CHAPTER – II

ELEMENTS OF BUILDING DESIGN

SPACE

Space is, indeed, fundamental to all forms of physical existence—and, along with Time, constitutes a continuum in which the entire Objective World finds refuge. The word Space to an architect's understanding has a quite distinct connotation from what a scientist or an artist thinks of it. Let us call it, for such a distinct function as Architecture, the great void above the planet Earth's crust. An architect fashions from out of this Great Void many diverse forms of shelter for multifarious human activities. Shelter is one of the three basic necessities of all peoples of the world, the other two being Food and Clothing. Shelter is constructed by enclosing Space by means of four walls and a roof—which, with the exception of the foundations, is primarily built on and above ground. When the need arises to extend it underground, Shelter is fashioned by digging up, with the undug earth around constituting the natural enclosure. It is not difficult to appreciate that the size, volume, and shape of Shelter are determined primarily by Utility which is one of the two basic aspects of architecture, the other being Aesthetic.

Utility constitutes the physical or measurable attribute or tangible aspect of Architecture while Aesthetic represents its metaphysical or immeasurable attribute or intangible aspect. An exclusive focus on Utility will produce Shelter that is as inert as the materials of which it is built. But this mere Building becomes Architecture when areas i.e., sizes are transformed into spaces to give birth to Aesthetic which expresses the Architect's notions of Beauty with a power to stir our souls. In this special sense, Space in Architecture becomes the "Great
Ineffable” as Le Corbusier put it or “Continual Becoming” as Frank Lloyd Wright defined it. Space, in such a case, is then a micro-Void (re-)constituted from the Macro-Void by man-made methods and means.

When Structure is introduced into the Great Void—by way of walls and/or columns—“it begins to be something on which you can hold something. It’s kind of realization of the beginning of containment” (Louis Kahn). A micro-Void emerges as enclosure—an empty place in which material bodies will have extension. Space thus becomes the raison d’être of Architecture.

Supremacy of Space, as a value of Building Design, is paramount, for Architecture alone of all the arts can give Space its full importance. It can surround us with a void of three dimensions, and whatever delight we may derive therefrom is essentially the gift of Architecture alone. Painting can depict space; poetry can recall its image; music can give us its analogy; but Architecture deals with Space directly. It uses Space as a material and sets us in its midst.

From the utilitarian point of view, avers Balram Srivastava, Space is the logical end of Architecture. And to enclose Space is the primary end of Building Design. Space undergoes qualitative changes by the manner in which it is shaped by its enclosure. A symmetrical Space, duly proportioned invites optical movement such as is necessary to impart an equipoise to our consciousness. The concept of space not only provides the opportunity and expressive power to the architect’s imagination, but also gives the spectators the optical illusion of various kinds leading to different experiences of aesthetic delight.

Though fixed in proportions and actual dimensions, under the concept of Space, Architecture is affected by lighting and
the position of shadows; it is affected by colour; a dark sanctum and a lighted roof; it is affected by our own expectancy. And it is affected by the character of the predominating lines: an emphasis on the verticals gives an illusion of greater height, and an emphasis on horizontals gives a sense of greater breadth.

Space is the necessary medium of movement. The solids are essential for support, pressure, and resistance. Besides, they convey the aesthetic feeling of dignity, poise, and grandeur. Space and solids are interdependent, and contribute not only to physical firmness and security but also to contour and composition of decorative elements and figural scheme, which, unaffected by the solidity of the mass(es), actually appear with their own aesthetic identity and entity.

**STRUCTURE**

Structure is an attribute of all that has physical existence. Structure is to Architecture as skeleton is to human body. Structure is the single most indispensable element of Architecture. Without Structure, there is no Architecture. According to Heinrich Engel, however, the necessity of Structure has its own unique cause. The cause is a conflict of directions, or rather several such conflicts that have to be resolved in order to generate Space for human living, working, and recreation. He elaborates this thesis as under:

These directional conflicts have one thing in common: they are all subjected to a phenomenon that, if it did not exist, would

---

2 ibid.
33
There are many views, both controversial and contradictory, extant on this delicate subject among which may be noted: (i) Form follows Function, (ii) Form and Function are one, and (iii) Form actually determines Function.

In my opinion, such controversies and contradictions spring from a basic confusion that exists between notions of Building (which is a creation) and Building Design (which is a process). A process, by its very nature, is sequential, whereas a creation, at bottom, is holistic.

"Architecture has no presence", avers Louis Kahn\(^5\), and goes on to add, "Only a work of architecture has presence, and that at its best is an offering of architecture itself." This concept is mystical, and beyond the reach of the formula: Architecture = Building + Aesthetics.

Before proceeding further, it may be pertinent to distinguish between Form and Shape\(^6\). Form is the most general of the words which can refer to the whole pattern or ordering of something, its make-up or constitution, or its enclosing surfaces. It has application in all these ways: the sonnet form; Ice is water in solid form; rectangular in form. At one extreme, it can merely indicate external appearance: A form-fitting dress. At the other, it can contrast with content all the interrelated patterns and techniques that make of something an organic unity: The author's keen sense of form sustains him through a subject that could easily have gone awry.

Shape more readily suggests a three-dimensional bulk, but it is not restricted to this reference: The gnarled shapes of century-old cypresses. The word can also apply to the enclosing

---


\(^6\) Reader's Digest, *Use the Right Word*, p. 227.
surface of both a plane or solid object: an elliptical shape; a dress to show off her lovely shape. When Form and Shape are contrasted form usually suggests a prescribed or typical pattern, whereas shape suggests the individual interrelationships that a specific thing exhibits: the startling variety of shapes with which the sculptor had fleshed out the human and animal forms he had chosen as his subjects.

For our purposes, however, apart from fulfilling its basic purpose of enclosing Space, Form expresses the Structural unity of all modes of artistic creation: music, literature, Architecture, etc. Also, philosophically speaking, Form is that which the mind itself contributes as the condition of knowing—as well as that in which the essence of a thing consists. If this were not the case, different people would not have different notions of Form, and apprehension of the physical aspect of objective Reality would be totally devoid of the colour and charm of subjectivity. When Space, Structure, and Form meld into each other, as if by a conscious choice of their own, the outcome transcends the limitations of a mere Building to become Architecture—a psycho-emotional force that stirs the soul of Man. At this juncture, it will be interesting to see what Louis Kahn has to say on this subject:

If I were to try to define architecture in a word, I would say that architecture is a thoughtful making of spaces. It is not filling prescriptions as clients want them filled. It is not fitting uses into dimensioned areas. It is nothing like that. It is a creating of spaces that evoke a feeling of use: spaces which form themselves into a harmony good for the use to which the building is to be put.
I believe the architect's first act is to take the program that comes to him and change it. Not to satisfy it, but to put it into the realm of architecture, which is to put it into the realm of spaces.

An architectural space must reveal the evidence of its making by the space itself. It cannot be a space when carved out of a greater structure meant for a greater space. Because the choice of a structure is synonymous with the light which gives image to that space. Artificial light is only a single, tiny, static moment in light and is the light of night and never can equal the nuances of mood created by the time of day and the wonder of the seasons.

A plan of a building should be read like a harmony of spaces in light. Even a space intended to be dark should have just enough light from some mysterious opening to tell us how dark it really is. Each space must be defined by its structure and the character of its natural light.

When a personal feeling transcends into Religion (not a religion but the essence religion) and Thought into Philosophy, the mind opens to realizations. Realizations of what may be the existence will of, let us say, particular architectural spaces. Realization is the merging of Thought and Feeling in the closest rapport of the mind with the Psyche, the source of what a thing wants to be. It is the beginning of
Form. Form encompasses a harmony of systems, a sense of Order and that which characterizes one existence from another. Form is what, design is how. Form is impersonal and belongs to nobody. Design is personal and belongs to the designer. Design is a circumstantial act: how much money there is available, the site, the client, the extent of knowledge. Form has nothing to do with circumstantial conditions. In architecture, it characterizes a harmony of spaces good for a certain activity of man.

But architecture has limits and when we touch the invisible walls of the limits, then we know more about what is contained in them.

A great building, in my opinion, must begin with the unmeasurable, go through measurable means when it is being designed, and in the end must be unmeasurable. The design, the making of things, is a measurable act. At that point, you are like physical nature itself, because in physical nature everything is measurable—even that which is yet unmeasured, like the most distant stars which we can assume will eventually be measured.

But what is unmeasurable is the psychic spirit. The psyche is expressed by feeling and also thought and, I believe, will always be unmeasurable. I sense that the psychic existence will call on nature to make what it wants to be. I think a rose
wants to be a rose. Existence will, man, becomes existence through nature's laws and evolution. The results are always less than the spirit of existence.\footnote{op. cit., p. 89.}

In sum, Form is that which deals with inseparable parts. If you take one thing away, you can't have the whole thing.\footnote{op. cit., p. 13.}

**HINDUISM AND THE TEMPLE**

(Ref.: Sketch I)

Hinduism consists of the beliefs, practices, and socio-religious institutions of the South Asia people known as Hindus, principally the peoples of India and parts of Pakistan, Ceylon (Sri Lanka), Nepal, and Sikkim. Hinduism also has a following among overseas Hindu communities that are situated in parts of Southeast Asia, East and South Africa, Surinam, and in Islands such as Fiji, Mauritius, and Trinidad.

Temple (mandir) is the place of worship of the Hindus. Their tradition demands that they strictly follow the guidelines laid for the religious organisation of their sacred architecture. Thus, temples must be erected on a site that is *shubha* (i.e., suitable, beautiful, and auspicious), in the neighbourhood of water, because the gods will not come to other places. Temples are not, however, designed to be congenial to their surroundings because a manifestation of the sacred is an irruption, a break in phenomenal continuity. Since temples are said to constitute an opening in the upward direction and thus ensure communication with the gods, they are visible representations of a cosmic pillar and their site is said to be a navel of the world. Their outward appearance must raise the expectation of

\footnote{op. cit., p. 89.} \footnote{op. cit., p. 13.}
HINDU TEMPLE: conceptual plan

SKETCH I
meeting with God. Their erection is considered a reconstruction and reintegration of Purusha-Prajapati enabling him to continue his creative activity, and the finished monuments are "symbols" of the universe that is the unfolded one. The owner (i.e., an individual or community that paid for its construction, and the descendants) of the temple—also called the "sacrifices"—participates in the process of reintegration and experiences his spiritual rebirth in the small cella, aptly called the garbhagriha (the womb room), by means of meditative contact with God's presence, symbolised or actualised in his consecrated image. The cella is in the centre of the temple above the "navel"—i.e., the "foundation stone"—a jar filled with the creative power (shakti) that is identified with the goddess Earth (who bears and protects the monument), three lotus flowers, and three tortoises (of stone, silver, gold) that represent earth, atmosphere, and heaven. The tortoise is regarded as a manifestation of Vishnu (the sustainer of the world among the Hindu Trinity) bearing the cosmic pillar, and the lotus as a symbol of the expansion of generative possibilities. The vertical axis or tube (coinciding with the cosmic pillar), which connects all parts of the building and is continued in the finial (kalasha) on the top, corresponds with the mystical vertical "vein" in the body of the worshipper through which his soul rises to unite itself with the Highest.

The principal architectural features of the temple, as identified by Percy Brown, are enumerated below:

Throughout the greater part of the country, the sanctuary as a whole is known as the vimana of which the upper and pyramidal or tapering portion is called the sikhara meaning tower or spire. Inside the vimana is a small and generally dark chamber or
cella for the reception of the divine symbol. This cella is the garbha griha or "womb-house", and was entered by a doorway on its inner, and usually, eastern side. In front of the doorway was a pillared hall or mandapa actually a pavilion for the assembly of those paying their devotion to the divine symbol in the cella. Some of the earlier temples indicate that the mandapa was a detached building isolated from the sanctuary by a definite open space, as in the "Shore" temple at Mamallapuram, and originally in the Kailasanatha at Conjeeveram, both near Madras, and built about 700 A.D. A little later it became the custom to unite the two buildings, thus forming an inter-mediate chamber, or vestibule and called the antarala. Leading up to the main hall, or mandapa, is a porch or ardha-mandapa while there may be a transept on each side of this central hall, known as the maha-mandapa. The most complete illustrations of the fully formed and co-ordinated temple structure are the tenth century examples at Khajuraho, Central India, especially that known as the Kandariya Mahadeo. In this class of temple, each portion named above, has its separate pyramidal roof raising in regular gradation from the lowest over the porch (ardha-mandapa) to the lofty spire over sanctum. In some parts of the country it became the practice to enclose the temple building within a rectangular courtyard by means of a continuous range of cells, facing inwards, the whole forming a substantial containing
wall and thus ensuring seclusion. One of the first temples to combine all these attributions and to present a co-ordinated plan was that of the Vaikumtanath Perumal at Congjeeveram (cir. A.D. 740).

Most of these early temples have a processional passage or *pradakshina patha* consisting of an enclosed corridor carried around the outside of the cela.

Percy Brown has also noted that "the basic intentions of the Greek and Indian temples were not dissimilar as neither was designed for congregational worship, each being a sacred monument, and an object of devotion in itself. The Indian temple was, in the language of the people, a "dwelling place of the gods", for, in addition to the symbol of the deity within the cela, numerous niches, recesses, alcoves, and altars, were provided as part of the architectural scheme, within which were enshrined sacred images of the immortals, so that the whole structure resolved itself into a place of assembly of the *Devas*, or "Shining Ones". By this token, "the religious, philosophical, and metaphysical qualities of the production (i.e., Temple Architecture) take first place, the artistic hereafter being regarded as secondary."

**BUDDHISM AND THE STUPA**
*(Ref.: Sketch II)*

Buddhism is a pan-Asian religion and philosophy founded by Siddhartha Gautama in Northeast India in the 6th century BC. Spreading from India to Central and Southeast Asia, China, Korea, and Japan, Buddhism has played an influential role in

---


10 ibid.
the spiritual, cultural, and social life of much of the Eastern world. Ashoka, one of the most significant early devotees of Buddhism, was the last major emperor in the Mauryan dynasty of India. Most enduring were Ashoka's services to Buddhism. He built a number of stupas and monasteries and erected pillars on which he ordered inscribed his understanding of religious doctrines.

Stupa is a Buddhist commemorative monument usually housing sacred relics associated with the Buddha or other saintly persons; an architectural symbol of the Buddha’s parinirvana, or death.

The hemispherical form of the stupa appears to have been derived from pre-Buddhist burial mounds in India. As most characteristically seen at Sanchi (2nd-1st Century BC), it consists of a circular base supporting a massive solid dome (the anda, “egg”, or garbha, “womb”) from which projects an umbrella (chhatra). The whole structure is encircled by a railing and four gateways (toranas), which at Sanchi are richly decorated with relief sculpture depicting Jataka tales, events in the life of the Buddha, and popular mythological figures.

The Indian conception of the stupa spread throughout the Buddhist world and evolved into such different appearing movements as the bell-shaped dagaba (heart of the garbha (womb) of Ceylon (now Sri Lanka), etc. The basic symbolism, in which the central relic is identified with the sacred person or concept commemorated and also with the building itself, is retained. Worship of a stupa consists in walking around the monument in the direction taken by the path of the sun (pradakshina). Even when the stupa is sheltered by a building, it is always a free-standing monument.
Buddhist stupas were originally built to house the earthly remains of the historical Buddha and his associates and are almost found at sites sacred to Buddhism. The concept of a relic was afterwards extended to include sacred texts. Miniature stupas and pagodas are also used throughout Asia as votive offerings.

Stupas were also built by adherents of Jainism to commemorate their saints. Jainism is a religion and philosophy of India, founded in about the 6th century BC by Vardhamana Mahavira—24th of the Jinas (conquerors), or great religious figures on whose example the religion is centred. In protest against the orthodox Vedic (early Hindu) ritualistic cult of the period. Of the very few examples that have survived, the remains of Kankali Tila, a great Jain stupa at Mathura in Uttar Pradesh, are the most important.

Banister Fletcher has averred that

Stupas are the most spectacular of Buddhist monuments. They originated as prehistoric burial mounds at the bases of which important personages were interred. Subsequently, burial chambers were added centrally within the mounds above the sarcophagi to conceal and secure sacred relics. In due course, the whole structure of stupas was given monumental form in brick or stone masonry. An umbrella or canopy was placed above the mound to add to the symbolism and as a mark of respect and distinction. The single umbrella shape grew into a number of superimposed canopies and eventually took the shape of a cone, known as a chatravalli. The protective fence around the stupa mound
also became a major feature. Originally made of timber, these fences retained their timber form even when constructed in stone or brickwork. There are four entrances or gateways (thoranas) through the fence and these face the cardinal points. Thoranas are used on ceremonial occasions in south Asia even today.

Stupas reached colossal dimensions and are among the largest of all architectural monuments. Usually simple and unadorned, they rely upon outline and served for certain focal points. What began as burial mounds are now often thought of as domes, as stupas have assumed a number of domical shapes from the simple convex curve with various degrees of elevation to diameter, through a range which includes cylindrical, bell-shaped, vase-shaped, paraboloid and stepped pyramidal forms. They have a number of subsidiary elements: terraces on which devotees gathered for ritual and worship (in early examples imposing thoranas gave access to the terraces and in later stupas formal flights of steps led to terraces paved with plastered brick or faced with stone slabs, and more elaborate buildings sometimes had outer terraces used for processions): the 'berm', which consisted of one, two or three steps at the base of the dome itself, was originally intended for walking around it when offerings were placed at the altars facing the cardinal points, but was used as the flower terrace when the ritual was
modified to exclude the original use; relic chambers, which might be numerous (whilst the main enshrinement was usually at the base of the dome, relics were also deposited in sealed chambers, often plastered and delicately painted, one above the other on the central vertical axis of the stupa, the last one immediately below the crowning chatravalli); the protective fences described above eventually developed into a square base for the dome and the crowning cones were often surmounted by a gilded finial with a crystal at its tip which flashed spectrum colours in sunlight or moonlight. But the focal point of the stupa was the altar its base upon which, originally, the devotees placed their offerings but which eventually became an elaborate central niche for an image of the Buddha's and a repository for the ashes of royalty\textsuperscript{11}.

According to the same author, in India few free-standing indoor stupa-halls remain, but there are rock-cut halls at Bhaja (250 BC), Nasik (129 BC), Karli (78 BC), Ellora (C. Seventh century), and Ajanta (AD 250). They are rectangular, apsidal-ended halls with closely-spaced pillars at each side, forming aisles or ambulatories. A stupa is placed in the apse, furthest from the entrance. The roofs are semicircular in section, and ribs representing the original timber member of the prototypes are cut from the rock. The façade usually contains, above a low entrance portico, a horseshoe-shaped window filled with rock-

\textsuperscript{11} FLETCHER, Banister. (Nineteenth Edition), \textit{A History of Architecture}, CBS Publishers & Distributors, Delhi, p. 751.
cut or wooden tracery which admits light to the interior. At Karli, the hall in 38.5 m (126 ft) long and the height and width are 13.7m (45ft.). The octagonal columns are of the Persepolitan type and the capitals take the form of elephants. The bases, shaped like inverted vases, are an indigenous form. The roof ribs in this case are actually of wood, inserted after the roof was cut\textsuperscript{12}.

\textbf{CHRISTIANITY AND THE CHURCH}
(Ref.: Sketch III)

Founded in the 1\textsuperscript{st} Century AD by Jesus of Nazareth (the Christ), Christianity has become the largest of the world's religions.

Early Christian architecture was an integral part of the architecture of the later Roman Empire. Before its formal recognition by the Roman emperor Constantine, Christianity was a persecuted religion. It was this ruler who initiated the evolution of the Roman Empire into a Christian state and prepared the way for distinctively Christian Western and Byzantine mediaeval culture. Architecture in the service of the Christian church, however, did not begin with him. The first Christians already had the synagogue as their place of worship, and, believing as they did in an imminent end to this world, felt no need of anything more. When that expectation receded and they grew in numbers and largely severed their Jewish ties, they met for prayer and for their central act of worship—which gradually developed into the formalised liturgy of the Eucharist—in whatever rooms could be made available to them by members of the group.

\textsuperscript{12} \textit{op. cit.}, p. 752.
The commonest form of the early church was a rectangular hall, timber-roofed, usually with one or two aisles to each side of the central nave, and with an apse at one end facing the principal entrances at the other. Corresponding roughly to the sacred enclosure in front of the temple, and to the atrium of a typical early Roman house, was a courtyard which was also referred to as an atrium and frequently had a fountain in the centre. One or more semicircular rows of seats were set against the wall of the apse for the clergy, with a raised throne in the centre for the bishop. An open screen in front of them marked off a sanctuary from the rest of the nave, and within this area was set the altar. To give it greater emphasis and dignity, it was usually surrounded by four or more columns and surmounted by a canopy, known as a baldachin or ciborium (a canopy supported on four pillars over the high altar).

The impression given by the interior of one of these churches today, in comparison with surviving but less well-preserved Roman buildings, is of great richness. Banister Fletcher has described it in graphic detail as under:

Looking down the length of the nave, one sees long rows of marble columns, sometimes, carrying flat entablatures, and sometimes rows of arches. Above these, and between the clerestory windows, the walls may be faced with marble, or sometimes with mosaics made up from small tesserae of coloured glass. There may be further iridescent mosaics on the 'triumphal arch' which terminates the nave proper, and on the semidome of the apse which opens into it. These mosaics, if surviving from the early period, will mostly be either narrative scenes from the
Bible or single figures seen against stylized landscapes or plain gold grounds. There is likely to be a coffered and richly gilded ceiling to the nave, while on the floor there will be a pavement of grey-white and black marble, inlaid with geometric patterns of coloured marbles.

But it should be remembered that much of what is seen is often the result of later changes. The ceiling, for instance, is likely to be a Baroque refurbishment and the marble paving from the eleventh or twelfth century. Much of the facing of the walls will probably be of a later date.

### ISLAM AND THE MOSQUE
(Ref.: Sketch IV)

Arising in Arabia in the 7th century AD as a result of the preaching and teaching of Prophet Mohammed, Islam, with its emphasis on an uncompromising monotheism and strict adherence to certain religious practices, spread rapidly all the way from the Atlantic to the Pacific Ocean, from Africa and Europe to China and Indonesia.

Architecture is by far the most important expression of Islamic art, particularly the architecture of mosques. It illustrates both the diversity of cultures that participates in the Islamic civilisation and the unifying force of Islamic monotheism that is represented by the spacious expanse of the

---

13 FLETCHER, *op cit.*, pp. 269-270.
BUDDHIST STUPA: conceptual plan

SKETCH II
WATER
FOUNTAIN
ATRIUM (OPTIONAL)

CHRISTIAN CHURCH : conceptual plan

SKETCH III
ISLAMIC MOSQUE: conceptual plan

SKETCH IV
mosque—a veritable externalisation of the sense of all-enveloping divine unity, heightened by the sense of infinity of the arabesque design. The arabesque, though it is ornately decorative, spiritually represents the infinite vastness of God.

Islamic architecture is characterised by these outward features: the pointed arch, and the horse-shoe arch in which the circle of the arch is carried past the normal springing-point. The use of cusping of the arches and of guarding colonnettes or nookshafts also contributed, though less crucially, to architectural development. The appearance of Islamic architecture is much affected by the use of colour on external surfaces. A coherent architecture, however, arises only from the methods of handling Form and Space in relation to Structure system. In Islamic architecture, according to Banister Fletcher, this was achieved by expressing each element of the building individually. He writes:

There is no attempt to collect numerous spaces and volumes within one great envelop whose facades describe a single mass. Each component stands identified in its own right, and is expressed externally as part of a sequence of linked structures. The coordination, clear expression and articulation of the individual components together supply the prime discipline. Dome, liwan, cloister or portal may be emphasized or diminished as required within its proper station, and each contains elements which display the essential structural form. All this was achieved by the eleventh century, the classical phase of Islamic architecture14.

14 FLETCHER, op. cit., p. 552.
The Prophet and his first followers did not seek a building in which to pray but made their prayers five times a day wherever they were. This example is still followed and the Muslim world has many outdoor praying places. At Medina, the Prophet first prayed facing towards Jerusalem, but in a small place on the outskirts of the city (still known as Quiblatain—The Mosque of the Two Directions) he faced towards Mecca. Thereafter this was the rule.

The House of the Prophet\footnote{555} was the congregational mosque of the first community. It was simply a courtyard with a covered arcade for prayers at the end nearest to Mecca and with domestic appurtenances on the other sides. The call to prayer was made from the walls of the house. The simplicity of this building is reflected in the mosques which immediately followed. There was no other model and as yet there were no architectural objectives, so the Prophet’s house provided an adequate example.

According to Banister Fletcher:

\begin{quote}
Historically the mosque was of such central importance of the life of the community that it became the dominant building, and this form is echoed in structures built for other purposes. It is always planned on an axis directed towards Mecca. With the exception of the earliest instances, this axis is terminated on the inner face of the mosque by the mihrab, where the leader of the congregation makes his prayer. This act, which involves prostration, must be observed from other parts of the prayer chamber, and lateral vision is therefore
\end{quote}

\footnote{555} p. 555.
important. The congregation assembles in lines traversing the main axis and takes its cue from the leader or those in the centre of the line in a position to observe him. Thus a multi-columned hall with transverse aisles is acceptable. Since there is nothing sacrosanct about the mihrab, secondary mihrabs are often placed in other position of convenience for the use of small congregations of individuals. The prayer space is furnished only with the mimber, from which formal pronouncements can be made, though a part of the prayer space may be railed-off or fitted with a balcony for special uses—those of a dignitary or ruler, or of muezzins or women. There may also be a fixed reading desk or preaching stool\textsuperscript{16}.

SIKHISM AND THE GURDWARA
(Ref.: Sketch V)

Sikhism, or more appropriately, the Sikh Faith, is a Revealed Religion founded by Guru Nanak Dev (1469-1539 AD) in the 15\textsuperscript{th} century AD. Its members are known as Sikhs. The word Sikh is derived from the Pali sikkha or Sanskrit shishya meaning “disciple”. Sikhs are disciples of their ten Gurus (religious teachers or spiritual preceptors), beginning with Guru Nanak Dev and ending with Guru Gobind Singh (d. 1708). According to the Encyclopaedia Britannica:

Nanak was born in 1469 in the village of Rai Bhoi di Talvandi, 40 miles from Lahore

\textsuperscript{16} FLETCHER, op. cit., p. 537.
(in present-day Pakistan). His father was a revenue collector belonging to the Bedi (conversant with the Vedas—the revealed scriptures of Hinduism) subcaste of Ksatriyas ("Warriors"). Nanak received an education in traditional Hindu lore and the rudiments of Islam. Early in life he began associating with holy men. For a time he worked as the accountant of the Afghan chieftain at Sultanpur. There a Muslim family servant, Mardana, who was also a rebecc player, joined him. Nanak began to compose hymns. Mardana put them to music and the two organized community hymn singing. From the offerings made, they organized a canteen where Muslims, as well as Hindus of different castes, could eat together. At Sultanpur Nanak had his first vision of God, in which he was ordered to preach to mankind. He disappeared while bathing in a stream. When he reappeared on the third day, he proclaimed: "There is no Hindu, there is no Mussulman."

Sikh tradition relates that Nanak also undertook four long voyages: east as far as Assam; south through the Tamil country to Ceylon; north to Ladakh and Tibet; and west as far as Mecca, Medina, and Baghdad. He spent the last years of his life in Kartarpur (in present-day Pakistan), where he raised the first Sikh temple. Before he died in 1539 he nominated one of his disciples, Angad, as his successor17.

Although the Gurus themselves disclaimed miraculous powers, a vast body of saakhis ("stories") recounting such miracles grew up, and with them gurdwaras (meaning, gateway to the guru), or Sikh temples, commemorating the sites where they are believed to have been performed. It also became an article of belief that the spirit of one Guru passed to his successor "as one lamp lights another". This notion gained confirmation through the fact that the Gurus used the same poetic nom-de-plume, "Nanak", in their shabads (hymns).

The first Sikh place of worship was built by Guru Nanak at Kartarpur and was, known as dharamshala ("place of faith"). At a later stage, a Sikh temple came to be called a gurdwara. There are more than 200 historical gurdwaras associated with the Gurus, which are controlled by the Shiromani Gurdwara Prabandhak Committee (SGPC) set up by the Sikh Gurdwara Act of 1925. Offerings made at gurdwaras are used for their upkeep as well as for the operation of Khalsa (concept of a "chosen" race of saint-soldiers) schools and colleges.

In addition to historical gurdwaras, every place with a sizable Sikh population is likely to have a gurdwara of its own. In well-to-do homes, a room is often set apart for this purpose. Sikhs are enjoined to regard the Adi Granth as "a Living Guru" worthy of single-minded devotion and unremitting worship. Devotees make their offerings of money and flowers and receive kadah-prashad, a batter of flour, ghee (clarified butter), and sugar.