



ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

Challenges in Managing Minimalistic Architectural Design Projects;
A Case study in Addis Ababa Grade One consultant firms

By

Jerusalem Yibeltal

A Project Work Submitted to Addis Ababa University College of Business and Economics
School of Commerce in Partial Fulfillment of the Requirements for the Degree of Master of
Arts in Project Management (MAPM).

June 2024

Addis Ababa, Ethiopia

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Advisor: Mahir J (PhD)

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STATEMENT OF DECLARATION

I, Jerusalem Yibeltal, declare that this project work entitled “Challenges in Managing Minimalistic Architectural Design Projects; A Case study in Addis Ababa Grade One consultant firms” is outcome of my own effort and that all source of materials used for the study have been duly acknowledged. I have produced it independently except the guidance and suggestion of the research advisor. This study has not been submitted for any degree in this University or any other University. It is offered for the partial fulfillment of the degree of Master of Art in Project Management.

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STATEMENT OF CERTIFICATION

This is to certify that Jerusalem Yibeltal has carried out this project work entitled: “Challenges in Managing Minimalistic Architectural Design Projects; A Case study in Addis Ababa Grade One consultant firms” under my supervision. This work is original in nature, and it is sufficient for submission as the partial fulfillment for the award degree in Master of Art in project management.

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**ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND
ECONOMICS
SCHOOL OF COMMERCE DEPARTMENT OF PROJECT
MANAGEMENT**

**Challenges in Managing Minimalistic Architectural Design Projects;
*A Case study in Addis Ababa Grade One consultant firms***

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ACRONYMS/ABBREVIATIONS

PM:	Project Management
Mc:	Middle century
SpSS:	Statistical package for the social science
PMBOK:	Project Management Book of Knowledge
VD:	Variance decomposition

ABSTRACT

This research explores the challenges faced in managing minimalistic architectural design projects within Grade One consultant firms in Addis Ababa, Ethiopia. Minimalist design, characterized by simplicity, functionality, and elegance, has gained global prominence. However, its implementation in Ethiopia, with its unique socio-cultural environment, presents distinct challenges. Addis Ababa, experiencing rapid urbanization and development, provides a pertinent context to investigate how minimalistic design principles can be integrated into local architectural practices while addressing managerial challenges.

The study aims to identify the specific obstacles encountered by professionals in the field and provide insights into effective management strategies. By combining professional interviews with a thorough literature review, this research seeks to offer practical guidance to architects, designers, and policymakers. The findings supports the adoption of minimalistic principles that align with local cultural values and promote sustainable architectural practices. This study contributes to the discourse on contemporary architectural management and sustainable urban development in Addis Ababa.

Keywords:

Minimalistic design, Architectural management, Sustainability, Urban development, Addis Ababa.

CHAPTER ONE

1 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Minimalistic architectural design, known for its simplicity, functionality, and elegance, has been a significant trend in global architecture. This design philosophy emphasizes the use of fewer elements to create a more impactful and meaningful space. However, implementing minimalistic design in different cultural and socio-economic contexts can present unique challenges. In the context of Addis Ababa, Ethiopia, these challenges are particularly pronounced due to the city's rapid urbanization, cultural diversity, and specific environmental conditions.

Grade One consultant firms in Addis Ababa, which represent the highest level of professional consultancy in the country, play a crucial role in shaping the city's architectural landscape. These firms are responsible for managing complex design projects that must balance aesthetic minimalism with practical functionality and sustainability. The management of such projects involves navigating various obstacles, including limited resources, regulatory constraints, and cultural expectations.

This study aims to identify the specific challenges encountered by Grade One consultant firms in managing minimalistic architectural design projects in Addis Ababa. By focusing on the unique difficulties faced by these firms, the research seeks to provide a comprehensive understanding of the factors that hinder the successful implementation of minimalistic design principles. This includes exploring issues related to project planning, resource allocation, stakeholder engagement, and adherence to regulatory standards.

In addition, the study examines the role of local cultural values and traditions in influencing the adoption and adaptation of minimalistic design practices. Addis Ababa, with its rich historical and cultural heritage, presents a unique environment where traditional architectural styles often intersect with modern design principles. Understanding how these cultural factors impact project management and design choices is crucial for developing strategies that are both contextually appropriate and innovative.

Moreover, the research delves into the sustainability aspect of minimalistic design in the context of Addis Ababa. With the city facing significant environmental challenges, such as rapid urbanization, pollution, and resource scarcity, sustainable design practices are becoming increasingly important. The study investigates how minimalistic design can contribute to sustainability goals, including energy efficiency, waste reduction, and the use of eco-friendly materials. By addressing these aspects, the research aims to highlight

the potential of minimalistic design to promote sustainable urban development in Addis Ababa.

1.1 STATEMENT OF THE PROBLEM

Globally, minimalist design is becoming more and more popular as a modern style that emphasizes elegance, simplicity, and functionality. Relatively little research has been done on how to apply and modify it in the particular sociocultural and economic setting of Addis Ababa, Ethiopia. For Ethiopian architects, designers, and construction companies doing business there, it is essential to comprehend the unique obstacles, chances, and possible advantages of minimalist design.

Ethiopia has a rich heritage shown by diverse traditions, across the nation's varied urban landscapes. In the lead of this process of change is Addis Ababa, the country's capital city undergoing fast urbanization. With all of these taking place there is little known about how minimalist approaches in design conform to the architectures of Ethiopia, its building methods, and societal beliefs. Traditional Ethiopian houses are often represented as being simple, using earthly materials. Thereby, through evidence-based insights, the research supports the ongoing argument in contemporary architectural practices and foster development in the city.

The purpose of this study is to fill this gap by investigating the current status of minimalistic design practices in Ethiopia, specifically during renovation projects in Addis Ababa. Renovation projects provide a rare opportunity to interlink the principles of minimalism with respect to not downplaying the existing cultural figurines. The research thus seeks to provide insight into the challenges, such as material availability, cultural consideration, and economic constraints, and opportunities, such as sustainability, functionality, and aesthetics, that are to be accrued.

Material availability is one of the greatest constraints to implementing a minimalistic design in Ethiopia. Locally available, high-quality materials for use in minimalistic designs are often in dearth, thus creating a significant challenge. The materials needed for minimalistic design can, at times, be expensive and logistically complex during importation, therefore making simplicity and efficiency impractical, and the economic factor is amongst the driving forces for minimalistic design in Ethiopia. Besides, minimal budgets may limit either the quality aspects or the quantity of the basic minimalist renovations, while also demanding cost-effective alternatives that do not undermine the

designs.

Despite these challenges, the opportunities in minimalistic design in renovation projects in Addis Ababa is great. Minimalist designs always provide for sustainability. This assures the uses of fewer materials and energy, small production of waste, and more energy efficiency. This is by far in compliance with the goals set towards sustainable worldwide and locally. Again, minimalism deals with maximization of space, accepting open spaces and resources economically, and in cities. And cities like Addis Ababa, demands this study as this could be of great importance because of space scarcity to breed for construction, and thus very beneficial. Clean lines and simple spaces are major characteristics of minimalistic design which shows a modern, as well as sophisticated aesthetic, squarely in line with the tastes of the growing middle class and younger population in Ethiopia.

The outcomes of this study not only add to the academic discussion on minimalistic design but also provide guidance to architects, designers, and construction firms aiming to apply minimalist principles in renovation projects in Addis Ababa. It should enable stakeholders to make decisions that are well received by the local culture, address societal needs, and contribute to sustainable development, as well as respond to the more subtle characteristics of a minimalistic design. As Addis Ababa is growing and developing at a fast pace, renovation projects that include minimalistic design principles in the city are part of the process. Considering the availability of materials, cultural values, and economic factors will enable architects and designers to provide functional and aesthetically appealing spaces that are also sustainable and culturally reasonable.

All in all, minimal design shows a lot of promise in Ethiopia, especially in renovation projects in Addis Ababa. If the challenges are met and opportunities tapped, minimal design can play a big part in sustainable development and modernization of the architectural landscape in Ethiopia. In this fashion, the current study aims to open ways for further research and practical application of minimalistic design in Ethiopia, contributing in the long run to the nation's innovation in architecture and sustainable urban development.

1.2 RESEARCH QUESTION

This study intends to answer the following research questions in detail based on the problem statement stated above:

1. How many of the grade one firms in the industry adopt a minimalist architectural approach, and to what extent do they implement and practice this design philosophy in their projects?
2. What are the main challenges faced when applying minimalistic design principles in the socio-cultural and economic context of Ethiopia, particularly concerning material availability, cultural considerations, and economic constraints?
3. How do minimalistic design principles intersect with Ethiopian architectural aesthetics, construction techniques, and societal values, and what are the implications for architects, designers, and construction firms operating in the region?
4. What opportunities exist for the integration of minimalistic design in Ethiopia, particularly in terms of promoting sustainability, functionality, and aesthetic appeal, and how can these opportunities be leveraged to address societal needs and contribute to sustainable development?

1.3 OBJECTIVE OF THE STUDY

The study objectives are presented as follows:

1.3.1 GENERAL OBJECTIVE OF THE STUDY

The main objective of this study is to identify and analyze the challenges in managing minimalistic architectural design projects within Grade One consultant firms in Addis Ababa. This aims to provide insights and practical recommendations for architects, designers, and construction firms operating in the region.

1.3.2 SPECIFIC OBJECTIVE OF THE STUDY

To achieve the main goal set forth earlier, the researcher pursues this study with the following specific objectives:

- Identify and examine the primary challenges faced by Grade One consultant firms in applying minimalistic design principles in architectural projects in Addis Ababa.
- Assess the alignment of minimalistic design principles with the architectural aesthetics, construction techniques, and societal values of Addis Ababa.

- Evaluate the implications of minimalistic design challenges on professionals within the architectural and construction industry, including architects, designers, and consultants.
- Identify opportunities for the integration of minimalistic design principles in Addis Ababa to promote sustainability, functionality, and aesthetic appeal.
- Provide recommendations for policy adjustments and strategies to support the effective management and implementation of minimalistic design projects in Addis Ababa.

1.4 SIGNIFICANCE OF THE STUDY

The significance of this study is multifaceted, providing valuable implications for all stakeholders in the architecture, design, and construction sectors of Addis Ababa, Ethiopia.

Firstly, the study provides critical insights for Grade One consultant firms, architects, designers, and construction professionals in Addis Ababa. By identifying and analyzing the challenges specific to managing minimalistic architectural design projects, this research helps stakeholders develop better strategies to overcome these obstacles. Understanding these challenges will enable firms to implement minimalistic design principles more effectively, catering to the unique needs and preferences of local communities.

Secondly, the study contributes significantly to advancing sustainable design practices in Addis Ababa. By exploring the integration of minimalistic design principles into architectural projects, the research highlights opportunities for promoting sustainability. This includes resource efficiency, environmental friendliness, and the creation of sustainable urban environments. Such insights are crucial for stakeholders aiming to contribute to the city's sustainable development goals.

Additionally, this study addresses the intersection of minimalistic design with local architectural aesthetics, construction techniques, and societal values. This has significant implications for cultural preservation and identity. By incorporating elements of local culture and traditional methods into minimalist designs, stakeholders can create spaces

that resonate with local communities while embracing modern design trends. This dual focus helps preserve and promote Ethiopia's rich cultural heritage and identity.

Moreover, the study can influence policy related to architectural practices in Addis Ababa. By highlighting the role of policy in either promoting or inhibiting the adoption of minimalistic design principles, the research can support advocacy efforts for policies that encourage innovation and sustainability while protecting cultural values within the built environment.

Lastly, the findings of this study adds to the body of critical publications on managing minimalistic design projects in diverse cultural contexts. This project can serve as a platform for knowledge exchange and collaboration among professionals in the architecture, design, and construction sectors. This, in turn, can lead to continued learning and upskilling within the industry, ultimately resulting in better and more sustainable architectural practices in Addis Ababa.

By addressing these various aspects, the study significantly contributes to the discourse on contemporary architectural management and sustainable urban development, providing practical recommendations to enhance the effectiveness and impact of minimalistic architectural projects in Addis Ababa Grade One consultant firms.

1.5 SCOPE OF THE STUDY

This research introduces an in-depth assessment of minimalistic design practices within the specific sociocultural and economic context of Ethiopia, with a focus on Addis Ababa. It investigates the challenges and implications that accompany the adoption and implementation of minimalistic design in the architectural and construction sectors, specifically in Grade One consultant firms.

The study aims to analyze how minimalistic design is applied in various architectural projects, focusing on the intersection of minimalistic design principles with Ethiopian architectural aesthetics and construction techniques. The research explores the potential challenges in maintaining functional and aesthetic elements within the built environment, given the constraints and opportunities present in Addis Ababa.

This research draws on a combination of literature review, expert interviews, and policy and regulation analysis, among other data collection methods. The findings are intended to inform architects, designers, construction firms, policymakers, and other stakeholders in the architectural and construction sectors in Addis Ababa. The study's insights is valuable for these stakeholders in making informed decisions about adopting and implementing minimalistic design principles in their projects.

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1.6 LIMITATION OF THE STUDY

This study is limited by its focus on Addis Ababa, which may not reflect the challenges in other regions of Ethiopia. It concentrates specifically on Grade One consultant firms, potentially overlooking issues faced by smaller or differently scaled firms. Data collection is dependent on the availability and willingness of industry professionals to participate, which may not fully represent the industry. Additionally, reliance on self-reported data can introduce bias. Lastly, the study focuses on renovation projects rather than new constructions, which may have different challenges and strategies. Despite these limitations, the study offers valuable insights into managing minimalistic design projects in Addis Ababa.

1.7 ORGANIZATION OF THE STUDY

This research project was organized into five chapters. The first chapter includes an introduction section reflecting on the background of the study, problem statement, research question, research objective, significance of the research, scope and limitations of the study, organization of the study and definition of terms. Chapter two includes the review of related literatures. It holds an introduction section, theoretical and empirical literature review. The third chapter deals with the methodology of the research. It includes the methods of data collection, the research design and approach, the source of data collection, the methods and procedures of data collection, the methods of data analysis, the research instrument, validity and reliability, and the ethical consideration section. The fourth chapter is all about data presentation, analysis, and interpretation. The collected data were analyzed and interpreted in this chapter. The last chapter includes a summary, a conclusion, and recommendations on the findings of the study. References and an

appendix, including the questioner, were also included in the paper.

1.8 DEFINITION OF TERMS (OPERATIONAL MEANING)

Project: A temporary undertaking aimed at accomplishing a specific objective within a set scope, timeline, and budget. (Project Management Institute, 2017).

Project management is defined as the utilization of knowledge, skills, tools, and techniques to plan, execute, monitor, and control a project from inception to completion, ensuring its objectives are met within the constraints of time, cost, scope, and quality. (Project Management Institute, 2017).

CHAPTER TWO

2 REVIEW OF RELATED LITERATURES

2.1 INTRODUCTION

In this chapter, existing literature related to minimalistic architecture and related topics was reviewed. It provides an overview of previous works relevant to the subject matter, serving as the crucial context for this study's objectives. This chapter includes both a theoretical review and an empirical review.

2.2 THEORETICAL REVIEW

Throughout time, architecture has been closely associated with any culture, religion, or ideology inscribed in the values, beliefs, and aspirations of the societies. From ancient Egyptian Pyramids and Greek temples to very detailed ornamentation of Gothic cathedrals and geometrically precise Christian and Islamic Mosques, architectural styles have varied not only in different regions but also in periods, each having unique cultural identities and aesthetic sensibilities.

Architecture is not just a static art form; it is dynamic in reflecting technological innovations and changes in society. New materials and ways of constructing that become available to the modern world allow new architectural forms to continually push the possibilities of construction higher, bigger, and structurally more complex. Today, from modern towering skyscrapers to sustainable, green-designed structures with innovative looks, contemporary architecture keeps benchmarking even higher with the ever-changing demands and trials of the day.

There are different myths and ideologies of when and where the eras and growth of Architecture derive from. Craven (2020) stated that long before the magnificent structures of ancient Greece and Rome, humans were designing and constructing. The period known as the Classical Era grew from ideas and construction techniques that evolved centuries

and eons apart in distant locations. Others explain that classical architecture, is the architecture of ancient Greece and Rome, especially from the 5th century BCE in Greece to the 3rd century CE in Rome, that emphasized the column and pediment (The Editors of Encyclopedia Britannica, 2010)

Architectural history is a rather difficult thing to trace in its entirety as there are a number of different architectural forms and periods that are dependent on specific locations (Van Huyssteen, 2023).

Here are definitions from these styles that could be applied in the field of architecture. Some definitions can explain Minimalistic Architecture as more than just aesthetics by establishing a design approach. It is a philosophy of simplifying the built environment and, at the same time, countries in carrying the maximum function with the least resources and underutilized potential. One of the pivots in the history of minimalist architecture was the rise of the Bauhaus movement in the early 20th century (<https://www.graygroupintl.com/blog/minimalist-architecture>). Other concepts describe it as a kind of philosophy of design that will focus on simplicity and the use of minor elements. This approach is showing an attitude in architecture to applying clean lines, simple forms, and focusing on functionality (Fidanci, 2023).

Fidanci (2023) further explains that what is core to minimalist architecture is functionality with very clear, rather elementary forms—irregular polyhedrons and figural blocks, cubes, and prisms—wherein any kind of structure has to be absolutely efficient spacewise. It is thereby ensured that no buildings are either wasteful or inefficient and that they can be more sustainable and environmentally friendly if materials for their construction are utilized efficiently. Minimalist architecture focuses on the functions that a structure should perform rather than on the complexity of the form; hence, such edifices are built economically and are simple in appearance. Besides, minimalistic creation designs work with a very limited palette of materials, such as concrete, steel, and glass. These materials have a very low environmental impact and are very durable.

Minimalist interior design for a home renovation expresses simplicity and clarity in efforts to declutter mental well-being as well as physical space. Choosing clean lines, open spaces, and a neutral color palette will allow any homeowner to build an aesthetically lovely environment in which to relax or focus. Minimalism is characterized by a vibe of design that restricts only the essentials within the scheme. As a result, it brings a lot of benefits to renovation projects. By the essence of the word "minimalism"—meaning less clutter and keeping it at a basic minimum in design—it sets clarity of mind

in not being overwhelmed with perceptions, such as including sufficient open spaces within the design scheme, thus further promoting the subliminal feeling of freedom and lightness. The use of clean lines and uncluttered surfaces generates the right balance and harmony. Finally, a minimalist design is associated with promoting awareness, reflection, and a feeling of calm in general; it represents a brilliant idea for home renovation projects. Instead of opulent embellishment characteristic of most historic architectural styles, minimalistic architecture celebrates clean lines, spacious layouts, and the play of light and shadow. The inherent beauty of construction materials is showcased in their purest and unadorned state, emphasizing authenticity and simplicity over ornamentation within this architectural framework.

This can be seen by the peculiarities and unique characteristics of minimalistic design. Reece (2023b) even argued that this design philosophy has certain qualities that make it very notable and timeless.

- **Simplicity in Form and Function:** Being the hallmark of the minimalist architecture, simplicity is depicted through the form and function. **Use of Basic Geometric Shapes:** The unsung heroes of geometry which are square, circle, triangle etc have found a relevance in minimalistic designs. It is important to use them in their purest state so as to maintain clarity and integrity of design.
- **Limited and Monochrome Color Scheme:** Minimalist architecture uses fewer colors generally. Color should not be an exception. It is recommended to become monochrome and have neutral colors – like white, that becomes more and more popular over the years, or beiges or grays, which never go out of fashion.
- **Material Honesty:** "Truth to materials" is a theme that minimalist architects repeatedly emphasize. Whether concrete, glass, or wood, the materials are expressed in their raw states to highlight their inherent features.
- **Natural Light and Shadow:** The use of natural light and shadow in purposeful ways is one of the key rudiments of the minimalistic principles of design. This gives a particular appearance in the area, providing a comfortable, warm feeling. **Open Spaces:** Minimalist design emphasizes the idea that less is more when it comes to space. Open floor plans and spaces free of clutter and unnecessary items are noteworthy elements that perfectly capture the concept of purposeful simplicity.
- **Attention to Detail and Quality of Construction:** Accuracy is one of the main aspects of this style of architecture. Every minute detail of the design is well

thought out and executed. Quality is never compromised for simplicity, which ensures a strong, durable, and sustainable construction.

The Latin root of the word renovation is "to renew." Renovation is a term sometimes used to describe a process of making significant home improvements. However, the term more frequently applies to replacing non-structural fixtures and finishes with newer ones, whether the result is consistent with prevailing stylistic trends or completely inappropriate (McNeil, 2015). Then he continued that there are other alternatives for renovation work. To avoid clash of aesthetics, it can be done within the original context of the house's style yet it is also of free will to change in fact surface materials, colors, trims and any other thing in details.

One benefit of renovating is that it personalizes your space, improves the function of a room, and adds value to your home or building (Designblendz Team, 2022). It will increase property value, update aesthetics, increase safety, save money, and improve comfort and customization (E, 2024). The renovations can be very minor, like cosmetic ameliorations, to extensive overhauls involving structural changes and modernization. Renovation provides an opportunity to bring back life into the old feature of buildings.

Renovation projects are full of hurdles and pitfalls without good planning and consideration beforehand. Undoubtedly, in doing so, it will result in additional cost and/or unforeseen implications of delay in schedule, and the results may not be as satisfactory as anticipated. Different mechanisms and preparations have to be done to attain the proper and fitting renovation work. Which should first be considered: the pure functionality to collect data or is some of the personal taste and preference of the designer justified to be alongside it, which functions along with data collection? All these considerations will be addressed subsequent to the thorough examination of the renovated project as the approach may vary depending on the specific characteristics and requirements of each project.

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2.2.1 Overview of Minimalistic Architecture

2.2.1.0 Introduction to Minimalistic Architecture

Minimalist architecture is a design philosophy of simple, unadorned, reticence through design elements (Minimalist architecture, 2022). It is an aspect of a greater design philosophy which is minimalism, an aspect that cuts across severally from visual art all the way to music and design work (Lovecraft, 2023). Much like other architectural styles and trends, minimalistic architecture evolved from a distinct historical context and

gradually gained prominence over time. Its emergence marked a departure from traditional design approaches, emphasizing simplicity, functionality, and reduction of elements to their essential forms. As it built up traction, minimalistic architecture became more and more influential in the configuration of the contemporary built environment, apparently expressing the apparently evolved values and aesthetics in society.

Minimalist architecture is an epitome of lasting simplicity and functionality in design. It is the inspiration for architects and designers from across the world in its feature of a clean, uncluttered aesthetic, focusing on the very essence of space and form. It challenges us to think about the impact of our built environment and the value of reducing visual noise to create serene and purposeful places: *Silence Is More* (Cvetković, 2024).

In summary, minimalist architecture represents much more than lack of elements; rather, it is about a fine equilibrium, as Nicholas Burroughs puts it. It reflects very strongly how modern society is changing towards simplicity in the same way technological and design developments reflect changes and evolutionary trends in society. It's a philosophy where elegance in design is preeminent over excess decoration, and clean, uncluttered lines with careful use of space are favored. By accepting minimalism, the architect and designer follow a philosophy emphasizing essence, function, and aesthetic abstraction, in tune with contemporary sensitivities and the desire for a harmonious living environment (Cvetković, 2024).

The movement of minimalist architecture, at its peak in the latter half of the 20th century, endures as a vital and influential force in today's architectural landscape. Its resonance and relevance underline the fact that it is timeless and amazingly extensible, adaptable to a myriad of contextual and environmental circumstances. The built beauty it helps create is not only the city but through the remotest country the enormous staying power of its ideals in that simplicity, functionality, and purity of design offer a strong vision. In the current evolving world, where each change is happening at a pace faster than imagined, the minimalist legacy stands as a testimony to the enduring appeal and relevance of this movement in shaping the future of architecture (Puisis, 2022b).

2.2.1.1 Origins and Development

The history of this movement is rooted in the trajectory of the history of art and architecture and can be distinguished quite afar as the early 20th century. Along the postwar art movements and the pioneering designs in the 1920s by visionaries – Ludwig Mies van der Rohe and Le Corbusier, the basic principles of minimalistic architecture

began to take shape (Puisis, 2022). They trademarked simplicity, functionality, and an acute focus on the essential design elements, or in other words everything that characterizes post-war tenets of efficacy and economy in architectural practice. (Taylor, 2009). Selo (2023) also agreed that the innovator for the modern age minimally was Ludwig Mies van der Rohe, a German architect who set out a genuine invention in 'modern' architecture for the industrial world. Over the subsequent decades, minimalist architecture came to carry the mark of a continued engagement with the outside world and response to the shifting cultural, technological, and environmental contexts, with pioneers whose light started to shine through during this aesthetic revolution, with pioneers like Mies van der Rohe (Broecker, 2024).

However, their roots stretch even further, back to the 19th century. The philosophical underpinnings of minimalism as a form of writing were sown by philosophers Ralph Waldo Emerson and Henry David Thoreau, best articulated in their seminal work "Walden" (Cvetković, 2024). But while minimalism was well stated with these earlier philosophical ramblings, it failed to gain its spirit as the dynamic ebb and flow of artistic movements and nomenclature, which was experienced through the entire 20th century, came about until the 1960s. And it was at this juncture that minimalism was first defined, by name, within the context of visual arts, although it had been seen as a rigid definition for the first time, thus acquiring its place in the annals of art and design (Cvetković, 2024).

Frank (2022), on the other hand, zoomed in and showed that there were very few influencers for the minimalistic style.

1. The De Stijl art movement
2. Architects like Van Der Rohe
3. Traditional Japanese design

1. The De Stijl art movement:

The name De Stijl, representing "The Style" in Dutch, or sometimes it is called Neoplasticism, is one of the key significant art movements that originated in 1917 in the Dutch city of Leiden. De Stijl represented a group of artists and architects that became members of the most important and innovative visual arts movement of the time. The actual meaning of this name and movement goes far beyond the boundaries of practicing members of this movement because it presents a whole body of work created between 1917 and 1931 as the key period's members were making their art in the Netherlands.

De Stijl was basically about simplicity and abstraction, how design could be stripped down to its very base forms and colors. This form of minimalism had the following key features:

- a. Horizontal and Vertical Lines: The basics with respect to this work were the horizontal and vertical lines. The lines were used in multifarious ways; to evoke balance, harmony, and structural clarity in their works.
- b. Rectangular forms: The rectilinear forms referred to in the De Stijl movement were the most preferred. They reflected a type of commitment to geometric exactitude and visual concord. Through the rectangle, an artist was to express a kind of rationality and visual coherence to be found in their works.
- c. Primary Values: The palette of De Stijl rose out of a conscious decision to limit the application to primary values, as in white, black, and gray. By avoiding the use of extraneous hues, the work's positive space was made less rhetorical in its purity and neutrality of form, thus allowing for a more direct and unambiguous visual language in expressing an underlining moral component associated with all creative acts.
- d. Primary Colors: Along with primary values, primary colors like blue, red, and yellow were adopted by De Stijl artists in the creation of accents and oppositions between colors in the works. Energizing and sophisticating the minimalist work, these picks of bold color indeed follow the simplicity and abstractness of that given principle.

The De Stijl artists followed these principles in the belief of going beyond the limitations of representational art. Instead, they endeavored to elicit a universal language of shape and color. With their strictest commitment to simplicity and abstraction, the movement remained a record that modern art and design would take, inspiring now and then generations of artists and architects.

2. Van Der Rohe:

Ludwig Mies van der Rohe is counted as one of the highest figures of modern architecture, prominent during the interwar period. As a German architect, his visionary contribution to this field might be considered to have fostered the birth of minimalist principles in design that resonate deeply to the current era. Van der Rohe's architectural legacy pursued simplicity, clarity, and spatial purity through several key strategies:

- a. **Innovative Use of Modern Materials:** He tackled the challenge of the new possibilities of modern materials in architecture definition with enthusiasm. The materials under consideration were mainly steel and glass. Through a turn to the structural potential and transparency of the material, he broke with the traditional concepts of space and form by giving life to areas characterized by transparency.
- b. **Minimal Structural Framework:** A case in point for Van der Rohe's design is, he has an obsession for careful reduction of building structural elements down to their barest expression where useless ornament meant nothing for a building, he adopted clean unadorned lines, and geometric simplicity allowing the inherent beauty in architectural form to shine through.
- c. **Embrace of Open Space:** Van der Rohe's design reiterated the seamless integration of the interior and the room outside, and with his design, he made sure of the same by incorporating liberal proportions of openings. By doing so, he gave one a sense of spatial continuity, availing a proper confluence of implantation between spaces in an apparently seamless integration with a proper confluence and harmonious relationship between structure and natural context.

Further testament to Van der Rohe's lasting contribution to architecture is perhaps his legendary aphorism: "less is more." This would fundamentally project minimalism, and what he means by this mantra, subtlety—the large ability of acting through restraint and simplicity—to evoke the greatest purity and clarity within architecture. In this—and in his philosophical contributions to architecture, too—Van der Rohe's imprint on modern architecture has been deep and enduring.

3. Traditional Japanese Design:

A principle deeply rooted in traditional Japanese design philosophy is to focus only on the bare essential and cast away everything else as excess. This principle is deeply ingrained in Japanese architecture and interior design, with simplicity, restraint, and functionality at the helm of its guideline. We now take a closer look at traditional Japanese architecture and interior spaces in order to discover a leaning toward understated grace with the following characteristics:

- a. **Use of Simplicity in Color and Designs:** The Japanese style always employs a soft, quiet scheme in color through earthy colors, creamy whites, and subtle grays. This sets a subdued color scheme, which goes a long way in helping to create a lively and bright background, good for thought and rest. On an equal measure, design choices are overridden by simplicity and minimalism, clean lines and forms characterized by a

minimum of detail.

- b. **Clean Lines and Forms:** Traditional Japanese design is characterized by sleek, straight lines and geometrical forms, which define a good love for order and balance. Architectural features like sliding shoji screens, tatami mat flooring, and wooden beams come across with a remarkable form's purity, radiating harmony and serenity within the space.
- c. **Nature:** Nature has quite an important role in traditional Japanese designing. Interior spaces tend to respond to the natural world; they seamlessly integrate with the natural world. Large windows and sliding doors retract to open up beautifully landscaped gardens, blurring the point of where the interior.

Through these principles of simplicity, cleanliness, and proximity to nature, the traditional design of Japan is perfectly scenic. It will be more tranquil and spiritual to create. This holistic approach to design reflects the Japanese aesthetic of wabi-sabi, which celebrates the beauty of imperfection, transience, and simplicity, offering a timeless and deeply resonant expression of cultural identity.

2.2.1.2 Characteristics of Minimalistic Architecture

Minimalist architecture is deliberately geometrical, rich in visual summary creation, structural repetition, equality of components, the embedding of craftsmen's rationality, and the use of plain or simple materials and coloration (Broecker, 2024). There are no two ways about it. In the large domain of architectural theory and practice, minimalistic design stands with a universal uniqueness, aptly defined by the points forming its conceptual support components.

Being described as minimalist, the styles come with deliberate geometries, structural repetitions, neatness, symmetry, and the use of plain or simple materials. Very often it contains pure geometrical forms, openness, and 'clean' lines to create a feeling of order and unification.

(Reece, 2023c) has explained a number of fundamental features and distinctive characteristics below, which give an idea of the essence of the studied and define its nature..

A. Simplicity in Form and Function:

Minimalist architecture encapsulates a paradigm of simplicity that extends to both form and function. This design approach is characterized by the use of only regular,

unembellished shapes, well-crafted to result in clean, uncluttered lines demarcating space. Minimalist structures reveal the roots of the material into functional form, showing off a clean, reduced form that highlights the material in its purest form, suggesting that the very form was derived for its functionality. The elements of the architectural design are carefully chosen and manifested in its elemental form, thus creating spaces that vibrate with clarity and purpose. Simplicity is unfolded not only in appeal but while vowing simplicity, hence filling the built spaces with an edible feeling of calmness and harmony, urging its occupants to dwell within the spaces that are intrinsically attuned and unobtrusive in their design.

B. Use of Basic Geometric Shapes:

In minimalist architecture, the key and most universal protagonists are the basic shapes of geometry: the square, the circle, and the triangle. These elementary forms are celebrated in the purity of their pure state, forming the benchmark for design integrity and frankness. In this respect, the purity of the vision is maintained by minimalist architects, and this ensures that every design element attains a unity of coherence and simplicity. The square symbolizes firmness and solidity, aligning any architectural composition and providing assurance of structural stability. The circle symbolizes unity and infinity; it helps the inside space flow gently with an imperceptible boundary. At the same time, the triangle creates a sense of dynamics and directive action, making its way into the compositions to give them a delicate but vivid sense of movement and progress. These elemental shapes shape the primary language of minimalist architecture, allowing the architect to create spaces that are not only visually stimulating but also carry a deep sense of clarity and purpose.

C. Limited and Monochromatic Color Palette:

When it comes to all aspects of design, including color scheme, the maxim "less variation, the better" applies to minimalist architecture. Monochrome and neutral hues are particularly favored, as they define rambling simplicity. A spectrum of muted colors from soft greys to muted beiges is greatly exhibited with the presence of white, which is always favored for its timeless elegance. These muted hues, aside from being peaceful and quiet to promote, also bring out confidence in the precision of spatial organization and purity of form that is characteristic of this minimalistic style. Minimalist builders create environments where each element can be appreciated in its naked state, promoting a sense of harmony and coherence by abandoning vivid colors and complicated patterns.

D. Material Honesty:

Truth to materials reigns supreme in the world of the minimalist: deep respect for the material and its intrinsic qualities. The principle that underlies it—those materials, in this case concrete, wood, or glass, in their bare or exposed form, reveal their natural state, letting their true being be a point of focus—answers the concern. In doing so, by avoiding decorative embroideries or shelving the nature of the material in concern, the minimalist architect pays tribute to the honesty and integrity of the material. The purpose, to let the spaces speak loud and clear in authenticity and purity, in such a way as to allow people to interact within, is without filigree or disguise, either surroundings dominated by exposed concrete with raw textures or emanating warmth through the use of natural wood grains, or even luminosity from transparent glass. Through this, each material gets a chance to be expressive, adding to the overall experience of the built environment. In this way, the minimalist architect creates a bond between the human cause and effect—between the materials with which his or her space is wrapped and through an interaction with them—and encourages intimacy and meaning much beyond pure functionality.

E. Natural Light and Shadow:

At the core of minimalism is the purposeful channeling of natural light and shadow, which raises the element to levels greater than ornamental aesthetics, for it brings out a mood that is both tranquil and warm within the space. By careful orchestration of the play between light and shadow, minimalist architects create dynamic compositions that fill the senses with harmony. Natural light filters softly through windows never adorned, or through barely recognizable skylights, adding a softly diffused illuminance to interiors, somewhat glowing, dramatizing the character of various surfaces and enhancing textures with a subtle luminosity. Simultaneously, shadow is manipulated to add depth and dimension to the composition of spaces, thereby creating a sense of spatial hierarchy and imbuing the environment with a sense of mystery and intrigue. In so doing, a sensory-rich experience is proposed that surpasses mere functionalism, and the space created will be an eye-magnet and an emotional magnet to one who uses it in every sense of the word.

F. Open Spaces:

The phrase "less is more" has perhaps found its deepest expression in the field of minimalist architecture, where space is managed with extraordinary care and thought. The

design ethos is simplicity, with open plans and uncluttered spaces, supposedly reflecting a mark of a true minimalist aesthetic. By eliminating unnecessary ornamentations and superfluous elements, the minimalist architect creates a place with an apparent sense of clarity and serenity, with an ease of movement and energy flowing across the space. Design decisions are made with a commitment to distill the purest line of functionality and, as such, allow for its most succinct articulation. What results is an environment that does not contain mere visual discord but, most importantly, cultivates an atmosphere of peace and contemplation, encouraging its occupants to interact with the space in a truly intuitive and therapeutically meaningful way. In minimalist architecture, it is where less becomes more, since the absence of superabundance or excess allows the inner qualities of space, such as beauty and purity, to emerge into the full light of exposure.

G. Attention to Detail and Quality of Construction:

Finally, the guiding principle that summarizes structural essentialism is precision. Every detail, however small, is meticulously designed and executed specifically, taking into account the details to the letter. In the search for simplicity, however, quality is never compromised, since each element of good design is critically examined, both for aesthetic issues and structural soundness. This relentlessness of precision not only secures a sustainable and long-lasting build but also gives the space a high level of craftsmanship and polish that complements the overall experience. In minimalism, every detail matters, and only through the detailed execution of each part can the actual meaning of the design vision be obtained.

2.2.1.3 Philosophy and Principles

The philosophy behind minimalist architecture resonates with the principle of less is more, articulated by Broecker (2024). This ethos calls for a calculated concentration on the essentials of creation while reducing visual obfuscation. Guided by principles of simplicity, clarity, and efficient material usage, minimalistic architecture finds its inspiration in Japanese aesthetics and Zen philosophy (Broecker, 2024).

At the very core, minimalism in architecture represents a purposeful reduction of superfluous decoration and detailing in design to leave room for clear lines, open spaces, and scrupulous effort toward detail. It attempts to remove all the decorations and focus on the main elements of design that speak of utmost respect for simplicity, honesty, and the

intrinsic beauty of things in space. Minimalist design uses regular, clean shapes that are square, round, and triangular to create a clear line that is used to subdivide space.

In addition, it involves sustainability—being responsible to the environment—through the aspect of quality, not quantity, and material durability, as well as efficient design solutions. Aimed at achieving spaces that are visually beautiful as well as functionally effective for harmonizing with the natural world and enhancing human living, this kind of approach is called "holistic" (Broecker, 2024). The second important aspect is that minimalists combine light and shadow in such a way that the internal composition appears dynamic and has the power to grip the senses. Natural light that is uniformly filtered by plain windows or skylights gives interiors a soft, distributed glow—enlightening surfaces and enunciating textures with a delicate brilliance. At the same time, the play of shadow adds to its spatiality and three-dimensionality, enhancing the effect of special hierarchy with further layers of mystery and enigma. Together, these components work harmonically to establish a multisensory experience that transcends functionality and invites occupants to lose themselves in a space that is simply a delight to the eyes and touching to the soul.

2.2.1.4 Examples of Minimalistic Architecture

Minimalist architecture has been one of the great signs on the built environment through time periods and geographies. The following are just a few examples that showcase the style:

- a. Farnsworth House: Among the leading jewels of minimalist architecture is the Ludwig Mies van der Rohe-designed Farnsworth House. Located in Plano, Illinois, USA, it was completed between 1945 and 1951, and its iconic residence purports to the principles of simplicity and functionality. The house is almost postured on stilts above the ground, hosting a glass façade without any kind of obstruction in the frame, henceforth detaching in the mind of an occupant the division between indoor and outdoor spaces. Sources:.
- b. Villa Savoye: This vintage house was designed by one of the great modern architects, Le Corbusier. Located in Poissy, France, construction of Villa Savoye was done in the years 1928-31. An important aspect for which this iconic residence is renowned is its minimalist features which has got a greater openness with ribbon windows on the façade, flat roof terrace as well as lack of ornamentation in the smooth white façade.

Villa Savoye is regarded as a classic piece of International Style that attributes to the significance of this residence as the perfect piece of minimalist architecture. (Curtis, 1986).

- c. Church of the Light by Tadao Ando, Ibaraki, Osaka, Japan: One of the masterpieces of minimalist architecture consists of the most recognized architects of Japan: Tadao Ando. The Church of the Light, constructed in 1989 in Ibaraki, Osaka, Japan, has gained widespread recognition as a structure that essentially performs philosophies related to minimalism in both spirit and letter. The simplicity of the design lies strongly in a geometrical simplicity that connects a certain symbolic relevance; the concreteness of the structure is cut so as to draw a symbol of a cross when viewed from the approaching access. Natural light is allowed to stream inside with the objective of etching out an almost meditative ambiance of tranquillity and thought (Frampton, 1988).
- d. John Pawson's Novy Dvur Monastery: Located in Czech Republic, it stands out as another of the minimalist architectural building designs of British architect John Pawson. Opened in 2004, existing with austere geometrical expressions, quiet colors, and natural materials, especially with the use of wood and stone, the monastery maintains a peaceful complex. The design that the minimalistic gave to the monastery gives the impression as if the design was even more serene and respectful and its harmony between architecture and spirituality could be visibly observed from the aesthetics (Sudjic, 2000).
- e. Barcelona Pavilion: Designed by Ludwig Mies van der Rohe for the 1929 International Exposition in Barcelona, Spain, the Barcelona Pavilion is a seminal work of modern architecture. The characteristics generally include an open-plan arrangement with sleek lines and minimal use of materials such as travertine, steel, and glass, the Pavilion exemplifies more the dictum of Mies van der Rohe, "less is more" (Neumeyer, 1991).
- f. The Glass House: The Glass House is a residential design building situated in New Canaan, Connecticut, USA. The house was designed by architect Philip Johnson and erected in 1949. The house has had a great reputation and is an iconic structure, famously known for its utilization of see-through walls and a touch of minimalism in the interior, thus blending the environment. The Glass House is considered a pioneering example of minimalist architecture in residential design (Thames and Hudson, 2011).

- g. The National Museum of Western Art: One of Le Corbusier's last works was preparing the plans for this museum in 1959. Tokyo, Japan is the site of the National Museum of Western Art, built to exhibit the modern masterpieces of European and American paintings, sculpture, prints and illustrated books. This most simple and linear design is ideal for this clean and timeless exhibit space. The building is free from ornamentation and is characterized by its rigid simplicity, geometric forms, the bare structure of the concrete and its modular grid system (Phaidon, 2008).
- h. The Menil Collection: The Menil Collection is situated in Houston, Texas, USA, and is a museum complex. Constructed in 1987, it was designed by architect Renzo Piano, who has given it a minimalist approach. The features include a very simple design with clean lines and a very subtle color plate, allowing a lot of natural light. The minimal form of The Menil Collection harmonizes with the diversity of art within its walls to make a quiet, contemplative setting for its patrons (Phaidon, 1997).
- i. Nelson-Atkins Museum of Art: The Nelson-Atkins Museum of Art is located in Kansas City, Missouri, USA. The well-known minimalist expansion of the museum was designed by architect Steven Holl in 2007. The glass and metal panel-clad interconnected pavilions create an abstract blend between light, space, and purity of form. The modernist form at the Nelson-Atkins Museum of Art offers a complete contrast to the historic Beaux-Arts building for an enriching visitor experience (Rizzoli, 2007).
- j. Wall-Less House (House in the Museum Garden): The Wall-Less House in Tokyo—that also designed by Shigeru Ban in 2000—is another masterpiece of minimalist architecture. Designed with an open plan and an asynchronous space with sliding façades of glass, perception of indistinct inside or outside in the inside space and, therefore, a visual absorption of outer space—a household connection to nature.
- k. Therme Vals: This is a project done in 1996, erected in Vals, Switzerland, by architect Peter Zumthor. Masterpiece in minimalism, with the use of natural materials such as stone, wood, and water, contrasted with the lighting of this space, is rendered with a calm and serene bathing milieu. The minimalist design integrates audaciously and harmoniously into the terrain which serves as its setting, inviting the beholders to repose in worlds of peace and health, harmony and lyricism in the quality of being—worlds of the sober richness of the silent beauty of infinity, shape, and color (Zumthor, 1999).

2.2.1.5 Requirements of Minimalistic Architecture

As simple as invoking the use of primary characteristics, minimalist architecture relies on simple geometry forms and materials of natural surfaces that relate harmoniously to one another. In this sense, it also employs natural light and air to enhance the simplicity of spaces (Cvetković, 2024).

The following requirements are listed below

a. Simplicity in Design

Minimalist architecture is a design approach that emphasizes little or minimum ornamentation, with the intentions of reducing a building down to nothing, in order to achieve a harmonious visual composition which calms the emotional state. In such architecture, every single design piece is very carefully chosen to move closer to the general tone of clarity and coherence—to pinch the very essence of form and function.

b. Functionality

Minimalistic architecture is based on functionality and drives design strategies. The use of spaces is meticulously crafted to achieve maximal use and efficiency, with a strong focus on how the needs of their occupants could be met in the best and most practically functional way, so unnecessary ornamentation and irrelevant features of design give way to developing solutions based on utility and purpose.

c. Efficient Use of Materials

A minimalistic design in architecture refers to the primacy of the maximum utilization of materials that are predominantly natural and sustainable. Material selection is based not only on aesthetic value but also on durable life span and longevity and is having a concern for the environment. In addition, they are often left in their raw or untreated state to highlight their natural beauty and texture.

d. Maximization of Natural Light and Ventilation

Minimalistic architecture utilizes the transforming power of natural light and ventilation to keep spaces radiant, fresh, and inviting. Orientation and layout effort in the building are taken to maximize the exposure of sunlight and enable it to foster passive levels of cooling through natural ventilation. This minimizes the requirement of artificial light and hence mechanical ventilation, consequently providing a healthy and comfortable indoor environment to the owners.

e. Spatial Continuity and Fluidity

Minimalistic architecture favors open, fluid spaces with an intention to make the user feel that the continuum of the spaces is connected. Mostly, the relationships between internal and external spaces are blurred and from one internal to another, there are clear

relationships. This has clear relations of free expansiveness and the sense of liberty within the built environment by encouraging more movement and interaction, hence leading to a more connected feeling towards nature.

f. Attention to Detail and Craftsmanship

Although reduced to simplicity, minimalistic architecture involves careful attention and detail to craftsmanship. In minimalistic works, the detail of any junction, joint, or surface finish is carefully designed to hold a flawless aesthetic and the integrity of the design concept. Attention towards detail and quality guarantees that every component will be an addition to the whole sensory experience and emotional impact created by a space.

g. Sustainability and Environmental Responsibility

Minimalist design is inherently compatible with sustainable and environmental strategies in that much emphasis is put on the motives behind each design decision toward resource use minimization, waste minimization, and environmental impact. Designing of architecture with passive designs such as thermal insulation, natural shading, and rainwater harvesting in the architectural framework enhances efficiency in energy and at the same time promotes ecological resilience.

Minimalistic architectural design follows these detailed requirements in order to design areas which are not only aesthetically beautiful but also functional, sustainable, and conducive to human well-being.

2.2.1.6 Benefits of Minimalistic Architecture

Benefits of the minimalist architecture include it being time-tested and wear-proof, allows maximal visual elements going hand in hand with minimalism, and includes natural elements. It allows for maximum performance and flexibility in supporting development teams for the best possible user experience (Frank, 2022).

The elaboration for each point is provided as follows:

- a. **Timeless Elegance:** Minimalistic architecture embraces an aesthetic that is timeless and transcends time-bound trends. The essence, from clean lines to simple forms, uncluttered nature, among other factors that define it, keeps the minimalist design appealing and relevant to an entire lineage of generations.
- b. **Enhanced Visual Impact:** Minimalist architectural designs may be simple, but they give off a maximum visual appeal. The application of essential design elements, from basic geometric forms to natural exposed materials and fine textures, cause minimalist spaces to exude sophistication and refinement beyond compare.
- c. **Integration of Natural Elements:** Minimalistic architecture applies mostly the natural elements such as natural light and views of nature, together with the organic

elements of matter like wood and stone. This integration sponsors a harmonious relationship between the built environment and the natural world and creates spaces that feel tranquil, anchored, and connected to the earth.

- d. **Optimized Functionality:** Designing for minimalism ensures maximum utility and resource effectiveness in spaces which become highly functional and changeable according to the user's requirement. Minimalist architecture facilitates the use of space to the maximum degree by excluding any extra embellishment and paying attention just to the essentials.
- e. **Flexibility and Adaptability:** There is more flexibility and adaptability in design with a sparse minimalistic architecture. Minimalist spaces can adapt very easily to grow or change to fit the desired needs or preferences, which can be an internal reorganization or an integration of new technologies or amenities.
- f. **Sustainability:** Minimalist architecture, by very nature, supports the maxims of sustainability and eco-friendliness; it further embosses the virtues of resource efficiency, minimized waste, and passive design strategies, reducing the environmental impacts in ways that support a healthy, efficient, and sustainable built environment.
- g. **Improved User Experience:** Ultimately, minimalistic architecture enhances the user experience by creating environments that are both visually pleasing and functionally efficient. By fostering a sense of clarity, tranquility, and well-being, minimalist spaces promote productivity, creativity, and overall quality of life for occupants.
- h. In general, minimalistic architecture presents many advantages for example timeless elegance and enhanced visual force, purification of functionality, sustainability, and benefaction to user experience. Minimalism as a design philosophy keeps on inspiring architects, designers, and its users the same way because of its simplicity, sophistication, and beauty.

2.2.1.7 Drawbacks and Challenges

Despite its usefulness, minimal architecture is open to accusations of class bias and can be unnecessarily restrictive if the limits of its problem space are not carefully specified since the architecture can immodestly deal with unforeseen problems at the expense of the intended goals and give rise to imbalances in the architecture.

Riding out the rigors of minimalism requires a fine understanding of what it means and a preparedness to navigate the challenges that are there to stay. Some of the challenges that most face by those intending to live a minimalist life are outlined below (Lovecraft, 2023b):

- a. **Letting Go of Possessions:** Perhaps the gutsiest challenge of minimalism is the emotional hurdle of parting with things. Anything with sentimental value attached or things that have memories can be such a challenge for most it makes it difficult to remove clutter from, and organize, to lead a streamlined life.

- b. **Social Pressures and Cultural Norms:** Minimalism works diametrically against the existing consumerist and materialist culture, and thus becomes hard for people desiring to be minimalists. There is always internal conflict and pushing away due to social pressure influences and the fear regarding how one might be judged or perceived by his or her peers.
- c. **Maintenance and Vigilance:** Minimalism requires constant diligence and vigilance to ensuring that the environment is always minimalist without the risk of it being cluttered again. There is a need for a constant watch over new acquisition and willingness to resist impulse purchase so as to maintain the minimalist environment and lifestyle.
- d. **Creativity in Resource Utilization:** Often minimalism means being resourceful and creative in a way. With less things owned, people should learn how to use what they have differently so that they can get more out of them thus this promotes adaptability and inventiveness.
- e. **Potential Judgment and Misconceptions:** Some may view minimalism as too radical or not practical hence make wrong conclusions about it. It takes confidence and strong will for someone to defy what the society thinks is right for them and also correct false beliefs surrounding this lifestyle.

Addressing these challenges requires a combination of self-reflection, resilience, and a commitment to the core principles of minimalism. By cultivating mindfulness, embracing simplicity, and fostering a supportive community, individuals can navigate the complexities of minimalism with grace and authenticity, ultimately realizing the transformative potential of a clutter-free and intentional lifestyle (Lovecraft, 2023b).

2.2.1.8 Scenarios for Implementing Minimalistic Architecture and how to embrace it.

Minimalist architecture is that widespread in contemporary Australian beach houses and survives in today's architectural world. Suitable for scenarios which are focused on simplicity and functionality, like residential, commercial, and cultural buildings (Cvetković, 2024).

Minimalism can be a life-changing, beautiful way journey to bring greater simplicity, clarity, and fulfillment. If you're thinking of embarking on this path, here are some practical tips to help you get started (Lovecraft, 2023):

- a. **Start Small:** Instead of feeling intimidated by the prospect of decluttering your entire home in one go, work on one portion at a time. Start with a single room, drawer, or closet, and gradually build out from there. Breaking the process down into small pieces will make it feel less overwhelming and more doable.
- b. **Identify Your Values:** Spend time thinking about your core values and life's priorities. Reflect on what really makes you happy, and what fulfills and gives meaning to your life. Use these insights like a star to guide you, in order to make discernments on the possessions aligned with your values and what you can really do without.
- c. **Practice Mindfulness:** Deprive yourself of a purchase in your daily life, and be more mindful of buying products. Each time one would want to purchase something new, it just requires a second or maybe a moment to ponder upon whether you really need it or you are just being deceived by our society's consumerist behavior. This means that instead of impulse buying, there is, in fact, a need for the item being purchased.
- d. **Get Creative:** Do not be afraid to get creative about how to make use of the things you opted to own and keep in your lives efficiently. Find creative ideas about shelf placement, home-creating, and redefine the way you can get an optimized room's and things' allocation. A creative approach means that you can make the most of your things and use these in ways never thought of, thus not allowing the wallets to empty quite a lot, spewing more waste.
- e. **Be Kind to Yourself:** This means that anyone who is plugging into the minimalism bandwagon should remember that this is a process not an end point. It is normal to face some obstacles and setbacks in the

course of practicing self-discipline and motivation, and this means that one may sometimes fail or find it hard to stay on the right path. I hope that you understand that this process of shedding and simplification does not come lightly and to be kind to yourself as you undergo this journey. Remember to always take time to revel in the accomplishments, no matter how seemingly insignificant and look at the challenges that present themselves as a good thing.

Applying the above tips to people's life, people can slowly absorb the spirit of minimalism and make people's living environment to be au fait with people's character.

2.2.1.9 Fusion of Minimalism and other styles

In fact, with minimalistic architectural design, other types of architecture can easily be incorporated into any renovation project to create a completely different look. This approach is helpful as it enables the maintenance of the original theme on a given space, or if desired, create another, unique, thematic space. Here are some of the following success stories of some projects:

1. Scandinavian Minimalism

Location: Stockholm, Sweden

Architectural Firm: Norm Architects

Project: Renovation of a Historic Apartment

Overview

Norm Architects were able to combine somewhat monochromatic purism of minimalistic approach in interior design with the warmth of traditional graphic Scandinavia to achieve the elegant living space which is functional, sleek and harmonious with all the historical references.

Design Elements

- a. **Clean Lines and Simple Forms:** An embodiment of minimalism can be observed from the carefully articulated lines, the simplification of shapes into basic geometrical forms, and offering a distinctly organized pallet. Cabinet pieces reflect commodity forms and are elaborate yet deliberately practical, which excludes any other decorative features.
- b. **Neutral Color Palette:** Soft tones of white, grey and natural wood are also used with the walls, floors and ceilings having white and the furniture and built in shelves being in grey. A clear black hue is employed with care and added to harmonize complexity with contrast, but still without compromising on the simplicity of work.
- c. **Natural Materials:** This is easily seen when in judging Scandinavian designs that use many natural products, which work so well with minimalistic design. There are wooden floorings, wooden furniture, and natural fabrics such as wool and linen used which gives the exterior warmth and makes the interior seem close to nature.
- d. **Open Space and Light:** It follows the modern conception of maximized unobstructed space and the ample use of natural light, which is typical for both minimalistic and Scandinavian aesthetics. Few curtains and blinds and big windows are incorporated into the design in order that a lot of natural light gets to the rooms making it vibrant.
- e. **Functional Decor:** Glass and other ornaments are selected as much for their practical use as for their visibility. There are no elaborate chandeliers hanging from the ceiling and there is limited artwork on the walls; there are also no extra-large plants single-handedly occupying a room – elements that make a place inviting but not excessive in the way that makes it hard to move through it.
- f. **Historic Touches:** New ornamentation is compatible with the style of the original architecture and its detailing: crown moldings, high ceilings, large windows. These frames give a traditional appeal to the minimalistic interiors which look quite fresh and are undoubtedly inspiring.

As a conclusion this project exemplifies how minimalist style can be harmoniously integrated with other design traditions, in this case, Scandinavian aesthetics. The result is a living space that feels both timeless and contemporary, offering comfort, functionality, and visual appeal. By respecting the existing architecture and thoughtfully incorporating minimalist principles, the designers created a cohesive and inviting home that showcases the best of both world (Scandinavian minimalism, 2023).

2. Industrial Minimalism

Location: New York City, USA

Architectural Firm: Studio O+A

Project: Loft Renovation in a Historic Warehouse

Overview

The herein project by Studio O+A demonstrated how a complete efficiency in simplicity could be combined with industrial aesthetics to create an efficient and comfortable home, with industrial and neutral textures from a historic warehouse loft in San Francisco.

Design Elements

- a. **Exposed Structural Elements:** Ceilings and walls of the entire loft area are made of brick and the presence of steel beams or duct work can be seen, which is typical of industrial style interiors. These are left in their natural state so as to uphold historical perspective and beacons of industries in design.
- b. **Minimalist Furniture and Fixtures:** The furniture designs also reflect minimalism within the setting to a given extent with straight lines, basic shapes, and toned-down colours. Contemporary features like standard metal and glass chairs, transparent table and slimline sofas do not over-power or dominate this industrial canvass.
- c. **Neutral and Monochromatic Color Scheme:** This implies that there is no introduction of many colours in a building but rather a neutral of greys, black and whites is used throughout the interior space as seen in minimalism. This non-threatening setting means that the uncooked industrial elements are deliberately the main decorative pieces.
- d. **Open Floor Plan:** The living area is open with no partitioning walls to the kitchen and dinning area, this gives the loft a large space and good natural light flow. Often, the lack of detail characteristic to minimalism is accentuated by the presence of space and light, both of which are inherent to the industrial lofts concept.
- e. **Use of Natural Materials:** Here we see the exterior of concrete and timber structures, metalwork all contribute to the warm and textured aesthetics. While using wooden flooring together with wooden accents and fixtures lets designers experiment with exposed concrete and metal to establish the right atmosphere.
- f. **Functional and Streamlined Storage:** When it comes to storage solutions, they are smart and do not take much of the space and hence do not violate the ideas behind minimalism. Additional furniture – shelves, cabinets – are made to order, fitted to provide ample storage without intrusive appearance in the context of the Loft style.
- g. **Thoughtful Lighting Design:** While industrial-style lighting fixtures such as pendent and exposed bulb chandeliers bring out the character in the loft and make the atmosphere more comfortable, their placement within the unit helps to show off the building's architecture. Moreover, the creation of warm and welcoming spaces highlights minimalism's functional simplicity through light.
- h. **Incorporation of Art and Personal Touches:** The design should include industrial art objects even if it is done in a minimalist style and a small number of personal decorations. They will make any room feel inhabited and unique without conflicting with minimal or industrial features that may be present.

“This project shows us how to join a minimalist approach with some industrial details and create a beautiful, usable living space,” says Arthur McLaughlin, Principal at O+A. “It is about preserving history, character and function while including a hint from Studio O+A’s toolkit.” This particular effort balanced rough materials

against voids and openings so that its design intelligence could shine through; these are the hallmarks of industrial minimalism and an enduring appeal of timeless spaces (Attitude Interior Design Magazine, 2019).

3. Modern Minimalist Farmhouse

Location: Napa Valley, California, USA

Architectural Firm: Feldman Architecture

Project: Renovation of a Farmhouse

Overview

Here they seamlessly coupled the aesthetic of minimalism with the restoration of farmhouse structures for a modern, cozy living space that respected the rustic appeal of the original.

Design Elements

- a. **Clean Lines and Simple Forms:** One can easily identify minimalism through the use of lines that are clean or simple forms, be it in groups of furniture, architectural blocks, or in joinery details. The original structure of the farmhouse had been kept, but flat-panel cabinets and clean, linear light fixtures have been introduced into the architecture to foster the intrigue of modern, minimalist design for the spaces inside.
- b. **Neutral Color Palette:** The palette, monochromatic in white with soft grey and natural wood tones, gives off a calming and cohesive air. While the accents of black and odd spots of muted greens or blues give it contrast and interest, it doesn't have that fussy quality that overly complicates simple spaces.
- c. **Natural Materials:** Primarily, it is composed of natural materials such as wooden beams reclaimed from barns, stone countertops, wide-plank wooden floors, and other such materials that give an aura of warmth and texture—sort of a welcoming feel mixed with a rustic farmhouse charm and minimalist elegance.
- d. **Open Space and Light:** Large windows and glass doors are positioned in a way that natural light can saturate the interior, which increases openness. The overall open floor plan allows the natural flow of things between indoor and outdoor spaces — an essential component of minimalist design — yet very indicative of farmhouse style.
- e. **Functional Decor:** Conservative use of decorative items means things that are more functional and not ornamental or decorative. Decorated handcrafted pottery, some plain weaved cloth materials, and minimums in artwork add to the charm and livability of the space.
- f. **Historic Touches:** Original architectural details are maintained and showcased—for example, well-kept, exposed wooden beams and barn doors. These historic materials add an alluring contrasting effect to the room's minimalist furnishing and modern amenities—a marriage done well between old and new.

This project essentially outlines the manner in which minimalist style can be creatively inflected into traditional farmhouse design. The upshot is a living environment with an ethos of timelessness and contemporaneity that bears comforts, utility, and aesthetic quality. With great regard for the existing architecture, brought out through the careful application and seamless use of minimalist principles, the designers set out an aesthetic and inviting home that fuses the best of both worlds (Conroy, 2023).

4. Mid-Century Modern Minimalism

Location: Palm Springs, California, USA

Architectural Firm: Marmol Radziner

Project: Renovation of a Mid-Century Modern Home

Overview

In this project modify an outdated Palm Springs home to become a contemporary minimalist abode: Marmol Radziner used principles of “less is more” design from the mid-century. The house now has a sleek design that is functional but also beautiful.

Design Elements

- a. **Clean Lines and Simple Forms:** This was a critical structural feature of minimalism in the m.c modern era so it was emphasized during restoration; Furniture with practicality in mind too got selected while at same time having sleek profiles which could bring out aesthetic clarity within each room setting.
- b. **Neutral and Earthy Color Palette:** Olive greens, terracotta among other warm earth tones were used so as create a welcoming atmosphere whereas whites or beiges made them appear lighter; Besides this, few bright saturated hues were introduced for visual interest without breaking away much from typical approach of less being more when it comes to style homes under m.c modern minimalistic concept
- c. **Natural Materials:** Design is brought back to the use of natural materials including wood, stone, and glass. Textural additions with wooden beams, terrazzo floors, and stone accents add warmth and depth, while retaining an overall look balancing modern simplicity with mid-century charm.
- d. **Open Space and Light:** Natural light filter in through the huge windows that are almost floor-to-ceiling next to sliding glass doors, opening to a deck or patio where one can enjoy the outside from inside. This goes a step further with the open floor plan, allowing for a maximum flow of air and light—the guiding principle in minimalism as well as in mid-century modern design.
- e. **Functional Decor and Iconic Pieces:** Decorations serve dual functions; they should serve some purpose beyond mere embellishment so items chosen as decorations are equally important for what they do within the room as how good they look there. Besides being beautiful in themselves iconic furnishings like those designed by Eames or Noguchi ought not just be limited to a minimalist sensibility.
- f. **Integration of Indoor and Outdoor Living** Outdoor living spaces are designed with the same minimalist approach with simple, functional furniture and natural materials, landscaping with native plants, clean hardscaping with clean, clear geometries enhances the seamless integration of indoor and outdoor environments.

As a Conclusion, this project is able to show how minimalistic design features can be infused beautifully with mid-century modern architecture. The result is a house that seems eternal and present, giving its residents the highest level of comfort and functionality with the visual elegance in vogue. By respecting the original mid-century elements in the house and purposely infusing minimalism principles, the designers made a unified, up-to-date home showcasing the best of both trends (Design LA, 2018).

5. Vernacular Minimalism

Location: Kyoto, Japan

Architectural Firm: Kengo Kuma & Associates

Project: Renovation of a Traditional Machiya House

Overview

With the project, Kengo Kuma & Associates merged the minimal design principles with traditional vernacular architecture of Japan, thereby updating the historic house of Machiya into a contemporary living space.

Design Elements

- a. **Integration of Traditional Materials:** Original wooden framework and earthy kind of materials typical in Machiya houses like cedar wood, paper screens – shoji, as well as clay plaster – Sakan have all been preserved in the renovation. These worked together well with their minimal finishes and detailing in giving a harmonious blend of the old and the new.

- b. Clean lines and simple forms: The findings demonstrate that simplicity in design is expressed through uncluttered spaces, basic furniture, as well as architectural features having clean lines and uncomplicated forms. It is where no decorations coupled with open areas allow traditional skills of craft and natural materials' beauty take center stage.
- c. Neutral colour scheme with natural touches: This calm backdrop is created by whites, beiges, soft greys among others so that it can act as a stage for timeless classic architecture which is widespread all over. These are then countered by lots of naturally occurring things like stones inside as well as outside walls; wood beams that have been left bare hence showing their grain direction tightly holding them together but still allow some space between each other – all these helps bring out textural quality together with warmth that's associated with minimalist design
- d. Indoor and Outdoor Space Integration: Traditional Japanese architecture integrates indoor and outdoor spaces with a clear, almost harmonious distinction between what is natural and what is built. More in the minimalistic rules of design, the sliding doors, and probably open-air courtyards — it just brings a lot of integration of what a house should feel like.
- e. Functional and Thoughtful Design: Furniture functional in use serves the purpose in a thoughtful design of utility and ease, and has minimalist lines maintaining the conventional appearance. Some thoughtful designs to fit the space in an ideal space efficiency solution without an overfilled, edgy look are built-in storage and modular furniture.

This project is today's prime instance of how minimal design assimilates sensibly into conventional architecture, thereby linking contemporary living with the traditional heritage closely. It can be seen through this project how Kengo Kuma & Associates contemporized an old Machiya house without losing its essence with the adoption of minimalism in the new design. In retaining the feel of a Machiya, combined with the concept of minimalist principles, Kengo Kuma & Associates successfully converted a living space of the past into a resting haven in the present time that glorifies the Japanese timelessness of craftsmanship and design (Kooo architects, 2020).

6. Krishnayan House

Location: Arera Colony, Bhopal, Madhya Pradesh

Architectural Firm: Dimensions by Vipin Chauhan & Associates

Project: Fusion of Contemporary Minimalist Architecture with Traditional Aesthetics

Overview

Krishnayan House blends contemporary minimalist architecture with traditional Indian aesthetics, creating a luminous space that captures ample sunshine and is imbued with an earthy, inviting ambiance. An open but smart spatial scheme, large windows, and skylights provide enough natural light inside all day long. This architecture proposes the use of modern materials, elegant surfaces, and neutral tones in getting a calm and chic character.

Design Elements

- a. Openness and Light: The emphasis on the open spaces, broad windows, and skylights allows an abundance of sunlight to filter into the living spaces, which are now in a natural warm light, full of life, welcoming and inviting.
- b. Cultural Combination: It effortlessly fuses modern beauty with traditional Indian artifacts that speak of Udaipur's cultural opulence like the pichwai paintings which were chosen to honor the lineage and background of the owners.
- c. Use of Few and Natural Colors: With few and natural colors, the room is made to feel large and quiet hence it can take different shapes with the help of bright furniture and art objects.
- d. Customized Teak Furniture: Every bedroom has unique classic teak furniture that displays high quality and meets customer's functional requirements as well as their taste for beauty.

- e. Visual Calmness and Vastness: The first floor includes a thin tiled path, a statue of Buddha, and a water feature that give a sense of peacefulness through seeing them with eyes also make outside seem larger than it is really.
- b. Personalized Comfort: There are specific little things done in each bedroom
- f. Personalized Comfort: There are specific little things done in each bedroom so nobody has ever felt more at home anywhere else; like using Italian marble for the floor but different walls materials or whatever else may be necessary just to achieve this goal alone.
- g. Harmonious Blend of Soft Neutrals and Vibrant Accents: The base for such an environment lies within soft shades while strong colors should be brought in small amounts through statement pieces such as paintings, lightings among others thus creating playful living spaces.
- h. The lighting design is adapted to the specific context to provide direct and indirect lighting for different activities. At the same time it should be possible to darken sunny zones artificially, when necessary, allowing seamless transition between various types of illumination required by changing events throughout a day. Tailored Lighting Design
- i. Upstairs is created world with beautiful garden outside library – a place where one can retreat into natural peacefulness except knowledge gained from books. One may lose oneself here completely though never wanting to be found again in its calmness and serenity (Prajapati, 2023a). Nature and Knowledge.

7. The Zen House

Location: Rajkot, Gujarat, India

Architectural Firm: Circle Design

Project: A Fusion of Minimalism, Muted Tones and Contemporary Aesthetics

Overview

The Zen House was created by Circle Design as a 2500 sq.ft sanctuary in the midst of the crowded city of Rajkot. It is a fusion of minimalism, muted tones and contemporary beauty that is designed to be an example of thoughtful architecture for peaceful living. The house is meant to have plenty of light, which flows through it so that there are no distinct areas where brightness or darkness are found, but rather they all merge into one another producing varying degrees of illumination depending on how far away they may be situated from any given point within the structure.

Design Elements

- a. Foundational Elements: Clean lines, recessed niches, harmonious textures, and subtle hues are some of the foundational design elements. The walls are finished in pure white texture, which serves as a blank canvas for Zen ideas to be arranged thus achieving balance through careful curation.
- b. Five Elements: The Zen House includes nature's five elements. It is not used as a decoration. For example, a fire pit is used to represent energy and change while a tree of life is used to create harmony and balance among other things. The place looks more beautiful with these things because they have deeper meanings than what can be seen by eyes alone-they make people feel calmness and peace within themselves due to its simplicity which has been carefully designed.
- c. Holistic Design Philosophy: The Zen House serves like a whole body experience which brings back life into a person by healing their mind, body and soul. This is an opposite way from chaotic cities that always make people feel tired or sick. According to Circle Design who are the creators of this house they say “We don’t just build houses; we create homes where lives can be changed forever” and this means that their aim was not only about making it look good but also improving residents’ wellbeing through different ways shown above.

Usually, the creative architectural design of the zen house is not only a house but also a physical representation of some good design principles which nurtures both physical and metaphysical man. It has been said that within this dwelling place one is able to realize total peace and inner calmness while living among the hustle and bustle of urban life (Prajapati, 2023a).

8. TEN House:

Location: Moscow, Russia

Architectural Firm: Babayants Architects

Project: A Harmonious Fusion of Nature and Minimalist Elegance

Overview

The TEN House is an architectural masterpiece located in Moscow, Russia; it symbolizes successful integration between environment, structure and design. Artem Babayan's who is a renowned architect led Babayan's Architects which designed this innovative living space. This residential building demonstrates pure contemporary lifestyle at its best where simplicity meets elegance with nature's touch being felt all over the building hence providing every occupant and guest with utmost comfort & relaxation.

Design Elements

- a. **The Kitchen:** The kitchen is thinking broken up into two independent volumes, clear and distinct, harmonized between usefulness and aesthetics. It offers an abundance of kitchen appliances, ample storage space, a dining table, and a kitchen island with a bar, minimal in the use of angles and creative details to produce an independent impression.
- b. **Nature as a Captivating Backdrop:** Although all around the house, nature veils itself to become a foundational backdrop, changing its hues and ambiance with each passing day and season, promoting contemplation and an active lifestyle at home.
- c. **Joined Spaces:** Making simple connections between functional areas makes the design easier to understand, like connecting the kitchen and dining room with an outdoor lounge containing a barbecue so that the house itself and the whole plot around it remain a coherent whole.
- d. **Blurred Lines:** Building another set of rooms next to the beautiful garden and facing the woods with transparent walls challenges conventional thinking by creating an environment in which one can hardly tell if they are inside or outside, offering peaceful shelter for those who want to be surrounded by nature's beauty.
- e. **Private Quarters:** The bedrooms exude a sense of elegance and originality, characterized by clean lines, clear colors, and captivating silhouettes, textures, and shades, showcasing the architectural prowess of Babayants Architects.

Basically, the inception of the project in 2022 allowed Babayants Architects to infuse their creative ingenuity into the partially constructed house, resulting in a breathtaking architectural marvel that redefines contemporary living. The optimized design creates a fluid and logical flow, enhancing functionality and introducing an element of intrigue and visual appeal to the main living areas (Atelier, 2023).

9. Minimalism Home in Beijing

Location: Beijing, China

Architectural Firm: Miaoju Design

Project: Oriental and Japanese aesthetics with contemporary minimalism

Overview

"Minimalism Home in Beijing," conceived of and designed by Miaoju Design, exemplifies the elegance of a minimalistic design that is married with depth through the aura of oriental cultures. Situated in the heart of the vibrant, populous city center of Beijing, if we set adjectives aside, this L-shaped house may be truly deduced as representing perfect simplicity and functionality. Shen Xiaofeng designed this house under the philosophy that

"Space is the emotion filled with nature, life, and beauty" that can surely be seen, felt and already reflected in every corner of the residence.

Design Elements

- a. **Delicate Balances in Planning:** Solid materials like wood and stone are balanced with the delicateness of the use of glass to achieve the serene atmosphere that can link the inside spaces directly with the visual of the pastoral courtyard scenes. There is an inclusion of historical backgrounds through primitive elements that resonate the sentimental beauty of ancient Hutongs in Beijing.
- b. **Sunlight and Space Maximization:** Natural light is + :: brightened by clear glass windows and doors, which also join the inside with the outside in a fluid manner to ensure there is uninterrupted flow through all areas
- c. **Every detail in Modern Minimalism:** The home speaks volumes about living minimally; it intentionally removes all unnecessary things to make room for big open living spaces, which are also versatile. Every decision made for this design project reflects its main idea-simplify so you can multiply— where less means more and people can be calm even when they are in the middle of a noisy town.

In summary, "A Minimalism Home in Beijing" reflects the combination of oriental and occidental minimalism, making an uncluttered space that marries modern details with traditional Chinese architecture accents. Explicitly, in the design, where every single touch shows Miaoju Design's commitment to minimalism as a way of living, to their devotion to it for the simplicity and quality, and in between—living for the inhabitants. The detail of that is evident from "A Minimalist Home in Beijing" is demonstrative (Watts and Watts, 2024).

10. Canyon Collection

Location: Los Angeles, California

Architectural Firm: Marmol Radziner

Project: Furniture Design Series

Overview

The Canyon Collection by Marmol Radziner takes iconic furniture pieces and infuses them with a modern touch that embodies the relaxed opulence found only within California's canyons. Their architectural finesse and the design ethos are visible in this line that mixes mid-century modernism with contemporary minimalism.

Design Elements

- a. **Sleek Modern Silhouettes:** The Canyon Collection demonstrates Marmol Radziner's skill in reducing furniture to its simplest form with sleek modern silhouettes that reflect the firm's architectural idiom. Every item has clean lines and an elegant look which gives priority to shape and purpose.
- b. **Subdued Color Palette:** Taking cues from the canyons' natural environment, this range features a subdued earthy palette brought to life by occasional touches of blackened paper cord and white bronze. The palette fits well with different interiors as it works hand in hand with the materials used while also being friendly to the eye due to its closeness with nature.
- c. **Canyon Collection:** This line reflects true architectural heritage combined with individual approach to each piece creation, thus including raw steel or bronze along solid oak etc., as well as integrating such things like this together it allows you feel them visually and by touch.
- d. **Every single item of furniture in that collection has been made paying great attention not only to general view but also to small details - from cocktail tables carved by hand to wardrobes made of oak covered with rattan.** It proves company's desire for reliability and high quality.
- e. **Versatile Functionality:** The versatile design of the furniture allows it to be spread over residential and even commercial uses. Be it a hotel in Puerto Rico or a modern home in Beverly Hills, the pieces are flexible and functional with a premium on comfort and overall usability.
- f. **Respect for Architectural Heritage:** The collection is to reflect this balance of being tantalizing and forward-thinking through a respect for the architectural heritage of the firm, Marmol Radziner. Design nods to the typical Danish furniture but clings to modernity with their life.

Generally, the Canyon Collection by Marmol Radziner is a testament to the firm's design philosophy, where simplicity and sophistication meet. It stands as a representation of how modern design can pay respect to traditional aesthetics while still pushing the boundaries of contemporary minimalism. The result is a timeless series of furniture that enhances the experience of space, light, and materiality in any setting (Slenske, 2018).

2.3 EMPIRICAL LITERATURE REVIEW

The empirical study done for this research is specified as follows:

Minimalist architecture usually concerns simple, uncluttered spaces for psychological and physiological benefits. According to Reece (2023), such places that bear clean lines and not many decorations help a lot in reducing stress levels among individuals and enhancing their cognitive abilities, since they minimize distractions, therefore little visual noise that may affect thinking. This is in line with the philosophy of simplicity in minimalist design that proclaims "less is more". With regard to shape and the notion of function, simplicity bears an effect on spatial perception and experience in relation to the user within minimalist buildings.

Brocker (2024) highlights that basic geometric forms like squares or rectangles give rooms an impression of balance more than irregular ones does. This geometric simplicity can enhance a sense of order and tranquility within the built environment.

It has been empirically proven that the use of a restricted color palette, which is usually within the neutral and monochromatic range, affects mood and spatial perception. For instance, in the experiments conducted by Cvetković (2024) these color schemes were said to evoke calm and tranquility, giving a feeling of openness and freedom from interior spatial noise. This empirical evidence supports the theoretical assertion that minimal color variation contributes to the minimalist aesthetic.

Such materials as wood, concrete, and glass, apart from adding to the beauty of minimalist architecture, are said by research to enhance the sustainability of it. According to Puisis (2022), those studies showed that buildings with such materials have mostly reduced environmental footprints, since the lesser need for synthetic finishes and lower attributes can be ensured at that. This emphasizes theoretical honesty in materiality and resultant sustainability in minimal design.

Studies on sustainable practices in minimalist architecture would show that this field of design helps environmental sustainability. The view that minimal designs inherently promote ecological resilience has had some success. For example, according to Frank (2022), buildings lacking complexity such as those characterized by few shapes achieve their sustainability through adoption passive strategies like insulation against heat loss or gain and use natural sunlight for shading thus reducing energy consumption levels considerably while lowering the release of CO₂ into the atmosphere more than other ornate architectural styles do. There is some supporting evidence from this practical observation made by Frank; he says it is backed up with empirical data too.

In addition, it is often said that simplicity makes things beautiful; Cvetkovic (2024) asserts that even though they are simple, spaces designed using this approach usually possess timeless beauty beyond fashion trends. The findings of Cvetkovic support theoretical perspectives on enduring attractiveness in minimalism.

Some research presents the advantages of adding natural elements to minimalist architecture. An instance is when Taylor (2009) discovered that well-being and productivity for those within such buildings can be greatly enhanced by having views of nature, natural light, as well as organic materials. Theorists have always stressed this point about including nature in minimalism.

In a broader sense, they advocate for applying simple geometry and honesty of materials in construction work since it is sustainable hence beautifying while at the same time promoting mental healthiness vis-à-vis environmental friendliness. These conclusions show how much we need not forget our roots even as we advance technologically; therefore, finding an appropriate place for minimalistic designs within modern-day architectural activities so that they may be able to make buildings serve their purposes effectively and sustainably.

2.4 RESEARCH GAP

Despite the increasing interest in minimalistic architectural design, there is a notable lack of research focusing on the management challenges specific to minimalistic architectural design projects in Addis Ababa, particularly within Grade One consultant firms. Most existing literature on minimalistic design predominantly addresses aesthetic and theoretical aspects, often within Western contexts, leaving a gap in understanding its practical application and management in non-Western, urban environments.

Additionally, minimal research exists on the unique socio-cultural, economic, and regulatory challenges encountered by Grade One consultant firms in Addis Ababa. Issues such as material availability, cultural compatibility, budget constraints, and regulatory compliance are critical factors that influence the successful implementation of minimalistic design principles but are insufficiently explored in current studies.

Furthermore, there is a significant gap in the literature concerning the strategies employed by these firms to overcome these challenges and effectively manage minimalistic design projects. Understanding these strategies is essential for developing best practices and guidelines that can be adapted to similar urban contexts.

This study aims to address these research gaps by providing an in-depth analysis of the challenges in managing minimalistic architectural design projects within Grade One consultant firms in Addis Ababa. It seeks to contribute to the body of knowledge by examining the intersection of minimalistic design principles with the unique architectural, cultural, and economic context of Addis Ababa, and by identifying effective management strategies for overcoming the identified challenges.

3 CHAPTER THREE

3.1 RESEARCH METHODOLOGY

Research methodology is an integral part of the research project; it is the very method and technique through which the collection of data and its subsequent analysis are made. It provides the point of doing research and strongly justifies the use of the research findings by ensuring adequate credibility and reliability (George et al. 2022).

3.2 RESEARCH APPROACH

The research approach thus selected could be a qualitative, quantitative, or mixed research approach, depending on the research topic (Creswell & Creswell, 2018). The qualitative approach primarily looks toward gathering verbal data that could gain its meaning from the perspective of the participant (Holme & Solange, 1997). Field observations, analysis of business documents, among other techniques, are thus considered methods for the collection of relevant data in the conduction of qualitative research. The quantitative data is data that is presented in numerical values and measurements. Qualitative research thus uses a small sample size in the collection of substantial data (Holme & Solange, 1997).

In this research, both quantitative and qualitative approaches have been conducted . According to Creswell (2014), using the two different research in a blend, the understanding of a subject or any issue can be deeper, and this approach has been increasingly accepted and popular.

3.3 RESEARCH DESIGN

Cooper and Schindler (2003) describe the basics of research design as a time dimension and activity plan, yet always focused on the research question. It dictates which sources can be used and which type should be employed to fulfill the information search, gives a framework for the definitions of relationships among the study variables, and outlines the procedures required for each research activity.

Exploratory research is a type of research design intended to give insights into poorly-understood problems or phenomena. It is often used as a initial phase in a more in-depth research process done to explain and define the nature of a problem under study rather than a conclusive evidence provision (Voxco, 2021). This is particularly useful when a researcher commences with a vague idea and wants to identify particular ways for the study of particular issues (Bhat, 2024).

These are mainly of two types: primary and secondary sources of exploratory research. Primary research refers to the gathering of information directly from the subjects or respondents. On the other hand, secondary research is an analysis of existing past data which was collected for other purposes. (Bhat, 2024).

This study relies on an exploratory research investigation for collecting the relevant piece of information that may live up to the local context of Addis Ababa, Ethiopia. Both primary and secondary sources of data were collected to provide the best coverage and understanding. The primary data were sourced from direct responses, the respondents themselves, through surveys, interviews, or observations. Secondary data were sourced from existing records, reports, and related publications on the study area. This mixed method ensures thorough exploration in relation to the research topic in a specific local context.

3.4 RESEARCH POPULATION AND SAMPLING

Cooper and Schindler (2014) argue that the "target population" refers to the entire collection of individuals or items that the research considers as a reference in drawing its conclusions. Construction Works Regulatory Authority data indicates that there are 74 level one consultants registered for architectural and engineering services in Addis Ababa. The frame of consultants in the study was prepared based on a list of consultants in Addis Ababa that were registered and thus valid in 2013.

3.4.1 SAMPLING DESIGN

Since the population is finite, the researcher knows the appropriate sample size to take from the target population to collect the needed information. The researcher has sampled using probability sampling to ensure that every individual in the population has an equal opportunity of being a participant in the experiment. In this study, the researcher used simple random sampling as the technique. This gives the study representative samples and protect the integrity of the data collection processes.

3.4.2 SAMPLE SIZE

The primary research objective of this study is to examine the application of minimalistic architecture by grade one consultants in Addis Ababa. Consequently, the criteria for selecting the target respondents include individuals involved in the field of architectural design within these selected consultant offices. To qualify as a grade one consultant, a minimum of seven professionals are required. These professionals include a practicing Professional Architect,

Professional Structural Engineer, Professional Construction Manager, Professional Electrical Engineer, Professional Sanitary Engineer, Graduate Engineer, and Associate Engineer. From these professionals, the target respondents are the Architects and stakeholders involved in the specific projects.

To determine the appropriate sample size for this study, the researcher employs the following formula:

$$\text{Sample size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N} \right)}$$

Fig 3.1 Sample Size formula

Where N is total number of populations

e is Margin of error 5%

p is variability (0.5 for max)

Z represent Z score (95% confidence = 1.96)

By submitting the numbers in the formula, the final sample size has been 63

Therefore, 63 firms are selected meaning 63 professional architects shall answer the provided questions. 63 active clients shall be involved in the prepared questioners.

3.5 TYPES OF DATA AND MATERIAL

The research has been done through primary data to be collected by the use of questionnaires, interviews, and observations. The interviews have been used to collect qualitative data from higher-level professionals and stakeholders directly involved in the projects, such as architects and clients.

The questionnaires had been created and sent to the chosen firms. The architects and clients from various firms has approached to complete their questionnaires, where their names are not included. The questionnaires were distributed through Google Forms for online questioning. The data acquired from the surveys, from the same mediums above, were put into Excel and software's like SPSS. Then the data was analyzed to accomplish the research objectives from structured data.

3.6 DATA ANALYSIS METHOD

Following the data collection process, a variety of methods of analysis is carried out, based on

the data collected. Analyses using descriptive statistics is carried out, such as frequency, percentage, mean, and standard deviation. The analyzed findings is interpreted using a combination of quantitative and qualitative methods.

Interview information and opinions is analyzed through describing them narratively. The survey data is analyzed with the aid of SPSS. The results is carefully discussed and interpreted using a descriptive research design with various statistical analyses, such as bar graphs, tables, and summary data.

3.7 RESEARCH INSTRUMENT

The research instruments used for this research has included questionnaires, interviews, and observations specially constructed for the chosen corporations. Both questionnaires and interviews has been created with great care based on the fundamental concepts covered in the literature review. They were crafted to gather information adequate for the research objectives and the realization of a clear picture regarding the issue being observed. Observations were conducted in the chosen companies to give the required firsthand experience about the dynamics and operations within these corporations.

3.7.1 MEAN SCORE RANKING

The mean scores reflect the average rating of the respondents on the Likert scale when the ratings are converted into a continuous index and categorized into distinct groups.

Table 3-1- Mean Score Ranking

Likert Scale	Likert Ranking	Mean Score Category
1	Strongly Disagree	1.0-1.49
2	Disagree	1.5-2.49
3	Neutral	2.5-3.49
4	Agree	3.5-4.49
5	Strongly Agree	4.5-5.0

Source: (Moohammad, 2014)

3.7.2 VALIDITY AND RELIABILITY

Validity: according to Hair et al. (2014), demonstrates how effectively a measure reflects what it is supposed to measure. The validity of such a study were assured through thorough comprehension of the constructs of interest and development of measurement tools that were

crafted to precision and accuracy. In this study, to increase the validity, the instruments were designed and presented in such a way as to be as clear and easy to understand as possible, which has helped minimize the risks of misunderstanding on the part of respondents. Second, subject matter experts regarding the issue were consulted in developing and refining such instruments. It was expected that these efforts help the study maintain high levels of validity so that the stakeholders accept the findings with higher confidence levels.

Reliability: the reliability of this research was enhanced through the implementation of very strict measures from data collection to analysis. Research instruments such as questionnaires, interviews, and observations were designed and validated for their capacity in consistently gathering accurate data. Protocols were established to ensure that the same standards are upheld in the process of collecting data. Triangulation of different sources of data serves to enhance the validity of findings as well as the credibility of the study. Through these strict methodical measures, this study shall also be retained as one of the most powerful forms of reliability for its findings.

From table 3.2 the Cronbach's alpha coefficient for the Minimalistic implementation ranges from 0.785 to 0.916. The instrument's Cronbach's alpha value must be at least 0.70 for the measurement to be considered reliable. All the numbers are greater than 0.7, proving the reliability of the measurements.

Table 3-2-Reliability Statistics

	Minimalistic Implementation	No of items	Cronbach's alpha
1	Familiarity with minimalistic design	11	0.775
2	Minimalistic in Ethiopia context	7	0.790
3	Challenge and Limitation of minimalistic approach	16	0.917

Source, (Own Survey, 2024)

3.8 ETHICAL CONSIDERATION

Saunders et al. (2016) goes on to tell that research ethics is the moral principles that guide the behavior concerning the rights of individuals that are involved in or impacted by research.

The research is ethically and morally undertaken. A prior secured consent from the participants

was obtained even before collection of any data. All the information in the research is confident and only accessible to the interested parties and is not competent without the said information. The participants were made aware of the benefit of research to protect their rights. In observing the ethical process in the research, there was proper acknowledgment through proper and honest citation of sources. Conducting research in an honest and ethical way should be by use of fair methods in collection and analysis of data, data confidentiality, and making it available to the organization and its workers. In addition, making sure that the anonymity of the participants and the organization is kept safe, especially if it is a desire from the participants or the organization to keep their identity anonymous.

CHAPTER FOUR

4 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

This chapter presents the findings of the study, which aimed to investigate the challenges in Managing Minimalistic Architectural Design Project in Addis Ababa, Ethiopia. The chapter is divided into two sections. The first part provides an overview of demographic characteristics of the respondents. The second part presents a descriptive analysis of the research.

4.1.1 Response rate

Table 4. 1 indicates the response rate. When distributing the questionnaire, the aim was to gather data from 63 sample of professional architects.

Table 4. 26 Response Rate

Questionnaires distributed	Questionnaires returned	Questionnaires rejected	Usable Questionnaires	Response rate
63	51	0	51	80.95%

Source: (Own Survey, 2024)

As the table below indicates that the researcher managed to issue 63 questionnaires to the respondents. the researcher received 51 of the distributed questionnaires duly filled out correctly. That represents 80.95% of the questionnaires that were returned and usable. Mugenda (2003) argues that 80% of returned questionnaires can be defined as having a very good response rate, while 60% is Good. In this case, 80.95% represent a very good rate of return. This means that the questionnaire was well received by the target respondents, thereby according the representative of the entire population. A very high response rate is a very good aspect because it enhances the validity and reliability of the findings noted during the research process. It is an ideal manner in which it can indicate that indeed the respondents are willing and ready to participate in research that can improve the chances of having the correct and accurate results. In this case, a very high response rate induces that the researcher managed to recruit as per its efforts, which makes the results very reliable and representative of the population.

4.1.2 Demographic Detail of Respondents

This section assesses general information of respondents. Respondents were asked about their gender, age, educational level, role in the company and years of experience. The result is presented in Table 4. 2

Table 4. 27 General Information of the respondents

Main factor	Category	Frequency	Percentage (%)
Gender	23	45.1	45.1
	28	54.9	54.9
	51	100.0	100.0
Age	25-34	29	56.9
	35-44	14	27.5
	45-54	6	11.8
	55 and above	2	3.9
	Total	51	100.0
Educational Level	BSC Degree	33	64.7
	MSC/MBA Degree	16	31.4
	PHD	2	3.9
	Total	51	100.0
Role in the Company	Junior Architect	20	39.2
	Other	15	29.4
	Senior Architect	16	31.4
	Total	51	100.0
Experience of the Respondents	< 1 year	7	13.7
	>15 years	5	9.8
	1-5 years	25	49.0
	11-15 years	2	3.9
	6-10 years	12	23.5
	Total	51	100.0

Source, (Own Survey, 2024)

4.1.3 Gender

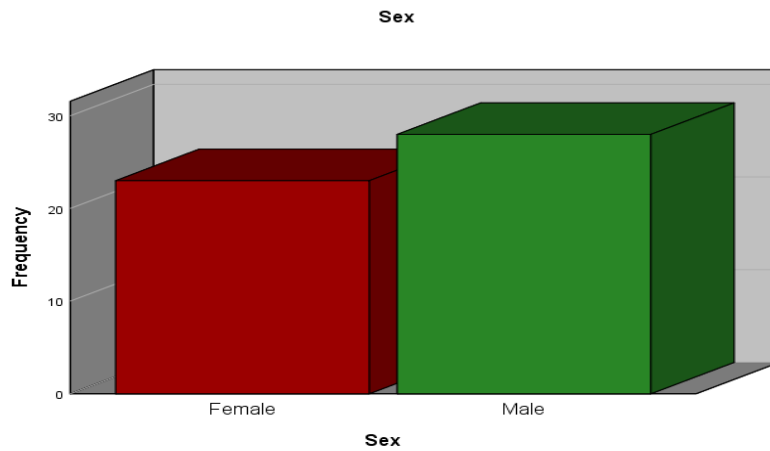


Figure 4. 6 Gender Distribution

Source, (Own Survey, 2024)

Based on the graph and table, it appears that the slightly majority of respondents in the study on minimalistic design practices in Addis Ababa, Ethiopia are males (54.9%). While the female scores 45.1% of the total respondents This finding suggests that the industry gives opportunity to both women and men almost equally.

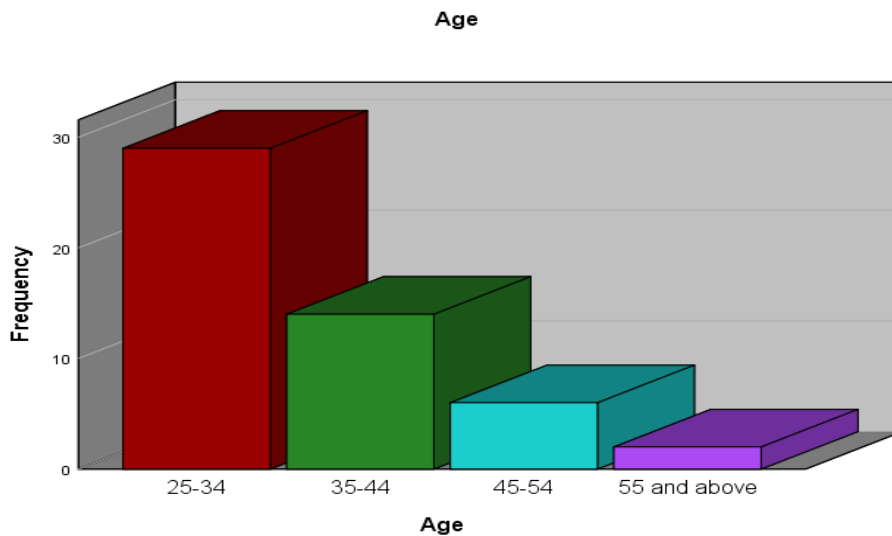


Figure 4. 7 Age Distribution

Source, (Own Survey, 2024)

The overall demographic analysis of the participants indicates that a significant majority, 56.9%, of them fall between the age of 25 and 34. The participant profile of this age group is significantly higher than other age groups, with a remarkable difference between the 25-34 and 35-44 age groups. The age group 35-44 accounts for 27.5% of the participants, which again reflects a relatively lesser percentage of participants compared to those within the age group 25-34. The findings further indicate a decline in representation within the age groups 45-54 and 55 and above, recording 11.8% and 3.9% of the participants, respectively. This set of findings generally suggests that the participants in the study fall within the constraints of young adult participants, the majority of whom are within the age group 25-34. This could perhaps be due to popular design trends towards minimalistic practices, or younger individuals tend to affiliate with design-related fields or show a greater level of concern to design trends.

4.1.4 Educational Level

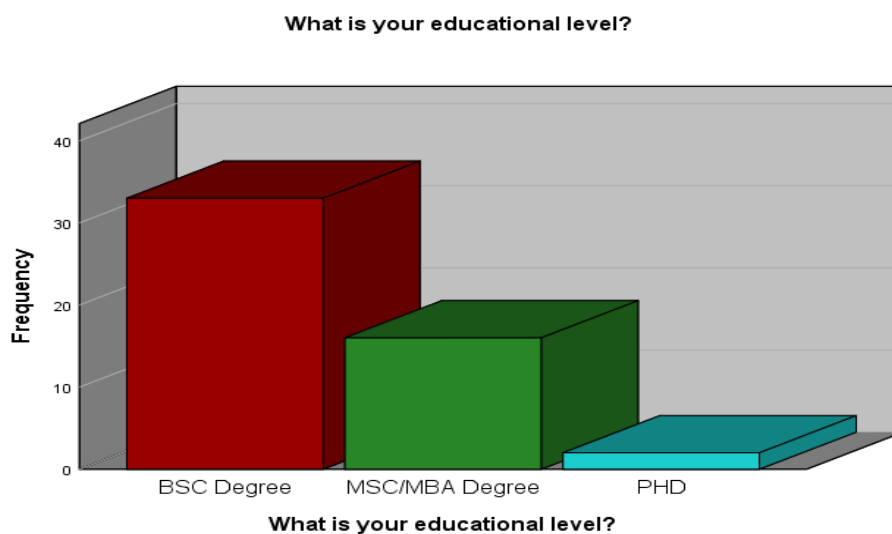


Figure 4. 8 Educational Level

Source, (Own Survey, 2024)

In fact, a small attempt toward an investigation of minimalistic design practice in Addis Ababa, Ethiopia has achieved a very outstanding response rate of 100% from the surveyed population, that is, 51 participants. A clear distribution in the levels of the respondents in terms of educational qualifications comes out from the findings. Of all the respondents, 64.7% have a BSC degree, which shows a high percentage of juniors in the profession and those at the pre-

professional levels. Since it is the second to the least number, 31.4% applies to people with an MSC/MBA degree, and this is quite indicative of a significant number of those at the professional and researcher levels. As shown from the results, only 3.9% possess a PHD, which is indicative of a low but strong number of those at the expert level. This would imply that the survey has accommodated the population properties and hence a good degree of correctness in representing the actual population characteristics. The dominance of BSC levels in the result may thus reflect a particular reliance on the practical aspects of the profession's requirements of skills and training, while the presence of MSC/MBA degrees could reflect the increasing nature of theoretical reliance and importance of research in the field.

4.1.5 Role in the Company

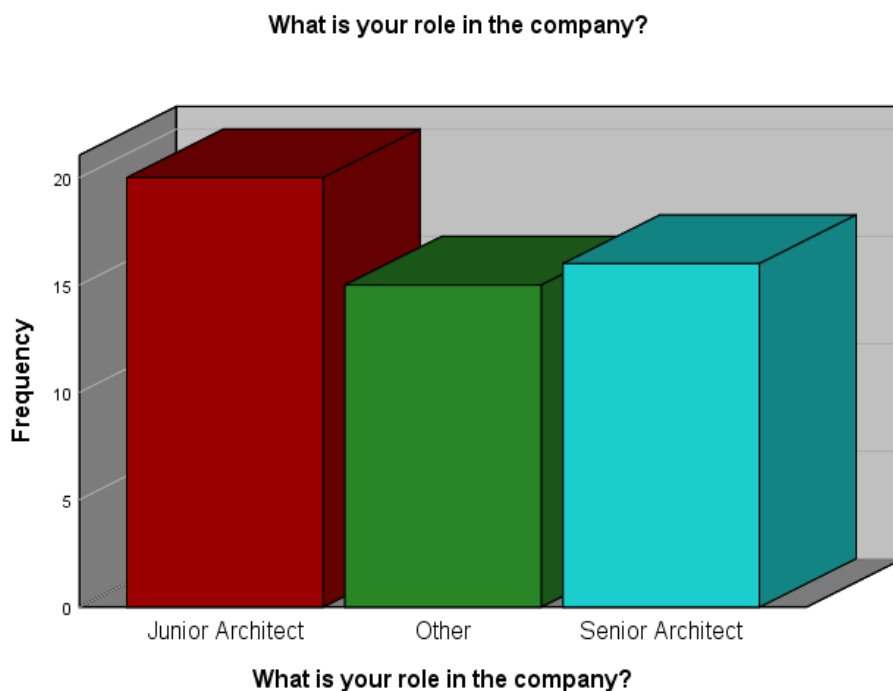


Figure 4. 9 Role in the Company

Source, (Own Survey, 2024)

The results reveal an important composition of respondents with different levels of skills in

minimalistic design practices in Addis Ababa, Ethiopia. The findings show that 39.2% of the respondents are junior architects, 29.4% are "other," clearly including related professionals, and then 31.4% are senior architects. The distribution of gender across these three categories points to the fact that the sample is representative of a highly diverse lot of practitioners but is slightly biased in favor of senior architects. This is important as it allows a more comprehensive understanding of the perspectives and experiences of diverse stakeholders.

4.1.6 Experience of the Respondents



Figure 4. 10 Experience of the Respondents

Source, (Own Survey, 2024)

Distribution of Experience The results of the study point out the existence of a significant percentage experience distribution of respondents in minimalistic practices in Addis Ababa, Ethiopia. The most experienced respondents (sample size of 49.0%) had 1-5 years, followed by those with 6-10 years at 23.5%. This may be indicative that the bulk of the respondents have relatively lower experience and that it translated to significant experience gained across the last 5-10 years. Obviously, quite fewer respondents with less than 1 year (13.7%) or over 15 years (9.8%) fall into this category. This means that there is a large segment of the newest entrants on one side and, on the other, a fleeting presence of experienced professionals. The availability of

varying proportions of experienced respondents has help generate views and opinions to paint a vivid picture of the minimalistic design practice nuances in Addis Ababa. Further, this can be carried out to determine if indeed experience has an association with the practice of design and if, indeed, there is a co-relationship between the number of years of experience and outcomes relating to design and challenges.

4.2 Descriptive Analysis

Descriptive statistics section deals with a summary in which the key features of a data set sample are described: mean, median, mode, and standard deviation. Descriptive statistics, using this data, gives a very brief and informative summary of the data set, which describes the main features of that data. According to NIST, descriptive statistics "provide a summary of the main features of a dataset, such as the central tendency, variability, and distribution of the data" (NIST, 2019). The following sub-sections are considered to discuss the results of the descriptive analysis of the research.

4.2.1 Familiarity with minimalistic design principles

Table 4. 28 Familiarity with minimalistic design principles

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Not familiar at all	1	2.0	2.0	2.0
Not very familiar	18	35.3	35.3	37.3
Somewhat familiar	18	35.3	35.3	72.5
Very familiar	14	27.5	27.5	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey on familiarity with minimalistic design principles in Addis Ababa, Ethiopia, found that a mere 2% of the respondents are unfamiliar at all with the principles. A huge proportion, 35.3%, found the minimalistic design practices not very familiar, and 35.3% of them were somewhat familiar. The remaining 27.5% claimed familiarity with the principles to be very high. These results indicate that generally, there is some level of awareness of minimalistic design

principles among the respondents, but a noticeable in-depth understanding or knowledge of these principles is lacking. It should ring a bell for introducing education and training regarding the optimal level of proficiency in this area in the design community. In addition, the quite low part of the very familiar percentage of respondents to minimalistic design principles may mean that more full and very open resources on these principles, particularly in the context of Addis Ababa, Ethiopia, are to be developed.

Additionally, the response got from the qualitative question was that many professionals are relatively new to minimalistic design principles and thus have limited experience implementing this style in their projects. Also, clients refer to buildings in here and request to be built exactly the same if not quite similarly and this lack of exposure to new trends can lead to a fear of trying out new styles to the industry

4.2.2 Method of learning about minimalistic design principles

Table 4. 29 Method of learning about minimalistic design principles

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Academic coursework	21	41.2	41.2	41.2
Colleagues/Peers	5	9.8	9.8	51.0
have less / no knowledge on it	14	27.5	27.5	78.4
Online resources	6	11.8	11.8	90.2
Professional training	5	9.8	9.8	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey results regarding the means of learning about principles of minimalistic design in Addis Ababa, Ethiopia, show that, in the case of 41.2% of respondents, academic coursework is the primary way of learning. This seems to tell a lot about how subjects in academic schools are a major gateway for accommodating people to minimalistic design principles. The second most common means of learning is having a colleague or a peer informed about the topic: 9.8% of

respondents stated this to be a source of their knowledge. The importance of such learning approaches within the design community is contextualized. Surprisingly, however, 27.5% of respondents pointed out that they have little or no knowledge of minimalistic design principles. It would mean that there is a significant gap in knowledge and understanding in this area. According to this result, it means that there would be a need for further education and training initiatives to complement knowledge deficiency in the sphere. Next comes the Internet, with 11.8% of the respondents citing this as a source of knowledge. It is worthwhile to note that only 6 respondents mentioned online resources as the method of learning, which could perhaps indicate low access to such reliable and relevant resources in the Addis Ababa, Ethiopia, environment. Professional training was mentioned as a means of learning by 9.8% of respondents; hence, this means that formal training programs and workshops can also introduce people to the principles of minimalistic design. The result, therefore, implies the indispensable need for a heterogeneous educational and training approach for minimalistic design principles, which encompasses formal education, peer-to-peer exchange, and online resources.

4.2.3 Extent of minimalistic design principles implementation in the projects

Table 4. 30 Extent of minimalistic design principles implementation in the projects

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Always	3	5.9	5.9	5.9
Never	13	25.5	25.5	31.4
Often	3	5.9	5.9	37.3
Rarely	16	31.4	31.4	68.6
Sometimes	16	31.4	31.4	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The responses to the question on the extent of minimalistic design principles implemented in projects in Addis Ababa, Ethiopia, reveal that only about 5.9% of respondents indicated that they always implement the minimalistic design principles in their projects. That indicates a huge gap

between the awareness and understanding of the minimalistic design principles and their implementation in practice. Most of the respondents, at 25.5%, do not implement minimalistic design principles at all, implying that they are not adopted or integrated into their design practice. A smaller proportion of respondents, at 5.9%, claimed often implementation of minimalistic design principles, against the majority at 31.4% claimed 'rare implementation' and the remaining 31.4% claimed 'some time implementation'. These shall further imply that designers and architects in Addis Ababa, Ethiopia need more training and support on how to implement minimalistic design principles in practice. In this case, workshops, training sessions, and mentorship programs that may be at their disposal to provide practical guidance on the implementation of the principles in their actual projects. Again, this could mean that there seems to be a lack of awareness or understanding of the benefits or the advantages of minimalistic design principles, which might be corrected through programs intended to educate and sensitize the masses. Awareness and understanding of these principles might lead to a rise in the number of their application and implementations.

4.2.4 Type of projects minimalistic design principles primarily applied

Table 4. 31 Type of projects minimalistic design principles primarily applied

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Commercial; Public buildings	1	2.0	2.0	2.0
	Commercial; Public buildings; Industrial	2	3.9	3.9	5.9
	Commercial; Public buildings; Renovation projects	1	2.0	2.0	7.8
	Industrial; Landscape architecture	1	2.0	2.0	9.8
	Landscape architecture	1	2.0	2.0	11.8
	never used	21	41.2	41.2	52.9
	Public buildings	1	2.0	2.0	54.9

Public buildings; Renovation projects	4	7.8	7.8	62.7
Public buildings; Renovation projects; Landscape architecture	1	2.0	2.0	64.7
Renovation projects	5	9.8	9.8	74.5
Renovation projects; Landscape architecture	1	2.0	2.0	76.5
Residential	4	7.8	7.8	84.3
Residential; Commercial	1	2.0	2.0	86.3
Residential; Commercial; Industrial	1	2.0	2.0	88.2
Residential; Commercial; Public buildings	1	2.0	2.0	90.2
Residential; Commercial; Public buildings; Industrial; Renovation projects; Landscape architecture	1	2.0	2.0	92.2
Residential; Commercial; Public buildings; Landscape architecture	1	2.0	2.0	94.1
Residential; Commercial; Public buildings; Renovation projects	2	3.9	3.9	98.0
Residential; Renovation projects	1	2.0	2.0	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey conducted in Addis Ababa, Ethiopia, regarding the type of project where minimalism is primarily executed shows that, first and foremost, 41.2% of respondents have never executed minimalism in a project. It shows there is either a lack of awareness and understanding about the principles of minimalism or that these principles are not being put into practice. Among the

respondents who applied minimalistic design, 62.7% of them deal with public buildings and renovation, pointing to the fact that minimalistic design principles are applied in the projects of public buildings and its renovation. The application is common with projects such as government buildings, schools, and hospitals, and with renovation projects that target functionality and efficiency of buildings. Another common area that has a good percentage of use is residential projects, at 7.8%. However, the use in commercial projects is recorded at 2-3%, together with the use in industrial projects and landscape architecture projects. These results also indicate that the trend is to apply minimalistic design principles to a broad spectrum of project types rather than just in a single project type; for instance, some respondents indicated using the principles in residential and commercial projects, and others in public buildings and renovation projects. As the result follows, there is a general need for education and training concerning minimalistic design principles in public building and renovation projects, and there should be even more opportunities for exploration of them in commercial and industrial projects by designers and architects.

4.2.5 Key features focused when implementing minimalistic design

Table 4. 32 Key features focused when implementing minimalistic design

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 3 color palettes	1	2.0	2.0	2.0
Functionality; Open spaces; Integration with nature	1	2.0	2.0	3.9
Functionality; Use of natural materials; Open spaces;3 color palettes; Integration with nature	1	2.0	2.0	5.9
Never used	20	39.2	39.2	45.1
Open spaces;3 color palettes; Minimal decor	1	2.0	2.0	47.1
Open spaces; Minimal decor; Integration with nature	1	2.0	2.0	49.0
Other (please specify)	2	3.9	3.9	52.9

Simplicity	2	3.9	3.9	56.9
Simplicity; Functionality	2	3.9	3.9	60.8
Simplicity; Functionality; Use of natural materials;3 color palettes	1	2.0	2.0	62.7
Simplicity; Functionality; Use of natural materials;3 color palettes; Minimal decor	1	2.0	2.0	64.7
Simplicity; Functionality; Use of natural materials; Open spaces;3 color palettes	1	2.0	2.0	66.7
Simplicity; Functionality; Use of natural materials; Open spaces;3 color palettes; Minimal decor; Integration with nature	3	5.9	5.9	72.5
Simplicity; Functionality; Use of natural materials; Open spaces; Minimal decor	2	3.9	3.9	76.5
Simplicity; Functionality; Use of natural materials; Open spaces; Minimal decor; Integration with nature	1	2.0	2.0	78.4
Simplicity; Minimal decor	2	3.9	3.9	82.4
Simplicity; Open spaces	3	5.9	5.9	88.2
Simplicity; Open spaces;3 color palettes	1	2.0	2.0	90.2
Simplicity; Use of natural materials;3 color palettes; Minimal decor	1	2.0	2.0	92.2
Simplicity; Use of natural materials; Open spaces; Minimal decor	2	3.9	3.9	96.1
Use of natural materials	1	2.0	2.0	98.0

Use of natural materials; Integration with nature	1	2.0	2.0	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

Key features focused on the implementation of a minimalistic approach to design within Addis Ababa, Ethiopia: In a survey on key features focused on when implementing minimalistic principles of design in Addis Ababa, Ethiopia, simplicity emerged as the most cited feature, where 56.9% of the respondents affirmed that was one of the key features to focus on when implementing minimalistic principles of design. This is followed by open spaces, with 34.9% of the respondents, and functionality, with 29.4% of them. The use of natural materials is also a significant feature, which 22.5% of the respondents consider key to their focus. In addition, integration with nature is said to be one of the salient, key features focused on by 19.6% of the respondents. Other features, such as the 3 color palettes, minimal decor, among others, and features yet not specified, range between a mere 1% and 3.3% of their being mentioned as the key feature focused on. Simplicity, functionality, and the use of natural materials are perceived as the most important features in implementing minimalistic design principles in Addis Ababa, Ethiopia. Still, there is a big gap in awareness and understanding of principles of minimalistic design, and the dimension of training and education might be high in order to adopt and implement them in practice.

4.2.6 Main challenges faced when applying minimalistic design principles in Addis Ababa

Table 4. 33 Main challenges faced when applying minimalistic design principles in Addis Ababa

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Client preferences	4	7.8	7.8	7.8
Client preferences; Lack of skilled labor	2	3.9	3.9	11.8
Cultural considerations	1	2.0	2.0	13.7

Cultural considerations; Client preferences	3	5.9	5.9	19.6
Cultural considerations; Client preferences; Lack of skilled labor	2	3.9	3.9	23.5
Cultural considerations; Economic constraints; Client preferences	1	2.0	2.0	25.5
Economic constraints; Client preferences	1	2.0	2.0	27.5
Lack of skilled labor	1	2.0	2.0	29.4
Material availability	2	3.9	3.9	33.3
Material availability; Client preferences; Lack of skilled labor	2	3.9	3.9	37.3
Material availability; Cultural considerations; Client preferences	3	5.9	5.9	43.1
Material availability; Cultural considerations; Client preferences; Lack of skilled labor	1	2.0	2.0	45.1
Material availability; Cultural considerations; Economic constraints; Client preferences	4	7.8	7.8	52.9
Material availability; Cultural considerations; Economic constraints; Regulatory frameworks; Client preferences; Lack of skilled labor	1	2.0	2.0	54.9
Material availability; Economic constraints; Client preferences	1	2.0	2.0	56.9
Never experienced	19	37.3	37.3	94.1

Regulatory frameworks; Client preferences	1	2.0	2.0	96.1
Regulatory frameworks; Client preferences; Lack of skilled labor	2	3.9	3.9	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey on the key challenges in the application of principles of minimalistic design in Addis Ababa, Ethiopia, finds the following: the application of the principles is not devoid of challenges. Leading the list of challenges, client preferences were mentioned by 7.8% of respondents, who said that the expectations and requirements of clients often conflict with the principles of minimalistic design. The availability of materials was another huge challenge, again cited by 7.8% of respondents. Material availability that attains the principles of minimalistic design can, therefore, be problematic. Cultural considerations ranked next, cited by 5.9%, noting that cultural norms and traditions both influence design decisions and set up a potential gain or conflict with minimal design principles. Economic implications cushioned another 5.9% of the responses, meaning that it can be a challenge to stick to these principles if proper budgeting and planning are not put into place. Lack of skilled labor rated 3.9% of challenges and necessitates special skills and expertise to use and install minimalist design principles.

Furthermore, from the VD survey, it was identified that a large part of these challenges almost always intersects and overlap in such a way that implementing minimalistic design principles could be even more daunting. For instance, the client preference could be influenced by cultural considerations, and on the other hand, economic constraints limit material availability. Indeed, the survey indicates that to practice minimalistic design principles in Addis Ababa, due consideration of these complex challenges and the deep understanding of the context, cultural norm, and client preference are quite demanding.

4.2.7 Opportunities do you see for integrating minimalistic design in Addis Ababa

Table 4. 34 Opportunities do you see for integrating minimalistic design in Addis Ababa

	Frequency	Percent	Valid Percent	Cumulative Percent
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Valid	Cost savings	5	9.8	9.8	9.8
	Cost savings; Addressing urban density	1	2.0	2.0	11.8
	Cost savings; I don't see any opportunities	2	3.9	3.9	15.7
	Enhancing functionality	1	2.0	2.0	17.6
	Enhancing functionality; Addressing urban density	1	2.0	2.0	19.6
	Enhancing functionality; Cost savings	3	5.9	5.9	25.5
	Enhancing functionality; Reducing environmental impact; Cost savings	1	2.0	2.0	27.5
	I don't see any opportunities	13	25.5	25.5	52.9
	Improving aesthetic appeal	2	3.9	3.9	56.9
	Improving aesthetic appeal; Cost savings	1	2.0	2.0	58.8
	Improving aesthetic appeal; Cost savings; Addressing urban density	2	3.9	3.9	62.7
	Improving aesthetic appeal; Reducing environmental impact; Cost savings	2	3.9	3.9	66.7
	Promoting sustainability; Cost savings	2	3.9	3.9	70.6
	Promoting sustainability; Enhancing functionality; Improving aesthetic appeal; Cost savings	1	2.0	2.0	72.5
	Promoting sustainability; Enhancing functionality; Improving aesthetic appeal; I don't see any opportunities	1	2.0	2.0	74.5

Promoting sustainability; Enhancing functionality; Improving aesthetic appeal; Reducing environmental impact; Cost savings	3	5.9	5.9	80.4
Promoting sustainability; Enhancing functionality; Improving aesthetic appeal; Reducing environmental impact; Cost savings; Addressing urban density	1	2.0	2.0	82.4
Promoting sustainability; Enhancing functionality; Improving aesthetic appeal; Reducing environmental impact; I don't see any opportunities	1	2.0	2.0	84.3
Promoting sustainability; Improving aesthetic appeal	1	2.0	2.0	86.3
Promoting sustainability; Improving aesthetic appeal; Cost savings	2	3.9	3.9	90.2
Promoting sustainability; Improving aesthetic appeal; Reducing environmental impact; Cost savings	1	2.0	2.0	92.2
Promoting sustainability; Reducing environmental impact	3	5.9	5.9	98.0
Promoting sustainability; Reducing environmental impact; Cost savings	1	2.0	2.0	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey provided various possibilities concerning the benefits and applicability of minimalistic design in Addis Ababa, Ethiopia. With regard to costs, the respondents indicated that the major opportunity posed by minimalistic designs would be the cost-saving aspect, at

9.8%. This is likely because minimalistic design tends to involve a reduced number of materials, hence lower costs for the entire process, from construction to decoration. Another major opportunity cited by the respondents is the fact that minimalistic design enhances functionality, at 5.9%. There may be improved functionality since minimalistic design often aims at minimizing space, thus providing a more efficient and effective utilization of space.

In addition to being cost-effective and functional, the respondents perceived minimalistic design to be an opportunity for sustainability, with 5.9% of the respondents citing this as a benefit. This may be because minimalistic design usually uses eco-friendly and environmentally friendly materials to reduce carbon footprint. Although a high proportion of 25.5% of the respondents found no opportunity in integrating minimalistic design in Addis Ababa, for those having found opportunities, improving aesthetic appearance, addressing low urban density, and reducing environmental impact were some of the potential benefits cited. The results of the survey show that minimalistic design could be beneficial to Addis Ababa on many levels: it could potentially be very cost-effective and at the same time provide solutions for better functionality and sustainability.

4.2.8 Support from current regulatory frameworks in Addis Ababa in implementing minimalistic design principles

Table 4. 35 Support from current regulatory frameworks in Addis Ababa in implementing minimalistic design principles

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	9	17.6	17.6	17.6
Disagree	19	37.3	37.3	54.9
Neutral	18	35.3	35.3	90.2
Agree	5	9.8	9.8	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

These are some blocked perceptions regarding the level of support by the current regulatory

frameworks in Addis Ababa, Ethiopia, towards the implementation of the use of minimalistic design principles. Correspondingly, 37.3% view the current regulatory frameworks in Addis Ababa as is unsupportive of the minimalistic design principle. Also 17.6% viewed the frameworks as very unsupportive. 35.3% of the respondents found the frameworks of a neutral measure, reflecting the lack of a support or influence on the adoption of minimalistic design principles. On the other hand, 9.8%, has a positive thought toward the style. Which is very minimal and subjective. The key finding is that there is hardly a level of support from the current regulatory frameworks in Addis Ababa and this has to be further studied in the future to know the effect if it was applicable to its fullest potential.

4.2.9 Alignment of Minimalistic design with Ethiopian architectural aesthetics

Table 4. 36 Alignment of Minimalistic design with Ethiopian architectural aesthetics

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very well	4	7.8	7.8	7.8
Somewhat well	16	31.4	31.4	39.2
Neutral	15	29.4	29.4	68.6
Not very well	14	27.5	27.5	96.1
Not well at all	2	3.9	3.9	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey on the above reveals that respondents do not hold a unanimous opinion on the connection of minimalistic design with Ethiopian architectural aesthetics. The survey indicates that there is an increasing opinion that indeed minimalistic design somehow aligns with Ethiopian architectural aesthetics, with a very big proportion (31.4%) indicating that, a smaller proportion (7.8%) saying it very well aligns with this aesthetics. Subsequently, a large number of respondents, 29.4%, believe minimalistic design is neutral to aligning with Ethiopian architectural aesthetics, which implies that there is not enough connection to that attribute. The second-largest group of respondents, 27.5%, reported minimalistic design does not align properly with Ethiopian architectural aesthetics, and a tiny share, with only 3.9%, thought that it does not

align at all. The indicated survey suggests that although there is some recognition that there might be a potential for an alignment of minimal design with Ethiopian architectural aesthetics, more in-depth exploration and an understanding of the nuances and complexities of this relationship may be necessary.

4.2.10Response of clients to minimalistic design proposals

Table 4. 37 Response of clients to minimalistic design proposals

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Disagree	17	33.3	33.3	33.3
Disagree	21	41.2	41.2	74.5
Valid Neutral	9	17.6	17.6	92.2
Agree	4	7.8	7.8	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

In the survey, the response of the clients toward the minimalistic design proposals identifies that the majority of the responses, which is 74.5%, indicate a negative response from the clients. To be exact, 41.2% showed that the responses from the clients are negative, while 33.3% were strongly negative. A smaller percentage of people, 17.6%, felt that the clients' response is quite neutral regarding minimalistic design proposals, which present an ordinary reaction or opinion. A slightly smaller percentage of respondents (7.8%) indicated that clients have a somewhat positive response; accordingly, not all clients may necessarily regard minimalistic design proposals. Surprisingly 0% has been voted for a strongly agree client who support minimalistic style using local material and simplified as well as monochromatic color.

A clear earring of minimalistic design proposals towards getting negative response from clients

may relate to a unexplored trend and negative growth in the industry

The qualitative data has helped define the reason why there is too much rejection from the clients, it has given answers as follows, the clients usually have referred and looked for an inspiration before they consult a professional for the general style of the building and therefore what they have in mind is usually very different from what shall be done realistically, this western influence not only affected the client but also the professionals too. To mitigate this problem awareness about the local material and environment has to be given in order to correct the drawback of this issue.

4.2.11 The blending level of using local material (Existing material) and Minimalistic approach

Table 4. 38 The blending level of using local material (Existing material) and Minimalistic approach

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Highly blend and usable	10	19.6	19.6	19.6
Neutral and can be modified as per the need	25	49.0	49.0	68.6
Not suitable for minimalistic approach	10	19.6	19.6	88.2
Other (please specify)	6	11.8	11.8	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The results of the investigation carried out on the blending level of using local materials and minimalistic design practices in Addis Ababa, Ethiopia show a gradient kind of response. Taken together, the findings mean that 19.6% of the respondents strongly blend local materials in a purely minimalistic design approach as usable and effective in their built environments. This means that there is a significant group of designers and architects who do integrate local materials effectively but maintain the aesthetic of minimalism. The second response (49.0%)

strongly indicates that local materials are in a neutral position, to be adjusted or changed as the situation or use demands. This might indicate that there is a willingness to consider local materials, but only with a flexible and adaptable mind. Besides, 19.6% of the respondents said that local materials are not fit for minimalistic design approaches, hence showing there might be difficulties or there are limitations. And the 11.8% reported that they used local materials in a way that does not fall into any of the above, which could indicate the presence of alternative methods or approaches. While the desire to utilize local materials is strong, challenges and limitations exist, which yet have to be met to gain successful minimalistic designs incorporating local materials.

4.2.12 Frequency of local materials usage in minimalistic designs

Table 4. 39 Frequency of local materials usage in minimalistic designs

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Always	2	3.9	3.9	3.9
I never used minimalistic	12	23.5	23.5	27.5
Never	7	13.7	13.7	41.2
Often	3	5.9	5.9	47.1
Rarely	16	31.4	31.4	78.4
Sometimes	11	21.6	21.6	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The distribution of frequency of utilization of materials in minimalistic designs in Addis Ababa, Ethiopia, is shown in Table 4.14. It is clear to see that respondents always use local materials in designs about 3.9% of the time, while 23.5% of them never source local materials. This number is observed to be around 31.4% rarely, and for a positive case, 21.6% occasionally use local materials. The use of local materials for minimalistic design in Addis Ababa is somewhat relatively very low. The majority of them, 78.4%, reported that they rarely or occasionally use

local materials in their design practice, which is by no means acceptable when design is approached through sustainability principles. This has implications for the design practice in the region in developing sustainable, environmentally friendly design practice. Another key point that emerges is the promotion of the idea of using local materials in minimalistic design practices. This can be achieved by various incentive methods or policies that encourage local materials and by educational awareness raising. Designers and architects, using local materials on more frequent instances, should nurture levels of application and bring the forthcoming levels of sustainability in the built environment in Addis Ababa into effect.

The data collected from the qualitative question implies that there are two types of materials used in minimalistic, foreign yet minimalistic materials and local materials and the professionals has responded that foreign materials are mostly not easily available in here. While the local materials are available but due to lack of skilled workers and lack of interest, the architect do not practice it as it should be. This lack of interest developed from the effect of the western world.

4.2.13 Integrating minimalistic design to cost savings for construction projects in Ethiopia

Table 4. 40 Integrating minimalistic design to cost savings for construction projects in Ethiopia

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very likely	15	29.4	29.4	29.4
Likely	12	23.5	23.5	52.9
Neutral	12	23.5	23.5	76.5
Unlikely	6	11.8	11.8	88.2
Very unlikely	6	11.8	11.8	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The finding of the study highlights that the adoption of minimalistic design practices in Addis Ababa, Ethiopia is connoted as a viable measure through which cost can be saved in construction projects. The maximum number of respondents, representing nearly 29.4% of the sample,

indicate that integrating minimalistic design practices is very likely to lead to cost savings. The majority, about 23.5%, is likely to be neutral about the idea. More exactly, they argue that they are neither likely nor unlikely to agree with the proposition. It could be possible that such respondents either do not hold enough information about the subject or in the context of Addis Ababa, minimalistic design practices are not common. However, it could also be true that a significant section of the respondents, i.e. 11.8%, is likely to be "unlikely" or "very unlikely" to agree with the idea that integrating minimalistic design is likely to derive cost-saving advantages. This might be due to several reasons, such as the likely appearance of minimalistic design and functional drawbacks, and so on.

4.2.14 Descriptive statistics of preference during renovation

Table 4. 41 Descriptive statistics of preference during renovation

	N	Mean	Std. Deviation
You prefer Natural Light and Shadow	51	3.82	1.053
You often use natural material and limited and monochromatic color in your projects	51	3.14	1.184
Open spaces are key components in your design philosophy	51	3.08	1.262
You believe less is more in the context of architectural design	51	3.06	1.207
You emphasize simplicity and basic geometric shape in your architectural design	51	2.88	1.143
You prioritize functionality over decoration.	51	2.75	1.181
Ethiopian architectural aesthetics, construction techniques promote minimalistic design,	51	2.53	1.155
Valid N (list wise)	51		

Source, (Own Survey, 2024)

The resolution of the descriptive statistics of preference during the renovations gives a clear inclination to minimalism design practices. The highest mean score of the statement "You prefer

Natural Light and Shadow" (3.82) is seen among the respondents, portraying the fact that the respondents have robustly valued the use of natural light and shadow in their design projects. The use of natural materials is important to the respondents, together with limited use of colors, preferably monochromatic, also scoring high, at 3.14 in average means. It might indicate that simplicity and restraint in design might hold a high rank among participants. The score for the importance of open spaces in the design philosophy is also high, at an average of 3.08. This makes evident the importance of creating free spaces allowing unreserved movement and interaction. The need for simplicity in eliminating unnecessary stuff on architectural design in a manner true to the saying "less is more" gets a mean score of 3.06. This hence gives the first priority to the need to have buildings and people-friendly spaces that are simple but not cluttered. More so, the functionality aspect gets a score of 2.75 in regard to what matters and should be concentrated on rather than decoration. This, therefore, emphasizes more on spaces created that are functional and practical and not necessarily spectacular or aesthetic. The respondents also agree on the influence of Ethiopian architecture aesthetics and construction on promoting a minimal approach, with a mean of 2.53. This emphasizes cultural and contextual aspects in defining some design preferences. This insight into the existing design preferences and values of architects and designers from Addis Ababa gives solid values for minimal design trends.

4.2.15 Promoting sustainability

Table 4. 42 Promoting sustainability

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Low Impact	5	9.8	9.8	9.8
low Impact	11	21.6	21.6	31.4
Average Impact	14	27.5	27.5	58.8
High Impact	14	27.5	27.5	86.3
Very High Impact	7	13.7	13.7	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The opportunity to promote sustainability has a moderate-to-high impact on integrating

minimalistic practices, as can be deduced from the survey results. Only 27.5% of respondents rate this opportunity as High, and merely 13.7% say it is to be Very High. This may be an indication that both designers and stakeholders realize the significance and importance of integrating principles of sustainable design in their line of activity. On the other hand, the opportunity to enhance functionality displays a comparatively low impact on a High/Very High assessment made by the respondents, with only 21.6% and 13.7% indicating such a potential. This can be due to the existing infrastructure and cultural setting in Addis Ababa, which based on the results, concerns functionality rather than appearance. Finally, the opportunity to enhance visual beauty has a very low rate of impact on the integration of minimalistic design with only 9.8% of respondents rating it to have a Very Low Impact. This can be due to the reason that visual beauty is always a more or less subjective and culturally dependent characteristic and hard to factor in as a determinant of minimalistic design. The results indicated that promoting sustainability is a key opportunity in integrating minimalistic design practices in Addis Ababa, Ethiopia. Significantly, a substantial proportion of respondents reflected that this could be of high impact on societal needs.

4.2.16 Enhancing functionality

Table 4. 43 Enhancing functionality

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Low Impact	6	11.8	11.8	11.8
low Impact	13	25.5	25.5	37.3
Average Impact	15	29.4	29.4	66.7
High Impact	12	23.5	23.5	90.2
Very High Impact	5	9.8	9.8	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey data suggests that enhancing functionality has a moderate to high impact on integrating minimalistic design practices, where – 23.5% of all the respondents, in total, have perceived this as a High Influence; 9.8% have perceived it to have a Very High Influence. This

means that designers and stakeholders in Addis Ababa realize the impact that integrating functional design principles has on their work. In contrast, the frequency of respondents rating this particular opportunity of incorporating minimalistic design practices to have a High Influence or a Very High Influence is relatively higher – 27.5% and 13.7% of the respondents, respectively, feel this has an impact. This may be mainly due to pre-existing societal and ecological problems in Addis Ababa, which emerge to be more vital, with sustainable design emerging as a frontrunner in their priorities. Similarly, data also shows that improving the aesthetic appeal has a relatively limited impact on integrating minimalistic design practices – only 9.8% of the respondents have rated this particular influence to have a Very Low Influence. This suggests that the aesthetic appeal does not emerge as a core concern for designers and stakeholders in Addis Ababa to approach minimalistic design practices.

4.2.17 Improving aesthetic appeal

Table 4. 44 Improving aesthetic appeal

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very Low Impact	8	15.7	15.7	15.7
low Impact	13	25.5	25.5	41.2
Average Impact	14	27.5	27.5	68.6
High Impact	9	17.6	17.6	86.3
Very High Impact	7	13.7	13.7	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

The survey shows that the aesthetic improvement opportunities have the median impact on incorporating minimalistic design practices. Data in the bar chart show that 13.7% of respondents recognize great potential for the factor "improving aesthetic appeal" and rate it Very High, while 17.6% have it rated High. It can be seen that both completely make sense because landscape designers in Addis Ababa can be influenced by other factors ranging from time and

cost constraints to cultural preferences of the region regarding landscape design. It is also shown that for 15.7% of respondents, improving aesthetic appeal is rated Very Low. This is a considerable rate, which can be interpreted that other respondents have really different priorities in their design work. This may primarily be attributed to cultural and contextual factors in Addis Ababa, which puts functionality and practicality in design on a pedestal, before aesthetic appeal. Contrary, the frequencies for the respondents to rate the opportunities to improve the sustainability and enhance the functionality options as High and Very High are relatively higher, with 27.5% and 23.5% indicating the potential. This implies that minimalistic landscape design in Addis Ababa might be informed and driven more by other factors, with sustainability, in this case, being of higher importance.

4.2.18 Company tradition towards application of some features

4.2.18.0 Simplicity

Table 4. 45 Simplicity

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Very low	8	15.7	15.7	15.7
low	12	23.5	23.5	39.2
Average	18	35.3	35.3	74.5
high	10	19.6	19.6	94.1
very high	3	5.9	5.9	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

It can be stated that 35.3% of all the respondents rate the company tradition in simplification at the level of Average, which means that in a significant part of the organizations in Addis Ababa simplicity is important in design work. The results also show that 19.6% rate the company tradition in simplification as High; this means that in significant parts of the companies in Addis Ababa, there is a strong attachment to this principle in design work. This may be due to cultural and other factors that relate to Addis Ababa, where simplicity is cherished for its efficiency and practicality. On the other hand, 15.7 indicated Very Low toward the company tradition in simplification. This means there is a possibility of some companies in Addis Ababa not

interested in this principle; that is caused by some different reasons, including attention to esthetic or functional problems that are much more important and apparent.

4.2.18.1 Natural and neutrality

Table 4. 46 Natural and neutrality

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very low	5	9.8	9.8	9.8
low	23	45.1	45.1	54.9
Average	16	31.4	31.4	86.3
high	4	7.8	7.8	94.1
very high	3	5.9	5.9	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

This means that company tradition towards natural and neutrality reflects a moderate application of natural and neutral design features in Addis Ababa, Ethiopia. It can thus be derived from data represented that a huge lot of companies in Addis Ababa have most probably prioritized the application of natural and neutral design elements while doing their work, since as many as 45.1% of the respondents have considered the company tradition towards natural and neutrality to be Low. It was also seen from the results that 31.4% of the respondents rated the company tradition towards natural and neutrality as being Average, suggesting that in Addis Ababa, some companies do have moderate commitments toward natural and neutral designs. This could have a cultural or even contextual backing within Addis Ababa, with nature and simplicity being considered beautiful to the eye and giving an emotional appeal. On the contrary, 9.8% of the respondents' rate company tradition towards natural and neutrality as Very Low, indicating that probably steering towards other priorities other than natural and neutral elements in work might get other companies busy in Addis Ababa. This could be due to the focus of aesthetics or functionality first while natural principles may be considered less important. This could be because aesthetics or functionality may be of higher importance than the natural and neutral design rules.

4.2.18.2 Basic Geometric Shapes

Table 4. 47 Basic Geometric Shapes

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Very low	5	9.8	9.8	9.8

low	16	31.4	31.4	41.2
Average	17	33.3	33.3	74.5
high	11	21.6	21.6	96.1
very high	2	3.9	3.9	100.0
Total	51	100.0	100.0	

Source, (Own Survey, 2024)

According to the survey results, regarding the application of basic geometric shapes in Addis Ababa, Ethiopia, most participants agreed that the company tradition towards basic shapes is moderate to high. Here, the data indicates that 33.3% rated this variable at an average level, which means most companies in Addis Ababa put a high value on the application of basic geometric shapes in their design work. In addition, the result spells out that 21.6% of respondents rate this variable at a high level, which can clearly state that some companies in Addis Ababa have a very high concern for adhering to the use of basic geometric shapes in their design work. In the light of this, 9.8% of the respondents rated the company tradition towards basic geometric shapes as Very Low, indicating that some companies in Addis Ababa might not consider the use of basic geometric shapes highly in their design work. This would either be due to cultural or contextual factors in Addis Ababa, where a concern for simplicity and clarity is saliently valued for efficiency and ease of use. On the contrary, 9.8% of respondents reflect that the company tradition towards basic geometric shapes is Very Low, meaning some companies within Addis Ababa may not prioritize the use of basic geometric shapes in their design work. This could be contributed to many factors—for instance, the aesthetics or functionality that may take priority over basic geometric shapes.

4.2.18.3 Open Spaces

Table 4. 48 Open Spaces

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very low	5	9.8	9.8	9.8
	low	16	31.4	31.4	41.2
	Average	20	39.2	39.2	80.4
	high	10	19.6	19.6	100.0
	Total	51	100.0	100.0	

Source, (Own Survey, 2024)

Company culture emphasizing open space is moderately reflected in the use of open spaces in design projects in Addis Ababa, Ethiopia. In detail, 39.2% of the respondents stated that the company culture focused on open spaces that were of average rating. This implies that in Addis Ababa, a lot of firms place a high importance on including open space in their design work. Moreover, 19.6% of the respondents rated the company culture at a high level, and this points to the fact that most of the companies in Addis Ababa are highly committed to using open spaces in design projects at Addis Ababa. This may be most likely due to cultural—or even contextual— aspects in Addis Ababa, which promote the values of natural lighting, ventilation, and spatial clarity for its aesthetic and functional improvement. Paradoxically, 9.8% of the respondents rated company culture as very low, meaning some companies in Addis Ababa might not give much priority to the use of open spaces in design work. This may be due to factors such as focusing on density, functionality, or even budgeting that may suppress the use of open spaces. This would strongly suggest that company culture has at least a moderate influence if the use of open spaces in design projects is to be re-emphasized among respondents; thus, recognizing its importance in the design domain.

4.2.19 Challenges and Limitations of Minimalistic approach

4.2.19.0 Limitation of applying Minimalistic architecture in the company

Table 4. 49 Limitation of applying Minimalistic architecture in the company

	N	Mean	Std. Deviation
Cost	51	3.84	1.120
Stakeholder Engagement	51	3.49	1.447
Complexity of using materials for renovation	51	3.39	1.078
Adequate education and training for project team members	51	3.39	1.282
Limited adaption	51	3.37	1.326
Organizational Culture	51	3.31	1.208
Project Size and Complexity	51	3.04	1.113
Technology Infrastructure	51	2.90	1.253
Compatibility	51	2.86	1.200
Lack of standardization	51	2.82	1.195
Legal and Contractual issues	51	2.61	.981
Valid N (list wise)	51		

Source, (Own Survey, 2024)

The findings from the survey showed how difficult or limiting some elements are for companies when adopting a minimalistic approach to architecture. The most limiting factor is the cost of

implementing a minimalistic approach, with a mean score of 3.84. Basically indicating companies could be skeptical of the approach, basing it on financial grounds. Seconded, stakeholder engagement, with a mean score of 3.49, indicates that the ability of companies to communicate and cooperate with different stakeholders—most of whom may not be acquainted with or receptive to minimalistic architectures—provides for effectual stakeholder management in attaining a minimalistic approach.

A considerable limitation is also represented by the complexity in material usage for renovation, whose average score is 3.39, meaning companies might face problems in the selection and application of renovation material, which could be a significant impediment to adopting a minimalist approach. The other key limitations that were identified are: adequate education and training for the team members, adaptation, organizational culture, project size and complexity, technology infrastructure and compatibility, standardization, and legal and contractual. All these limitations present mean scores in the range of 2.61 to 3.84, meaning they are equally major challenges that the companies are likely to face in implementing a minimalist approach fundamentally. Therefore, from the survey, it is observed that such limitations are bound to be faced by these companies and thus need to be considerably addressed for effective implementation. Conclusively, the findings from this survey have established that companies adopting a minimalist approach in architecture are likely to face a range of challenges, demanding that such challenges be clearly understood to enable companies to develop effective approaches towards overcoming them and successfully adopting a minimalist approach in architectural works.

4.2.20 Measures that can improve the implementation of minimalistic approach in the construction industry

Table 4. 50 Measures that can improve the implementation of minimalistic approach in the construction industry

	N	Mean	Std. Deviation
Training and education programs	51	3.57	1.500
Improved collaboration between stakeholders	51	3.49	1.515
Government initiatives and incentives	51	3.33	1.424
Integrating with other technologies	51	3.14	1.265
Standardization	51	2.92	1.324
Valid N (list wise)	51		

Source, (Own Survey, 2024)

The survey results also denote measures for improving the implementation of a minimalistic approach by the construction industry. The highly identified measure is that of provision for the training and education programs, with a mean of 3.57. This means companies believe that through training their employees and stakeholders, they can understand the benefits and the practices of minimalistic architecture better; therefore, this will help in improving its adoption. The second important measure is improved collaboration between stakeholders, with a mean of 3.49. It implies that companies recognized the role of effective communication and teamwork in the successful implementation of a minimalistic approach. Therefore, this highlights the necessity for companies to promote a culture of collaboration and openness within the organizations. Government initiatives and incentives are also marked as a critical measure with a mean of 3.33. This means companies believe that the interface level of government support and motivation can help in driving the implementation of minimalistic architecture in the construction industries. The integration of minimalistic architecture with other technologies, for example, building information modeling, is another important measure, with a mean of 3.14. This implies that companies recognize the multifaceted benefits of combining minimalistic architecture with other technologies for improved efficiency and cost reduction. Finally, standardization is also regarded as an important measure, with a mean of 2.92. This indicates that companies believe standardizing in terms of clear guidelines and standards will help in improving the adoption of the minimalistic approach and in lessening errors. The survey results indicate that there are several measures that can effectuate improvements in the effective implementation of a minimalistic approach in the construction industry. Through adopting these measures, companies can overcome challenges that emanate from the adoption of this approach and eventually reap the benefits.

And to summarize the qualitative response of the clients, the majority of clients strongly preferred decorative styles reminiscent of common Ethiopian architectural tradition elements in designing the buildings rather than minimalist design. Influenced by local aesthetics and cultural norms, they craved vibrant colors, intricate patterns, and richly decorative detailing in the designs. Besides, minimalism correlated with Western design principles and woke no recognition, falling in line with the idea of their houses and living spaces.

Heavy decorative styles, which had prominent followers, catered to Ethiopian clients since they already had visual richness, warmth, and cultural value. Another thing was the use of local materials and construction techniques, reflecting Ethiopian heritage and artisanry. They wanted spaces that could feel inviting, warm, and welcoming of their cultural identity, with traditional house motifs, textiles, and artworks.

Although the glamorous look of decorative styles lures most clients, there is an interest among them in minimalist design principles, which include increased functionality, space efficiency, and maintenance cost reduction. But even in this respect, they were afraid of totally succumbing to this concept, as a major loss of cultural authenticity and homey spirit could be inevitable.

Within the context of societal needs and sustainable development, such a compromise between decorative styles, eco-friendly practice, and locally produced materials is seen. They value: Increased functionality in minimal and decent size, ensuring efficient utilization of space and a reduction in maintenance costs, trying to gain through minimalism the priceless qualities of increased functionality, space efficiency, and maintenance cost reduction. They have been underlining the importance of keeping the architectural tradition of Ethiopia, satisfying their necessities and trends in modern sustainability.

Minimalist design, appreciated by clients for its practicality and space efficiency, contrasted with their strong preference for decorative styles, which show the thirst for saving cultural continuity and connection with the roots in the Ethiopian built environment. Cultural identity and local context should be core values in creating a balanced legacy for modern design adaptation in the local setting.

CHAPTER FIVE

5 SUMMERY, CONCLUSIONS, RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

This study sought to identify and analyze the challenges faced by Grade One consultant firms in managing minimalistic architectural design projects in Addis Ababa. Through comprehensive research methodologies, including literature review, expert interviews, and case studies, several key findings emerged, which are detailed below:.

5.2 SUMMARY OF RESULTS FROM THE STUDY

5.2.1 Challenges in Adopting Minimalistic Design

One of the major challenges identified in this section or categories is sourcing materials that best adhere to minimalistic design principles. Most materials very essential for designs that are minimalistic, like certain types of high-quality finishes, minimalist fittings, and modern building technologies, are relatively scarce or not ready available in the local market. This forces firms, in most cases, to import most of the materials, hence increasing the cost of a project and its timeline. Even when locally sourced materials are available, most of the time their quality and appropriateness for minimalist designs are always in question, which might affect the aesthetic and functional delivery of the projects.

The challenge of cultural and societal resistance is also raised by the study. Most minimalistic designs are characterized by simplicity and lack of ornamentation, which, in some contexts, may not accord with the local culture where more elaborate and decorative architecture is preferred. Major clients and other stakeholders in Addis Ababa are inclined towards tradition design features, which will make it hard for any firm to try and propagate and employ the minimalistic design. There still is a sort of cultural perception that correlates minimalism with a lack of austerity or luxury, hence clients' unwillingness to associate value and prestige with more ornate designs.

The second most significant constraint that came out of the study was economic in nature. By their very nature, minimalistic designs could have lower long-term sentences due to simplicity and efficiency. Nevertheless, there is usually a larger upfront investment in specialized materials, skilled labor, and design expertise needed. This is off-putting for not a few clients, more

especially when one considers the context of a developing country where cost constraints are already tight enough. Moreover, most clients have not been made to understand the long-term economic benefit that comes with the minimalistic designs, which is why they are still unwilling to transform themselves by adopting minimalistic design approaches, be it reduced maintenance costs or energy efficiency.

The findings of this study indicate that the present regulatory regime in Addis Ababa, in most cases, is ambiguous, and lacks specific guidelines and support for the implementation of minimalism design principles. Such ambiguity indeed complicates the process of project management, and firms are forced to pass through a landscape that does not have explicit support or facilitation of minimalistic designs. Navigating through the existing regulatory environment can be full of delays, which further adds to the cost and timelines of the project. This is really tough for innovative design projects, which demand very flexible and adaptive approach from regulation.

Yet another challenge is the wide variations in perception and acceptance of minimalistic design on the part of clients. Most clients remain unaware of the actual advantages in minimalistic architecture and hence tend to be rather skeptical about such designs. This reluctance possibly ensues from the misconception that minimalism is stark, straightforwardly simplistic. In this respect, unremitting effort towards the education of clients regarding the huge functionality, aesthetic appeal, and even long-term cost-saving potential that minimalism can offer also becomes an important part of the process. Firms that have put in effort to educate their clients about such benefits usually face less of a problem in getting projects approved.

It finally enumerates various strategies adopted by the successful Grade One consultant firms to surmount these challenges. Such firms have built strong relationships with local and international suppliers to ensure the availability of quality materials needed in the minimalistic designs. This is very important in managing expenses and timelines. Some of these firms, in turn, actively involve themselves in advocacy works, which help in changing certain policies that could support minimalist design principles. This includes working with regulatory bodies to work out more flexible and supporting guidelines for new architectural practices. heavy investment in client education and clearly explaining the added value and practicalities of a minimalistic design has also been used to great effect. Those firms that put a premium on open communication and

involve clients every step of the way in the design and construction process experience very few problems.

These findings point out the multifaceted challenges and provide a foundation for developing useful recommendations toward best practice in the management of minimalistic architectural design projects in Addis Ababa. From this research, Grade One consultant firms will be able to enhance their strategies toward more efficient and culturally integrated minimalistic designs within Addis Ababa's urban setup.

5.2.2 Measures to Improve Implementation

Critical Appraisal on Adopting Minimalistic Design Several key measures were identified to address the challenges in adopting minimalistic design. The topmost recommendation was investment in training and education programs, which gained the highest support through a mean score of 3.57. The programs are essential for increased proficiency and understanding of minimalistic design principles by architects and other professionals. Training initiatives fill in the gap between awareness and practical application of greater skills and knowledge. Workshops, seminars, and certification courses are on such an understanding from conceptual knowledge to material understanding and costing components of minimalistic design. By equipping professionals with essential tools and techniques, educational efforts will greatly enhance the quality and consistency of minimalistic design projects.

Another important measure was improved collaboration between stakeholders, which scored an average of 3.49. This builds on better communication and cooperation in various groups involved in any project: owners, architects, contractors, and suppliers. More interactive and cooperative collaboration ensures that all stakeholders get in tune with the goals of the project and understand the pros and cons of minimalistic design. This can be done through regular meetings, open communication channels, and collaborative decision-making. Grouping stakeholders to work together on the potential problem, streamline workflow, and production, which will bring out the desired product that exactly depicts the design vision – with improved collaboration, one can smoothly manage the customer's expectations while building trust, both of which are key to the successful realization of a project using minimalistic design principles.

Government policies and incentives were also considered to be important, featuring a mean score of 3.33. Favorable government policies can overcome some of the financial and logistical barriers to the adoption of minimalistic design. This may include financial bonuses such as grants, subsidies, or tax benefits for projects integrating minimalism principles. Indeed, this may have additional support through policy implementation, changes, and clear cutting of guidelines and standards for the adoption of minimalistic design. By easing regulation, the government will encourage more firms to adopt these principles and ensure projects are efficiently and properly developed. Public-awareness campaigns and educational drives can also be used as a tool to inculcate the benefits of minimalistic design among different audience classes that include probable clients as well as common citizens. These collective efforts made by the government will definitely bring in a supportive atmosphere for the adoption of minimalistic design and lead to more sustainable and cost-efficient architectural practices.

5.3 CONCLUSIONS

This study has provided a comprehensive analysis of the challenges faced by Grade One consultant firms in managing minimalistic architectural design projects in Addis Ababa. The findings reveal significant obstacles, including difficulties in sourcing suitable materials, cultural and societal resistance, economic constraints, and regulatory barriers. Moreover, the study highlights the varied perceptions and acceptance of minimalistic design among clients, which further complicates project implementation.

To overcome these challenges, several strategic measures have been proposed. Enhancing local supply chains and establishing strategic partnerships can mitigate issues related to material scarcity and quality. Educational initiatives aimed at clients can shift cultural perceptions and increase the acceptance of minimalistic design. Providing detailed cost-benefit analyses and exploring financial incentives can address economic constraints and make minimalistic projects more financially viable. Engaging in regulatory advocacy to streamline approval processes and develop supportive policies can create a more conducive environment for these projects.

Investing in professional development and creating platforms for knowledge exchange can enhance the skills of architects and designers, ensuring that they are well-equipped to handle the complexities of minimalistic design. Implementing integrated project management systems and developing robust risk management strategies can improve overall project efficiency and

resilience.

By adopting these measures, Grade One consultant firms in Addis Ababa can better manage minimalistic architectural design projects, ensuring their successful execution while aligning with local cultural, economic, and regulatory contexts. This study contributes to the body of knowledge by providing insights and practical recommendations that can guide firms in refining their strategies and overcoming the challenges associated with minimalistic design in the urban context of Addis Ababa.

5.4 RECOMMENDATIONS

5.4.1 Recommendations for Architectural Firms

To address the challenges associated with managing minimalistic architectural design projects, architects in Addis Ababa's Grade One consultant firms should implement several strategic measures. First, enhancing local supply chains and establishing strategic partnerships with both local and international suppliers can mitigate issues related to material scarcity and quality. Encouraging local production of high-quality materials will reduce dependency on imports, lower costs, and shorten project timelines.

Furthermore, investment in various continuous professional development programs is necessary. Such programs may be based on the latest techniques, materials, and technologies in minimalistic architecture to upgrade the skills of architects toward better project delivery. Moreover, knowledge sharing events—conferences, forums, online communities—would allow professionals across the board to share best practices and innovative solutions without any payment. Integrated project management systems can also be put in place to aid in communication, coordination, and documentation, making everything easier. Such a system should provide for collaboration among all stakeholders: designers, contractors, and clients. Build robust risk management strategies that will help in the forecasting and mitigation of potential challenges. These are careful risk assessments with contingency plans for material shortage, change in regulations, and other unforeseen circumstances.

5.4.2 Recommendations for Government Bodies

Success on minimalistic architecture design projects is left in the clients' hands. Therefore, clients should join the education programs provided by different architects and firms to increase acceptance and understanding towards minimalistic design. Workshops and seminars to teach

clients about the minimalistic design benefits and principles might alter the cultural perceptions. Representing successful minimalistic projects with their long-term benefits seems to change client perception. Not only this but clients must also be given detailed cost-benefit analyses through which the denting of long-term saving and value due to minimalist designs is presented. In such analysis, low maintenance costs, energy efficiency, and sustainability benefits are used as factors to attract justification for the investment to be made initially. Other financial benefits explored from tax breaks or subsidies for projects that include the minimalist design principles further drive up the financial viability of such projects. A supportive regulatory environment could be achieved by engaging in advocacy efforts to bring about clear guidelines and support policies for minimalist design with policy makers, which will in finer detail offset benefits to both the clients and the architects.

By adopting these recommendations, both architects and clients can work together to improve the management of minimalistic architectural design projects. These strategies will ensure successful project execution while aligning with local cultural, economic, and regulatory contexts, contributing to more efficient and culturally integrated minimalistic designs in the urban context of Addis Ababa.

5.5 SUGGESTIONS FOR FURTHER RESEARCH

Based on the findings and limitations of this study, several areas for further research have been identified to deepen the understanding and management of minimalistic architectural design projects in Addis Ababa's Grade One consultant firms.

Firstly, future research could focus on a comparative analysis of minimalistic design projects across different regions within Ethiopia. This would provide insights into regional variations in challenges and successful strategies, offering a broader perspective on the implementation of minimalistic designs in various cultural and economic contexts.

Secondly, investigating the long-term economic impacts of minimalistic architectural design on building performance and maintenance costs could provide valuable data to support the economic case for minimalism. This research could involve case studies of completed projects, analyzing their operational costs, energy efficiency, and overall sustainability over time.

Thirdly, further research could explore the role of technology in enhancing the management of minimalistic design projects. This could include the adoption of advanced project management software, Building Information Modeling (BIM), and other digital tools that facilitate better coordination, communication, and efficiency in project execution.

Additionally, examining the effectiveness of educational initiatives and marketing campaigns in shifting client perceptions and acceptance of minimalistic design would be beneficial. This research could involve surveys and interviews with clients before and after such initiatives to assess changes in their attitudes and willingness to adopt minimalistic designs.

Another area for further research is the development of new materials and construction techniques that align with minimalistic design principles and are suitable for the local context. Collaborating with material scientists and engineers to innovate cost-effective and sustainable materials could significantly benefit the industry.

Lastly, policy-focused research aimed at understanding and influencing the regulatory environment for minimalistic architecture in Addis Ababa is necessary. This could involve an analysis of existing building codes and regulations, identifying barriers to minimalistic design, and proposing policy changes to support innovation and flexibility in architectural practices.

By pursuing these research avenues, future studies can contribute to a more comprehensive understanding and effective management of minimalistic architectural design projects, ultimately enhancing their adoption and success in Addis Ababa and beyond.

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1. APPENDIX

Investigating minimalistic design practices in Addis Ababa, Ethiopia. In the Case of Grade 1 consulting firms located in Addis Ababa.

2. QUESTIONNAIRE

Dear respondents,

This questionnaire is prepared by Jerusalem Yibeltal, Addis Ababa University School of Commerce the department of Project Management second year master's Program student, who is currently working on the topic: Investigating minimalistic design practices in Addis Ababa, Ethiopia. In the Case of Grade 1 consulting firms located in Addis Ababa.

To achieve the study's objective, I kindly ask you to participate in completing the questionnaire. Your responses will be kept confidential and used only for academic purposes. Your cooperation and assistance are highly valued.

Thank you for your cooperation in advance!

Jerusalem Yibeltal

PART I. Background Information

Instruction

- Please read each question carefully.
- Kindly answer all the questions by ticking or filling in the spaces provided.

1. Sex

- ☐ Male
- ☐ Female

2. Age

- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55 and above

3. What is your educational level?

- o BSC Degree
 - o MSC/MBA Degree
 - o PHD
 - o Other (please specify)
4. What is your role in the company?
- o Senior Architect
 - o Junior Architect
 - o Other (please specify)
5. Total years of experience in the construction sectors?
- o < 1 year
 - o 1-5 years
 - o 6-10 years
 - o 11-15 years
 - o >15 years

PART II. Familiarity with Minimalistic Design

Please carefully read and respond to each question in the survey based on your personal experiences and perspectives. For each question, select the option that best represents your view or situation. Some questions may allow for multiple selections, while others will require you to choose only one option. If an option to specify "Other" is provided, please elaborate as needed. Your honest and thoughtful responses are greatly appreciated and will contribute to a better understanding of the application and perception of minimalistic design principles. Thank you for your participation.

1. How familiar are you with minimalistic design principles?
 - o Very familiar
 - o Somewhat familiar
 - o Not very familiar
 - o Not familiar at all
2. How did you first learn about minimalistic design principles?
 - o Academic coursework
 - o Professional training
 - o Online resources

- Conferences/Seminars
 - Colleagues/Peers
 - Other (please specify)
3. To what extent do you implement minimalistic design principles in your projects?
- Always
 - Often
 - Sometimes
 - Rarely
 - Never
4. What type of projects do you primarily apply minimalistic design principles to? (Select all that apply)
- Residential
 - Commercial
 - Public buildings
 - Industrial
 - Renovation projects
 - Landscape architecture
 - Other (please specify)
5. What are the key features you focus on when implementing minimalistic design? (Select all that apply)
- Simplicity
 - Functionality
 - Use of natural materials
 - Open spaces
 - Neutral color palettes
 - Minimal decor
 - Integration with nature
 - Other (please specify)
6. What are the main challenges you face when applying minimalistic design principles in Addis Ababa? (Select all that apply)
- Material availability
 - Cultural considerations
 - Economic constraints
 - Regulatory frameworks

- Client preferences
 - Lack of skilled labor
 - Other (please specify)
7. What opportunities do you see for integrating minimalistic design in Addis Ababa? (Select all that apply)
- Promoting sustainability
 - Enhancing functionality
 - Improving aesthetic appeal
 - Reducing environmental impact
 - Cost savings
 - Addressing urban density
 - Other (please specify)
8. The blending level of using local material (Existing material) and Minimalistic approach
- Highly blend and usable
 - Not suitable for minimalistic approach
 - Neutral and be modified as per the need
 - Other (please specify)
9. How often do you use local materials in your minimalistic designs?
- Always
 - Often
 - Sometimes
 - Rarely
 - Never
10. How well do you think minimalistic design aligns with Ethiopian architectural aesthetics?
- Very well
 - Somewhat well
 - Neutral
 - Not very well
 - Not well at all
11. How likely is it that integrating minimalistic design will result in cost savings for construction projects in Ethiopia?

- Very likely
- Likely
- Neutral
- Unlikely
- Very unlikely

	Strongly Disagree	Disagree	None	Agree	Strongly Agree
The current regulatory frameworks in Addis Ababa are supportive for implementing minimalistic design principles.					
Clients generally respond positively to minimalistic design proposals.					

Please respond to the following statements about minimalistic design knowledge on the scale 1-5. 1 (Strongly Disagree), 2(Disagree), 3(Neutral), 4 (Agree), 5 (Strongly Agree).

1. What is your preference during renovation?

	Strongly Disagree	Disagree	None	Agree	Strongly Agree

You prioritize functionality over decoration.					
You often use natural material and limited and monochromatic color in your projects					
You emphasize simplicity and basic geometric shape in your architectural design					
You prefer Natural Light and Shadow					
Open spaces are key components in your design philosophy					
You believe less is more in the context of architectural design					
Ethiopian architectural aesthetics, construction techniques promotes minimalistic design,					

PART III Minimalistic in Ethiopia context

1. The following are opportunities for integrating minimalistic design in Ethiopia on their potential to address societal needs.

	Strongly Disagree	Disagree	None	Agree	Strongly Agree
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Promoting sustainability					
Enhancing functionality					
Improving aesthetic appeal					

2. Your company tradition towards application of the following features is high.

	StronglyDisagree	Disagree	None	Agree	Strongly Agree
Simplicity					
Natural and Neutrality					
Basic Geometric Shapes					
Open Spaces					

Part IV: Challenges and Limitations of Minimalistic approach

1. The following are limitations of applying Minimalistic architecture in your company.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Organizational Culture					
Stakeholder Engagement					
Technology Infrastructure					

Adequate education and training for project team members					
Project Size and Complexity					
Compatibility					
Complexity of using Materials for renovation					
Cost					
Limited adaption					
Legal and Contractual issues					
Lack of standardization					

2. The following can improve the implementation of minimalistic approach in the construction industry.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Training and education programs					
Improved collaboration between stakeholders					

Government initiatives and incentives					
Integrating with other technologies					
Standardization					

INTERVIEW QUESTIONS FOR THE PROFFESIONALS

1. What number of renovation projects does the organization take on annually? Approximately and from those projects how many of it is renovated using minimalistic approach?
2. What are the main challenges you face when applying minimalistic design principles in the sociocultural and economic context of Ethiopia?
3. How can these opportunities be leveraged to address societal needs and contribute to sustainable development?

INTERVIEW QUESTIONS FOR THE CLIENT

1. Were you aware of the minimalist design principles when you were deciding on the design of your building?
2. How do you perceive the intersection of minimalistic design principles with Ethiopian architectural aesthetics, construction techniques, and societal values?
3. What benefits have you experienced, if any, due to the application of minimalist design principles in your building?
4. How do you think these opportunities can be leveraged to address societal needs and contribute to sustainable development?
5. Would you consider using minimalist design principles for future projects? What features would you like to see incorporated in a minimalistic building design to better suit your needs?
6. How important is a minimalistic design to you when selecting a building or living space?
7. Which elements of minimalistic building design do you find most appealing?

8. In which areas of a building do you prefer minimalistic design the most?
9. Do you agree with the following statement: "Minimalistic building design improves my overall living experience"? Explain
10. What benefits do you associate with minimalistic building design?
11. Do you have any concerns about minimalistic building design? If so, what are they?
12. Which styles do you prefer and why?
 - Simple and natural looking building
 - Decorated and colorful building