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# Finding the Minimalistic Principles in Vernacular Architecture: A Case Study of Gulledgudda, Karnataka, India

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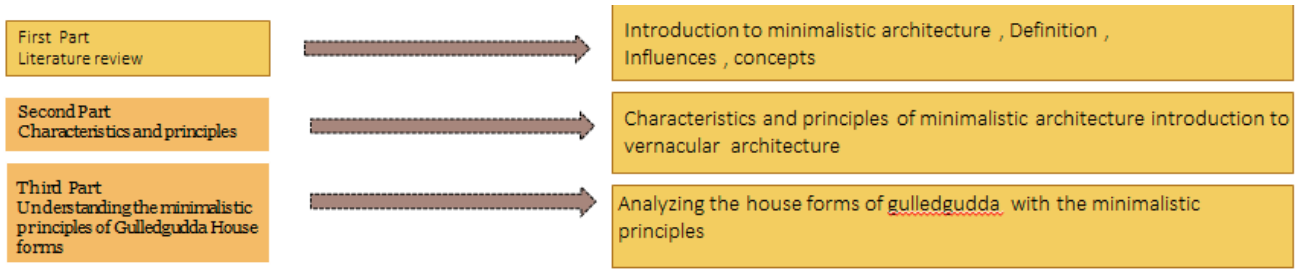
## Abstract
The research paper aims to study the architectural principles followed and adopted in minimalistic architecture. The study intends to understand the impact of culture on minimalist architecture. Minimalism is acknowledged by reasoning as the concept of culture. This paper also discusses the planning and design concepts involved in the vernacular houses of Gulledgudda, a weaver's village in Karnataka, India. Vernacular houses of Gulledgudda justify the characteristics of minimalism with their Simplicity-Bareness-Cleanliness. The methodology adopted was a primary survey, documentation, and semi-structured interviews of vernacular houses of Gulledgudda. It also emphasized open spaces, natural light, and a sense of functionality while reducing unnecessary elements to create a serene and uncluttered environment.The result are simple geometrical forms with functional spaces which are pure white in colour , which generates a sense of emptiness and serenity.

**Keywords**: Minimalistic Architecture; Culture; Vernacular Architecture.

## 1. Introduction
Vernacular architecture symbolizes the principles of minimalism through its in-built design approach. This methodology itself leads to making minimum intervention in the environment .The outcome is a balanced amalgamation of form, function and sustainable approach with the context and local resources available. Minimalistic philosophies contribute to the sustainability and functionality of vernacular built form by prioritizing the elimination of excess and focusing on essential elements. Vernacular architecture considers the relationship between the dwelling, occupant and environment , hence it can develop a built environment which is climate responsive and promotes sustainable approach.
Vernacular architecture which is described as indigenous buildings constructed with the experience of the local people using the materials and techniques available in the vicinity, in response to the local climate, economic and social norms of the region. The most significant is that vernacular architecture is a response to the environmental context, built by ordinary people of a locality, knowing of their culture and surroundings (Oliver, 1997).Vernacular Architecture is a conscious sense of belonging to Man's immediate environment and Surroundings. It reflects the socio-cultural aspects of dwellers, With the understanding of material and technology to the region. Vernacular has been defined as an act of spontaneous, indigenous, rural, and mostly anonymously built structures initially Featured as non-pedigree Architecture (Rapoport,1969; Dayaratne, 2008). Bernard Rudofsky in 1964 Introduced indigenous architecture through his exhibition titled 'Architecture without Architects: A short introduction to Non-pedigreed architecture, promoting it a arguable question . Additionally, the principles of vernacular architecture demonstrate value of restriction and simplicity in design. Rather than relying on excessive ornamentation or decorative flourishes, vernacular architecture prioritizes the practical motivations behind the construction process, including structure, economy, and function.
The research structure is as follows




The house forms of Gulledgudda which were done by primary survey, documentation, and semi-structured interviews.

### 1.1 Influence of Minimalism in Vernacular Architecture
Minimalistic principles which are reflected in vernacular architecture include the use of natural (locally available) materials, the lessening of elements to their vital forms and functions,and the importance on abstraction and simplicity. The materials used in vernacular architecture are chosen for their tactile value, truth of immateriality, and ability to transform. The lessening of elements to their vital forms and functions is attained through abstraction, which is seen in the basic elements

such as walls and windows. Minimalistic vernacular architecture also emphasizes the use of clean and simple language in its design, creating fluid and uncluttered spaces. These principles contribute to the creation of architecture that is visually minimalistic, communicative and evocative.

### 1.2 Minimalism: A Simple Design Philosophy

*Minimalistic*, the adjective, *minimal,* means"least possible." *Minimal* is derived from the Latin *minimus,* which means "smallest."

Minimalistic architecture focuses on design that emphazise on simplicity in content and form.Minimalism includes simlification,purity and elegant organization in life .Minimalism in house forms can be defined as removal of unnessary elements, clear lines, purity in geometric forms. Simplicity in design is achieved by addressing light, colour, material, form and function . The idea of minimalism is to make things unassuming by shedding them down to their simplest form . In this process the unwanted clutter is eliminated for a better Design. Hence a minimalistic approach is characterized by elimination, simple forms,and a color scheme in only monochrome.

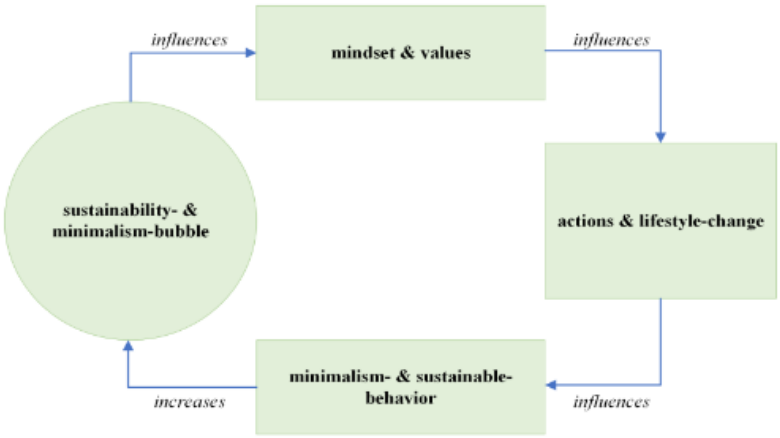



*Fig 1. Visualization of the 'Minimalism Process' (Source: http://hj.diva-portal.org/smash/get/diva2:1674601/FULLTEXT01.pdf)*

### 1.3 The concepts of minimalism can be studied

- Principles of minimalist Design
- Elements of minimalistic Design
- Characteristics of minimalistic design

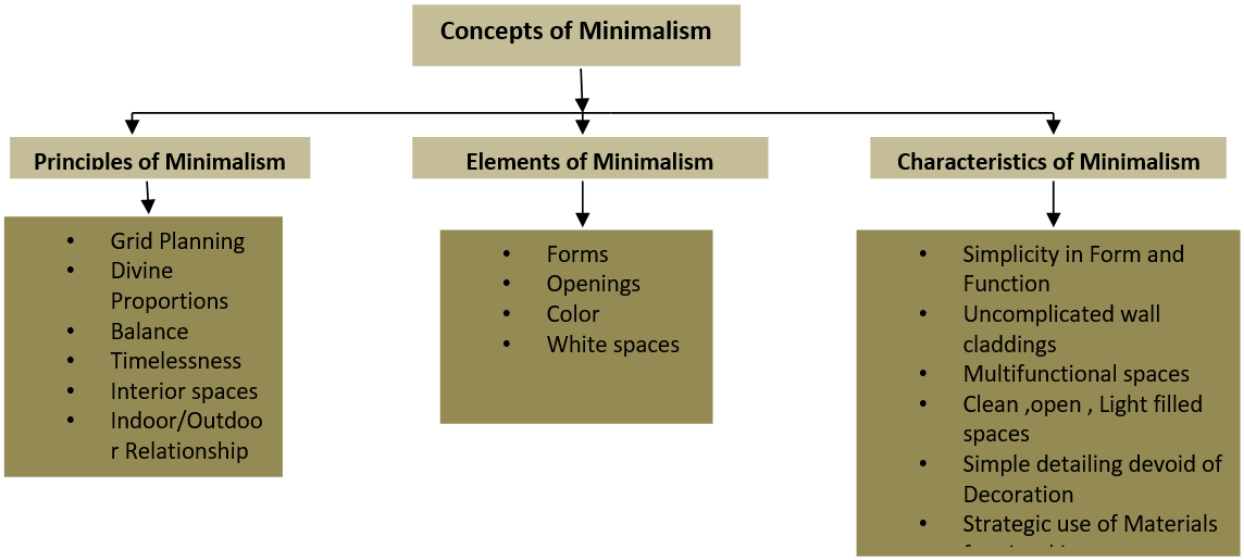



Fig 2. Showing concepts of Minimalism *(prepared by Author).*

## 2.0 History of Guledgudda

Guledgudda is located in Karnataka state, India. Which was part of Badami taluka is now shifted to Bagalkot district. is a, with a population exceeding 34,000 people.

*Fig 3a.* Map of India showing location of Karnataka


*Fig 3b.* Map of Karnataka showing location of Gulledgudda

### 2.1 Background /Culture

Weaving as a profession started around the 8th century AD in Ilkal. The traditional Guledgudda Khana (Choli or Blouse piece), which is prepared in this village only. Women Karnataka but in Maharashtra state wear it in combination with an Ilkal saree. Around 1580 Guledgudda originated as a town place, second Ibrahim Adilshai of Bijapur built a fort on the hill, naming the village as Guledgudda. Guledgudda village stands its identity on the global map, Which is also famous in the name of "GuledguddKhana". It is used for ladies blouse. "Guledgudd" name is a combination of two words Gule and Gudda, where Gule means migration and Gudda means hill, thereby it is known as place of migration. As the village grew people uphill migrated on the foothills where three lakes were a major source of water are found to the town. These source of water reservoir are the major reason for cultivation.

People of differnt caste like devangas, pattasalias, kuruvinshetty, muslims etc migrated to Gulledgudda . This geographical belt around is famous for weaving expertise , with special procedures of cotton processing (vegetable color dyes)and distinguishing local garments. The Guledgudd Town Municipal isvone of the oldest TMCs of the district. This town Municipality was first constituted on 29th November 1886 with 13 members. More than 80% of the population is engaged in weaving. Majority of the weavers are involved in hand-loom and natural dying methods but due to changing times recently power-looms have taken over with new technology as a outcome of which production has been increased and their socio-economic status is changed drastically. Approximately 350000 blouses are weaved yearly. Nearly 2000 power looms, 3000 handlooms,42 twisting factories, are engaged in the town.With the change technology the weaving industry has adopted new power looms.

### 3.1 Understanding the characteristics of minimalistic architecture on the House forms of Gulledgudda

#### 3.1.1 simplicity in form and function

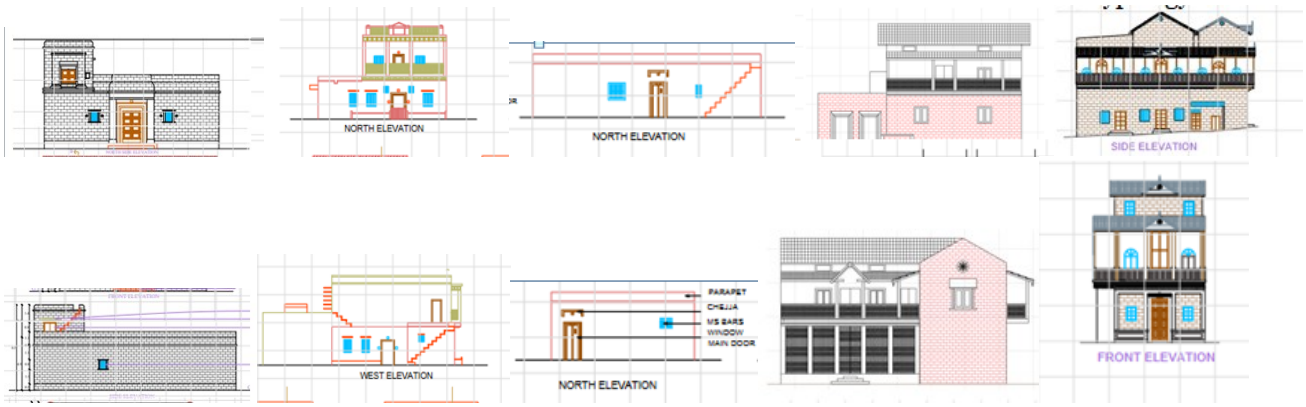
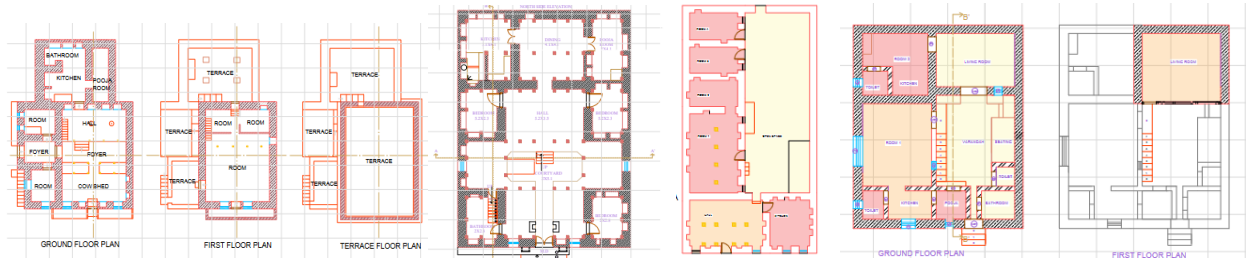



Fig 4 (Documemted by v Semester students as part of Elective: Vernacular Architecture )

The houses of Gulledgudda have a simple,straight forward,and efficient layout with stacked volumes of spaces.Mostly the plan forms are rectangularin shape,that avoid lot of in and out ,complex curves or angles.. The rationality of construction is displayed not only through the section in the built form but is clearly visible in the elevation. Hence, the structural material becomes the most visually easy to read material on the façade.( ref *Fig 4* ). A parallel corridor running through the inner part of the building is a combining feature and is a well-thought resolution for the circulation and exchange of air within the compound and surrounding rooms . The relation with the rooms is very well amorphous and blends with the flow of the corridor.The courtyard acts as the central space in the house where all the family members come together, thereby creating a sense of harmony and unity within the family members. Interactive courtyards act as inside outside communicators. The door opening in the courtyard of the dwellings connect the built and unbuilt in a series of events . A single floor structure which is also in cubical and rectangular form with respect to different functions. spaces are arranged in proximity based on their functions and privacy considerations.




Typology 1 Typology 2 Typology 3 Typology 4

(Documemted by V Semester students as part of Elective: Vernacular Architecture )

#### 3.1.2 Simple detailing devoid of decoration

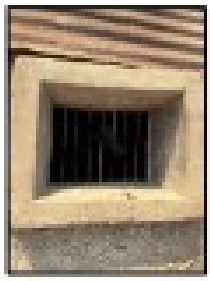
The outcome of constructional details is expressed not only through the building sections but are clearly reflected on the elevation. Similarly the structural material acts as most communicative on the façade. The use of timber in columns, doors, windows or a fasia bands creates one can experience the built speaking out a strong visual language. The visual vocabulary of the facades translates into a composite language with a balance of solid and void,they also conveythe minimalistic design approach.The structral frame is a non load bearing ,with two columns and centered opening,which becomes the visual vocabulary of the elevation of Gulledgudda. The openings have either a stone or timber lintel which is visible in the elvation. The Katti is an extension of plinth at the threshold which forms a semi- public sitout between the street (oni) and the house.The houses which are single storied, built in brick masonry have smaller and lesser openings. Traditional building practices in the house forms of Gulledgudda are knoweldge driven practise which are very extensive,precise and site specific. Walls soak up the heat during day light and slowly release it during cooler nights. Earth /mud walls or plasters are shown to control relative humidity inside the building .These possible properties of earth as a building material are seen in the house forms of Gulledgudda . Due to harsh climatic conditions that dictate this zone the material pallette showcases low energy techniques for a climatically suitable solution.The excellent efficiency of the house typology design lies in its planning which assures maximum light and airflow.

Timber is used as a structural member in the roof form,where longer sections are used for columns and beams . All the earthly materials such as mud bricks, timber, stone and wood used in the construction not only blend in co-existence with each other but aiso simultaneously play different roles, in the sections and sizes, which at the end stands as a cohesive construction system.


Multiuser spaces


living room


living room with skylight


skylight on terrace


Kitchen

### 3.1.3 Multifunctional spaces

Minimalistic architecture places a strong emphasis on functionality and practicality. Every element within the space serves a purpose.This intend on functionality confirms that the design approach remains efficient and uncluttered.Spatial organization in architecture is the arrangement and relationship of spaces within a building form. It is concerned with how spaces are defined, connected, and used, and it has a significant impact on the overall function, form, and experience of a space. The house forms in Gulledgudda are in a linear organization where spaces are arranged in a straight line. Most of the house organization is long and narrow. Linear organizations are efficient because they allow for a continuous flow of movement through the house forms . We can see that most of the weavers houses are in rectangular shape, Rectangular houses are efficient use of space. The rectangular shape allows for a maximum amount of usable space within the confines of the walls. This is important for weavers, who need to have enough space to store their looms and other equipment. The ground and first floors are connected internally by a wooden staircase, providing easy access between levels. Additionally, an exterior stone staircase offers an alternative entry point. This design approach reflects both functional efficiency and traditional architectural elements, blending practicality with cultural and aesthetic considerations. Overall, linear organization is a versatile and efficient spatial arrangement.

### 3.1.4 Clean, open Light filled spaces

Minimalistic architecture plans are open floor plans with spacious layouts. Openness creates a sense of freedom and fluidity within the space, generating a easy movement pattern and circulation . Minimalistic designs often give importance to natural light, utilizing the correct size of fenestrations,skylights, and other openings to achieve ample daylight. This emphasis on natural light helps to create a bright and airy atmosphere while reducing the need for artificial lighting. In addition they open a dialogue to the surrondings.

Guledgudda, being located in Karnataka, winters are warm and windy whereas summers are short,humid and sweltering. Roof opening allows skylights and other openings to have adequate sunlight, encouraging a feeling of freedom and fluidity in the space. The importance of lighting helps create a sense of light and atmosphere while reducing the need for artificial lighting.

### 3.1.5 Strategic use of materials

The architectural, socio-cultural, and sustainable values of vernacular buildings approve the intentional use of materials The houses of Guledgudda on a climatic basis involves understanding how architectural features and construction materials are influenced by the local climate. Most of the House forms in Guledgudda are oriented to improve natural ventilation and minimize heat gain. openings such as windows and doors are designed to face prevailing winds to facilitate cross-ventilation and cooling during hot summers. shading elements such as overhanging eaves and verandah are provided to reduce direct sunlight. Walls 600 mm thick of stone which counters the heating effect by giving insulation. The roofs are made of wooden beams with a mixture of mud, dry leafes, and lime mortar to give strength and insulation to the structure. Wooden doors and windows were easy to install. Stone or kadappa flooring were installed to keep the house cool.Wooden roofing is opted in the house forms as it is economical and climate responsive. Wooden roofing consists of layers such as wooden beam, wooden battens, wooden rafters, gunny bags, neem leaves, mud, sand and water proofing. In some house forms galvanized iron is also used which is supported with I section and Wooden rafters. Skylights are made up of wood and covered with iron rods

By analyzing the houses of Guledgudda on a climatic basis, we can appreciate how traditional architectural principles and construction techniques are adapted to the local climate to create comfortable and sustainable living spaces. These design features reflect the knowledge of local builders in responding to the challenges posed by the semi-arid climate of Guledgudda.

## Conclusions and Recommendations

Different case studies of vernacular architecture around the globe showcase the use of natural resources in an resourceful way and implementation of climatic strategies to achieve human comfort.

Technical knowledge of the relationship of the built forms with local culture, climatic zone and socio-cultural will help the present and future generations to undertand the sustainable approach of vernacular architecture.

The technical knowledge data would act as a base to integrate these principles and characteristics of vernacular arhchitecture in contemporary design solutions, which could lead to climate responsive.

Excessive use of natural resources has hampered human growth,therefore it becomes important to make the coming generations aware of the minimalistic lifestyle.

Overall, analyzing the house forms of Guledgudda involves recognizing the blend of tradition, functionality, and adaptation to local conditions that characterize residential architecture in the region. Studying these aspects provides insights into the cultural heritage and lifestyle of the community in Guledgudda.

Minimalistic Design approaches not only restricted to architecture but different professions such as as industrial design, product design, etc could apply the characteristic and principles in their respective fields.

Architecture which aspires to transcend globally should first respond to regionalism.

The coming language of architecture could have the elements of contextual reasons,to showcase harmony in context rather than the globalization language.

The Minimalistic approach in the design shows a deep commitment towards the quality of life of human beings and its complex substantial integrity.

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