



UNDERSTANDING
and
APPRECIATING
ARCHITECTURE

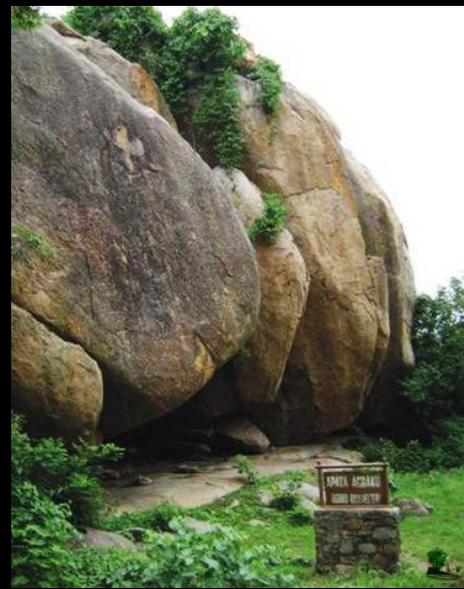
BY

DR SS BHATTI

Former Principal, Chandigarh College of Architecture, Chandigarh

UNDERSTANDING and APPRECIATING ARCHITECTURE

Architecture fulfils one of the three basic human needs, SHELTER; the other two are: FOOD and CLOTHING. Shelter has preceded Architecture by many centuries as the Art and Science of making “The Objective Outer World of Matter”. In other words, Man set foot on the road to civilisation when he stepped out of the cave to make his own Shelter with his own hands. That is reason enough to say that “architecture is the matrix of civilisation”.



ARCHITECTURE SPEAKS...

*Khalvat kee fizaaron mein karoon jalvatein paida
Jo khaak mein pinhaan hain woh hon sooratein paida
Uttoon main lahoon ban ke rag-i-sang mein jis dam
Hon Taj-o-Ajanta see haseen mooratein paida*

خَلوت کی قضاؤں میں کروں جلو تیں پیدا
جو خاک میں پنہاں ہیں وہ ہوں سوڑتیں پیدا
اتروں میں لہو بن کے رگ سنگ میں جس دم
ہوں تاج و آجنتا سی حسین موڑتیں پیدا
— تعمیر چنڈیگرہ ہی

—DR SS BHATTI



**In desolate Emptinesses I'm creating Habitations
Forms that lie hidden in dust become Manifestations
When I course like blood thro' the veins of Stone
Taj-'n'-Ajanta emerge as Beautiful Configurations**

The inviolable importance of

ARCHITECTURE,

as the "Mother of all Arts",
becomes crystal clear, when we know that it
was

Lord Vishwakarma

who created the Universe
although the three principal gods of

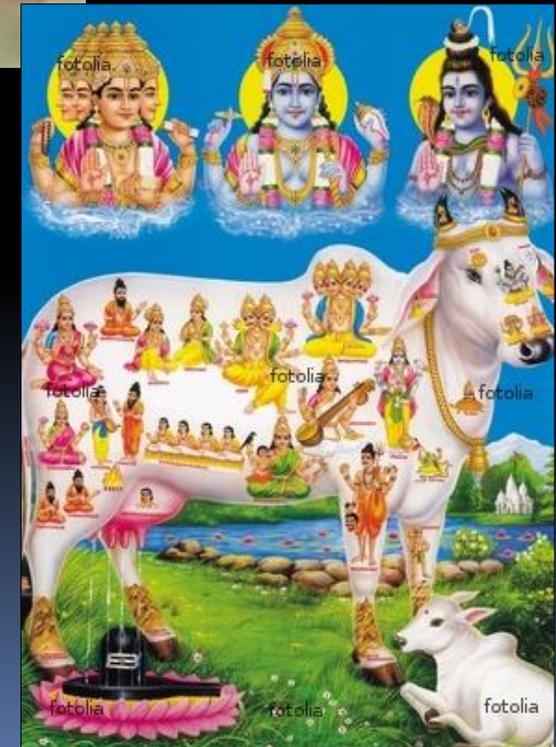
Hindu Mythology:

Brahma, Vishnu, and Mahesh,

had the powers of
Creation, Protection, and Dissolution,
respectively.

And **Lord Vishwakarma**, as the
CELESTIAL ARCHITECT, employed only
two elements:

Space and **Time**—and the three stated
primary functions of Brahma, Vishnu, and
Mahesh are going on, ever since the
Universe came into existence,
endlessly...in self-renewing cyclical order.



ELEMENTS OF CREATIVITY are:

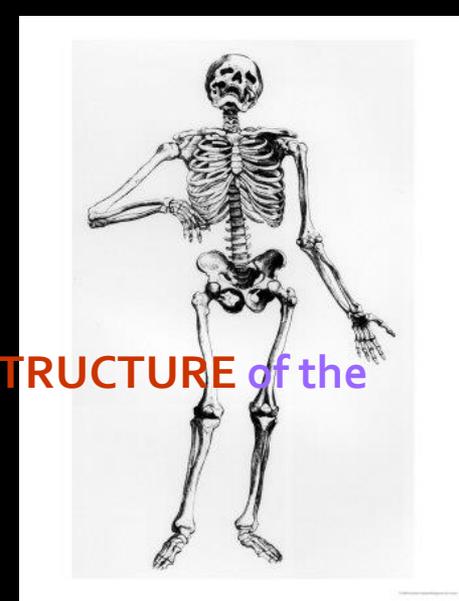
SPACE, **Structure** and **Form**, which function in tandem with each other in the mind-boggling Unity and Diversity of whatever Humans create.

In Building Design, **Space** pertains to Architecture; **Structure** to Engineering; and **Form** to Aesthetics.

SPACE in **ARCHITECTURE** is enclosed vacuity, with **STRUCTURE** intervening between it and the enclosing envelope called **FORM**.

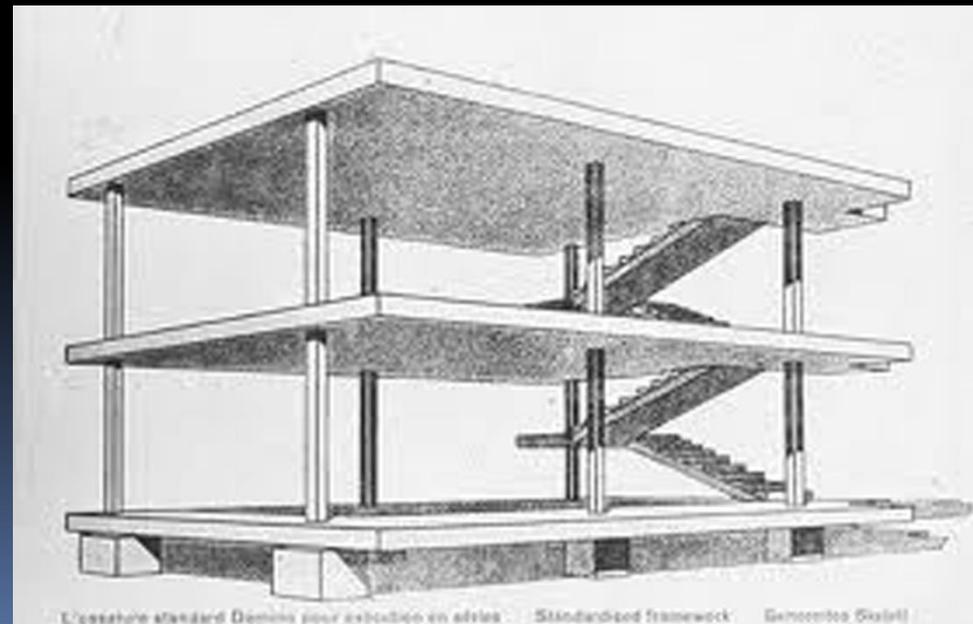
It is akin to the Human Body in which Skeleton is the Structure that creates Space for accommodating vital physiological functions—and intervenes between Form [flesh and skin] and the **Space**.

Space is akin to **Soul**; **Structure** to **Mind**; and **Form** to **Body**.



SKELETON is the **STRUCTURE** of the Human **BODY**...

...Just as this **Column-and-Beam STRUCTURE** is the **SKELETON** of the **BUILDING** [That is the **BODY** of **ARCHITECTURE**] shown below!



- Aesthetic Appreciation and Artistic Creation are two complementary activities of the same human Mind.
- Man, having been created by **GOD** in His own image, is essentially an Artist who started his forays into Creativity by wondering at the beauty and bounty of Nature, which is God's manifest power [*Qudrat* is the word that Guru Nanak has used for it in Gurbani].
- The word 'Man' is not a gender; it represents a human person, and thus includes both the sexes.
- The beginning of his journey in the realm of Artistic Creation lay in the exercise of Man's native ability [that is, God-gifted, *not* culturally acquired] of Aesthetic Appreciation.
- Aesthetic Appreciation takes place by means of one or more of the **Five Senses**: Seeing, Hearing, Touching, Smelling, and Tasting.

- To delve deep into the stated problem we will have to go back to the beginning: the **ELEMENTS**; the **PRINCIPLES**; and the **OBJECTIVES** of Human Creativity.
- **ELEMENTS** are the simplest parts of which anything consists or into which it may be analysed irreducibly.
- **Space, Structure, and Form** are the three Elements of which **ARCHITECTURE** is made.
- **Space** is the Great Void, uninhabited emptiness, from which all that exists physically must be shaped.
- A basic aim of **Architecture** is the creation of Shelter, which is composed of **Structure** and **Form**, just as the human body is composed of the bony skeleton and the fleshy muscles and skinny surface, the finished form.
- These three **ELEMENTS** are there in all Forms of Art: literary, visual, performing.
- Dance, Drama, Music (Performing Arts) are spatial-temporal i.e., they exist both in **Space** and **Time**.

- **PRINCIPLES** are fundamental unchanging truths; the ultimate source or cause or origin of something. Together they constitute a comprehensive law or doctrine from which others are derived, or on which others are founded.
- Principles of Creativity are: **Balance**, Harmony, Proportion, Scale, Rhythm, and Unity.
- **Balance** is visual (painting, sculpture, architecture) or audial (poetry, music) equilibrium (i.e., a state in which opposing forces or tendencies neutralise each other).



Khalsa College, Amritsar, is a perfect example of **BALANCE** in Architectural Composition!

- **HARMONY** results from combination or adaptation of parts, elements, or related things, so as to form a consistent and orderly whole.
- The German philosopher and mathematician Leibnitz uses the term “pre-established harmony”: a harmony between **Mind** and **Matter** established before their creation, whereby their actions correspond though no communication exists between them.

■ **HARMONY** is fundamental to all forms of Creativity as it produces a unity of effect or an organic whole, which gives aesthetic pleasure.

Meenakshi Temple, Madurai, is a perfect example of **HARMONY** in ARCHITECTURE!

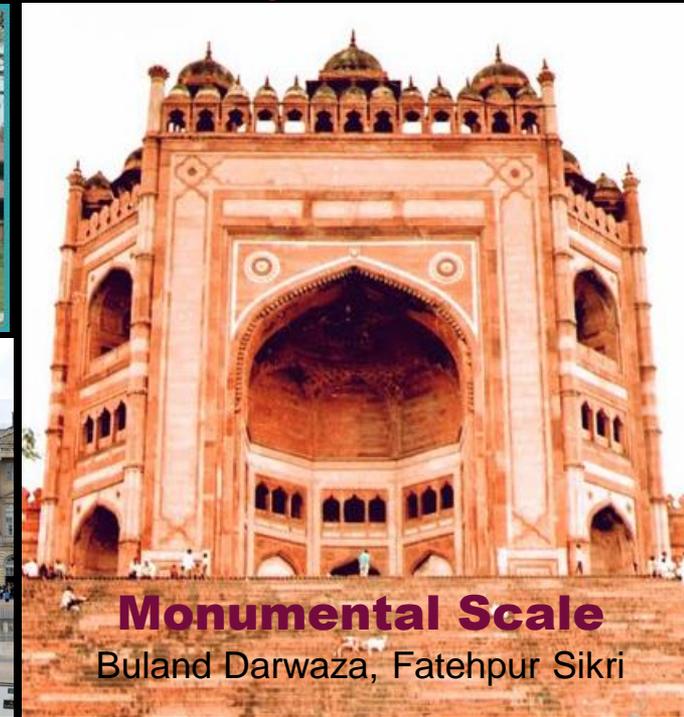
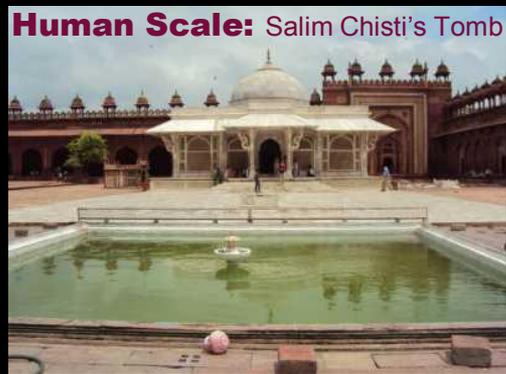
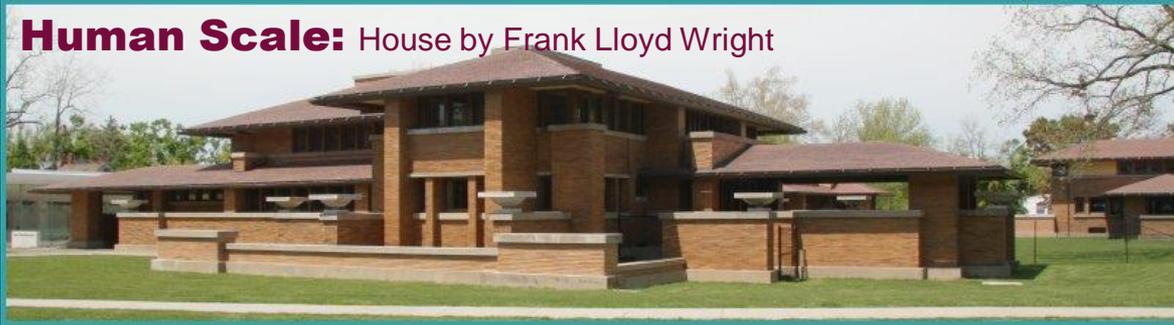


- **PROPORTION** and **SCALE** are inter-related as both deal with the problems of sizes and their relationships with one another.
 - **PROPORTION** is the relation of one part or portion to another, or to the whole, or of one thing to another, with regard to magnitude, quantity, or degree.
 - An artefact is said to be well-proportioned when the comparative relation or ratio among its parts, as to the whole, produces a pleasant effect.

TAJ MAHAL is a matchless example of Perfection of **PROPORTIONS** and **SCALE!**



Scale in Architecture has two extremes: Human and Monumental. It is easy to identify oneself with Human Scale because of its friendliness. Monumental Scale is used to awe the spectator, and exploits **Architecture's power to create unforgettable visual impact** for obvious reasons.



■ **RHYTHM** is the measure of time or movement by regularly recurring impulses, sounds, etc., as in music. It is the measured motion which, by regular recurrence, produces delightful patterns of sight (as in **architecture**) or sound (as in **music**).

■ Of all the principles, **RHYTHM** is the most fundamental as it is the only single principle found in all Forms of Creativity, their mediumistic eccentricities notwithstanding.

The Order and Harmony of the Cosmos is sustained by the heartbeats which Rhythm creates in the souls of stars, planets, and all forms of living matter.

RHYTHM in Dance is Audio-Visual; in MUSIC, it is Audial; in ARCHITECTURE, it is Visual but apparent [not actual]! Unless Poetry is recited the music intrinsic to it by the presence of metre will not manifest—and it will come off as a bland, prosaic thing!



- **UNITY** is the quality or fact of constituting a complex, systematic undivided whole so as to create an impression of being one as complete-in-itself. Unity is a plural, implying the presence of a minimum of two components.
- **The goal of ARCHITECTURE is to transform our awareness from Separation to UNITY.**
- **In UNITY we perceive only divine power, express only love and freedom.**
- **UNITY lies in the organisation of parts by which objects otherwise unrelated are so placed that the mind loses sight of them as separate entities, and notes only the resulting composition as an **Organic** (i.e., seemingly seamless) **Whole**.**
- **So fundamental is the PRINCIPLE of UNITY that scarcely any other quality is needed for excellence in a work of Creativity.**
- ***A unique quality of UNITY, which has hitherto been ignored, is that, in a Work of ART, even destruction must be represented as construction (i.e., as a composition of constituent parts carefully selected from out of the junk-yard randomness of the debris of destruction!)***

- **OBJECTIVES** can be seen clearly if we first consider the basic function of **Architecture**, which is to create **SHELTER** for the multifarious activities of human beings.
- **This function has two aspects: UTILITY, and AESTHETIC.**
- **Architecture** must fulfil the needs for which it is created (**UTILITY**), and must be a sublimation of sensory, perceptive, and cognitive experience (**AESTHETIC**).
- **Architecture, as Built Environment, must create ORDER which is one of its chief Objectives.**
- **The other are: TRUTH, BEAUTY, and GOODNESS.**
- *Insofar as **Architecture** is concerned, **Nature** is the best known embodiment of such Fundamental Principles which inspire, inform, and organise human **Creativity**.*

An Immortal Ode to Love that **Sahir** failed
to Admire: **TAJ**—
which is an Architectural Poem in
White Marble!

ساحر کو حسنِ تاجِ دکھائی نہ دے سکا
کچھ ایسا فکرِ مفلسی میں مبتلا ہوا
سادہ سی بات اُسکی سمجھ میں نہ آسکی
ہے سیم و زر سے بالا محبت کا مرتبہ

*Sahir ko husn-i-Taj dikhayi na de saka
Kuchh aisa fikr-e-muflassi mein mubtala hua
Saada see baat uskee samajh mein na aa saki
Hai seem-o-zar se bala mahabbat ka martaba*

Sahir couldn't discern the Beauty of Taj
So engrossed was he in thoughts of Poverty
This simple truth escaped his poetic grasp
That Love from Wealth enjoys total Liberty

TAJ MAHAL, in Agra, Uttar Pradesh, India (N 27°10' E 78°03')

- **Beauty** is the splendour of **Truth**, of Order (**Unity**), of **Form**.
- **Truth** is the apprehension and expression of the Ultimate Reality whereby accuracy of adjustment or conformity to inviolate PRINCIPLES is achieved.
- **Goodness** is the aesthetics of character—a spontaneous, undistorted, qualmless expression of the inner person: unpolluted by the dross of mundane life.
- Something is *good* when it promotes health, welfare, or happiness.
- When one transfers human benevolence to its origin, **GOD** becomes good, with the insertion of an additional “o” that stands for outstanding ordinariness.
- **Utility** is fitness for perfect use.
- **Utility** is the power to satisfy the wants of people in general.
- It gives one the all-important insight into the ultimate scheme of things that nothing that exists is without use, for the cosmos is an active conglomerate composed of, and sustained by, interrelationships, interdependences, and interactions.

BUILDING-TYPES

Though Architecture primarily seeks to provide **SHELTER**, it faces its own intrinsic challenge to design it in such a manner that it fits like a glove the unique requirements of each Building-Type among a vast variety of functions without creating environmental anarchy. The following examples are given to illustrate this special property of Architecture as the Art and Science of Building Design...

Egyptian PYRAMIDS: Architecture for the Dead



Architecture for Library:

Panjab University
Architect: Pierre Jeanneret



Gothic Cathedral: Architecture for Worship and Social Interaction
By Master Masons



Iconic Architecture: Gandhi Bhawan, PU

Architect: Pierre Jeanneret



Architecture for Students Centre PU

Architect: BP Mathur



Airport Architecture: TWA by Eero Saarinen



Architecture for Living: Farnsworth House by Mies van der Rohe



Architecture for Art and Culture: Guggenheim Museum by Frank Lloyd Wright



STYLES OF ARCHITECTURE: Just as there is a vast variety of Building-Types, **Architecture** has produced many fascinating **Styles** throughout the course of history—each shaped by a complex of religious beliefs, climate, social custom, resources, building materials, construction techniques, patrons' whims, architects' notions, etc.



Egyptian Architecture



Greek Architecture



Roman Architecture



Romanesque Architecture



Gothic Architecture



Renaissance Architecture



Baroque Architecture



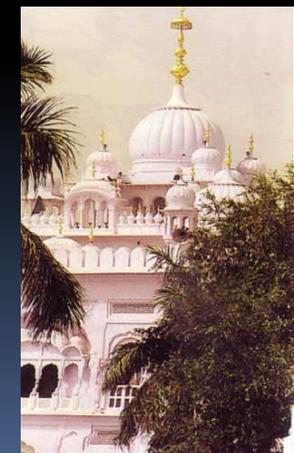
Rococo Architecture



Mughal Architecture



Hindu Architecture



Sikh Architecture

GREATEST MODERN ARCHITECTS WITH THEIR FAMOUS WORKS



Walter Gropius: Bauhaus



Mies van der Rohe: Seagram



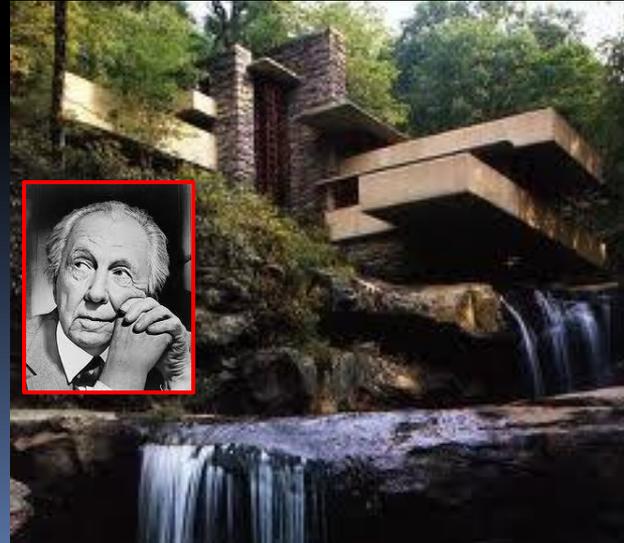
Louis Kahn: IIM, Ahmedabad



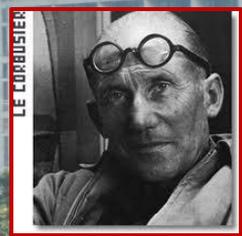
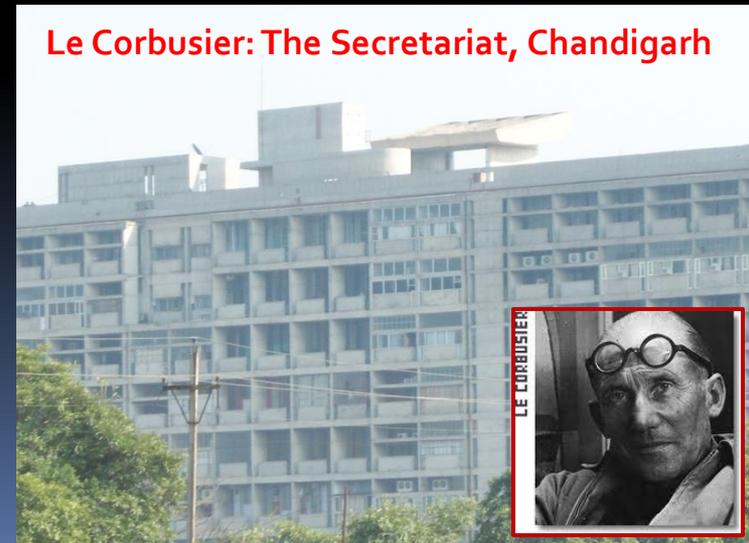
Antonio Gaudi: Sagrada Familia



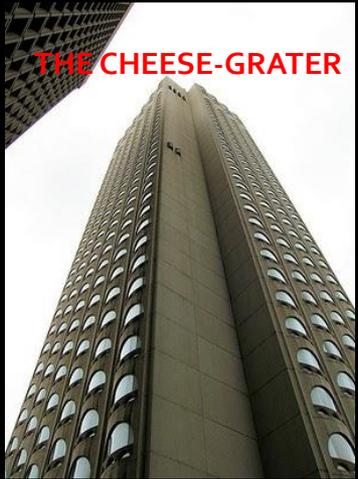
Frank Lloyd Wright: Falling Water House



Le Corbusier: The Secretariat, Chandigarh



New Architectural Trends Bordering On The Fantastic

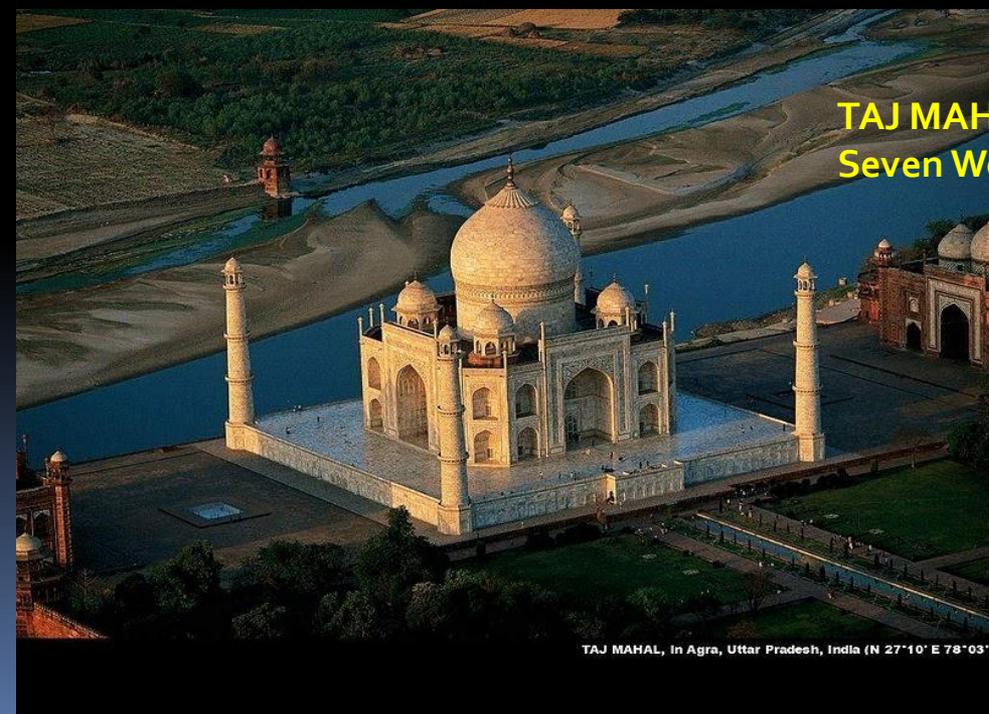




SRI DARBAR SAHIB is a Marvel of Sikh Religious Architecture



KHALSA COLLEGE is a Masterpiece of Sikh Architecture



TAJ MAHAL is a Marvel of Mughal Architecture. It is one of the Seven Wonders of the world!

TAJ MAHAL, In Agra, Uttar Pradesh, India (N 27°10' E 78°03')

MARVELS AMONG HISTORICAL MONUMENTS

HOW GEOGRAPHY, PLANNING, and ARCHITECTURE are related and interdependent.

Planning precedes **Architecture** like it does every human activity—as a scheme or method of acting, proceeding, etc., developed in advance. These two disciplines, by their very nature, scope, conception, construction, and evolution, use **Geography** as their vast, though limited, canvas.

□ **Geography** being **Nature's** Planning and Architecture of the Earth's crust is characteristically altered by the intervention of human **Planning** and **Architecture** which gravely affects **Ecology** leading to serious long-term problems.

□ We must therefore develop an **Ecology of Consciousness** to make these Three Primary Disciplines proactive, reactive, interactive, and synergetic if the Planet Earth is to be saved from the short-sightedness with which we continue its wanton destruction in the name of growth and advancement driven by individual and corporate GREED!

To underscore the metaphysical integrity of the Three Primary Disciplines I have enunciated the following axioms:

□ **GEOGRAPHY** is the *Mother Science*. Geography is the BODY and Ecology is the SOUL of Natural Environment. Geography sustains.

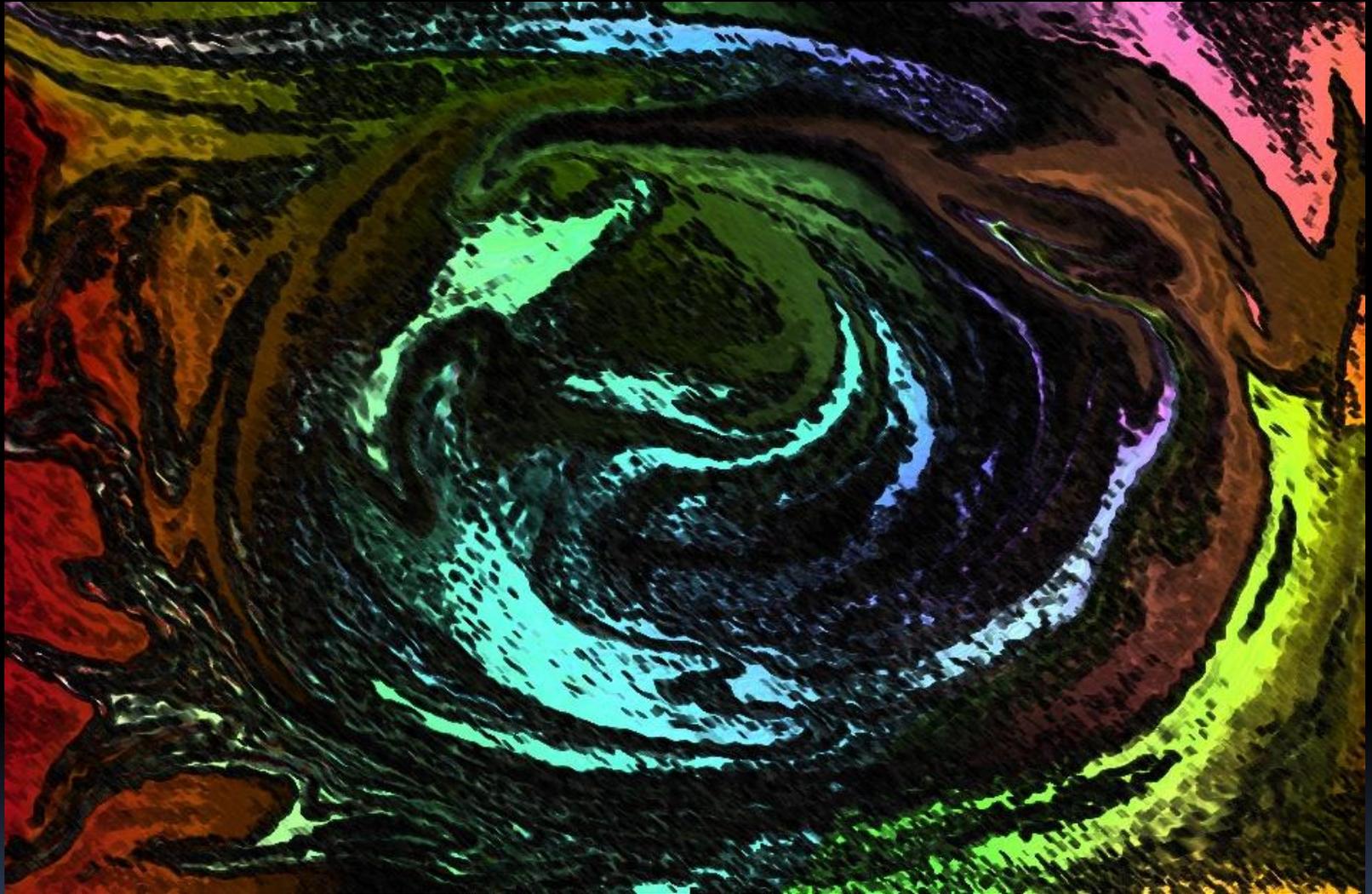
□ **ARCHITECTURE** is the Mother Art. Architecture realises. Architecture is the Built-Form of Micro-Planning.

□ **PLANNING** is the Mother Strategy. Planning anticipates. Planning is realised Macro-Architecture.

Constantinos Apostolou Doxiadis (1913 - 28 June 1975), a Greek architect and town planner, formulated an interesting theory of Human Settlements. He became known worldwide as the lead architect of Islamabad, the new capital of Pakistan, the city of Rawalpindi, Baghdad, and later as the father of Ekistics. Described as a scientist, salesman, visionary, and man of action, he was an apt public speaker.

Doxiadis believed that the conclusion from biological and social experience was clear: to avoid chaos we must organise our system of life from Anthropos (individual) to Ecumenopolis (global city) in hierarchical levels, represented by Human Settlements. So he articulated a general hierarchical scale with fifteen levels of Ekistic Units :

- | | | |
|--------------------------------------|------------------------------|---------------------------------|
| •Anthropos – 1 | •neighbourhood – 1,500 | •small megalopolis – 25 million |
| •room – 2 | •small polis (town) – 10,000 | •megalopolis – 150 million |
| •house – 5 | •polis (city) – 75,000 | •small eperopolis – 750 million |
| •House-group (hamlet) – 40 | •small metropolis – 500,000 | •eperopolis – 7,500 million |
| •small neighbourhood (village) – 250 | •metropolis – 4 million | •Ecumenopolis – 50,000 million |



THANK YOU

YOU HAVE HEARD ME SO VERY PATIENTLY!