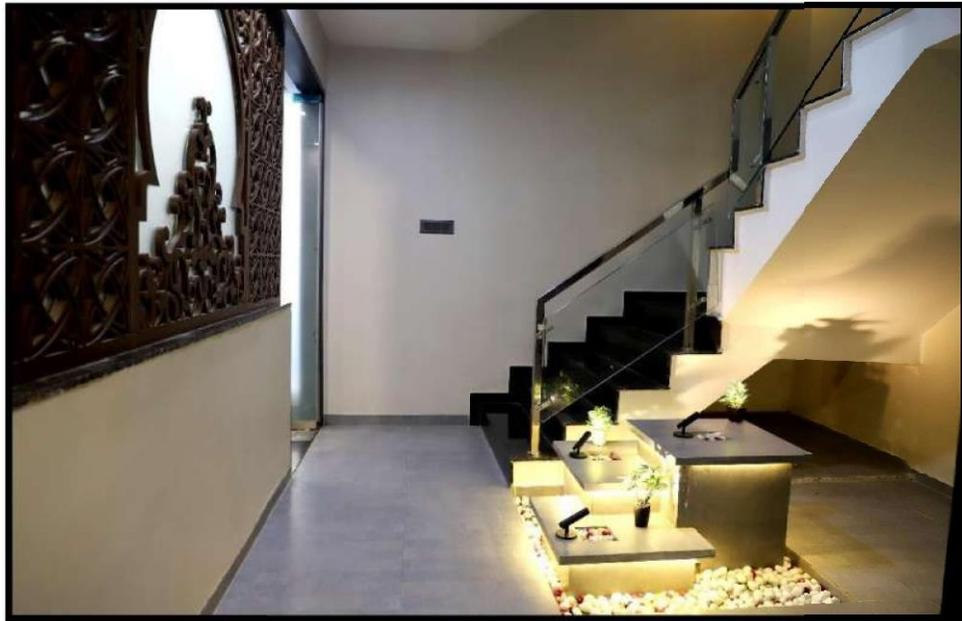


Plate 26: Staircase of the House



Plate 27: Sitting area of swimming pool



Plate 28: Swimming pool View -1



Plate 29: Swimming pool View -2



Plate 30: Swimming pool View -3

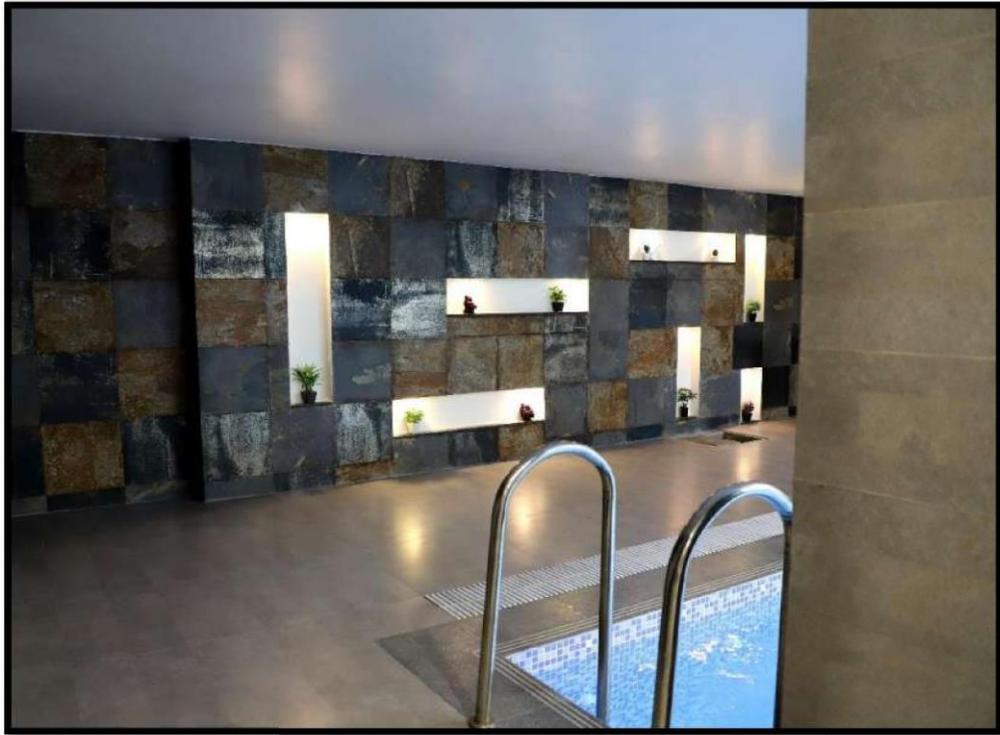


Plate 31: Swimming pool View-4

First floor



Plate 32: Main door of the house



Plate 33: Living room



Plate 34: Living room and partition



Plate 35: Kitchen and Dining area –Front View



Plate 36: Kitchen and dining area-Side View

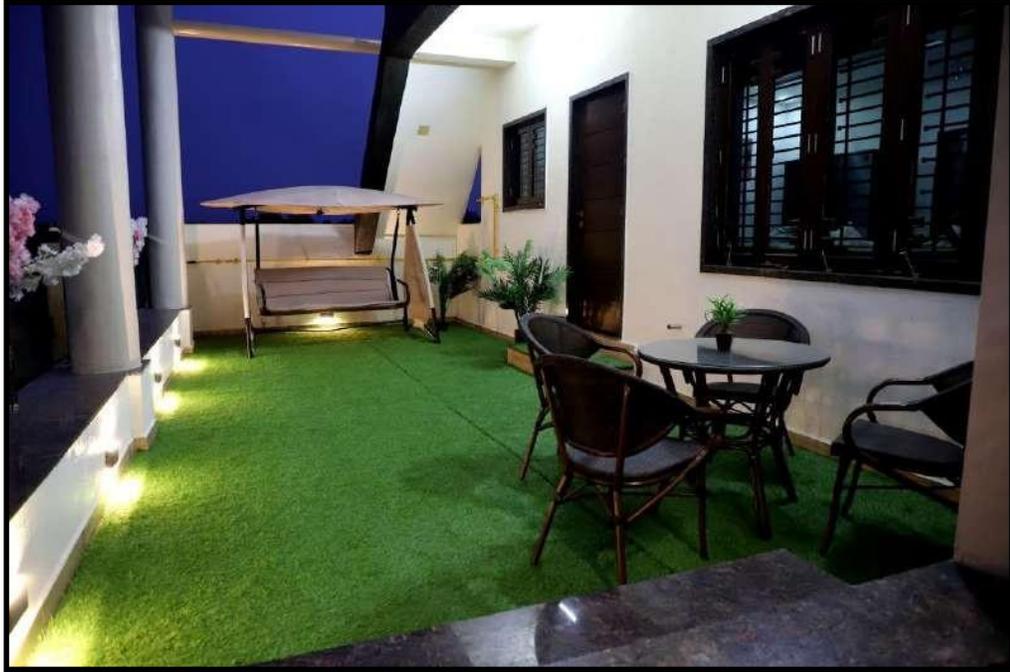


Plate 37: Covered terrace



Plate 38: Master bedroom



Plate 39: Master bedroom-Front View

Second floor



Plate 40: Brother's bedroom



Plate 41: Brother's bedroom- Opposite Wall View



Plate 42: Brother's bedroom-Side View



Plate 43: Walk-in-wardrobe



Plate 44: Brother's bathroom



Plate 45: Brother's bathroom-Internal Area View



Plate 46: Daughter's bedroom



Plate 47: Daughter's bedroom-Side View



Plate 48: Daughter's bedroom-TV Side View



Plate 49: Ceiling of daughter's bedroom



Plate 50: Shower area of daughter's bathroom



Plate 51: Dry area of daughter's bathroom



Plate 52: Guest bedroom of second floor-Bed Side View



Plate 53: Guest bedroom of second floor-Wardrobe Side View



Plate 54: Family sitting of second floor



Plate 55: Common bathroom of second floor

Third floor



Plate 56: Attached bathroom of guest bedroom



Plate 57: Stair case

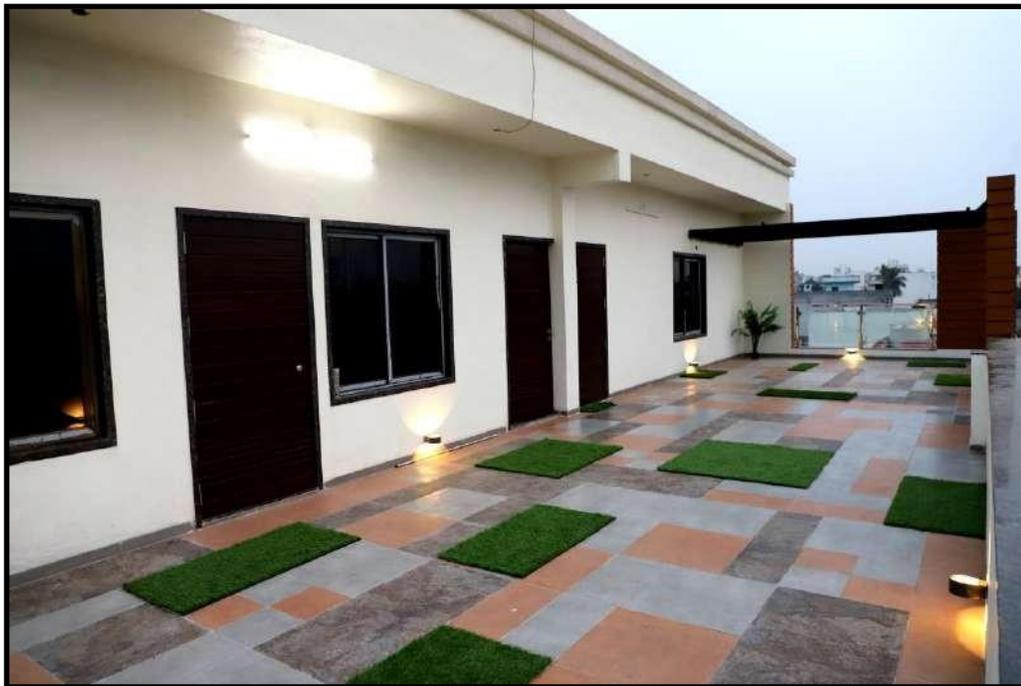


Plate 58: Open terrace of third floor View -1



Plate 59: Open terrace of third floor View -2



Plate 60: Front of the residence

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Everyone dreams of simple, unassuming and safe space to live a life at minimum cost which is functional and satisfactory to the inmates of the space, where one can express one's own choice and individuality. The vocabulary of design is constantly being reinterpreted, and in the context of the modern age, reflects new materials and new technologies. It is important to note that architecture, space planning, and the decorative arts are inevitably a reflection of a way of life. Before attempting to reconstruct ancient buildings and spaces, one must be aware of how these structures or spaces were used, and how man, woman, and society in general behaved in them(Kubba, 2003).

Nowadays a crisis named Coronavirus outbreak has disrupted the lives of Individuals. The coronavirus has changed how we work, play and learn: Schools are closing, sports leagues have been cancelled, and many people have been asked to work from home ⁽¹⁾. It has been forced to work from home since early March in an effort to stop the spread of COVID-19. Every economic shock leaves a legacy. The deadly coronavirus will be no different. This time it's a public health emergency that's shaking up the world economy. In just a few weeks, Coronavirus has changed how we meet and greet each other, how we work and how our children are educated ⁽²⁾.

Offices around the world are empty. Our work environment is suddenly being reinvented. Many others are hoping to make their home office more of a permanent work space in the future. Professionals are actively discussing how they can make remote work more of an option in the future⁽³⁾.

Working from home is a luxury only few of us can afford, but it's also a challenge to set up an office without spoiling the design aesthetics of the house, especially when space is at a premium. Many a home these days is found doing double duty - that of an office as well. Professionals of all hues, from lawyers to graphic designers to freelancers, are increasingly working out

of homes. But a home with its infinite distractions is not the easiest place to 'work'⁽⁴⁾.

Importantly, these lessons need to inform not only how we can adapt in the near term, but how we create future design strategies. Because we expect to see an ebb and flow of COVID-19 cases over the next year or more, these ideas are intrinsically long-term. When we first were advised to work from home, many saw this as a small hurdle in time before returning to office normalcy. Naturally, stopgap measures ensued like propping up laptop monitors and using couches for office chairs. But we know now that this is a kind of new normal, and so an investment in our workspace at home needs to be made while balancing it with the rest of our space (Lindberg, 2020).

The concept of the workplace is shifting from ideas of a physical location to a state of mind. Physical location of a working place has been gradually losing its importance due to growth of information technology. Modern working life adapted the system of work from home. Work from home referred as the concept of working in a concern where the employees do not have to commute to a central and single place of work. It is also called telecommuting and remote work. The development in information and communication technologies has made it very easier to complete the tasks outside of the workplace because of good internet connectivity as well as reasonable price, more user-friendly computers, laptops and other similar gadgets. This made working from home easier as well as feasible to perform tasks and likely reduced the employer costs of providing such arrangements. Today it is the need of an hour to have a working place at home from where it becomes easy to continue work during such crisis. The residential design aims to facilitate the fulfilment of special needs and life objectives of users into their environments. In fact, "good design directly impacts the quality of life" (Brawley, 2001). Residential interior space designing is a creative art which can transform an ordinary house into a very happy lively home. The purpose of interior designing is to make the home liveable according to the needs and requirement of the family and the space characteristics. The interior designer should be able to satisfy the functionalism, expressiveness and beauty. It is

not the decorating of the house; but it is the total designing of the house. The design should be such that it should be able to express the personality, aesthetic taste of the family living in through proper designing of the space, proper selection of furniture pieces, accessories and furnishing. (E.g. light, color, texture, furniture (Calkins, 1988). While designing the residence a need is felt today to have an office at home for making a pleasant and comfortable place conducive to the profession.

In India, interior designers have concentrated on designing of commercial building and residences separately, but little efforts has been given on designing the interior space for professionals like doctors who mostly prefer to plan residential unit with small clinic and teachers plan small classes or tuition room with their residence.

Review of literature revealed that much need to be explored on Residences combined with offices which motivated the researcher to study this important topic. This research is going to be beneficial for the Department of Family and Community Resource Management since interior designing is a course been offered to the students pursuing the graduate and post graduate programme. The research would also be meaningful to the students studying interior designing as they would get knowledge about the utilization of space for designing Office cum Residential Unit. Many studies have been conducted in relation to residential and commercial areas but very few researches specifically on Designing Office cum Residential Unit.

The present study will focus on design development for office cum residential unit which was the need of our due to the prevailing scenario and people prefer to work remotely from home. Therefore, this study would offer guidance on how to create a residential space look elegant, without neglecting any of the areas as well as combine the Office area for ease of working during the difficult times when we are forced to work from home. The study will be helpful for the Professionals, interior designer, architects and civil engineer for the development of their design and proper utilization of the space. The designing of the residential unit with an office area will be helpful in creating more conducive atmosphere to work from home. With this background the present study is undertaken with the following objectives.

OBJECTIVES

1. To find out the needs and preferences of the client for designing an office cum residential unit.
2. To propose the design for office cum residential unit for facilitating Professionals to work from Home

METHODOLOGY

A research design is arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedures (Kothari, 2014). The present live project aimed to Design Office cum Residential Unit for professionals to work from home. An action designing project was undertaken to fulfil the desired goal of the client by developing several designs and drafts which can be used to achieve the desired goal. It was fulfilled by a systematic approach by organizing design ideas, materials and drafting 2D and 3D designs. Initially the client's existing problem was evaluated and solved by drafting ideas and designs, the cycle went on until the desired goal was achieved and the clients were satisfied.

The interview schedule was prepared on the basis of indication supported by the review of literature. The interview schedule was divided into three sections which contained background information of the client, information regarding the live design project and need and preferences of the client for his office cum residential unit. The sample of the selected live project was a residential unit in Surat city, Gujarat. Purposive sampling technique was adopted for the present research.. On the basis of the needs and preferences of the owner with regards to the designs selected for interior aspects namely; floor, wall, ceiling, furniture and furnishings the designs was prepared.

On the basis of needs and preferences of the client and information collected regarding structure and various aspects of interiors was designed. For creating various visual projections AutoCAD 2016 software was utilized for drawing floor plan with furniture placement, false ceiling layout, electrical layout, wall elevation of office ,sitting area, common bathroom, drawing room, master bedroom, son's bedroom ,daughter's bedroom ,attached bathroom

and 3D view for all the floors. The cost estimation was prepared considering the actual price and labour cost of the live design project.

MAJOR FINDINGS

The background information of the client, Information regarding the live design project and needs and preferences of the client for his office cum residential unit. The site was located in Antroli area, Surat city of Gujarat. The plot area of the live design project was 1852.821 Sq.Ft. The total carpet area of all the floors was 3668.33 Sq.Ft. The budget given by the client was ₹90, 00,000/-.

The ground floor consisted of a paved parking area, an office, a common bathroom, a stair case, a swimming pool area, a changing room and sitting space near the swimming pool. The size of the office was 9'11"X 14'6". The office consisted of a working table with a chair, a sitting bench and storage. The size of the paved parking area was 15'0"X 32'9". The size of the sitting area besides the swimming pool was 7'0"X 9'7". The sitting room was having three seater and two-seater sofa. The size of the swimming pool area was 10'8"X 27'9". The common bathroom consisted of a wash basin, a water closet and a shower. The size of the common bathroom was 7'5"X 3'9" and the size of the changing room of the swimming pool was 7'5"X 8'2". The false ceiling levels were represented by straight lines and dotted lines with indirect lightings. The ceiling was made of gypsum base, which gives an aesthetic finished touch to the swimming pool and office area.

The first floor consisted of a drawing room, a kitchen cum dining, a store room, a utility area, a master bedroom with attached bathroom, and an outdoor area. The main entrance was from the drawing room, the drawing room was of 24'0"X 15'0" size. The drawing room consisted of a C-shaped sofa sitting with a centre table, TV unit on the opposite wall, storage for footwear near the entrance door, a partition between the kitchen cum dining and the drawing room. The kitchen and dining room were of 24'5"X 15'5" size. The kitchen of L-shaped counter having island attached with 7 seater dining table. The size of the utility room was 6'6"X 6'6" and the store room was of 5'6"X 6'2". The common basin unit was designed nearby the drawing room, kitchen and master bedroom. The size of the common bathroom was 5'2"X

7'3". The master bedroom consisted of two wardrobes, a double bed with two side drawers, a dressing unit and a TV unit. The size of the master bedroom was 18'6"X 11'0" and the size of the attached bathroom was 5'11"X 7'0". The bathroom consisted of a washbasin, shower area and a water closet. The ceiling of the master bedroom and kitchen was made of gypsum base, which gives an aesthetic finished touch. The plain cement sheet was planned in the common bathroom and attached bathroom above the 9' height.

The second floor consisted of sons' bedroom with attached bathroom, guest bedroom, common bathroom, a family sitting room, and daughter's bedroom with attached bathroom. The size of the son's bedroom was 16'5"X 15'0" and the walk-in wardrobe was of 7'11"X 10'0" size. The son's bedroom consisted of a king-size bed with side tables, TV panel, study table with storage, wardrobe and dressing unit. The guest bedroom was adjacent to the son's bedroom. The size of the guest bedroom was 13'6"X 11'0". The guest bedroom consisted of a queen-size bed, a dressing unit and a wardrobe. The common bathroom was of 5'2"X 7'3" size. The common bathroom consisted of a wash basin, shower area and a water closet. The family sitting consisted of an L-shaped sofa and centre table. The size of the family sitting was 11'4"X 10'11". The daughter's bedroom was adjacent to the family sitting with an attached bathroom. The size of daughter's bedroom was 11'11"X 16'0". The daughter's bedroom consisted of a queen-size bed with side tables, wardrobe, TV unit and dressing table. The size of the attached bathroom was 11'11"X 5'3". The attached bathroom consisted of a shower area, a wash basin, a water closet and a storage cabinet. The ceiling of guest bedroom, daughter's bedroom, family sitting and son's bedroom was made of gypsum base, which gives an aesthetic finished touch. The seating area ceiling was planned of curvature design and daughter's bedroom ceiling with cross boxes.

The third floor consisted of a store room, a guest room with attached bathroom and an open terrace. The store room was of 11'8"X 10'11" size. The guest room with attached bathroom was situated near an open terrace pergola sitting. The size of the guest room was 19'7"X 10'11". The attached bathroom consisted of a wash basin, a water closet and a shower area. The size of the attached bathroom was 8'0"X 10'8". The open terrace was of

49'11"X 14'6" size, and it was open to the sky. The ceiling of the guest bedroom and staircase was made of gypsum base, which gives an aesthetic finished touch. The electrical layout was represented by the lines and symbols of the electrical wiring. The indirect rope light was planned in a vertical gap with 4" dropped ceiling for all the floors.

Cost estimation and design implementation

Cost estimation was prepared considering the actual price and labour cost of office cum residential unit. According to the prevailing rates in the local market of Surat city September 2020, the total cost estimation was carried out and given separately for each interior component. The total cost of live design project was ₹92, 13,432/-. The implementation of selected designs provided by the designer was completed in last week of April 2021.

CONCLUSION

Professionals are actively discussing how they can make remote work more of an option in the future. Today it is the need of an hour to have a working place at home from where it becomes easy to continue work during such crisis. The designing of the residential unit with an office area will be helpful in creating more conducive atmosphere to work from home. The designs of the live project would enrich the knowledge of the learner's and make them aware about the significance of the interior planning of residential and office.

Satisfaction of the client

Interior designer has completed the live design project successfully with our entire satisfaction. During the working period we found her a sincere, honest, hardworking, dedicated with a professional attitude and having very good knowledge of each and everything related to interiors and finding the innovative ways of designs according to our needs and preferences. I highly appreciate the wonderful interior work and met our expectation successfully. We look forward and recommend her for our upcoming projects and other customers as well.

IMPLICATIONS OF THE STUDY

Based on the findings of the present live design project, the designer conveyed with number of implications for the concerned users, clients, professionals and students.

For the client

The designing office cum residential unit would facilitate the client for working professionally within the residence while working from home.

For the professionals

The findings of the present study would act as a feedback to the professionals showcasing the designs which reflects the need of the professionals to work from home remotely.

For the interior design students of the Department of Family and Community Resource Management

Interior designing is an integral part of the curriculum of the department of family and community resource management wherein courses like building materials and housing, residential and commercial space designing, lighting in interiors as a courses are offered. The designs of the live project would enrich the knowledge of the learner's and make them aware about the significance of the planning of residential and commercial spaces.

For Libraries/Documentation

The findings of the study will enrich the research data base for the libraries, documentation centres and related institutes at National and International Level which deal in interior designing.

Recommendations of the future study

1. A similar design project can also be undertaken for designing office cum residential unit for the flats, duplex and apartments.
2. A design project can also be undertaken for redesigning the existing residential unit.

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Appendix I



DEPARTMENT OF FAMILY & COMMUNITY RESOURCE MANAGEMENT
FACULTY OF FAMILY & COMMUNITY SCIENCES
THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA
NAAC Accredited 'A' Grade

Date: 02/11/2020

Respected Sir/Madam,

The Department of Family and Community Resource Management, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda supports the practice of protection of human participants in research. The following will provide you with information about the study that will help you in deciding whether or not you wish to participate. If you agree to participate, please be aware that you are free to withdraw at any point throughout the duration of the Research. The title of the research study is "Designing Office cum Residential Unit: Facilitating Professionals to Work from Home". All information you provide will remain confidential and will not be associated with your name. If for any reason during this study you do not feel comfortable, you may leave the study. Your participation in this study will require approximately 15 minutes. If you have any further questions concerning this study, please feel free to contact us through phone or email of the researcher given here. Please indicate with your signature on the space below that you understand what participation in the study involves and agree to participate. Your participation is strictly voluntary. All information will be kept confidential and your name will not be associated with any research findings.

I Saayed Afzal Hussain freely agree to participate in the research project entitled "Designing Office cum Residential Unit: Facilitating Professionals to Work from Home.

Signature of Respondent

Research Guide
Dr. Sarjoo Patel
Assistant professor
M:9825361888
FCRM Department

Research Scholar
Ms. Kavita Shah
M:9998533594
Email: Shahkavita449@ymail.com
FCRM Department

Appendix II

A. INTERVIEW SCHEDULE

Please fill out the information given below.

SECTION I: BACKGROUND INFORMATION OF THE CLIENT

1. Name of the client: _____

2. Age: _____

3. Gender: _____

4. Address: _____

5. Contact No: _____

6. Profession: _____

7. Education:

H.S.C

S.S.C

Graduate

Post Graduate

Any other specify

8. Type of house:

Flat

Tenement

Bungalow

Studio apartment

Duplex

9. Type of Family:

Nuclear Family

Joint Family

10. Total monthly income of family (Rs.): _____

11. Total number of family members: _____

12. No. of Children in the family: _____

13. No. of Adults in the family: _____

14. Family details:

Sr. No.	Family member	Age	Gender	Preferences
1.	Head of the family			
2.	Wife			
3.	Son			
4.	Daughter			

SECTION II: INFORMATION ABOUT THE PROJECT

(1) Address of the site: _____

(2) Total built up area of Site: _____

(3) Total Carpet area of site: _____

(4) Budget given by the client: _____

(5) Any specific requirements for the office and residence as preferred

By the client: _____

SECTION III: NEED AND REQUIREMENT OF THE CLIENT

Sr. No.	Requirements	Preferences
1.	Requirement for Ground floor	
2.	Requirement for First floor	
3.	Requirement for Second floor	
4.	Requirement for Third floor	

SECTION IV: PREFERENCES OF THE CLIENT WITH REGARDS TO THE PROJECT

1. Would you like to have the design based on a theme?

Yes

No

2. If Yes, which themes would you prefer?

Modern

Traditional

Transitional

Minimalistic

Contemporary

Retro

Rustic

3. What is your timeframe?

Less than 12 Months 18 Months 24 Months

4. Please provide the preferences for the aspects of interior design.

Sr.no	Interior aspects	Preferences
A	FLOORING	
	Ground Floor	
1.	Office	
2.	Parking area	
3.	Entrance	
4.	Swimming pool area	
5.	Bathroom	
	First Floor	
1.	Kitchen & dining area	
2.	Master bedroom	
3.	Drawing room	
4.	Bathroom	
	Second Floor	
1.	Family	
2.	Daughter's Bedroom	
3.	Sons Bedroom	
4.	Guest Bedroom	
5.	Bathroom	
	Third Floor	
1.	Store room	
2.	Guest room	
3.	Open terrace	

B	CEILING	
	Ground Floor	
1.	Office	
2.	Parking area	
3.	Entrance	
4.	Swimming pool area	
	First Floor	
1.	Kitchen & dining area	
2.	Master bedroom	
3.	Drawing room	
4.	Bathroom	
	Second Floor	
1.	Family	
2.	Daughter's Bedroom	
3.	Sons Bedroom	
4.	Guest Bedroom	
5.	Bathroom	
	Third Floor	
1.	Store room	
2.	Guest room	
3.	Open terrace	
C	WALLS	
	Ground Floor	
1.	Office	
2.	Parking area	
3.	Entrance	
4.	Swimming pool area	
	First Floor	
1.	Kitchen & dining area	
2.	Master bedroom	
3.	Drawing room	
4.	Bathroom	

	Second Floor	
1.	Family	
2.	Daughter's Bedroom	
3.	Sons Bedroom	
4.	Guest Bedroom	
5.	Bathroom	
	Third Floor	
1.	Store room	
2.	Guest room	
3.	Open terrace	
D	FURNITURE	
	Ground Floor	
1.	Office	
2.	Parking area	
3.	Entrance	
4.	Swimming pool area	
	First Floor	
1.	Kitchen & dining area	
2.	Master bedroom	
3.	Drawing room	
4.	Bathroom	
	Second Floor	
1.	Family	
2.	Daughter's Bedroom	
3.	Sons Bedroom	
4.	Guest Bedroom	
5.	Bathroom	
	Third Floor	
1.	Store room	
2.	Guest room	
3.	Open terrace	
E	FURNISHINGS	

	Ground Floor	
1.	Office	
2.	Parking area	
3.	Entrance	
4.	Swimming pool area	
	First Floor	
1.	Kitchen & dining area	
2.	Master bedroom	
3.	Drawing room	
4.	Bathroom	
	Second Floor	
1.	Family	
2.	Daughter's Bedroom	
3.	Sons Bedroom	
4.	Guest Bedroom	
5.	Bathroom	
	Third Floor	
1.	Store room	
2.	Guest room	
3.	Open terrace	
4.	Bathroom	

Appendix III

Letter of Appreciation

Date: 27/04/2021

To,

Ms. Kavita Shah
Department of Family and Community Sciences
Faculty of Family and Community Sciences,
The Maharaja Sayajirao University of Baroda,
Vadodara.

Sub: Letter of appreciation

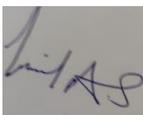
Dear Madam,

I would personally like to appreciate all the hard work and diligent effort that you have put into completing the office cum residential project. Your dedication to work, desire to finding the innovative ways of designs according to the preferences was wonderful and out of the box thinking was astounding. All my family members, friends and relatives appreciated your efforts. Entire project theme, designs, creativity, concepts and color combinations were absolutely fantastic.

We truly acknowledge and appreciate the wonderful interior work that you have carried out according to our needs and preferences. I would like to specially appreciate you and your team for professionalism in completing the project on time and with high quality of work. I would like to congratulate you for bringing our dream house in real picture. My best wishes for your future endeavours.

I look forward to get other project designed by you in future.

Thank you



Saiyed Afzal Hussain

Yours sincerely

ABSTRACT

Nowadays a crisis named Coronavirus outbreak has disrupted the lives of Individuals. The world of work is changing like never before and dining room tables have become actually offices for many. Remote working is an idea whose time has come. Many others are hoping to make their home office more of a permanent work space in the future. Professionals are actively discussing how they can make remote work more of an option in the future. Working from home is a luxury only few of us can afford, but it's also a challenge to set up an office without spoiling the design aesthetics of the house. Professionals of all hues, from lawyers to graphic designers to freelancers, are increasingly working out of homes. Urban living provides the platform for people to balance their busy work lives with a more active and social way of life. Today it is the need of an hour to have a working place at home from where it becomes easy to continue work during such crisis. Hence the need was felt for designing office cum residential unit: for facilitating professionals to work from home. This study would offer guidance on how to create a residential space look elegant, without neglecting any of the areas as well as combine the Office area for ease of working during the difficult times when we are forced to work from home. The live project was designed by the researcher according to the needs and preferences of the client. The plot area of the live design project was 1852.821 Sq.Ft and total carpet area of all the floors was 3668.33 Sq.Ft. The ground floor consisted of an office room, swimming pool, changing room, common bathroom, sitting area and paved parking space. The first floor consisted of a drawing room, a kitchen cum dining, a store room, a utility area, a master bedroom with attached bathroom, and an outdoor area. The second floor consisted of sons' bedroom with attached bathroom, guest bedroom, common bathroom, a family sitting room, and daughter's bedroom with attached bathroom and third floor consisted of a store room, a guest room with attached bathroom and an open terrace. The interview schedule also allowed the designer to collect information on the requirements of the client's needs and preferences for office cum residential unit. The designing of the residential unit with an office area will be helpful in creating more

conducive atmosphere to work from home. On the basis of needs and preferences of the client and information collected regarding structure and various aspects of interiors were designed. For creating various visual projections AutoCAD 2016 software was utilized for drawing floor plan with furniture placement, false ceiling layout, electrical layout, wall elevation of office, sitting area, common bathroom, drawing room, master bedroom, son's bedroom, daughter's bedroom, attached bathroom and 3D view for all the floors. The cost estimation was prepared considering the actual price and labour cost of the live design project.