Vernacular Architecture
The term **Vernacular** is derived from the Latin word vernaculus, meaning "*domestic, native, indigenous*".

**Vernacular architecture** is a term used to categorize methods of construction which *use locally available resources and traditions* to address local needs.

**Vernacular architecture** tends to *evolve over time to reflect the environmental, cultural and historical context in which it exists*.

It is an **indigenous architecture with specific time or place** (not imported or copied from elsewhere). It is most often used applied in residential buildings.
It can be contrasted against polite architecture which is characterized by stylistic elements of design intentionally incorporated for aesthetic purposes which go beyond a building's functional requirements.
VERNACULAR ARCHITECTURE refers to those buildings made by common builders in an informal way, rather than by architects using design methodologies.

only 10 percent of the buildings in which we live or work are designed by architects, and a huge 90 percent of the world's architecture is vernacular.
According to R.W. Brunskill ......

•...a building designed by an amateur, without any training in design; the individual will have been guided by a series of conventions built up in his locality, paying little attention to what may be fashionable. The function of the building would be the dominant factor, aesthetic considerations, though present to some small degree, being quite minimal. Local materials would be predominantly used and other materials being chosen and imported quite exceptionally.”
DIFFERENT FORMS OF VERNACULAR STYLE
In contrast to planned architecture by architects, the building knowledge in vernacular architecture is often transported by local traditions and is thus more - but not only - based on knowledge achieved by trial and error and often handed down through the generations rather than calculated on knowledge of geometry and physics.
An early work in the defense of vernacular was Bernard Rudofsky's 1964 book *Architecture Without Architects: a short introduction to non-pedigreed architecture.*

The book was a reminder of the legitimacy and "hard-won knowledge" inherent in vernacular buildings, from Polish salt-caves to gigantic Syrian water wheels to Moroccan desert fortresses, and was considered iconoclastic at the time.
Hama - The City of Water Wheels

• **Seventeen** large water wheels continues to operate on the River Orontes

• **Noria** is a “device for raising water”

• In Syria the water Wheels are also known as “the wailer” for wailing sound generated during the operation of the wooden wheels.

• water wheel was the sole technology enabling humanity to harness large amounts of energy.
Morrocon - Desert Fortresses

- **Fortified village** – commonly called as Kasbahs with small windows, built high and close to each other.

- **Kasbahs** are a **skillful adaptation** to the **harsh climate** in the hot-arid region.

- **Layout** of the Kasbahs, **height**, **orientation**, the use of **materials** play a **major role in the temperature regulation inside**.

“vernacular architecture, given the insights it gives into issue of environmental adaptation, will be necessary in the future to ensure sustainability in both cultural and economic terms beyond the short term."

Oliver also offers the following simple definition of vernacular architecture: "the architecture of the people, and by the people, but not for the people."
The Encyclopedia of Vernacular Architecture of the World defines vernacular architecture as:
“...comprising the dwellings and all other buildings of the people. Related to their environmental contexts and available resources they are customarily owned- or community built, utilizing traditional technologies.

All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of life of the cultures that produce them.......”

Christopher Alexander, in his book A Pattern Language, attempted to identify adaptive features of traditional architecture that apply across cultures.
Howard Davis's book *The Culture of Building* details the culture that enabled several vernacular traditions.

Frank Lloyd Wright described vernacular architecture as "Folk building growing in response to actual needs, fitted into environment by people who knew no better than to fit them with native feeling".

Hassan Fathy in the design of the town of New Gourna near Luxor incorporated the traditional mud brick vaults of the Nubian settlements.

Bernard Rudofsky first used the term vernacular in an architectural context, labeled it “vernacular, anonymous, spontaneous, indigenous, rural, as the case may be".
Geoffrey Bawa is considered the pioneer of regional modernism in South Asia. Along with him, modern proponents of the use of the vernacular in architectural design include Charles Correa, Balkrishna Doshi, Sheila Sri Prakash, Indian architects and Muzharul Islam and Bashirul Haq, internationally known Bangladeshi architects.

These architects have used vernacular architecture as an inspiration for innovations in environmental and socio-economically sustainable design and planning.
FACTORS INFLUENCING VERNACULAR ARCHITECTURE

1. CLIMATIC & GEOLOGICAL
2. LOCAL MATERIALS USED
3. TECHNOLOGY ADOPTED
Vernacular architecture is influenced by a great range of different aspects of human behaviour and environment, leading to differing building forms for almost every different context; even neighbouring villages may have subtly different approaches to the construction and use of their dwellings with significant similarities in structural forms.
The way of life of building occupants, and the usage of shelters, greatly influences building forms. The size of family units, spatial usage, preparation of food, interaction of people and many other cultural considerations affects the layout and size of dwellings.

Culture also has a great influence on the appearance of vernacular buildings, as occupants often decorate buildings in accordance with local customs and beliefs.
People have different forms of shelter appropriate to different seasons and geographical locations.

The development of different solutions in similar circumstances because of cultural influences is typical of vernacular architecture.
Vernacular Architecture consists of buildings or landscapes that affirm a distinctive material, affinity for place and holds the promise of achieving a compatible and sustainable relationship between people, nature and the human built environment.

Tradition has accumulated over the ages wisdom and knowledge and it is our duty to focus the essence of this genius tradition and use it in today’s environment.
Vernacular Architecture
In the last 30 to 50 years **Vernacular Architecture** has drawn in the interest of scholars from different fields.

- **Sociologists** -
  - the **intensive surveys of individual communities** that discovered the buildings of different people
  - The method in which the **temples and churches were erected** and
  - Different **forms of religious observance** expressing their social organization.
Geographers -
  - Identified the **significance of localized geographical factors** in the development of different regions in the country.

Students of Folk life –
  - Revealed the **architectural details and building practices** and how they perpetuate the customs whose origins were lost and whose technical basis have long been transformed.
Vernacular Architecture -

- The way in which regional and national character survived the various political amalgamations that make up the nation.

It is defined as “Expression of local people’s immediate needs and a response to the social and cultural background. It is also the direct expression of community and community life”
Architectural Historians -

- Study of minor architectural monuments, the houses of the people, the barns of their crops and the factories of their early industrial effects.

Besides these there is also an increasing public interest in the form of public protests in planning proposals, quality of visual life etc.
TYPES OF VERNACULAR ARCHITECTURE

1. DOMESTIC
2. AGRICULTURAL
3. INDUSTRIAL
4. RELIGIOUS
DOMESTIC VERNACULAR ARCHITECTURE
Comprises of the buildings designed for living (activity participated by the entire family such as eating, sitting, sleeping, storage etc,) and the ancillary buildings such as wash area, kitchens, stores etc.

It also includes private houses used for domestic accommodation, rest houses and shops where domestic activities predominated over the commercial.

A distinction is also made between the domestic vernacular of the countryside (mainly farming) and that of the urban (mainly commerce).
AGRICULTURAL VERNACULAR ARCHITECTURE
Comprises of all the buildings of the farmstead apart from the farm house and its domestic ancillaries, stables, poultry shed, cart shed etc.

Granery - Harappa
INDUSTRIAL VERNACULAR ARCHITECTURE
Comprises of all the buildings which houses industrial related activities such as wind and watermill, corn and lime kilns, potteries etc.

Farnham Pottery, Wrecclesham, Surrey with the preserved bottle kiln
NDUSTRIAL
RELIGIOUS VERNACULAR ARCHITECTURE
Comprises of all religious buildings such as temples, churches, mosques etc.
DOMESTIC (RESIDENTIAL)

Batak house, Indonesia

Mud house, Nepal
COMPONENTS OF VERNACULAR ARCHITECTURE

1. CONSTRUCTION TECHNIQUES – walling materials and construction, foundations, roofing shape, materials.
2. CULTURAL BACKGROUND – geographical location and evolution
3. PLANNING – documented through plans, sectional forms to show how the internal arrangement of these buildings are done and how they are revealed on the exterior
4. ARCHITECTURAL DETAIL – windows, staircases, external and internal ornamentation.
5. OTHER DATA – place, time, context, use, user group.
Systematic methods in the study of Vernacular Architecture includes:

- **IDENTIFY SITE** - The scope of any study must be defined clearly. Geographical area of the study should be demarcated clearly.

- **BUILDING TYPES** – Typologies in the study area to be carefully analyzed. Study starts with the analysis of a single residential unit, then to the buildings in the community, cultural and industrial use.

- **PERIOD OF STUDY** - The time of study influences the character of the buildings. For eg: The period of study has a significant impact on the built form, architectural style etc.
A complete **Vernacular** study includes operations at three levels:

- **EXTENSIVE RECORDING** - A systematic method of recording relevant details in a superficial way. It is basically the reconnaissance survey including the visual impacts.

- **INTENSIVE RECORDING** – Survey of selected examples from extensive recording based on **Typologies** and its significance in the study area.

- **DOCUMENTARY STUDY** – includes the historic survey, archaeological survey, documentary evidences such as title deeds, revenue departments etc.
EXTENSIVE RECORDING

Extensive recording involves speedy collection of survey materials in the field. It intends to collect basic architectural information as revealed in the exterior of the buildings.

PROCEDURE:

1. Define survey area / boundaries for the study
2. Assemble all relevant survey materials (maps, field notebooks, measuring tapes, pen, butter sheets etc).
3. Decide on the relevant period of the study to identify their impacts.
4. Decide on typologies – Individual, group / cluster etc
5. Identify the buildings - house no, address etc
EXTENSIVE RECORDING

PROCEDURE:

6. Mark the orientation aspects, landmarks etc

7. Study the materials usage and classifications Identify any reliable features – Inscriptions that may either relate to the original construction or some period in the life of the buildings which are significant in the study.

8. Identify the construction methods adopted such as stone masonry, brick masonry, mud construction etc.

9. Photographs and sketches to explain the architectural style.

10. Dates of survey and initials for future references.
INTENSIVE RECORDING

During the extensive recording, certain building types/forms may be repetitive or resemble certain period or depict certain economic level of the society. Such typologies are selected for intensive study through the preparation of measured drawings in a systematic way. It involves two distinct procedures namely measuring and drawing.

PROCEDURE:

1. Prepare schematic plans, elevations, sections etc.
2. Enlarged details to depict the method of construction
3. Sectional elevations through staircases to provide the overall heights, floor to ceiling heights etc.
4. Dimensions of selected details and photographs
5. Compilation of survey data to prepare drawings
INTENSIVE RECORDING

DRAWING:

1. Preparation of scaled drawings to a suitable scale.
2. Suitable size of sheets are finalized with an appropriate title block with the drawing number, date of drawing drawn, north point, scale etc.
3. Enlarged details to a suitable scale
4. Appropriate lettering and dimensioning of drawings.
DOCUMENTARY INVESTIGATION

• Title deeds of property
• Taluk Offices / Revenue departments
• Taxation records
• History, literature
• Archaeological survey
Vernacular Architecture
APPROACHES IN THE STUDY OF VERNACULAR ARCHITECTURE
APPREACHES TO VERNACULAR ARCHITECTURE

- **Aesthetic** - Relates to quality, value etc
- **Anthropological** - relationship between family and social structure
- **Archaeological** - reveals indication of architectural elements
- **Behavioural** - relates to the behavioural pattern in relation to the built-up structures and their personal community eg: urban and rural community
- **Conservationist** - to evaluate the potential of traditional, historical buildings for reuse.
APPROACHES TO VERNACULAR ARCHITECTURE

- Developmental - to relate archaeological and organizational principles and brings technology and analysis in vernacular buildings.
- Ecological - focuses on habitat as part of total environmental system
- Folkloristic - compares folk artifacts with the craft skill, custom and benefits.
- Historical - examines various influencing forces using documentary records.
APPROACHES TO VERNACULAR ARCHITECTURE

• **Meso-logical** - relates to history, similar to historical approach documentation of drawings and verbal documentation.

• **Spatial** – behavioural and anthropological organization – articulation of spaces and volume.

• **Structuralist** – theories disclosing the functions and meaning of structures.

• **Generating transformational** – methods of defining the systems interlining evolution and change.
AESTHETIC APPROACH

Two distinct approaches:

**Ethnographic:** To understand the aesthetic dimension in the culture of the building

**Responsive:** Appreciation of the structure.

Aesthetic approach is the effective aspect of communication.

**Utilitarian:** Historical, religious, social relation etc that becomes a point of reference in buildings.

**Aesthetic:** Appearance and occupation contains aesthetic potential.
AESTHETIC APPROACH

The building explains Architectural creation Technology and Form

Gujarat: Decorations in the interiors and exteriors are often utilitarian

English: Finishes reveals use of structural materials.

Japan: Art dominates the decorative elements

A comparative study of tradition reveals a rich diversity owing to culture and aesthetic dimensions
AESTHETIC APPROACH

A typical street in a Bohra neighborhood in Gujarat

A castle in Kyoto, Japan.

Daigo-Ji Temple, the oldest wooden tower in Kyoto.
ARCHAEOLOGICAL APPROACH

• Date of the buildings
• Chronological order of the development
• Documentation of changing architectural style over time
• Excavation and recording of ruined structures to collect sufficient detail to allow for accurate reconstruction.
• Changes / evolution that occurred due to human behaviour and spatial changes.
ANTHROPOLOGICAL APPROACH

• Prior to 1960, only documentation of different residence styles were done which remained as artifacts of tradition and culture

• Late 20th century the approach changed towards functionalism leading to paradigm study of social organization.

• According to Amos Rapaport – Climate, ecology, material, technology and local economy determined the settlement pattern pertaining to regional level.
ANTHROPOLOGICAL APPROACH

Amos Rapaport in his conclusions

- Factors such as climate, ecology, material, technology and local economy acts as constraints than determinant which acts as modifiers of form.

- Built forms are closely inter-related to behavioural patterns and cultural values.

- Cultural influence in the form is originated through symbolic conception i.e., notions of the right order of relationship within the social, cosmic universe can play an active role in the builds of the house.

  - **Objective:** a place to live
  - **Subjective:** Climate, materials etc.
  - **Aesthetic:** Social and cultural
BEHAVIOURAL APPROACH

The human behavioural patterns of the community, acts as a constraint or as a supportive element in defining the house typologies.

Eg: In India house typologies are huge as they adopt a joint family system. Houses are grouped together in large numbers in clusters reflecting their behavioural pattern.
ARCHITECTURAL APPROACH

Manifestations of vernacular Architecture in architectural practice over centuries are many and diverse. Experiencing them and interpreting them in modern context is the job of an architect. He should try to gain knowledge based on the documentary evidences collected.
ARCHITECTURAL APPROACH

It can be broadly classified into the following:

• Architecture as pictorial or picturesque suggestion of symbolic identities.

• Architecture as determined by climate, nature or function.

• Architecture as an embodiment of experience, emotion, spiritual and ceremonial qualities. Iconic suggestion or symbolic identity.

• Architecture as a tool to restore and discover the local technology
  ❖ Pure form of architecture without change by external influences
  ❖ Architectural design to recreate / restore these unadulterated forms – neo vernacular.
ARCHITECTURAL APPROACH

METHODS:

• To categorize few aspects of buildings that are dominating for documentation and reuse. Eg: Plan, decoration, shape of openings etc

• Achieve through traditional materials and building methods to blend authenticity.

• Creation of local identity through architectural traces of the vernacular, at times served a variety of social goals
  • In 1940, Hassan Fathy in the Egyptian village viewed it as a builder and a craftsman. It aimed to preserve the national identity.
ARCHITECTURAL APPROACH

Pigeon is a part of the daily diet in many parts of Egypt and Pigeon houses, or dovecotes, are constructed from mud brick create an artificial mountainous topography.

The droppings are also a valuable source of fertilizer and the houses are so universal that they are also part of the Egyptian national identity.
Five myths about traditional buildings

• Vernacular building was necessarily functional, as opposed to decorative
• People were trying to imitate those above them on the social scale
• Vernacular builders were inherently conservative: vernacular architecture is unchanging.
• The domestic/private was divided from the agrarian/public.
• If they didn’t have names, they didn’t have agency or culture
MODERN APPROACH

Alternative to aesthetic approach is modern approach. Modern Architecture aims to free from those stylistic traditions and to create a timeless version of architecture.

Modern approach adopts the following:

- Complexity of various forms
- Expressions could be modern and need not be traditional, material, construction and technology.
- Recreating
- Complication of hybrid forms that occurs in spite of constraints of climate. Materials and forms produce sensory delight and are spiritually uplifting.
Modern architects felt that vernacular architecture affirm the following modern ideologies:

- Severely utilitarian in use
- Functional, material and technology to adapt to climate needs and effective utilization of site
- Beautiful on the sculptural expression, mass and volume as a result of manipulating the plan and section to accommodate the users need.
MODERN APPROACH

Adolf Loose, F.L. Wright. Le Corbusier – Best Expression

Rudolf Steiner's The Second Goetheanum, 1924-1928, in Basel, Switzerland, is an example of architectural Expressionism.

Le Corbusier's chapel at Ronchamp, Notre Dame
MODERN APPROACH

Walter Gropius – Machine Aesthetics

The Bauhaus building at Dessau, designed by Walter Gropius
MODERN APPROACH

Charles Correa – Apartments in Mumbai

Aimed to enhance quality of habitation without minimizing the prototypes and interpretation of the poetic sensibility of Architecture.
MODERN APPROACH

Bernard Exhibition on “Architecture without Architects” in 1964 went beyond picturesque and conveyed the following:

- Qualities induced
- Human Scale
- Great Views
- Visual Richness
- Features which heightened social interaction
ANTHROPOLOGICAL APPROACH -
“HOUSE, FORM AND CULTURE”
By “AMOS RAPOPORT”
Rapoport (1969) introduces vernacular architecture as a folk tradition that is a

‘direct and unself-conscious translation into physical form of a culture, its need and values – as well as the desires, dreams and passions of the people.’

*Rapoport categorizes* this folk tradition into

• pre-industrial vernacular and
• modern/post-industrial vernacular.
PRE-INDUSTRIAL VERNACULAR

• Pre-industrial vernacular architecture refers to buildings built by the community and involves no specialized trades.

• a direct response of the community that understands its own needs and requirements; and are handed down through verbal transfer of knowledge through generations.

• The outcome of the response tends to be very tradition oriented, and the houses follow a uniform model.

• The construction is clear and simple, adhering to the rules drafted by ancestors (Rapoport, 1969).
POST-INDUSTRIAL VERNACULAR

• Post-industrial vernacular architecture differs considerably in its conception, design, and construction.
• The occupants of these kinds of houses, provides input to the design and construction of the house.
• Individual variability is thus witnessed in these houses; and the differences fall within a frame of common heritage and values.
• These often lack flamboyant aesthetic display as they try to solve problems in the simplest possible manner, working with the site and micro-climate, respecting other members of the community and the environment (Rapoport, 1969).
MODERN SOLUTIONS

• Our modern solutions to climatic problems often do not work, and our homes are made bearable by means of mechanical means whose cost sometimes exceeds that of the building shell...

• Primitive and pre-industrial builders cannot take this attitude, since they lack the technology to allow them to ignore climate in design...they solve their problems by collaborating with nature. - (Rapoport, 1969)
“House Form and Culture” written by Amos Rapoport in 1969, is one of seven books in the “Foundations of Cultural Geography Series” edited by Philip Wagner.

It considers the underlying theoretical constructs that have shaped, and continue to shape, the built environment, including religion, beliefs, customs and socio-cultural forces at large.

Rapoport’s “House Form and Culture” is a presentation of cross-disciplinary studies of dwellings, buildings and settlements from architecture, planning and cultural geography.
In view of the logical arrangement of Rapoport’s argument, the book is divided into two parts:

Chapters 1-3 are for the defence of the primacy of culture which discusses the nature and definition of the field, alternative theories of house form and the socio-cultural factors and house form.

Chapters 4-6 explains the modifying influence of other factors such as climate, construction materials and technology and a look at the present.
HOUSE, FORM AND CULTURE

The foundation of Rapoport’s book was laid on the intellectual debate of the meaning and characteristics of folk, primitive, and vernacular buildings on one side, and modern buildings on the other—possibly even forming a continuum.

Rapoport argued that “primitive” buildings were produced by “primitive” societies which had a “diffuse knowledge of everything by all” with elementary technology.

The book linked behaviour and form, and theorized that built form has influence on behaviour, not in a causal manner but in the way of “coincidences.”
Rapoport claims that “climate and the need for shelter” determine the form of dwellings.

His balanced view on the impact of climate on house form is commendable; after giving enough evidence on the supremacy of culture over climate in determining house form, he submitted that “it is a characteristic of primitive and vernacular buildings that they typically respond to climate very well.”
Chapter 6 - “a look at the present”, presented the relationship between house form and culture from the “primitive” to the vernacular and 1960s modern period.

He noted that in the past there were hierarchies in society which were legible on built forms but at the time of writing there was “the general loss of hierarchies within society,” resulting in the reality that “all buildings tend to have equal prominence.”

According to Rapoport, “modern man has lost the mythological and cosmological orientation which was so important to primitive man, or has substituted new mythologies in place of the old.”
Rapoport again demonstrated his balanced sense of judgment when he maintained that “both ‘primitive’ and ‘modern’ times have myths that may be different but are commonly motivated by being “primarily socio-cultural”–however still claiming that the “neglect of traditional cultural patterns may have serious results”.
Amos Rapoport’s Hypothesis:

“House form is not simply the result of physical forces or any single causal factor, but is the consequence of a whole range of socio-cultural factors seen in their broadest terms. Form is in turn modified by climatic conditions and by methods of construction, materials available, and the technology. Rapoport notes the socio-cultural forces as primary and all other forces as secondary or modifying.”
Factors Impacting House Form

- Climate
- Materials, Construction, and Technology
- Site
- Defense
- Economics
- Religion
- Cultural
FACTORS INFLUENCING HOUSE FORM

Climate - Imperatives of climate as determinants of form for shelter

Pueblo clustered dwellings
FACTORS INFLUENCING HOUSE FORM

Athabascan – summer hut

Marsh Arab dwellings, Iran

Cappadocia, Turkey – cave dwellings +

Eskimo – winter igloo
Materials, Construction, and Technology - *Evolution of form*

- Yaguar dwelling, Amazon - wood + thatch
- Uru dwelling, Peru - reeds
- Arab tents - sticks + felt
- Masai dwelling, Africa - wood + thatch (+ mud)
Site - Influence of site on house form — hilly terrain, ecological determinism, lack of land, etc.

Defense - Tight / closed settlement patterns as a form resulting from defense-needs

Santorini, Greece - barrel vault roofs (stone...concrete)  
Agra fort, Agra
Economics - Exerts constraints on house development, but does not account for house form.

HOUSES IN NEPAL – BASED ON ECONOMY
Religion - Anti-physical determinism (neglecting material factors) - attributes form of houses to religious or spiritual views and beliefs; orientation, plan and spatial arrangements may be affected by religious beliefs; raised on stilts or underground can also be attributed to religion.

CHURCHES, RUSSIA
Cultural - Socio-cultural forces may include religious beliefs, family and clan structure, social organization, way of gaining livelihood, and social relations between individuals. Social organization may reflect the varying relationships between or varying needs of genders or different age-groups.
tribes and natives who still live permanently under very simple conditions Kåta", which is like at tent. - In sweden

The mongolians live in a "Yurt" which is like a circular wooden frame carrying a felt cover.

A lot of countries around the world have their own "aboriginal people". For example, Canada, Alaska and North Russia have Eskimos who live in igloos.

A tribe in India live in this hut called the Toda Hut.
SYMBOLISM
COLOUR
FOLK ART
SYMBOLISM

TEMPLE AS THE BODY OF THE DEITY

- Stupi
- Sikha (Tuft)
- Mahanasi
- Alpa nasi
- Sikharam
- Kantham
- Gulam (Neck)
- Bahumulam (Shoulders)
- Prastaram
- Mukham (Face)
- Karakaram (Arm)
- Padavargam
- Janumandalam (Knee)
- Adhishtanam
- Upa Peetham Charanam (Foot)
- SEATED SIVA
SYMBOLISM

TAJ MAHAL, AGRA

SRIKOIL KERALA
COLOUR

JAIPUR – PINK CITY

JODHPUR – BLUE CITY
COLOUR

ELLORA CAVE PAINTINGS

MARBLE INLAY WORK - TAJ
FOLK ART

MADHUBANI PAINTINGS - BIHAR

WARLI - MAHARASHTRA

KALAMKARI- ANDHRA

GONDH - MP
FOLK ART

PATA CHITRA

TANJORE PAINTING
Vernacular Architecture
PRINCIPLES OF DESIGN
IN
VERNACULAR ARCHITECTURE
“The vernacular architecture of our past was based on certain principles of design”.

And is a result of factors that are

- region specific – site, landform, topography and climate.

- culture specific - living style, activity pattern, customs and traditions.
In design evolution, Architecture cannot fulfill its function and generate its message unless it has some underlying principles of design...

- AXIS
- SYMMETRY
- HIERARCHY
- RHYTHM
- DATUM
- TRANSFORMATION

Including FORM & SPACE.
Principle of Design: The underlying geometry was *Grid Iron Pattern.*
Houses were designed in close proximity to each other, built around a central courtyard.

Facades solid, windows openings facing the courtyard and passages.

Introverted design planned around the main depression “the tank”, that acts as a community space.

Mud bricks used for construction.

Series of enclosures for security reasons with gates at strategic locations.

Principles of Design:
Axis: is a line established by two points in space. Series of lines cross each other to form grid iron pattern.
Hierarchy: Articulation by variations of form and size of space. This principle is achieved by variation in size of spaces from street- to passage -to court.
Transformation: Alteration by various forms manipulated in design can be seen.
HOUSES AND COMMUNITY TANK

TEMPLE - RUINS

HOUSE - PLAN

MOHANJODARO
Axis is to be terminated at both of its ends by a significant form or space. The notion of edges defined by well-defined edges.

Vertical planes facades enclose an open space. Well-defined spaces centralised/regular in form.
The organizing principle is a central courtyard.

- The Dogon village designed based on hierarchy of spaces, the social and spatial fabric generated out of few simple design principles.
- Design is either along the main axis or diagonal axis.
- Building walls seen at an angle along the diagonal as perspective with vanishing points shifting along axis creating an ever-changing perspective view.
- Low ceilings supported by carved pillars.
- Spatial character evolved to defend against warriors. They built their houses in clusters, which acted like fortress.
- Geometry of design adopted in dwelling includes pure geometric shapes like square, rectangle and circle design.
Line datum can organise the elements in the form of line. Line can cut through and form a common edge for the pattern.

In the village layout-the main open space falls on the line. A regular geometry

Visible in the design-orderly geometric chaos

G-A cluster
H-Headmen's House
S-Arrival space
A-A cluster
M-Mosque
Design: Street as a space for community.
- Streets are narrow, with wide opening to the main court and spaces. It can be with or without variety.
- The geometry can be curves, zig-zag to meet the multiple needs of culture.
- Radial pattern, in terms that the design generates from one central focal point the welcome court.
- Street pattern - Bannis clustered around the axial street. The lower cast kept away from the main settlement area. The main court is near the Head's House.

The ‘banni house’ is single cell of body of settlement. The circular unit is subdivided in to various zones according to the functions to be carried out in the house, division of space without walls.
DHORDO VILLAGE, RAJASTHAN
PLAN
Source (base drawing) - Architecture of the Indian desert.

Exceptional size-dominance seen by the size of the space/form in design.

A unique shape-visually dominant and important shape of the space/form in design.
Design: Jaisalmer fort is a traditional settlement, not exactly a vernacular settlement. The city is network of streets, high buildings, narrow streets.

Hierarchy of size: The design layout shows a network of space in which varies in size. A space dominates when it is significantly different in size from all other elements, such as "C-Royal Square"

Hierarchy of Shape: Visually dominant by the shape from other elements in composition. A discreet contrast in shape is critical.

Rhythm: Patterned reoccurrence of elements in design such as Granary areas in the design. Repetition as a dense organization of repetitive pillars.
JAISALMER, RAJASTHAN
Space and form are visual elements. Visual continuity is a result of opening up of enclosures in space. Generation of form in space is affected by opening these horizontal and vertical elements in space. It depends on size, number and location of openings.

Main Chowk has full enclosure with two streets opening the visual link.

Neighbourhood Space activity linked to houses opens to the residential streets.

Angan near the house. Transition space in house and street.

Main Village Square is village community space, at intersection of main streets.

**SKETCH PLAN**
Source - Architecture Kutch.
Design: In the Kutch region, the architecture is a result of hot and dry climate. Village is situated near a river. The house has geometric circular form. The layout of village is based on caste hierarchy—Brahmins, Harijans, Darbari and Muslims. The network of streets is organic, resembles the branches of trees. The underlying geometry is ring with branches. The streets have ever-changing views. Chowks, Y shaped junctions make the intersections of streets.
The *present is to be seen as a continuity of the past.*

The *relation of spaces* is to be seen as a *functional need.*

*Street and court as community spaces,* an extension of house/adjoining area.

**Principles of Design:** Axial relations, articulation of spaces, transformation in space and hierarchy of space and size.

The various design *typologies* such as *street, courtyard,* hybrid

of street and court are to be learnt as lessons from the past.

“*The contemporary design as a continuity of the past vernacular design.*”
Indian vernacular architecture is the informal, functional architecture of structures, often in rural areas of India, built of local materials and designed to meet the needs of the local people.

These structures reflects the rich diversity of India's climate, locally available building materials, and the intricate variations in local social customs and craftsmanship.

It has been estimated that worldwide close to 90% of all building is vernacular, meaning that it is for daily use for ordinary, local people and built by local craftsmen
The vernacular can be simply defined as
“of, relating to, or characteristic of a period, place, or group ; especially : of, relating to, or being the common building style of a period or place ”

Though this definition is better applied to Western culture, more so in the context of North America, where the ‘vernacular’ often denotes pioneer construction and architecture.

The ‘vernacular’, in India, denotes low cost, traditional village and small town settlements, where construction is carried out without the help of architects and professionals, where building activity is regulated by a long tradition that stretches back for many centuries, in many cases.
Vernacular settlements in India often take on the shape and form that is dictated by the climate they are in, or the socio-cultural norms that they are designed to preserve and protect.

For example, village settlements in Uttaranchal are often characterized by houses of stone, timber and mud mortar on slopes, with thick stone walls of coursed rubble masonry designed to ward off cold, with a shelter for animals below the main house (the heat given off by mulch animals heats the house above further).

In Kerala, village houses are slope-roofed with Mangalore tiles and thatch to draw off and channel rain.

In Assam, the same houses are often built on stilts, the better to counter the often damp ground.

In Punjab, whitewash on the outside walls helps to cool down the summer heat.
‘Mangalore’ tiles in Kerela

The cold dry climates in Spiti
In each case we see that vernacular architecture in India’s diverse regions has evolved a unique way of responding to the climate and the environment that is sustainable,

It also shows an intelligent approach to the problems of climate, and is a delicate balance of social and cultural factors through spatial vocabulary such as walls, courtyards, floors and semi-private and private spaces.

Climate, of course, is a predominant factor in determining the forms of vernacular architecture in India. Climate in India varies from the scorching sun in the Gangetic plains to the tropical conditions of the south, from the cold dry climates in Spiti and Leh to the perennially damp conditions in the northeast of the country. This variation in climate spawns a diversity of forms for vernacular architecture.
Apart from climate, **geography too is a determining factor.** Geography, once again, can **vary from the hilly terrain** of the Himalayas and Kashmir, to the **flats of the Deccan** and the south, from the **damp ground** of Assam and Bengal to the **dry earth** of Punjab.

The **third factor is the availability of material** and the types of material available. In **Goa and Karnataka**, an abundance of **red laterite stone** makes this the medium of choice for vernacular construction, and in **north India** a **clayey soil makes sunburnt bricks** and mud mortar a commonly used medium. **Bamboo construction** can be found in the **northeast**, and roofs tiled with the so-called **‘mangalore’ tiles in the south**. Similarly, a plethora of **sandstone made medieval Jaipur into the famous ‘Pink City’**, and a similar stone was used to face Mughal buildings in the 17th century.
MUD - RAJASTHAN
WOOD - KERALA
THATCH - TAMILNADU
STONE - HIMACHAL
BAMBOO - CHANG GHOR
An interesting theory holds that materials also varied according to the caste system.

White **stone** is apparently only used by Brahmins, **red** by *Kshatriyas*, **yellow** by *Vaishyas* and **black stone** by *Shudras*.

The **Indian vernacular is a true representation of the people and their culture, and India’s diverse heritage** makes this a fascinating study.
Indian vernacular architecture has evolved organically over time through the skillful craftsmanship of the local people. Despite the diversity, Indian Vernacular architecture can be broadly divided into three categories.

- KACHCHA
- PUKKA
- SEMI-PUKKA
KACHCHA
A *kachcha* is a building made of natural materials such as mud, grass, bamboo, thatch or sticks and is therefore a short-lived structure.

Since it is not made for endurance it requires constant maintenance and replacement.

The practical limitations of the building materials available dictate the specific form which can have a simple beauty.

The advantage of a *kachcha* is that construction materials are cheap and easily available and relatively little labor is required.
PUKKA
A *pukka* structure is made from materials resistant to wear, such as forms of stone or brick, clay tiles, metal or other *durable materials*, sometimes using mortar to bind, that does not need to be constantly maintained or replaced.

However, such structures are *expensive to construct* as the materials are costly and more labor is required.

A *pukka* may be elaborately decorated in contrast to a *kachcha*. 
SEMI-PUKKA

A combination of the *kachcha* and *pukka* style, the semi-*pukka*, has evolved as villagers have acquired the resources to add elements constructed of the durable materials characteristic of a *pukka*.

Vernacular Architecture always evolves organically as the needs and resources of people change.