WALoR 1985 TRANSACTIONS Vol.35 No.02

THE 1985 ROBIN HEWITT MEMORIAL LECTURE

"THE MASON AND THE ARCHITECT"

BY BRO. PROF. M. HUGO-BRUNT

Carlyle said "there is but one temple in the world and that is the body of man".

Although not one stone remains upon another of the celebrated Temple of Jerusalem, the descriptions in the Bible and Josephus are precise enough to interpret the various temples in the light of other buildings and recent rediscoveries by archaeologists.

The architect finds various aspects of masonry fascinating in addition to the obvious integration of tools and architectural details into an esoteric philosophy; none more so than the historic evolution of the temple plan and its interior. It might be of interest, therefore, to examine:

1) The temple in evolution
2) The use of the orders
3) The tools, guildmen, artisans and craftsmen.

All architecture, be it commemorative, habitation, religious, defensive or public assembly, is a human manifestation. It is creative space enclosure, massing and construction. Its scale is consciously related to man but may be manipulated by him to be super or sub-human, i.e. scale and measuration develop from human canons. Building, whether solid or void, becomes construction in materials either permanent or impermanent, smooth or rough, large or small, pervious or impervious, lit or unlit and may reflect contour or deny it. Whatever a building is it is the result of human intelligence resolving factors and conditions by analyses and syntheses. Architectural beauty is derived from the source of beauty -the human figure, i.e. the law of rhythmic dimension. The right side of the body is deemed the repository of the masculine, the left side the feminine. The Ionic column is a representation of Lot's wife as a pillar and is feminine having the spirals of beautiful hair. A Parthenon column is masculine. Vitruvius and Alberti stressed that sacred buildings should be founded on the proportions of the human body. Masonic guilds conceived the mediaeval Gothic cathedral as the body of Christ. They comprehended the language of mysticism and were consciously involved in symbolism.

Antiquity diffused into the Renaissance via the mediaeval Masonic guilds. All obeyed rules originating from the classical canon. The elements of buildings lend themselves to geometric analysis as the architects manipulated proportions based on the geometry, the circle, the triangle and the square, i.e. those elementary figures which related to the human canon. All had to be used in preliminary building design, the circle being more important in a plan although the most important was the equilateral triangle which was also an optical determinant. Both Solomon's seal and David's shield used it,-- two equilaterals imposed upon each other creating the famous star. The researches of Wittkower and his students at the Courtauld Institute in London indicate how important these were in architecture, e.g. in Milan Cathedral.

The temple originates in classical antiquity as rediscovered by 18th century savants. The plan was derived from several sources including the biblical prototype, originally a transportable tent. The second was similar but used metal ornamentation until eventually the Greeks of Ionia taught the Jews how to beautify building with masonry and stone carving.

The tabernacle plan, divinely revealed to Moses in the Sinai desert, was never changed in subsequent erections. The cella or Holy of Holies' dimensions were 10 x 15 cubits. There were two sanctuaries 15 x 30 cubits under the sloping tent which extended 5 cubits in every direction beyond the sanctuary, i.e. 40 cubits by 20 cubits in width.(*Biblical cubits were* $7^1/_2$ *in but the royal cubit used in Solomon's temple was 31in. The temple was* 135ft. *in length,* 35ft. *in width and 50ft*. *in*

height.) All stood in an enclosure 100 cubits long by 30 cubits wide. When transformed into a solid load bearing structure it copied the early Phoenician or Canaanite temple.

A Hazor shrine excavated by Yigael Yadin incorporated a standard Canaanite three-chamber plan. A prototype for Solomon's temple built 300 years later, it was 75ft long (Solomon's was 140ft.) and it had walls of double stone with intervening space filled with rubble.

Archaeologists also uncovered a temple using basalt slabs. A 15in. moon deity with a bowl stood against a railed platform. Such a Phoenician temple is described in the Old Testament. In 1000 BC when David united Israel there was actually no building, but later Solomon erected a magnificent shrine. Josephus, the high priest of David's day, selected the site of the Holy of Holies for Jonathan after analysing the natural features. It was only used for a short period. Since his people lacked skills he contracted with Hiram of Tyre for teams of architects, masons, carpenters and smiths. They introduced the narrow stone box sanctuary with 10ft. thick walls.

The Phoenician temple had an anteroom, a main hall and a sacred oly of Holies, which suited Solomon admirably because the Hebrew and Phoenician rituals were similar - differing only on Hebrew onotheism. The Bible describes the plan as having a small anteroom or 'Ulam' on the left of the entrance. Most activities occurred in the ain hall or 'Hekal' where early morning and dusk sacrificial services were held: animals were offered up outside, incense being burned inside. Ten tripod lamps were lit by the assistant priests while the high priest burnt incense on an altar before the steps leading to the Holy of Holies. Inside the Holy of Holies was a 'betyl' or 'holy stone' image. The centre of the hall had a low table with twelve small loaves of bread one for each tribe. The cedar panelled walls were decorated with winged Phoenician sphinxes and the lotus pattern., The structure exuded the scent of cedar and incense. The whole was dimly illuminated by small, high recessed windows which contributed to the beauty and mystery intensified as one approached and mounted the steps through the doors into the sanctuary.

In 1000 BC King David's Commander-in-Chief, Joab, captured Jerusalem. David subsequently built various structures with the aid of Hiram of Tyre, including a palace-residence of stone and cedar and fortifications of the new city south of the temple. The northern wall was 600ft. south of the present wall, i.e. it occupied some of today's city site.

The temple had no high priest until 1300 BC when Joshua and the Jebbusites possessed Jerusalem. The temple had courts for both sexes in addition to the sanctuary and the congregational court as well as an area for ritual lustration and cleansing. Unfortunately no vestige remains as the site is disputed.

Jewish builders never aspired to monumental magnificence and even Solomon's cedar palace decayed within a few centuries. When building the temple in 1015 BC he followed the biblical description but doubled every dimension so that the Holy of Holies was 20 cubits x 40. The porch and the chambers about it were 10 cubits each, a total of 80 cubits x 40 cubits. It was 30 cubits high to the ridge of the tabernacle. The surrounding enclosure was 200 cubits in length and 100 in width, but even with these increased dimensions the temple was insignificant being in reality a shrine or treasury for precious works in metal.

Like many Brahminical sancturies two brazen pillars, Jachin and Boaz, stood before the facade. Fergusson wrote, "More nonsense (has been written) regarding it than almost any other known architectural object". But then the translators were never architects while the architects of restoration were not learned Hebrew scholars ... A brazen pillar, 18 cubits high and 12 cubits in circumference, i.e. 6ft. in diameter, is an absurdity which no brass founder ever could have perpetrated. The details of this restoration are given in Speaker's Commentary on the Bible (Vol. 11, pp. 520).... In 1 Kings, Ch. 7 the 15th verse reads: 'He cast two pillars of brass of 18 cubits high apiece and a line of 12 cubits did compass either of them about'." (*Fergusson, James, History of Architecture; The Temple at Jerusalem, Bk. 11, Chapt. VI, London, 1894.*) Solomon erected two screens one being 4, the other 5 cubits in height supported on two metal pillars a cubit in diameter and 12 cubits apart. The tabernacle received its internal light from the front, but it was also partially lit from the sides.

The Star of David mosaic, the device of the shield of David characteristic of Jews in Nicea, symbolised heaven and earth intertwined. The Seal of Solomon, the Islamic cherubim and the Minorah an ancient emblem of Israel, i.e. the tree of life, were beaten out of gold. In 70 AD a good representation of the Minorah and the Temple was carved on the Arch of Titus in Rome.In 586 Babylon sacked Jerusalem and destroyed the temple. It was rebuilt by Elam, Jauna and Shater for Herod in the Hellenistic tradition.

Ezekiel's visionary temple on the banks of the Chebar was identical to Solomon's as far as the naos and pronaos were concerned. (*Fergusson, pp. 215.*) When the Jews returned from their captivity in Babylon they rebuilt the temple exactly as its dimensions and forms had been described by Ezekiel, but they were unable to build either the northern and southern courts, and the materials were inferior. Nothing is known of the brazen pillars in the porch, nor of the vessels and furniture.

God's House was for individual worship and officiating priests who addressed the congregation from the outside. As the Hebrews rejected idols, God alone was present in the sanctuary which held a small casket, protecting the stone tablets with the Ten Commandments. Guarding this Ark were two 17ft. high olive wood sphinxes with outstretched wings. Cherubim inlaid with gold met above it. Egyptian influence was obvious.

A passage ran round the hall (i.e. the Nave) to chambers adding 10 cubits to all dimensions, making it 100 x 60 cubits. The main court contained the altar as in Solomon's temple, but there were another four courts each 100 cubits square on the east. Solomon's temple had a new court, later the Court of the Gentiles in Herod's day but north and south courts were never made, and never existed even in Zerubbabel's time. The northwest angle of the temple was a treasury until it was replaced by the Antonia Tower.

Fortunately Herod's city has recently been modelled at 1:50 scale, i.e. $^{1}/_{4}$in.-1ft. to accord with the most recent archaeological discoveries. Herod's palace towered over the main city square surrounded by rectangular houses. The Wailing or Western Wall incorporating two rows of Herodian stone near Barclays Gate is surviving temple wall. Its last restoration by Herod indicates a mixture of Roman and Phoenician forms and accords with Josephus's description. In the 6th century BC 4he Bronze Age - Homer mentions the brazen house of Priam and the brazen palace of Aleinous. In the 1st century BC when Herod rebuilt the temple he erected a screen before it without Solomon's chequer-work and pomegranates. It was a third larger, being 40 cubits high, 20 cubits wide. There was also a golden vine ornamenting the facade.

Nevertheless, the gilded and coloured metal ornaments made Herod's temple an object of wonder. The altar bases and all the other metal objects were of brass. No pillars supported the roof.

The Court has been described by the Books of Kings, Chronicles, Ezekiel and the Talmud. Today Omar's Dome of the Rock surmounts the sacred hollow for the blood of sacrifices - an unequal quadrangle 8ft. x 21 ft. There was also a brass altar for burnt offerings. The sanctuary entrance to the tabernacle was again defined by the Boaz and Jachin pillars.

In front of the right pillar the 3%ft. high 'Molten Sea' mounted on twelve oxen provided a 15ft. wide vessel for priests to receive sacrifices. The Herodian courtyard, the entrance to the temple and Holy of Holies' sites are still identified for the visitor. Cherubim were BabyIonian motifs marking holy places, but Ahab placed various other motifs on the wall, viz eagle wings and the Assyrian lion's face in the priests' porches as described in Kings and Chronicles.

The Herodian masons dressed stone without instruments which imply, for example, that prefabricated sections entered temple precincts. One stone block 47ft. long has been found without mortar, while Roman, Hellenistic, Greek, Egyptian and Babylonian motifs have been identified in the 150ft. high columns of the central porch.

Again the sanctuary was served by priests, the most sacred Holy of Holies being served by the high priest as before. The emphasis was upon the sung or spoken word. The priests restored the last tabernacle not daring to alter any sacred dimension, but they made 100 cubit wide wings to the facade, and made them 100 cubits high. Magnificent outer courts were added.

An area measuring 600 by 10 cubits each way was enclosed within monolithic terraced walls. Herod's Judea was flooded with Roman ideas. The stoa basilica was equal in length to the largest English cathedrals. Incorporated into this colonnaded enclosure were two important gateways.
While the synagogue represented the dramatic and religious prototype of the lodge with its emphasis upon the word, contemplation and prayer, there were other later ancestors. Both the Hellenic anr Hellenistic Greeks evolved structures with very specialised characteristics. In Greek constructional work scaffolding was used and control came from models. Masonry was done in-situ. The apprentice and the master dressed and worked upon the rough work at the quarry but the forming, finishing, correcting, repair and polishing had to be done on the site. Artisan craftsmanship was skilled and sophisticated. Gradually the status of the master-mason working for king or a patron improved so that by mediaeval times he was an esquire, i.e. a Gentleman of Coat Armour, his fees being approximately three to ten times the wages of a workman. Some were highly specialised, such as pinnacle makers, mosaic workers, factors and fresco artists. Their tools were simple, the most important probably being water which enabled the builder to find a true level on any site when enclosed in a low walled 'tank'. It was used in conjunction with pegs, staves, chains, twine and paint. A primitive theodolite was the groma used in surveying. Prior to building, plans were laid out by dipping twine in white paint and marking the ground. Sometimes naptha was used and burned. Diagonals were then taken to check dimensions.

Tools were made of wood, copper, bronze and finally iron.
(1) The 24in. gauge was for measuring, determining divisions and angles.
(2) The gavel was used to shape and chip rough stone or to create perfect or exaggerated fits.
(3) The square checked the accuracy of surfaces to determine whether they were right, good and acceptable.
(4) The compass (probably the oldest of the instruments) represented the span of the palm. It was divided into digits.
(5) The chisel was used for smoothing, fitting and providing regularity to what might otherwise be a shapeless mass of stone. The earliest copper chisels required constant reheating and sharpening.
(6) The adze or hand axe was a basic shaping too[for the carpenter and the joiner, and extensively used by the ship builder.
(7) The plane was an invaluable instrument for finishing wooden surfaces. It was used in conjunction with emery and carborundum, often in crystal form on masonry surfaces which could also be smoothed by being rubbed together.
(8) The saw was a serrated metal blade mounted in a handle or between two points of a bow. It was a precise toothed tool for cutting timber or stone. It required constant sharpening with carborundurn or emery and eventually files after the advent of iron.

Chisels, which varied in size and shape, probably originated from wooden wedges used to cut soft materials like sebakt. A wooden wedge wrapped in water soaked cloth hammered into a hole gouged into the stone and left overnight to freeze would then split stone along its layers or contours. The technique is still used today. It was here that the hour glass was used and is sometimes seen as a motif on old tracing boards.

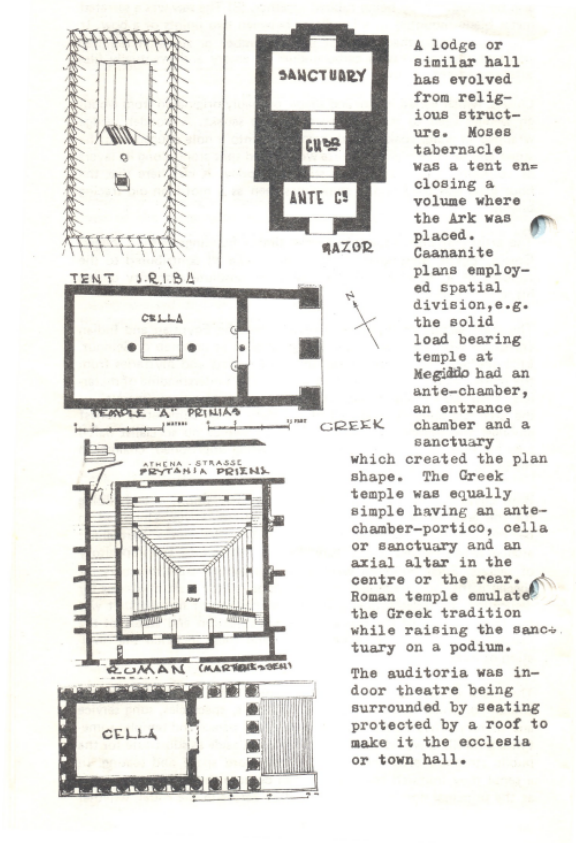
The artist-craftsmen established small timber buildings as their lodges. Greece, Egypt, Mesopotamia, Persia and India all contributed to the concept of a 'King' or 'Master' exercising absolute authority during his term of office.

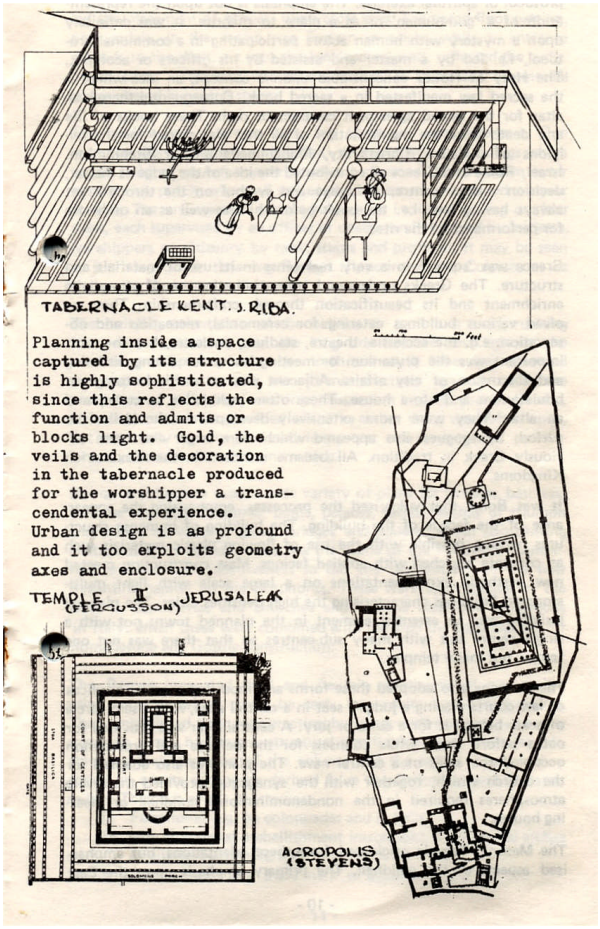
The craft secrets or mysteries evolved from the Egyptian and Indian craftsmen who were instructed by 'gods' such as Imhotep or Semnut. Elite specialist scribes protected the craft secrets and mysteries from the masses who provided directed labour. The understanding of materials, their potentialities and limitations were empirical 'secrets' of the architect-builders who had of necessity to be completely honest amongst themselves to prevent failure. In Venice no specialist dared pass his skill on to a foreigner without being imprisoned, chained in the dungeons and drowned with the tide.

Both Egypt and Mesopotamia had the same perceptions when building for the gods or their monarchial -priest representatives. They had to be monumentally commemorated and recorded in a permanent archive which needed a structure for the deposition and repository of secrets. Such buildings were also used by the craft members for special gatherings assembled for instruction in the craft mysteries for dedication, or rededication and rites of passage of members. It was the

lodge or hall of the masters. The classification and status of the masters and brethren were determined and these included the revelation of its secrets.

The place of worship was now the temple, the synagogue and the church for congregations, special ceremonials, spectacles, sung service and oratory. They combined the function of palace and temple: sometimes a dwelling would have special areas set aside as substitute for the public structure even though those had more space and seating. In a sense they imitated the first theatres because the monarch or priest as the principal dominated the secondary actors in the ritual, whether a lodge or similar hall has evolved from religious structure. Moses tabernacle was a tent enclosing a volume where the Ark was placed. Caananite plans employed spatial division, e.g. the solid load bearing temple at Megiddo had an ante-chamber, an entrance chamber and a sanctuary which created the plan shape. The Greek temple was equally simple having an ante--chamber-portico, cells, or sanctuary and an axial altar in the centre or the rear. Roman temple emulated the Greek tradition while raising the sanctuary on a podium. The auditoria, was indoor theater being surrounded by seating protected by a roof to make it the ecclesia. or town hall. Planning inside a space, captured by its structure, is highly sophisticated since this reflects the function and admits or blocks light. Gold, the veils and the decoration in the tabernacle produced for the worshipper a transcendental experience. Urban design is as profound and it too exploits geometry axes and enclosure
protocol or spiritual exercise. The emphasis is not upon the representation of a 'god-human' or as a place to theorise. It was definitely upon a mystery with human actors participating in a communal protocol, i.e. led by a master and assisted by his officers or acolytes. The Holy of Holies concentrated upon a concept, an idea which is the sacred law manifested in a sacred book.





Consequently there is an altar for the sacred agreement contract or oath. These books of life and death were the manifestation of all that was sacred for the religions of Judaism, Christianity, Mohammedanism or Brahminism. Israel, Rome and Greece all contributed the idea of the judge as master,.decision maker, centre, executive and symbol on the throne – yet always having law, i.e. the book before him as well as an orchestra for performance of the rites.

Greece was 'square' in a very real sense in its use of materials and structure. The Greeks understood trabeation, the use of stone - its enrichment and its beautification through craftsmanship, They evolved various buildings catering for ceremonial, recreation and observation. e.g. the ecclessia, theatre, stadium, paelestra, but the most important was the

prytanium or meeting house for sitting, listening and discussion of city affairs. Adjacent was an archival storage or bouletarium and store house. These often included a sanctuary and an altar. They were more extensively developed in the Hellenistic period. Synagogues also appeared which were larger and more obviously Greek in tradition. All became standard in the Alexandrian Kingdoms.

It was Rome that vulgarised the processes, emphasising the appearance of the facade of the building. The building of immense structures became possible with the use of flowing plastic materials such as concrete enriched with applied facings. Mass construction created new aesthetic experimentations on a large scale with light multi-storeyed buildings characterising the high densities cities. The planned building was an essential element in the planned town: not with a single centre but with many sub-centres so that there was not one temple but many temples.

The Romans also adopted these forms and modified them as basilicas or law courts placing a judge's seat in a central apse, with a semi-circle of seats behind it for a curia or jury. A central altar was provided for oaths before them while counsels for the defense and prosecution occupied the sides of a central nave. The plan was also adapted for the church which, together with the synagogue, provided the severe atmospheres required in the nondenominational guildhall or meeting houses.

The Masonic Temple originated from these adaptations, but emphasised aspects of the guildhall. The primary emphasis upon the East led the placement of officers upon cross axes. The paved floor pattern, or mandala, in the centre was Eastern in origin, while an entrance off axis to the West, set into the longitudinal wall, reflected the auditorium plan. The axis was de-emphasised as important ceremonial concentrated in central space. The basilica had a temple plan, but there was one difference. One entrance was supervised an guarded - characteristic in buildings where secret guild or church mysteries were performed. There was an outer portico, i.e. porch, where all not engaged in court were turned away or waited. The arrangement of the prytaneurn included seating on four sides, each supervised by an officer or deacon and occupied by initiates, worshippers or citizenry by rank, status and protocol. It may be seen in surviving Greek theatres, Roman Hippodromes or Colosseurns as well as the Christian basilicas.The building orientation of the basilica or temple is axial, running from east to west so that the long side has the best light in the northern hemisphere, i.e. on the north and south. Whenever the word was important it became an audience-spectator structure with the possibility of gatherings, meetings, inspection and fellowship. Exedra, atria or porches were provided which in earlier times were often open, but eventually became enclosed to protect and store private possessions, e.g. ritual implements and robing.

Roman architecture used a wide variety of plans for temples, basilicas, theatres and amphitheatres, baths, palaces, tombs, arches of triumph and pillars of victory, gates, bridges and aqueducts (all constituting architecture) in Roman cities. As the dome of the Pantheon exemplified architectural inventiveness so did the pendentives of the new Byzantine capital on the Bosphorus. These were appropriated by the West in baptisteries and churches and became distinctly indigenous in Italy. When these were combined with the arch the stage was set for Romanesque and Gothic construction.
The Roman innovated fluid and flexible constructional systems by using concrete which could be cast into vaults, arches and domes. They embellished their very practical buildings with rich and decorative materials rarely having any structural significance. Even more remarkable was their adoption of the column and the orders to which they added an ornate composite derived from the Corinthian and Etruscan orders. Their use of the orders was:
1) Functional, e.g. on colonnades and in halls
2) Non functional embellishment introduced in triumphal arches as pilasters and integrated into doorways
3) Authoritarian as a 'trade mark' of State
4) As a device to control scale and proportion
5) As an agent of diffusion in both east and west.

Before the 18th century, lodges existed which derived their rituals from operative craftsmen-masons of the 13th century.

Twenty four miles from Glasgow, ' Kilwinning Lodge in Ayrshire on the bank 'of the Garnock, was founded by mason-builders between 1140 and 1190, but its earliest document is dated 1599. Other material of 1620 belongs to the London Masons Company which existed in 1472 as a fellowship of the masons following a rule dating from 1356. In 1376 there were 47 guilds or 'mysteries' in London of recognised status as guildmen. The first operative lodge was AInwick (1701) and the neighbouring Salwell, Durham (1725). Operative masons of Edinburgh were admitting non craftsmen of the most eminent quality to membership in 1600 as was customary in other guilds,e.g. London guilds. No doubt speculative Masonry had entered into the ritual.

If Masonry is deemed to have started in 1356 with the establishment of the London Masons Company is this really acceptable since there were craft organisations in the Middle East with classical Egypt being pre-eminent? In India Vedic craft guilds were defined in the oldest operative manual, the Sulpha Sastra of 600 BC which contained instructions, suitable land usages, sites and plans as well as mathematics and geometry for surveying, measuration, speculation and aesthetics, i.e. beauty and architecture in the highest sense. Phidias who was appointed the Master-superintendent of the Acropolis by Pericles supervised the designers, Ictinus, Kallicrates and Minesicles, all of whom directed their crafts. They were followed by mediaeval schools of the English, French, Burgundian and Portuguese Masters, e.g. Geoffroi de ville Hardouin. Boytace, William of Wickham and William of Sens. There were the academies like the Acardi, Rome, the Society of Architects, London and the Royal Academies of Europe.

Orders were used in the architecture of a lodge: several columnar elements were part of the furniture. In England there were two traditional columns inside the hall. In 1410 two pillars were described in the Cooke manuscript as originally made by the children of Lamech, one being of marble, -the other lacerus (i.e. lutares or burnt brick) implying that the first would not burn and the last would not drown (i.e. absorb or soak).

Solomon's pillars are not mentioned in early manuscripts and mediaeval masons appear to have had little direct interest in the temple. In the Edinburgh Register of 1696 Solomon's pillars appear in a ritual. The four 8ft. high columns at the western end of the tabernacle had Corinthian capitals crowned by water bowls circumscribed by carved pomegranates and covered with flat tops. These were frequently hollow archival repositories. In 1755-1797 the bowl and the globe appeared in the English Midlands. The water bowl or kailassa was a familiar motif in India, the globe being essential in astronomy and navigation. It was used as an armorial sphere in the Portuguese coats of arms. They also appeared-as head pieces in lodge furniture.

Between 1760 and 1865 the lodge wardens had 20in. pillars as personal equipment which represented wisdom, strength and beauty. In 1737 officers used the three orders on their mahogany candlesticks. Early in 1730 they represented the officers of the East, South and West and the round ball (or chapiter) on a 5 cubits high column is an harmonic pomegranate decoration circumscribing the bowl or kailassa which faced the throne of Solomon. In 1733 tracing boards were floor cloths.

The 17th century lodge had three windows on the East South and West 'to light men to and from their work'. In 1700 both the windows and the pillar were west facing the master. There were changes in minor details, particularly in the reduction of fenestration. As 18th century scholars were reawakened by the rediscovery of Pompeii in 1748 they again composed an environment inspired by Graeco-Roman models. The mediaeval guilds, both Catholic and Protestant, reintroduced classical predecessors in academies, guildhalls, refectories and halls for gathering in good fellowship before and after meetings as well as meetings -themselves. It was an harmonic of the Tholos in Greece, the mediaeval guild hall or monastic chapter house, while classical and mediaeval eleemosynary institutions such as alms houses, hospitals and offices which had frequently been some distance from the temple hall now reappeared.

The English temples' aesthetic must be determined in an 18th century context. A magnificent Romano-Greek ghost dominated European thought from Roman times.

Like a guildhall, however, ceremonial is peripheral, i.e. from the areas of seating where the emphasis is upon the word and music, but when important ceremonial or mystery it is spectacle and by virtue of being mystery it becomes central and can not be accessible even from window.

The Mediaeval period carried on the classical tradition for Byzantium and Islam, improving upon Roman architectures. Various special buildings for congregation were of primary importance as the evolution of the chapel church and mosque. The Catholic and Monastic tradition of the West specialised and expanded and was also absorbed by the non-conformist of Protestant tradition. The guildhall and the court were true predecessors of the lodge, modifying the prytaneum and basilica plan for the purpose.

BIBLIOGRAPHY

Archaeological Institute of America, Archaeological Discoveries in the Holy Land, New York, 1967.
Bragdon, Claude, The Beautiful Necessity, London, 2nd ed. , London and New York, 1910
Carver, Shundy, Wisdom, Strength and Beauty, Lodge of Research, Vol. 33, No. 2, Perth, 1983
Caffin, Howard, How to Study Architecture, New York, 1940.
Comay, Joan, The Temple of Jerusalem, London, 1975,
Fergusson, James, History of Architecture, 2 vols. London, 1887.
Fletcher, Bannister, A History of Architecture on the Comparative Method, London, 1943.
Hamlin, Talbot, Architecture through the Ages, New York, 1940.
Hugo-Brunt, M. , Bibliography: Greek Architecture, Chapel Hill, North Carolina, 1976.
Jacobs, Jay & Bishop, Morris, Great Cathedrals, New York, 1968. Kollek, T. & Pearlman, Moshe, Jerusalem, Wallop, Hampshire, 1974. Preston, William, Masonry Dissected, London, Edinburgh, 1724-1818. Standard Version of the Bible, Boston, New York, 1971.

ACKNOWLEDGMENTS

The author acknowledges the editorial assistance of R.W. Bro. Shundy Carver, and would take the opportunity of drawing attention to the recent work of the distinguished scholars quoted in the article, particularly Robin Kent's recent article on the "Tabernacle" in R.I.B.A." journal 1985. He further acknowledges the secretarial assistance of Mrs. Margot Scott and of his wife Frances.

5035 words