

From Synagogue to Church The Traditional Design

Its Beginning, its Definition, its End

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The Shape of the Question

This is a book about the traditional plans of ancient synagogues and churches. Some of these plans are so like each other, that they may well have been laid out according to some kind of rule. But the precise nature of this rule has remained a secret. Even an experienced archaeologist like Professor Cyril Mango has asked the following question:

Early Byzantine basilicas can be noble buildings, as any visitor to, say, S. Apollinare in Classe will attest. When seen in quantity, however, they produce an impression of monotony, of a ready-made uniformity. One cannot help wondering why this particular type of building should have maintained itself so long, in so many widely-scattered provinces, and, basically, with so little variation.¹

But this question is of wider concern. Travelling round England I can see dozens of medieval churches with one height of roof for the sanctuary and another height for the nave. Was there in fact any rule deciding how to divide these spaces?

I believe that I have now revealed the nature of this rule. This achievement is not, I hasten to say, by greater agility of reasoning, but by happening to be the first person to have used a computer to deal with this problem.

The beginning of my discovery was as follows. According to ancient documents synagogue and church design depended on the heavenly Temple,² and the Temple in Jerusalem was based on the heavenly Temple. So I began looking for some parallels in their shape and proportions. The trouble about finding proportions in buildings is that it is so complicated. To begin the game of hunt-the-thimble a child hides the thimble – a simple act like choosing a proportion. But when the other children come in, to find the thimble, they have to search the whole room, which may take some time. So to find all the possible proportions of a church, and to ask whether they have parallels in the Temple – which has over seventy proportions – quickly becomes excruciatingly boring.

And yet of course this is precisely the kind of problem which suits computers. When I had eventually compiled a computer program,³ I found not only that I was spared most of the boring details but that I was working fast enough to deal with many more churches, and to produce more positive answers. I began to have a new vision of the characteristics of design.

Based on these characteristics, this book gives the traditional rules for the design of early synagogues and churches. These rules arise from the belief that human beings might imitate the temple in heaven. It is based on two sets of data.

One set of data is a collection of ancient documents. There are no ancient manuals for designing synagogues or churches. Indeed the way synagogues and churches were laid out was a professional secret, so most documents dealt with it only indirectly and it was a subject about which a designer would only speak to his fellow designers or his superiors. Extracts from the main documents are printed in the second half of this book.

I find that I have quoted very few commentaries on these ancient documents. Since this book happens to be the first to reveal the secret of design, most of the main questions in this book have not seemed important to previous commentators.

The other set of data is the range of proportions in which the synagogues or churches are parallel with the Temple, or with some other scriptural model. I have had to devise for myself some standards of measurement. These are set out in Appendix 1. In other appendices there are samples of over forty ancient synagogues and over seventy churches. These are mathematically analysed to demonstrate that use of scriptural proportions was regular. But it would be tiresome to readers to increase the number of examples or to give more tables of figures. The original Apple computer program is available from the publisher, and if you wish to identify scriptural proportions it would save you time.

This chapter first gives an outline of the book, and then goes on to ask about the past. Why exactly has the design process of holy buildings been kept secret? And when and how was the word *basilica* connected with the church? Then it will examine the beliefs of two of my present colleagues, Dr Doron Chen on the design of synagogues, and Professor Peter Kidson, one of my teachers, on the design of churches.

Chapter 2 presents a problem. Everyone can see a new synagogue or church, but ancient Jews and Christians believed that the heavenly Temple was invisible. Is the proposal that visible buildings are imitations of this invisible Temple? This might well be nonsense. But ancient platonic philosophers dealt in these terms, and knew exactly how to deal with this problem. Sight was not, in their view, essential. And those who believed in the Holy Scriptures knew of at least two scriptural imitations of the heavenly Temple. Chapter 2 is about platonism, and

since these two imitations were measured in cubits, platonists regarded the numbers of these measurements as of great importance. So if a designer wished to build a synagogue or a church he might well use these scriptural numbers.⁴

The next chapter examines the scriptural accounts of the Tabernacle and the Temples in Jerusalem. These were historically the central shrines of Judaism, and were a rich source of symbolism.⁵ Much of this symbolism is shared by the synagogue. The fourth chapter studies the ritual of the sabbath service,⁶ emphasising the duty of the whole of creation to worship God.⁷

The Scriptures record God as occasionally commanding men to make objects, like the Tabernacle, the Temple, or the Ark of the Covenant. He sometimes included the measurements of the objects, and hence their proportions. But I have found that all forty synagogues that I have measured are proportioned like the objects which God required men to make, particularly the Temple in the vision of the Prophet Ezekiel. The synagogues, stretch from the Herodian period to 800 AD. Their proportions are no coincidence, since they particularly apply to the most important places, namely where the Ark is set down, and where the leader prays and reads.⁸ Synagogue decorations and mosaic floors fit very well with this interpretation.⁹ So for platonist Jews the ancient synagogues are a fulfilment of scripture. They regarded the numbers of the measurements as an extremely important truth about the objects which God had commanded Israel to make. They thus regarded building synagogues as similar to Moses making the Tabernacle.

After this analysis of synagogues we shall examine churches. There are some informal house-churches, but most of the early remains of churches are lost. But at the beginning of the fourth century, when the formal Christian churches come into view, their design seems to follow the same rules as for synagogues. For churches we have additional evidence from the services of Laying the Foundations and Dedication.¹⁰ The ritual of the first part of Eucharist has many parallels with the synagogue service, and likewise the same scriptural proportions are used in the church building as in the synagogue.¹¹ In the second part of the Eucharist the main innovation is the altar, but even the interpretation of this owes a great deal to the Judaic context of the New Testament.¹²

This conventional layout which I have found in both synagogues and churches, I have called 'the traditional design'. It starts from the earliest synagogue whose plan we can measure, and continues, possibly without exception, to churches which were built in 800 AD. When does it end? At different times in different countries. But in England Salisbury Cathedral is certainly traditional. In contrast most of Sir Christopher Wren's churches are in a new style, legally defined by the Church of England.¹³

Jews have never described the way they design a new synagogue. They inherited a practice of keeping this subject secret, since it had to do with God's creation of the universe, and 'The Chariot', that is, Ezekiel's description of the place where God dwelt. Christians heard from Jews that there was some kind of secrecy. In the third century AD Origen described a secular love-poem which had somehow found its way into Holy Scripture, the Song of Songs. He starts out by saying that it was not advisable for young people to read it:

I advise and warn everyone who still has the lusts of flesh and blood, and has not yet escaped the desires of material nature, to refrain entirely from reading this book or from its contents. A Hebrew custom, they say, is that if anyone has not yet reached a mature adult age, he is not even allowed to hold this book in his hands.¹⁴

This passage is about a book which might otherwise cause lustful thoughts. But, as he continues, Origen points to another kind of restriction:

I have also learned from them this fact: that even though they have a practice of allowing educated and wise pupils to read Scriptures of all kinds, those Scriptures they call 'secondaries' are kept to the end. These consist in four books: the beginning of Genesis in which the Creation of the World is described, the passage at the beginning of the Prophet Ezekiel speaking of the Cherubin, the end of Ezekiel containing the Building of the Temple, and this book, the Song of Songs.

Why should one regard the passages from Genesis and from Ezekiel as 'secondaries'? The answer is in tractate Hagigah in the Mishnah:

The forbidden degrees [of marriage]¹⁵ may not be expounded before three persons, nor the Story of Creation¹⁶ before two, nor [the chapter of] the Chariot¹⁷ before one alone, unless he is a Sage that understands of his own knowledge.¹⁸

The limitation on those who could discuss these subjects was not to hide anything unsuitable or sinister, but to circulate truths of this kind only to those who could understand them. Confronted with these subjects ordinary Jewish people would be lost. Keeping them back, for discussion with suitable people, had its origin in Greek philosophy. It was a Platonic habit which spread to the Jews.

In a supplement to Hagigah, also published in the third century, we find two teachers who had a conversation in about 75 AD following a reminder of the custom established by the Mishnah.

Rabban Yohanan ben Zakkai was riding on an ass, and Rabbi Eleazar ben Arakh was driving the ass from behind. [Eleazar] said to him, 'Rabbi, repeat for me a chapter of the works of the Chariot!' He said to him, 'Have I not ruled for you to begin with that [custom], "they do not repeat [the chapter of] the Chariot before one alone, unless he is a Sage that understands of his own knowledge".'

He said to him, 'Now may I lay matters before you?'

He said to him, 'Say on!'

Rabbi Eleazar ben Arakh began and expounded concerning the works of the Chariot.

Rabban Yohanan ben Zakkai got off his ass, wrapped himself in his cloak, and the two of them sat down on a rock under an olive-tree, and [Eleazar] laid matters out before him.

[Yohanan] got up and kissed him on the head and said to him, 'Blessed be the Lord, God of Israel, who gave to Abraham our Father [you, Eleazar,] a son who knows how to understand and expound upon the glory of his Father who is in heaven'.¹⁹

As this book will show, a synagogue could not be designed without thinking of how to represent God and how to represent his creation. Synagogue design was indeed due to religious meditation, but such religious mysteries could be discussed only with mature and learned people.

Many ancient documents suggested that the model, both for the synagogue and the church was the Jewish Temple,²⁰ since it too had been associated with 'Creation' or 'The Chariot'. Yet in the nineteenth and twentieth century when art historians were questioned about the origins of the church plan, the answer would have usually included the Latin or Italian word *basilica*. Was there any link between the word *basilica* and the Jewish Temple?

Basilica is derived from the Greek *basilikê*, meaning 'palace'. One correct meaning for *basilikê* is 'palace', since the word has to do with *basileus*, Greek for 'king'. But in architecture *basilikê* has a special meaning, since in ancient Athens *basileus* meant something slightly different. Athens as a city was ruled by archons, or chief magistrates, and one of them had the title 'King Archon', or *Archon Basileus*. So in Athens *basilikê* was the title of his office, a building in the market. This was a porch with three solid walls. The fourth wall was a colonnade giving access to the street (Figure 1.1). So while *basilikê* continued to mean, 'palace', Athens added to the word a local meaning, 'a porch beside an open space'. In fact this local Athenian meaning came to spread all over the Roman empire. It commonly meant a covered meeting-place leading into the forum, where people could shelter in hot or rainy weather. We shall name this type of building a 'market *basilica*'.

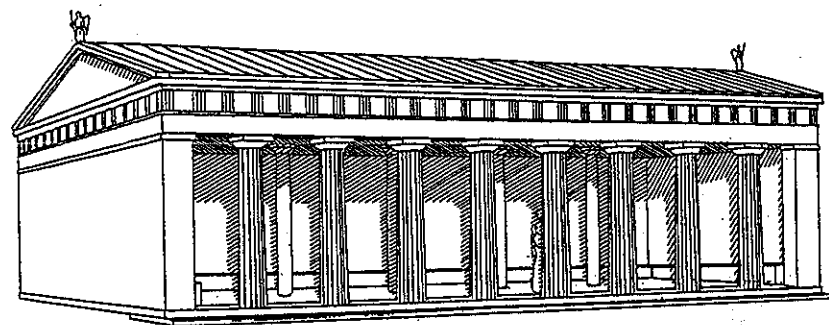


Figure 1.1 The Stoa of the Archon Basileus

In the fifteenth century Leon Battista Alberti, one of the greatest architects, conjectured that the market *basilica* had been the model for churches.²¹ During the 1950s, architectural scholars, most of them connected with Rome, reconsidered this hypothesis. They concluded that the market *basilica* had too many different plans to be the architectural model for a church.²² And it seems that Alberti did not know the ecclesiastical meaning of *basilica*. St Isidore defines it. *Basilica* means 'palace' and churches are 'called *basilicae*, because they are places where worship and sacrifice are offered to God, the King of All'. This was remembered by a large number of writers in the middle ages.²³

In fact therefore the Greek word *basilikê* and the Latin *basilica* are simple translations for the scriptural word – Hebrew *hekal*, or Greek *naos* – which can either mean 'palace' or 'temple',²⁴ the dwelling of God the king.

For nearly thirty years Dr Doron Chen has written about the design of synagogues and other buildings of the Roman and Byzantine period. For him the design of ancient synagogues parallels the teaching of the Tuscan architect Vitruvius.²⁵

Vitruvius' *Architecture* is the single work on this subject to have survived from the Greco-Roman civilisation. It is essential that any one with an interest in classical architecture should read it, since Vitruvius often gives us the only technical information we have. But even Vitruvius has limitations. For example he described buildings in Greece, Asia, and Egypt, but there is no sign he had ever been outside Italy.

Vitruvius described buildings in three different ways. He visited Rome frequently, and speaks of the city buildings as one who knows them well. For buildings overseas which he had never seen, he quotes written sources, and it is to this class that his discussion of Greek Temples belongs, with their special unit of measurement, the *modulus*. He describes his own buildings, such as the Tuscan temple or the basilica at

Fano,²⁶ in a third way. But he gives no sign that he began his own buildings by finding a *modulus*, so not all the buildings in Vitruvius's book were designed on the modular system.

An illustration of Chen's method is his explanation of the plan of the sixth-century synagogue at Nabratein or Nevoraya. He begins by saying that his own researches had begun when he noticed how many 'ancient synagogues in Israel are similar in form and dimensions to the Roman atrium'. Vitruvius describes the courtyard or atrium, and he must have often built houses with an atrium, a rectangular open courtyard round which various rooms were built. The shapes of the atrium are shown in Figure 1.2 and Vitruvius describes the proportions as follows:

In width and length, atriums are divided into three classes. The first is laid out by dividing the length into five parts and giving three to the width; the second, by dividing the length into three parts and assigning two parts to the width; the third, by using the width to describe a square figure with equal sides, drawing a diagonal line in this square, and giving the atrium the length of this diagonal line.²⁷

What was the measurement of these courts? All that Vitruvius says about 'dimensions' is that the atrium can be anything between thirty and a hundred feet long.

In 1978, when Chen began his study of Nevoraya synagogue, he used a plan drawn by Kohl, shown in Figure 1.3. On this plan the interior space of the synagogue is 15.40 m. long by 10.30 m. wide, as near as no matter a proportion of three to two, like the second of Vitruvius' suggestions. That seemed very satisfactory.

Three years later this synagogue was re-surveyed by Eric and Carol Meyers and James Strange. The new survey showed that Kohl's rapid plan had greatly simplified the building, so Chen's analysis was not of the building itself, but of Kohl's plan. I can only hope that the plans in this present book are true representations of the buildings. The new plan (Figure 1.4)²⁸ showed that none of the synagogue walls are parallel, and that a 3-to-2 rectangle does not fit the internal measurements.

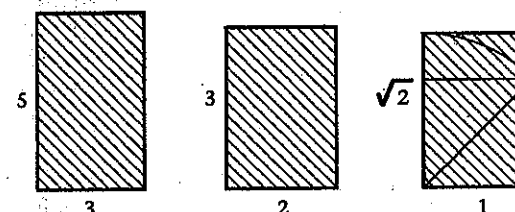


Figure 1.2 Shapes for courts in houses suggested by Vitruvius

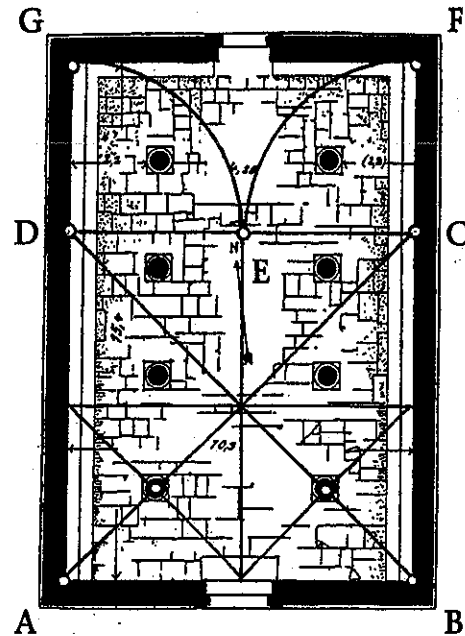


Figure 1.3 Kohl's plan of the Nevoraya synagogue – after D. Chen

Chen then went back to the synagogue, re-surveyed it, and produced an analysis of the same numbers, measuring the inner length of the west wall and the external width of the south end.²⁹

Up to the present time Chen had precisely followed Vitruvius's instructions on an atrium, and his instruction on proportions, three to two.³⁰ But then he goes off on his own. Chen is concerned with the 'planning module' which he supposes should be an exact number of feet.³¹ But the numbers used in atrium proportions are not in Vitruvius's works attached to any measurable units, though they may fall between two extremes.³² Vitruvius was much concerned with proportions like 'five by three'. He was anxious about the correct shape of the atrium. But the reason he did not say 'Five yards by three yards' was that his recipe was for any size at all.

Chen is right to say that few finished buildings precisely follow the initial plan, and various mistakes are likely. So if a historian of architecture wishes to examine proportions, some allowance has to be made. For Nevoraya synagogue Chen advocates an allowance which 'should not exceed 1%',³³ and succeeds in keeping within this limit. We shall for the time being note this allowance, and we shall discuss it when we have more evidence.

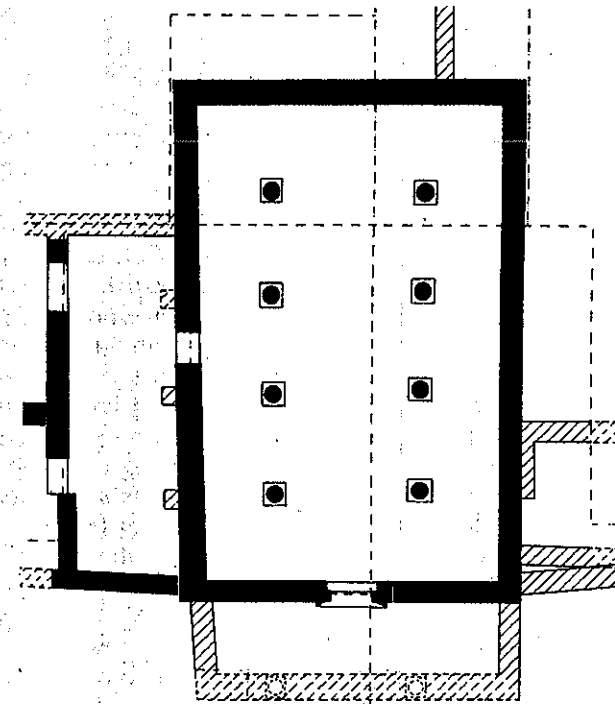


Figure 1.4 Meyers' plan of the Nevoraya synagogue – after E. Meyers, J. Strange and C. Meyers

As an architect discussing the design of Nevoraya Chen notes the parallels with Vitruvius the architect, and is mainly content to produce a series of accurate mathematical proportions. Chen tends to neglect those people who might have contributed to synagogue design, but who were not architects. But there is one exception.

Chen believed that the synagogue at Meron was proportioned as a double square, and guessed that this shape may mean something else: 'The proportion of the double square has often been related to the Temple in Jerusalem; the sanctuary 100 cubits by 50 cubits, the porch in the interior, 20 cubits by 10 cubits, the main hall, 40 cubits by 20 cubits'.³⁴ But he did not pursue this topic, nor go beyond a guess, nor go on to check whether some other proportions were related to the Scriptures.

In many ways Chen is faithful to Vitruvius, but he goes beyond him in seeing a relationship between proportions and measurements. Scholars have been doing an increasing amount of work on ancient measurements, and I have myself spent a long time studying their work,

and trying to measure ancient buildings. But, with the help of other archaeologists, I have concluded that synagogues and churches were designed not according to units of measurement, like the foot or the cubit, but simply, as Vitruvius had said, according to proportions. If synagogues or churches had been intended to be replicas of any earthly building, they would display roughly the same measurements. But the measurements of ancient synagogues or churches are almost all different.³⁵ Their precise measurements depended not on any publicly available units of measurement, but, as Vitruvius said for certain buildings, on the available width or length of the site. As a consequence of this conclusion I have not troubled to measure the buildings in this book in supposed ancient feet or cubits, but in metres. Metres cannot have been the measurement of ancient designers, but we are not sure what alternative form of measurement they might have had.

In the 1950s George Cooke wrote a guide to parish churches. A person whom Cooke described as a 'nineteenth-century clerical medievalist' had told him that,

Because the religion of Christ crucified is preached in their walls, a vast number of churches have been constructed on the cross form.

Cooke retorted that,

Such fantastic delusions cannot be accepted today ... Neither masons nor ecclesiastics concerned themselves with symbolic expression when a church was being built.³⁶

Cooke wrote this reaction against symbols in a book about thirteenth-century churches. But why he had not read more thirteenth-century documents? A good example is the following statement by the thirteenth-century Bishop William Durandus:

Some churches are formed in the shape of a cross, to remind us that we are to be crucified to the world, or that we ought to follow the Man who was crucified.³⁷

Architectural history is more than a record of the technical concerns of the designer or the mason. Admittedly the findings of archaeologists and of architects are an essential part of the evidence, but so is a knowledge of the time in which they happened to live, and this can only be known through contemporary documents.

Professor Peter Kidson and Dr Thomas Cocke were the authors of a book on Salisbury Cathedral, celebrating the production of a new and accurate plan by Peter Spencer. Kidson analysed its proportions, and wrote,

The essential principle was that all the major dimensions should form themselves into a mathematical system in the sense of being related to each other by means of ratios.³⁸

Kidson and Vitruvius would therefore share the principle that the dimensions should be related by ratios. Kidson continues,

For reasons that were intelligible in remote antiquity when this method came into general use the preferred ratios were notionally irrational rather than rational.³⁹

Here Kidson ceases to follow Vitruvius. Vitruvius does in fact mention one irrational number in the passage we have already quoted about the atrium. But this is the only such number in the whole of his ten books on architecture. Otherwise Vitruvius dealt in divisions and multiplications of rational numbers. 'Rational' numbers are those which can be measured in the same units,⁴⁰ such as lengths of 10 centimetres and of 83 centimetres. If a third length is added, say of four inches, it cannot be expressed in whole centimetres, and is therefore termed 'irrational'. If the side of a square is measurable, it was known – from the very start of European mathematics – that the length of the diagonal is irrational. But this example mentioned by Vitruvius may not be intended as an exercise in irrational mathematics, but as a beautiful proportion which could anyway be practically measured with a piece of rope.

If, in the ancient world, an irrational measurement had to be given there were several ways of making approximations, in which Kidson shows much interest.⁴¹ So one side of a square multiplied by seven and divided by five gives an approximate measurement a little short of the length of the diagonal, which for some purposes might be tolerable.⁴² But there are two things to be added. If one allows that the pursuit of irrational numbers was mainly of concern to professional mathematicians, there was also a social distinction to be taken into account. Professional mathematicians did not consider 'architecture ... a part of mathematics, even though some people might think so'.⁴³ The idea that architects might be interested in irrational numbers was forcefully made in the 1920s by Jay Hambidge and Matila Ghyka.⁴⁴ But the single ancient architectural writer who survives, Vitruvius, mentions only one, and that is that.⁴⁵

Kidson's next statement raises further questions. He says:

Architects opted for square roots and their derivatives ... although more often than not [they] settled for approximate arithmetical equivalents. This postulates margins of tolerance of up to 2 per cent. ...

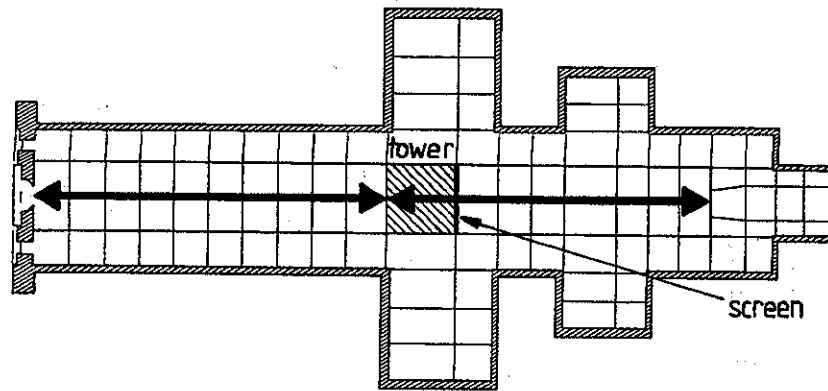


Figure 1.5 Kidson's lengths of Salisbury nave and choir

I too have laboured with the measurements of Salisbury Cathedral, and I admire Kidson's perseverance in working out an answer which satisfies him. Nevertheless I believe he has chosen the wrong approach.⁴⁶ He has divided the length of the nave and choir at the west side of the central tower (the arrows in Figure 1.5). But the division is in fact either in the centre or on the east side, where the choir screen used to be. This was removed in about 1790. But, as pictures made before 1790 show,⁴⁷ the screen was the natural eastern end to the space of the nave.

In his 'Principles of Design' Kidson is clearly at home with mathematics. But I would hesitate to accept his chapter since it is in no way a religious argument. I should have liked him to give a theological explanation to the mathematics of the cathedral. So we have to start our questioning again. What do the Holy Scriptures have to say on this subject? How is it treated by the classical teachers of divinity?

Notes

- 1 C. Mango (1976) 66f.
- 2 For churches see for instance Vogelsang 114–119.
- 3 See p. 250.
- 4 Chapter 2, p. 14.
- 5 Chapter 3, p. 23.
- 6 Chapter 4, p. 37.
- 7 Chapter 5, p. 51.
- 8 Chapter 6, p. 70.
- 9 Chapter 7, p. 88.
- 10 Chapter 8, p. 114.
- 11 Chapter 9, p. 129.
- 12 Chapter 10, p. 149.
- 13 Chapter 11, p. 162.

- 14 Origen, *Prologue to the Song of Songs*, tr from W. Baehrens, Origen, *Werke, Homilien zu Samuel I, zum Hohelied ...*, GCS, vol. VIII (1925) 62. The point about age is also made by Jerome, Letter 53.8.
- 15 See Lev 18.6ff.
- 16 Gen 1.1–2.3.
- 17 Ezek 1.4ff, see Meg. 4.10
- 18 Hagigah 2.1.
- 19 Tosefta Hagigah 2.1.
- 20 See for instance Vogelsang 114–119.
- 21 See document d-Alberti on p. 216. The first to criticise Alberti on this point was A.C. Zestermann in 1846. According to him Christians had invented a new kind of *basilica* adapted to the needs of their liturgy. He was much criticised.
- 22 Krautheimer (1975), p. 484, n.6, and Duval (1962) 19.
- 23 Isidore of Seville, *Etym.* 15.4.11
- 24 *Hekal* is used in 1 Kg 21.1, 2 Kg 20.18 to mean a palace. It is also used, (and translated into Greek *naos*) in 2 Chr 36.7. But the primary meaning of *naos* is 'temple' and here the name of the synagogue depends on the Hebrew meaning of the word.
- 25 Chen (1980) 37.
- 26 Vitruvius, *Arch.* IV. 7 and V. 1. 6–10.
- 27 Vitruvius, *Arch.* VI. iii. 3, translated by M.H. Morgan
- 28 Meyers, Strange and Meyers, *BASOR* 244 (1981) 8. Chen objected to the inaccuracy of this plan.
- 29 And not the two internal widths as Chen says in *PEQ* 119 (1987) 44.
- 30 Chen is quite right here. But by adopting the geometry of von Wersin he considerably expands Vitruvius' proportions.
- 31 Hiscock 5.
- 32 See Vitruvius, *Arch.* VI. iii. 3.
- 33 Chen (1978) 193.
- 34 Chen (1980) 258.
- 35 See Appendix 4, p. 231. The last column in the table shows the different measurements of the length of each synagogue.
- 36 Cooke, 94–5.
- 37 Durandus, *Rat.* 1, 1, n.17. For other scholars who have rejected symbolism see Krautheimer (1975) 491, n.81.
- 38 Cocke and Kidson, 62.
- 39 Cocke and Kidson, 62.
- 40 See Euclid, *Elem.* X, Definition 3. *Rêtos* is Greek for 'rational', and *alogos* for 'irrational'.
- 41 See Kidson (1990) 77, 86, 92, 94.
- 42 See Heath, *Euclid*, Vol. II, 119.
- 43 Anatolius, *Fr. ex libr. Arithm.*, PG 10.233c.
- 44 See for instance works by the leaders Hambidge, and Ghyka, and a critique by Wittkower (1960).
- 45 Hiscock 6–13.
- 46 In his survey of internal dimensions, Cocke and Kidson, 67, Fig. 12.
- 47 Cocke and Kidson, 17, Plate 8.

CHAPTER TWO

The Philosophy

The next chapter will examine the physical background of the synagogue, but to understand this other parts of the context must be filled in. This chapter will therefore ask what was the Jewish and Christian philosophy of the building. It would be good to choose some system of thought which was currently accepted when Jews started to build synagogues. The earliest synagogue of which we have archaeological evidence was at Schedia in Egypt. It was built during the reign of Ptolemy III, in or after 247 BC.

Modern commentaries on the Holy Scriptures usually attempt to work out what the author originally meant as he wrote the book. But in this book the uppermost question will be what a quotation from one of these holy books may have meant to an ancient reader. An example which is necessary for our present purpose is in Exodus, when Moses went up Mount Sinai to hold converse with God. The ancient reader had to ask himself a philosophical question: 'Was the summit of Sinai on earth or was it the beginning of heaven?'

On the summit of Mount Sinai the Lord had told Moses to 'Make me a sanctuary', giving many measurements and detailed instructions to construct the Tabernacle. This looks as if the Tabernacle is an ordinary material object. But from time to time the Lord also said, 'You must make it exactly as I have shown you, after the design for the tabernacle', or, 'See that you follow the design for them which you are being shown on the mountain'.¹ This looks as if he is referring to some heavenly model.

If the top of Mount Sinai was in heaven, many ancient philosophers regarded heavenly realities as invisible. So if Moses was in heaven to be shown the design it could not be seen. So how does one reproduce in a material form this heavenly design? To reproduce something invisible in a form which can be seen might smack of deceit.

But an answer to this problem had been worked out in the classical world. Indeed it was part of the syllabus of Higher Education. When pupils were fifteen they had finished their secondary education, and had some understanding of literature and mathematics. Those who wished

to do so and had the funds then went on to Higher Education. This lasted five years, and there was a choice between philosophy and rhetoric.² The system was founded in the third century BC, and the syllabus remained conservative, and largely the same, for about a thousand years. Thus even when the Roman Empire became Christian, Christian lecturers were still conservative enough to refer to Greco-Roman gods and goddesses.³ Thus for a thousand years the same books were studied as part of the exercises of Higher Education. Every philosophy student was familiar with them.

At the end of the philosophy course students read Plato's dialogues. The *Republic* discussed the basic truths in the universe, and the social pattern which might fit them. The *Timaeus* was an essay on the making of the world.

In the *Republic* the universe was divided into two realms, which were each perceived in a different way. First there was the world around human individuals, of which they were aware through their five senses. This is what Plato called 'the sensible realm'. They touched and saw and heard it. This realm was also deceptive. But there was also a second realm, which could neither be touched nor seen nor heard. It contained the 'forms' or 'ideas' of basic truth, and could be explored only by the highest human faculty. These two realms formed an attractive parallel to earth and heaven in the Jewish and Christian systems of belief.

Incidentally the usual English translation of this 'highest human faculty' as 'intellect' is unfortunate, and unfortunate too the naming of the realm of basic truths as 'intellectual'. Intellect implies powers of logic. Plato used the Greek word '*nous*', but this word implied not only logic but also imagination and conscience.

Plato believed that if a person used his five senses to experience the world, they were an unreliable guide. Truth and falsehood had an uncertain boundary. And anyway the true things in the sensible world were simply imitating basic truths in the 'intelligible world'. Plato's classic contrast between the sensible and intelligible worlds is in the parable of the Cave (see p. 181). People in the Cave represented the sensible realm. They were tied up in such a way that the only thing they could see was shadows on the back wall. This was a passage familiar to every classical philosophy student.

In Plato's parable the people in the Cave made immense efforts to understand what they could see in the Cave. But their efforts were in vain, since the only things one could see were shadows. Finally someone managed to free himself and emerge from the cave – going from the sensible realm to the intelligible realm. He saw the sun and realised that it is the provider and cause of everything.

The sun symbolized the highest values, among other things the 'cause of all that is right and beautiful', or the 'idea of the Good'. These values were 'forms' or 'ideas', which lay beyond the sensible world. You could

not hear them or touch them. In the *Republic* Plato was very successful in dividing the 'sensible' realm of deceit and the 'intellectual' realm of truth. But he still had to show how these two fitted together.

For Plato the truths in the sensible world imitated the ideas in the intelligible world. And if a person witnessed a good deed in the sensible world, he might go on to recognise it as an imitation of the 'idea of the Good'. The human intellect can be trained to make informed guesses, and occasionally, and sometimes ecstatically, it may go higher into the basic truth. Platonists agreed, and as the Epistle to the Hebrews said of the earthly sanctuary it is 'only a shadowy symbol of the heavenly one', and 'only a pointer to the reality'.⁴

Plato's idea of the two realms was not completely original. It came partly from the early mathematicians, the Pythagoreans. The first account of them is as follows,

By their study [the Pythagoreans] came to believe that the sources of mathematics were the sources of everything else. And since the first source is naturally numbers, they believed that they saw in numbers ... many likenesses to present or future things. One number, they believed, had the property of justice,⁵ another of soul or intellect,⁶ and another of opportunity.⁷ The rest of the numbers had properties of roughly the same kind. They saw also that the notes and phrases of harmonics were in numbers. Since it seemed to them that numbers explained the complete nature of all things, ... their theory was that the principles of numbers were also the principles of everything else.⁸

The Pythagoreans had two kinds of mathematics. The first branch of mathematics was concerned with a number, for instance 'one', which went with another word, for instance 'egg' - 'one egg'. In this mathematics 'one egg' added to 'two eggs' makes 'three eggs'. This is the kind of mathematics taught at primary school. But there is a second branch of mathematics. A person can meditate on the number 'one' by itself. As a subject of meditation it might be viewed in a new way, and have a new name like 'one-ness' or 'the true One'.⁹ In some way this 'one-ness' was believed to exist both in the sensible realm and in the intellectual realm and numbers, for the Pythagoreans, formed a bridge linking the two realms. Mathematicians of the second kind produced a series of books on these numbers, and specially on numbers from one to ten.

Meditative mathematics was thus the key to unlock the door of the intelligible world, and Plato expressed this Pythagorean belief in the *Timaeus*. Number, according to this dialogue, determined the structure of the universe. The four elements, fire, earth, water and air, were arranged in proportion to each other.¹⁰ The *Timaeus* was also a set book

in the syllabus, so every philosophy student had examined the theory that the sensible and the intelligible realms could be linked by mathematics.

Plato treated the numerals as being themselves 'ideas' or 'forms'. He also believed that 'ideas' were the thoughts of God, though he meant this in a far more limited sense than would be acceptable to Jews or Christians. As an example of a meditation on these ideas consider a mathematician's idea of 'the true Four':

This is called 'Justice' since its square [$4^2 = 16$] is equal to the sum of its sides [$4 + 4 + 4 + 4 = 16$] ... The numbers which come before this have the sum of the sides larger than the square, and the numbers which follow have the sum smaller than the square.¹¹

This approach to 'the true Four' is very different from the mathematics I learned at school. The calculation is simplicity itself (Figure 2.1). The left-hand square on the top row has all the small squares numbered. They add up to nine. The side measures three small squares, but, counting from the arrowhead next to the right side, the sum of the four sides - $3 + 3 + 3 + 3$ - equals the figure in the circle, 12. With a square whose sides are four the sides add up to the total number of small squares. With a square whose sides are five (or more) the sum of the sides is always less than the number of squares. It would be hard to find a practical way of using this calculation. But in the context of meditation it was believed to be the reason why the true four was the same as Justice.

And of course the true Four had links with other truths in the intelligible world, for example with the hero Herakles.¹² And the way to

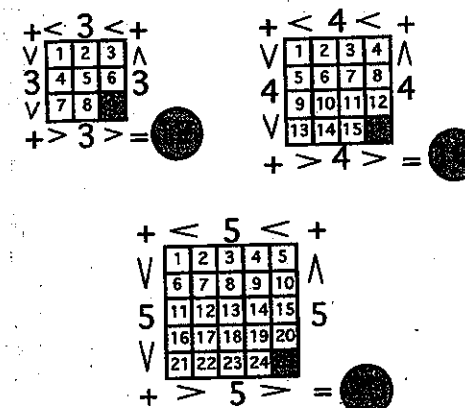


Figure 2.1 The True Four

find all this about numbers was to join the Pythagorean brotherhood. In that society one was taught to live a plain life filled with silence and abstinence.¹³ This was the way to train the intellect to recognise what the numbers meant. Socrates said that part of the training for the intellect was purification:

What kind of purification? Isn't it the same as what was said originally in [Orphism]: to set the soul as far as possible apart from the body ... having 'liberated' it from the prison of the body?¹⁴

These beliefs were close to the heart of the Pythagorean brotherhood, and the brotherhood was an exclusive club. According to the Pythagoreans it was inappropriate for an outsider to try to understand their central beliefs:

Everyone always took care that the principal and most essential teachings in this subject were not spoken about. They observed the strictest reserve, and took pains to bring nothing to the notice of the outsiders. They did not write their traditions down, but committed them to the memory of their successors, for these are the mysteries of the gods.¹⁵

This section of Higher Education appealed greatly to some Jews. Thus in Palestine, writing at the end of the first century AD, Josephus said that the Jews called Essenes followed 'a way of life taught to the Greeks by Pythagoras'.¹⁶ There were of course Jews who were surprised that any truth came from outside their tradition, and Aristobulus, a writer of the second century BC, solved this problem by saying that the Greeks learned this truth from Moses.¹⁷ Josephus, more reasonably, said,

Moses represented God as One, uncreated, and immutable from all eternity. I am not now concerned to argue that the wisest of the Greeks learned to adopt these conceptions of God from the principles provided by Moses ... But in fact Pythagoras, Anaxagoras, Plato, his successors the Stoics, and indeed nearly all the philosophers appear to have held similar views concerning the nature of God.¹⁸

Philo lived from about 20 BC to 50 AD. He was a prolific Jewish author who had had his Higher Education in Alexandria. Plato had thought of God as an abstract philosophical being, and some Jews had refused to believe he was the same as the God of their belief. But Philo adapted the philosophy of 'the great Plato' to be a way of thinking for Judaism.¹⁹ He accepted that Plato's two realms in the parable of the Cave were like the scriptural earth and heaven, and was attracted by the meditative

arithmetic of the new school of Pythagoreans. A member of this school, whose name has been lost, wrote a book which is frequently cited by later authors. Philo's writings are full of quotations from it.²⁰

During Philo's lifetime most Jews believed that the Scriptures were divinely-inspired, and almost all Philo's written work was in the form of scriptural commentaries on Holy Scripture. Philo had no doubt that the numbers in the Scriptures came from God; and often wrote his meditations down.

An extract on p. 184 below contains part of Philo's account of the number concerned with the Sabbath, the true Seven. He starts with the Scriptures. Philo first quotes Genesis: 'On the seventh day, having finished all his work, God blessed the day and made it holy, because it was the day he finished all his work of creation.' This passage makes it clear that the number seven was in God's mind. But Philo soon²¹ goes off into a long series of other meditations on the 'beauties' of the number seven. In a note at the end²² he says that these meditations are not by him. 'These are the statements and reflections of men on the true Seven', so the whole of this series was derived from mathematicians. He then comes back again to interpret Scripture, and concludes it by saying that there is a law in the Ten Commandments about doing no work on the seventh day.

The 'beauties' which Philo saw in the true seven must now be identified. Their beauty resides in their simplicity.

- A Multiplication seven times: one doubled seven times makes 64: one trebled seven times makes 729. Both 64 and 729 are squares as well as cubes. ($64 = 8^2 = 4^3$), ($729 = 27^2 = 9^3$).²³
- B Seven is composed of one and two and four, which are musically harmonic. Twice the vibrations produces an octave and four a double octave.²⁴
- C Seven is made up of three and four, the sides of the right-angled triangle, and hence stands for uprightness.²⁵
- D Seven is made up of three, the dimensions of surface, and four, the dimensions of solidity.²⁶
- E Other numbers of the series up to ten are either the source of other numbers in the series formed by other numbers. Seven has no connection with any number under ten.²⁷

In this last section it is said that 'the philosophers compare the true Seven with Nikê' who appeared out of the head of Zeus. This reference to the Greek gods, interestingly enough, was ascribed to the philosophers, and was not ruled out.

It does not matter very much whether a person educated in this century can or cannot see these beauties. The Pythagoreans would have thought them beautiful, since for them numbers demanded reverence. Numbers were the distinctive thing which binds the universe together.

Perhaps the most interesting thing is that Philo's reverent treatment of 'the true Seven' goes directly back to the Pythagoreans and Pythagoras. No doubt they were in certain respects wrong, but none the less they contributed to a world-view which Philo believed to be true.

On another matter Jewish teachers may have been influenced by Pythagoreans. The rabbis insisted that truths which were the results of meditation should not be told to people who could not understand them.²⁸ As we have seen they forbade public comments on two passages, the Account of Creation in Genesis, and the Account of God's Chariot in Ezekiel. The only people who could comment on these were experienced Sages, and whatever they said (once again following the Pythagorean practice) was not written down.²⁹ The Christians also inherited the belief that only the mature,³⁰ after a suitable period of asceticism,³¹ could comment on the mysteries. This Pythagorean approach has meant that a great many subjects of meditation have been lost.

Christians accepted Philo as an outstanding theologian, and many used him as a source.³² Thus Eusebius of Caesarea, who had also been educated in Alexandria, said Philo was

a man most celebrated by many, not only by Christians but also by those outside the Church ... He is said to have surpassed all his contemporaries in the study of Platonic and Pythagorean philosophy.³³

Christian authors continued to adopt the Philonic approach to numbers. There are two good examples of the way in which they used them. One is an early seventh century book on numbers by Isidore of Seville (see p. 195 below), an excellent example of the way Christians used the Neo-Pythagorean interpretation of numbers.³⁴ The second example is the frequent occurrence of numbers in describing church buildings. Unless the reader realises that numbers were believed to be the key to heavenly realities, the constant repetition of numbers can be tedious. If they are the key, then the following passages gain intellectual importance. Thus Eusebius looked at the four sides of the courtyard at Tyre and was reminded of the four Gospels,³⁵ or at the twelve columns in the Anastasis in Jerusalem, 'equal in number to the twelve apostles'.³⁶ Thus the *Testamentum Domini* tells designers that the church should have 'Three entries in type of the Trinity,' and that the baptistery should be twenty-one cubits long 'for a type of the total number of the prophets' and twelve cubits broad to typify the apostles.³⁷ Thus in a new church at Edessa 'a single light shines in the choir through three open windows, announcing the mystery of the Trinity'.³⁸ These are the simple numbers which result from meditation.

What in all this numerical symbolism was the place of beauty? Vitruvius aimed to build Temples in a way he considered beautiful. His

idea of a beautiful building was, nevertheless, purely visual. It pleased the eyes. Meditative mathematics does not lead in the direction of visible beauty, but Pythagoreans believed it led to wisdom. Perhaps in the intelligible realm the basic truths of goodness and beauty might merge. But this was simply a hope.

At any rate, at the start of the fifth century AD, Augustine shared this hope:

For it is written, 'In their paths Wisdom appears to them cheerfully, and she meets them in every thought'. Wherever you turn she hints to you by various clues in her works ... in order to show you that whatever concrete thing delights your bodily senses has number ...

Look at the sky and the earth and the sea, and at anything which shines above you, or creeps or flies or swims beside you. They have their shapes because of numbers. Take away the numbers and they are nothing ...

But don't attend so deeply to the spirit of the artist that you fail to see the eternal number. For if you see it, then Wisdom will shine on you from her own inner throne, and from the treasury of truth.³⁹

Augustine thus believed that art is part of wisdom, and that meditative arithmetic led to wisdom rather than beauty.

The design of synagogues was based on an ancient and respectable philosophy, and had the backing of Plato. This all-inclusive philosophy was strongly entrenched in ancient society. It seemed to ride far above the designers and architects whose aim was visible beauty. So if ancient synagogues or churches are beautiful, we should only expect their beauty to be in terms of what Augustine speaks of as numerical wisdom.

Notes

1 See Ex 25.8, 9; 40.

2 For Higher Education see Marrou 189-194, 285 and Mango 1980, 127-137.

3 Hestia, or the goddess called in Latin Vesta is mentioned by Anatolius, a Christian lecturer on Aristotle in *Theol. Arithm.* 7, p. 6 line 17, and he mentions many adjectives appropriate to Greek gods, like 'Motherless' [Athena] and the 'the Virgin' [Artemis]; see 41, p. 54 line 11.

4 See Heb 8.5, 9.24.

5 Four, see *Theol. Arithm.* 23, p. 29 line 7.

6 One, see *Theol. Arithm.* 5, p. 3 line 21.

7 Eight, see *Theol. Arithm.* 44, p. 59 line 4.

8 Aristotle, *Metaph.* 1, 2, 985b.

9 The Greek word for 'one-ness' was *monad*.

10 Plato, *Timaeus* 31C.

11 *Theol. Arith.* 5.21.

- 12 *Theol. Arith.* 23, p. 28.19.
- 13 On the abstinent mystical sect, the Therapeutai see Philo, *de Vita Contemplativa*, especially sections 11–12, 28, 34.
- 14 Plato, *Phaedo* 87 c.d. See also *Laws* 6.782 d.
- 15 Iamblichus, *Vit. Pyth.* §226 sq. Iamblichus (c.250–c.330) was a philosopher. He wrote the *Theology of Arithmetic*. But there was an earlier book with this title, and since mathematical teaching was conservative Iamblichus' book probably contained little that was new. In fact Falco's edition shows that Philo the first-century Jew, described numbers using very much the same material.
- 16 Josephus *Ant.* 15.371.
- 17 See the translation of Aristobulus, *Fragm* 3 in OTPs 2.839.
- 18 Josephus, *Ap.* 2.172f.
- 19 Philo, *Æt.* 52.
- 20 This source is later quoted in the *Theology of Arithmetic*, as is evident from the passages where Philo has the same subject and uses some of the same words: see for instance *Theol. Arithm.* 20 (p. 24, line 13), 23 (p. 29, line 11), 42 (p. 55, line 9), 62 (p. 84, line 11).
- 21 From Philo, *Op.* 91.
- 22 At Philo, *Op.* 128.
- 23 Philo, *Op.* 91.
- 24 Philo, *Op.* 95.
- 25 Philo, *Op.* 97.
- 26 Philo, *Op.* 98.
- 27 Philo, *Op.* 99.
- 28 Christians too thought this way, see Matt. 7.6.
- 29 See m.Hagigah 2.1 and Origen, *prol in Cant. Cant.*, II.5, GCS 2.62.
- 30 The Greek word is *teleioi*.
- 31 See 1 Cor 2 (and Barrett 68ff) and Heb 5.12–14 (and Westcott 135). See also Plato, *Phaedrus* 269e; and Philo, *Mut.* XII, §81.
- 32 See the passages from Anatolius (who was a Christian) in *Theol. Arithm.* 6–7, pp. 520–73; 7–8, pp. 715–84; 14, pp. 174–13; 23–24, p. 29, pp. 296–3116 (Philo quoted in 297,11); 33, pp. 4219–441 (Philo quoted in 4219,43,5); 41–42, pp. 5411–557 (Philo quoted in 5411,12,556); 56, pp. 752–8; 58, pp. 7814–793; 63–64, pp. 862–8711 (Philo quoted in 863,6,15).
- 33 Eusebius, *H.E.* 2.4,2.
- 34 This enthusiasm for numbers went on. For an excellent study of the continued enthusiasm for numbers among tenth-century western scholars see Hiscock.
- 35 Eusebius *H.E.* 10.63. The four arches in the hymn for the New Church at Edessa, 7 (see p. 194 below) 'are' the four ends of the earth.
- 36 Eusebius, *V. Const.* 3.38.
- 37 *Test. Dom.* 1,19,1 (see p. 192 below).
- 38 *Hymn for the New Church in Edessa*, 13 (see p. 194 below).
- 39 Augustine, extracted from *Lib. Arbit.* 2,15,41(162) – 42(167); CChr 29, 266–7. The quotation is from Wisdom 6.17.

CHAPTER THREE

God-Given Buildings

The Tabernacle and the Temple were designed on the model of the heavenly dwelling. The present chapter will examine their physical structure. The liturgy concerning them, the Laying of the Foundations and the Dedication, will be discussed later on.

Some modern scholars wish to establish the probable history of a passage of Scripture, by taking it apart, piece by piece, before they decide its meaning. But in the first century BCE the Jews believed that the truth was in the completed books of the Scriptures which they had received. So they would do their best to interpret the texts, even if the final form of the book they appeared difficult. I would like to follow their method.

The Tabernacle is described in a long section of the Book of Exodus, which often repeats itself. A briefer version appears below on p. 179. Our main commentator on Exodus will be Philo. He not only interprets the book from a Platonic standpoint, but is part a tradition of Platonic interpretation which stretches back for over a century.¹ He relied on the Greek text of the Scriptures.

When Moses had led the children of Israel out of Egypt across the Red Sea, he came to Mount Sinai:

Then Moses went up the mountain. The glory of the Lord settled on Mount Sinai, and the cloud covered it six days. On the seventh day he called to Moses from the midst of the cloud ... And Moses entered in the midst of the cloud and went up the mountain, and Moses was on the mountain forty days and forty nights.²

Philo now shows how Moses was preparing in a thoroughly Platonic way for meditation:

In [the great natural gifts of Moses] philosophy found a good soil, which she improved still further by the admirable truths which she brought before his eyes. ... But first he had to be clean, as in soul so also in body ... purifying himself from all the calls of mortal

nature, food and drink and intercourse with women. ... For we read that by God's command he ascended an inaccessible and pathless mountain ...³

God now makes two points to Moses about making the sacred furniture and the tabernacle. Firstly Moses 'must make, according to all that I have shown you on the mountain, the plans of the Tabernacle and the vessels.'⁴ And secondly Moses should instruct Bezaleel⁵ 'to carry it all out as I commanded you'.⁶

Philo now explains that the things on the mountain of which Moses was aware were intelligible 'ideas' or 'forms':

It was determined therefore to fashion a tabernacle, a work of the highest sanctity, the construction of which was set forth to Moses on the mount by divine pronouncements. He saw with the soul's eye the immaterial forms (*ideai*) of the material objects about to be made, and these forms were to be reproduced in copies perceived by the senses.⁷

Moses was to receive God's commands in the intelligible world, and then to descend the mountain, to the sensible world. There his task would be to translate what he has seen on the mountain into a plan, and to give the plan to Bezaleel.

In the scriptural text God had commanded Moses to make the sanctuary 'exactly as I have shown you'. But what precisely did Moses see? The Temple or dwelling of God,⁸ or the heavenly Tabernacle 'not made with hands'⁹ Could Moses have seen this? Certainly not, as far as Philo was concerned. He would have taken the word 'heavenly' to imply that it was invisible to human eyes.

Where Philo discusses the heavenly Tabernacle he is closely following Plato. The exact form of the 'design' would be entirely invisible, as an ideal reality, and have nothing to do with the sensible realm. Moses is like the man who escaped for Plato's cave, and he, partly due to his cleansing of his soul and body, is the one person chosen to understand the 'intelligible forms' of the tabernacle.

When describing the Tabernacle the Scriptures give a whole series of numbers. If someone tried to list all the facts that are known about the Tabernacle, many facts would contain numbers. But to Philo with his Platonic background, numbers had a special meaning. They were present in both platonic realms, as 'ideas' in the intelligible realm, and in the sensible realm as material objects.

So in his *Questions on Exodus* Philo contemplates on all kinds of numbers – its sixty pillars, or twenty-eight cubits (the length of the curtain), or seven lamps.¹⁰ This book will argue that when a designer of a synagogue or a church used numbers he was following in the footsteps

of Philo, and used numbers in the hope of reproducing the basic truth about the true dwelling of God.

The Tabernacle was not to be thought of simply as a small tent. God had said, 'Thou shalt make me a sanctuary and I shall appear among you',¹¹ and Philo commented,

Clear indeed is the literal meaning, for the [heavenly] shrine is spoken of as the archetype of the Tabernacle, a sort of shrine. But, as for the deeper meaning, God always appears in his work, which is most sacred; by this I mean the world ... If however thou art worthily initiated and ... can, in a certain sense, become an animate shrine of the Father ... then will appear to thee that manifest One, who ... grants visions of ... the abundant sources of good things. For the beginning and end of happiness is to be able to see God. But this cannot happen to him who has not made his soul ... a sanctuary and altogether a shrine of God.¹²

So Philo had three thoughts in three totally different contexts. The first one concerned correspondence: the heavenly dwelling is imitated by the earthly shrine. Secondly one of symbolism. Assuming that God dwells in nothing less than the universe (or world), the Tabernacle must be a symbol of the world. Thirdly God comes to human beings, so a person's soul can also be a 'sanctuary and shrine of God'. This versatility of meaning is one reason why synagogues (and later churches) were never content simply to look backwards in the history of the sensible world, and be exact copies of the Jewish Tabernacle or Temple. They sought instead to imitate the heavenly dwelling of God. The revelation of this dwelling of course belonged to the intelligible realm. But they believed that they could express the basic truth about it through scriptural numbers, which also had their place in the intelligible realm.

Though they were in separate periods of Israelite history the Tabernacle of Moses and the Temple of Solomon had the same meaning. They were intended to be where God dwelt on earth. The Temple, as Philo said, was to be God's permanent dwelling, but the Tabernacle was for wanderers

Now if they had already occupied the land into which they were removing, they would necessarily have had to erect a magnificent temple on the most open and conspicuous site, with costly stones for its material ... But as they were still wandering in the desert and had as yet no settled habitation, it suited them to have a portable sanctuary ... It was determined therefore to fashion a tabernacle.¹³

All the same the earthly Tabernacle was still a copy of the heavenly ideas. So even though the histories of the Tabernacle and the Temples

were separate, the buildings could also be thought of as copies of one model. The Book of Wisdom was perhaps written during Philo's lifetime, and puts these words in the prayer of Solomon:

You told me to build a temple on your sacred mountain and an altar in the city which is your dwelling-place, a copy of the sacred Tabernacle prepared by you from the beginning.¹⁴

So in King Solomon's reign the era of the Tabernacle had finished, and Solomon followed King David's policy to build the first Temple in Jerusalem. The architectural plan of the Temple was due to the Lord: the Book of Chronicles said,

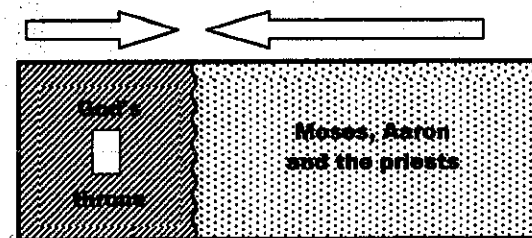
The Lord said to King David, 'It is Solomon your son who is to build my house and my courts'. So David gave Solomon his son the plan of ... the temple ... 'All this was drafted by the Lord's own hand', said David; 'My part was to consider the working out of the plan'.¹⁵

Chronicles in fact implies that David repeats a piece of sacred history: King David has the role of Moses and King Solomon that of Bezaleel.

What did the Tabernacle's earthly structure mean? One of the first things to note is that the furniture is precious, made up of the most precious treasures and jewels of the Israelites, but the Tabernacle (another word for 'tent') consisted in cloth and skins, held up by various pillars and beams. Its materials were humble. There were no doors. The entrance was closed by a curtain (or 'veil'), and another curtain divides the tabernacle into two rooms (Figure 3.1). Their names in this figure are translations of the Hebrew in the English Bible of 1611. The square room is 'the Holy of Holies'. This phrase is a superlative of 'Holy' meaning 'the Holiest'. The version of 1611 translated the name of the other long room as 'the holy place', and printed the word 'place' in italics. They rightly felt that, though this word did not exist in the Hebrew text, it was needed in English. In Hebrew this room was simply called 'the Holy'.¹⁶ This book will often be discussing the rooms called 'the Holy of Holies' and 'the Holy'. To distinguish between the two it will use the name 'the long room' for the old translation 'the holy place'.



Figure 3.1 The two rooms of the scriptural Tabernacle



God's throne is the lid of the Ark

Figure 3.2 The scriptural Tabernacle as throne-room

Scripture gives us another picture of the Tabernacle. It is a throne-room. The throne was above the Ark of the Covenant. The Ark was a wooden chest, decorated with gold, and containing the tablets of the Law. It had a golden lid with figures of two cherubim, and God's throne was between them. It was not visible, but God said, 'There I will meet with you and communicate to you'.¹⁷ So another name for the Tabernacle was the Hebrew phrase *'ôhel mō'êd*, or 'The Tent of Meeting'.¹⁸ The meeting was between God and the priests, who represented Israel. Figure 3.2 shows the lid of the ark and the location of the throne, and the arrows show the type of meeting envisaged, God facing his priests. The point where they met was specially holy. Where the Holy of Holies joined the long room recalled God in his revelation to the world. One could appropriately read the Law there. And the long room's entry into the Holy of Holies recalled human access to God's mercy and glory. One could pray there.

As one of the principal holy buildings in the Scriptures the Tabernacle was a symbol for many things. Josephus, for example, is one of those who said that the Tabernacle stood for heaven and earth. 'The four pillars'¹⁹ supported the veil between the two rooms in the Tabernacle.

The Tabernacle served as an imitation of the nature of the universe. Into one-third of it, [the Holy of Holies, or] the part within the four pillars, the priests could not go. This part was, like heaven, set apart for God. But the priests (and priests alone) were admitted into [the Holy Place, the] part twenty cubits long. This was the part like earth and sea, in which men are free to move.²⁰

Josephus scheme is illustrated in Figure 3.3, but this symbolism was probably much older. The curtain or veil between the two rooms represents the firmament. Both in the Tabernacle and in the Temple God's meeting with humanity is only with the priests. They alone could



Figure 3.3 Josephus' understanding of the Tabernacle



Figure 3.4 Philo's understanding of the Tabernacle

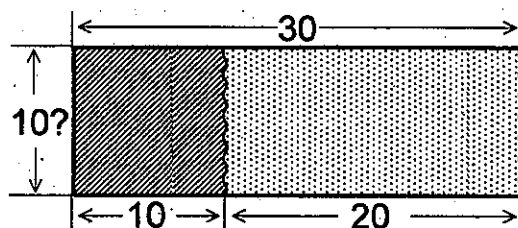


Figure 3.5 Traditional proportions of the Tabernacle

go into the long room, and only their leader, once in the year, could enter the Holy of Holies.

Philo also identified the two rooms with heaven and earth, but he is more philosophically inclined, and speaks of them as the intelligible and sensible realms (Figure 3.4).

The description of the Tabernacle in terms of proportions contains a surprise. In the sections from Exodus we have quoted, with their many measurements, the width is not mentioned. The ancient authors did not take this silence too seriously. The Holy of Holies in the Temple had a square plan²¹, and Philo and Josephus both assumed that the Holy of Holies in the Tabernacle was the same shape. The proportional plan is shown in Figure 3.5. Presenting the Tabernacle in proportional terms, like the numbers in Theological Arithmetic, it is abstract enough to lead the way to a number of different interpretations.

The completed Tabernacle was accompanied by an altar and placed in a court, as shown in Figure 3.6.

The furniture of the Tabernacle included the Ark of the Covenant in the Holy of Holies. According to Exodus the Ark was the only piece of

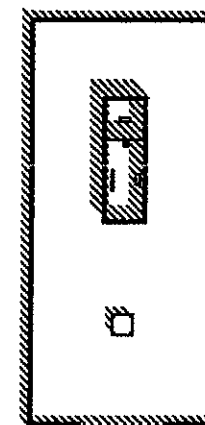


Figure 3.6 The Tabernacle in its court

furniture in this room, but the Christian Epistle to the Hebrews said that as well there was a gold incense altar.²² In Exodus the place of this altar is not in the Holy of Holies, but in the long room, just in front of the Holy of Holies.²³ Exodus places two other pieces of furniture in the long room. They stood on either side, halfway down. On the south side was the gold Lampstand with its seven lamps, and on the north side the Table.²⁴ This held the twelve loaves of 'the Bread of the Presence', and vessels for the drink-offerings. This is all the actual furniture, and its description is enough for the purposes of this book. But many commentaries carry a fuller account, with an account of the vestments of the high priest.

When the Tabernacle was finished the Lord appeared. The entry of the Tabernacle faced east. The Lord was expected to come from his heavenly dwelling in the east. Then 'the Lord covered the Tabernacle with cloud and filled it with glory'.²⁵ This was marked in two ways. The first place was at the east end of the Tabernacle, near the entry. 'The pillar of cloud came down, and stayed at the entrance to the Tent while the Lord spoke with Moses' (Figure 3.7).²⁶ But at the other end of the Tabernacle, inside the Holy of Holies was God's throne – an invisible throne set 'between the cherubim' on the Ark's golden lid.²⁷

Solomon's Temple is described in 1 Kings 6–7. This is a text which has been republished in a slightly different version in 2 Chronicles 3–5. Among other additions it reports that the Temple was founded on Mount Moriah, where Abraham took Isaac with the intention of sacrificing him.

The Temple and the Tabernacle were different in many ways, but Israelite worship continued. According to the Scriptures it suffered very little change, and indeed the central portion of this stone Temple was sometimes known as 'the tent'.²⁸ The shape of the Temple's inner rooms was the same as the rooms of the Tabernacle.

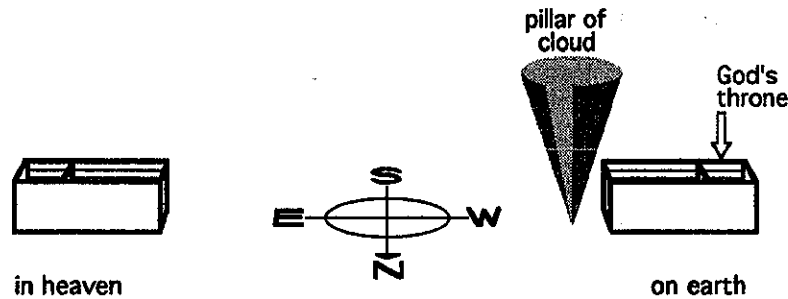


Figure 3.7 God's descent to the Tabernacle

The plan of Solomon's Temple consists only of the interior measurements (Figure 3.8). The longer room in the temple was sometimes called 'the house of the temple', so the vocabulary is muddled: 'temple' is used both as a name for this room and for the temple as a whole. The columns outside are mentioned but not exactly located.

The decoration of Solomon's Temple is well described. And since this new building was made of stone there was a thick wall. A solid wall was outside, and between this and the inner section, or 'tent', were thirty small rooms on each of three storeys.²⁹ Figure 3.9 is a diagram of the Holy-of-Holies end of the building.³⁰

This is a section of the building with the outer face of the near wall removed. The ledges which support the floors of these rooms are described, and the Greek translation makes it clear that these ledges did not go into the wall of the 'tent', but were simply supported by the outer structure. This was a sign of the special sanctity of the 'tent'.³¹

The height of the entrance to Solomon's temple has caused difficulty. Most traditional versions of 2 Chronicles 3.4 give 'one hundred and twenty cubits'.³² The first picture in Figure 3.10 shows the enormous tower which is the result. Many artists took this passage literally, giving this kind of entrance to Solomon's Temple.³³ But some Greek and Syriac sources of this verse give the height of the porch as 'twenty cubits' (shown on the right of the picture). Several modern translations of the Bible have considered 'twenty' to be what the original author wrote.

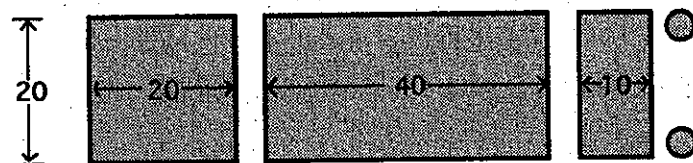


Figure 3.8 Interior measurements of Solomon's Temple

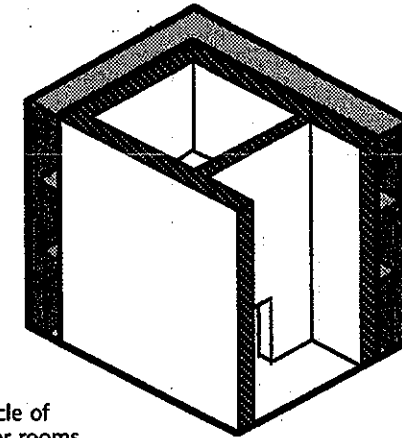


Figure 3.9 The Tabernacle of the Temple and its outer rooms

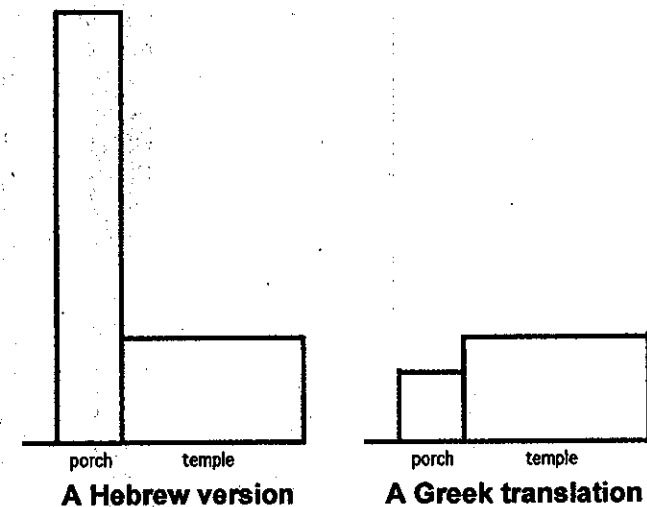


Figure 3.10 The Porch in the Hebrew and Greek of 2 Chronicles 3.4

The Temple we have been discussing was founded by King Solomon. It was a real building which was destroyed in 586 bc. While it was in ruins the prophet Ezekiel had a vision of a temple, which is in some future age to be in the middle of Jerusalem. In the vision an angel takes Ezekiel to measure the Temple,³⁴ and he produces enough measurements to make a plan.³⁵ Was this the heavenly Temple? Ezekiel does not say. But in measuring the visionary Temple he is following the role of Moses, with his vision of the model on Sinai, and David, with his plan

from the Lord. Ezekiel's vision is of the ideal Jerusalem to which the people will return. And the Lord instructs him:

Tell the Israelites, O man, about this house ... you are to describe to them the temple and its fittings, its exits and entrances, all the details and particulars of its elevation and plan. Make a sketch for them to look at, so that they may keep them in mind and carry them out. This is the plan of the temple to be built on top of the mountain. All its precincts on every side shall be most holy.³⁶

This passage is perhaps why the Temple of Ezekiel's vision was, as we shall see, the chief model for the synagogue and the church.

In Ezekiel's temple-vision the inner rooms are surrounded by their six-cubit wall and also called 'the Tabernacle' or 'the tent'. Their proportions are again the same as Moses' Tabernacle in Exodus (Figure 3.11), but the

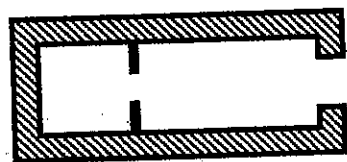


Figure 3.11 The 'tabernacle' of the Temple seen by Ezekiel

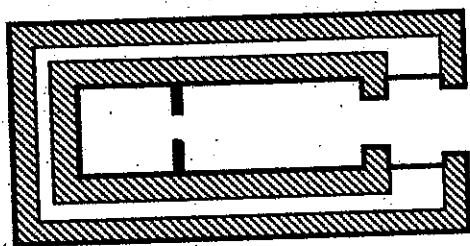


Figure 3.12 Ezekiel's whole plan of the Temple

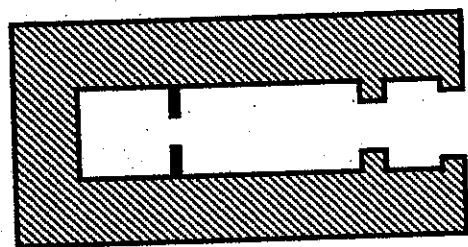


Figure 3.13 Simplified plan of Ezekiel's Temple

measurements are twice as big, and the building is constructed not of cloth but of stones. The surrounding small rooms were outside the walls of this 'tabernacle'. The plan, surveyed as far as Ezekiel's measurements permit, is in Figure 3.12. This plan omits the two pillars outside the porch. The arrangement of the 'arcades' or small rooms in the passages is not known, nor is it clear precisely what happened in the area on either side of the porch.

The plan of the Temple of Ezekiel's vision is repeated many times in the illustrations of this book. I have often used the simplified version shown in Figure 3.13, which omits the rooms between the outer walls.

Ezekiel had the foundations of the Temple revealed to him and made measurements. His results are shown in Figure 3.14.

The Temple retained many of the symbolisms of the Tabernacle. So Josephus implies that the Holy Place consists of things seen and that the Holy of Holies things that are invisible (Figure 3.15). He dealt with the long room through the things that were in it, but at Josephus' period the Ark of the Covenant had long been taken away. It was no longer in the Holy of Holies:

The first room, precisely forty cubits long, had three splendid objects far-famed among men; a lampstand, a table, and an altar of incense. The seven lamps ... represented the planets, the twelve loaves on the table the circle of the Zodiac signs and the year, while

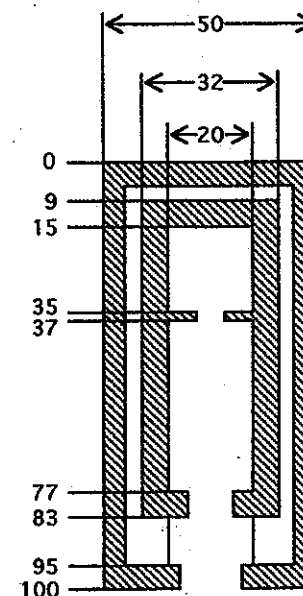


Figure 3.14 Measurements of Ezekiel's temple-vision

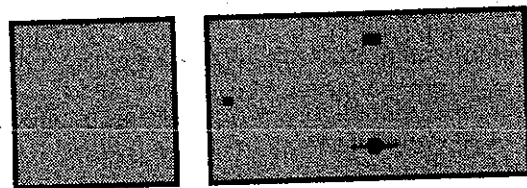


Figure 3.15 Josephus contrasts the temple rooms

the altar of incense, by the thirteen fragrant spices which were its ingredients – from sea and from land, from peopled and from empty – signified that all things come from God and are due to God.

The inner room was twenty cubits long, and was shielded from anyone outside by a veil. In this stood nothing whatever. It was never to be approached, never to be sullied, never to be seen. It was called the Holy of Holies.³⁷

Josephus was writing about a Temple which till twenty-odd years before had been the site of a continuing liturgical tradition. Apart from the Ark, which had been lost in Nebuchadnezzar's siege, the other furniture of the Tabernacle had to be present. Indeed since Josephus was a priest, there is a good chance that he had seen it in use. But Ezekiel is writing about a Temple for the future. And when he is exploring it he only speaks about one wooden table. Though it occupies the place which in the Tabernacle was reserved for the Altar of Incense, it is none the less the Table of the Presence, whose location had once been opposite the lampstand in the Tabernacle. This was not exactly the shape or size of any previous furniture, since it was two cubits long and two cubits wide, and its height was three cubits.³⁸

The Temple of Ezekiel's vision was, as we shall see below, taken as the proportional guide for synagogues. It was adopted far more frequently than the Tabernacle, which comes far behind. There were some other objects which were also taken as guides, and these were objects which God had commanded to be made, such as the Ark of the Covenant in the sanctuary, or Noah's Ark. When occasion demands they will be further discussed.

This may seem to be a modest history of the buildings where Israel worshipped. Commentaries on the Old Testament reveal various complications about the early Israelite approach to liturgical prayer. The scriptures themselves reveal little about their origins, but we can at least say that there are two characteristics which all these holy buildings share, the contrast between the two inner rooms, expressed in several ways by different authors, and the shape of the inner rooms (Figure 3.16). Their shapes persist throughout their history.

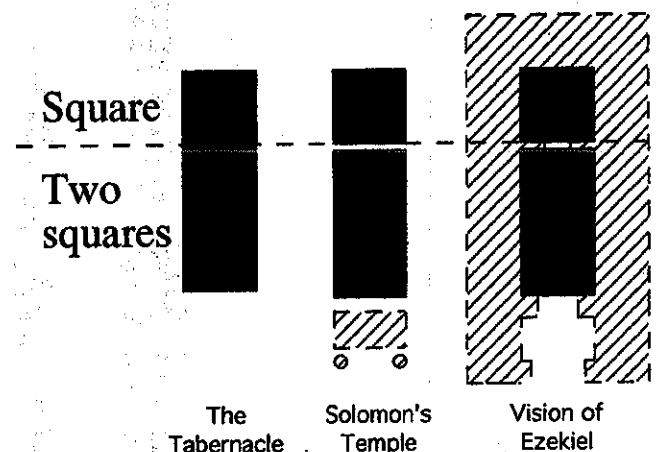


Figure 3.16 Shapes of inner rooms of the Tabernacle and two Temples

Notes

- 1 For the second century BC, see for example Aristobulus, Fragment 2, 3–4 (ap. Eusebius of Caesarea, *Praep. Ev.* 13.13), OTPs 2, 840.
- 2 Ex 24.15–18. The English translations of Exodus in this book are those of Brevard S. Childs, (see bibliography) and are printed here by his kind permission.
- 3 Philo, *VitMos* II, 66–70 (tr. F. H. Colson, *Loeb* VI, 482–485).
- 4 Ex 25.8 LXX and Philo, *QEx* II. 52 (*Loeb* Sup. II, 99). The Hebrew of Ex 25.9 differs from the Greek: 'You must make it exactly as I have shown you, after the design for the tabernacle and the design of all its furnishings'.
- 5 Ex 31.2.
- 6 Ex 31.11.
- 7 Philo, *VitMos* II. 74 (tr. F. H. Colson, *Loeb* VI, 485). See also Heb 11.27.
- 8 Ps 11.4. see also I Kg 22.19, Ps 9.4, 47.8, Isa 6.1.
- 9 Heb 9.1–5.
- 10 Philo, *VitMos* II. 79, *QEx* II. 87, *QEx* II. 78, A cubit is a foot and a half.
- 11 Ex 25.8.
- 12 Philo, *QEx* II. 51, tr. based on Marcus.
- 13 Philo, *Vit Mos* II. 72–74
- 14 Wis 9.8.
- 15 I Chron 28. 6, 11, 19.
- 16 See the Hebrew of Ex 26.33 and 28.29.
- 17 Ex 25.22 (Childs).
- 18 Ex 31.7 etc. The seventeenth-century translation, 'the tabernacle of the congregation' used to mean the same. Today this phrase might perhaps mean that 'the congregation' of Israel had been free to go into the Tabernacle. This was never so.
- 19 Ex 26.32.
- 20 Josephus, *Ant* 3.123 (see also 180f.), quoted by Origen, *Ex.Hom.* 9.4 (115, 119), *Lev.Hom.* IX.9, Jerome, *Ep.64 ad Fabiolam* 9, Theodoret, *QEx.* 60, *Interp. ep. Heb.* IX.1, Bede, *de Tabernaculo* II.8.
- 21 Philo, *VitMos* 2.91, Josephus *Ant.* 3.116.
- 22 See Heb 9.4. But there is an added difficulty here because the Greek word *thumiaterion* can mean only the container for the burning incense without any altar. Origen, *Ex.Hom.* 9.3 follows Hebrews, and so does Apoc 8.3 of the incense altar in the heavenly Holy of Holies.

- 23 Ex 30.6.
- 24 Ex 40.22, 24.
- 25 Ex 40.34–38.
- 26 Ex 33.9.
- 27 Ex 25.22.
- 28 Ezek 40.1.
- 29 Ezek 41.6.
- 30 Not to scale.
- 31 1 (3) Kg 6.6.
- 32 The veil in 2 Chron 3.14 is presumably an addition in the style of Exodus to the present Hebrew text of 1 Kg 6.21, where the word 'veil' seems to have been mistakenly omitted.
- 33 For instance Montanus's reconstruction of 1572 in Rosenau p. 107, fig 91.
- 34 Ezek 40.2–5
- 35 Ezek 40.48–41.18.
- 36 Ezek 43.10–12.
- 37 Josephus, *War* 5.216–219.
- 38 Greek text of Ezek 41.22. The Hebrew text omits 'two cubits wide' (NRSV).

Synagogues and their Liturgy

Synagogues are principally designed for a single special occasion, the morning service on the Sabbath. This chapter aims to visualise this service in its building, but this aim is bound to raise some architectural questions. To some of these there are answers. Year by year the body of archaeological evidence is growing. But there is a lack of ancient documents about ancient synagogues and their services.¹ A general book called *The Ancient Synagogue* has just appeared by my colleague Professor Lee Levine, with an enormous and impressive number of documentary sources. But hardly any of the serious questions the book raises give rise to any definite answers. This is not because Levine has been lazy. He has taken account of the ancient documents about the synagogue. But unfortunately most documents play no role in illuminating its purpose. So for instance the earliest synagogues in Israel come from the Herodian period,² but the general shape of the liturgy only starts to become clear in Jewish sources in a document published in about 200 AD. Most answers about the earlier period are therefore no longer within reach. I hope to suggest some additional answers by assuming that some Jewish practices were inherited by Christians, but these should be taken as tentative suggestions rather than as evidence.

Later Jewish literature makes it clear that the liturgy had been constantly growing, and that it had varied in details from region to region.³ This regional development needs to be borne in mind, but it does not prevent us from gaining a general view of the ancient sabbath service. The community which performed it was the 'whole assembly'. This group included some officials. This included the 'Elders',⁴ senior people like the heads of families, the President of the Synagogue, and to this group belong the men who by inheritance were priests.⁵ These priests had a particular task – that of blessing the Israelites.⁶ But they were not responsible for organising the whole service. The service was directed by a master of ceremonies, a permanent staff member known as the *hazzan* or 'Servant' of the synagogue. Luke's account of Jesus' visit to Nazareth happens to be one of the earliest documents about synagogue worship. In this service the *hazzan* handed the scroll of the Prophets to

Jesus, and when the passage was finished he 'gave back the scroll to the *hazzan* and sat down'.⁷ There is also some indirect evidence which shows that in early synagogues there must have been music.⁸

What was the morning service like in Palestine? The Mishnah gives us some idea. The Mishnah's subject is Jewish law. It is like an encyclopaedia, which whenever it happens to be published contains information which is much older. The Mishnah was published in 200 AD, but sometimes the points it makes seem to be traditional, or the result of teaching given by a long series of rabbis, stretching from 200 BC to 200 AD. It gives a ruling describing ten liturgical acts, for which a quorum must be present.⁹ The quorum was ten participants, and this ruling is still in force, for a synagogue service cannot take place without at least ten in the assembly. This ruling did not say precisely which liturgical acts it is describing, and the last part of the list deals with other services, the first being funerals. But the first five points seem to concern the Sabbath morning service:

If there are less than ten present they may not recite the *Shema*¹⁰ with its benedictions,¹¹ nor may one go before the Ark [to lead the prayers], nor may [the Priests] lift up their hands [in blessing], nor may they read [the prescribed portion of] the Law or the reading from the Prophets ...

If this section of the Mishnah is to be taken as evidence for the Sabbath morning service, the service appears to be in four distinct sections.

1 SHEMA' ('Hear!')

The leader went 'Before the Ark', and led Prayers and the *Shema*. 'Hear, O Israel, the Lord is our God, the Lord our one God ...'. The *Shema* was accompanied by 'benedictions', but this word means no more than ordinary prayers. They were called 'benedictions' because when the leader finished the prayer its customary ending was that he 'blessed' God in such words as, 'Blessed art thou, O Lord, who hearest prayer'.

2 TEFILLAH ('Prayer') with 3 THE BLESSING

The leader went on with a succession of prayers. Before 100 AD they totalled nineteen.¹² Before the last of these prayers the priests, and all the elders, raised their hands and blessed the congregation.¹³

4 READINGS

The Law and the Prophets were read.

The New Testament gives an account of Jesus speaking in the Nazareth synagogue, and of Paul's speech to the synagogue in Antioch-in-Pisidia. This shows that the assembly of the synagogue was willing to hear words of exhortation from a visiting teacher. But there is too little evidence to add to the service a regular sermon.¹⁴

We are able to go some way towards picturing this in the synagogue. It was of course possible to hold prayers without needing any furniture. But for normal synagogues there was certainly a cupboard called the 'Holy Ark' containing the scrolls of the Scriptures. In Figure 4.1 in each section of the cupboard the rolled ends of the scrolls can be seen. Its purpose, to preserve the Scrolls of the Law, was the same as the 'Ark of the Covenant' in the Tabernacle.¹⁵ But its form was different. The Ark of the Covenant had been a chest with angels on its gold lid. But in the synagogue the Holy Ark was not a chest but a cupboard. The synagogue was unwilling literally to copy the Ark of the Covenant.

Tosefta Megillah was a commentary on the Mishnah tractate on the Feast of Purim, and was completed in Palestine before the fourth century AD. It describes the position of the people in some of the synagogues, and where the people believed themselves to be. These synagogues would include those with a platform for the Elders, (for instance Figure 4.11) or some with an apse (for instance Figure 6.12). The Holy Ark at one end of the synagogue is the main feature included in 'the sanctuary' of the next text and its illustration (Figure 4.2). 'Before the Ark' is in the middle of the synagogue.

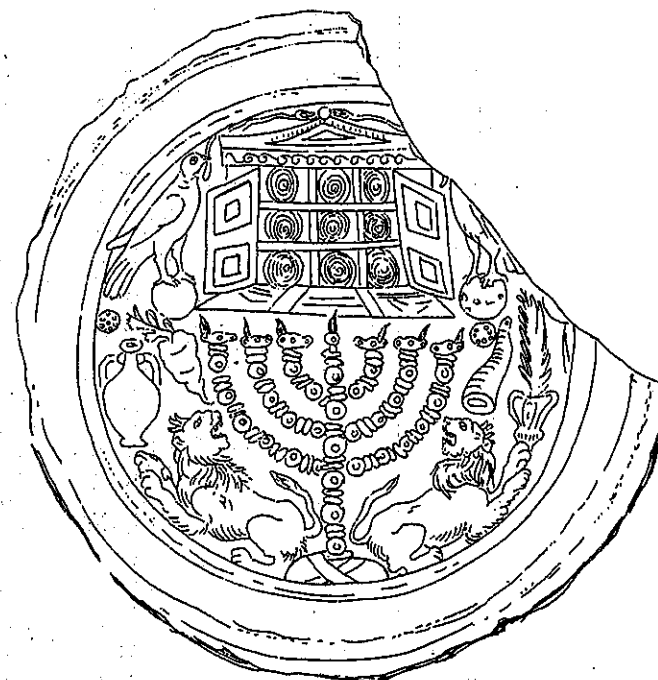


Figure 4.1 Holy Ark, fourth-century painting on glass – after Garruci

The passage is as follows:

The Elders sit facing the people with their backs to the Sanctuary¹⁶. When a man goes down from the Ark, he should go facing the people and with his back to the Sanctuary. When the Priests hold up their hands [to bless], let them face the people with their backs to the Sanctuary. But let the Servant of the synagogue face the Sanctuary, and the whole community face the Sanctuary, as it says, 'The whole community assembled at the entrance of the Tent of Meeting'.¹⁷

Figure 4.2 represents the moment when the Elders give their blessing in front of the Holy Ark, and hold out their hands. They face down the synagogue. The leader of the prayers is 'before the Ark', marked in this case with a platform, and facing the sanctuary. After the point illustrated in the figure the Reader faced the sanctuary for the remaining prayer, and the readings from the Law and the Prophets.

Where did the people believe themselves to be? The clue is in the fact that the priests blessed the people. The Priests, the 'sons of Aaron' were commanded by the Scriptures to bless,¹⁸ and the blessing in the synagogue has only slight ritual differences from what it had been in the Temple.¹⁹

Synagogues were in existence long before 70 AD, that is before the Jerusalem Temple was destroyed. Thus the Temple liturgy was probably the source of the Sabbath synagogue service. The priests are said to have gone into a building near the Temple and said prayers, including the *Shema*.²⁰ Then they entered the Temple itself and prostrated themselves. When they came out they stood at the top of the steps of the Porch, and blessed the people in the court.²¹ The Elders blessing the people in the synagogue is clearly derived from this.

Thus for *Tosefta Megillah* the whole synagogue represented the court, and the sanctuary the entrance of the Tabernacle. This was in fact the heavenly Tabernacle, but the evidence for this will not come till the next

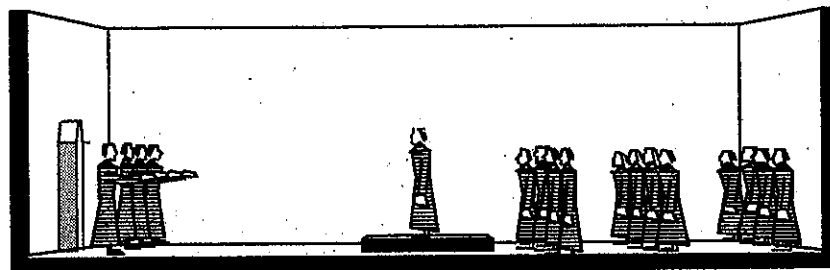


Figure 4.2 The Priests' Blessing

chapter. In this context whatever is said about the Tabernacle would apply also to the Temple

The first plan in Figure 4.3 is that of the Tabernacle and its court, which contained the altar. In the second plan the black lines mark the walls of the synagogue hall. The door of the symbolic Tabernacle is in the centre of one wall and the place 'Before the Ark' is at the point where the altar had been.

The phrase 'Before the Ark' derived from the First Book of Chronicles:

David appointed certain Levites to serve before the Ark of the Lord, to celebrate, to give thanks, and to praise the Lord the God of Israel ... Then came Benaiah and Jahaziel the priests, who blew the trumpets regularly before the Ark of the Covenant of God.

So, in King David's Tabernacle, 'Before the Ark' was the place in which the Levites ministered.²² Synagogue services sometimes contained psalms which in the Temple had been the responsibility of the Levites.²³ The Levites had also sung in celebration of the daily sacrifices. They had a platform near the altar at the centre of the court, reported by the Mishnah, and marked in black in Figure 4.4.²⁴

The Mishnah included different measurements of the Temple area from those reported by Ezekiel, and the plans were not intended to be supplementary to each other.

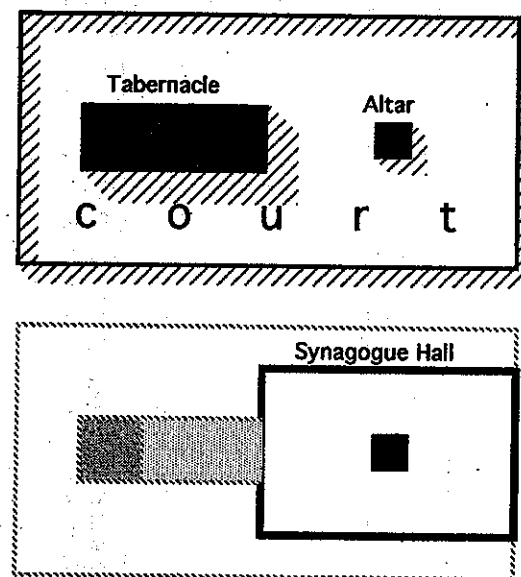


Figure 4.3 Tabernacle and Synagogue

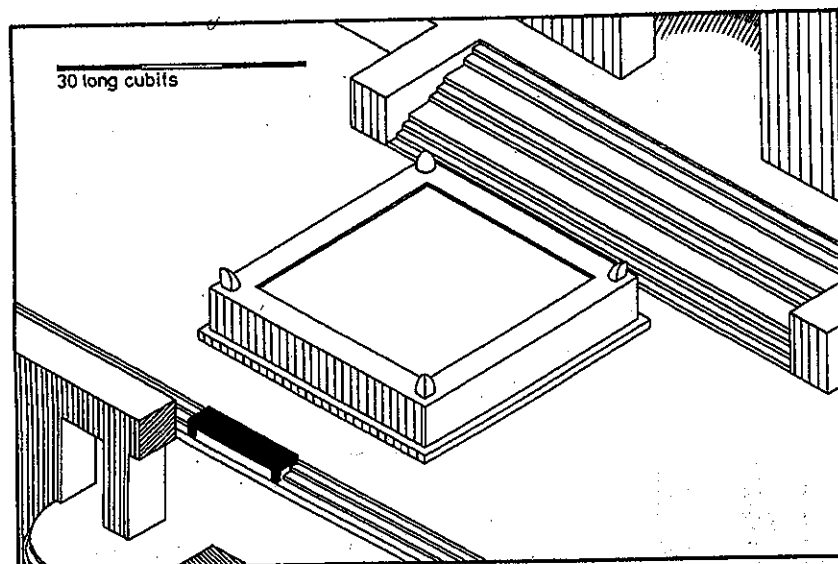


Figure 4.4 Levite's platform in the Temple court

Mishnah *Ta'anith* described an old man saying prayers and reading the Law. The description used the phrase 'coming down from the Ark'²⁵ to the place where he said the prayers. The phrase is also used in the description of the Day of Atonement in the Temple, when the High Priest 'came down' from the Temple into the Court to read the Law and said prayers.²⁶ In fact three of his prayers were the same as were said in the synagogue service.²⁷ The interpretation of the Ark as representing the Tabernacle or the Temple, and the hall representing the court persisted for a long time.²⁸ In the eighth century AD the Karaite sect still called the synagogue the 'court'.²⁹ Since in their eyes the *bema* occupied the centre it must represent the altar. They further argued, as a matter of interest, that since in the Temple the sacrifice could only be offered by priests, in the synagogue only priests should read the Law.

The place 'Before the Ark' was often marked by a raised platform,³⁰ or *bema*.³¹ It was made of wood, to recall among other things the platform of Ezra the Priest when he came to read the Law in Jerusalem.³² Ezra was reading from a higher point than his audience, so it was called also the 'hill' or *ambo*, a word meaning 'elevation'.³³ Like almost all the wooden objects from ancient times most of these platforms have simply vanished. But sometimes there are marks where their feet were attached to the floor, as at Horvat Rimmon (Fig 4.11). There is also in the first synagogue at Dura-Europos a patch of white plaster, 80 cm. square, which is part of the platform's foundation (Figure 4.5).

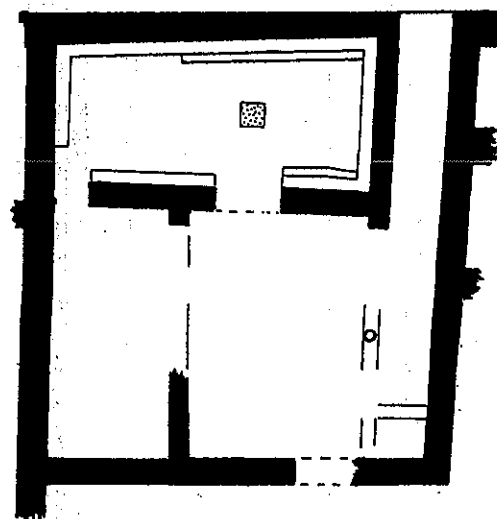


Figure 4.5 Foundation of *bema* in the first synagogue at Dura-Europos – after N.C. Andrews

The name of the Tabernacle, *'ôhel mo'ed* or 'Tent of Meeting', grew out of the idea that God meets his people. *Tosefta Megillah* illustrates this when describing the position of the people in its synagogue. The people who have been inside the Temple or have come out of it represent God's messengers, and they face the rest of the Israelites.

Another illustration is the throne, like the one from the synagogue in Delos shown in Figure 4.6. In secular life teachers sat on thrones. So the Gospels record a 'Seat of Moses' in the synagogue, where the Pharisees and the scribes taught,³⁴ or the seat in the Nazareth synagogue, on which Jesus sat to teach after his reading of the prophets.³⁵

So far we have given a simple picture of the people and the furniture inside the synagogue. But the simplicity may well be deceptive, and no doubt depends on the few sources which remain to us. The picture becomes even more complicated when we begin to look at the direction in which the synagogue faces.

The scriptural account of creation implies that 'God's dwelling was in the east, near the garden of Eden'.³⁶ Furthermore the scriptures say that when God arrived both in the Tabernacle and in the Temple, he came from the east.³⁷ Figure 4.7 illustrates this from a third source, Ezekiel's vision of the Temple. A rabbi who lived in about 200 AD referred to the entry as follows:

The entrance of a synagogue should face east, for we find that in the Tabernacle the entrance faced to the east.³⁸

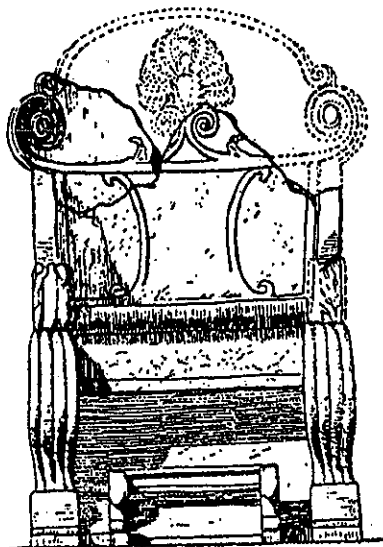


Figure 4.6 Seat from the synagogue in Delos – after P. Bruneau

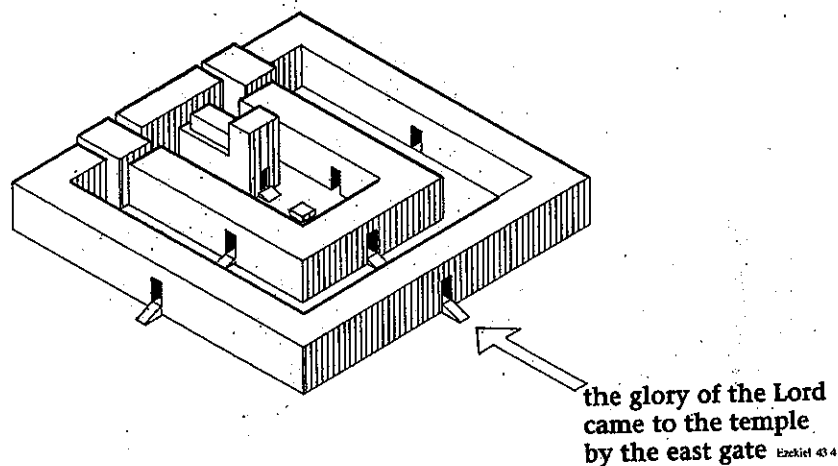


Figure 4.7 God's glory comes through the east gate

This text is important to us as we begin to ask about the existence of a holy direction, but it should not be overlooked that it also compares the synagogue to the Tabernacle.

Most Christian readers think of the nave or hall of the church as being less holy than the part containing the altar. The rabbi seems to be saying the opposite. In his view the door should be in the direction of God's dwelling, ready for God's glory to come in.

Not everyone believed that God lived in the east. But for those who did so there was the added assumption that facing the east door of the earthly synagogue was the heavenly dwelling of God. So R. Phinehas bar Hama taught that, 'The earthly Holy of Holies faces the heavenly Holy of Holies'.³⁹ There would be some kind of balance as shown in Figure 4.8. But Phinehas bar Hama was not saying that the buildings should be the same size. The dwelling of God might be conceived as much bigger. Hence the earthly and heavenly Holies of Holies could face each other in some kind of diagram like that in Figure 4.9, with the earthly Holy of Holies inside the Earth, symbolized by the long room of the Tabernacle. In this way the congregation could face the door of their earthly synagogue, while at the same time facing the heavenly Holy of Holies.

In any case according to *Tosefta Megillah* the ordinary worshippers faced the elders and priests, the representatives of God. This implies that the division between the Holy of Holies and the long room – or heaven and earth – has an important symbolic task to perform. God sits on his throne above the Ark, where he reveals himself to Israel, and hears their

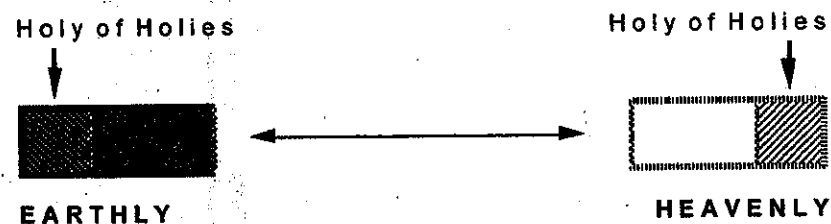


Figure 4.8 Balance of earthly and heavenly Tabernacles

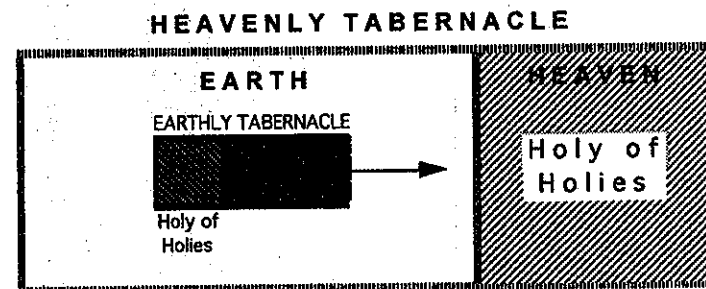


Figure 4.9 Earthly Tabernacle inside heavenly

praises and requests. And Israel faces him, receives his Law, and worships him. This is an appropriate symbol for the *'ôhel mo'ed*, or 'tent of meeting', as shown in Figure 4.10.

Some Jews argued that since God dwells everywhere, any direction is meaningless.⁴⁰ One could pray facing in any direction. The Scriptures however suggest two directions, and the majority of ancient synagogues followed one or the other.

The alternative sacred direction was towards Jerusalem. The Lord's dwelling was in the city 'in the midst of the nations',⁴¹ 'of which He had said, "I shall set my name in Jerusalem".'⁴² In fact Solomon's prayer at the dedication of the Temple in Jerusalem describes the Israelites in other countries turning towards this city and this house:

Should you give them over to an enemy, who carries them captive to his own land, ... and should they then in the land of their captivity ... pray to you, turning towards their land which you gave to our forefathers, and toward this city which you chose, and this house which I have built for your name, then in heaven your dwelling-place hear their prayer.⁴³

This prayer of Solomon encourages the Prophet Daniel in Babylon to turn in the direction of Jerusalem for his prayers. His house 'had, in the roof-chamber, windows open toward Jerusalem: and there he knelt down three times a day and offered prayers and praises toward God, as was his custom'.⁴⁴ So, according to this selection of Scriptures, the Israelites living outside Jerusalem should pray towards the Holy City and towards the Temple.⁴⁵

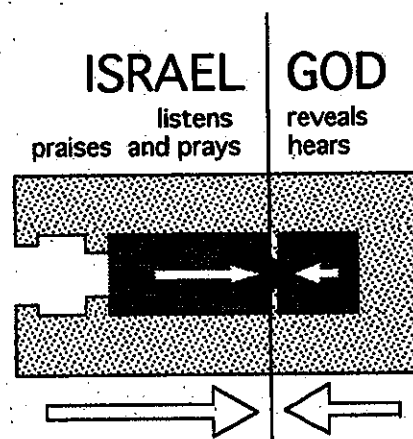


Figure 4.10 God and Israel in the house of prayer

The synagogues at Rimmon, Rehob and Qasrin had the sanctuary platform at the end closest to Jerusalem (Figure 4.11). The Holy Ark would therefore be in the direction of God's dwelling.⁴⁶ The same may have been true of the synagogues designed in the belief that the sacred direction was east. But even though the Scriptures suggest that the direction of prayer should be either east or towards Jerusalem, there were still some people who disbelieved in a sacred direction,⁴⁷ and they may well have founded some of the ancient synagogues discovered by the archaeologists.

Jews had been asking whether the sacred direction was toward the east or towards Jerusalem long before Christianity existed. But the Christians came into being, and gradually gained great numbers. The paths of Jews and of Christians divided. Then at the Council of Nicaea in

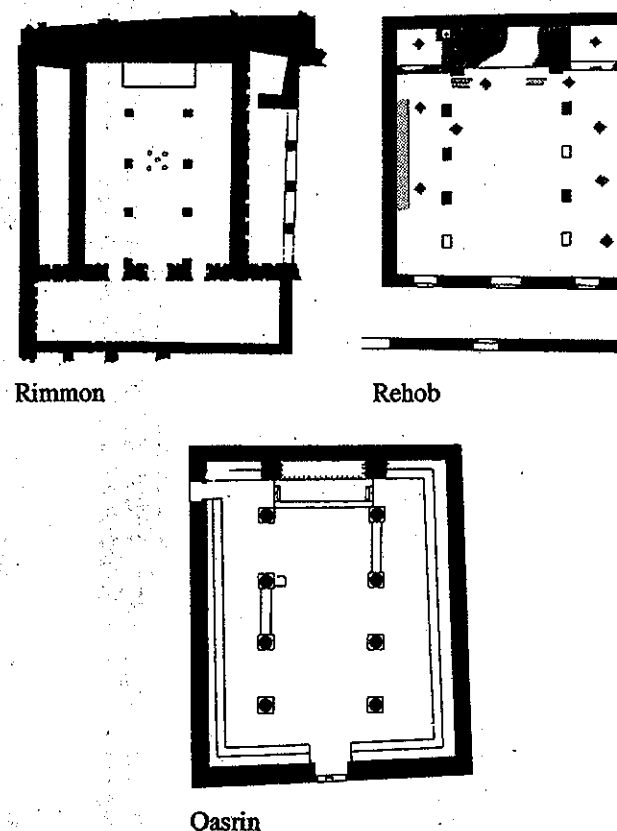


Figure 4.11 Synagogue platforms located towards Jerusalem: Rimmon – after A. Kloner, Rehob – after F. Vitto, Qasrin – after Z. Ma'oz.

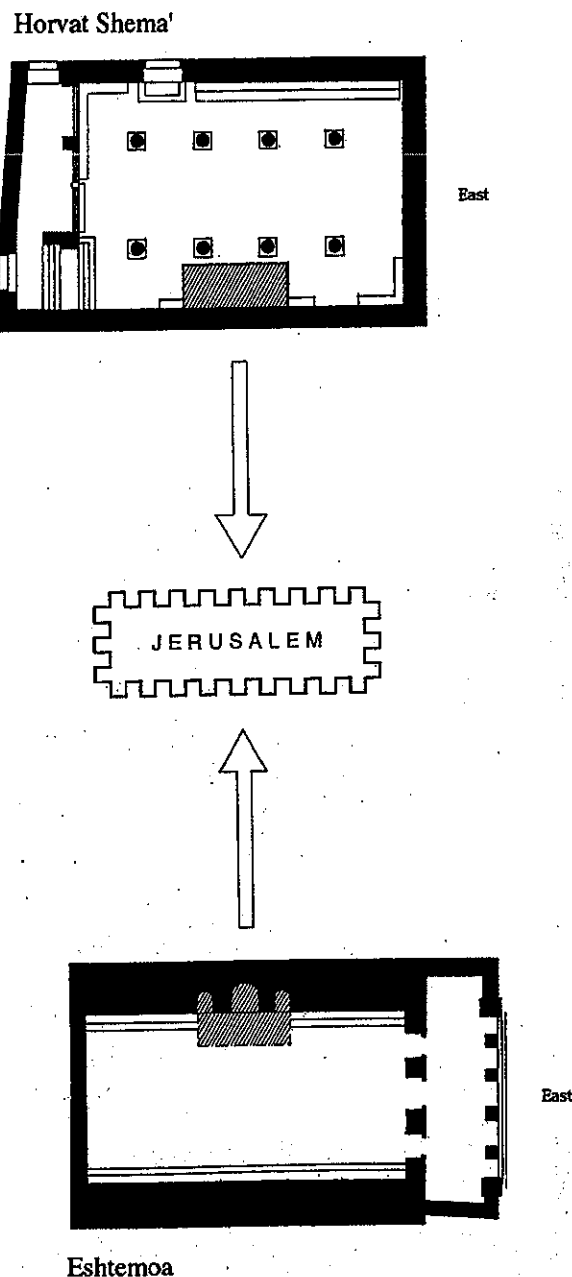


Figure 4.12 Late phases at H. Shema' and Eshtemoa: H. Shema' – after E. Meyers, Eshtemoa – after Author's survey

325 Christians in the Eastern Mediterranean adopted a decision about the sacred direction. They decided to pray towards the east. It may well be that the Jews reacted by giving up praying eastwards and adopting the direction of Jerusalem.⁴⁸ Some assemblies made immense architectural changes. Thus there were synagogues at Horvat Shema' to the north of Jerusalem and at Eshtemoa to its south. Both were built to face east. And both had to have the Holy Ark newly placed, in this case at right angles to their original design (Figure 4.12).

The next chapter deals with ancient problems connected with heaven and earth. But the next chapter but one examines how the proportions of the synagogue are like the Tabernacle and the Temple, and will produce further clues to questions about the direction of the synagogue.

Notes

- 1 The lack of evidence for services is discussed in Reif 53–55, Bradshaw 1–24, and Levine (2000) 6–9.
- 2 The Hebrew University excavated a building near the Hasmonean palace at Jericho (see Netzer, Kalman, and Loris). On p. 113, n.31, after examining the architecture of synagogues, I shall say why I doubt that this building was a synagogue.
- 3 b. Arakhin.10a and b. Taanith. 28b.
- 4 See Num 11.16.
- 5 Rosh haKnessat and Archisynagogos.
- 6 Num 6.24–26.
- 7 Luke 4.17,20.
- 8 See m. Sukkah 5.4 for songs in the Temple. Early Christians expected 'psalms and hymns and spiritual songs', Eph 5.19.
- 9 m. Megillah 4.3.
- 10 Deut 6.4–9 + Deut 11.13–21 + Num 15.37–41. It is not certain whether the second and third passages were always used, and the first may have been abbreviated. See m. Berakoth 2.2.
- 11 See m. Berakoth 1.4.
- 12 b. Berakoth 32b.
- 13 Tamid 7.2, using the words in Num 6.24–26. See also m. Megillah 4.5.
- 14 See Lk 4.16.20 and Acts 13.16. Taken literally these speeches seem to be in different sections of the service, but the author may not have been concerned with guiding the reader to the exact point in the liturgy.
- 15 In Rome, from the bottom of a painted glass bowl of the fourth century AD (Krauss Fig. 19, 365).
- 16 'Sanctuary' is my rendering of the word 'holy' (*qodesh*).
- 17 Tosefta Megilloth IV.21, but for the translation compare Neusner 294. See also Lev. 8.4.
- 18 Num 6.22–26.
- 19 m. Tamid 7.2.
- 20 The Chamber of Hewn Stone, m. Tamid 5.1.
- 21 m. Tamid 7.2.
- 22 1 Chr 16.4,6,37.
- 23 Thus on festivals the Psalms appointed were 113–118, the *Hallel*, m. Rosh haShanah 4.7.
- 24 m. Arakhin 2.6, m. Tamid 7.3. The position of the platform may be partly governed by the Mishnah's strict definition of areas where levites could enter.
- 25 m. Taanith 2.2.
- 26 Or the Court of the Women, b. Yoma 69b.
- 27 m. Yoma 7.1.
- 28 See Krauss 101.

- 29 See Krauss 27.
 30 It was in the middle in Alexandria: Tosefta Sukkah 4.6 (Neusner II.224).
 31 *Bema*, Greek for 'platform', Greek in the inscription from Syracuse, CIGr. 9895, and transcribed into Hebrew in m.Sotah 7.8.
 32 Neh 8.4 (*migdal*), 2 Esd.18.4 (*bema*).
 33 Ezra's platform was called a *migdal* ('high place' or 'tower') in Neh 8.4. A synagogue *bema* was also known in Hebrew as 'hill' (*geren* Tos. Sukka IV.6, Neusner II.224) and in Greek as 'elevation' (*ambo*, inscription from Side, *REJ* LVIII, 60–64).
 34 *Kathedra*, Matthew 23.2. For secular professorial use see for instance Martial, *Epigr.* 1.76.14, and a third-century AD inscription from Eleusis, SIG 845. See also I. Renov, 'The Seat of Moses' in J. Gutmann (1975) 233–38.
 35 Luke 4.20.
 36 See TestJob 4.3, 52.10 and VitAd 45.2. An ambiguity exists with Genesis 2.8, and Ps 68.33 where, defining the position of God's dwelling, the Hebrew word 'east' can also mean 'ancient'. This ambiguity does not exist in Greek, where the word means only 'east'.
 37 Ex 38.13–19 and (for the Vision of the Temple) Ezek 43.1–2.
 38 Tosefta Megillah 3.22 (Neusner II, 294). See also Ex 27.22 which gives the west point for the end opposite the door.
 39 pBerakhot iv, 5, p. 8 b–c. The brickwork of the synagogue walls was originally *opus reticulatum*, made with bricks set diagonally, usually a sign that the buildings belong to the reign of Augustus.
 40 b.Baba Bathra 25a.
 41 Ezek 5.5.
 42 2 Kg 21.4.
 43 I Kg 8.46–49.
 44 Dan 6.10
 45 This is the explanation of a statement by Babylonian rabbis, b.Baba Bathra 25a, that 'the Shekhinah [Divine Presence] is in the west', since the city of Jerusalem is to the west of Babylon.
 46 For instance Arbel (late), Beth Alfa, Ma'oz Hayyim (late), Meroth (late), Na'aran, Jericho.
 47 For instance Husifa and Diqqa.
 48 See Urbach, vol. I, 61–62.

CHAPTER FIVE

Heaven and Earth

By the time the earliest synagogues were built, as far as we know at the end of the third century BC, Jewish philosophers and theologians were constantly asking the same set of questions. They were all directly or indirectly concerned with the way in which earth was related to heaven. This relationship affects both synagogue architecture and the services themselves. This chapter will also explore some parts of the theology of the services, with their practical results. Earlier Scriptures relating earth and heaven were considered, for instance Ezekiel's vision of God on his throne, surrounded by cherubim,¹ or Isaiah's description of the *qedushah*, the seraphic hymn 'Holy, holy, holy'.² In this period there were new accounts of men journeying into heaven, and seeing the angelic beings worshipping God. The next chapter will explain how, in terms of design, this has an effect on the proportions.

The story of the Creation of heaven and earth opens the Scriptures. But Jews considered that heaven and earth were not the first things to exist. God's Wisdom was prior to heaven and earth. Indeed Wisdom said,

The Lord created me the first of his works,
 long ago, before all else that he made.
 I was formed in earliest times,
 at the beginning, before earth itself.
 When he set the heavens in place I was there.³

It was thus possible to consider God before he made the universe, and the mysteries which existed before the creation. A book of meditations, published a little after 200 AD, identified some of the 'most precious' things that were with him:

This is also true concerning God's actions – whatever is more precious comes first. Torah, which is the most precious of all, was created before all else ... The Temple, since it is the most precious of all, was created before all else ... The Land of Israel, which is the most precious of all, was created before all else ...⁴

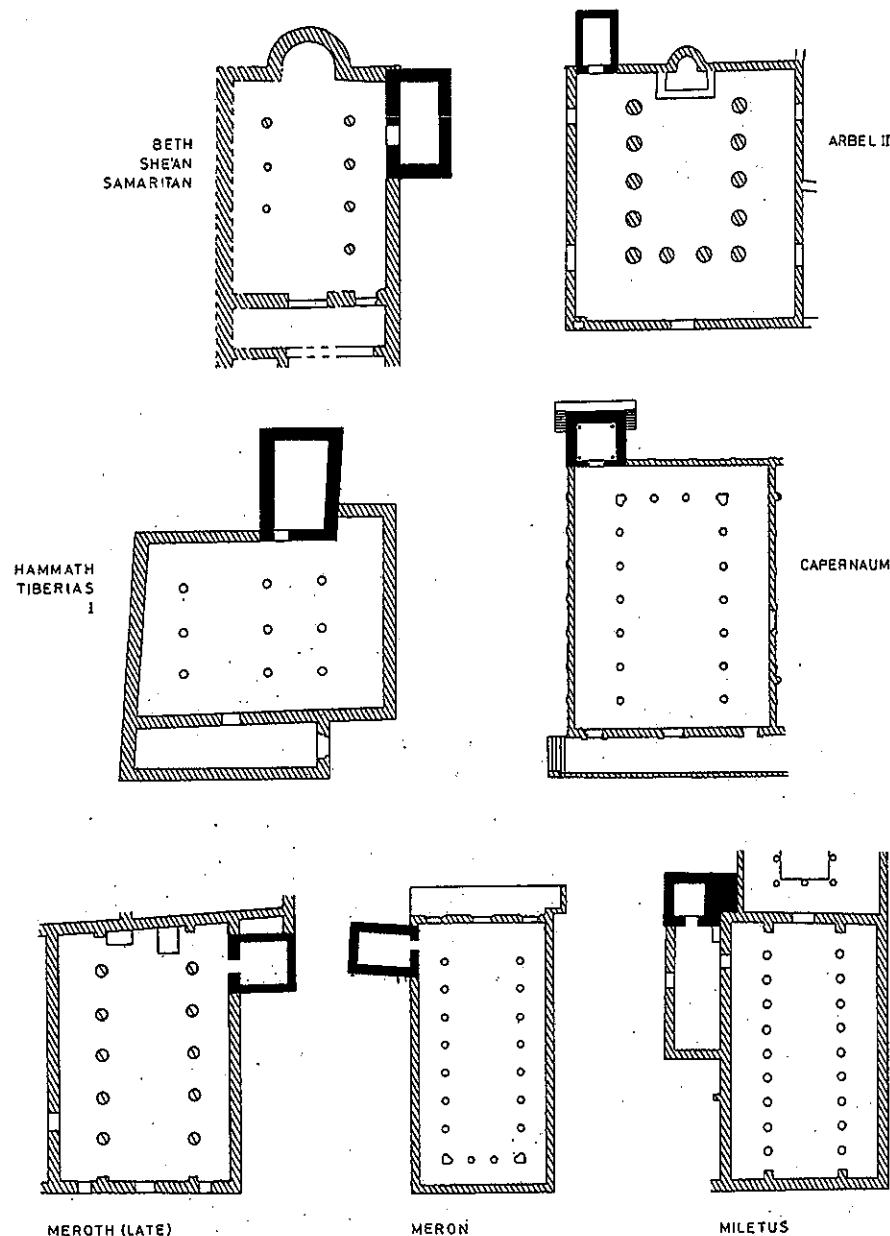


Figure 5.1 Small rooms adjoining synagogues

All three of these mysterious gifts of God, the Temple, the Torah (or Law) contained in the Holy Ark, and the Land, concern the design of synagogues.

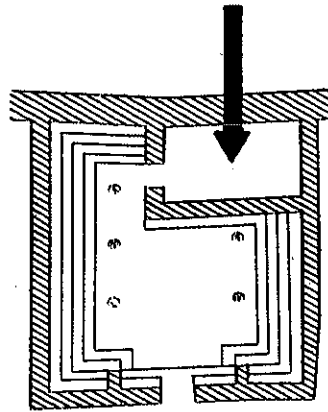
Whenever rain had to be a subject of prayer, the Holy Ark was carried outside the synagogue.⁵ So Holy Arks were portable. A selection of small rooms has been discovered linked to the main halls of synagogues, illustrated in Figure 5.1. These were probably places for keeping the Holy Ark when no service was in progress. And a song exists to celebrate the Ark being brought into the main hall. The word 'acacia' means the Holy Ark, because the original Ark of the Covenant was made of acacia wood.⁶ Holy Arks had their own small veil, in this case embroidered with gold.⁷ The 'sanctuary-palace' is the synagogue:

Sing, O sing, acacia [Ark],
Ascend in the fullness of your majesty:
Bedecked with golden embroidery,
Praised in the sanctuary-palace,
Adorned with the finest ornaments.⁸

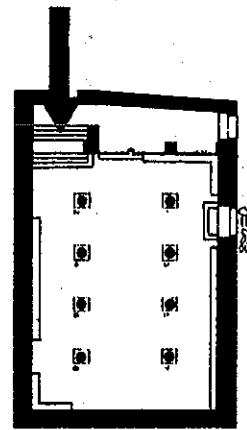
The congregation regarded the sacred Scrolls of the Law as the holiest things in their synagogues.⁹ This sanctity continued even when the scrolls ceased to be usable, and hence these 'worn-out sacred books or their worn-out covers' were put in a 'hiding-place' or in Hebrew, *genizah*.¹⁰ Archaeologists have discovered several holes in the ground or small cupboards containing the remains of scrolls. Some plans are shown in Figure 5.2. A scroll containing part of Ezekiel 37 was found in Masada's small room. In the first phase Horvat Shema' had the sanctuary on the west (at the top of the figure) with a gallery above it. On the left hand side is an entry door with steps going down to the hall. The *genizah* may have been beneath these steps. Ma'oz Hayyim and Beth Alfa hid their scrolls in boxes. The box at Ma'oz Hayyim is on the sanctuary floor and the box at Beth Alfa is below it. So according to these plans the *genizah* was perhaps placed close to the ceremonial place of the Holy Ark.

The Holy Ark contained the Law, and since the Law began with the creation of heaven and earth by God, it thus obliged the inhabitants of both heaven and earth to praise their Creator. The Psalms often invited angels as well as men to praise God:

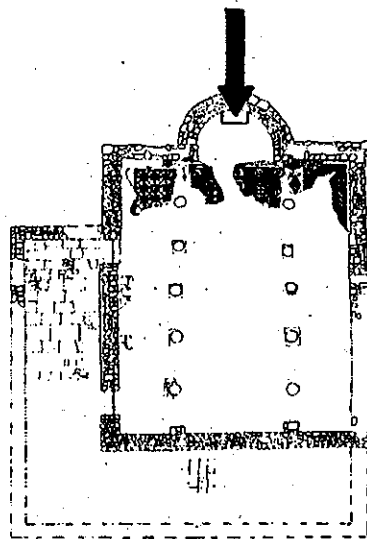
Praise the Lord from the heavens;
praise him in the heights above.
Praise him, all his angels;
praise him all his hosts ...



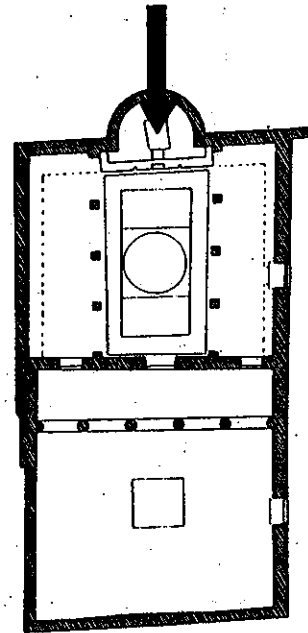
Masada



Horvat Shema'



Ma'oz Hayyim



Beth Alfa

Figure 5.2 Some genizah positions: Masada – after G. Foerster, H. Shema' – after E. Meyers, Ma'oz Hayyim – after V. Tsafiris, and Beth Alfa – after E.L. Sukenik

Praise the Lord from the earth;
you sea monsters and ocean depths ...
Let kings and all commoners,
princes and rulers over the whole earth,
youths and girls,
old and young together,
let them praise the name of the Lord,
for his name is high above all others,
and his majesty above earth and heaven.¹¹

In this way the Scriptures wished to unite the worship of heaven and earth.

The Qumran sect, though it disagreed in many ways with orthodox Jews, none the less believed that heaven and earth should worship together. The man whom God has forgiven, they said,

should take his place with the host of the holy ones, and should enter into community with the congregation of the Sons of Heaven.¹²

So even in heretical Qumran the earthly worshipper was seen as linked to heavenly worship. The orthodox also saw the implications of this: on the festival of Sukkoth there was a procession, at which the *hazzan* stood and held the Torah-roll. He is likened to an 'angel'.¹³

Angelic liturgy was very like that of the earth. A text of about 120 BC said:

[In the heavenly temple] are the archangels, who serve and offer propitiatory sacrifices to the Lord on behalf of all the sins of ignorance of the righteous ones. They present to him a pleasing odour, a rational and bloodless oblation.¹⁴

Moreover the angels were believed to offer them at precisely the times¹⁵ when the Jerusalem priests made their offering. Accurate timing was thus important to the organisers of liturgy. If it was precise, Israel and the angels would sing 'Holy, holy, holy' together¹⁶ as a united congregation.¹⁷

Against this background how are we to understand the ancient pictures of 'sanctuaries'? They occur on five mosaic floors which are presented in chronological order: at Hammath Tiberias, the second southern synagogue (335), Susiya (400), Sepphoris (425) Na'aran (525), Beth Alfa (550), and the 'Samaritan' synagogue at Beth She'an (550).

The first sanctuary picture is from the mosaic floor at the southern synagogue at Hammath Tiberias (Figure 5.3). The Holy Ark is at the end of the mosaic nearest God's heavenly dwelling. This is not a picture of

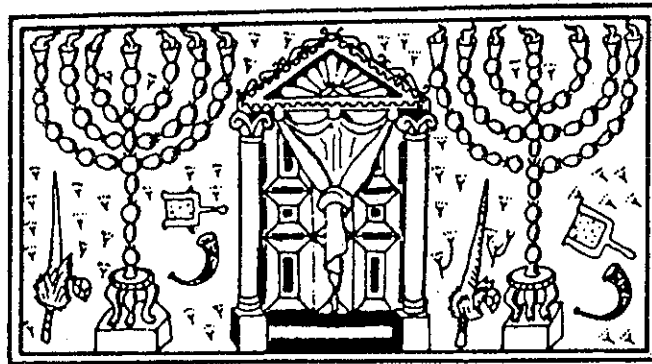


Figure 5.3 Sanctuary scene, Hammath Tiberias South – after M. Dothan

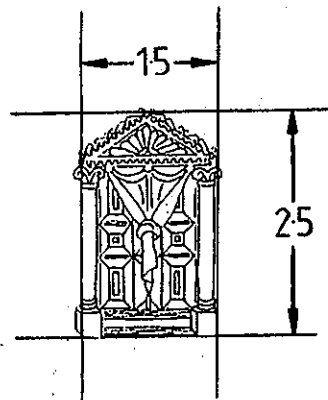


Figure 5.4 Proportions of the Hammath Tiberias picture of the Holy Ark

the Ark of the Covenant. The Ark in the tabernacle was a chest, but this is a cupboard, and a picture of the Holy Ark as it would have been in a synagogue. God's commands were that the Ark of the Covenant should be 'two-and-a-half cubits long, one-and-a-half cubits wide, and one-and-a-half cubits high'.¹⁸ But in this mosaic (and those in several other synagogues) the Holy Ark is provided with the area proportion of the chest, 2.5 high and 1.5 wide (Figure 5.4). It is flanked on each side by identical lampstands with their lamps lit.

The lampstands are much like the lampstand in the Tabernacle, but they have a different number of 'cups shaped like almond blossoms'.¹⁹ This perhaps is to make them unlike the original heavenly lampstand seen by Moses on Mount Sinai.²⁰ On the left of each lampstand is the palm-branch spray (*lulav*) and the fruit, a citron, used at the feast of Tabernacles,²¹ and on the right is the rams-horn trumpet (*shofar*),²² and a censer.²³

Is this sanctuary to be understood literally or has it an additional meaning? The central feature looks an exact picture of a synagogue Holy Ark, simply a cupboard for the scrolls of the Law.²⁴ In this picture the top of the cupboard has a gable ornamented with a shell. In some other representations the cupboard and the gable are separated. This can be taken to be a realistic picture of some other Holy Ark, and so far the Hammath Tiberias picture looks realistic. The strangest thing to some one who knows the Scriptures, is that there are two lampstands. There had been only one, whether in the Tabernacle or in the Second Temple. At Hammath Tiberias the lampstands are lit, but in other places they vary. There were for instance bronze models at En Gedi synagogue, which could not be lit,²⁵ and in the picture at Na'aran (Figure 5.10 below) they had no lights on top, but had lanterns hanging on their branches.²⁶ All over the background there are formal flowers. Are they purely decorative, or did they too have some other meaning?

This picture on the mosaic floor cannot represent the scriptural Tabernacle, since it has two lampstands, and the Holy Ark is a totally different piece of furniture from the biblical Ark of the Covenant.²⁷ But this scene, as Professor Moshe Dothan has made clear, may well represent the synagogue sanctuary. Following this mosaic he reconstructed the sanctuary in the synagogue at Hammath Tiberias (Figure 5.5).²⁸ The Holy Ark is in the raised sanctuary, and the lampstands are on either side. In fact they are placed where the mosaic marks out a square space for them.

The synagogue goes up to the heavenly sanctuary, and there is a need for a boundary. The Assembly of the Hammath Tiberias synagogue was worshipping on earth, but the sanctuary is heaven. In some synagogues²⁹ the boundary is a chancel railing usually made of marble. The uprights are vertical slabs about twelve centimetres in width and a metre high. They are placed a little over a metre apart, and are joined by flat marble slabs. These railings divide the sanctuary from the hall. What do they represent? Some chancel rails have symbols on them like the marble slab with the lampstand (Figure 5.6).³⁰ The lampstand seems to echo the sanctuary scene, and with this particular design we simply get the message that the sanctuary is beyond, but not any additional notion of what the railing stands for. But a panel from the synagogue at Kefar Bar'am (Figure 5.7) gives another message. This is covered with a large meander through which appear stars and the constellations of the zodiac. The meander represents the firmament which divides earth from heaven, and according to ancient thought it was a metal frame something like a sieve. It was the shape of the sky, and according to Homer made of iron.³¹ So the account of Creation in Genesis said,

God made the firmament, and separated the waters which were under the firmament from the waters that were above the

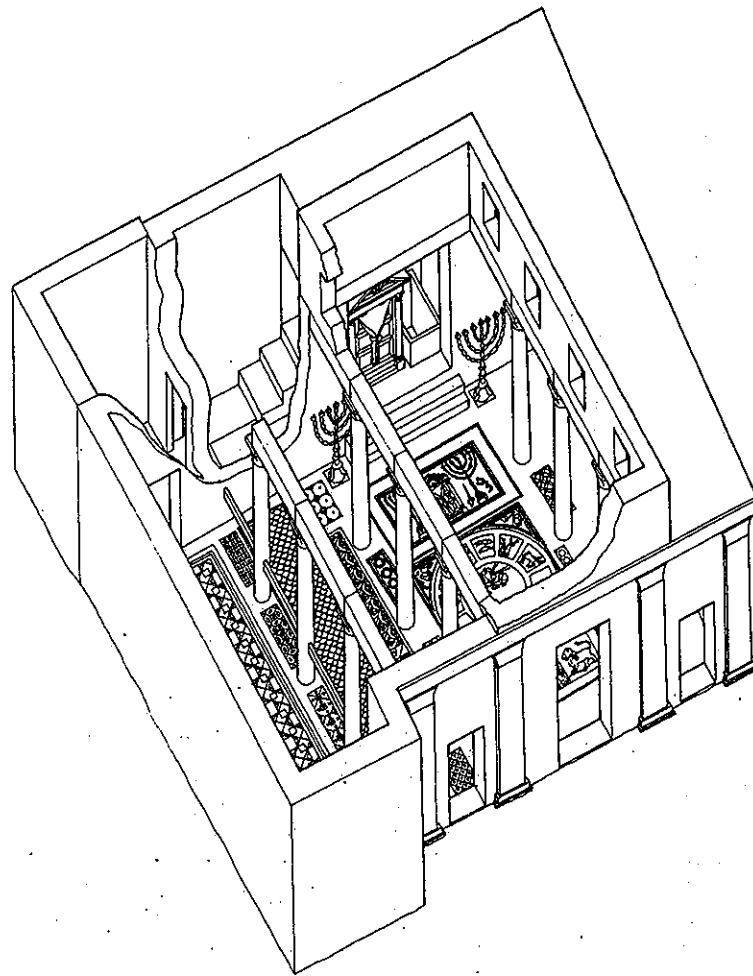


Figure 5.5 Reconstructed sanctuary, Hammath Tiberias South – after M. Dothan

firmament. And God called the firmament the heavens ... God put lights in the firmament.³²

So the stars are seen through the firmament, and the basic meaning of the rail is to make a solid boundary between earth and heaven.

The next sanctuary scene is from Susiya (Figure 5.8). The Holy Ark is represented as a rectangular cupboard. The shell, which surmounts the Ark, is in the centre of an ornamental roof, which also covers the two lampstands. The two sides of the roofed structure are deliberately

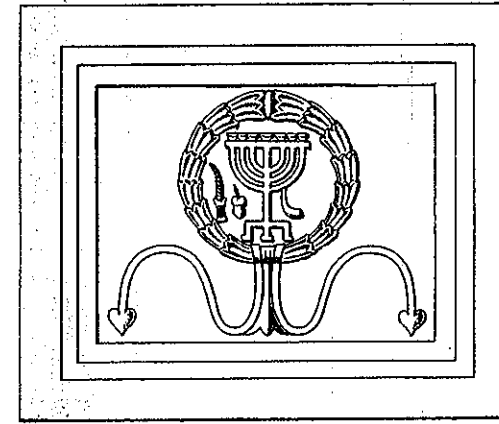


Figure 5.6 Slab showing lampstand from railings, Hammath Gader

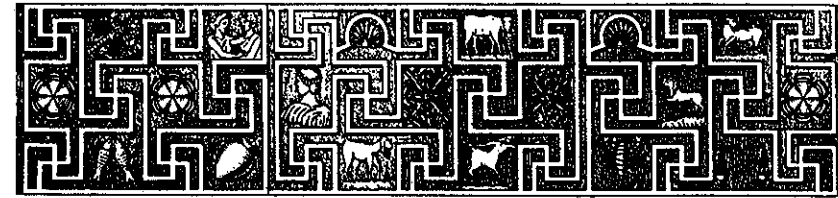


Figure 5.7 Slab showing firmament from railings, Kefr Bar'am

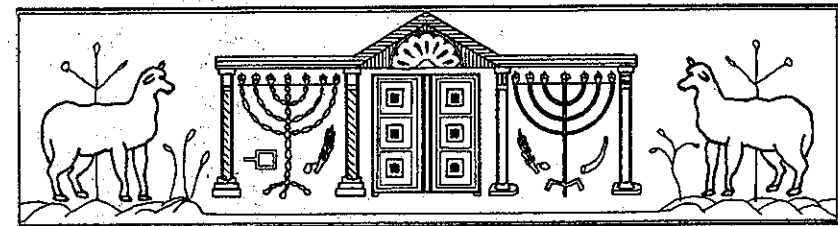


Figure 5.8 Sanctuary scene from Susiya

different. The pillars on the left are twisted and those on the right are smooth. The lampstand on the left is made with metal flowers but the right one is plain. Near the sanctuary and against a background of shrubs, stand two rams. This picture raises a question, for no Jew would sacrifice a ram in the synagogue.

At Sepphoris, due to the shape of the synagogue, the mosaic has to be very long. In the two synagogues which we have just examined, the sanctuary has only occupied one section of the mosaic, but at Sepphoris there are four (Figure 5.9), two of which add to the significance to the sanctuary. Most inscriptions commemorate donors of the mosaics.

The top section nearest the platform, not one of the four, shows a prayer-text. In attendance are angelic lions, holding the heads of oxen.³³ This is not very tightly linked with the four sections containing the sanctuary. In other synagogues there are also pictures of both the sanctuary and of prayer-texts,³⁴ but they are linked differently.

The first panel of the sanctuary is divided into three sections. Two lampstands declare the sanctuary as heavenly. As accessories the lampstands have a palm-branch spray in a bowl, a citron, a ram's horn trumpet, and some tongs. This time the lampstands are not shown with a censer. The Ark is between them, and a single censer is shown below it.³⁵ This combination of Ark and censer recalls the censer which the Chief Priest carried on the Day of Atonement.³⁶

The section below is a single horizontal picture of the Consecration of Aaron.³⁷ Aaron's figure has been damaged, but his name appears between the heads of the ram and the ox, the morning sacrifice of the Consecration. The evening sacrifice of the Consecration appears in the left-hand panel of the section below,³⁸ and included in this picture are two trumpets.³⁹ The middle panel shows the Table of Shewbread⁴⁰, and the right-hand a basket of Firstfruits⁴¹ and a pair of cymbals.⁴² Below this Figure 5.9 shows the beginning of the scene of the sun, zodiac and seasons.

These sections include something more than Aaron's Consecration. If it had been a history of his consecration, the scenery would have included a wooden altar,⁴³ not a stone one as in the centre of the Sepphoris picture. And the water-supply to its right of the altar is unlike that in the Tabernacle, but is similar to the 'Sea' in Solomon's Temple.⁴⁴ The trumpets and cymbals on the right and left of the lower section are not connected in the Scriptures with Aaron's Consecration on the earth. In fact Aaron is presented as one of the Righteous Ones in Paradise.

These three sections therefore represent the worship of God on earth being fulfilled in heaven, or, to put it in slightly more Judaistic terms, the Law being obeyed in the whole universe. Aaron sums up the priesthood, and the account of his Consecration is to be taken as a sign of the sacrifices. For once a week he is to lay the Table of Shewbread,⁴⁵ and at the Feast of Weeks he receives the basket of Firstfruits.⁴⁶ On the right hand side of these three sections and at the bottom is a pair of trumpets and a pair of cymbals, which were used at the Dedication of Solomon's Temple⁴⁷ and at its Rededication in the time of Ezra.⁴⁸ Looking back for a moment to the Susiya mosaic, the two rams are again a shorthand for the worship of Israel.

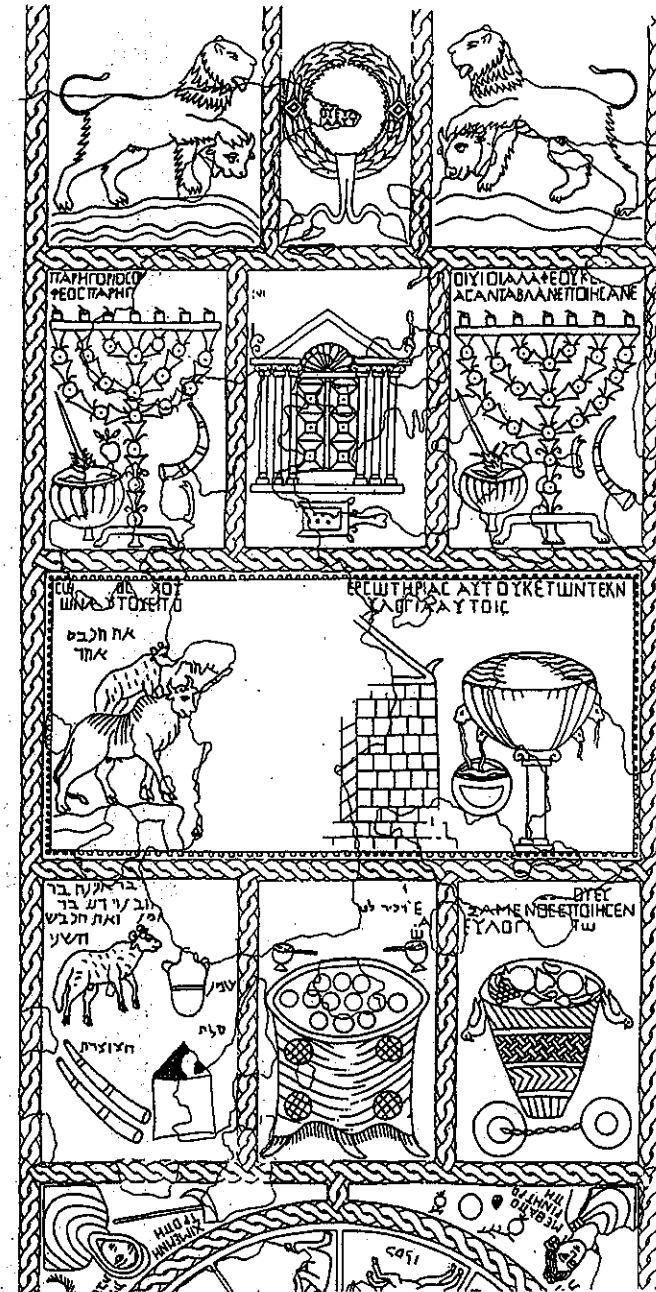


Figure 5.9 Sanctuary scene from Sepphoris – after Z. Weiss and E. Netzer

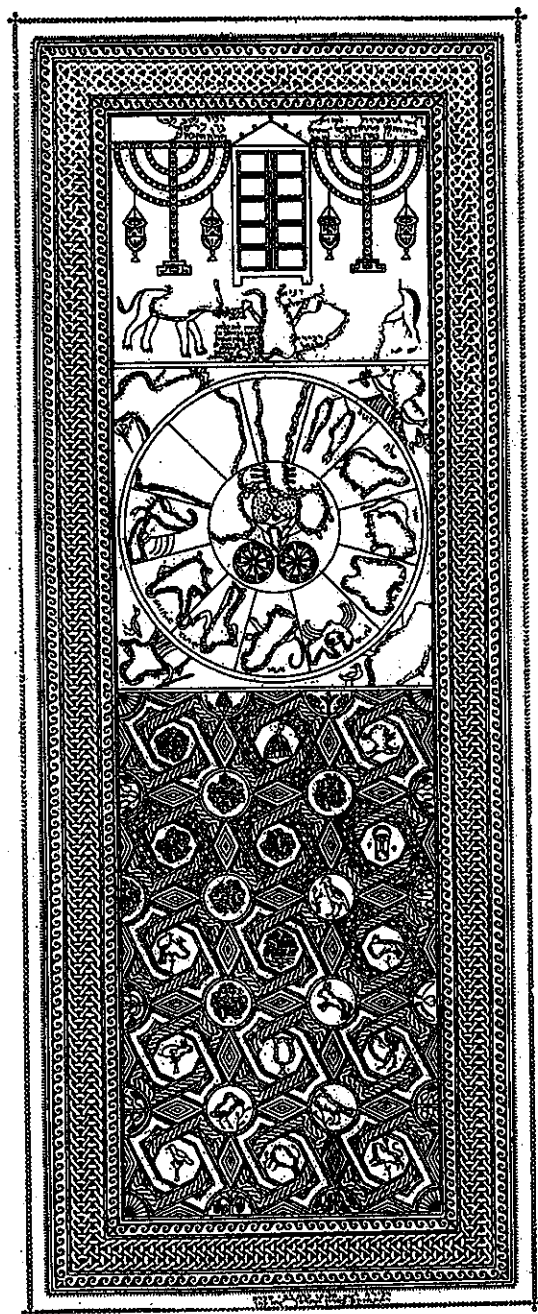


Figure 5.10 Central mosaic, Na'aran synagogue – after N. Avigad

The floor mosaic in the hall of the synagogue at Na'aran (Figure 5.10) has three sections. At the bottom of the top section are a damaged central figure and some lions representing Daniel in the Lions' Den. This picture merges with the very simple sanctuary. The Holy Ark is a single cupboard with an ornamented triangular gable. The two lampstands are models which could not themselves be lit. But they had real lanterns attached to them, so they could be a source of light. The presence of Daniel shows that this is a picture of a Righteous One in the heavenly sanctuary. Below the scene of the sun, the zodiac and the seasons, there is a large picture of the firmament, this time in a more geometrically complicated pattern, and, seen through the firmament, are pictures of earth – a view of earth looking down through the firmament. The pictures are damaged, but the central row contains doves, a glass perhaps of wine, and a bull, which could all be sacrificed. The outer pictures have wild animals, and a well. The relation of heaven and earth in this picture is a different one, since the heavenly Tabernacle is above the earthly one, and is separated by a firmament (Figure 5.11). The Holy of Holies remains related to the heavenly sanctuary, and the long room to earth.

The sanctuary picture from Beth Alfa (Figure 5.12) is by two artists, Marianos and his son Aninas. It contains the same liturgical objects as that from Hammath Tiberias, but the two lampstands are differently constructed. The left one has its lamps flaming, but the right one is not

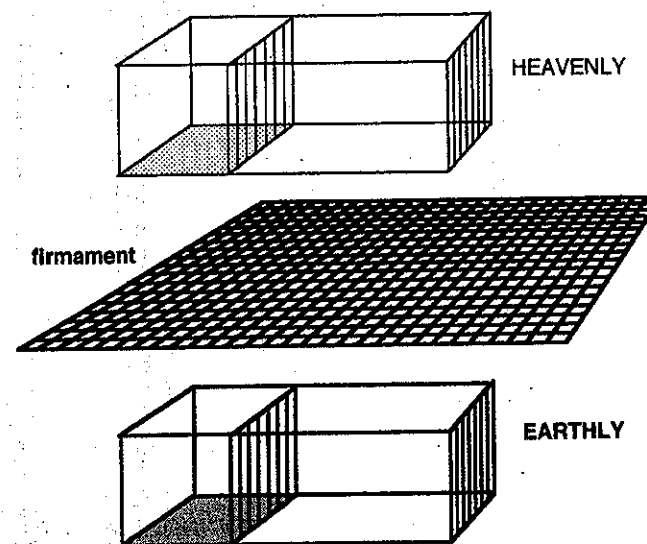


Figure 5.11 Relation between heaven and earth, Na'aran synagogue

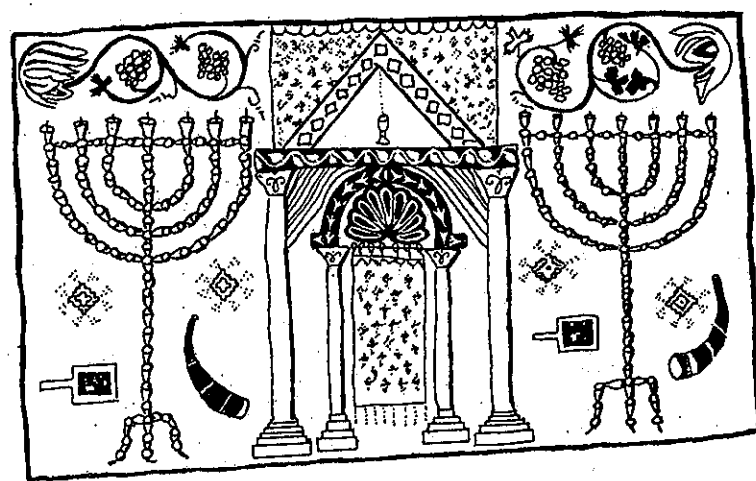
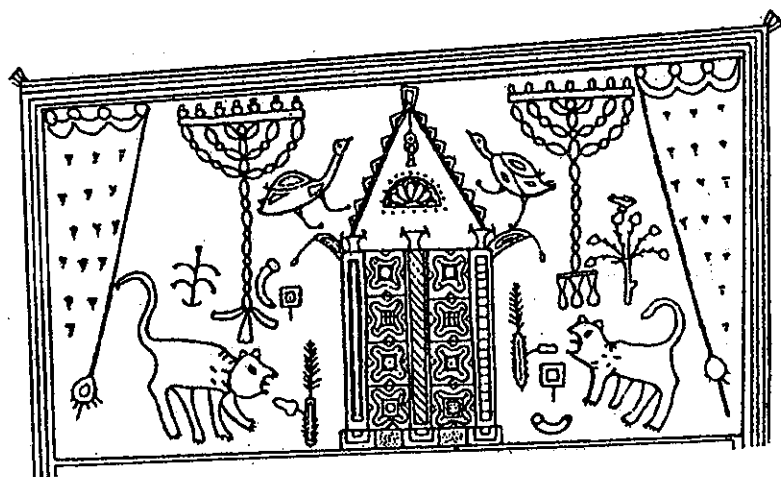


Figure 5.12 Sanctuary scenes from Beth Alfa and Beth She'an

alight. As at Susiya the lampstands are shown differently, but this may have been due simply to the mosaic having two artists. They were in fact responsible for many other irregularities.

In addition there are two curtains drawn back, a double veil, which according to the Mishnah was to separate the Holy of Holies from the long room in the Temple.⁴⁹ In the history of the Jerusalem liturgy this veil had never been drawn back to reveal the sanctuary. But there are occasions in Christian literature when the veil of the heavenly Temple is drawn back. The evangelists stated that when Jesus died, 'the veil of the

temple was rent in twain'. The temple here is the universe, and the meaning is that heaven is opened,⁵⁰ so that Christ's people can go confidently through into the heavenly sanctuary.⁵¹ The sanctuary at Beth Alfa must therefore represent the one in heaven, and this explains the birds on the roof of the ark, and the angelic lions. Moreover the plants here are not formal flowers, as in Hammath Tiberias, but have grown into shrubs.

The last sanctuary scene is from 'the Samaritan Synagogue' in Beth She'an. The modern name of the building has been chosen because the synagogue contains a seventh century inscription in the Samaritan language. But we are here dealing not with the seventh century but with the sixth, when the sanctuary scene was made. The artists were Marianos and Aninas, who had worked at Beth Alfa. Was this a Jewish or a Samaritan synagogue? The sanctuary scene contains nothing specifically Samaritan, and the evidence makes it an even choice between Jewish and Samaritan.⁵² For the purpose of this chapter we shall assume that it was Jewish.

The Beth She'an sanctuary scene (Figure 5.12) contains two lampstands, together with a censer and a ram's horn trumpet, like those in Hammath Tiberias. There are also four formal patterns. Above the lampstands are vines, no doubt to recall the Tree of Life in Paradise or the Garden of Eden.⁵³ The flowered curtain above the canopy seems to be hanging against a back wall, and may be purely ornamental. But there is another pair of curtains inside the large canopy, and a curtain hanging down in the small one, in order to prevent people from gazing at things too holy for them to see. The Dura-Europos picture of the scriptural Ark being taken from the Philistines, with its veil, is another example of this hesitation to feast one's eyes on holy things (Figure 5.13).⁵⁴ There is no Ark, but the small curtain seems to be in front of a niche.

What do all these heavenly sanctuary scenes mean? The Ark (or the niche) obviously contains the Torah, 'which is the most precious of all', and 'was created before all else'. The lampstands and their accessories, supplemented by the pictures of Israelite worship, the rams at Susiya and the liturgical objects at Sepphoris, represent the unceasing worship of earth and of heaven. Both heaven and earth are thus presented as obeying God's Law. And in each case where there was a sanctuary picture in the mosaic, the synagogue was thought to be in the court of God's true sanctuary.

The sanctuary pictures in synagogues connect worship in the synagogue with worship in the heavenly sanctuary. But as we have already seen synagogues began to be built when the Temple establishment was still working. How did the Temple liturgy and the synagogue services fit together?

One important difference between them was sacrifice. Sacrifice was not the custom in the synagogue, but it was an essential part of Jewish



Figure 5.13 The Ark and canopy: picture from Dura-Europos – after C.H. Kraeling

worship in the Temple. The Mishnah solves this problem when it speaks about the *ma'amad*, a practice which deliberately connected the synagogue liturgy with the Temple.⁵⁵ The Mishnah's explanation of this word is reprinted below on p. 188.

Ma'amad is derived from a verb meaning to 'stand', and means 'position'. But 'position' has a special meaning. This was a formal position for service. For example in a palace a courtier, ready to do the king a service,⁵⁶ 'stood before' him⁵⁷ in his 'position', and in the Temple the priests, ready to serve the Lord God,⁵⁸ would be in these formal positions. In the context of Judaism as a whole each Israelite waited in his *ma'amad* or 'position' ready to minister to the Lord.⁵⁹

The Mishnah described the *ma'amad* in the period before 70 AD, when the temple sacrifices were still being offered. In that period the Temple had been served by two groups of priests. A small group, the Chief Priest and his staff, was permanently in Jerusalem. A far larger group, numbering about eighteen thousand hereditary priests⁶⁰, lived outside Jerusalem. This group was split into divisions called 'courses'. Each course had a special time once a year for going to Jerusalem and doing its spell in the Temple.⁶¹

When a village⁶² sent a course of priests to Jerusalem, it was inevitable that those remaining behind would wish to take part in the liturgy being celebrated by their people in Jerusalem. But how could the *ma'amad* – the 'position' – of those who stayed in the village be deemed to be a witness of the sacrifices in Jerusalem? The official answer was this. When they exercised a particular discipline of prayer, their own village became a 'position' of witness. So the people met in their village at precisely the same time as the prayers in the Temple, and took part in services called by the same names as the sacrifices. While those in Jerusalem joined in the temple liturgy, the Israelites who stayed behind in the village read the story of Creation, and other Scriptures belonging to worship in the Temple.⁶³ They also adopted some of the temple prayers. And this was counted as their correct 'position'. So this *ma'amad* in the villages was not only the appropriate 'position' for the villagers to minister to the Lord, but also formed an extension of worship in the Jerusalem Temple. And this was connected with worship in the heavenly Temple.

Not only was the plan of the heavenly Temple like the plan of the earthly, but they were alike in their liturgy. In the earthly temple the priests offered incense⁶⁴ and in heaven the archangels offered bloodless oblations to God. They are described in a text of about 120 BC:

There with him [in the heavenly temple] are the archangels, who serve and offer propitiatory sacrifices to the Lord on behalf of all the sins of ignorance of the righteous ones. [6] They present to him a pleasing odor, a rational and bloodless oblation.⁶⁵

In addition the angels offered them precisely at sunrise and sunset,⁶⁶ at the same times both that earthly priests offered them in Jerusalem. Some Jews even believed that precise punctuality was important, because the angels waited for Israel to take the lead: 'The ministering angels do not begin the song above until Israel has started it below.'⁶⁷

So synagogue services were held simultaneously with worship in heaven.

Notes

- 1 See Ezekiel 1.
- 2 Isaiah 6.3.
- 3 Prov 8.22f, 27 REB.
- 4 *Sifre*, 'Egev 37 (tr. R.Hammer), omitting quotations from Prov 8.22, Jer 17.12, Prov 8.26.
- 5 m.Taanith 2.1.
- 6 Ex 25.10.
- 7 On the authority of Num 4.5–6. Veil = *Paroketh*, Ex 26.31, 2 Chr 3.14.
- 8 b.Abodah Zarah 24b, see Gutmann (1973) 148 reprinted in (1975) 221.
- 9 See m.Megillah 3.1.
- 10 m.Shabbath 9.6.
- 11 Ps 148. See also Ps 103.19–21, and Song of Three 36.52.
- 12 IQH III.21b, tr. Knibb, 178.
- 13 Midrash Tehillim 17.5 (p. 129).
- 14 TLevi 3.5–6: see Rom 12.1.
- 15 ApMos 7.2 (1 cent AD) The hour drew near for the angels ... to ascend and worship the Lord. cf 17.1: TestAbr B, 4.4. (c. 100 AD) 'at the setting of the sun all angels worship God'. These were the regular prayer times in synagogues. See also 1QS end of 9 and 10 (c. 100 BC).
- 16 Is 6.3.
- 17 Some teachers believed that angels took their timing from Israel. In b.Hullin 91b, 'The Sages said, "The Ministering Angels on high utter no song until Israel have done so below"'. See also 1QS 1.13–15.
- 18 Ex 25.10.
- 19 Ex 25.33.
- 20 See Exod 25.31–40.
- 21 Lev 23.40, m.Sukkah 3.12.
- 22 See Lev 23.24, m.Rosh haShanah 4.9.
- 23 Possibly for use on the Day of Atonement, Lev 16.12.
- 24 Contrast the Ark of the Covenant in the Tabernacle, Ex 25.10–22.
- 25 See ASR 117.
- 26 See Figure 5.5.
- 27 See d-Exodus 25.10.
- 28 This is rightly a conservative reconstruction. But since Dothan did not see the upper layer of the sanctuary flooring, I would venture to guess that the box he shows on the right of the Holy Ark, which goes into the floor. originally had no sides, but was a sunken *genizah* with a paving slab as its lid. In this case the Holy Ark could occupy the central position.
- 29 For instance Gaza, Rehob, and Ma'oz Hayyim.
- 30 A reconstruction of a marble slab from a chancel railing at Hammath Gader.
- 31 Homer, *Od.* 15.329.
- 32 Gen 1.7, 17.
- 33 Weiss and Netzer (1996) 16–17.
- 34 At Hammath Tiberias and Beth Alfa.
- 35 Weiss and Netzer (1996) 18–19.
- 36 See Ex 16.22.
- 37 Ex 29.
- 38 See the interpretation in Weiss and Netzer (1996) 20.
- 39 Weiss and Netzer (1996) 20–23.
- 40 Ex 23.23–30.
- 41 Ex 23.16, Lev 23.17.
- 42 Weiss and Netzer (1996) 24–25.
- 43 Ex 27.1.
- 44 1 Kg 7.23.
- 45 See Lev 24.6, 9, a less detailed version of Ex 25.23–30.
- 46 See Num 28.26.
- 47 2 Chr 5.13.
- 48 Ezra 3.10.
- 49 m.Yoma 5.1, but this is disputed.
- 50 Matt 27.51, Mk 15.38, Lk 23.45.
- 51 Heb 10.20.
- 52 N. Zori (1967) 167 also thought this synagogue was Jewish.
- 53 See two works possibly of the second century AD, Apoc. Abr. 23.6 and 3 Bar 4.8.
- 54 See 1 Sam 7.1. The picture is from Dura-Europos synagogue, X.74. b. Taanith 27b.
- 55 See Hebrew or AV of 1 Sam 16.22, 1 Kg 1.2.
- 56 See Hebrew or AV of Ex 9.10, 1 Sam 16.21.
- 57 See Hebrew or AV of Dt 19.17, Jer 7.10, 18.20.
- 58 Dt 10.8, Judg 20.28, Ezek 44.15, 2 Chr 29.11.
- 59 Calculation by Jeremias, 200.
- 60 See 1 Chr 27.
- 61 'Village' is used as a translation of 'town' throughout this passage and in quotations from the Mishnah, to avoid confusion with Jerusalem.
- 62 See m.Megillah 3.4, 6.
- 63 m.Tamid 6.2–3.
- 64 TLevi 3.5–6: see Rom 12.1.
- 65 ApMos 7.2 (1 cent AD) The hour drew near for the angels ... to ascend and worship the Lord. See also 17.1: TestAbr B, 4.4. (c. 100 AD) 'at the setting of the sun all angels worship God', and QS 9–10 (100 BC). [The Master] shall bless him with the offering of the lips at the time ordained by him: at the beginning of the dominion of light, and at its end when it returns to its appointed place'.
- 66 Philo *V. Cont* 27 (c. 20 AD) [Israel's prayers, at sunset and sunrise], m.Berakoth 1.2 (c. 40 AD?) [*Shema* to be recited just before sunrise].
- 67 b.Hullin 91b.

CHAPTER SIX

Synagogue Proportions

This chapter aims to examine the proportions of ancient synagogues. Most of the background is already behind us. The floors of synagogues with their sanctuary mosaics proclaim that the synagogue represented the heavenly Temple. The heavenly Temple is not part of the sensible world, but of the intellectual world, and is therefore an invisible 'idea'. But Plato had said that if a person wanted to consider the 'ideas', or the 'thoughts of God' which constituted the truth, he would do well to meditate on numbers, since these had an existence both in the sensible and the intellectual worlds. Philo, the Jew living in Alexandria, elaborated this teaching into a meditation on scriptural numbers. Among other things he meditated on the measurements of the Tabernacle, since this was a likeness of the true dwelling of God. In fact the cubit measurements of the Tabernacle are simple, and those of Ezekiel's Temple only slightly more complex. These two sets of numbers had the same doctrinal value, in that both the Tabernacle and the Temple were copies of the heavenly Temple.

These same numbers, of measurements in cubits, might well be used for synagogue design. But when one comes to measure synagogues, they turn out to be many different sizes. The measurements of synagogues in the sample are listed later in the book,¹ but this graph shows the results more clearly (Figure 6.1). The black lines indicate the length of each synagogue, and the rectangular shaded plans show the lengths of the Temple and the Tabernacle.² But the lengths of the synagogues appear to be in a normal statistical curve, and do not stop at any point. They show that no attempt was made to imitate the measurements of the Temple or the Tabernacle. Indeed any attempt to do so would be alien to the platonic philosophy which was current when ancient synagogues were built. The true dwelling of God was believed to be a basic truth. It was in the intellectual world, and therefore not only invisible, but also immeasurable.

Synagogues did not imitate the Tabernacle or the Temple in their measurements. But they did imitate it in terms of proportion between two scriptural numbers. And proportions are immeasurable. Take as an

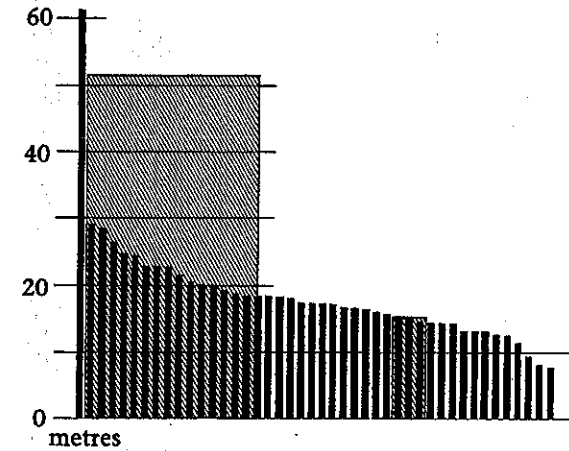


Figure 6.1 Different lengths of synagogues, with the Tabernacle and Temple

example the proportion of 15:77 (Figure 6.2). The total length of the three diagrams is different. But however long or however short the diagrams, the short line in each pair has the same proportion to the longer line.

In fact synagogues follow what Vitruvius taught about Tuscan temples. The builders applied the proportion to the site, regardless of what it actually measured.

A proportion of 15 to 77 could easily be marked out in feet, since feet are standard public units. But it is a matter of pure chance if the synagogue proportions correspond to feet or other standard measurements. They are like Vitruvius' building proportions. They depend on the site of the building rather than on any public unit of measurement. For instance Vitruvius said that if a Tuscan Temple is to be built, 'The place where the temple is to be built having been divided on its length

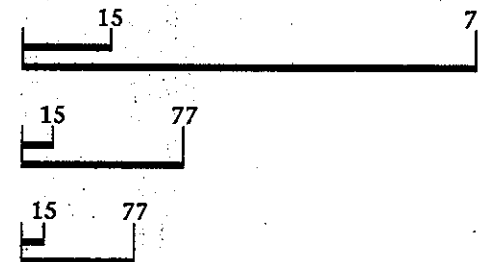


Figure 6.2 Proportions can be any total length

into six parts, deduct one, and let the remainder be given to its width'.³ Vitruvius is not concerned whether the width is short or long. Still less is he concerned that it should fit any standard public measurements, like feet or cubits. His one concern is that it should be divided into six units of any size, and that five of these units should be the measurement of the width. It is exactly like this with synagogues. And as the plan progresses the procedure is the same. When he has chosen one proportion and set it to work, Vitruvius forgets all about it, and chooses a new proportion from scratch. The reader might not agree at first, since he goes on to divide the length into two, whereas just before it had been six. Then he divides the width into ten, whereas before it had been five. This would all be very easy. But then he divides the width into three. This is not a progressive sum. The successive proportions are independent of each other. What Vitruvius is doing is to give the builders a series of instructions, so that if they measure and mark each one the Tuscan Temple will have been laid out.

A practical procedure for marking out proportional units was worked out by a Persian commentator on Euclid whose name was al-Nairizi.⁴ He lived in the tenth-century, but his date is not very important. He was by no means the first mathematician to work out such a procedure, and any one familiar with geometry could have worked out a similar method. Al-Nairizi's method was as follows. The tools needed are simply two scales and two strings (Figure 6.3).

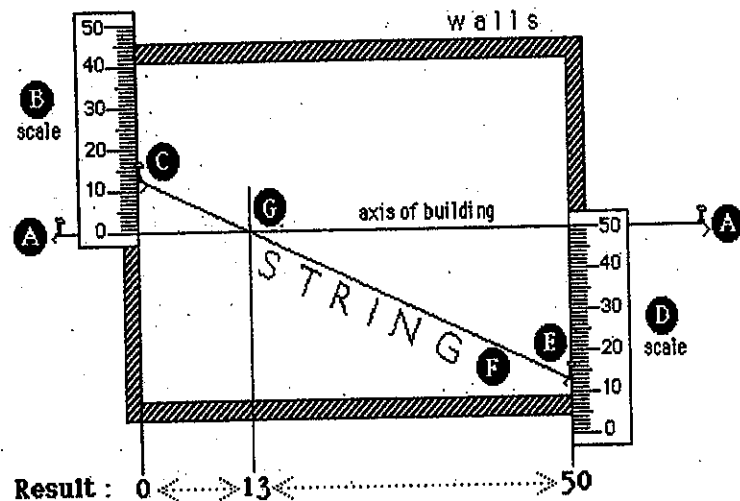


Figure 6.3 Al Nairizi's marking of proportions

AIM To mark on the inner axis of the building the proportion 13:50. The left point of measurement is the centre of the left wall, and the right the centre of the right wall.

- A Mark the inner axis of the building with string (A-A).
- B On the left end of the axis, and at right angles to it, place a scale of 50 or more units (B), with the axis string on the zero mark.
- C Place a peg (C) at 13 on this scale.
- D On the right end of the axis, and at right angles to it, place the same type of scale (D), with the axis string on the 50 mark.
- E Place a peg (E) at 13 on this scale.
- F Draw a string from one of the pegs at point 13 to the other (C-E).
- G The point where this string crosses the axis string (G) is at 13 units to 50 units, the total length of the axis.

This method produces a proportion of 13:50. It does so without any need to reduce the measurements to feet or other public units of measurement. Al-Nairizi's method for producing proportions takes some time and trouble. But it is accurate.

This and the chapters following are about the proportions of synagogues and churches. It is easy both to list the scriptural proportions,⁵ and to say that the proportions of a given synagogue should correspond correctly with the scriptures. But how does one define 'correctly'? This is a problem which formed no part of the ancient attitude to proportions, and it need not interrupt this chapter. But it is essential for judging the validity of this book's argument. The definition of 'correctly' is in Appendix 1.

The most important source for the proportions of synagogues is Ezekiel's survey of the Temple, of which Figure 6.4 is a plan. But no

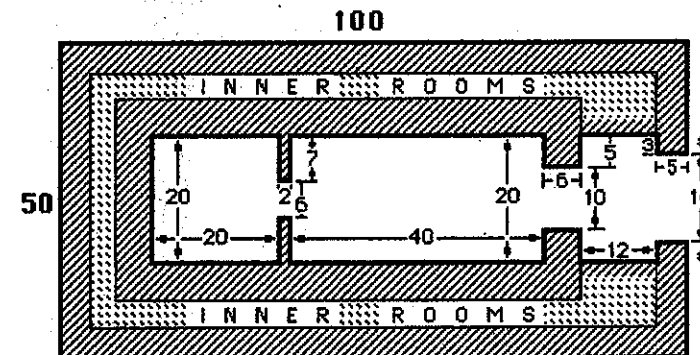


Figure 6.4 The Temple of Ezekiel's vision

ancient synagogue exists which is like this Temple. This poses a problem. The answer may be implied by a statement made in the third century AD by a rabbi from the Holy Land,

A man may not make a House [i.e. a Temple] according to the pattern of the Temple, nor a porch according to the pattern of the temple porch, nor a courtyard according to the pattern of the temple court, nor a table according to the pattern of the Table, nor a candlestick according to the design of the candlestick.⁶

A literal following of the scriptural lengths and widths, as the rabbi realises, would only produce an imitation of the earthly building. This result would be totally inappropriate. Rather the synagogue had to be like the Temple in heaven. The numbers with which the terrestrial Tabernacle was constructed were part of God's commands. In the intelligible or spiritual world they were ideas, and parts of the basic truth about his heavenly dwelling. Figure 6.5 shows a selection of measurements. Hence the scriptural numbers must be used, but not in any way that leads to the geometrical imitation of the earthly Temple.

The proportions of synagogues are of two kinds, rectangle-proportions and length-proportions. For rectangle-proportions let us say that from the Temple a width of 50 cubits is taken, and a length of 100 cubits

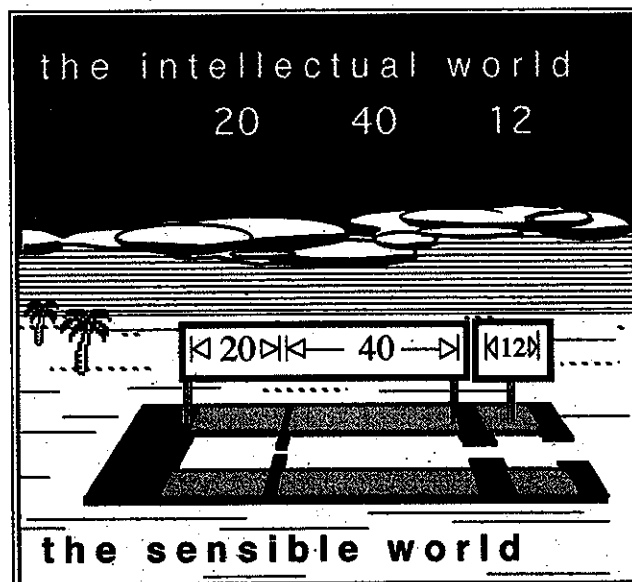


Figure 6.5 The temple numbers are also platonic ideas

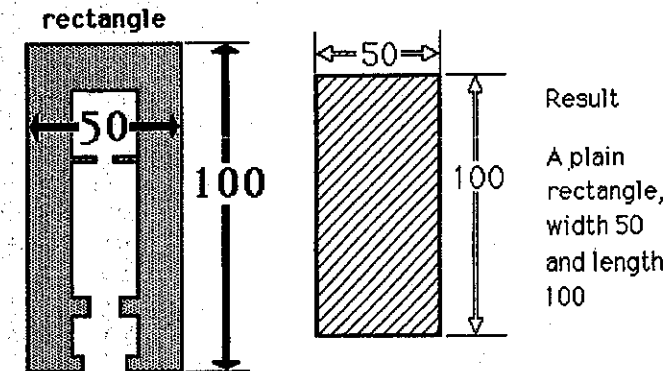


Figure 6.6 Rectangle proportions

(Figure 6.6). The result is a plain rectangle. The rectangle-proportion might be expressed in proportional terms as 50:100. Or it might be reduced to a fraction, as 0.5000. The rectangle on the right of the Figure shows the same proportion in a smaller size, as a reminder that ancient designers were concerned about the proportion – or the shape – and not the size.

Scripture contains more rectangle-proportions than are in the list in Appendix 2. In practical terms we shall be measuring buildings, and there are some proportions which are too wide or too long to be accurately measured. But, apart from these extreme proportions, there are fifty-six rectangle-proportions in Ezekiel's Temple, the Tabernacle and its furniture, and Noah's Ark.⁷ This of course is a large quantity. On the one hand we intend to see whether any of these proportions fit the plans of synagogues. And if they do, they may well be what the architect intended when he designed the building. But on the other hand this is an enormous quantity of proportions. If you check them all you are statistically very likely to get an answer; but quite a few of these proportions were never part of the architect's plans. Even so, if three conditions are met, this scheme is likely to be right. First all the proportions have to be 'correct'. Secondly they have to be consistent over a large sample. And thirdly the exceptional proportions in the scheme have to be repeated. In the analysis of 46 ancient synagogues, in Appendices 4 and 5, these three conditions have all been met.

In a world of abstractions, where the synagogues were as neatly laid out as in the left hand plan in Figure 6.7, it would be an easy enough business to calculate the proportions. But because the builders seldom made right angles of exactly ninety degrees, and neglected to measure both the matching walls, most synagogues have irregular plans, and are like the irregular building on the right. But if we recall the philosophy

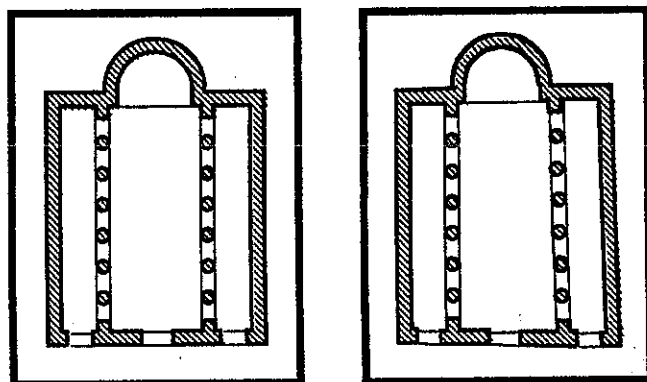


Figure 6.7 Regular and out-of-shape buildings

which lies behind synagogue design it is not a philosophy of geometry but of numbers.

If the designers were working with proportions based on two scriptural numbers, the person who laid out the synagogue would have systematically measured the length and the width of the rectangle-proportion. So, if one could find the two measures, they were likely to be correct.

An example is a problem concerned with the synagogue at Magdala (Figure 6.8).⁸ Is it possible to find an appropriate scriptural rectangle?

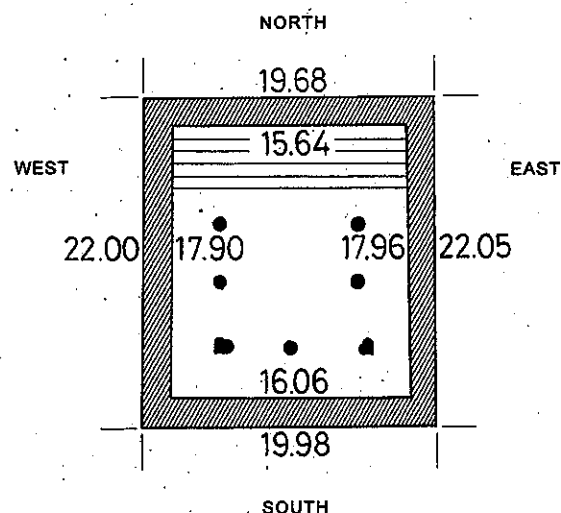


Figure 6.8 Outer walls at Magdala – after V. Corbo

The synagogue as it is built has four different lengths and four different widths. Do any two of these lengths and widths form a proportion for a scriptural rectangle?

	<i>east outer</i>	<i>west outer</i>	<i>east inner</i>	<i>west inner</i>
LENGTHS	22.05	22.00	17.96	17.90
WIDTHS	19.68	19.98	15.64	16.06
	<i>north outer</i>	<i>south outer</i>	<i>north inner</i>	<i>south inner</i>

The way to find out is to divide the width by the length. Thus the north outer width in Figure 6.7, 19.68, divided by the west outer length, 22.00, gives the proportion⁹ 0.8945.

$$\frac{\text{width } 19.68}{\text{length } 22.0} = 0.8945$$

The next thing is compare this result with the list of scriptural proportions in Appendix 2, page 227. The nearest above it is 0.9091 (difference 0.0146), and the nearest below 0.8621 (difference 0.0324).

Differences with nearest entries in Appendix 2:

$$0.9091 - 0.8945 = 0.0146$$

$$0.8945 - 0.8621 = 0.0324$$

These differences are far too big, and in Appendix 1 the acceptable difference is less than one in four hundred, or 0.0025.

For Magdala the answer lies in the south outer width (19.98) divided by the west outer length (22.00) and. The length divided by the width is 0.9082.

$$\frac{\text{width } 19.98}{\text{length } 22.00} = 0.9082$$

Differences with nearest entries in Appendix 2:

$$0.9091 - 0.9082 = 0.0009 \text{ ('correct')}$$

$$0.9082 - 0.0461$$

Thus, allowing for a difference of 0.0009, just under a thousandth, it therefore 'correctly' corresponds to 0.9091, or 20:22, the proportion from scripture. Its width is 20, and 22 equals the length of the Holy of Holies plus the thickness of the thin wall with the connecting door (Figure 6.9).

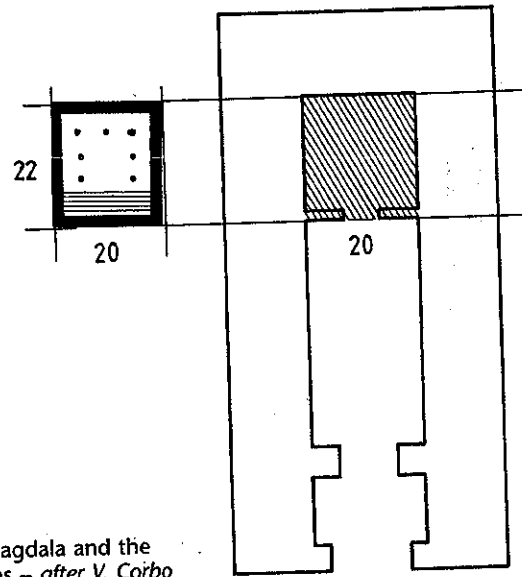


Figure 6.9 Magdala and the Holy of Holies – after V. Corbo

The proportions were carefully measured when the synagogue was built, so when one succeeds in finding them, they are very accurate. They were taken to an exact arithmetical proportion, rather than an irrational number, as maintained by Chen or Kidson, like the square root of two. And, in terms of their scriptural model, the proportions have meanings. For example this rectangle-proportion of 20:22 declares that, 'This synagogue is the Holy of Holies in Magdala'. Of course the Jews (and after them the Christians) related these proportions to the Holy Scriptures. But there is no Jewish or Christian monopoly on the numbers in the proportions. Many people saw these proportions as part of geometry, and used them for designing buildings. For instance in a non-Christian Roman market building, the Basilica of Maxentius, there are forty-seven geometrical proportions which could, in a Jewish or Christian building, also have a relation to Scripture.

We are aiming to give many scriptural proportions, like the length-proportion 20:22. In Appendix 2 a letter is added to the proportions, for instance 20:22 (C). This is to make it easy to connect with the scriptural plans in Appendix 3, Plan C, where this proportion is given. So the rectangle-proportion 20:22 appears in plan C of the Temple, on page 229.

Most of the rectangle-proportions refer to only one scriptural proportion, but the exceptions are firstly 0.3333, which is either 10:30, the rectangle of the whole Tabernacle (page 28), or 20:60, the porch and the long room of the Temple, to be found on plan D.

The second exception, 0.5, has four meanings. It might stand for:

- A A width of twenty divided by a length of forty, the dimensions of the long room in the Temple, the Holy Place,
- B A width of ten divided by twenty, the corresponding long room in the Tabernacle;
- C A width of fifty divided by length of 100, the whole area of Ezekiel's Temple;
- D A width of one divided by two, the surface of the Table of Shewbread in the Tabernacle or in Ezekiel's Temple.

Jewish prayer was not dependent on buildings. Sometimes Jews prayed out of doors and sometimes in rooms of houses planned without any religious purpose, such as the early synagogue-room in Dura-Europos. But whenever temple proportions formed the design of the synagogue hall, it was laid out in two rectangles. The outer rectangle was for human beings and the inner one for God and his angels. This is most obvious in a synagogue of more than one aisle, for example Capernaum (Figure 6.10). The outer rectangle, where the people sat, followed the outer walls of the synagogue. The proportion was 50:62, referring in Scripture to the width of the outer walls of the Temple and the length of its inner rooms. The members of the congregation sat in the seats along the walls of the synagogue, of which part of the plan stretches down the left wall. The second rectangle-proportion is 20:42, the length of the Temple's long

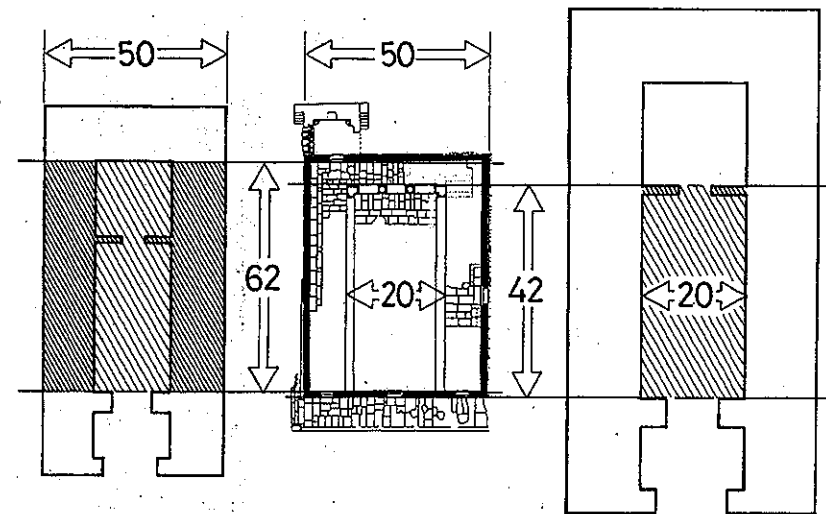


Figure 6.10 Capernaum synagogue, two rectangle proportions – after S. Loffreda

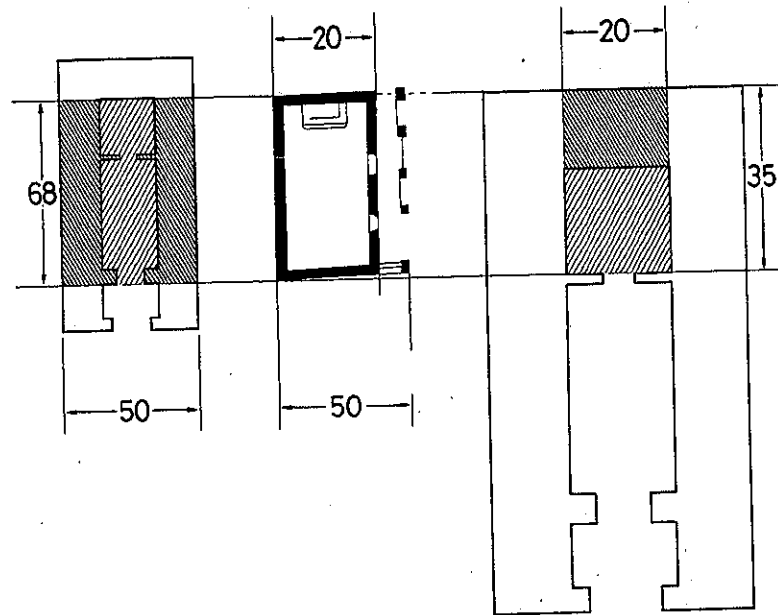


Figure 6.11 Horvat Anim synagogue, two rectangle proportions – after Z. Ilan and D. Amit

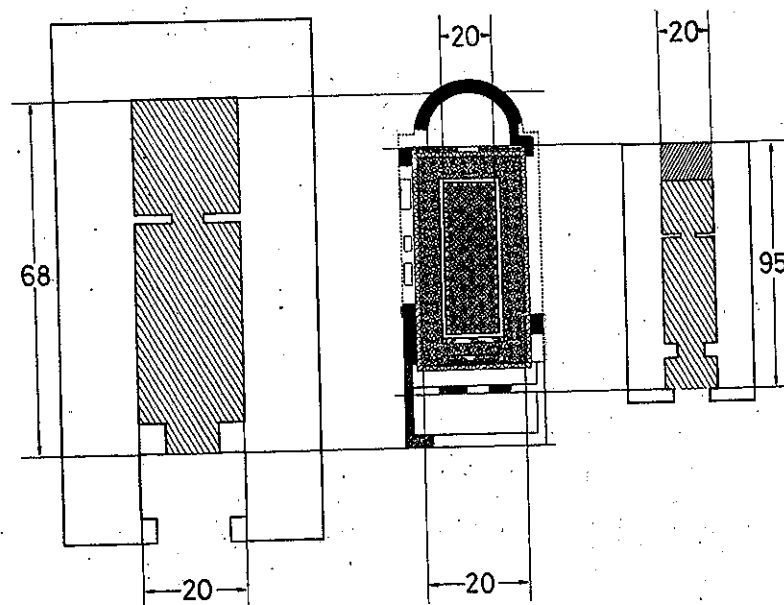


Figure 6.12 Aegina synagogue, two rectangle proportions – after E.L. Sukenik

room with the wall which separates it from the Holy of Holies. This is where the active members of the synagogue performed the ritual of worship.

Synagogues like Capernaum were obviously designed with two rectangles. But in the design of single-aisled, and apparently simpler, synagogues two rectangles were also used. In the case of H. Anim the outer rectangle includes the passage way beside the building (Figure 6.11). The size of the temple-models is of course very different, but the synagogue designer attended only to the shape. For him the size had no significance.

The plan of Aegina illustrates the design of synagogues with two rectangles. The original building was not a synagogue, though it did consist of a room with an apse. The extant walls are coloured black, but there is a great deal missing. Within the framework of this building a synagogue was planned. The building was not long enough, so at the end opposite the apse two walls were built, as an outer and an inner entry (Figure 6.12). A mosaic was laid, with an outer rim and an inner panel. The width of this outer rim and the length of the synagogue, from inside the apse to the new outer door, gave a proportion of 20:68. The width of the inside of the mosaic panel and the length of the new hall, ending at the new inner entry, made a proportion of 20:95. So in this case the building of a double entry results in the existence of two rectangles.

The rectangle-proportions in the Figures from 6.9, to 6.12 do not make it clear at which end was the Holy of Holies. In fact the illustrative temples in these Figures might each be the other way round. So another set of proportions is needed.

The direction of the building is determined by length-proportions. Length-proportions consist in two lengths starting at the same point, corresponding to two lengths in the Tabernacle or the Temple. An example is the position of the wall between the Holy of Holies and the Holy Place. On the left of Figure 6.13 are the letters A and B. In the Temple the length between them is 37 cubits, the distance from the outer wall to the entrance of the Holy of Holies. The letters A-C on the right mark the total length of the Temple, 100 cubits. So the length-proportion is the shorter length, 37, divided by the longer, 100, or 0.3700. The direction is clear.

Normally these scriptural proportions had further meanings, besides their reference to the Temple. Thus a length-proportion involving the door of the Holy of Holies (Figure 6.14) might have a religious meaning – in terms of the Temple it might mean that the Holy of Holies in the Temple was more sacred than the other part, or again, in terms of the universe, 37 might mean heaven and 100 the whole universe.

There is an even greater quantity of length-proportions. As Figure 6.15 shows, if one wishes to point to the entrance of the Holy of Holies

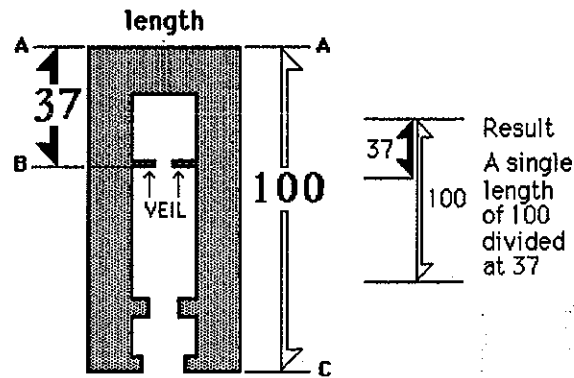


Figure 6.1.3 A length proportion

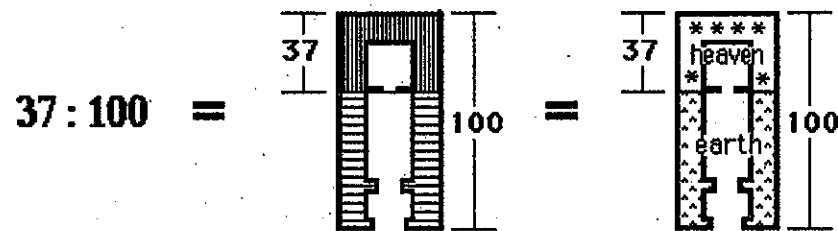
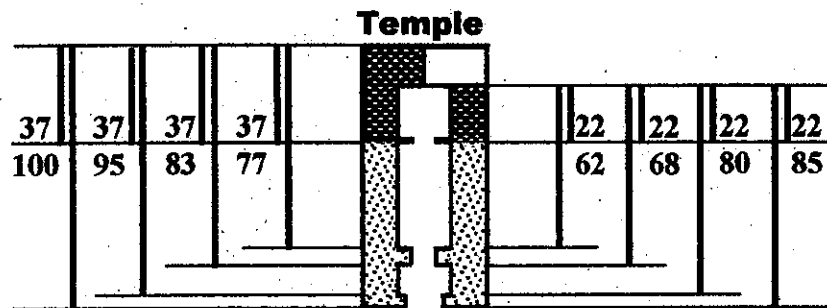


Figure 6.14 Length proportion, meanings of numbers



all eight proportions mean the veil

Figure 6.15 Proportions of the entrance of the Holy of Holies

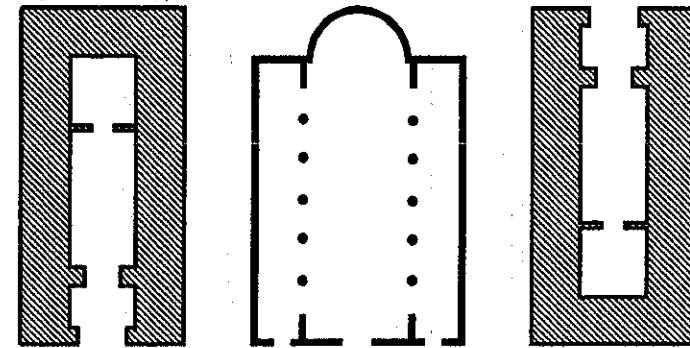


Figure 6.16 Holy of Holies of model may be at top or bottom

one could use one of eight proportions. These are numerically different, but mean the same. Relying on my experience of analysing these plans I do not believe that each different proportion had a separate meaning. The designer usually wanted to contrast the square room with the one whose area was two squares. And, to speak practically, the fact that many possible proportions would achieve this meant that the task of design was less difficult.

For practical purposes the scriptural length-proportions number 79. Theoretically there are more at either end, but, again to speak practically, these are too extreme to be identified. The number of entries in Appendix 5 (p. 232), is twice 79 – 158 – since a temple might have its entry at the top or the bottom (Figure 6.16). Moreover seven of the possible scriptural proportions might mean two proportions in the Temple.¹⁰ There is such a great number of length-proportions that the computer program is likely to produce far too many favourable results, and any analyst has to select those which most probably reflect the designer's intention.

There is a sample of synagogues below on p. 232 for which I have calculated length-proportions and on which I base my conclusions. Of the earlier synagogues most have a length-proportion which makes the Holy of Holies of the Temple lie towards the holy direction. Capernaum is a good example (Figure 6.17), the holy direction being the city of Jerusalem. The three main entries of the synagogue face Jerusalem and the length-proportions are measured from the colonnade along the line E-E. The two proportions are exact. The one to the left of the synagogue plan, is exactly 65:63, indicating the wall between the two rooms in the temple, and making the Holy of Holies fall outside the synagogue. The proportion marked on the right is 15:100, indicating the walled area beyond the Holy of Holies, and putting the Holy of Holies inside the main door.

The idea of the *'ôhel mo'ed*, or 'tent of meeting' is far more deep-rooted than the idea of any particular direction in which the synagogue

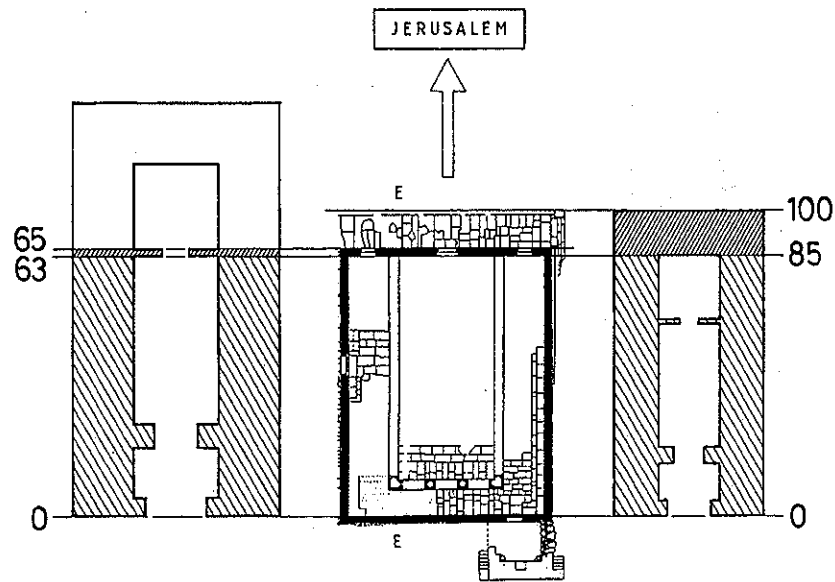


Figure 6.17 Length proportions in Capernaum – after S. Loffreda

should face, and proportions which depend on the model temples running in opposite directions are further indicated in Appendix 5.¹¹ But, now that we have defined the idea of length-proportions, it is time to return to the subject of the direction in which the synagogue faced. All the problems it raises we shall not solve. But we may be able to make a little progress in solving part of the problem.

Figure 6.17 shows that the wall with the main door at Capernaum is proportioned like the wall between the Holy of Holies and the long room. But Figure 6.18 shows that this is a common feature. This showed that the synagogue's true Holy of Holies was not inside the building, but also that in its long room the place of Ezekiel's altar had special symbolism.

During the fourth century two things may have affected the direction of synagogues. The first was that the eastern Christians chose to pray in an eastward direction, and, in reaction, the Jews deliberately changed the direction of some synagogues towards Jerusalem. We have already seen an example in the alterations at Eshtemoa and Horvat Shema'. Even the furniture of the synagogue was changed. Liturgical platforms were added even to the synagogues which already faced Jerusalem (Figure 6.19). The second change was that people preferred not to look at the synagogue door but at something solid. Meroth, the right hand synagogue in Figure 6.19, had its doors closed and new doors added the other end. And in

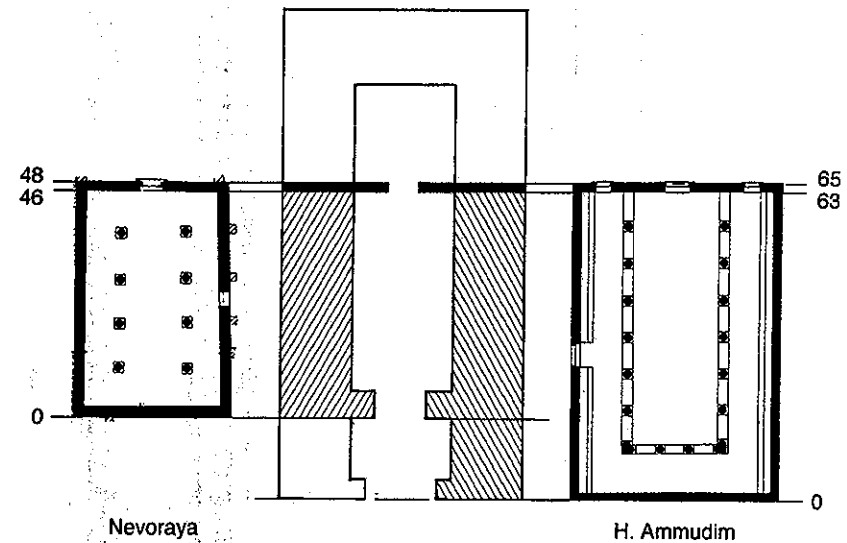


Figure 6.18 Length-proportions of synagogue walls with main door

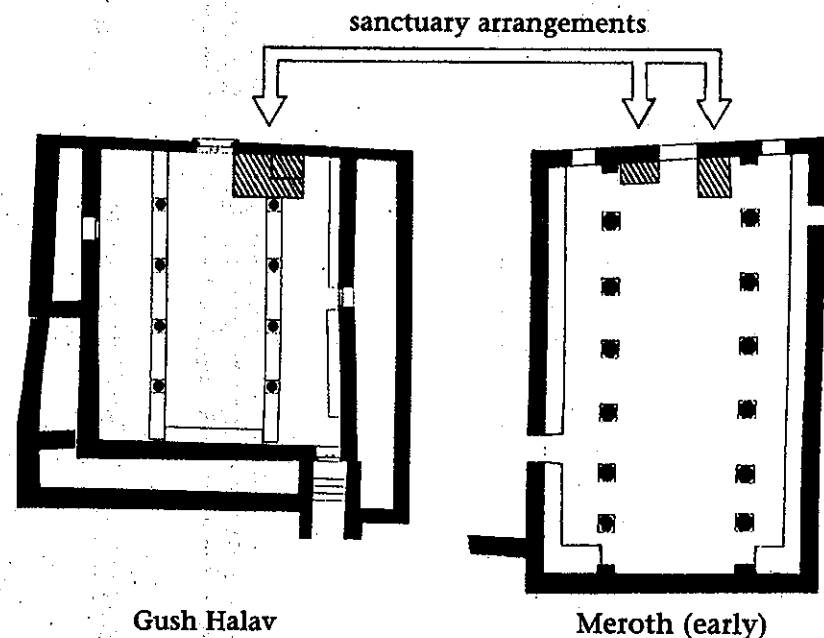


Figure 6.19 Sanctuary arrangements added at Gush Halav and Meroth

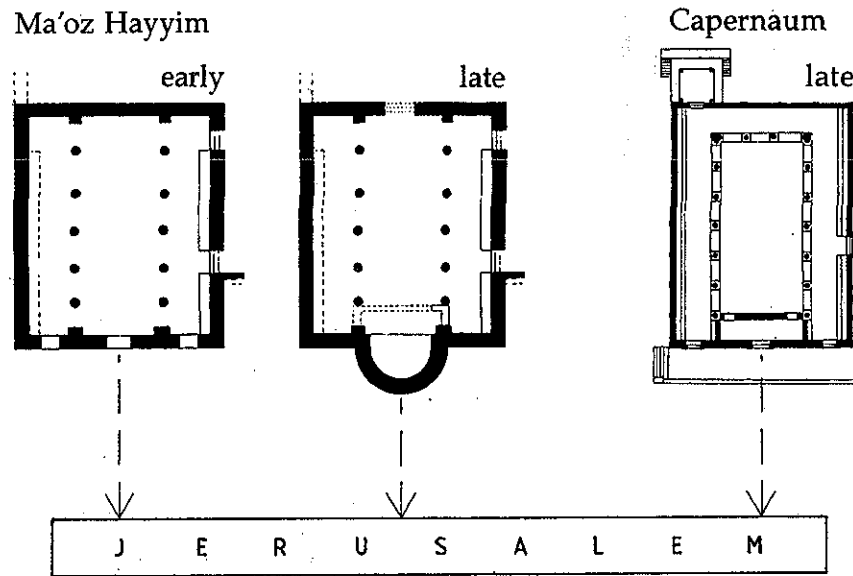


Figure 6.20 New arrangements at Ma'oz Hayyim and Capernaum (second phase)

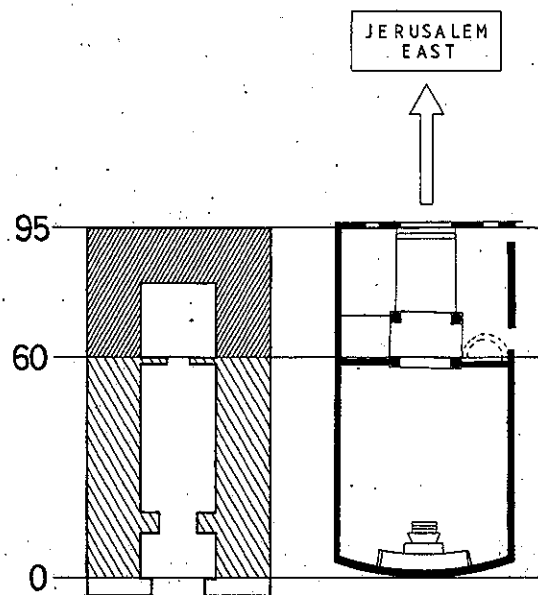


Figure 6.21 Court at Ostia proportioned like a sanctuary – after M.F. Squarciapino

Figure 6.20 Ma'oz Hayyim was both reversed and had an apse added. This change, the preference for looking at something solid, certainly changed the buildings. But it did not necessarily imply any alteration in the belief that there was an appropriate direction for prayer. Also in Figure 6.20 is the Capernaum synagogue. This was surrounded by roads, so it had no room for an apse or new doors, but it fulfilled the need for something solid by building a wall just inside the door.

Outside the entry doors of synagogues there were sometimes courtyards. The Tabernacle and the Temple both had square courts, and it is a surprise that synagogues with square courts are rare. Instead the outer court of the synagogue was always a shape corresponding to the Holy of Holies. This proportion starts out in the early synagogue, Ostia (Figure 6.21), which was like a Tabernacle. But it continues even in synagogues with apses. We shall come back to this problem.¹²

If there are length-proportions, do width proportions also exist? For the Temple they would be 20:32, and 20:50. In the sample of synagogues there are very few. This seems to be because the designer had already used his ingenuity in choosing the main rectangle and length-proportions of the design, and could go no further without spoiling what he had already done. Thus it seems likely that synagogue designers used only rectangle and length-proportions.

Notes

- 1 In the last column in the table in Appendix 4, 'Synagogue Rectangle Proportions', p. 231 below.
- 2 Their exact measurement is a matter of dispute, but for the purposes of this graph it is necessary to have one of the sizes. The plans are drawn with a cubit of 52 cm.
- 3 Vitruvius, *Arch.* IV, 7, 1.
- 4 An added piece after al-Nairizi's comment on Euclid, *Elements* 1.31 (Besthorn and Heiberg 141-3), Heath, Vol. I.326.
- 5 They are in Appendix 2 on p. 227 below.
- 6 B. Menahoth 28b.
- 7 Listed in Appendix 2 on p. 228 below.
- 8 These measurements are taken from a plan, and do not represent the length on the site. My method of measuring irregular buildings is more fully described in Appendix 1, p. 221.
- 9 A decimal calculated to four points has meaning. But in the context of architectural measurement further calculation is meaningless.
- 10 The seven are: $0.4545 = 35:77 = 10:22$; $0.2941 = 20:68 = 5:17$; $0.2500 = 20:80 = 25:100$; $0.2000 = 17:85 = 12:60$; $0.1667 = 5:30 = 2:12$; $0.1500 = 12:80 = 15:100$; $0.1250 = 10:80 = 6:48$.
- 11 In the following synagogues the wall containing the main door has the following proportions: 63:65 – Meron, Priene (outer wall); 58:60 Gush Halav, Arbel. This proportion also applies to synagogues which face east, so 40:42 is the original condition of Eshtemoa.
- 12 See below, p. 132.

CHAPTER SEVEN

The Mosaic Floors of Synagogues

Most synagogues have flat stone floors, which reveal very little. But there are also some mosaic floors. Chapter 5 has examined the pictures of sanctuaries they contain. This chapter will examine their theological meaning and the evidence they provide for positions in the liturgy.

The synagogue, like the Tabernacle or the Temple, stood not only for the heavenly Temple but also, as Josephus said, for heaven and earth.¹ Ma'on synagogue is ruined, but some of its mosaic designs have survived. The floor of the main hall showed the riches of earth, its fruit, its animals and its vegetation (Figure 7.1), seen through a vine, which no doubt represents the firmament. In this picture of the mosaic the main entry door was near the bottom. The earth was under the protection of two peacock-angels at the bottom of the mosaic, and two lion-angels at the top. This is all in a rectangle. Within this rectangle, on the side nearest the sanctuary, a seven-branched lampstand is represented, with a ram's horn trumpet or *shofar*, a pine-branch spray or *lulav* and two citrons. This is evidently the earth obedient to God's Law, protected by angels, and waiting by the gates of the heavenly Holy of Holies. Unfortunately of the other walls of Ma'on too few have survived for a proportional plan to be made.

Down the centre of the Ma'on mosaic is a line of fruit and birds, and at the mid-point of the line is an unemphatic picture of a basket of pomegranates. There is no sign here of any central symbol of Jerusalem. But designers were well aware of Ezekiel's prophecy that Jerusalem was 'at the centre of the nations'.² At least from the second century AD it was believed that Jerusalem contained, in the Holy of Holies of the Temple, the *shetiyyah*, or foundation stone.³ This was connected not only with the laying of the temple foundations, but also with the creation of the world,⁴ and was the scriptural 'corner-stone' of the earth.⁵ So some of the synagogue designers put a mark of Jerusalem in the proportional position of the centre of the long room in the Tabernacle or the Temple. This was in order to show that it was the centre of the earth (Figure 7.2). Nevertheless at the centre of Na'aran synagogue a mark exists, but it is a surprising one. This is the scene with the sun, the twelve signs of the zodiac, and the four seasons (Figure 7.3), and it cannot stand only for



Figure 7.1 Hall mosaic at Ma'on – after M. Avi-Yonah.

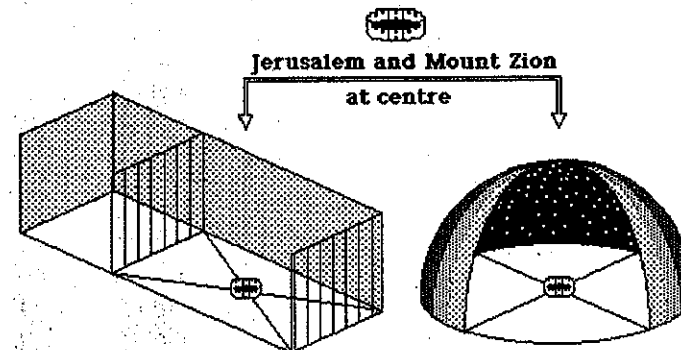


Figure 7.2 Jerusalem as centre of the Earth

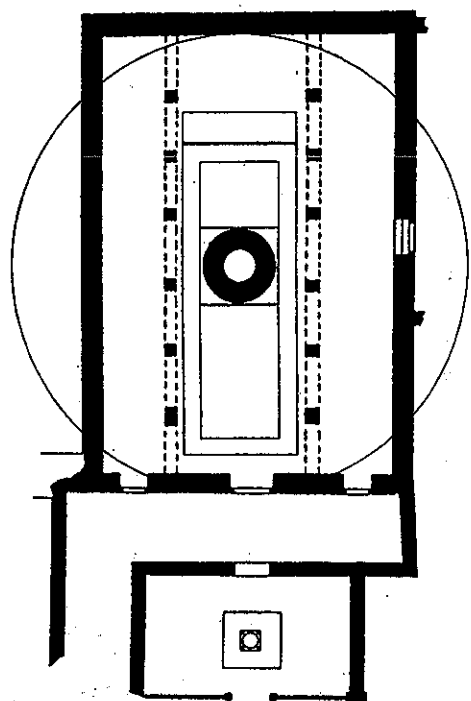


Figure 7.3 Zodiac scene in the centre of Na'aran hall – after L.H. Vincent

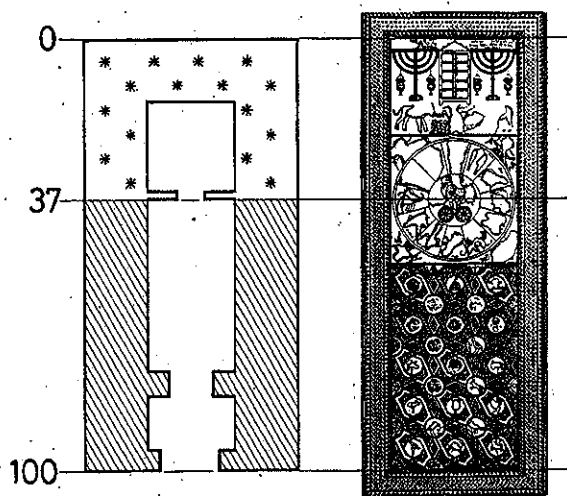


Figure 7.4 The central hall mosaic at Na'aran – after N. Avigad

Jerusalem. This is by no means a view of the city. The same picture is also in other synagogues. Suggestions that this zodiac scene represents the calendar have been made. But at Na'aran the zodiac signs go round clockwise but the seasons anticlockwise, and at Beth Alfa the zodiac signs do not match the seasons. To anyone who viewed these designs as guides to calendars such errors would be intolerable.

In the Tabernacle and the Temple, both of them models of the synagogue, we have mentioned another particularly holy place, namely the point where the Holy of Holies (or heaven) meets the longer room (or earth); where God reveals Himself, and where his people worship him. Several synagogues have a double proportion. They combine the meeting of heaven and earth with the central point of Jerusalem. This is either in the centre of the whole building, or its hall, as a symbol of the earth. Figure 7.4 shows a more detailed picture of the mosaic and its proportions. The zodiac scene is, as we have said, in the centre. But the centre of the zodiac scene divides the design into two sections. The section above corresponds with the end of the Temple containing the Holy of Holies, or heaven, and the section below corresponds to the end containing the long room, or earth. And the subjects of the pictures match these meanings. Heaven is the universal sanctuary with its pair of seven-branched lampstands, and has the presence of a Righteous One, the prophet Daniel with his lions. An elaborate geometrical pattern representing the firmament frames the various treasures of earth.⁶

Scenes with the sun, the zodiac, and the seasons occupy a central position in several more synagogue halls, the first at Hammath Tiberias South (Figure 7.5). The hall represents the earth, so its central point represented Jerusalem.

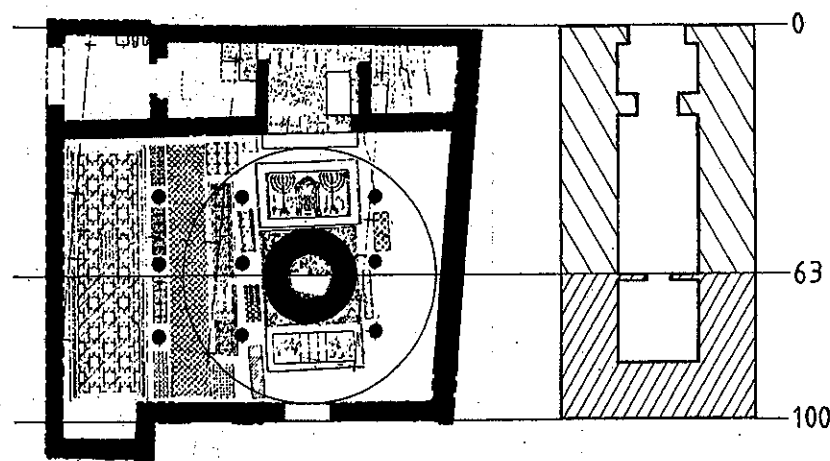


Figure 7.5 Zodiac scene, centre of hall at Hammath Tiberias South – after M. Dothan

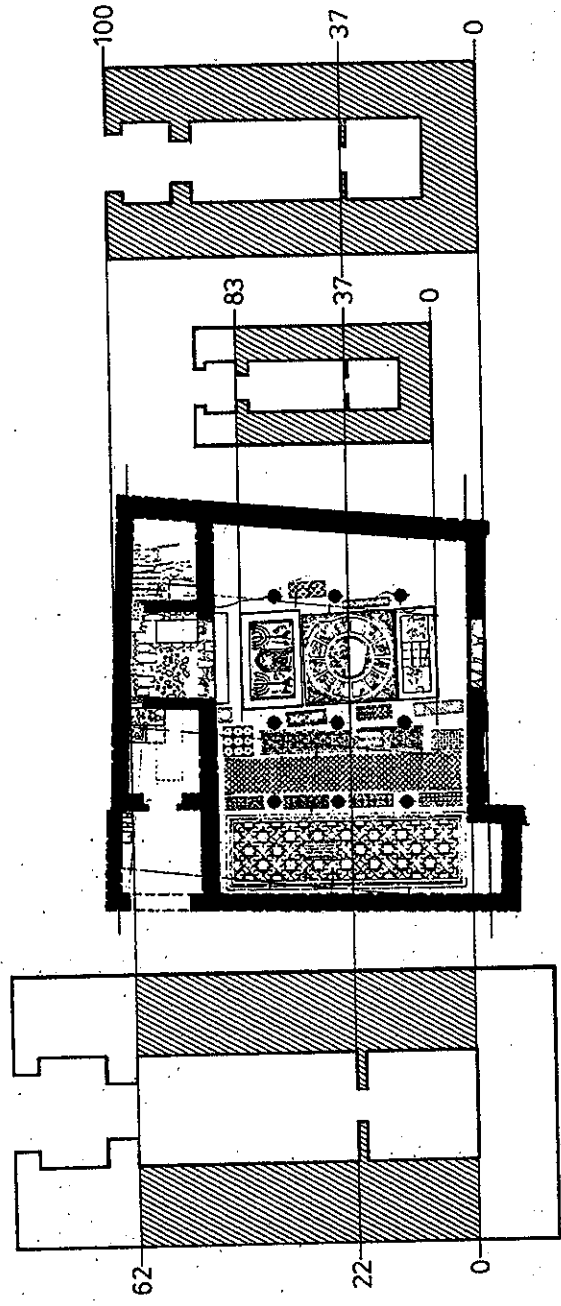


Figure 7.6 Hammath Tiberias S.: repeated proportions of the zodiac – after M. Dothan

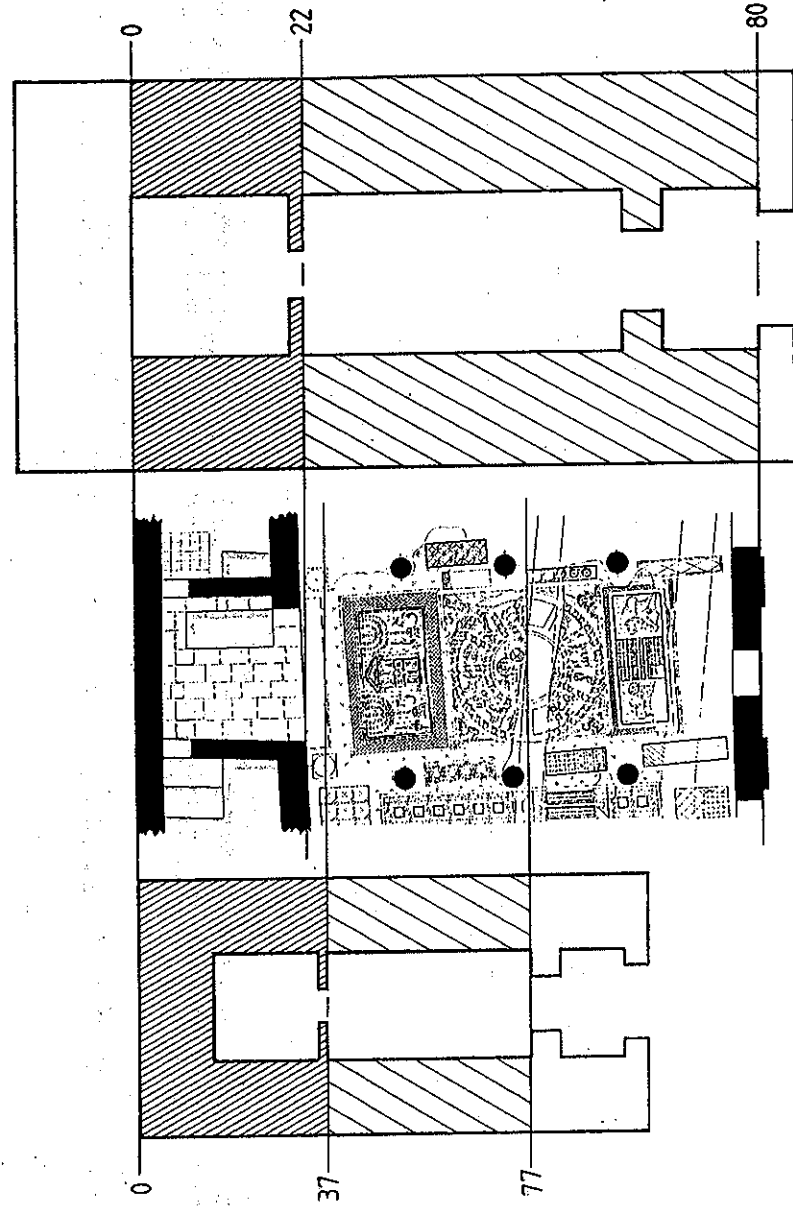


Figure 7.7 Heavenly temples at Hammath Tiberias South – after M. Dothan

But this central point is also proportioned as 63:100, that is the opening from the long room of the Temple to the Holy of Holies. The porch of this temple is in the synagogue sanctuary. Evidently this proportion was important, since it was emphasised. In Figure 7.6 the temple on the right is the same one as in the last Figure. But a variation of this proportion is again twice repeated, in order to emphasise that the zodiac scene is in an appropriate position to 'meet God', in the context of the *'ôhel mo'ed*, or 'tent of meeting'.

I cannot help asking this question once again, 'Was Augustine right in his comment on beauty and number?' In fact the public cannot see all this elaboration of the mosaic floor. It can only be measured, and measured by experts. The dimensions are surprisingly accurate. But do they lead to beauty?

A further invisible elaboration has to do with the division between the temple on earth and the one in heaven. Figure 7.7 is the nave of the Tiberias synagogue, with the proportions of two temples. Both temples have their Holies of Holy at the same end as the synagogue sanctuary. The left hand one, the smaller, starts at the centre of the zodiac scene, and the larger one on the right at the entrance of the building. The larger one is a symbol of the universe, with the sanctuary as heaven and the hall as earth, with Jerusalem – the zodiac – at its centre. The smaller temple is the one in heaven. It is interesting that this is the Temple to which Jerusalem gives access.

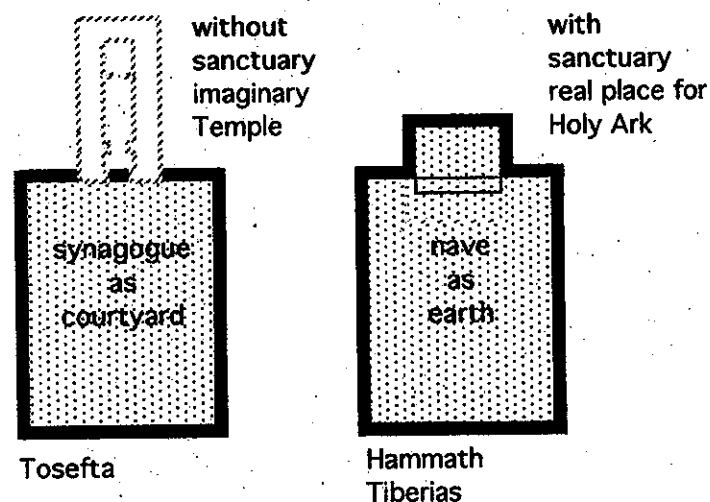


Figure 7.8 Synagogues with and without sanctuary

The background of this arrangement is the difference between synagogues with a sanctuary and those without. The first plan in Figure 7.8 is based on *Tosefta Megillah*. On the one hand in *Tosefta Megillah* the hall represents the temple court, and plan does not represent the sanctuary of the Temple or the Tabernacle. Instead a symbol of the sanctuary is marked on the wall by a niche or some other sign. On the other hand with Hammath Tiberias the sanctuary is not only marked on the plan, but is the climax of the synagogue.

The zodiac scene at Beth Alfa has the same central position in the hall and the same proportion, 37:100 (Figure 7.9). It also has a large Temple proportioned 22:68, which is shown on the right of the Figure. It occupies the whole of the synagogue and court, and has the same effect of emphasising the entrance to the Holy of Holies.

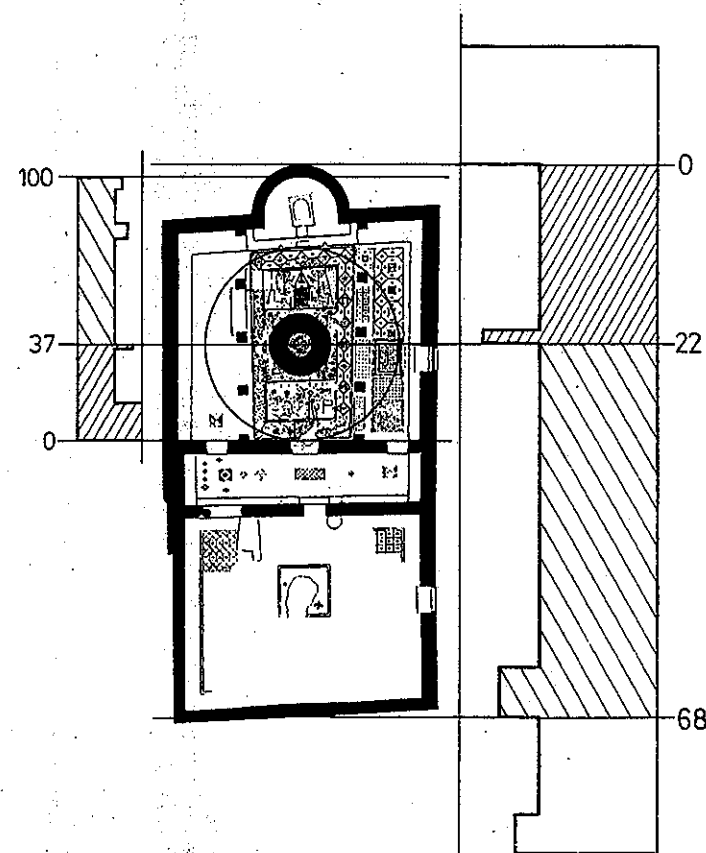


Figure 7.9 Zodiac scene at the centre of the hall at Beth Alfa – after E.L. Sukenik

At Sepphoris and Beth Alfa the picture beneath the zodiac scene is of Mount Moriah, the site of the Temple in Jerusalem,⁷ showing the Binding of Isaac by Abraham, who readies himself for the sacrifice of his son. The mosaics of both synagogues are shown together in Figure 7.10, with the length of the mosaic at Beth Alfa in this case expanded to match the sections at Sepphoris.⁸ In the first section below the zodiac at Sepphoris the left panel shows the servants waiting at the bottom of Mount Moriah, and the subject of the damaged right panel is the Binding itself.⁹ At Beth Alfa an undamaged design shows the same subject. At Sepphoris the next section ends the mosaic. It shows Abraham's entertainment of the Three Angels at Mamre.¹⁰

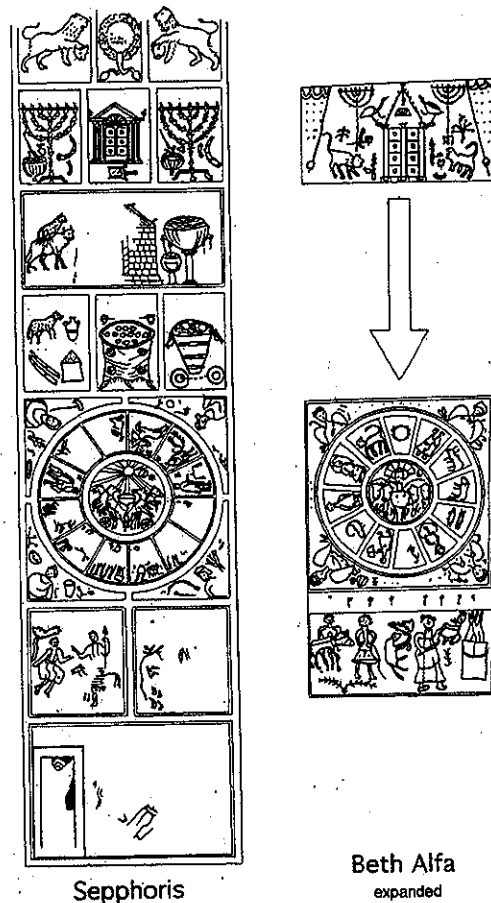


Figure 7.10 The floor mosaics at Sepphoris and Beth Alfa synagogues

The Binding of Isaac is to be connected with the sacrificial liturgy. Weiss and Netzer quote the following text:

When Abraham our father bound Isaac his son, the Holy One – blessed be He – instituted the sacrifice of two lambs, one in the morning and the other in the evening ... What is the purpose of this? It is in order that when Israel, offers the daily offering upon the altar and reads the scriptural text, 'Northward before the Lord', the Holy One, blessed be he, may remember the Binding of Isaac.¹¹

So the Binding epitomized a true and faithful sacrifice to God. And the passage about Abraham entertaining the Three Angels, not only contains the promise of Isaac's birth, but to the Jews it was the promise that God 'will make your descendants as numerous as the stars of heaven'.¹² All of them too would be children of Abraham.

It is possible that the oldest known synagogue near the Sea of Galilee, Gamla, was altered to the proportions which apply to the zodiac scene (Figure 7.11), though the measurements are rough. Inside the thick city wall was a room (not shown in this particular plan) which counted as part of the synagogue. The synagogue was altered, and a line of foundations was added inside the columns in the main hall.¹³ The

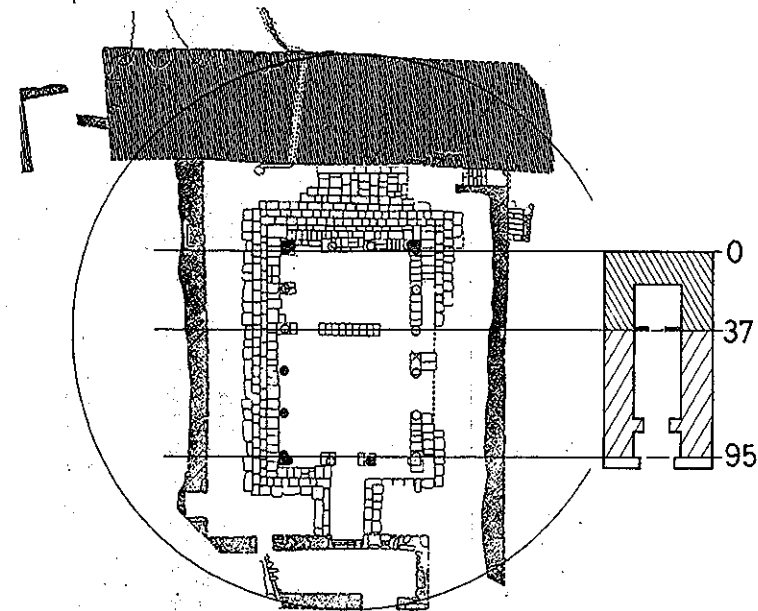


Figure 7.11 Masonry foundation, centre of Gamla synagogue – after S. Guttman

centre of this line appears to be the centre of the whole synagogue, including the city wall, and is proportioned at 37:95 inside the interior colonnade. It is therefore likely that this was where, in the second phase of this synagogue, the leader of the prayers stood and the Law was read.

The scene of the sun, the zodiac, and the four seasons, has no connection with the pictures round it. They do not explain it. Its position is what matters. This exact proportional position is repeated in Sardis, but again without any picture.¹⁴ In Figure 7.12 there are two different circles with the same centre.

The centre is also the point where in the model Temple the Holy of Holies meets the long room. This also corresponds with the remains of the feet of the *bema*, where the prayers were offered and the Law was read.¹⁵

Following the indications of the mosaic floors of synagogues, two things were placed in this position, either the centre of a zodiac, and in other synagogues or else a platform. The leader of the prayers and the person who read the law certainly stood in that position. But the evidence does not allow us to decide whether the leader stood directly on the zodiac picture, or whether he stood on a carpet or platform for which the picture was a marker. The zodiac scene will be further

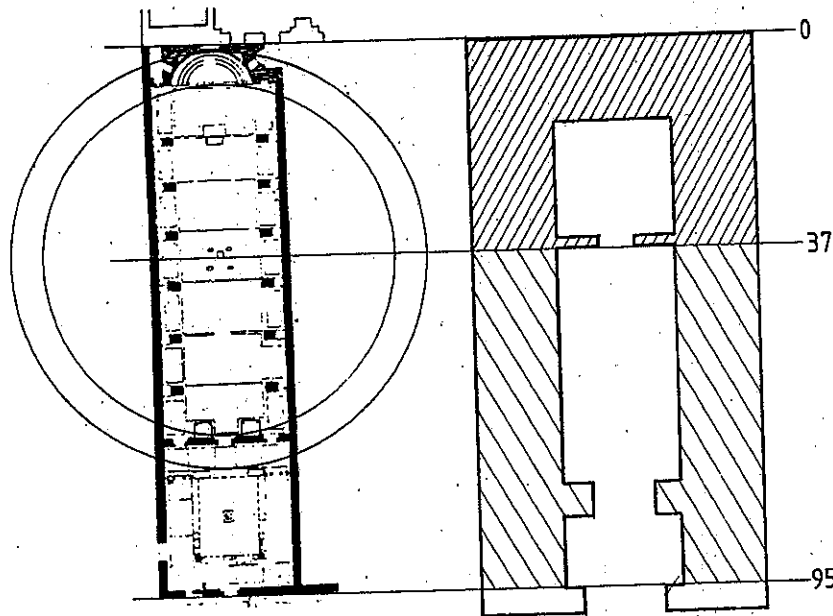


Figure 7.12 The bema at the centre of Sardis synagogue – after A. Seager

discussed below, but another important place is marked in the Sardis synagogue.

Ancient synagogues provide almost no exact positions for the Holy Ark. This is because the Ark was portable. It was brought from its room into the synagogue, and it was set down in the area of the sanctuary. Its place could thus slightly vary. But in Sardis there is a table whose proportions are those of the Ark of the Covenant, repeated twice (Figure 7.13). Surely this is a table on which the Holy Ark was placed.

Jericho synagogue was built at the beginning of the seventh century. In the central aisle there is a mosaic design like a small temple. Its Holy of Holies, at the opposite end from the apse, is divided into sixty-four squares. The sixty-fourth number, according to Philo, is 'the first of the cubes which is at the same time, square'. He said that squared numbers produce length and breath but no height, and are therefore 'invisible' and heavenly. But cubic numbers, according to him, add the height and are 'solid' and earthly.¹⁶ This Temple is therefore made of a 'solid' numeral and is therefore on earth. Indeed it is the earthly temple directed to the sanctuary in the apse, which is heaven. It is positioned in the nave by the Ark of the Covenant's position in the Temple, as shown in Figure 7.14. Half way between the first sanctuary step and the far end of the small temple is a lampstand in a circle,¹⁷ representing Jerusalem.

The Mishnah records that Onias, a righteous man, was praying as he stood in a circle. He threatened not to leave the circle unless his prayer was granted.¹⁸ He is known as 'Onias the Circle-maker', which to

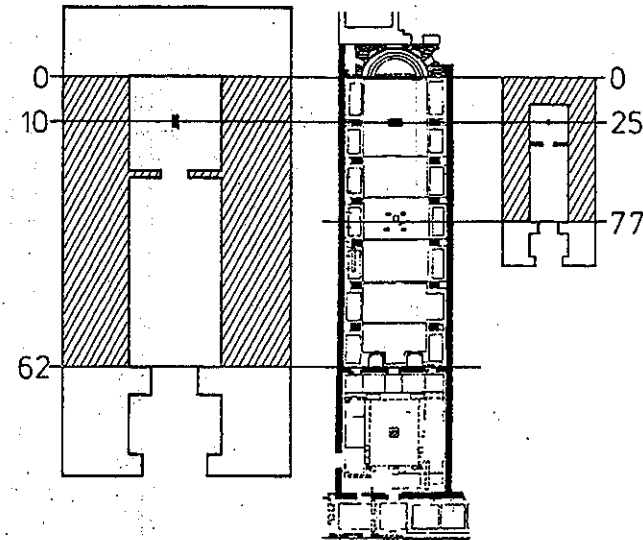


Figure 7.13 Sardis: repeated proportions of Holy Ark – after A. Seager

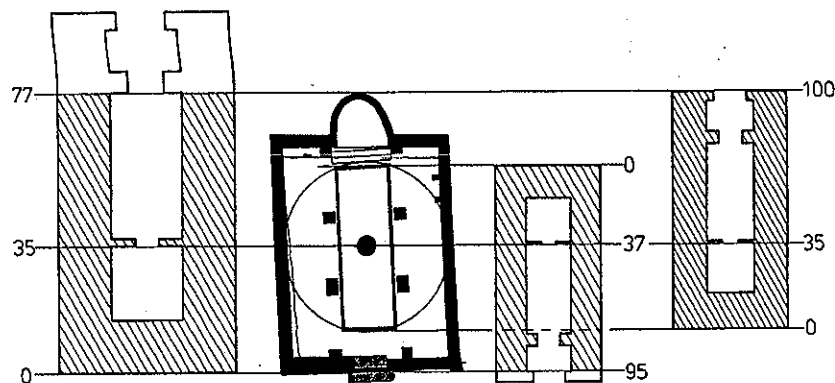


Figure 7.14 Temple and circle at Jericho synagogue – after D. Baramki

modern ears is an odd name. But the point of the story is that he threatened not to leave the circle, and it is quite possible that in 70 BC, some Jews habitually prayed in a circle. Perhaps this may also account for the zodiac scene being chosen for so many mosaics, since this is a design whose chief element is a circle. In any case the circle in the Jericho mosaic by its location represents Jerusalem. It is where prayers were said and where the scriptures were read.

In Jericho the mosaic picture of the Holy Ark stands for the heavenly sanctuary, just as it does at Hammath Tiberias and Beth Alfa. In the small mosaic temple Figure 7.15 marks the point where the Holy of Holies meets the long room at a small holy building inside a larger one, the synagogue. This is an earthly building inside a heavenly one, as in Figure 4.9 (p. 45).

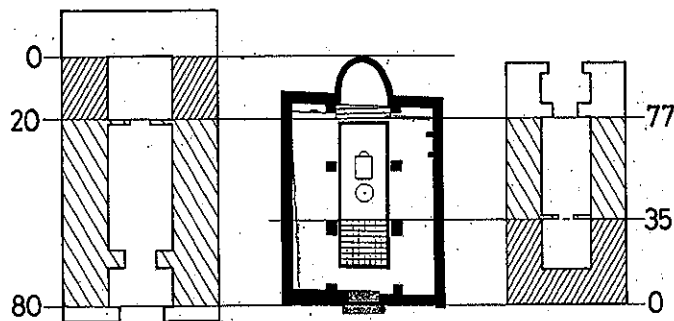


Figure 7.15 Reading place at Jericho synagogue – after D. Baramki

The mosaic in Jericho synagogue frees us from the notion that the zodiac is the only symbol to occupy the place of prayer. The circle seems to be a more basic notion, and in fact the circle is substituted for the zodiac scene in two synagogues, the Samaritan synagogue in Beth She'an and Horvat Susiya. But this may perhaps be because there were pictures of living beings in the zodiac scene that had to be covered up.

A question which still remains is about the meaning of the zodiac. Its three elements, the sun, the signs of the zodiac and the seasons are common in Roman mosaics. But for Jews their meaning ought to be very simple – the seasons should stand for earth, and the sun with the zodiac for heaven. In other words God from Jerusalem summons the world. In the words of Psalm 50:

God, the Lord God, has spoken
and summoned the world from the rising of the sun to its setting.
God shines out from Zion,
perfect in beauty.

And all creation joins in. So the Song of the Three Holy Children says,

Bless the Lord, you heavens;
sing his praise and exalt him for ever.
Bless the Lord, all you waters above the heavens ...
Bless the Lord, sun and moon ...
Bless the Lord, you stars of heaven ...
Let the earth bless the Lord ...
Israel, bless the Lord,
sing his praise and exalt him for ever.¹⁹

Josephus said that the temple represented heaven and earth, and synagogues clearly inherited this symbolism. And we have identified the position in the synagogue of Jerusalem as the centre of the earth. Heaven, earth, and Jerusalem are the beginnings of a 'sacred geography'. But how far were synagogues felt to symbolise geography? Many such sacred geographies existed in Judaism, for example that expressed in Jubilees 8 in the second century BC:

And [Noah] knew that the Garden of Eden was the Holy of Holies and the dwelling of the Lord. And Mount Sinai was in the middle of the desert, and Mount Zion was in the midst of the navel of the earth. The three of these were created as holy places, one facing the other.²⁰

Let us undertake some guesswork with Beth Alfa synagogue (Figure 7.16).

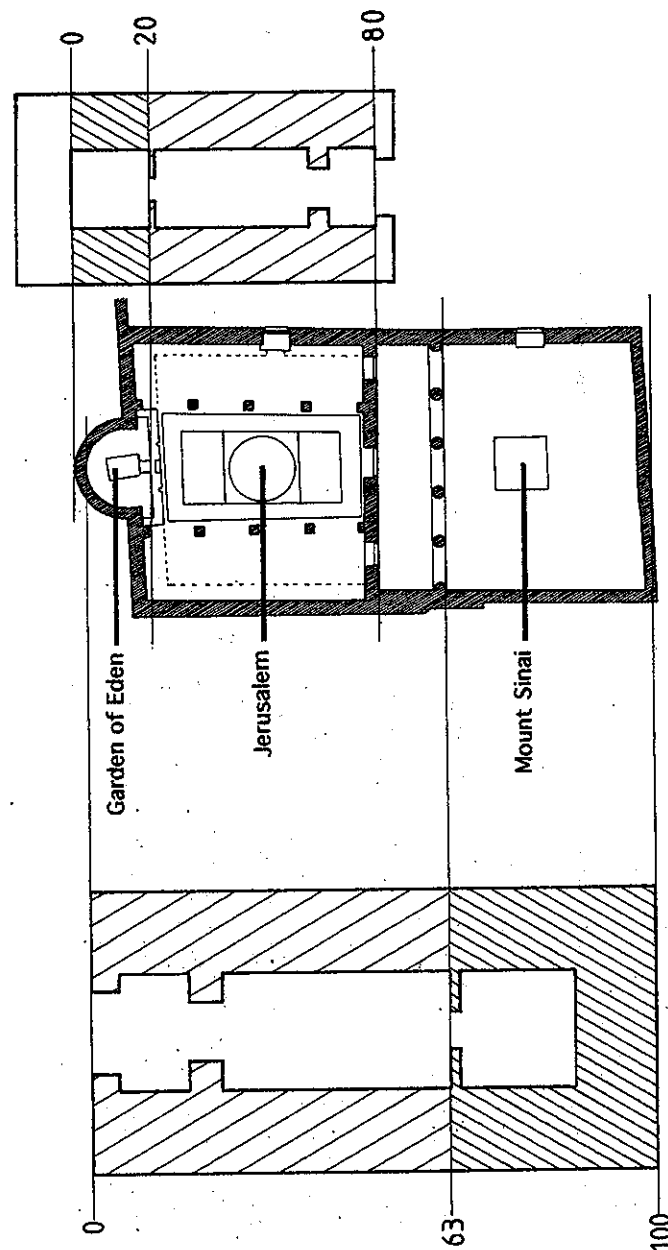


Figure 7.16 The sacred geography of Beth Alfa – after E.L. Sukenik

We shall assume that there was a supply of water in the centre of its court, as in many other synagogues.²¹ This recalled two things. The first was the priests' laver in the court of the Temple.²² Secondly it recalled the spring which Moses struck from the rock,²³ which would make the court stand for the wilderness of Sinai. Jerusalem was, as we have seen, at the centre of the synagogue hall. And the Garden of Eden was no doubt in the apse where the Holy Ark stood. If this guess about Beth Alfa is correct, it is tempting to suggest that one of the sources which shared this geography was the Book of Jubilees.

And the Garden of Eden was no doubt in the apse where the Holy Ark stood. If this guess about Beth Alfa is correct, it is tempting to suggest that one of the sources for their geography was the Book of Jubilees.

In describing the synagogue service *Tosefta Megillah* showed that there were two focal points in the building. One was the place of the Holy Ark and the other the place 'Before the Ark', where prayer was offered and the Holy Scriptures were read. This platform had of course various positions in the synagogue,²⁴ but in the examples which follow – the five earliest synagogues to have been discovered – it always occupied a central position. The platform itself is measured, like the Ark of the Covenant, by its centre (Figure 7.17). Archaeologists have not yet discovered any complete ancient platforms, and we shall not show them. But since the central point of the building itself symbolises Jerusalem, in this particular context the central point of the platform will be called 'Jerusalem'.

According to a document of the third century AD the synagogue at Alexandria had the platform, the site of 'Jerusalem', in the centre:

Now there were seventy-one golden thrones set up there, one for each of the seventy-one Elders, each one worth twenty-five talents of gold, with a wooden platform in the middle.²⁵

Also in the centre of Sardis synagogue there are the feet of a platform.

So I decided to examine some synagogues. They had all lost their platforms, but I wanted to see where the platform might have been

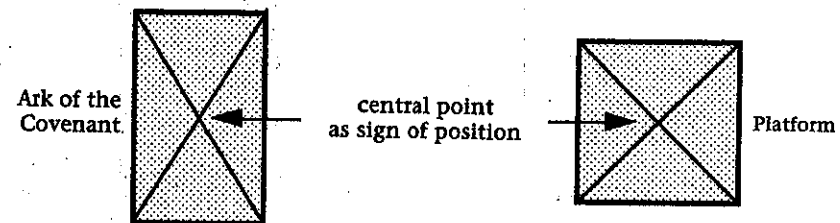


Figure 7.17 Principal measurements of the Ark and the platform

placed. In the synagogues we have examined above, the place of prayers and readings usually had two characteristics. First this place was in the middle of the building in order to represent 'Jerusalem', and secondly it corresponded proportionally to two model Temples.²⁶ The centre point of the synagogue should exactly coincide with the meeting-points of the Holy of Holies and the long room in both the model Temples. I decided that the position in a synagogue where I could find both these characteristics together was probably the location of the platform.

I started off by searching for 'the middle' of a building. But is it the middle of the whole building,²⁷ or of some smaller part?²⁸ In the large synagogue at Bar'am (Figure 7.18), I took as a candidate for 'Jerusalem' the centre of the area enclosed by the inner colonnade. Then I measured the building and discovered that two Temples fitted the plan correctly, using my sense of the word 'correctly'.²⁹ These Temples were opposite ways round, and in each case 'Jerusalem' was at the meeting-place of the Temples' inner rooms. Thus the two characteristics both existed, and the place of the readings and prayers in the larger synagogue at Bar'am has probably been found.

The Bar'am synagogue was built in roughly 250 AD, though all these dates are tentative. My next question was at what date did the platform start to have these two characteristics. I decided to examine the five earliest synagogues so far discovered. The most recent of the five are Masada and Herodium; both built during the Bar Kokhba revolt in the first half of the second century AD. Then comes Magdala, built in about 40, and last of all the synagogues built in the Herodian period, Gamla and Ostia.

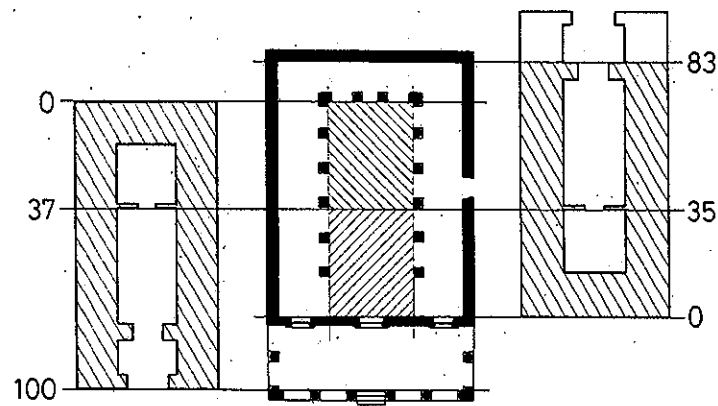


Figure 7.18 Conjectural location of reading-place, Bar'am Large Synagogue – after A. Hiram

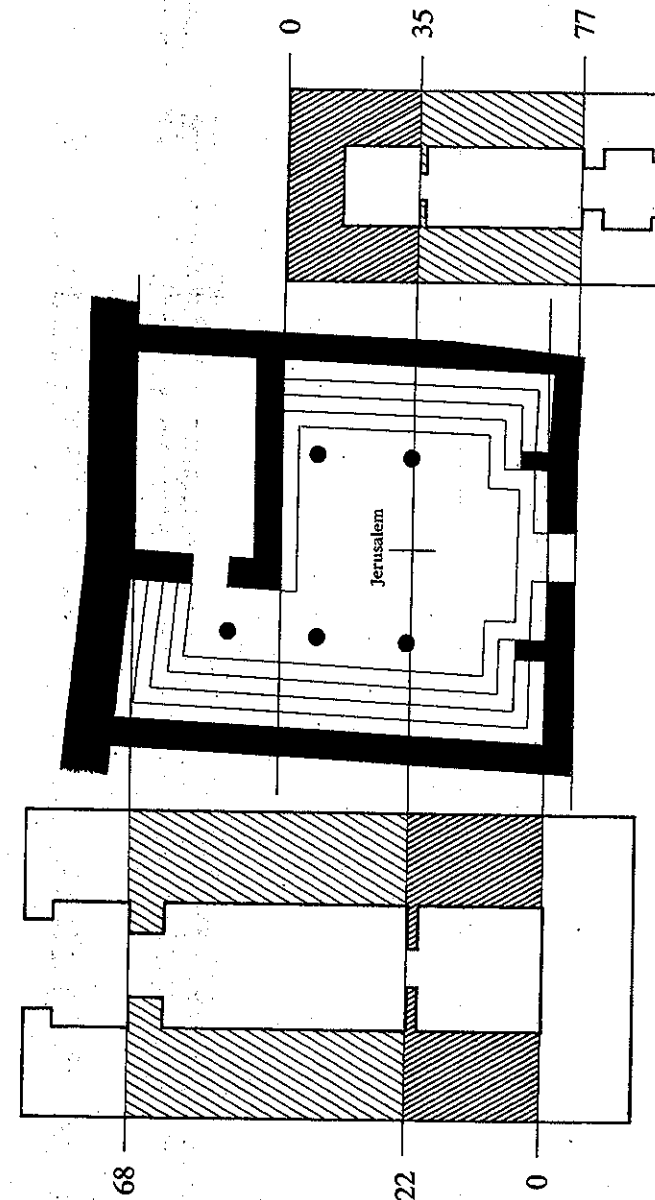


Figure 7.19 Conjectural reading-place, Masada Synagogue – after G. Foerster

When the building at Masada was made into a synagogue 'Jerusalem' was probably in the middle of the open space inside the main door (Figure 7.19). And after I had examined its proportions, I found that at Masada 'Jerusalem' was also the place where the Holy of Holies met the long room in two model Temples. The two characteristics were both of them present.

In Herod's castle at Herodium in 132 AD a large room was converted into a synagogue. In this case the proportions remained very simple (Figure 7.20). The room was provided with platform seats going up to a small seat 40 centimetres wide, which went all round the outside walls. On the far side from the main door a stone structure stood on this shelf to mark the sanctuary.³⁰ Two pairs of columns were added and the synagogue's centre point, 'Jerusalem', was half-way between them. It corresponded to the place where heaven meets earth in two Tabernacles. The Tabernacles went in opposite directions. The usual practice for designing synagogues was to choose Ezekiel's Temple as the model, but here it may not be an accident that two Tabernacles were chosen. The Tabernacle belonged to a time when Israel was wandering in the wilderness with Moses. At the time when the room in the Herodium became this synagogue, Bar Kokhba's Jews were in revolt against Rome. The designer may even have chosen the Tabernacle because this, for Israel, was another stage of wandering.

Magdala is almost a century older than the synagogues in the castles. No sign is left of its main door, but it was probably to the north, at the

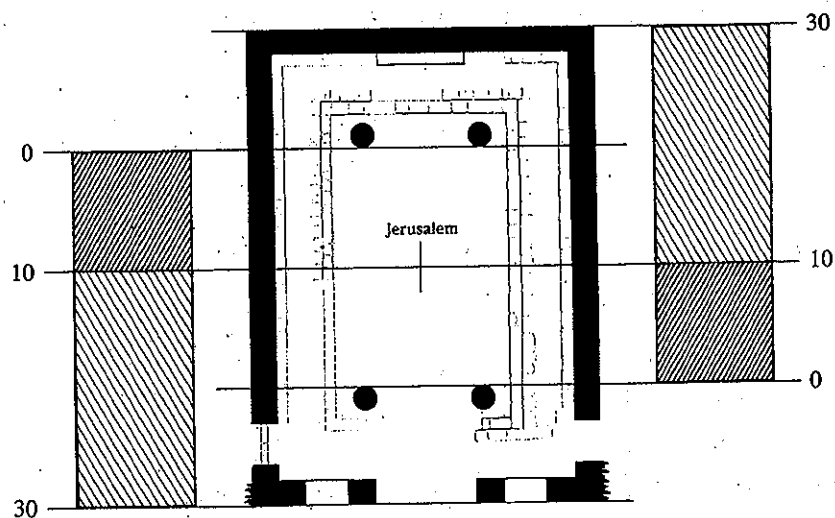


Figure 7.20 Conjectural reading-place, Herodium Synagogue – after G. Foerster

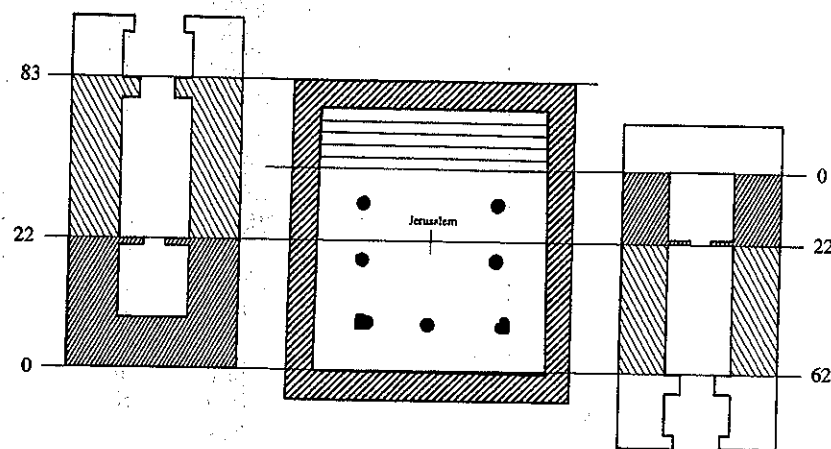


Figure 7.21 Conjectural reading-place, Magdala Synagogue – after V. Corbo

top of the seats (Figure 7.21). 'Jerusalem' is probably in the middle of the whole synagogue, and once again this is the point where, in two model Temples, the Holy of Holies meets the long room.

This brings us back to the earliest synagogue in the Palestine neighbourhood, Gamla in Gaulanitis.³¹ We have already considered the second phase of this building with the added foundation. For the first phase 'Jerusalem' is not in the centre of the main walls of the synagogue, but depends on the large model Temple drawn on the left (Figure 7.22). 'Jerusalem' is going to be at the point where the two inner rooms meet. The smaller Temple drawn on the right of the plan has its entry at the city wall and the point where the Holy of Holies meets the long room on the point which is expected to be 'Jerusalem'. The other end of the small model Temple sets the side of the inner colonnade near the door. But 'Jerusalem' is not yet in the centre. The other end of the inner colonnade thus has to be marked so that 'Jerusalem' is central. This design is in many ways like the synagogue at Herodium. But in Herodium 'Jerusalem' existed independently. It was in the middle of the synagogue, and the model temples were calculated later on. But at Gamla 'Jerusalem' is fixed by the large Temple on the left of the Figure, and it has to be made central by the construction of a rectangle formed by the colonnade. In other words there is a different order in the stages of proportional calculation. Appendix 9 illustrates the stages in such a proportional calculation for the layout of a church.

The four early synagogues we have now considered were in the area of Palestine. But Ostia was in Italy, and served as the sea port of Rome. The synagogue there had a slightly different design (Figure 7.23). A large temple, illustrated on the right of the plan, determined the point which

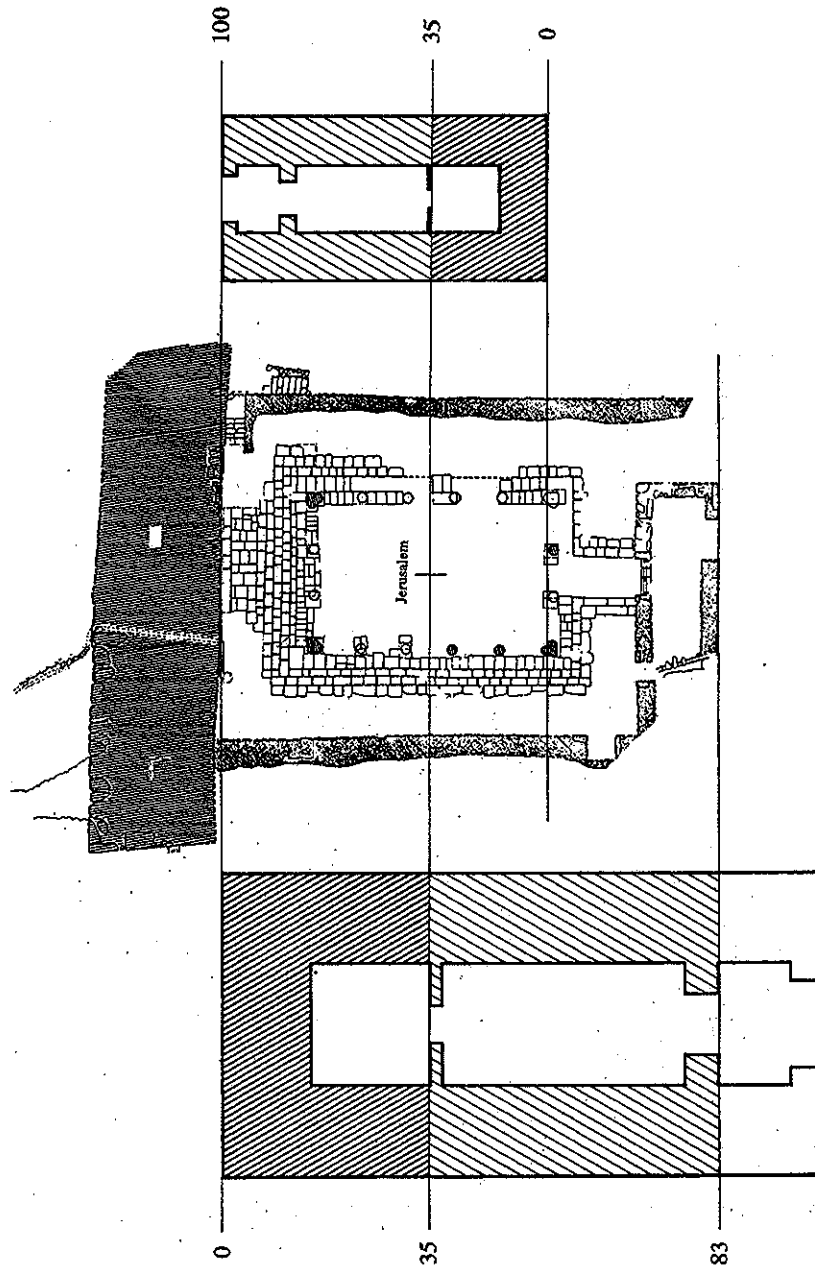


Figure 7.22 Conjectural reading-place, Gamla Synagogue – after S. Guttman

was to be 'Jerusalem'. This temple had its main door facing in the same way as the door of the synagogue. The main doorway of the hall was next laid out, and ensured that 'Jerusalem' was central. Then came a Temple whose long room stretched between the synagogue door and 'Jerusalem'. Its far end marked the place where the sanctuary arrangements would end. Unlike the other five synagogues the two Temples faced in the same direction. But this is a small change in design, visible also among later synagogues in Palestine. The distance of Ostia from Palestine probably had nothing to do with it. The Jewish community was closely knit, and there was constant travel to and from Rome.

The five earliest synagogues that archaeologists have discovered cover about a century and a half. They provide some valuable evidence for style and design, but they are so spread out in time that we cannot write a detailed history. Going on the little evidence we have, we can guess that ancient synagogues were common in the Roman Empire. They existed wherever there was a Jewish community permitted to build them.

The earliest inscription from a synagogue comes from Egypt, and is two centuries older than the earliest synagogue buildings which archaeologists have discovered. But during those two centuries many synagogues must have been designed in Egypt, and we can see the results in the five early synagogues we have just examined. None of

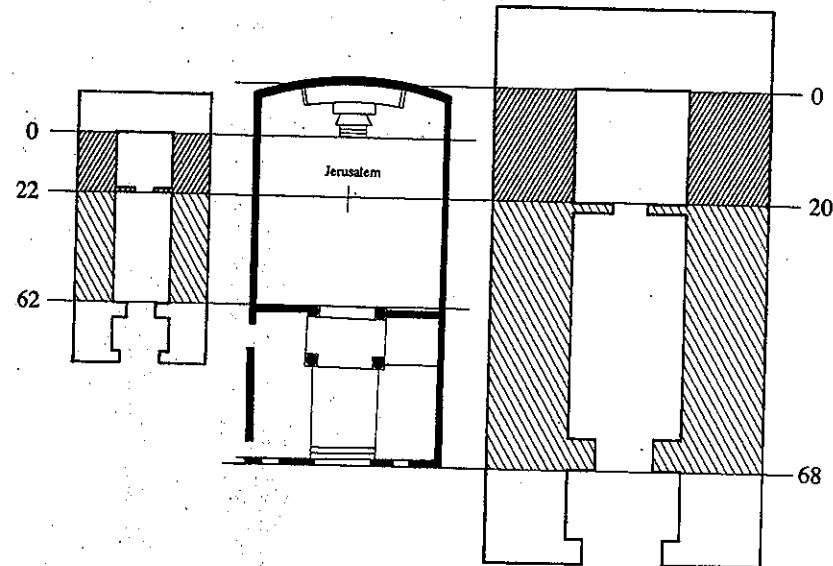


Figure 7.23 Conjectural reading-place, Ostia Synagogue – after M.F. Squarciapino

them are the same. Each of the five has its own individual design. But there is also a tradition of design which stretches back beyond the synagogues which the archaeologists have so far discovered. This accounts for the two regular characteristics of the position of the platform. During the last fifty years archaeologists have taught us a great deal about the early synagogues. But when these five earliest synagogues are analysed they already witness to a maturity of design, and to a tradition which has already been established.

Since the next chapter will be studying churches, this chapter will end with a summary of the traditional design of synagogues.

- A The students of philosophy in classical Higher Education included Jews and Christians. In the syllabus they were introduced to theological or contemplative mathematics, resulting in a special respect for the numbers from one to ten. These numbers were not only realities in the sensible realm, but also 'ideas' in the intelligible realm. 'Ideas' were the thoughts of God.³²
- B In Alexandria Philo was a Jew, who had studied philosophy. As an author he used theological mathematics, not only writing long pieces on the numbers from one to ten,³³ but also meditating on scriptural numbers. The designers of synagogues had a philosophy which was a humble reflection of Philo's. If they proportioned their buildings using scriptural numbers, they could imitate the heavenly Temple. The proportions were mainly those of the visionary Temple seen by the Prophet Ezekiel, but they could take proportional numbers from any of the objects which God had commanded men to make.
- C This book examines ancient synagogues from the Herodian period to 800 AD. The synagogue was usually designed following the model of the Temple, and the Temple had existed long before the synagogues, and received various interpretations. When synagogues began to be built they inherited a great many meanings of the Tabernacle. Or they might represent the altar and court of the Temple. Or they might be in the centre of the earth, and be Jerusalem.³⁴ A basic idea of the Tabernacle was as a 'tent of meeting' between God and his people.³⁵
- D Providing the reader agrees with my estimate of 'correctness',³⁶ the measurements show that the synagogues in the sample were accurately proportioned according to these scriptural numbers. This is confirmed by the regularity of the data in Appendices 4 and 5.
- E Synagogue services involve two places³⁷, one to which the ark is brought in, and the other, 'before the Ark', where the scrolls are read and where prayer is offered.³⁸ Synagogue length proportions reveal the existence of two temples in opposite directions, in order to illustrate the concept of the 'tent of meeting'. This overrides the concern for the direction in which a synagogue should face.³⁹

- F Some floor mosaics have a picture of a heavenly sanctuary, and synagogue services express the idea that heaven as well as earth should worship God.⁴⁰ Sacrifice was not permitted in the synagogue, but in the Jerusalem Temple the sacrifice of animals had at one time been offered. At this stage the synagogue services took place at the same time as in the Temple and were called by the same names. This deliberate coincidence is explained by the concept of *ma'amad* or 'position'.⁴¹ When in 70 AD the Temple was destroyed there were no more sacrifices. But the whole daily round of services in the Temple in Jerusalem was in fact repeated at the same time by the angels in heaven. So in this sense the cessation of sacrifice on earth was theologically of little significance, since the angels continued to sacrifice in the heavenly temple.
- G The rectangle⁴² and length proportions⁴³ of synagogues could be worked out by some method like an-Nairizi's.⁴⁴ Several proportions which are numerically different might have the same meaning. This is confirmed by the different measurements in the synagogue sample.⁴⁵
- H Much of the meaning of synagogue buildings can be worked out by means of proportions. But the mosaic floors of synagogues provide additional theological information, as well as accurate locations of the position 'Before the Ark'.⁴⁶

Providing these arguments are along the right lines, synagogue design is traditionally based on a set of mathematical data. This set of data is limited. Its main division is into scriptural models, such as the Tabernacle or the Temple, whose dimensions were supplied by God. Within the measurements of these scriptural models two numbers are taken and used to form a proportion. This is applied to one length or one rectangle of the new synagogue plan, and only used once. For the next proportion in the new synagogue another scriptural proportion must be chosen.

This procedure with proportions was the mechanics of the craft of synagogue design. Like any craft one builder handed it down to the next, whether he happened to be a sophisticated architect in Alexandria, or a more humble craftsman in a village.

The designer knew how to choose a scriptural proportion and apply it to his building, and in itself this process is limited and mechanical. It is the role of Bezaleel.⁴⁷ But for meditation on the design we depend not on craftsmen, but on those who, like Moses, meditated on the mysteries of the Chariot of God and the Creation.

The builders felt that their technical method depended on two things which people could trust. The first was the Holy Scriptures, and the second was the philosophy of the Jewish Platonists. Their method combined the two. Whenever God commanded certain things to be made, like the Tabernacle, his instructions included many numbers. But

these numbers to a Platonist existed as basic truths in heaven. So in building a synagogue the designers were in their way fulfilling what Moses was to do when he was told 'See that you work to the design that you were shown on the Mountain' – which means also in the presence of God.⁴⁸

These teachers meditated on the subjects of the Chariot of God and the Creation. But they were unable to share their meditations with the immature, and the design of synagogues has therefore remained for most people a well-kept secret.

Notes

- 1 Josephus, *Ant.* 3. 123.
- 2 Ezek 8.8.
- 3 m.Yoma 5.2.
- 4 Tosefta Yoma 4.6, b.Yoma 85a. See also Ginzberg, Vol. 1, n. 39.
- 5 See Job 38.6, 1 Enoch 18.2.
- 6 The mosaics at Susiya and Isfiya have a similar meaning.
- 7 2 Chr 3.1.
- 8 See Gen 22.
- 9 Gen 22, *Promise* E. 30–31, H. 30–33.
- 10 Gen 18, *Promise* E. 32–33, H. 34–35.
- 11 *Promise* E.38, quoting from Yalkut Vayyera 99.
- 12 Gen 22.17.
- 13 This line of masonry was not attached to the foundations on either side. On most plans of Gamla the reconstruction of the small columns on the opposite side to the main door is misleading.
- 14 For Sardis synagogue see Seager (1975).
- 15 See m.Berakoth 5.3, m.Erubin 3.9, m.Taanith 2.3.
- 16 Philo, *Q.Gen.* 3.49.
- 17 Like the circle in the centre of the prayer room in the House of Leontis, Beth She'an.
- 18 m.Taanith 3.8.
- 19 Song of the Three 36, 38, 40–41, 52. See also Ps 148.
- 20 A passage before this, Jub 4.25f, makes the earth more like the Temple: it has a Mountain of Burning in the location of the altar of incense. The exploration of the earth in 1 Enoch 24–33 has a journey starting with Mount Sinai (25.3, identified in 1.4), and going to the centre of the earth, i.e. Jerusalem (26.1, 27.1–5). From there he continues eastwards to the Mountain in the Desert (28.1), crosses the Erythraean Sea (32.2), and ends in Eden, 'the Garden of Righteousness' (32.3).
- 21 For instance in the courts at Sardis 2, Beth She'arim and Na'aran.
- 22 Ex 38.8, 1 Kg 7.23ff ('the Great Sea'), m.Middoth 3.6.
- 23 Ex 17 and Num 20.
- 24 For example the synagogue at Rimmon, see Fig. 4.11, p. 47.
- 25 Tosefta Sukkah 4.6, here translated by Neusner in *Tosefta, Second Division*, 224.
- 26 Examples of two Temples the same way round are Hammath Tiberias South (Fig. 7.6) and Sardis (Fig. 7.12), and of Temples the opposite way round are Beth Alfa (Fig. 7.9) and Jericho (Fig. 7.15).
- 27 As at Sardis (Fig. 7.12, p. 98), and perhaps Na'aran (Fig. 7.4, p. 90), providing it had no apse.
- 28 As at Hammath Tiberias South (Fig. 7.5, p. 91) and Beth Alfa (Fig. 7.9, p. 95).
- 29 See Appendix 1.
- 30 Stones were found, according to the late Fr Virgilio Corbo, on the upper shelf at the end opposite the door. They may have marked the sanctuary. I have taken the liberty of adding them to Foerster's plan, though I do not know how big the sanctuary mark may have been.

- 31 The building at Jericho excavated by the Hebrew University (see E. Netzer, Y. Kalman, R. Loris) is like a synagogue. Its exterior has the right proportions. Like Gamla it has benches all round. The cistern might be for ritual washing. It is symmetrical, which might mean that, like Gamla or Herodium, its place for reading the law might be in the centre. But it is unlikely to be a synagogue. Several other buildings than synagogues display all the features mentioned above. The interior of the building is not proportioned to make the centre correspond to the point in a temple where heaven and earth meet, which makes it unlike the other early synagogues in Palestine. This Jericho building might, for example, have been a large living space for guests, as the subsequent addition of a triclinium might suggest.
- 32 Chapter 2, pp. 16–20.
- 33 See an example of his essay on seven, on p. 184 below.
- 34 Chapter 3, pp. 39–43 and Chapter 6, p. 65–67.
- 35 Chapter 3, pp. 27.
- 36 See Appendix 1, p. 221.
- 37 Chapter 4, pp. 39–40.
- 38 Chapter 4, p. 40.
- 39 Chapter 4, p. 40. Synagogue courts are an excellent example: see Chapter 6, Fig. 21 p. 96.
- 40 Chapter 5, pp. 55–63.
- 41 Chapter 5, pp. 63–65.
- 42 Chapter 6, pp. 70–79.
- 43 Chapter 6, pp. 79–81.
- 44 Chapter 6, pp. 65–70.
- 45 For Appendix 4 see p. 231 below and for Appendix 5 p. 232.
- 46 In the present chapter.
- 47 Ex 31.
- 48 Ex 25.40.

CHAPTER EIGHT

Christian Dedication Services

This chapter aims to do three things. As we start to examine churches we need to see how the archaeology and documents differ from the study of synagogues. Secondly the aim is to examine the Dedication services. Documents which provide evidence for these have been preserved among Christians, but no ancient evidence survives among Jews. This is of course the case among many ancient documents on other topics. The Jewish ones are lacking, but the Christian ones have survived. The opposite is in fact the case for next topic. Jewish archaeology of the first three centuries after the Herodian period is now rich, and from the whole of this period synagogues have been discovered. The remains of churches are very rare. The third question we must examine is the cross church and its lighting.

The dates of the churches and the dates of the Christian documents vary a great deal, and are divided geographically and in time. Churches disagreed with each other over their teaching, but doctrinal differences have no influence on the way their churches are designed. The secrecy goes on for Christians since they are indirectly influenced by Pythagoras. And there are signs that even opinions about church design are meant for a small group of mature people. A monk, for instance, tells his abbot his meditations on the church, and till his death vows the abbot to silence.¹ Another example is that a Nestorian stated that Nestorius himself arranged that the church should have a particular meaning. This is a loyal statement. It shows that the Nestorian got his explanation from another Nestorian. But it is not quite true, because Thomas of Marga, not a Nestorian, reports the identical arrangement.² People did not speak about the design in public, so he would not have known that it was a common possession of Christianity. I am conscious of many failings in the present book. They would be serious errors if they relied on a complete history of the period available to everyone. But, in the present state of the evidence, and the secrecy of some of it, the most one can achieve is a summary. At least what it shows is the effect of tradition.

The geographical coverage of this book is concerned with origins. Its initial point of reference for synagogues is the Holy Land, and the

ancient Jewish communities who happened to live elsewhere. We can think of these synagogues as evidence for part of an original history. But when the book deals with churches, it has to be remembered that they were almost all destroyed in the early fourth century. Of course they were then rebuilt. But, if we have only an archaeological view of the fourth-century evidence, new churches seem to spring up all over the Roman Empire, and we have almost no archaeological evidence for what went before. It would have been extremely valuable to have had a detailed history of formal churches in, for example, Rome during the early period. Indeed I have paid very little attention to the city of Rome in this book for two reasons. Firstly Rome has many churches which were founded in the fourth and fifth centuries. But they have been in continuous use, and most have been changed. And secondly there are very few early Roman documents about the design of churches.

I have also paid little attention to the Italian Renaissance. Palladio was a splendid original architect. But it matters more, as far as this book is concerned, that he was also an architect who obeyed the rules which had been set down from time immemorial.

Educated Christians, like Jews, were interested in the philosophy of numbers.³ Eusebius calls Philo of Alexandria 'a man most celebrated not only among many of our own [Christian] scholars, but also among many outside the Church'.⁴ Philo's many followers included Isidore, Archbishop of Seville, who in about 600 AD wrote a text on numbers along Philo's lines (see p. 195 below). It contains simplified versions of his classical meditations on the numbers one to ten, and Isidore ends a section on a particular number by giving all the scriptural references. He also comments on some scriptural numbers above ten. Thus Christians, like Jews, believed that numbers were Platonic ideas, and – in religious terminology – a way of proceeding from the material to the spiritual world. This meditative attitude continued for as long as Higher Education continued, certainly to a period after 600 AD. The next two chapters aim to show that the design of churches was based on that of synagogues. If this is true then Christians had, right from the start, acquired the habit of designing churches in scriptural proportions.

For churches the archaeological sample consists of seventy-five buildings, founded before 800 AD, which contain altars. Not all the buildings of this period have preserved their altars, which makes the selection somewhat random, but in a sample randomness is an excellent quality. The extent of the sample is shown in Figure 8.1. Admittedly there are buildings without altars, some of which are too famous to omit, such as St Peter's, Rome or Agia Sofia in Istanbul, and some early British churches. The end of this book will show how the traditional church design in Britain finished. In fact many other countries could have been chosen to illustrate the end of this tradition.

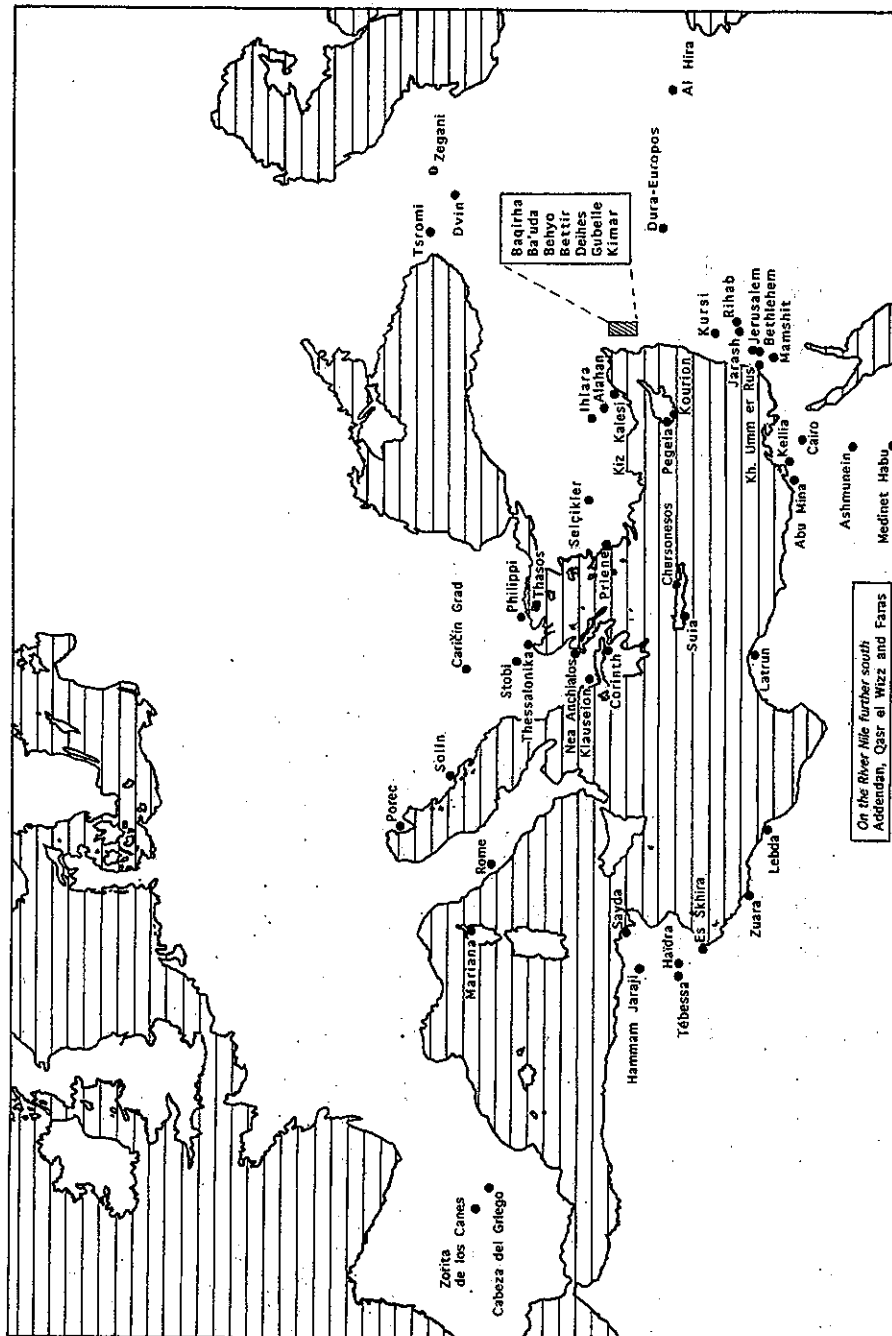


Figure 8.1 Sample of Churches with Altars built before 800

In this book churches are regarded as deriving from synagogues. But before the fourth century archaeological evidence for churches is severely lacking. This means that any history of how synagogues influenced early churches is impossible. The remains of early churches are rare because in 311 the Emperor Diocletian commanded that Christian churches should be destroyed. Apparently the authorities scrupulously obeyed him, and no formally planned churches were left standing. From a historical point of view this had the effect of magnifying the role of his successor Emperor Constantine, who, in the minds of some scholars, was wrongly assumed to have invented formal churches.⁵

In addition a number of early informal house churches had also been discovered.⁶ It is true that some Christian communities were small and unpopular, and had to make do with house churches. It may have seemed appropriate for an archaeologist to ask how in the fourth century formal churches had grown out of house churches. But from a historian's point of view this question is too limited. It asks nothing about the formal churches which Diocletian destroyed. There were indeed many such churches. Origen describes martyr's chapels⁷ and formal churches which were founded in the first half of the third century.⁸ When Eusebius of Caesarea spoke of the period round about 280, he wrote, 'How can anyone describe those vast assemblies, and the multitude that crowded together in every city, and the famous gatherings in the houses of prayer? On their account they were dissatisfied with the old buildings, and founded and erected large churches in all the cities'.⁹

Formal buildings went with formal liturgies. But, providing our argument in the next two chapters is sound, this formality will be seen to be quite old. If synagogues were the model Christian worship was neither more nor less formal than prayers in the synagogue. At least it has little, apart from financial support, to do with the Emperor Constantine.

Two New Testament works, the Letter to the Hebrews (85 AD ?) and Revelation, or the Apocalypse (95 AD ?) describe the heavenly Tabernacle. Hebrews contained such valuable teaching that, though it was not in his style, it was assumed that it was by St Paul, or one of his disciples.¹⁰ This at least guaranteed its place among the canonical books of the Church. Hebrews presented Jesus as an eternal High Priest, who 'has taken his seat at the right hand of the throne of the Majesty in heaven, a minister in the real sanctuary, the Tabernacle set up by the Lord, not by man'.¹¹ The author of Hebrews envisages thrones in the heavenly Tabernacle. Chapter 9 contains a description of the earthly Tabernacle, with one equally surprising feature: the gold incense-altar was not just outside the Holy of Holies, but inside it.¹² So the High Priest Christ 'has taken his seat at God's right hand' and awaits the Christian people, who can come into the Holy of Holies with confidence.¹³

The Apocalypse had always been officially accepted by the western church. But during the fourth century doubts arose in the eastern Church about the identity of the author, someone called John. The churches in Asia Minor, Syria and Palestine rejected the book, and it was only in the thirteenth century that all the eastern churches eventually accepted it. Its influence must have varied. Its account of the Heavenly Tabernacle is along the same lines as the Letter to the Hebrews but a little fuller.

The Apocalypse mentions not one but two candelabra with seven lamps, one in the long room of the vision, that is to say on earth, where the vision begins, and the other in heaven.¹⁴ It spoke of John measuring the temple on earth.¹⁵ The spiritual vision of the heavenly Tabernacle keeps changing, but Figure 8.2 is a conservative reconstruction. John sees first a priest among seven gold lamps,¹⁶ presumably about to be placed on the lampstand. This is the long room or Holy Place of the heavenly Tabernacle. John then enters the sanctuary¹⁷ to the east of the building,¹⁸ and the thing which first catches his eye is God's throne, surrounded by twenty-four thrones for elders.¹⁹ These are the seats shown in Figure 8.2. This scene may seem more like a heavenly synagogue, in the style of *Tosefta Megillah*, than a heavenly Tabernacle,

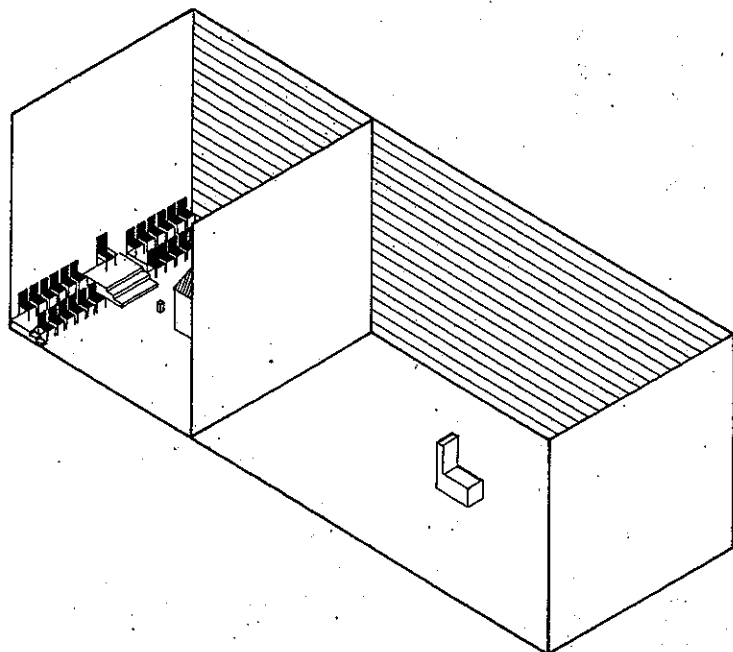


Figure 8.2 The heavenly Tabernacle according to the Apocalypse

but in fact it is an attempt to combine interpretations of the Tabernacle and Ezekiel's description of God's throne. This is why God is surrounded by the four winged beings who are cherubim.²⁰ Later on John, standing once again in the long room, was unable to see the sanctuary, since it is hidden by the veil which he says is the sky. But then the sky is destroyed,²¹ and the long room, the earth, can see the throne of God and the Lamb. At this point John follows a tradition, also held two centuries before by the Testament of Levi. He sees, like Isaiah, a gold altar²² before the central throne. This altar was not for animal sacrifices, but for a sacrifice 'reasonable and bloodless'. Under the altar are 'the souls of those who have been slain for the glory of God'.²³ But again the scene changes, and the next time 'God's temple in heaven was opened ... the Ark of the Covenant was seen within the temple'.²⁴ This also is shown in Figure 8.2, though John does not mention seeing the seats and the altar at the same time. The Ark is shown covered by a canopy.

As we shall see, this was a text taken very seriously by the designers of churches. Its effect can be measured by the large number of ancient altars either with a reliquary on the floor beneath them, or a saint's burial in a crypt directly beneath the altar.²⁵

Even before the reign of Constantine some Christians believed that the church's model was the Tabernacle. Methodius of Olympus, who died in Diocletian's persecution, had written *Concerning Virginity*. Its alternative title was *The Symposium*, since it described a banquet to which Virgins were invited and made their speeches. In her speech the virgin Thallousa likened a position in the church to the incense-altar in the Tabernacle (see p. 189). This was not simply a literary or spiritual comparison, for when she refers to the incense altar's position in the Tabernacle, she suggests a parallel position in the physical church building (Figure 8.3). The Virgins were to stand directly in front of the chancel steps. Thallousa also regards the image of the tabernacle as pointing to God's dwelling in heaven.

The precedents for church dedication services were those for the Tabernacle and for the Temple. The first dedication of a church site was when the building had just been begun, and was called either the 'Laying of the Foundations' or 'Laying the Foundation Stone'. This was based on the rebuilding of the first temple by 'Zerubbabel son of Shealtiel and Jeshua son of Jozadak' in the book of Ezra.²⁶ The second service, which in modern times has usurped the name 'Dedication', was when the building had been finished. This service followed two scriptural precedents. The first was the dedication of the Tabernacle,²⁷ and among other things involved anointing the church with oil. The second precedent was the dedication of Solomon's Temple, which had involved bringing in the Ark of the Covenant. In a church dedication the altar was brought in and assembled, following the precedent of Ezra.²⁸

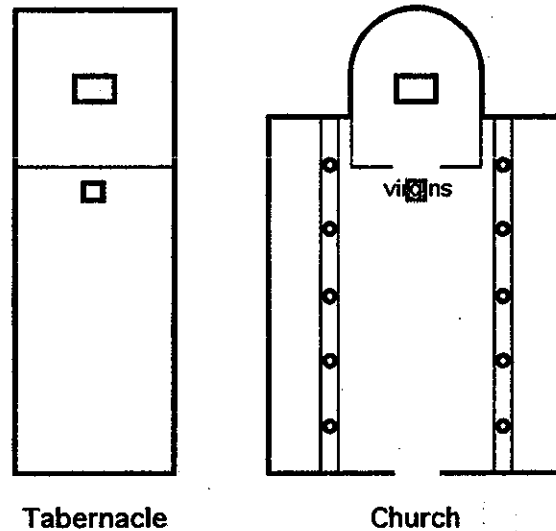


Figure 8.3 Thállousa compares the Church and Tabernacle

The Byzantine service when the work is to be begun on a new church is simple. The Bishop arrives when the foundations have been laid out. He goes round them censing them. He ends by standing at the place where the altar is to be, saying a prayer, and placing the first stone – the ‘foundation stone’ – there. This is the sign for the builders to begin their work. It is set out at greater length in the documents.²⁹ These are the earliest documents I know. They date to the tenth century. But the service existed long before. Thus when Empress Helena came to Jerusalem in 326, she was at two ‘dedications’ before either church had been built. One was the church on the Mount of Olives, and the other at Bethlehem.³⁰ This service must have ancient roots.

The Armenian service, dating to the eighth century, is richer. Psalms are sung, following the example of Ezra 3.10. Twelve stones are to be set at the corners of the building, which the Bishop blesses. He himself takes a stone to the centre of the sanctuary, which will become the altar, and formally starts the digging, ‘according to the vision of Ezekiel about the Temple, and the design of St Gregory for the holy martyria’. He ‘draws on the site the measure of the size of the building’.³¹ It is unlikely that the Bishop himself designed the layout of the church, but in the service he formally takes the responsibility, because the layout is held to be something mysterious. The service ended with readings from Scripture at the position where the altar was to be built. The Latin rite in the *Pontificale* also placed a wooden cross on the future position of the altar.

This service, the ‘Laying of the Foundations’, seems to be old and widespread. It sheds a great deal of light on the church’s layout. It implies that the planning had all been completed before this service. In the *Life of Porphyry* a variant of this rite is described. In 400 in Gaza the architect Rufinus had received a plan of the building from Emperor Arcadius’ wife, Eudoxia. He marked the foundations in plaster in the site. Bishop Porphyry after a prayer, gave the command to the people to dig the foundation trenches. Then, when the building stones had been brought to the site, there was much prayer and singing, and afterwards the Bishop was the first to fetch the stones and put them into the trenches.³²

In ancient synagogues the Holy Ark, when it reached its liturgical position, stood in a ciborium or baldachino, which stood for the heaven of heavens.³³ Some Palestinian rabbis taught that the baldachino and the Holy Ark were of equal sanctity.³⁴ Such a ciborium is illustrated in the ‘Samaritan’ synagogue at Beth She’an (see Figure 5.12 above, p. 64). In most ancient synagogues we can only guess at the exact place where the Holy Ark was to stand. But in Sardis synagogue there is a table which has on either side of it double-headed lions, no doubt to recall the cherubim on the lid of the Ark of the Covenant.³⁵ The length proportions show that the Holy Ark was placed on this table.³⁶ One proportion fits it with the Ark of the Covenant in the Temple and another with the Ark in a smaller Temple (Figure 8.4). Comparable proportions are shown for the altar in Alik in the island of Thasos, (Figure 8.5).³⁷ In churches which are traditionally designed, a scriptural proportion is worked out for one measurement. But when it has served

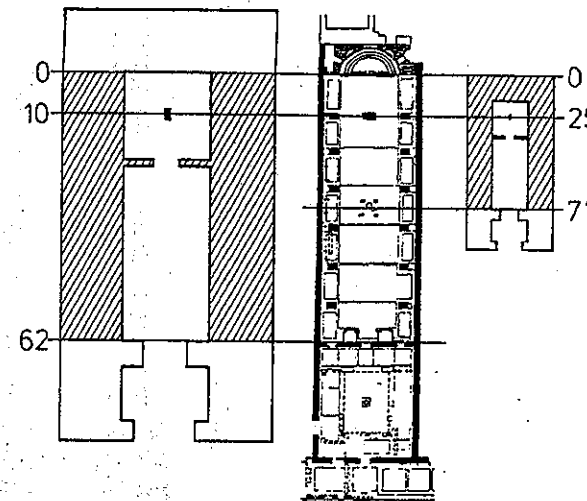


Figure 8.4 Sardis, the proportional position of the Ark table – after A. Seager

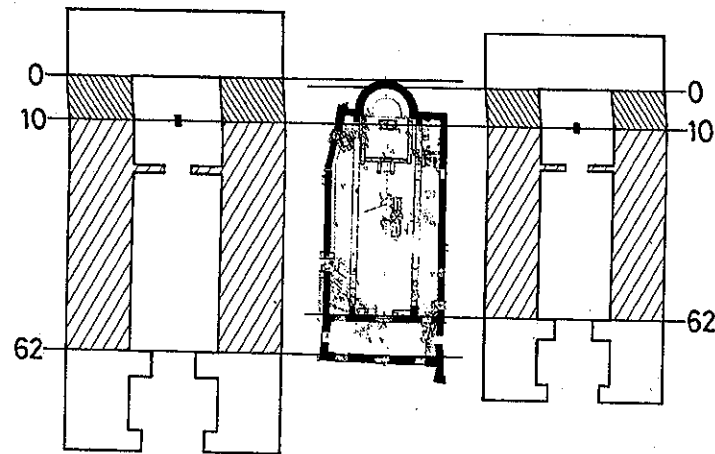


Figure 8.5 Thasos, Alikí: the proportional position of the altar – after J.-P. Sodini

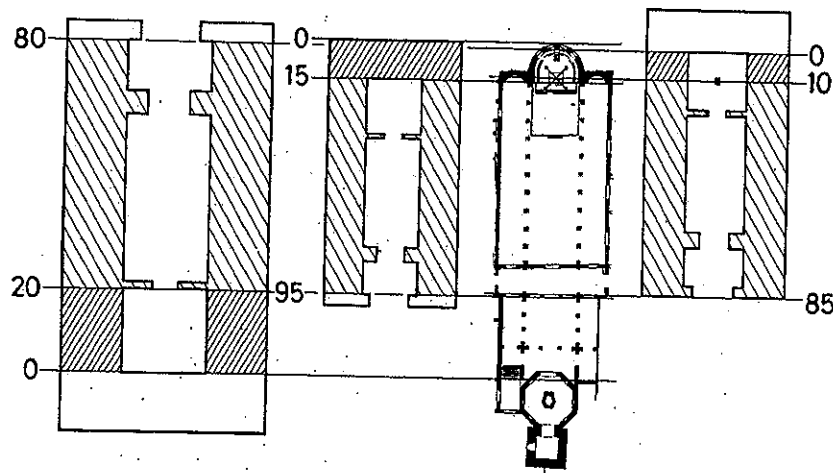


Figure 8.6 Separate proportions for the ciborium at Porec – after U. Piazzini

its purpose, this proportion is abandoned, and another proportion is chosen.³⁸ This has the practical purpose of preventing any suggestion of a material model for the synagogue or church. The analysis of the Church of St Euphrasius in Porec shows how proportions, even though they are very close together, are in fact separately calculated (Figure 8.6). The pair of temple plans on the left, going in opposite directions, show the effect of the apse and the court. But in the temple on the right, the

middle of the ciborium (marked by the lines between the small columns) is proportionally the scriptural Ark of the Covenant, and has no contact with any previous proportions.

When eventually the church building was finished the first eucharist was held. Indeed Pope Vigilius of Rome regarded this as the basic thing which consecrated the church.³⁹ Dedication services varied greatly,⁴⁰ but their basis was the physical preparation for the eucharist. The altar was set up. Usually the altar had relics of the martyrs inserted into it, like the heavenly altar of the Apocalypse, and beneath it 'the souls of those who had been slain for the glory of God'. We have seen how the altar's place is in the position of the Ark of the Covenant. But this is not a straight piece of scriptural interpretation. The place of the Ark should also be seen in the changeable light of the Apocalypse, at one time as the position of an Ark and then as the location of an altar.

The Dedication service also involved anointing the church with oil, as Moses had done with the Tabernacle. 'You shall take the anointing oil, and anoint the tabernacle and all that is in it, and consecrate it, and all its furniture: and it shall become holy'.⁴¹

God's gift, which this Christian liturgy of dedication hoped for, would be the same as that at the dedication of the Tabernacle by Moses. He 'finished the work. Then the cloud covered the Tent of Meeting, and the glory of the Lord filled the Tabernacle'.⁴² And the same thing happened when Solomon had dedicated the Temple. 'When the priests came out of the Holy Place, a cloud filled the House of the Lord, so that the priests could not stand to minister because of the cloud: for the glory of the Lord filled the house of the Lord'.⁴³ The arrangement for the Nestorian service refers to this history, and also to the closely-related theme of the universe and its creation.⁴⁴ The poem for the new church at Edessa expresses this very well, and the notes draw attention to comparisons in the documents:

For truly it is a wonder that [the church's] smallness is like the wide world⁴⁵ ...

Behold, its ceiling is stretched out like the sky ...

And it is decorated with golden mosaic, as the firmament is with shining stars.

And its lofty dome – behold it resembles the highest heaven.

Cross-shaped churches naturally appealed to Christians. Emperor Constantine chose a cross shape for his Church of the Apostles, and even this may not have been the earliest. We shall start with a strange building founded in 379 AD, the cross-shaped Martyrium of St Babylas at Ka'oussiye near Antioch. It is a large building, eighty yards from one side to the other. Its east end is at the bottom of Figure 8.7. The square sanctuary in the centre was a holy place, since it contained the altar and the tombs of the

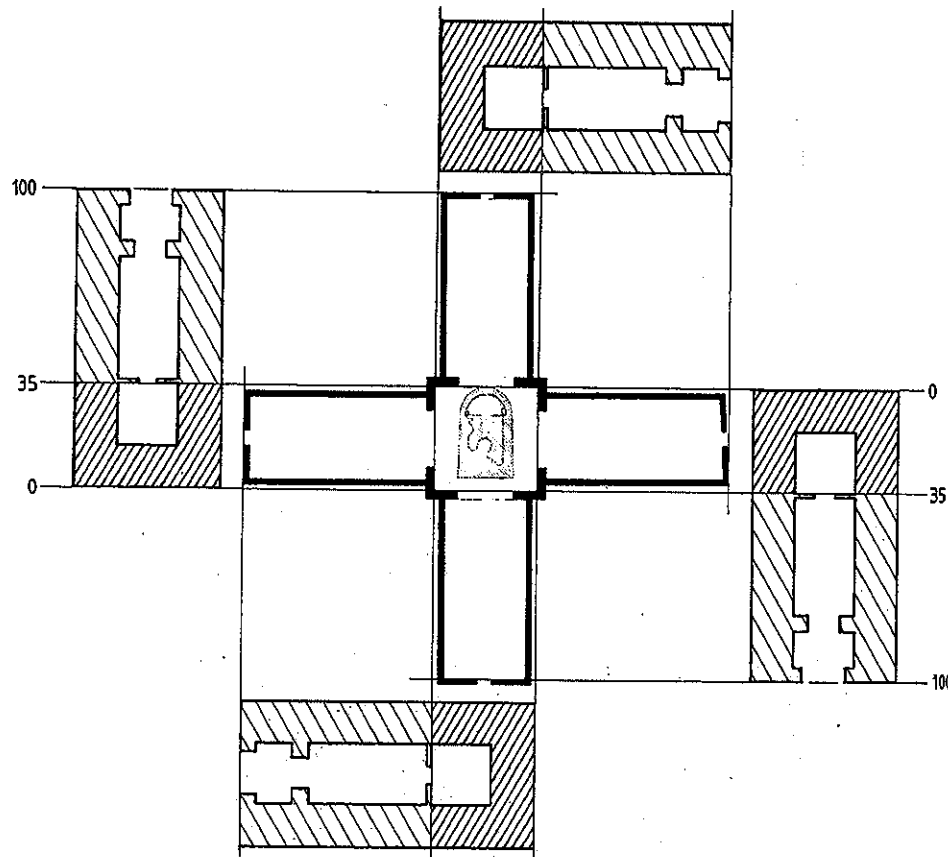


Figure 8.7 Analysis of the Martyrium of St Babylas – after E. Baccache

saints. The proportions of its central room are those of the Holy of Holies. In fact the area of the Holy of Holies of four temples facing outward to the points of the compass. They are each in the same proportion.

The layout of St Babylas is unusual as a ground plan. But set it one storey up and it is the arrangement of a vast number of cross churches with domes. Let us take as an example Hagia Sophia in Istanbul, since this was in many eyes the guideline for church architecture (Figure 8.8). Its dome is supported on arches, which form a square on the floor. In Hagia Sophia the square is further divided in half in both directions, which determines the layout of the outer walls: the mechanics are the same as for St Babylas. And being up on the roof, the arch proportions do not affect the regular church plan of sanctuary and ambo, though they do affect the size of the central aisle.

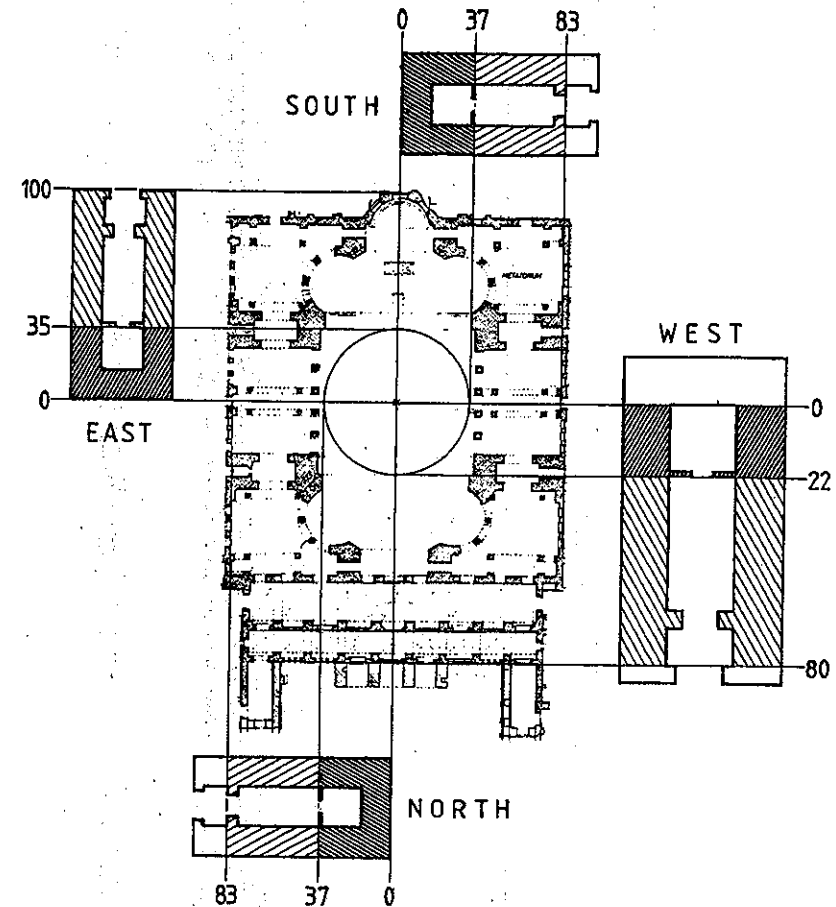


Figure 8.8 Constantinople, Hagia Sophia, position of Dome – after R. van Nice

Many different proportions were used to fix the position of the domes. In Hagia Sophia, Thessaloniki, built in about 625, the small temple stretching west from the dome has its Holy of Holies area occupying the full square (Figure 8.9). But the temple stretching east, ending at the altar, has its Holy of Holies area occupying half the square.⁴⁶

Why did they trouble to use these proportions for the dome? Domes represented the highest heaven,⁴⁷ and the spiritual intention was to make the light from highest heaven illuminate the whole church (Figure 8.10). 'God is light',⁴⁸ and Christians are 'Children of light'.⁴⁹ So the dome – and beneath it the dome square – is the Holy of Holies area

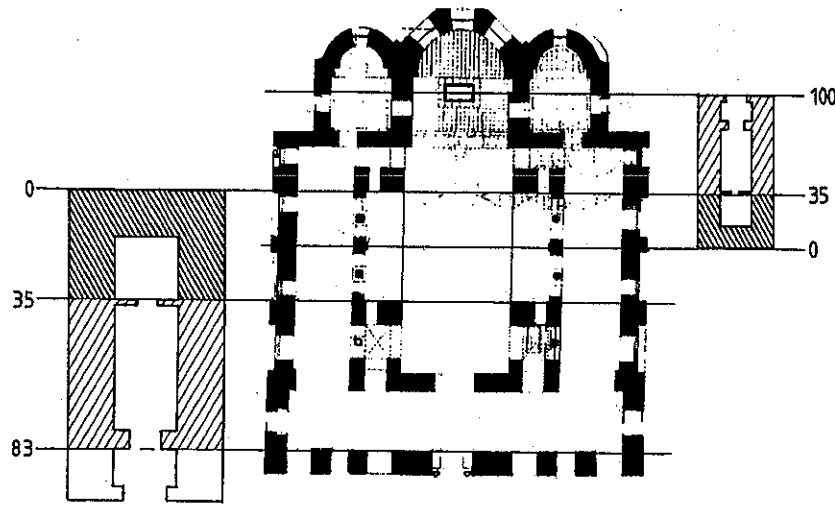


Figure 8.9 Hagia Sophia, Thessaloniki, position of Dome – after K. Theoharidou

where heavenly light enters the church. But the light stretches out to occupy the rest of the temple, to the four outer walls of the church. God 'hath called us out of darkness into his marvellous light'.⁵⁰ These ideas, it goes without saying, are expressed in a strictly mathematical way. But in church planning this process has survived for over a millennium.⁵¹

Notes

- 1 d-Thomas 2, p. 205. Compare Methodius' title; the *Symposium*, a small group of spiritual women, or in Maximos' introduction to the *Mystagogy* (not printed here) describing his dependence on a 'grand old man' for the meditations on the mystery of the church. See Berthold 183, and 215 note 4.
- 2 d-Thomas 4, p. 205.
- 3 Such as *On the Mysteries of Numbers*, ascribed to Epiphanius, in PG 43.509–517.
- 4 Eusebius, *H.E.* 2.4.2.
- 5 See for example the start of chapter 2 of Krautheimer (1975).
- 6 For a history of scholarship see White 11–15.
- 7 Origen, *Hom. 4.3 in Jer.* (PG 13.289A).
- 8 Among others Origen, *Hom. Jes. Na. 10.3* (PG 12.881C).
- 9 Eusebius, *H.E.* 8.1.5. See also Lactantius, *de mort. persec.* 12.
- 10 Westcott lxiii–iv.
- 11 Heb 8.1–2.
- 12 Heb 9.4.
- 13 Heb 10.19f.
- 14 See Apoc 1.12, 4.5.
- 15 Apoc 11.1.
- 16 Apoc 1.12–20.
- 17 Apoc 4.1–2.
- 18 Apoc 7.2.

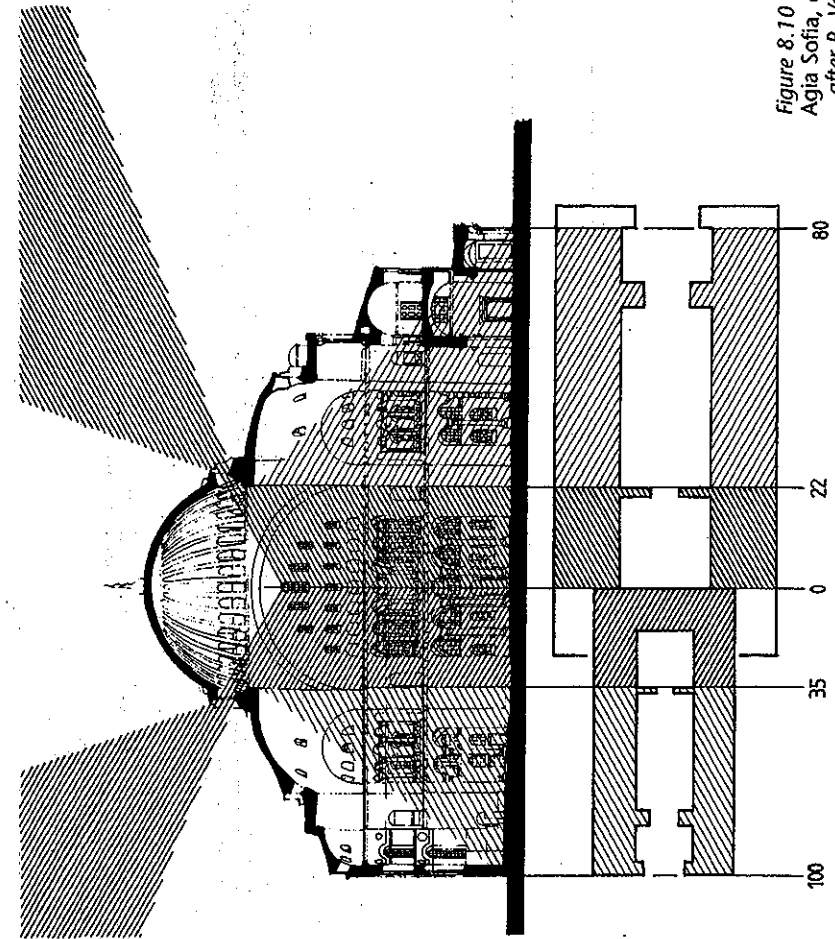


Figure 8.10 Constantinople, Hagia Sofia, dome and lighting – after R. Van Nice

- 19 Apoc 4.4.
- 20 Ezek 1.5-14, Apoc 4.6.
- 21 Apoc 6.13.
- 22 Apoc 8.3. See Isa 6.6, TLevi 3.6.
- 23 Apoc 6.11.
- 24 Apoc 11.19.
- 25 This vision is of a single building whose characteristics change. The unity of the structure is thus more emphasised than in commentaries like Charles, Farrer and Sweet.
- 26 Ezra 5.10, 1 Esdr 5.57.
- 27 Ex 40.1-2, 9, 33-38.
- 28 1 Kg 8.1-11, Ezra 5.2-3.
- 29 See d-Laying a Church's Foundation, p. 208.
- 30 Eusebius, *Life of Constantine* 3.43.
- 31 See d-John of Odzun 11, p. 203.
- 32 Mark the Deacon, *Life of Porphyry* 78-79. There is no mention here of an altar-stone, but the fact that it is omitted may not mean very much in this context. This does not pretend to be a technical description of the service.
- 33 d-Thomas of Marga 6, p. 205.
- 34 p.Megillah III.1.73d, pp. 61f.
- 35 See Gutmann (1975) 160.
- 36 Not for instance as 'a monumental and imposing lectern', the 'tentative answer' of Kraabel 487. The readings were no doubt done from the bema.
- 37 One altar in the sample, in Libya, Zuara church 4, is in the position of the Ark of the Covenant, 25: 30, in a small area the shape of a Tabernacle (see Appendix 7, p. 238). This is not so much like the other African churches in the sample which have nave altars, but more like some of the church *bemata* which we shall deal with later in this chapter.
- 38 See Appendix 9 on church layout, where each scriptural proportion functions only for one task.
- 39 See PL 82.834.
- 40 See further Wilkinson (1993).
- 41 Exod 40.9. See d-Nestorian 20, 208, d-Ded.Gk 14, 209. See also d-Germanus 1, 198.
- 42 Exod 40.33.
- 43 1 Kg 8.11.
- 44 d-Nestorian 14, p. 207.
- 45 See the notes to the document (p. 194). See also d-Maximus 2 and 3, p. 197, d-Nestorian 5, p. 206, d-Yahya 7, p. 210, and d-Simeon 1, p. 214 and 15, p. 216.
- 46 No doubt it was intended that there should be a proportion to the central apse, but the measurements of the building are not accurate enough.
- 47 See d-Edessa 6, p. 194.
- 48 1 Jn 1.5.
- 49 Lk 16.8, etc.
- 50 1 Peter 2.9.
- 51 See Appendix 10, p. 250.

CHAPTER NINE

The First Part of the Eucharist

The designer of a synagogue aimed to make the building appropriate, spiritually and practically, for morning and evening prayer. The aim of church design was the Eucharist. This chapter will examine the first part of the Eucharist, which has inherited a great deal from the synagogue. This is reflected in the similar architecture of churches and synagogues. But Maximus the Confessor equated this section of the Eucharist with the sensible realm, and the second part to the intellectual world.¹ The building may stand for one thing in the first part of the service and quite another in the second.

The synagogues so far discovered, and which can be surveyed, date from the Herodian period to 300 AD. They faced in different directions. But almost no churches belong to this period, and there is far too little evidence to make a history. Then in the fourth century, when the evidence becomes available, a division appears. In the Greek-speaking part of the Roman Empire Christians believed that God's dwelling was in the east, and churches normally had their apses to the east.² But when churches were designed in Latin-speaking areas, such as Rome, North Africa or Spain, there was often no specific sacred direction in mind. Figure 9.1 shows the directions of early churches in Rome and in Carthage. They were simply laid out in line with the streets.

Some Christian explanations of church buildings, for example Germanus's,³ read in a very complicated way. Partly this is due to the fact that they derive, from meditation. But partly it is because many of them were developments of a previous range of symbolism to do with synagogues. One feature of synagogues definitely remained, though it is not explained anywhere, and that is the proportions of the '*ôhel moed*, or 'tent of meeting'. So churches like Sta Croce-in-Gerusalemme in Rome, are based on two holy buildings, but the entry of the Temple is at the opposite end to that of the Tabernacle (Figure 9.2). Of course this is an exceptional church. But normal churches often have this type of proportion. Church 1 at Sbeitla in Tunisia, whose nave runs at right angles to Sta Croce, roughly north and south, also has tent of meeting

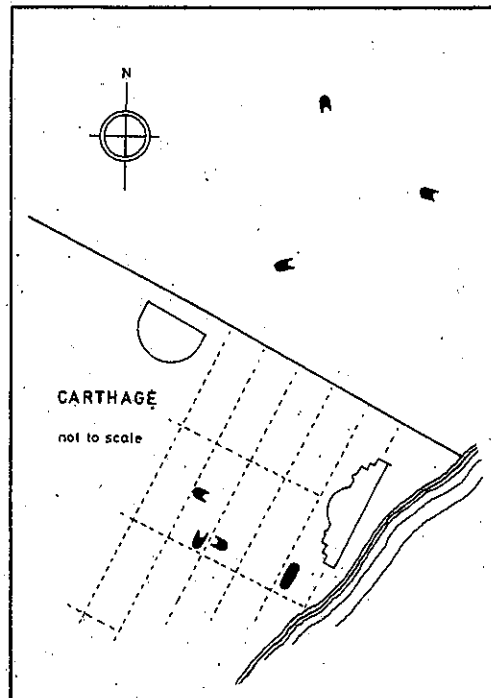
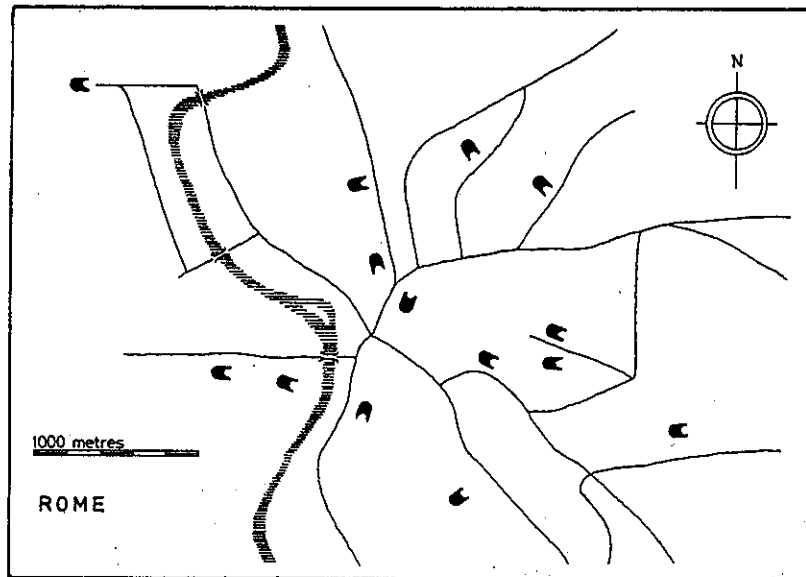


Figure 9.1 Directions of churches in Rome and Carthage

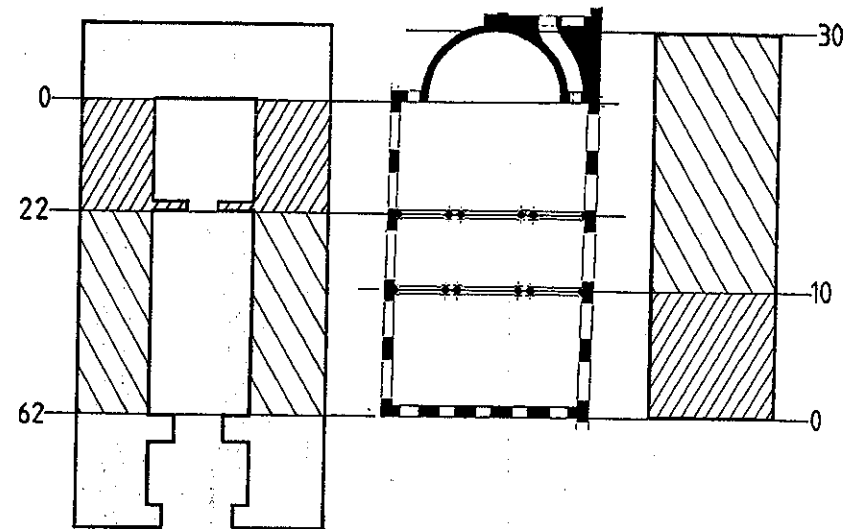


Figure 9.2 Sta Croce, Rome: Tent of Meeting – after R. Krautheimer

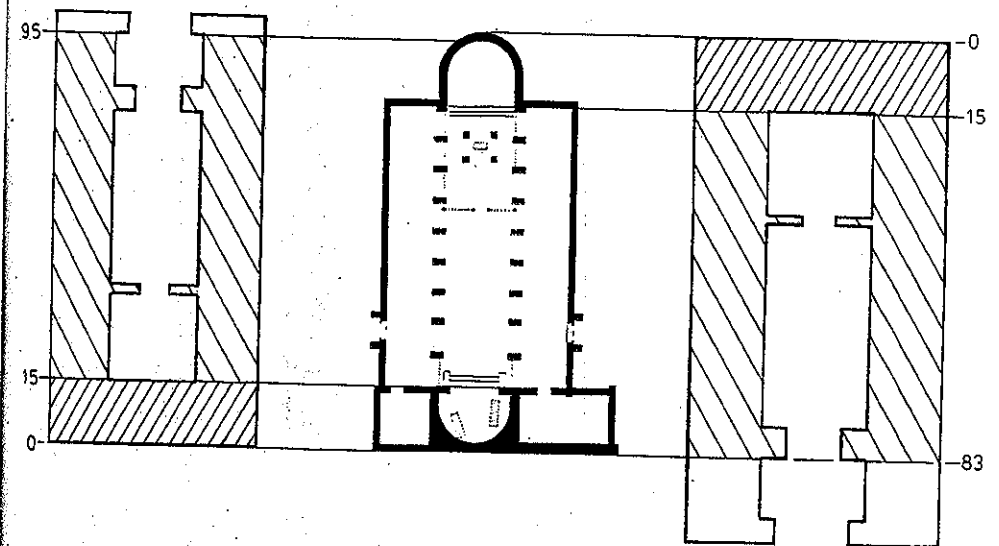


Figure 9.3 Sbeitla Church 1: Tent of Meeting – after N. Duval

proportions. (Figure 9.3). Other examples of these proportions will be found in Appendix 8.

As an extension of tent of meeting proportions, church courts are also regularly proportioned like a sanctuary, to ensure that one model Tabernacle or Temple should face the other. This is a straight inheritance from synagogues.⁴ Sometimes, as at St Peter's Rome, the court occupies the whole west end of the temple. The Temple and the court are thus directed like the Jewish Temple and court in Jerusalem before they were destroyed. At other times it occupies only the Holy of Holies, as at Perge (Figure 9.4). Usually, as in the churches at Ephesus and Bethlehem, and in the East Church at Mamshit (Figures 9.5 and 9.6) the proportions followed Ezekiel's Temple, but sometimes, for example in the South Church at Caricin Grad, the proportions were those of the Tabernacle, which in this case meant the same thing as the Temple.

This arrangement of the court was common to Jews and Christians, though as far as I am aware no ancient Jewish document discusses it. Eusebius may hint at an explanation, in his sermon at Paulinus' new church at Tyre.⁵ The court there was fenced in by stone chancels with a latticed design, which no doubt meant the visible firmament.⁶ Eusebius said that the court was 'full of air and sunlight'. The fact that this was open, and 'beneath the sun', meant that this was a sanctuary for the earthly Holy of Holies, opposite to the heavenly Holy of Holies, which is above the sun and the zodiac. The water supply in the court may have symbolised the spring, struck from the rock by Moses, which followed the children of Israel through the wilderness,⁷ but as Eusebius describes

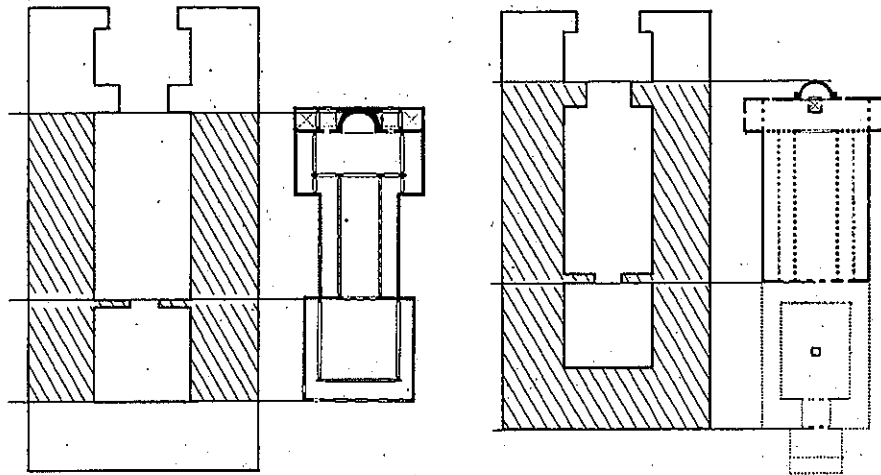


Figure 9.4 Courts at Perge and Rome – after H. Rott and R. Krautheimer

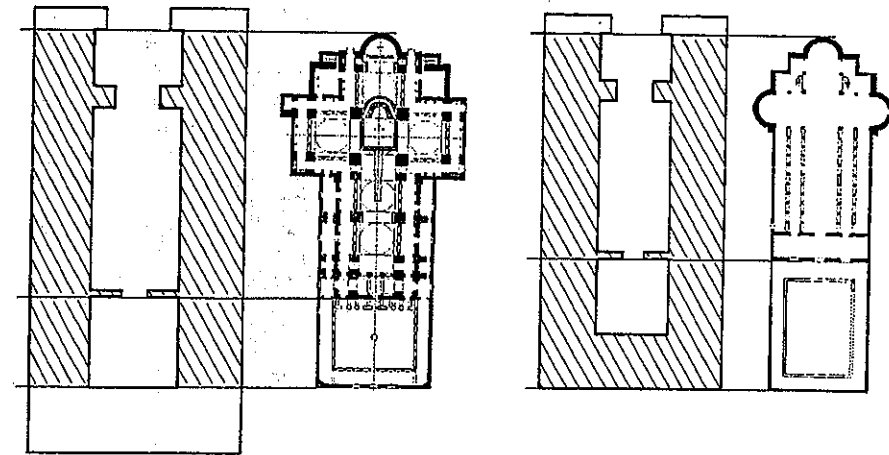


Figure 9.5 Courts at Ephesus and Bethlehem – after J. Keil and W. Harvey

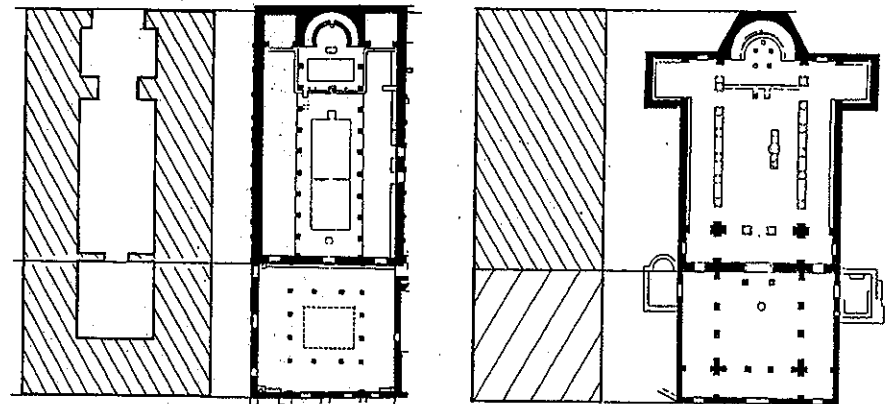


Figure 9.6 Courts at Mamshit E. and Caricin Grad S. – after A. Negev and R.T. Hoddnott

it, it stood for the laver like the one in which Aaron washed to prepare himself for holy service.⁸

In some three aisled synagogues or churches the ordinary members of the congregation were in the side aisles. This was usually controlled by the rectangle proportions. Lists of these proportions for synagogues are in Appendix 4 and for churches in Appendix 6.⁹ The central and the side aisles differ in synagogues because the place known as 'Before the Ark' was in the centre, and was clearly part of the heavenly Tabernacle. But the churches with rails dividing the centre from the side aisles, make this division even clearer.

The plan of the church at Jeradeh in North Syria is a good example (Figure 9.7). There are two rectangles. One, with the width of fifty, covers the side-aisles, and the other, with the width of twenty, covers only the central aisle. Rails mark the difference between the side aisles and the centre. They represent the firmament, so the area including the side aisles is the earth and the central aisle is heaven.¹⁰ A reconstruction of the church is given in Figure 9.8. This particular picture is a good illustration of the Syrian liturgy, with the earthly people looking into the centre, which is heaven.

Rectangle proportions in synagogues were not just for three-aisled buildings like Capernaum, but also for buildings with one aisle, and for less regular buildings like the synagogue at Horvat Anim.¹¹ This characteristic is inherited by churches, like the first phase of St Mary's Church, Deerhurst in Gloucestershire. The first building, founded in about 600, had a single aisle, which remains as the inner nave rectangle. and the complete outer church with its apse is a later addition. The rectangle proportions of the first church are shown in Figure 9.9.¹² Even in this simple church the outer width of the columns makes the long room of the Temple and the inner width the two rooms. The original church at Deerhurst, simple as it is, is none the less traditionally proportioned.

A synagogue service was very like the first part of some Eucharists. It was a public service. Its contents were prayers, scripture readings and a

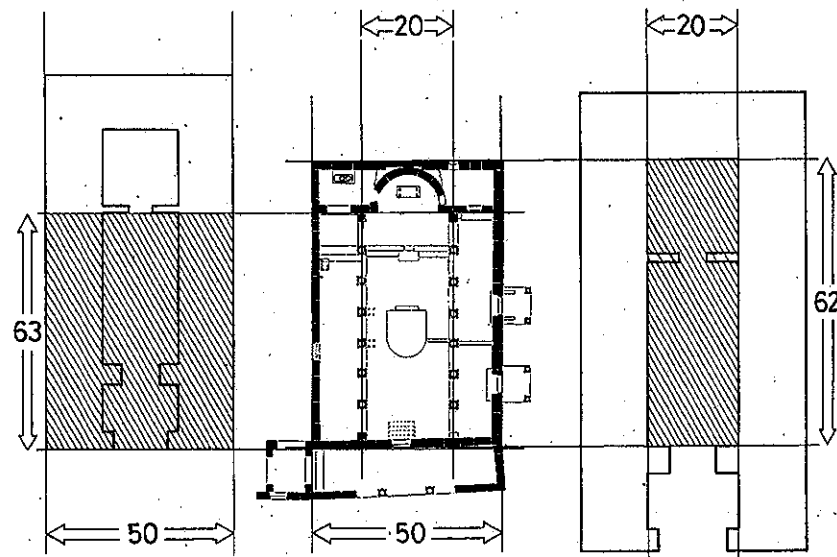


Figure 9.7 Rectangle proportions of Jeradeh church – after E. Baccache

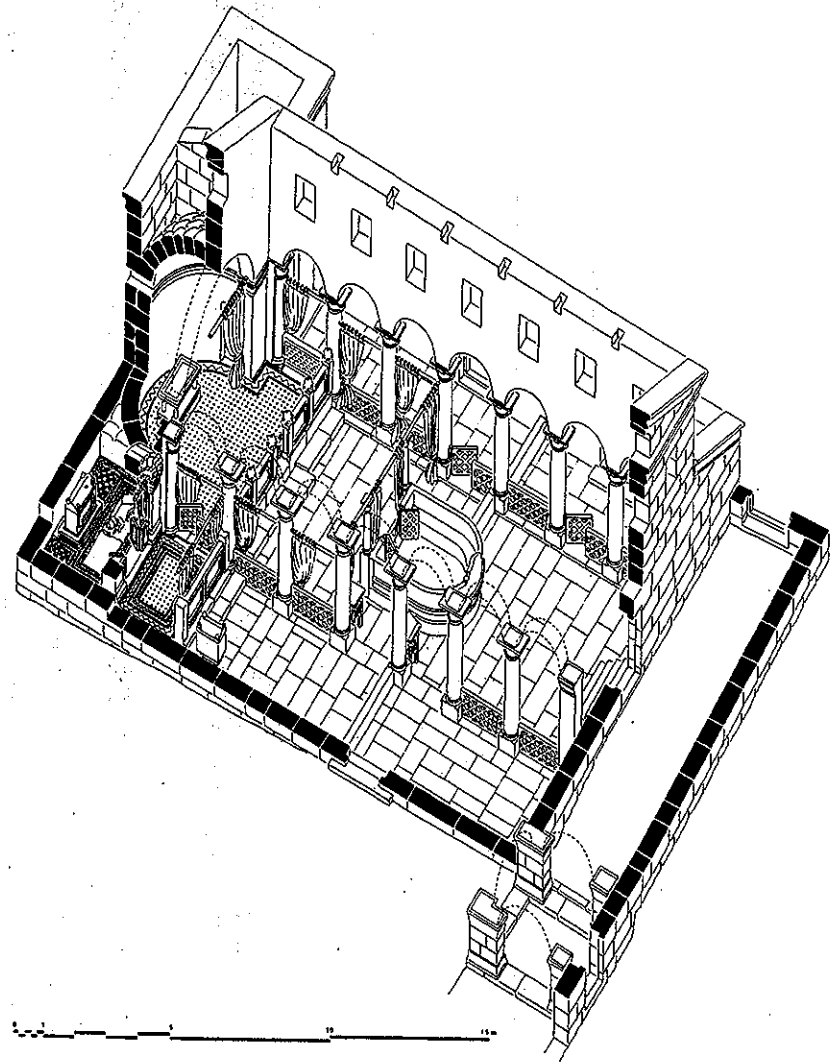


Figure 9.8 Reconstruction of Jeradeh church – after E. Baccache

blessing, though its structure was different. Though there were many different Christian liturgies, we shall refer to the features mentioned in the collection of documents below, even though some of them may have belonged to one liturgy and some to another. In the simplest form these features were as follows:

Synagogue

PRAYERS
(Shema-Tefillah)
BLESSING

READINGS

Church

Little entrance

PRAYER and
Litany

READINGS

BLESSINGS

The Little Entrance in the eucharist, when the deacons brought in the Gospel Book, and placed it on the altar,¹³ was parallel to the start of some synagogue services, where the Holy Ark was brought in, sometimes with singing.¹⁴ In the case of Sardis synagogue the Holy Ark was placed on a table, with double-headed lions on either side, standing for the cherubim on the lid of the ark.¹⁵

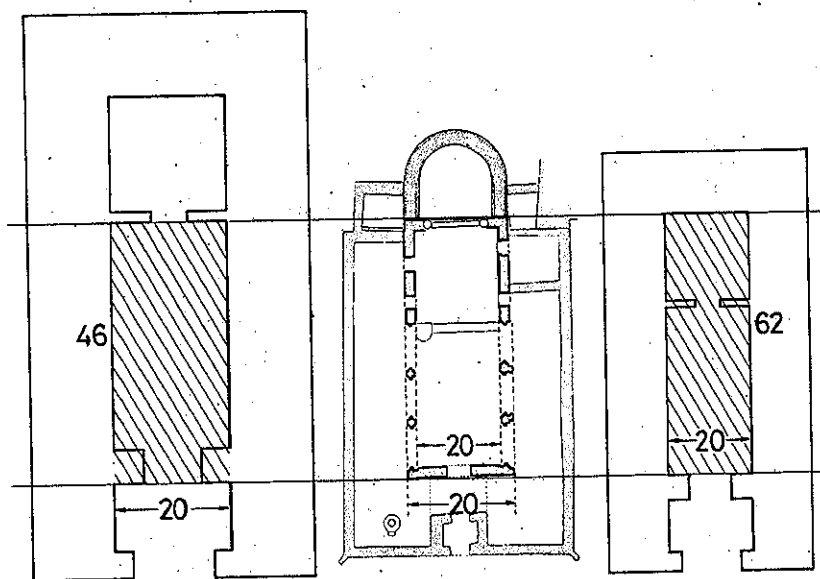


Figure 9.9 Rectangles of the original Deerhurst Church – after P.A. Rahtz

The Bishop also entered, blessed the people, and sat on his throne.¹⁶

At this point the main Jewish prayers took place. In the Christian Liturgy of St James in Jerusalem the archdeacon (or in Jewish terminology the Head Hazzan) says a short litany for the peace of the church, and the Priest says a prayer of personal preparation. Thus at this point some Christians too had a short prayer, with more prayers to come later on.

Then the ministers go, sometimes along a narrow path called the *solea*,¹⁷ to the place where the Scriptures are read. The location of these places varied greatly and they will be dealt with more thoroughly below. Some were however clearly based on the synagogue. Some reading-places are located exactly like the point 'Before the Ark'. Jews sometimes call the reading-place '*ambo*',¹⁸ a name common among Christians, which literally means 'crest of a hill'. Christian documents also say that the reading-place signified Jerusalem,¹⁹ a statement we have already seen expressed by its central position in the synagogue.²⁰ Two church ambos from Greece are illustrated in Figure 9.10, and Durandus speaks

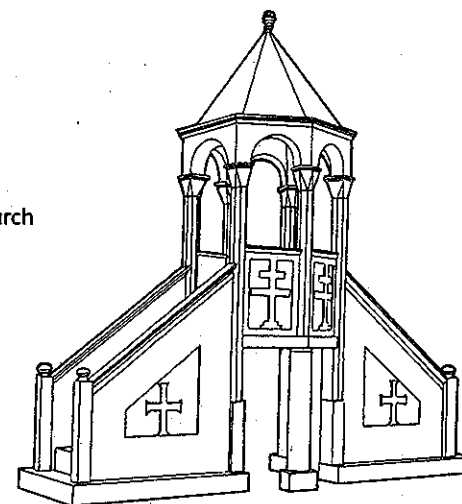
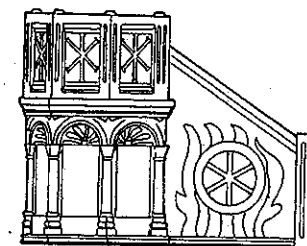


Figure 9.10 Two church ambos from Greece – after A. Orlandos

of similar types of furniture in the western church.²¹ From this formal position three or more passages of Scripture were read. Due to the fact that they were in manuscript, they would have been read from separate books. One passage was from the Old Testament (a Christian title for the Jewish Holy Scriptures), and another from the Acts of the Apostles or the Epistles in the New Testament (the added Christian Holy Scriptures). Then there was a hymn, the 'Alleluia', and a prayer preceding the final lesson, from one of the four Gospels. The synagogue scripture readings ended with the reading of the Law.

At this stage the first part of the Eucharist came to an end. In the fourth century some of the adults who attended the first part of the Eucharist were baptized, and others were still under instruction, in Greek 'catechumens'. Egeria, who went to Jerusalem in this period, said that after the Gospel had been read, the bishop 'blessed the catechumens ... and the faithful.'²² The catechumens were in fact dismissed, and the doors were closed so that they could not return.

Christians use phrases of which one may suspect a Jewish origin to describe their reading-places, for example 'Ezra's platform'²³ or 'a mountain',²⁴ and their proportions corresponded to those of the synagogue. They were placed where heaven met earth.

The *bema* stood for the city of Jerusalem, sometimes including the Jerusalem Temple.²⁵ In some churches its entry was supposed to be in the centre of the church, but its treatment varied. For instance if an altar was placed in the *bema*, it was not because any essential ingredient of the Christian liturgy was needed. Practically it was used to receive the book and the cross, both of which had at the beginning of the service been at the main altar.²⁶ But the altar was there in the *bema* because Jerusalem had both a Temple, the place of animal sacrifice, and also Golgotha, the place of Christ's sacrifice.²⁷

The Church of Julianos is a large building in the village of Brad, in North Syria, and the proportions of its *bema* make a good parallel with those of Beth Alfa synagogue.²⁸ The centre of the reading-place, the zodiac scene, is at the centre of the hall, and also marks the entrance to the Holy of Holies of the Temple. These two tasks are separated in Brad (Figure 9.11). The entry to the *bema* is at the centre, representing Jerusalem, and the reading point, at the entry to the Holy of Holies, was a bookrest at the end of the curved wall of the *bema*. The bookrest is proportionally at the point of revelation from heaven, where in the Temple the Holy of Holies meets the long room. The Gospel reading being at the point of revelation emphasises the task of taking God's message to the world.

The ambo at St Leonidas, at the Lechaion, Corinth, has two staircases (Figure 9.12), and a path or *solea* leading to the sanctuary. The proportions of the Ark of the Covenant in the Temple dictate those of the ambo. In Judaism the Scripture which is most revered is the Law. The

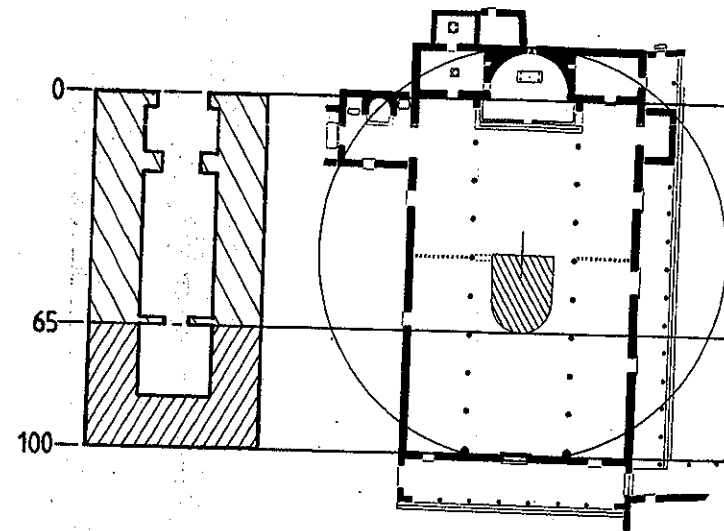


Figure 9.11 *Bema* in the Church of Julianos, Brad, Syria – after E. Baccache

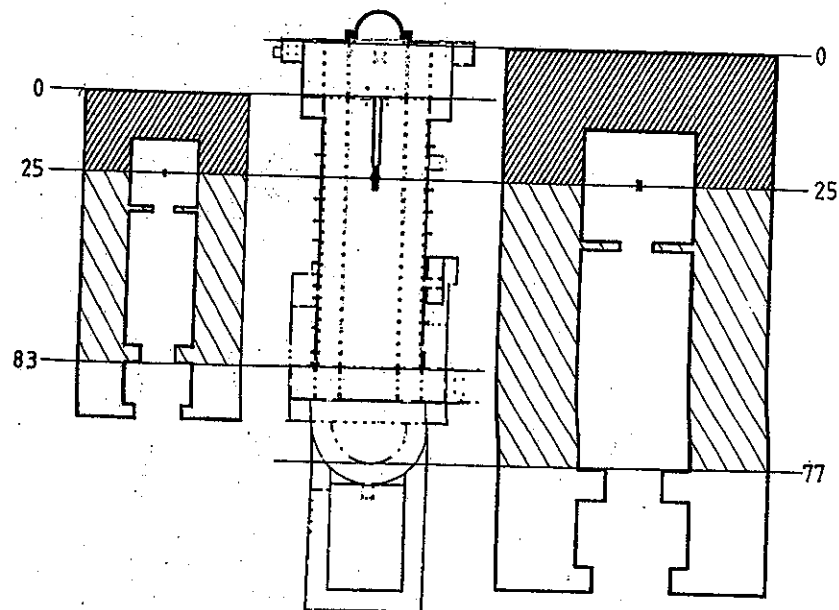


Figure 9.12 The *ambo* and Ark in the Lechaion, Corinth – after D. Pelekanides

Church does not reject the Law, but replaces it by what it believes is a still more revered Law, the Gospel.²⁹ The next Figure, 9.13, shows that the proportions of the ambo, the point of God's revelation from the Holy of Holies, are repeated three times, just as they were for the Ark in the synagogue at Sardis.³⁰

This design of a reading-place was not only used in the part of the Roman Empire whose language was Greek. It was also in the Latin-speaking province of Dalmatia, at the Church of Anastasius at Solin (Figure 9.14). This is not a church with a central point, but its series of proportions marks the meeting-point of heaven and earth. The mosaic of the central aisle contains a temple-shaped mosaic, corresponding to the small temple model on the right of figure. The square with the heavier shading marks the mosaic's sanctuary area. The other part of the temple is marked by a mosaic with a different design. The small temple on the left is the length of the nave, ending at the sanctuary step, and a model temple with different proportions marks the place of the altar. The large model Temple on the left has its end at the edge of the upper platform, the place of the throne.

In St Theodore's Church at Jarash in Jordan there are two things to be noticed. (Figure 9.15). One is that there is an ambo or pulpit at the end of quite a long narrow passage from the sanctuary. Another point to note is that (as in many other churches) the whole reading-place has been moved out of the centre into the side. Thus the narrow passage to the ambo is the *solea*, which was running down the centre in the last plan of the Lechaion.³¹ The ambo reaches the point of revelation on the left-hand temple, and the ark of the Covenant in the one on the right.

The reading-place has so far been close to the church sanctuary, a symbol of the heavenly origin of the Scriptures. But it might also be in the

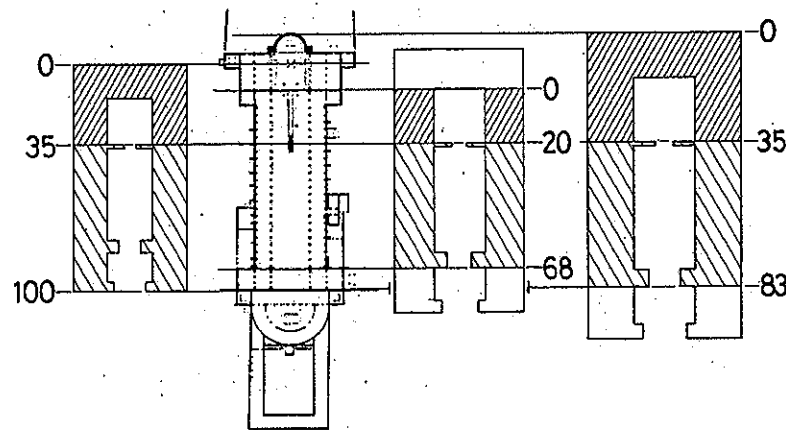


Figure 9.13 Revelation in the Lechaion, Corinth – after D. Pelekanides

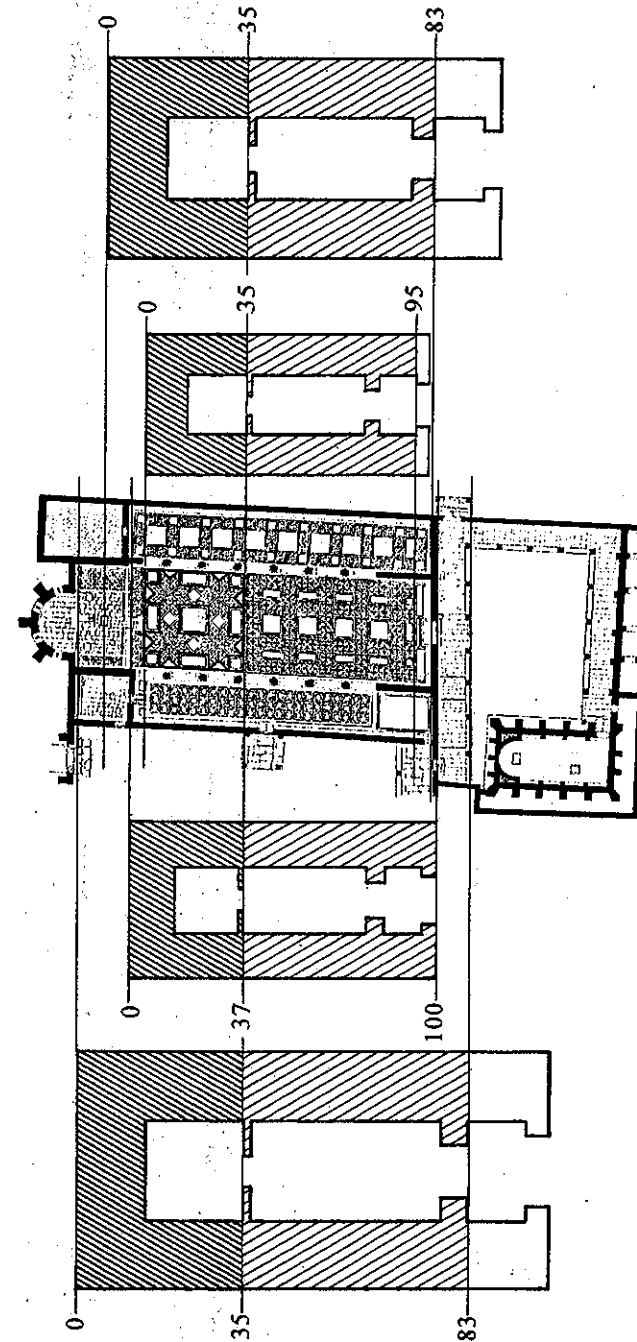


Figure 9.14 Reading-place, Basilica of Anastasius, Solin, Dalmatia – after E. Dyggve

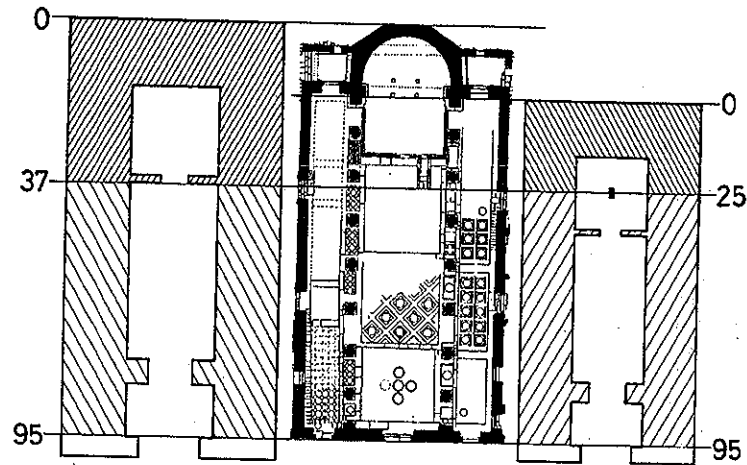


Figure 9.15 Pulpit in St Theodore's Church, Jarash – after J.W. Crowfoot

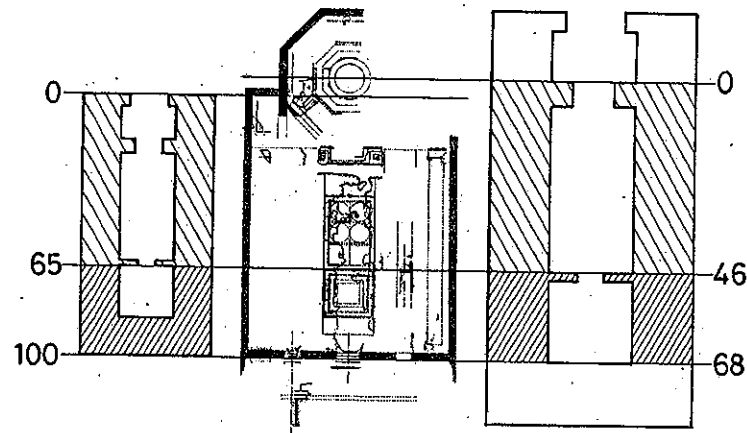


Figure 9.16 Bethlehem Church and the reversed Temple, – after W. Harvey

other direction, as in the synagogue at Jericho,³² to state that God's word is present in the earthly temple. So in the Church of the Nativity, Bethlehem (Figure 9.16) the nave mosaic shows a square Holy of Holies in an earthly temple.³³ This too seems to be a reading-place. The design of this earthly temple is strange. But it is at the centre of a square, which is the Holy of Holies of a small earthly Temple. The line between the square and the rest of the small temple is the subject of at least four repetitions. On the left is the nave proportion, and on the right the one ending at the

central opening in the sanctuary. Figure 9.17 shows the central aisle of the Church, where the same line receives two further proportions.

The church at Kefr Nebo in North Syria is also of the fourth century, and though it looks very different, some of its proportions are very like those in Bethlehem (Figure 9.18). The *bema* in Syrian churches was a destination for the reader of the scriptures. It is a small platform with seats all round it, and at the west end there was a reading stand for the Gospel. It is usually U-shaped, and sometimes contains a ciborium and an altar. In Kefr Nebo the bema starts at the point of revelation, and represents the Holy of Holies in a small reversed Temple. This is much like the one in Bethlehem Church or Jericho Synagogue. But it ends with the Ark of the Covenant, the place to which the Gospel book is taken and where it is read. Authors say that the bema stood for the city of Jerusalem,³⁴ sometimes including the Jerusalem Temple.³⁵ An altar in the *bema*, as we have already said, represented Jerusalem, its Temple, and Golgotha.

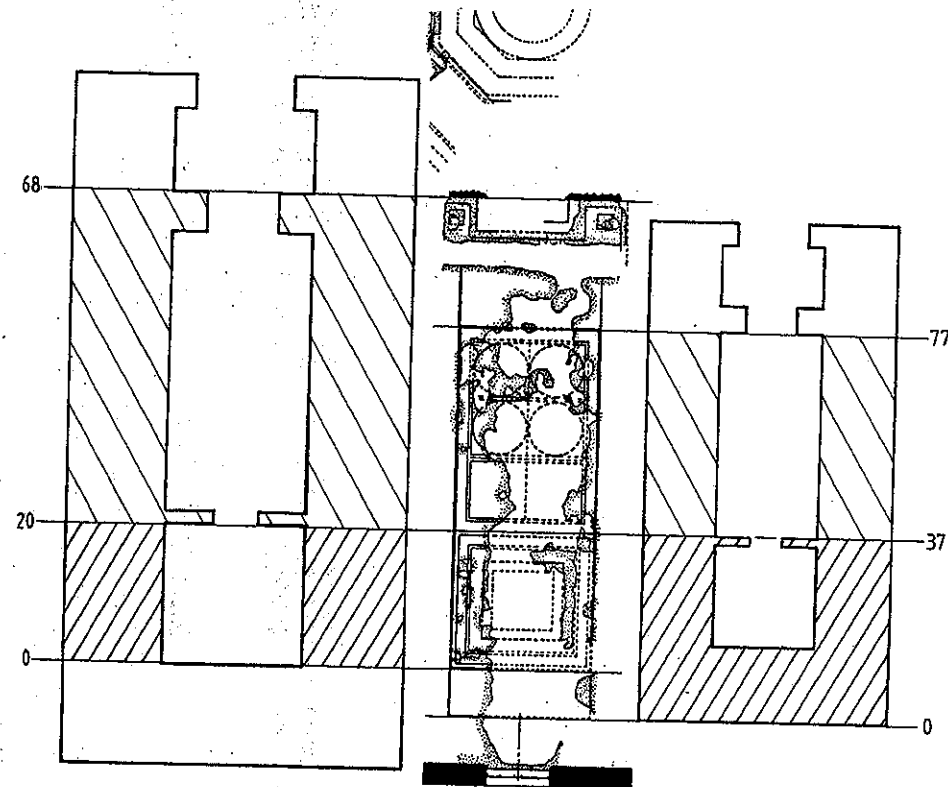


Figure 9.17 Bethlehem nave mosaic and the reversed Temple – after W. Harvey

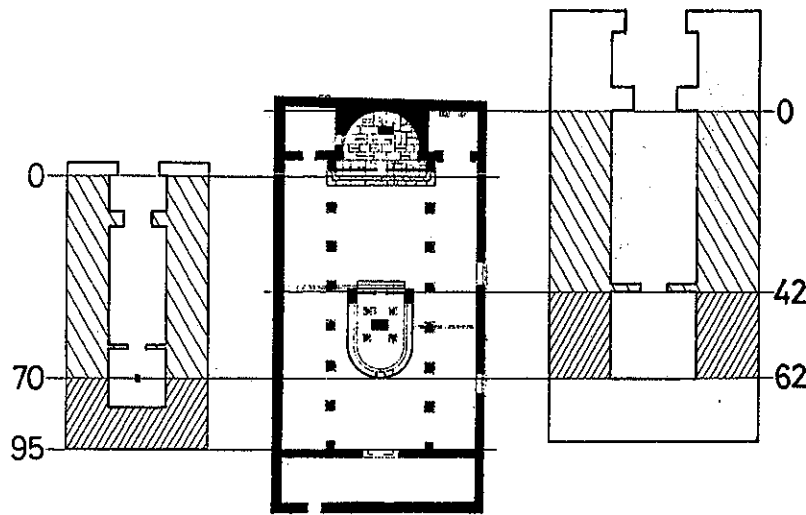


Figure 9.18 The bema in Kefr Nebo, Syria – after E. Baccache

In Africa there are several churches which have a *solea*. This path starts from the main altar and ends in an appropriately-proportioned space perhaps with a dome or ciborium. Thus it seems clear that it ends at a reading-place. There is a ciborium at Church 2 at Haïdra in Tunisia, which corresponds to the Ark of the Covenant (Figure 9.19), and at Tébéssa in Algeria a space near the west door, opposite to the main altar, but of exactly the same proportions (Figure 9.20). Since the *solea* joins the two spaces the one opposite the altar seems to be the place for reading.

Until the late middle ages church building continued to be in a tradition based on the heavenly Tabernacle and Temple, interpreted by the synagogue.³⁶ The final section of this chapter will examine some documents supporting this statement, which are included in the collection of documents below.

Churches were built to be like the heavenly Tabernacle or the heavenly Temple. Often chancel rails divided the buildings into the Holy of Holies (or heaven³⁷) and the long room, partly to indicate where people were allowed to pray. The Law excluded all but the Chief Priest in Jerusalem from the Holy of Holies.³⁸ The Gospel allowed Christian Priests into the sanctuary, but the rails kept out any who were not priests.³⁹ The railing also represented the firmament,⁴⁰ for according to Durandus they divided heaven from earth,⁴¹ or according to Simeon of Thessalonica, divided the sensible realm from the intellectual.⁴² These authors lived in the thirteenth and fifteenth centuries, but they attest to

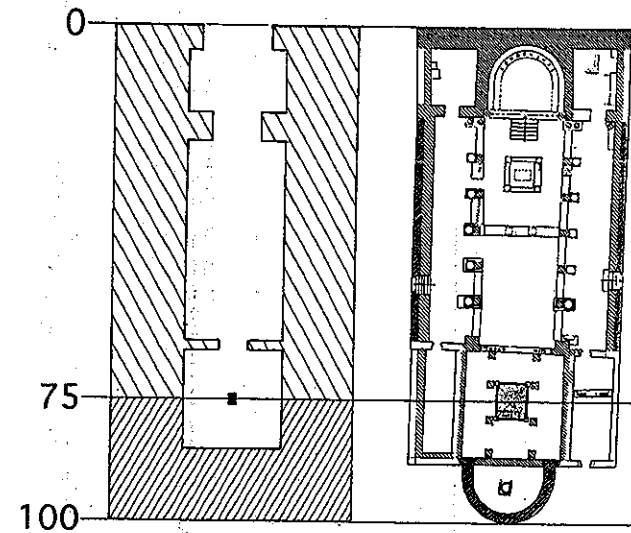


Figure 9.19 A possible reading-place in Church 2, Haïdra – after N. Duval

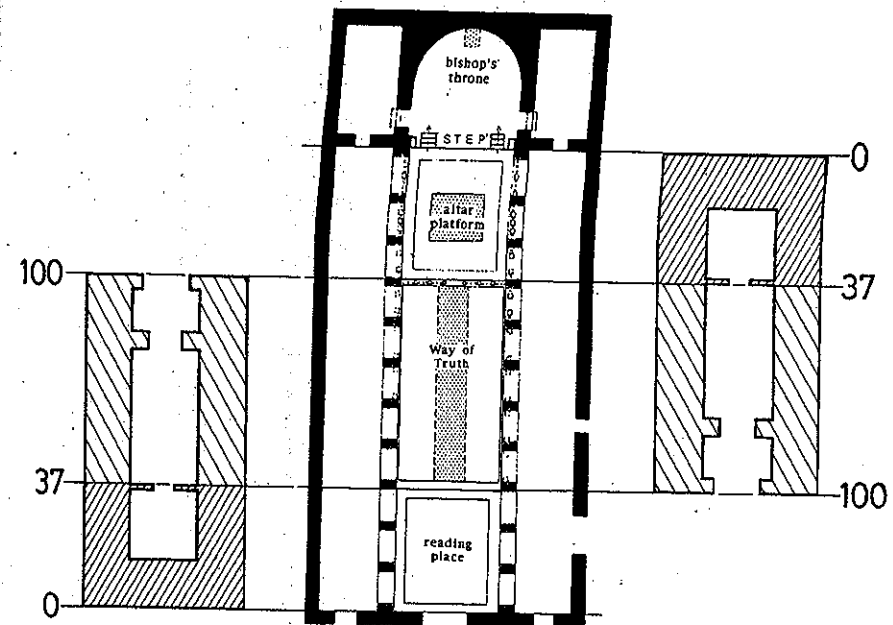


Figure 9.20 A possible reading-place in Tébéssa basilica – after N. Duval

a tradition over a thousand years old, for which the sources are Josephus and Philo.

The small rooms connected with synagogues⁴³ suggest that, despite the almost complete lack of documentary evidence, at the beginning of the sabbath service the Holy Ark was brought in. It was set down in the main synagogue, but it was not fixed to the floor, so, though we lack information about its exact position, the Holy Ark at least occupied a space with the proportions of the Holy of Holies. Happily there is one check on its exact position, since the synagogue at Sardis has a table for the Holy Ark.

The Holy Ark was portable, but the Christian altar, in contrast, was fixed to the floor. In a large number of ancient churches its exact position is known. The evidence in Appendix 7 shows that it (or its baldachino) was always in the proportional position of the Ark of the Covenant in the Holy of Holies.⁴⁴ The top of the altar is likened to the lid of the Ark of the Covenant because it is God's throne.⁴⁵

In some churches there was a curtain at the entrance of the sanctuary. This stood for the veil which had divided the Holy of Holies from the long room in the Tabernacle,⁴⁶ but it also represented the cherubim guarding against Adam's return to Paradise.⁴⁷

In the first part of the Eucharist the ciborium (or dome) over the altar stands for the Ark of the Covenant and its lid, the 'propitiatory'.⁴⁸ This is the same symbolism as in the synagogue. It is compared with the Tabernacle.⁴⁹ The next chapter will examine its meaning in the second part of the Eucharist.

Durandus in the thirteenth century says that the first part of the Eucharist takes place in earth, the nave, and the second part, the consecration of the elements, in heaven, the Holy of Holies.⁵⁰ He stands in the main tradition. But by the fourteenth century Simeon said the nave represented not earth but heaven, and earth came to be represented by the porches or nartheces.⁵¹ He was probably attributing the symbolism of the second part of the Eucharist to the first part.⁵² In the second part the church nave certainly meant heaven,

The central *bema* in a church, where the scriptures and the Gospel were read, is clearly based on a synagogue *bema*. It is compared to a hill,⁵³ and not only to a platform,⁵⁴ but to the platform of Ezra the Scribe.⁵⁵ And to many churches and synagogues the Nestorian saying would apply, 'The Temple [i.e. the long room] is the whole earth, and the *bema* in the middle of the Temple represents Jerusalem, which is "in the centre of the earth"'.⁵⁶

Some manuscripts of Yahya said that the central *bema* was Jerusalem and others that it was the Temple.⁵⁷ Yahya identified the Bishop sitting in the *bema* with the Aaronic Chief Priest of the Temple – 'The seat of the Bishop is the place of the Chief Priest, the son of Aaron.' He sits in front of their sanctuary, that is to say facing eastwards towards the whole city

of Jerusalem'.⁵⁸ This is additional evidence for the earthly temple in the Apocalypse and in the mosaic floors.

The *bema* in the nave is sometimes connected by a Path or *solea* to the sanctuary, like Jacob's Ladder leading from earth to heaven⁵⁹ (see for example Figure 9.13). This does not seem to have an archaeological parallel in synagogues.⁶⁰

One thing remains to be done. A change which took place in the Eucharist must be explained, which altered its interpretation.

In many places the first part of the Eucharist came to a natural end with the dismissal of the candidates for Baptism. These candidates were not qualified to attend the second part of the Eucharist, and at the end of the first part they were sent out, and only the qualified members of the congregation remained. The second part was in some ways like a second service. The two parts of the service, with their different congregations made it easy to think of the church building as symbolising one thing in the first half and another in the second.

Up to the late fourth century there were still adult candidates for baptism. But in due course this practice changed. Since all the Christians were baptised as babies, the blessings and dismissals of adult candidates which had originally happened at the end of the first part of the Eucharist were dropped. And if you had attended the Eucharist maybe a century after this change you would not have experienced the division in the same way. It might have looked like a single congregation attending a single continuous service.

Notes

- 1 See d-Maximus 8, p. 197, and 15, p. 198.
- 2 See d-Germanus, 10, p. 260.
- 3 See d-Germanus, 198.
- 4 As at Ostia, (Fig. 6.21, p. 86) and Beth Alfa (Fig. 7.16, p. 102).
- 5 See d-Eusebius 39 p. 191. Comments by Krautheimer (1975) 46 and Mango (1972) 4–7.
- 6 See d-Thomas of Marga 5, 205. This of course raises the question of what exactly was contained in the secret tradition, for whose answer the evidence is lacking.
- 7 Num 20.11, 22.16, 1 Cor 10.4.
- 8 Ex 30.18–21.
- 9 Appendix 2, p. 221, Appendix 6, p. 233.
- 10 Other churches like this in Greece are Philippi A, and the Acheiropoietos Church in Thessaloniki.
- 11 See Figure 6.10.
- 12 Taylor Vol. 1, 193, Figure 85.
- 13 See d-Germanus 33, p. 200.
- 14 See p. 53.
- 15 See J. Gutmann (1975) p. 160.
- 16 See d-Maximus 8, 197 and d-Germanus 36, 200, d-Simeon 2, 214, and compare d-Amalarius 5, 204, and d-Durandus 10 and 11, 213.
- 17 See d-Nestorian 8, p. 207, d-Yahya 13, p. 211, and Figure 9.13, p. 140.
- 18 Inscription at Side in Pisidia, see Krauss 236.
- 19 d-Edessa 15, p. 194, d-Nestorian 6, p. 206, d-Durandus 11, p. 213.

- 20 See Figures 7.4, 7.5, and 7.9, p. 90 ff.
 21 See d-Durandus 11, p. 213.
 22 Egeria. *Itin.* 24.6. This happens not to be in the Eucharist, but it was a standard form. See also d-Maximus 14, p. 198.
 23 d-Amalarius 17, p. 204.
 24 d-Germanus 9 (Isa 13.2, 40.9), p. 200, d-Yahya 14, p. 211, d-Durandus 11, (Isa 40.9), p. 213.
 25 d-Amalarius 17, p. 204, d-Thomas 4, p. 205, d-Yahya 17(?), p. 211.
 26 See d-Governors 4, p. 205, d-Yahya 23, p. 211.
 27 d-Thomas 4, p. 205, d-Nestorian 6, p. 206.
 28 See above, Fig. 7.9, p. 95.
 29 Rom 8.2, Gal 6.2
 30 See Fig. 7.13, p. 99.
 31 See Figure 9.12, 139.
 32 See Figure 7.13, p. 99.
 33 I am not certain whether the eastern point is marked by a horizontal line in the sanctuary mosaic (hidden by the superimposed line), or inside the nave wall, which is at this point restored.
 34 For instance d-Nestorian 6, p. 206, d-Durandus 11, p. 213.
 35 d-Amalarius 17, p. 204, d-Thomas 4, p. 205, d-Yahya 17(?), p. 211.
 36 d-Durandus 1, p. 211.
 37 d-Nestorian 5, p. 206. Is this the same as 'Paradise' in d-Yahya 7 p. 210. Nestorians make paradise lower than heaven.
 38 See Leviticus 16, which gives permission for only an annual entry.
 39 For the freedom by which Christians believed they could enter at any time see Heb 10.19. Rails described in d-Eusebius 44, p. 191, d-Germanus 8, p. 200.
 40 d-Durandus 4, p. 212, d-Simeon 15, p. 216. See also d-Eusebius 44, p. 191.
 41 d-Durandus 4, p. 212.
 42 d-Simeon 15, 216.
 43 See Figure 5.1, p. 52.
 44 d-Eusebius 4, p. 190, d-Nestorian 5, p. 206.
 45 d-Building the Tabernacle 25.17-22, p. 179, d-Germanus 3, p. 199, d-Simeon 7 p. 215.
 46 d-Durandus 6, p. 213.
 47 See Gen 3.24, and d-Yahya 26, p. 211.
 48 d-Germanus 4, p. 199. See d-Building the Tabernacle 25.17, p. 179.
 49 d-Yahya 9, p. 120.
 50 d-Durandus 8, p. 213, see d-Nestorian 6, p. 206, d-Yahya 7, p. 210.
 51 d-Simeon 1, p. 214.
 52 d-Simeon 4, p. 214.
 53 d-Germanus 9, p. 200, d-Durandus 18, p. 213.
 54 d-Amalarius 18, p. 204.
 55 d-Amalarius 17, p. 204.
 56 Ezek 5.5, and d-Nestorian 6, p. 206.
 57 d-Yahya 11, p. 210, 17, p. 211.
 58 d-Nestorian 6, p. 206.
 59 Gen 28.12.
 60 See d-Nestorian 7, p. 207, d-Yahya 13-14, p. 211.

CHAPTER TEN

The Second Part
of the Eucharist

Most churches are architecturally simple as buildings. But their meaning is not simple. When Germanus speaks of it as 'the House of God, the Body of Christ. Its name is "the Bride of Christ",¹ the reader's reaction to these similes may be simply muddled. But it all depends what language one is expecting to hear. Germanus's statement is not logic. It is the poetry of meditation. In examining the symbolism of the Church during the second part of the Eucharist we shall find that objects had quite a different meaning from what they stood for in the first part.

Church buildings are conceived as 'heaven upon earth',² and, like synagogues, were connected with the heavenly palace of God. In the second part of the service this is a key to understanding the design. The beginning of this part is a cry, 'The Doors!' From this point they are guarded and the church is closed.³ Maximus described this part of the service in a vocabulary of philosophy and theology. It is a change from the first part of the service, with its concern for material things and the lusts of the flesh. The second part is concerned with the intellectual realm, and the church becomes heaven itself, the bride-chamber of the Lamb with its banquet.⁴ The faithful are united with the angels in their cry of 'Holy, holy, holy'.⁵ Those who are worthy are taught the secrets of the future and the unspeakable mysteries of God's salvation.⁶ Germanus links it in a slightly different way to the liturgy. He speaks of a procession of deacons to the altar. They are holding fans which represent cherubim.⁷ Indeed with their vestments they themselves represent angels, just as the *hazzan* (or deacon) did in the synagogue.⁸ Germanus sees them as a procession headed by Christ at his Second Appearance and his righteous saints.⁹ The Bishop as High Priest takes the role of Christ.¹⁰

Germanus linked this procession with the burial procession to Christ's tomb, where after three days his resurrection was announced.¹¹ And they come now, in the Byzantine rite bringing the bread and wine, to the altar.

This is the extent of the part of the service which contains architectural details. The commentators go on to describe the prayer

of the priest at the altar over the bread and wine, and their distribution to the people.

In the great Thanksgiving over the bread and the wine the holy Table at last rightly becomes the heavenly altar of Christ's sacrifice,¹² a fulfilment for Christians of the prophecies of the altars of the Tabernacle and the Temple,¹³ the promise summed up in the Tomb of Christ.¹⁴ It was the most solemn moment in the liturgy. Thus, when he was in Syria, John Chrysostom says that the curtains of the sanctuary were shut during the main prayer to bless the bread and wine.¹⁵ From about the eighth century the senior person in the service came more and more to say the chief prayer in a low voice, while the deacon led the congregation in a separate intercession. But these descriptions have no architectural significance.

The altar has a complicated scriptural background. There are altars outside the Tabernacle and Solomon's Temple, which were used for animal sacrifice. There had been a golden incense-altar in the long room of the Tabernacle, in front of the veil which hid the Holy of Holies. Nevertheless Ezekiel sees another object he calls an 'altar' in his vision of the Temple, but he describes it as 'a wooden altar'. But since it is wooden it could not be an altar for sacrifice, in the normal sense of the word, and Ezekiel also describes it as a table. In the Tabernacle the Table of Shewbread had been half way down the long room. Perhaps Ezekiel saw a version of the Table of Shewbread that was placed in a new position. On this table the twelve loaves of bread¹⁶ and the incense were set out before the Lord.

This 'setting out' of the bread and incense is a translation of the Greek word *prothesis*, and in the long period examined by this book this word too has changed its meaning. In the Scriptures it described the setting out of the bread on the Temple table,¹⁷ and it was thence transferred to the setting out of the eucharistic bread on the altar. But in practical terms in the liturgy the bread was prepared to be set out in the sacristy.¹⁸ And by the fifteenth century the place where its preparation took place – a little chapel to the north of the altar – was also known as the *prothesis*.¹⁹

Part of the Christian altar's antecedents are certainly the liturgical arrangements in the Tabernacle and the Temple.²⁰ But it could not be an exact reproduction of these earthly pieces of furniture, for it was heavenly. At some stages it could represent the Tomb of Christ, itself a place of sacrifice 'where he offered himself like a lamb' in the Passover.²¹ And in the centre of the heavenly Holy of Holies, John, the author of the Apocalypse, saw sometimes the heavenly altar, and sometimes the heavenly Ark. Indeed this place could also be interpreted as the middle of Paradise, and due to its location the altar is thus identified with the Tree of Life.²² Germanus connects this altar with the one seen by Ezekiel, where 'the true and heavenly bread' is set forth, prefigured by the Table in the Tabernacle.²³

These antecedents from the Scriptures, which had been holy to the Jews, enriched the Christian belief – a basic one from the Gospels – that this stood for the table of the Last Supper round which the disciples sat when Jesus gave them the bread and wine.²⁴

The middle of the Holy of Holies was certainly the place where Christians located the altar at the Laying of the Foundations. The 'altar' or 'holy table' was always present in a church. But there was no table in a synagogue. Where did Christian altars come from, and why was their position so prominent?

Josephus, the famous historian of the Roman-Jewish War, was also a theologian and a priest. He found a long passage of the *Letter of Aristeas*, and admired it so much that he copied it out in his *Antiquities*. Its subject is a Table of Shewbread, which King Ptolemy Philadelphus of Egypt presented to the Temple in Jerusalem in the third century BC. The original Table of Shewbread in the Tabernacle was made of acacia wood, three feet long, and with a simple decoration of gold.²⁵ The table given by Ptolemy was the same size, but was so richly decorated and bejewelled that it takes over six hundred words to describe.²⁶ Ordinary decorations, such as a fruit wreath and an egg-and-dart frieze are mentioned, but it also had less common ones, which appear in Figure 10.1. These are a meander 'in the midst of which they set valuable stones of various forms like stars', which describe the two bottom rows in the Figure. The rarest of all was an 'arrangement of precious stones. . . . For security they were drilled with holes, through which golden pins were fastened'.²⁷ These pins are visible in the top row.

The Table given by Ptolemy Philadelphus remained in the Jerusalem Temple for eighty years at the most. In 167 BC it was taken away by Antiochus Epiphanes, and a century later none of the residents of Herodian Jerusalem knew what had become of it. Some, like Josephus, admired its description in the *Letter of Aristeas*. Then, in 70 AD, Jerusalem was destroyed, and nineteen centuries went by.

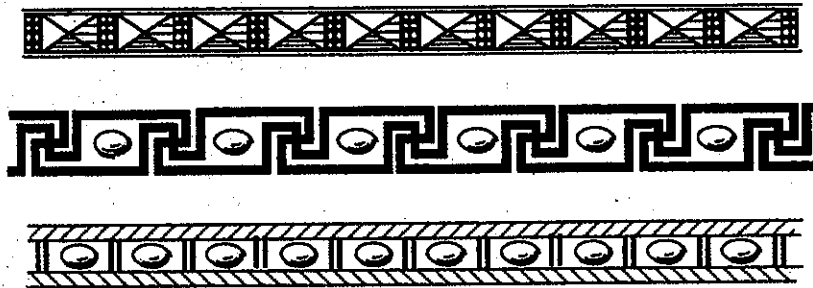


Figure 10.1 Unusual table decorations in the Letter of Aristeas

In the 1970s, the late Professor Nahman Avigad began his excavations in the Jewish Quarter of the Old City of Jerusalem. He was working on some rich private houses of the Herodian period when in them he found a *delphica*, a small side-table which followed a standard design for Roman furniture (Figure 10.2).²⁸ These tables had a rectangular stone top about 45 centimetres wide and 85 long, and stood on a single pillar against a wall. Varro, the Roman author, remembered tables like this from his childhood, and on them were placed bronze vessels.²⁹ Pictures and sculptures have been discovered from other parts of the Roman Empire which show their general use,³⁰ and on a table-top found in Jerusalem is a picture of a Jewish *delphica* with some vessels (Figure 10.3).³¹ Underneath the table are two jars for storing wine, and on the top is a

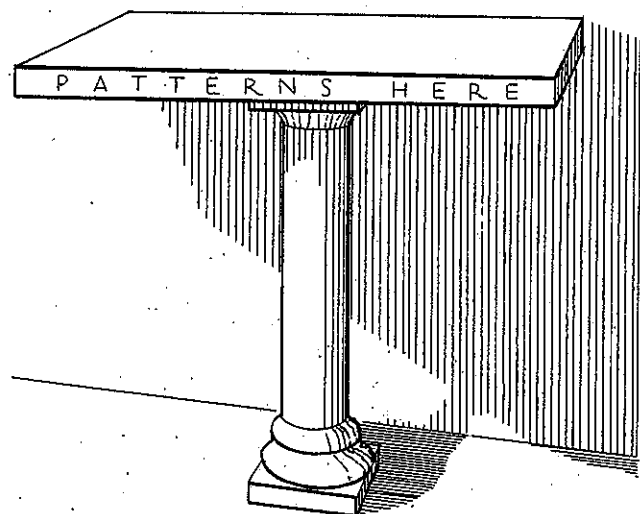


Figure 10.2 A *delphica*

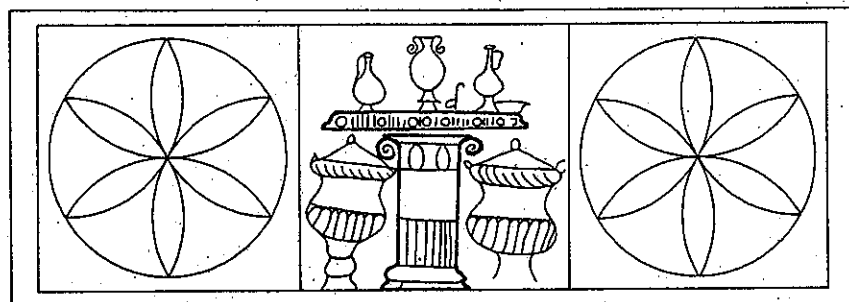


Figure 10.3 Illustration of one of the *delphicae* on a table – after N. Avigad

spoon and three bronze vessels, the outer pair for wine and the inner one for water. The table in the picture has a rim decorated with rosettes.

Roman table-tops were often decorated round the edges, and this was also true of some in Jerusalem. The decorations include rosettes, which in a Jewish context stood for angels, and some other scenes.³² But an important contribution to our present question is that the same decorative designs were used on these *delphicae* had also been used on the Table mentioned in the *Letter of Aristeas*. This includes even the rare ones. Figure 10.1 is in fact based on designs from the tables. The *delphicae* therefore recalled the Table of Shewbread, and were in some sense sacred.

These tables were used for mixing wine and water before it was brought to the Table. The Mishnah made the following rule:

If an Israelite was eating with a gentile at a table, and he put flagons [of wine] on the table and flagons [of wine] on the *delphica*, and left the guest there and went out,

- what is on the table is forbidden [as possibly unclean]
- and what is on the side-table is permitted.

But if he had said to him: 'Mix thy cup and drink' [which implied that he had to go to the *delphica*],

- that which is on the *delphica* is forbidden also.³³

Jews said the common grace at the main table of the meal,³⁴ and according to the Mishnah the *delphica* was simply the place where the wine and water were mixed. But the decorative ornaments are all copies of the ornaments on Ptolemy's Table of Shewbread. These particular ornaments of the *delphicae*, produced as they were in one city and in a short period of time, must have a definite meaning. On one of them there is a picture of the ship setting out from a port, speaking perhaps of a journey from this world to another.³⁵ There is a picture of a fish, perhaps representing Leviathan, whose flesh will be the food of the righteous in Paradise, as wine will be their drink.³⁶ These designs, in their different ways, both seem to point to a banquet in the life to come.

But Jesus himself at the Last Supper looked forward to a meal in a future world:

'When the hour came he took his place at table, and the apostles with him; and he said to them, 'How I have longed to eat this Passover with you before my death! For I tell you, never again shall I eat it until the time when it finds its fulfilment in the kingdom of God.'

Then he took a cup, and after giving thanks he said, 'Take this and share it among yourselves; for I tell you, from this moment I shall not drink the fruit of the vine until the time when the kingdom of God comes'.³⁷

Three things can be affirmed about *delphicae*:

- A They had no connection with synagogues. In Herodian Jerusalem they formed part of the furniture of rich houses.
- B Some of their decorations recalled the table, described in the *Letter of Aristeas*, which Ptolemy had presented to the Temple.
- C Other decorations showed that they expected a future life in the place where the banquet would be.

Ancient documents called the Christian altar 'The Table of Shewbread', and likened the church altar to this scriptural table. It is exactly this table which Germanus described:

On the altar is set forth the true and heavenly bread, the mystic and unbloody sacrifice which Christ the victim set before the faithful, his flesh and blood to be the food of eternal life.³⁸

The *delphicae* in Herodian Jerusalem may thus form some of the archaeological predecessors of the Christian altar. But Christians placed such tables in the position of the heavenly altar of the Apocalypse, in the centre of the Holy of Holies. Jews also chose this position for the Holy Ark, as is suggested by the position of the table on which the Ark placed in Sardis synagogue.

Designers had to determine how much space to leave between the altar and the back wall of the church. Yahya said that altars were in two distinct places, one independent of the walls, and the other at the end next to the east wall 'as a climax'.³⁹ When the altar was to be located near the outer wall the designer had often to place a smaller temple within the Holy of Holies space of another. So at Behyo in Syria the altar is close to the wall, and is proportioned as the sanctuary of an altar that starts at the rail of the bema (Figure 10.4), and at St Peter's Rome, the whole church is divided into the Holy of Holies and the long room, but the small tabernacle fits in the Holy of Holies (Figure 10.5).

The reason for this is that the heavenly Tabernacle could be envisaged above its earthly counterpart. The heavenly and earthly Tabernacles thus match and reflect each other. This is a model that would require two storeys (section 1 of Figure 10.6), but that could not be translated into the plan of a church. If you only have one storey, heaven is in fact represented by the Holy of Holies in the earthly Tabernacle. But what about the heavenly Tabernacle? It has to be reduced, so section 2 is a purely imaginary stage of transition. But with this change it fits into the heaven section of the earthly Tabernacle (section 3). The same thing would naturally be true of the heavenly Temple. This is a common way of designing a large church with a choir. As Durandus has said, the choir can in this case be looked on as heaven compared with the long room.⁴⁰ This would imply that the division by which the choir is in heaven –

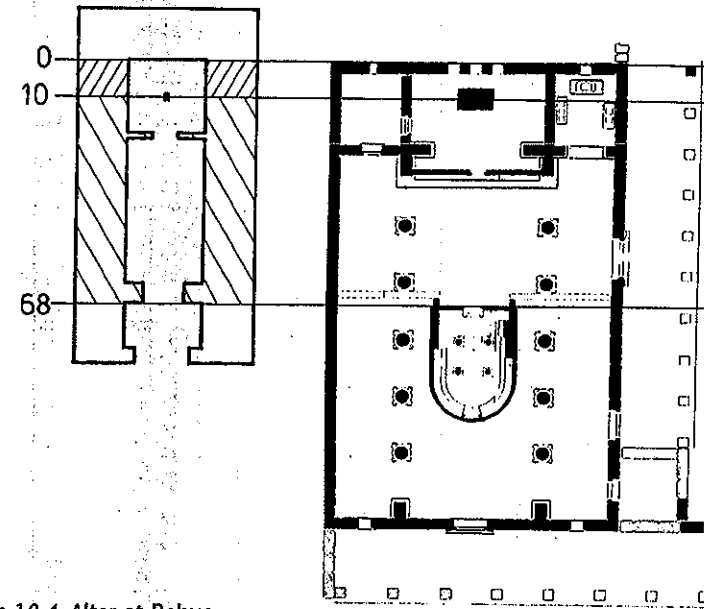


Figure 10.4 Altar at Behyo church, Syria – after E. Baccache

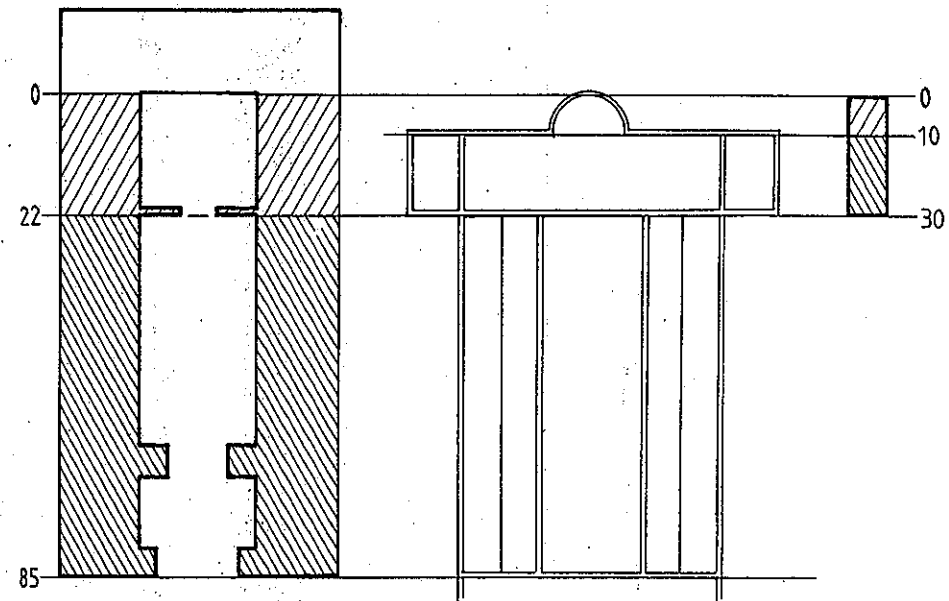


Figure 10.5 Sanctuary of St Peter's, Rome – after R. Krautheimer

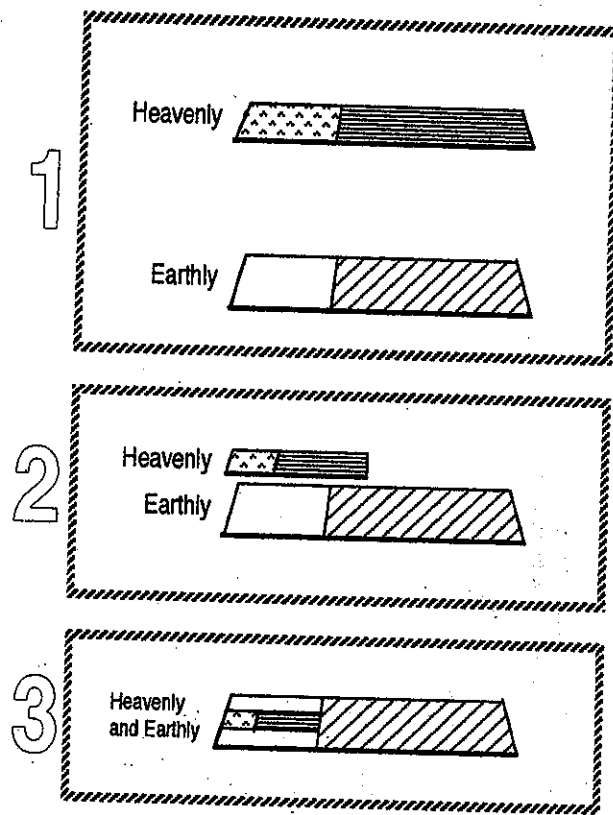


Figure 10.6 Heavenly and earthly tabernacles on one storey

Durandus mentions rails – would come at the main wide division in Figure 10.6. But there is another division to come in the small tabernacle, and the smaller Holy of Holies stands for another higher heaven.

The models of churches examined so far have been mostly Ezekiel's vision of the Temple, and sometimes the Tabernacle. The other models are rarer. They comprise all the objects which God commanded to be made and for which he gave the measurements. This too is a continuation of the Jewish tradition. We have already said that many Jewish pictures of the Holy Ark reflect the biblical plan, being two and a half units high and one and a half wide.⁴¹

Eusebius in his dedication sermon⁴² spoke in scriptural vocabulary⁴³ of various classes of Christians as stones in Christ's Temple. This simile is transferred to building. Twelve stones representing the apostles were blessed at the Armenian Laying of the Foundation to represent the

foundation of the holy temple of God.⁴⁴ Furthermore Durandus compared the church building with the body of a single person, in this case Christ.⁴⁵ Philo did it in quite another way. He spoke as follows of Noah's Ark:

Pupil Why does Scripture hand down the dimensions of the Ark in this manner: 'The length shall be three hundred cubits, its width fifty and its height thirty ...'

Master The proportions of the body are similar. For if anyone wishes to inspect the matter he will perceive ... that if he takes a cord and stretches it from the head to the feet, he will find that the cord is six times as long as the width of the chest.⁴⁶

The Ark, threatened by the flood but still floating above it, was for Philo an expressive symbol of the human body. But when Christian theologians adopted this symbol, Noah's Ark became the coffin of the dead Christ, about to be raised by God.⁴⁷ This second-century interpretation was destined to last. In 1572, fourteen hundred years later, Benedictus Arias Montanus published a drawing of Christ's body in a Noah's Ark, of which Figure 10.7 is a rough tracing.⁴⁸

St Augustine, Bishop of Hippo in Africa, often compared the church with the mysterious Noah's Ark, and several neighbouring churches are like Noah's Ark in proportions.⁴⁹ The two shown in Figure 10.8 are from the Roman Province of Numidia, next to Proconsularis, the Province where St Augustine was bishop. The church in Henshir Tarlist was roughly of his period.

At this point let us summarise what we have discovered about churches,

- A Some Christians studied Philosophy in classical Higher Education. They respected Philo's use of scriptural numbers, and were equipped to follow the designers of synagogues in their use of these numbers.⁵⁰ They applied these numbers to the design of churches, often with the same meaning.⁵¹ In other words they continued to follow the example of Moses, building their churches, as far as their philosophy went, like the heavenly dwelling of God.
- B The Epistle to the Hebrews and the Apocalypse give further indications about the heavenly Temple.⁵² A pre-Constantinian document illustrates the fact that, like the synagogue, the church was imitating the heavenly dwelling of God.⁵³
- C Geographically the seventy-three churches in the archaeological sample are widely-spaced in the area which became Christian.⁵⁴ They show that rectangle and length proportions were used in churches in

Figure 10.7 Noah's Ark, the Coffin of Christ – after B. A. Montanus

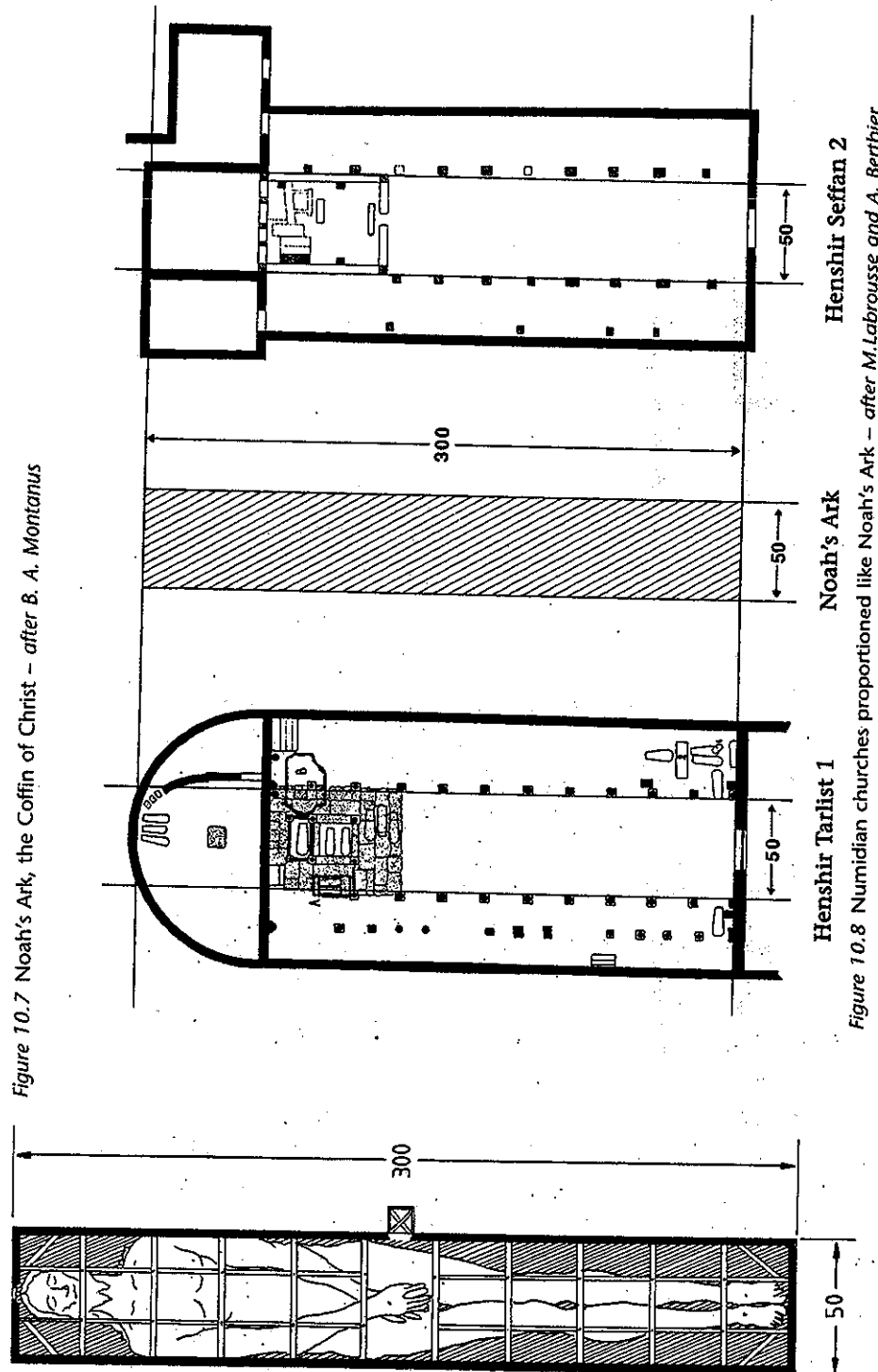


Figure 10.8 Numidian churches proportioned like Noah's Ark – after M. Labrousse and A. Berthier

- the same way as in the synagogue.⁵⁵ A measurement of their proportions makes it possible that all formal churches designed before 800 used proportions from the Scriptures.⁵⁶
- D The process by which the church was built is illustrated in the services of Laying the Foundations and the Dedication. The ritual of the first part of the Eucharist was in many respects similar to the synagogue service.⁵⁷
- E Questions about the direction in which the church should face are solved only long after the church's formal pattern had been established. Districts vary in their answers. Church courts reveal an open sanctuary at the other end to the main sanctuary which was indoors. This is the same as in synagogues,⁵⁸ and the proportions are also those of synagogues.⁵⁹
- F Church reading-places were sometimes proportioned in the same way as synagogues, and often had the same names.⁶⁰ The Gospel was sometimes read from the end of a minor temple facing in the opposite direction from the main temple.⁶¹ The division between the nave and the sanctuary represented the firmament dividing earth from heaven.⁶²
- G The one thing which distinguished all churches from synagogues was the position of the altar.⁶³ In all cases in the sample the altar's exact length-proportion is that of the Ark of the Covenant,⁶⁴ even when they are close to the wall.⁶⁵ The ministers sometimes represent angels.⁶⁶ The Christian altar may have been derived from Jewish side-tables or *delphicae*.⁶⁷
- H Another Christian innovation was the cross-shaped church, in the eastern Mediterranean fashioned on Constantinople's Agia Sofia. But the traditional position of the ambo and the altar was still observed.
- I Most of this symbolism is very old,⁶⁸ and it lasted at least till 800 AD, which is the end of my sample of churches.

The chapters above represent the traditional design of synagogues and churches before 800 AD. The next chapter will ask how long this tradition lasted. A fourteenth-century law from Sweden declared, 'Adam and his sons were the first to pay tithes, and Solomon to build a church'.⁶⁹ Does this constitute a prophecy?

Notes

- 1 d-Germanus 1, p. 198.
- 2 d-Germanus 1, p. 198, d-John of Odzun 3(?), p. 202, d-Thomas of Marga 8 (?), p. 206, d-Simeon 5, p. 214, (see 1, p. 214, and 10, p. 215): 'Paradise' in d-John of Odzun 23, p. 203.
- 3 *Ap. Const.* 8 (LEW 13.19f). See also LEW 28.12, 41, 7, 321.3.
- 4 *Apoc* 19.9.
- 5 d-Maximus 16, 198.
- 6 d-Maximus 13, 15, p. 197, d-Simeon 4, p. 214.

- 7 d-Germanus 49, p. 200.
- 8 d-Germanus 16. See p. 200.
- 9 Apoc 14.1, and d-Simeon 3, p. 214.
- 10 d-Simeon 3, p. 214.
- 11 d-Germanus 50, p. 200. See Amalarius 18, p. 204.
- 12 d-Germanus 3, 5, p. 199.
- 13 d-Amalarius 19, p. 204, d-Durandus 3, p. 212.
- 14 d-Germanus 3, 5, p. 199, 8, 50, p. 200, d-Amalarius 24, p. 205, d-Yahya 9, p. 210, d-Simeon 1, p. 214, 7, 9, p. 215, 15, p. 216.
- 15 John Chrysostom, in *Eph.* iii.5 (PG xi.23D) and in *I Cor.* xxxvi.6 (PG X.340E).
- 16 Ex 25.30, which also mentioned also drink offerings.
- 17 Ex 39.18(Greek) or 36 (English), 40.4, 23.
- 18 At least in Byzantium in the ninth century, LEW 309.5.
- 19 See d-Simeon 16, p. 216.
- 20 d-Amalarius 19, 21, p. 204, d-Durandus 5, p. 212.
- 21 Apoc 4.6ff, d-Germanus 5, p. 199.
- 22 d-Yahya 9, p. 210.
- 23 d-Germanus 3, p. 199.
- 24 d-Germanus 3, p. 199, d-Yahya 10, p. 210.
- 25 See Ex 25.23f.
- 26 See LettArist 57-82 and Josephus, *Ant.* XII, 64-77.
- 27 See LettArist 61 and Wilkinson (1993-4).
- 28 Avigad thinks that a twelfth table was stolen from the site. It is now in Haifa Museum: see Avigad 172.
- 29 Varro, *Ling. Lat.* 5.125.
- 30 See for instance Avigad 171.
- 31 IDAM 70-128, the table in Haifa.
- 32 See Wilkinson (1993-4) 11-13.
- 33 m.Abodah Zarah 5.5.
- 34 m.Berakoth 6.6.
- 35 IDAM 70-128, the table in Haifa.
- 36 See 2 Baruch 29.1-6.
- 37 Luke 22.14-18 REB; Mark 14.25, Matt 26.29.
- 38 d-Germanus 3, p. 199. See also d-Amalarius 24, p. 205.
- 39 d-Yahya 10, p. 210.
- 40 d-Durandus 5, p. 212.
- 41 Including pictures of the Holy Ark in the floor mosaics at Hammath Tiberias South, Jericho, Na'aran and Susiya.
- 42 Eusebius E.H. 10.4 p. 63-68.
- 43 Eph 2.20. See also 1 Co 3.9, 16f, and 6.19.
- 44 d-John of Odzuin 7, p. 202.
- 45 d-Durandus 3, p. 212.
- 46 Philo, *Q. Gen.* II, 1 and 5.
- 47 For instance see Justin, *Dial.* 138, Tertullian, *Bapt.* 8, Cyril of Jerusalem, *Cat.* 17.10, John Chrysostom, *Lazarum* 7, Augustine, *Civ. Dei* 15.26, and *Contra Faust. Manich.* 12.14 (PL 42. 262B) quod Noë cum suis per aquam et lignum liberatur ... quod sexies longa, ad latitudinem suam, et decies ad altitudinem suam, humani corporis instar, ostendit quia in corpore humano Christus apparuit.
- 48 Montanus, vol. VIII, first figure from the tract named *Exemplar, sive de sacris fabricis liber*.
- 49 Gen 6.15.
- 50 That is the Christians inherited sections A to the first part of G in the synagogue summary, p. 110.
- 51 Chapter 8, p. 119 and this chapter.
- 52 Chapter 8, p. 117-119.
- 53 Chapter 8, p. 119-120.
- 54 Chapter 8, p. 114.
- 55 Chapter 8, p. 121 f.
- 56 See Appendices 6-8, p. 233 ff.
- 57 Chapter 9, pp. 135-140.

- 58 Chapter 9, p. 132.
- 59 For rectangle proportions see Chapter 9, p. 134 and Appendix 6, p. 233, and for length proportions Chapter 9, p. 129. Appendix 7 analyses the length proportions of church altars and Appendix 8 the length proportions of the church divided into nave and sanctuary.
- 60 Chapter 9, p. 137.
- 61 Chapter 9, p. 144 f.
- 62 Chapter 9, p. 144.
- 63 Chapter 10, p. 154.
- 64 Chapter 10, p. 154.
- 65 Chapter 10, p. 154.
- 66 Chapter 10, p. 149.
- 67 Chapter 10, p. 150-154.
- 68 Chapter 10, p. 156.
- 69 Holmbäck and Wessén 264. Gen 4.3, 1 Kgs 6.1.

CHAPTER ELEVEN

The End of the Tradition

I was living in Jerusalem when I ended the first part of my research on synagogues and churches. I had been gathering evidence from synagogues and churches founded before 800 AD. I concluded that throughout this period all these buildings were designed by the same process. There were two reasons for this. Firstly, because these two groups designed their buildings by interpreting their Holy Scriptures, this would separate Jews and Christians from other religions. Secondly the educated elite had reason to believe, through Plato and Philo, that the scriptural numbers of the design might reveal heavenly mysteries.

How long did people believe in this traditional system of design? Unfortunately no general answer to this question is possible. Some groups of people have abandoned the traditional system long ago. Some continue to believe in it. This chapter asks how long did people in the kingdom of England believe in this traditional process of design.

When I returned for a time from Jerusalem I wanted to survey some churches in England. I chose thirteen churches near Chichester, founded in the thirteenth century – five hundred years later than the archaeological samples in this book. As I surveyed them, I became increasingly surprised. All thirteen of them were designed precisely by the traditional process that I had been studying.

I then turned to a larger thirteenth century building, Salisbury Cathedral,¹ built between 1216 and 1266. This has the advantage of being a structure with no major architectural additions. The building programme was quickly and continuously carried out, and this enabled the architects to pursue a single plan for the Cathedral, and an uninterrupted understanding of its layout.

Buildings erected before 800, including those in the archaeological samples, usually had narrow windows. But as western Europe passed through the middle ages, it was decided that windows should become wider, and let in more light. This meant changes to the engineering, and complicated the outside of the building. Buttresses were added to the lower storey, and flying buttresses to the upper windows, so western medieval plans appear unusually complicated. But at Salisbury Cathed-

ral the procedure for measuring is none the less quite simple. Figure 11.1 shows how the buttresses must be left out, and the walls must be measured by their width at eye-level.

In 1550, at an early stage in the Reformation, the Salisbury stone High altar was destroyed,² and its previous position is still now unknown. But the other proportions of Salisbury Cathedral are strictly in accordance with the tradition we have examined. One of the questions which is often asked is about the two transepts of different sizes. Figure 11.2 does not show a width-proportion, but two rectangle-proportions. The temple with the transept width of 50 accounts for the length of the high nave. It is a Temple with its Holy of Holies. The Temple with the transept width of 20 accounts for the whole building. Like the synagogue at Capernaum it has the Holy of Holies outside the building.

For Durandus the model of the church had been the Tabernacle,³ Nevertheless in 1450 Leon Battista Alberti questioned whether the church was instead modelled on the secular basilica.⁴ He was an enthusiastic admirer of Vitruvius; and this was a natural enough question. But it was not a question which would have occurred to any one who had studied the church's use of the word, which was certainly still understood in the middle ages. The proof of this was that in France in 1567 Philibert De l'Orme wrote in praise of scriptural measurements

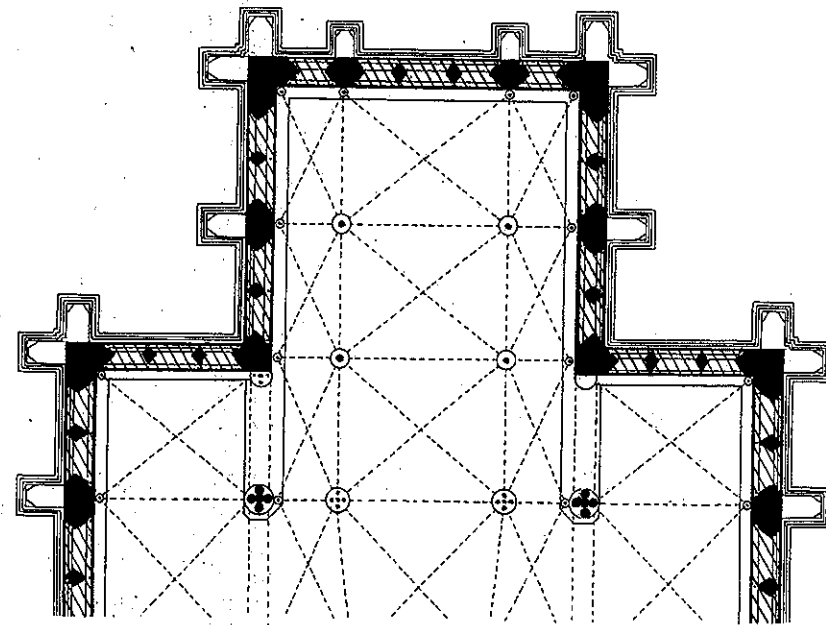


Figure 11.1 Analysis of the east end of Salisbury Cathedral

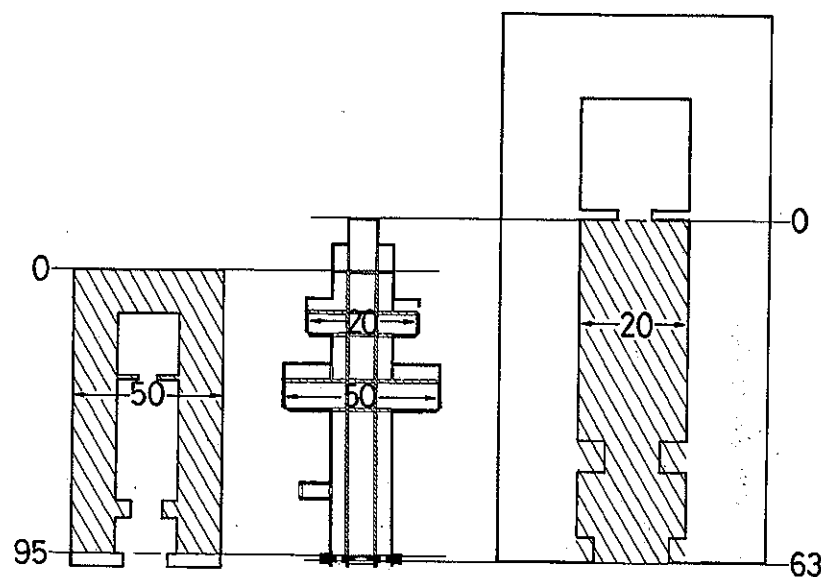


Figure 11.2 Transept proportions of Salisbury Cathedral

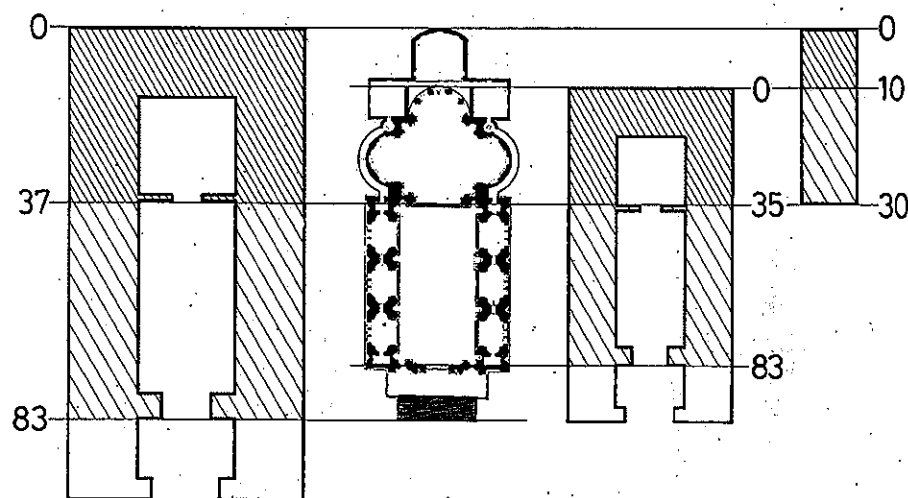


Figure 11.3 Conjectural part of Palladio's design for Il Redentore, Venice – after B. Scamozzi

in the *First Book on Architecture*. And in Italy the architects still designed churches in the traditional way, but in the classical style. For instance in 1577 Palladio designed the Redentore Church in Venice, by the traditional process. This was a civic church administered by the Capuchins, so it had to have a separate eastern choir for the community which looked after it. The traditional design is clearly defined in the proportional layout of the Capuchin choir and the main church, with their common sanctuary (Figure 11.3). But the decoration in Il Redentore is not Gothic, but classical. The system of design has a separate process of thought from the system of decoration. And this is perhaps emphasised in church architecture by there being one service for the Laying of the Foundations – the basic design – and another at the Dedication, when the church has its decoration.

The synagogues show many signs of continuity with the tradition. The ambo or *almemor*⁵ is very like that in a church. An example is the one made of metal in 1644 at the Isaac synagogue at Cracow in Poland (Figure 11.4). And four synagogues, shown in Figure 11.5, have the point 'Before the Ark' in the centre of the hall. Worms, Lublin and Karlsruhe. They stretch in time from Sardis in the fourth century, with its complex of proportions, to the medieval synagogues of Worms, the MaHaRSHaL synagogue in Lublin, and Karlsruhe at the end of the eighteenth century.

Worms in the Rhineland, was built in the twelfth century and has since been rebuilt, but its ambo, or *almemor*, must always have been in the centre, and this seems the only proportion, as at Lublin. This symbolism might not depend on theological mathematics, but on the scriptural statement that Jerusalem is in the centre of the nations. The classical-style synagogue at Karlsruhe has its *almemor* in the middle, but its proportions show that the tradition had not been forgotten.⁶

In England the traditional design of churches came to an end with the Reformation. The new arrangements for the liturgy contained confirmation and ordination services, but omitted other services in the Pontifical, which included Laying the Foundations and the Dedication of Churches. This literary gap was never officially filled. What is more the altars were destroyed. For example in 1550 the Bishop, Nicholas Ridley, ordered the destruction of all altars in his diocese of London. Sixteen years later Matthew Parker, the Archbishop of Canterbury, issued some regulations which he called *Advertisements*,⁷ and described where the Holy Communion should take place. 'The parish' should 'provide a decent table standing on a frame for the Communion table. ... They shall decently cover with ... silk ... the Communion Table, and ... set the Ten Commandments upon the east wall over the said table.'

Once the altar was abandoned the whole design tradition was in fact finished. Nevertheless the layman was not aware that much had changed. Under the new arrangement churches, as far as he was concerned, had roughly the accustomed objects in roughly the right

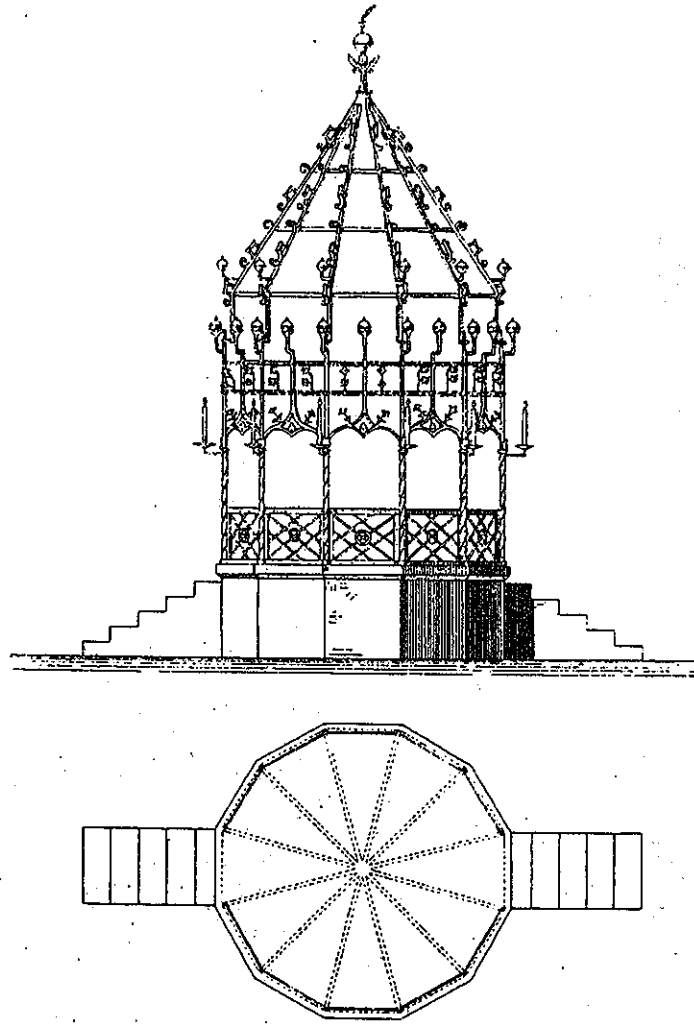


Figure 11.4 The *almémor* in Cracow, 1644 – after R. Krautheimer

places. This was the result of the tradition being an invisible secret. The layman simply visiting a building cannot tell whether or not it follows the traditional design.

With the Protestant reformation the traditional design ended in many western European countries. It ended at various different dates. But in eastern countries such as the State of Georgia it changed much later. Georgian churches were traditionally designed till at least the nineteenth century.⁸

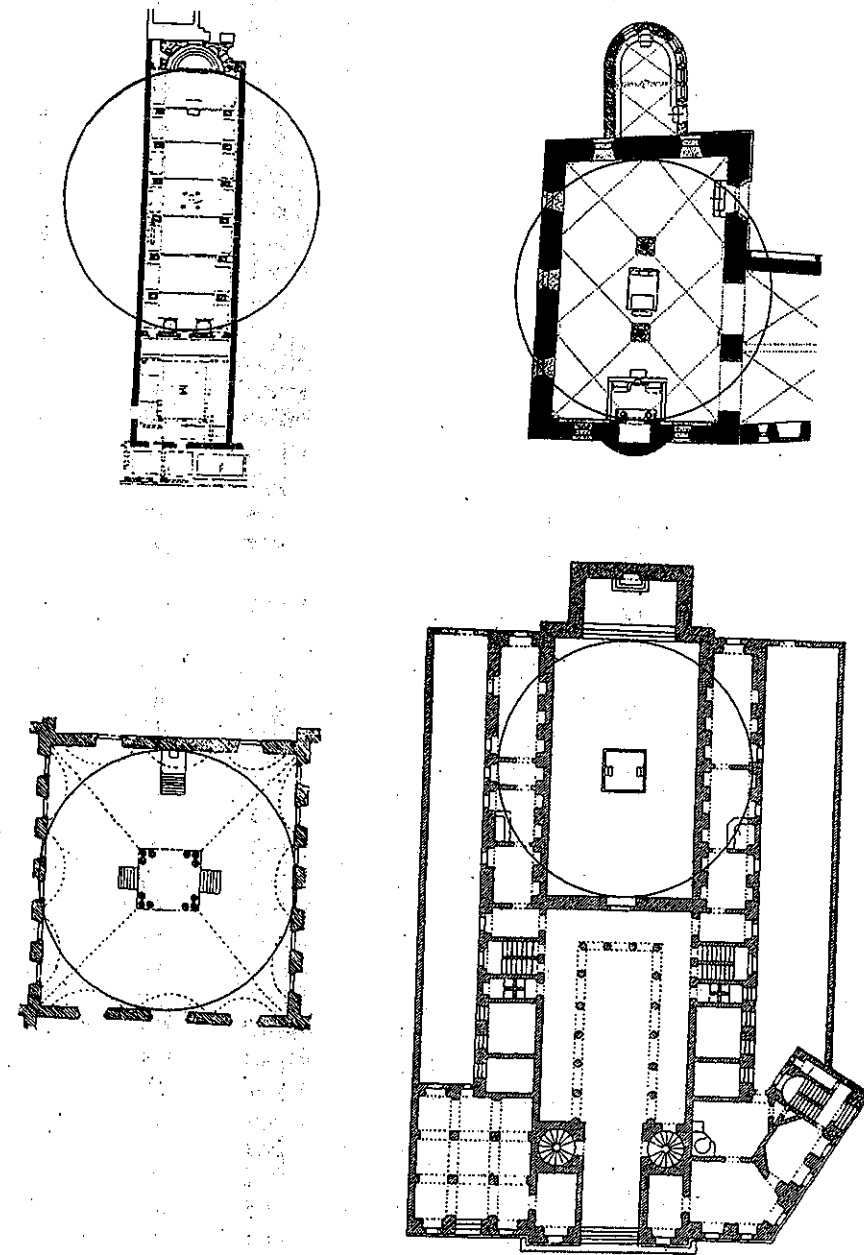


Figure 11.5 Places 'before the Ark' in Sardis – after A. Seager, Worms – after R. Krautheimer, Lublin – after R. Wischnitzer and Karlsruhe – after H. Rosenau

Would this tradition of design ever return in protestant England? Partly this depends on the understanding of mathematics. At the time of the English Reformation all but a few mathematicians still followed Plato. For instance in 1570 John Dee wrote a preface to Euclid's *Geometry*.⁹ He believed that numbers had 'Formes ... which are constant, unchangeable ... Neither of the sense, can they, at any time, be perceived or judged'. Dee still believed in the platonic philosophy which had made the traditional design of churches acceptable. And in 1570 the syllabus included Platonist arithmetic, and the few who rebelled were not doing so consciously. They had included Copernicus, who died in 1543, and would include Galileo, who was a boy of six when Dee's translation of Euclid was published. Like the learned men before them Copernicus and Galileo had studied Plato. But unlike those learned men they also experimented. And through their experiments they both realised that the old notion of the universe, with the earth in the middle, was mistaken. Their new ideas were the ones which gradually gained acceptance among academic mathematicians. And when in 1687 Newton published his *Principia Mathematica* the universe he envisioned was formed very differently from what either Platonism or the Scriptures had made it. This new view of the universe challenged Platonism, with its sensible and intelligible realms. It also called Scripture into question. Was Jerusalem the centre of the earth? Was earth the lower storey of the heavens? If the facts narrated in Scripture were not facts, were they mere pieces of poetry? Educated westerners had more pressing concerns than to revive the traditional method of designing churches.

Sir Christopher Wren was ten years older than Newton. As a Professor of Astronomy and a founder member of the scientific Royal Society, he was in touch with the latest scientific discoveries. Then in 1666 London was burned down. Wren had designed some striking buildings at Oxford. He was chosen to be one of the rebuilders of the city, and was busy for the rest of his life as an architect, and – unfortunately – too busy to write books. In London he rebuilt a total of fifty-two churches. In some of his projects the shape of the old church was retained, and in these the altar was restored to its original place. But in others he was independently responsible for the design, and followed the Church of England rules which ultimately derived from Parker's *Advertisements*.

In 1675 he began rebuilding St Paul's Cathedral (Figure 11.6). The Church of England lacked the service of Laying the Foundations, where a cross had been set up on the future location of the altar,¹⁰ but its rules were that the communion table should be at the east end. Wren had long gone beyond Platonic mathematics, and did not expect to find religious meanings in proportions. Where the traditional design is present in Wren's work, it is only by accident.

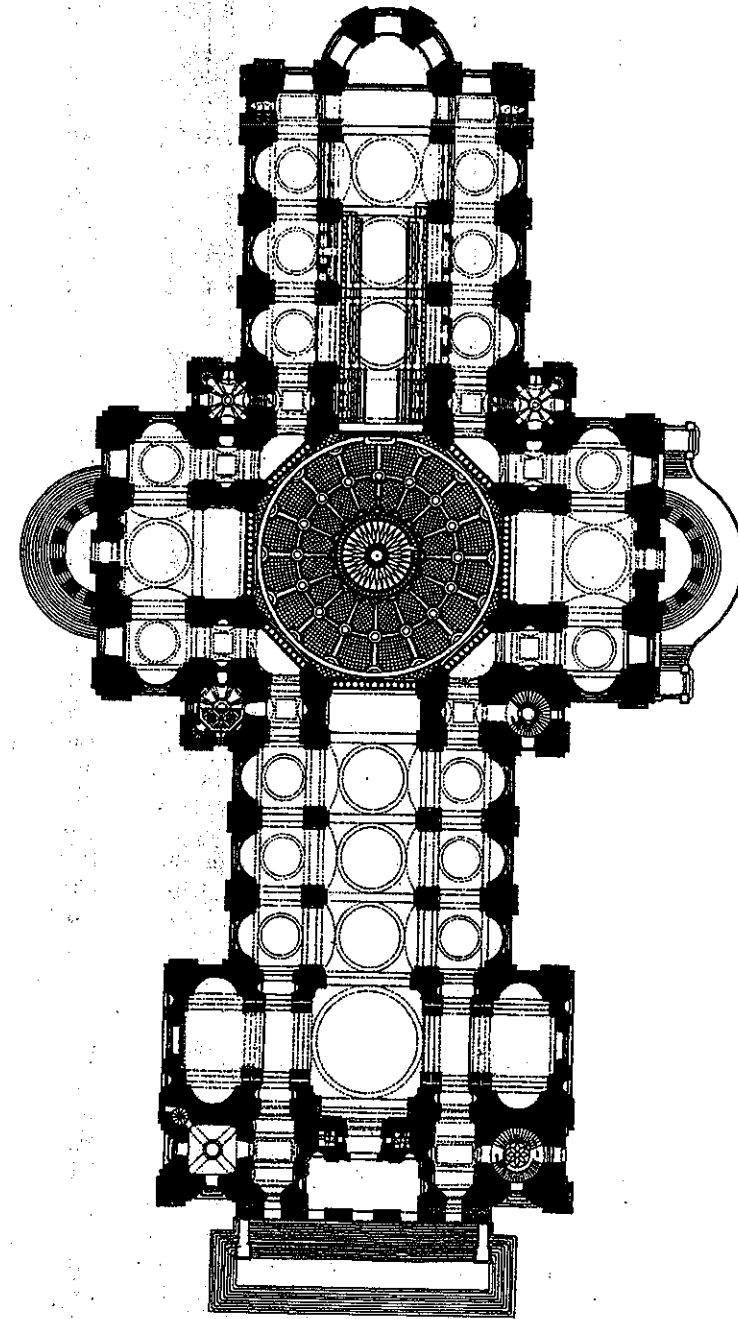


Figure 11.6 London, St Paul's Cathedral

Wren brought many resources to his work as an architect. Besides being himself a mathematician he had also read a great many current interpretations of Vitruvius, like that of Fra Giocondo, Serlio or Palladio. Thus in his *Proposals for Rebuilding the City of London* he said that 'The Churches are to be design'd according to the best forms for Capacity and Hearing, adorn'd with useful Porticoes, and lofty ornamental Towers and Steeples, in the greater Parishes'.¹¹ The needs are as utilitarian as Vitruvius's¹² So his famous saying is not a chance remark, but a considered view. He said,

'It is enough if [Roman Catholics] hear the Murmur of the Mass, and see the Elevation of the Host, but [our buildings] are to be fitted for Auditories' allowing 'all to hear the Service, and both to hear distinctly and to see the Preacher'.¹³

It was a long time before St Paul's Cathedral was completed. After many changes of plan, it was finished only forty-one years after the fire, in 1716. In the mean while a synagogue had been built in London and finished in 1701. It was called Bevis Marks, now a Sephardic synagogue (Figure 11.7). The place of the reading platform is proportionally where heaven and earth meet. In other words it continued with the traditional design. It is not to be supposed that the Jewish community as a whole still believed in Platonic arithmetic. The design of a synagogue was no doubt carried out by a small scholarly elite who adopted the traditional process of design. And the eighteenth-century Jews held firm to their ancient religious practice, whereas the Protestants had repudiated some traditional Christian habits and beliefs.

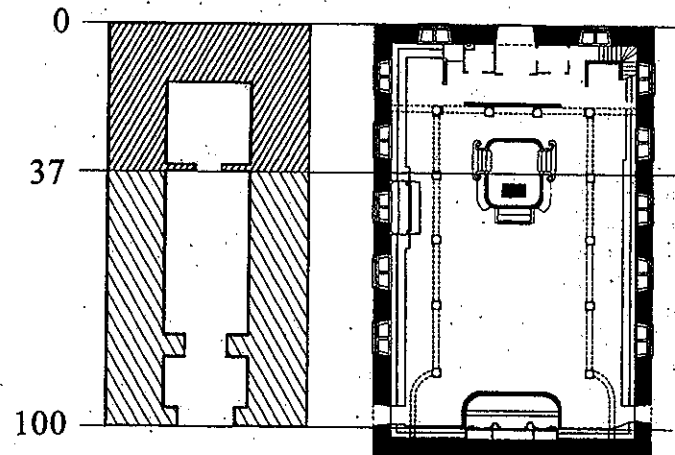


Figure 11.7 Place of the reading table, Bevis Marks Synagogue, 1701

Before 1818, and the foundation of the Incorporated Church Building Society, there were very few new churches being built outside London.¹⁴ Most Anglican Bishops had never themselves built a new church. Hence when a new one had to be built, they had no experience of choosing styles. The chapel of St John, Epping, was built in 1786¹⁵ (Figure 11.8). When it was founded it was not licensed for Holy Communion, and the space for the communion table was occupied for the time being by schoolchildren. The church has no traditional proportions, and it could not possibly have had them at this stage of the history of the Church of England.

We shall finish this book in the late nineteenth century, and deal with two buildings both of which satisfy the requirements of traditional proportions, the church partly and the synagogue completely. Chatham

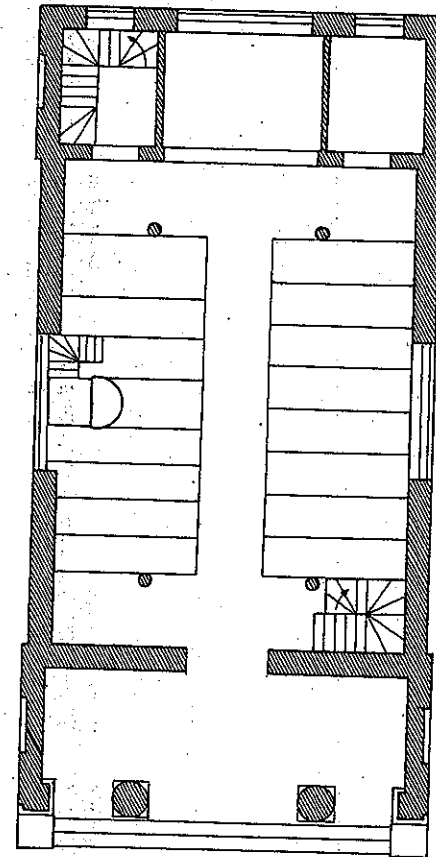


Figure 11.8 St John's Chapel, Epping, 1786

Memorial Synagogue was built in 1865 (Figure 11.9).¹⁶ It was built in the Saracenic style, which was a Jewish response to the Gothic fashion of churches. The ark is at the east end and the reading-desk at the *bema* twice exactly proportioned at the 37: 100 mark. Clearly the designer understood the traditional proportions of the synagogues.

Nothing associated the design of the chapel at Epping with the traditional style. Could the same be said for the buildings of the Gothic Revival? Gothic started off in secular buildings and gardens, and it was later introduced into churches. The gothic style was started not by

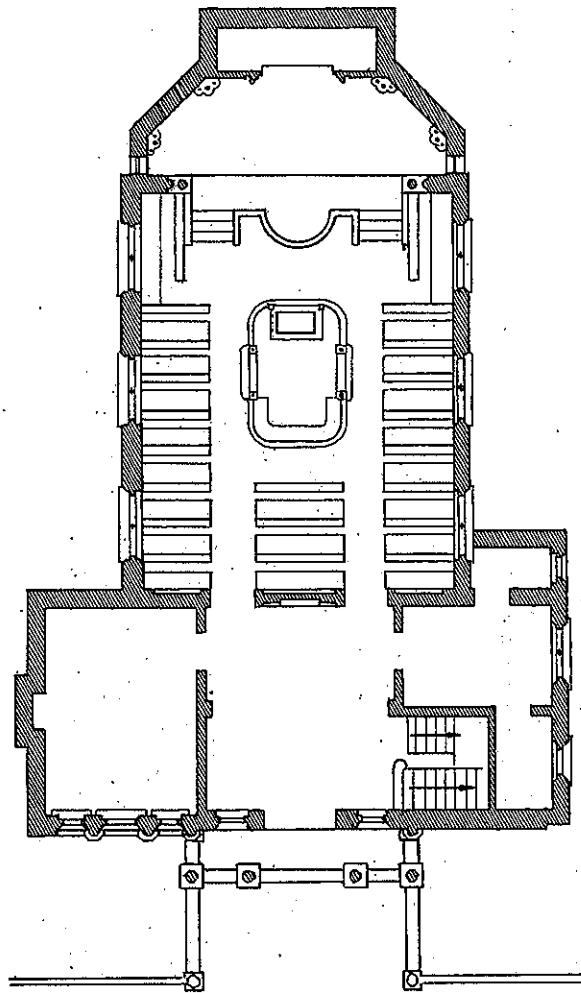


Figure 11.9 Chatham Memorial Synagogue, 1865

accurate architectural historians but by fashionable decorators. When churches first adopted the gothic style the main emphasis was on the pulpit, but the Camden Society in Cambridge, founded in 1839, fought hard for churches to be designed with chancels. Most architects who used the gothic style did not enter much deeper into the traditional plan. There were some architects who took the tradition more seriously. So Sir George Gilbert Scott, the nineteenth-century patriarch of this famous architectural family, rebuilt St Mary Abbots, Kensington in 1872 (Figure 11.10). He took great care to follow medieval proportions. His choir, for example, is the shape of the Ark of the Covenant, like a great

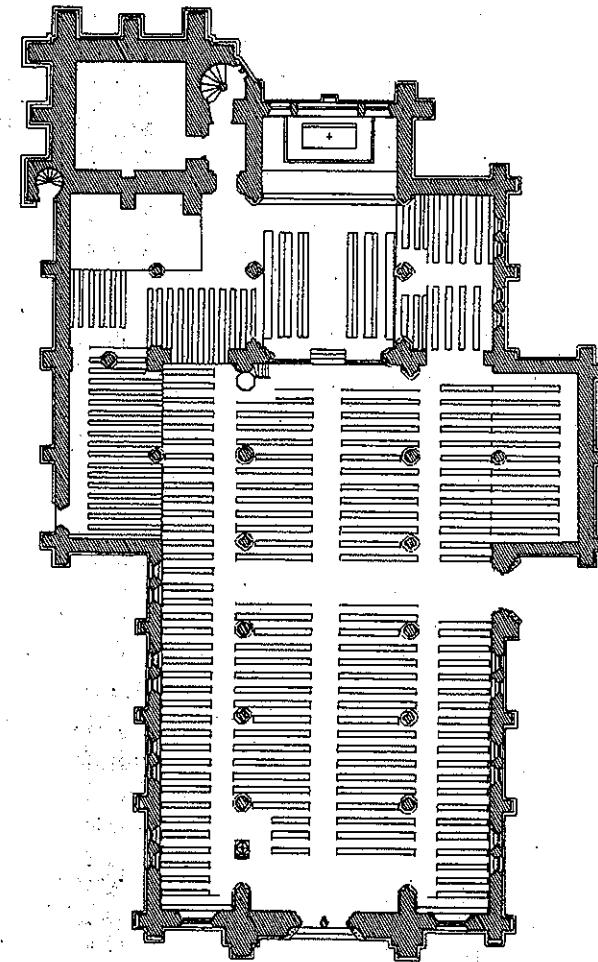


Figure 11.10 St Mary Abbots, Kensington, Sir George Gilbert Scott, 1872

many churches built in the thirteenth-century. Since he was a constant visitor of medieval churches and an observant archaeologist, his field work made him a scholar of mediaeval techniques. He was well able, as a technician, to imitate traditional plans. But it is doubtful whether he knew the scriptural meaning of the proportions. And he did not do so consistently. One example is the non-traditional position of the main altar in St Mary's. His written works never show that he understood the meaning of the traditional proportions, and, as a nineteenth-century Evangelical, he would be suspicious of medieval doctrine, however much he approved of medieval ornament.

Furthermore the nineteenth-century use of the church was very different from what it had been in the middle ages. In 1872, the period shown in the plan, every area of the floor was full of pews, those for a large choir in front of the altar and in the chapel on the right, and benches for the schoolchildren on the left. The only free space was occupied by the organ.

Should new synagogues and new churches be traditionally designed? Some communities continue to follow the system, as part of a wider religious culture. In designing the plans they have studied the Scriptures. They are familiar with the notion that God's dwelling is in a certain direction, or that Jerusalem is in the centre of the earth. They know precisely how to locate the Holy Ark (or Altar), and the place where the Law (or the Gospel) is read. And their religious tradition goes back at least to Alexandria and to the Jew Philo.

As a piece of religious culture this is historic, but it may or may not be valuable. The traditional design is certainly based on the Scriptures. But it interprets them by a system stemming from Pythagoras, and his meditations on mathematics. And today very few Jews and very few Christians wish to enter the spiritual world through meditating on numbers in the Platonic way.

The greatest objection to the traditional design is that it was a secret reserved for those who had initiated it, and it led to an architecture of secrecy. You have to measure a building to tell whether it has or has not been traditionally designed. It was part of Plato's teaching, and perhaps a wise rule, that people should keep to themselves the things they had learned through meditation. But does this kind of secrecy go well with architecture? The traditional design is something which can perhaps be admired as an antique, a system of the past. If there is a new style of architecture, I hope it aims to illuminate the laity.

Notes

1 An accurate plan of Salisbury Cathedral by Peter Spencer has now appeared, attached to Cocke and Kidson.

2 Cocke and Kidson, 15.

3 See d-Durandus 2, p. 212.

4 See the extract below, p. 216.

5 Coming from the Arabic word for 'the pulpit', *al-minbar*.

6 The internal rectangle proportion of the synagogue hall is 20:35, and the flat part of the sanctuary and the inner total length are the length proportion 10:75.

7 See Bettenson 337.

8 XVIII century Georgian churches, for instance at Tkhinvala, St George, Odzisi, Church of the Archangels, Saskhori (1704), Church of the Shalikhshvili family, Koshkēbi (1708), and St Theodore, Largvisi, (1759).

9 d-Dee, p. 218.

10 See Durandus, *Rat. Div. Off.* 1, 1, 7, and *Pontificale*, II. 1, pp. 451-5. See also the picture from the *Pontifical* (Venice, 1572) reprinted in Riley, p. 5, fig. 4.

11 Enthoven 118.

12 On capacity, Vitruvius, *Arch.* V.1,2, VI. 5.2, and on acoustics of the theatre *Arch.* V.8.1.

13 Enthoven 320.

14 See Yates 54.

15 It was pulled down in about 1835.

16 Plan traced from *The Builder*, Sept 10, 1870. 726.

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Documents

Building the Tabernacle (Exodus 25–30)

These extracts from Exodus introduce God's instructions for making the Tabernacle. They emphasize features which might be imitated in synagogues or churches. The translation is by Brevard S. Childs (*Exodus, a Commentary*, London 1977, 512–521) and is printed here by his kind permission.

The Contribution

- 25.1 The Lord said to Moses, 'Tell the Israelites to set aside a contribution
3–8 for me ... (of gold, ... cloth, ... oil for the lamps). Let them make a sanctuary for me so that I may dwell among them. You must make it exactly as I have shown you, after the design for the tabernacle and the design of all its furnishings.

The Ark

- 10 They shall make an ark of acacia wood, two and a half cubits long, a cubit and a half wide, and a cubit and a half high ... You shall cast four gold rings for it and put them on its four feet ... You shall make poles ...
13 and insert the poles into the rings ... to carry the ark by them. ... You
14, 16 shall put into the ark the testimony which I will give you.¹ You shall make a propitiatory² of pure gold, two and a half cubits long and a cubit and a half wide. You shall make two cherubim of gold ... at the two
18 ends of the propitiatory ... There I will meet with you and communicate to you – from above the propitiatory and from between the two cherubim which are on top of the ark of the testimony – all the commands that I have to give you for the Israelites.

The Table

- 23 You shall make a table of acacia wood, two cubits long, one cubit wide, and a cubit and a half high ... (Gold rings ... poles to carry the table).
29 You shall make its plates, bowls, jars, and jugs with which to offer libations. You shall set the bread of the Presence on the table, to be
30 before me always.

The Lampstand

- 37 You shall make a lampstand of pure gold ... There shall be six branches extended from its sides ... You shall make the seven lamps for it ... See to it that you follow the design for them which you are being shown on the mountain.

The Tabernacle

- 26.1 The tabernacle itself you shall make of ten curtains of fine twisted linen, of blue and purple and scarlet material, with a design of cherubim worked into them ... [Measurements are given to make the curtain along the sides hang about a cubit from the floor] ... You shall join the curtains to one another with the clasps so that the tabernacle shall be one whole.

Outer Covering

- 7 You shall make curtains of goats hair for a tent over the tabernacle.
8-13 [Measurements are given to make these curtains overlap the ones of the tabernacle, and they suggest that the width of the inside is ten cubits.] You shall make for the tent a covering of tanned rams' skins, and above that a covering of dolphin skins.

The Frames and Bars

- 15 You shall make frames for the tabernacle of acacia wood to stand upright ... [Measurements of the frames, and the bars which join them, are given which fix the length at thirty cubits, but leave doubt about the width.] Then you shall erect the tabernacle according to the manner which you were shown on the mountain.

The Veil

- 31 You shall make a veil of blue, purple, and scarlet material and fine twisted linen. It shall have a design of cherubim worked into it. You shall fasten it with hooks of gold to four posts of acacia wood overlaid with gold upon four bases of silver.

Assembly

- 33 You shall hang the veil from the clasps and bring the ark of the testimony there within the veil, and the veil shall separate for you the Holy Place from the Holy of Holies. You shall put the propitiatory upon the ark of the testimony in the Holy of Holies. You shall set the table outside the veil, and the lampstand on the south side of the tabernacle opposite the table. You shall put the table on the north side.

The Screen

- 36 You shall make a screen for the door of the tent of blue, purple, and scarlet stuff and fine twisted linen with embroidery. You shall make for the screen five posts of acacia wood and overlay them with gold, and you shall cast five bases of bronze for them.

The Outer Altar

- 27.1 You shall make the altar of acacia wood, five cubits long and five cubits wide – the altar is to be square – and three cubits high. You are to make horns for it ... and you shall overlay it with bronze ... As you were shown on the mountain, so shall they be made.

The Court

- 9 You shall make the court of the Tabernacle. On the south side there are to be hangings for the court of fine twisted linen, a hundred cubits long ... [The same for the north side.] ... For the width of the enclosure, on the west side, there shall be fifty cubits of hangings ... For the breadth of the court on the front, or east side ... [An embroidered entry screen of twenty cubits is in the middle, hanging on four posts, with fifteen cubits of hangings on either side.] ... The length of the court shall be a hundred cubits, the width fifty, and the height five cubits ... [A description of the oil for the lamp, and of the vestments of Aaron follows. The ordination of Aaron and his sons is described, and the offering of sacrifices on the outer altar.]

The Incense Altar

- 30.1,2 You shall make an altar for burning incense; make it of acacia wood. It shall be a cubit long and a cubit wide – it shall be square – and two cubits high ... You shall overlay it with pure gold ... [Rings and poles to carry it.] ... You shall place it before the veil which shields the ark of the testimony before the propitiatory which is over the testimony, where I will meet with you. Aaron shall burn fragrant incense upon it. [Description of the half-shekel offering.]

The Laver

- 17-18 The Lord said to Moses, 'You shall make a laver of bronze ... for washing; and place it between the tent of meeting and the altar. Put water in it, and let Aaron and his sons wash their hands and their feet from it. When they enter the tent of meeting, or when they approach the altar to minister ... they shall wash with water, that they may not die.

Notes

- 1 That is the Ten Commandments.
2 This is the ark's decorated lid.

Plato's Cave: 380 BCE

The main speaker is Socrates, and the person who replies is Glaucon.¹ From *Republic* vii.

[1]

- [514] 'Next', I said, 'I want you to compare the state of being educated or uneducated with the following situation. Picture people living in an underground dwelling like a cave, and across the whole cave there's a

long opening for the light. But since they were children the people inside have had their legs and necks tied up. They have to remain in the same position, and they can only look in front of them, because the ropes prevent them from moving their heads round. Up above there is the light of a distant fire burning, but this is behind them. Between the fire and the people tied up, and above them, is a road, and a wall has been built beside it. This wall is just like the screen in front of a puppet-show, above which the puppets are visible.'

'I can see it', he said.

'Then picture also people carrying all kinds of objects beside this wall so that they stick up above it. They are carrying statues of men and of all kinds of animals, made of wood or stone or anything else, and it is likely that some of the people carrying them will be talking and others will remain silent.'

[515] 'This picture you're speaking of,' he said, 'and these people tied up are absolutely extraordinary.'

'But they are just like us,' I said. 'Now do you think that such men would have seen anything of themselves or the others, apart from the shadows which the fire makes on the wall of the cave in front of them?'

'No! If they have been prevented all their life long from moving their heads, I can't see how.'

'And what about the things being carried past. Isn't this the same?'

'What do you mean?'

'Well, if they were able to speak to each other, don't you think that they would give names to the things they were able to see?'

'Of course.'

'And what about this. Say the opposite wall of the place where they were tied up had an echo. So whenever one of those who passed along the wall uttered a sound, don't you think that they would believe that there was no other source for the sound but the passing shadow?'

'By God, you're right!' he said.

'So in every single way' I said, 'such men would think that the truth was nothing but the shadows of artificial objects.'

'They certainly would,' he said.

'Now consider what it would be like if their ropes happened to be untied,' I said, 'and if their ignorance were removed. Say a person were released and suddenly forced to stand up and move his neck and walk and look up to the light, in doing so wouldn't he feel pain, and because he was dazzled wouldn't he be unable to examine the things which had made the shadows? And what kind of reply do you think he would give to a person who said, 'All you saw in the past was so much nonsense, but now that you are nearer the truth and reality, you see more clearly.' Or say a person showed him each of the things which were passing along, and forced him to say what they were. Don't you think that he'd find it difficult, and would think that the things he had seen before were more real than what he was now being shown?'

'Very much so', he said.

[II] 'Furthermore if this person forced him to look at the light itself, don't you think it would pain his eyes, and he would turn round and go back

to the things which he could see. Because he'd think these things were far clearer than what has just been pointed out to him.'

'That's right', he said.

[516] 'But imagine if from there,' I said, 'some strong person went on pulling him up the rough steep path, and dragged him along until he saw the light of the sun. Don't you think as he was pulled along he would be in pain and in trouble, and when he came into the light his eyes would be so full of its beams that he couldn't see anything which we now call real?'

'I agree,' he said, 'He certainly wouldn't see them immediately.'

'I think that he'd have to become accustomed to the things outside before he could see them. First of all he would find it easiest to look down at shadows, and then at the reflections of men and other objects in water, and only later at the real objects. Thus practised he might find the night a more easy time to view the objects in the sky, and the sky itself. In that case he would examine the light of the stars and the moon, rather than looking at the sun and its light in the daytime.'

'Exactly right', he said.

'And last of all he would see the sun. Not by its reflection in water, and not by a mirage, but the sun itself in its own place. He could contemplate it as it is.'

'Of course', he said.

'At this very point he would start to realise that the sun provides the seasons and the years, and both administers everything in this region he can see, and of all the things he can see that it is somehow the cause.'

'It's plain' he said, 'that such thoughts would follow.'

'Well then. Say he remembered his first home, and what passed for wisdom there, and the prisoners who were there with him, don't you think this man would be happy at his transformation, and would regard the others with pity?'

'Indeed he would.'

'And say the prisoners instituted a prize to recognise and honour the sharpest examiner of the shadows in front of him. So he'd remember accurately the objects which usually came before others or after them, and the objects which usually came together. On this evidence he'd guess about the future. Do you think that the free man would envy the prize-winners they honoured or wish to be like them? Or do you think that he'd agree with Homer, and while on earth he'd much prefer to be another man's slave, or a man without property, or the humblest thing one can imagine, rather than think their thoughts and live their life.'

'I myself quite agree,' he said, 'I would prefer any misfortune you like to mention rather than accepting such a life.'

'And attend to this,' I said. 'If this man of whom we are speaking went down again and sat in his old seat, he couldn't see if he had suddenly come out of the light.'

'He'd be blind indeed,' he said.

[517] 'And say it was necessary for him to compete in judging the shadows with the people who had always been prisoners. He could not even see the shadows while his vision was dim, and he had not yet got used to the

dark, and it would take some time for him to become accustomed to it. Don't you think they'd laugh at him, and there would be a rumour about him that when he'd gone out he'd returned with impaired vision, so it wasn't worth while even trying to go out. And if anyone wanted to release them and lead them away, they might try to kill him, wouldn't they?"

"They certainly would," he said.

- [III] 'So this is the picture, my dear Glaucon, which must be applied to all that we have previously said. So we'll take the region of the world which we can see to be like the home of the prisoners, and the light of the fire within it the same as the sun in all its qualities. And if you think that the upward climb and the vision of the outer world is equivalent to the rising of the soul to the intelligible region, and would welcome this as an answer, you won't fail me in my expectations – but God only knows whether it is true. My experience of it shows this, that the last thing we can know – and it is hard to see – is the idea of the Good. But when it becomes visible it is to be reckoned as the cause of all that is right and beautiful. In the visible world it is light, and the source of light. In the intelligible world it is the source of truth and reason. And any individual or public person must have seen all this if he's ever going to act with understanding.'

Notes

1 In this translation I have been greatly helped by Alix Wilkinson, my wife.

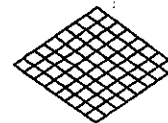
Philo, The True Seven

Extracts from Philo's *De Opificio Mundi*, 89–128 (tr. F. H. Colson, G. H. Whitaker, Loeb I, 72–101)

I have paraphrased the numerals described by abstract nouns, such as *monad*, *hexad* or *ogdoad* as 'the True Unit', 'the True Six' or 'the True Eight'.

- 89 Now when the whole world had been brought to completion in accordance with the properties of the True Six, the Father honoured the following day, the seventh. He praised it and called it holy ...
- 90 But whether anyone can adequately celebrate the True Seven's properties I beg leave to doubt, for they are beyond all words ...
- 91 The True Seven means two things. There is one meaning within the True Ten. This is measured by seven times single True Units, and is composed of seven True Units. And there is another meaning beyond the True Ten. This is a number which always derives from the True Unit, which is [seven times] multiplied by two, or by three, or by any number which follows.
- So for example 64 is the product of multiplying by two, starting from the True Unit¹ and 729 that of multiplying by three² ... For invariably the seventh term of a number starting from the True Unit and either multiplied by two or three or another number is both a cube and a square, combining both abstraction and solidity. The abstraction is the surface formed by the squares and the solidity is the solid formed of cubes. ...

64 as Square



surface 8×8

64 as Cube



cube $4 \times 4 \times 4$

- 95 Passing on to the other aspect of the True Seven, the one contained in the True Ten, we must wonder at this aspect no less than the one we have mentioned. So for instance seven, composed of one and two and four, has two specially harmonic relationships, the twofold and the fourfold, one producing the diapason harmony while the fourfold relation produces double diapason. ...
- 97 This very True Seven displays yet another beauty, a holy object to contemplate. Since it is made up of the True Three and the True Four, it provides an example of everything in creation which is steadfast and naturally upright. And I'll show you how.
- The right-angled triangle, which serves as the basis of right angles, is a combination of the numbers three, four, and five. Three and four, the essence of the True Seven, make up the right angle. Angles larger or smaller than the right angle are examples of irregularity and disorder and inequality. And there is nothing to prevent them being even larger or even smaller. But one right angle cannot be compared with another, and cannot be 'more right' than another. It remains the same, and never changes its identity.
- So if the right-angled triangle is the basis of drawings and right angles, and what is most essential to this, the right angle, is produced by the reality of the True Seven, namely the True Three and the True Four, it is reasonable to suppose that this reality is the source of every drawing and of every shape.
- 98 To what we have already said it is necessary to add that three is the number belonging to surface. A point is related to the True Unit, a line to the True Two, and a surface to the True Three. But four belongs to the solid: by the addition of one depth is added to a surface. Hence it is clear that the nature of the True Seven is not only the starting-point for plane and solid geometry, but also – in short – for those things without bodies and those with them.
- 99 So sacred is the dignity inherent in the True Seven that it has a unique relation distinct from all the other numbers in the True Ten. Of them it can be said that they are either the source of other numbers without having a source themselves, or that they have a source, but are not the source of any others, or that they both are and have a source. Only the True Seven is not in this class ... It is neither the source nor derived from any source. For this reason some philosophers compare this number with Nikê. She had no mother and was a virgin, and – so the story goes – appeared out of the head of Zeus. But the Pythagoreans compare it to the Sovereign of the Universe

... Of him the True Seven would fitly be said to be a symbol. Philolaus³ provides this evidence of what I say: he says 'There is a Sovereign and Ruler of the Universe, God, ever One, without motion, Himself only like unto Himself, and unlike the rest.' [Many other arguments are adduced.]

- 128 These are the statements and reflections of men on the True Seven. There are many more. On the one hand its nature has merited the highest honour, an honour accorded by the most respectable men who have worked in mathematics among the Greeks and barbarians. But on the other hand that lover of virtue, Moses, gives it a special honour. He inscribed the True Seven – and its beauty – on the most sacred tables of the law, and impressed it on the minds of all who were under him, that they might carry on normally for six days but that they should keep the seventh day holy. They should not do any work on it to seek or gain a livelihood. Rather they should concentrate on philosophy with a view to improving their morals and examining their conscience.

Notes

- 1 $1 \times 2 = 2$, $2 \times 2 = 4$, $4 \times 2 = 8$, $8 \times 2 = 16$, $16 \times 2 = 32$, $32 \times 2 = 64$.
 2 $1 \times 3 = 3$, $3 \times 3 = 9$, $9 \times 3 = 27$, $27 \times 3 = 81$, $81 \times 3 = 243$, $243 \times 3 = 729$.
 3 A Pythagorean philosopher of the 5th century BC.

The Apocalypse of John the Divine: 95 AD

- 1.10 I was in the spirit on the Lord's Day, and I heard behind me a loud voice like a trumpet saying, 'Write what you see in a book!'

Holy Place of Heavenly Tabernacle

- 1.12– On turning I saw seven golden lampstands, and ... one like a son of
 20 man, clothed with a long robe (*podêrê*) and with a golden girdle round his breast ... The seven lampstands are the seven churches.

Sanctuary of Heavenly Tabernacle

- 4.1 After this I looked, and lo, in heaven an open door (cf. Is.6.4) ...
 2 'Come up hither ...' At once I was in the Spirit, and lo, a throne
 4 stood in heaven, with one seated on the throne! ... Round the throne were twenty-four thrones, and seated on the thrones were twenty-four elders ...
 6 And before the throne there is as it were a sea of glass, like crystal. And round the throne, on each side of the throne, are four living creatures, full of eyes in front and behind.
 5.6– And between the throne and the four living creatures and among the
 6.11 elders, I saw a Lamb standing, as though it had been slain. ... I saw under the altar the souls of those who had been slain for the glory of God.

Firmament Destroyed

- 6.12 There was a great earthquake; and the sun became black as
 13 sackcloth, the full moon became like blood, and the stars of the sky fell

to the earth ... the sky vanished. ... and every mountain and island was removed from its place. (Earth can see the throne of God and the Lamb).

John sees earth from heaven

- 7.1–8 After this I saw four angels standing at the four corners of the earth, holding back the four winds ... Then I saw another angel ascend from the rising of the sun, with the seal of the living God, and he called with a loud voice to the four angels ... (Earth not to be harmed till the sealing). And I heard the number of the sealed, which was a hundred and forty and four thousand.

Sanctuary of Heavenly Tabernacle

- 7.9– A great multitude ... standing before the throne ... another angel came
 9.21 and stood at the altar with a golden censer, and he was given much incense to mingle with the prayers of all the saints upon the golden altar before the throne. ... Then the angel took the censer and filled it with fire from the altar and threw it on the earth ... (still heaven).

John returns to earth

- 10.9– [John goes to the angel, who was standing on the sea and on the land,
 11.19 and is given the scroll.] Then I was given a measuring rod like a staff, and I was told, 'Rise and measure the temple of God and the altar ... but do not measure the court ... for it given over to the nations.' Then God's temple in heaven was opened, and the ark of his covenant was seen within his temple.

Going to the highest heaven

- 12.1– A great portent appeared in heaven, a woman. ... her child was caught
 13.18 up to God and to his throne.

The Holy Place of heaven

- 14.1–5 Then I looked and lo, on Mount Zion stood the Lamb ... the hundred and forty-four thousand who had been redeemed from the earth.
 14.6– Then I saw another angel flying in midheaven ... And I heard a voice from
 18.24 heaven ... And another angel came out of the temple in heaven ... Then I saw another portent in heaven ... And I saw what appeared to be a sea of glass mingled with fire ... After this I looked and the temple of the tent of witness was opened ... And the temple was filled with smoke from the glory of God and from his power, and no one could enter the temple until the seven plagues of the seven angels were ended ... Then I heard a loud voice from the temple ... from the throne, saying, 'It is done'. Then one of the seven angels who had the seven bowls came and said to me, 'Come, I will show you the judgement of the great harlot ...' ... And he carried me away in the Spirit into a wilderness ... After this I saw another angel coming down from heaven, having great authority, and the earth was made bright with his splendour ... Then I heard another voice from heaven ...
 19.1–8 After this I heard what seemed to be the mighty voice of a great multitude in heaven ... And the twenty-four elders and the four living

creatures fell down and worshipped God, who is seated on the throne ... And from the throne came a voice ... Then I heard what seemed to be the voice of a great multitude.

- 19.9- Then I fell down at the angel's feet to worship him, but he said to me,
20.10 'You must not do that! I am a fellow-servant with you and your brethren who hold the testimony of Jesus. Worship God.' ... Then I saw heaven opened, and behold a white horse! He who sat upon it is called Faithful and True ... Then I saw an angel standing in the sun ... Then I saw an angel coming down from heaven ... Then I saw thrones, and seated on them are those to whom judgement was committed. Also I saw the souls of those who had been beheaded for their testimony to Jesus ... They came to life again, and reigned with Christ a thousand years.

A New System

- 20.11- Then I saw a great white throne and him who sat upon it; from his presence earth and sky fled away and no place was found for them ...
21.8 Then I saw a new heaven and a new earth; for the first heaven and the first earth had passed away and the sea was no more. And I saw the holy city, new Jerusalem, coming down out of heaven from God, prepared as a bride adorned for her husband ... 'Behold, I make all things new'.

New Jerusalem

- 21.9- An ... angel spoke to me, saying, 'Come, I will show you the Bride, the wife of the Lamb' And in the Spirit he carried me away to a great, high mountain, and showed me the holy city Jerusalem, coming down out of heaven from God ... its length and breadth and height are equal. ... the city was pure gold ... And I saw no temple in the city, for its temple is the Lord God and the Lamb. And the city has no need of sun and moon to shine upon it, for the glory of God is its light, and its lamp is the Lamb.
22.5 But nothing unclean shall enter it ... Then he showed me the river of the water of life, bright as crystal, flowing from the throne of God and of the Lamb ... And night shall be no more.

The Ma'amad: 200 AD

Mishnah, Taanith 4.2-4; translation based on Danby, p. 199. *Ma'amad* means 'position' in the sense explained on page 66 above.

2 What are the 'positions'?

It is written ... 'My oblations ... shall ye observe to offer unto me in their due season'. But how can any one's sacrifice be offered if his position is not near it?

Therefore [David and Solomon,] the first prophets, ordained twenty-four Courses.¹ For each course there was a position in Jerusalem. It was made up of priests, levites and Israelites. When the time came round for a Course to go up, the priests and levites who belonged to it went up to Jerusalem. The Israelites of this Course assembled in their own cities to read the story of

- 3 Creation ... at Morning Prayer and at the Additional Prayer. At the
4 Afternoon Prayer they came together and recited it by heart ... When a Wood-offering was to be brought they did not stand in their positions at the Closing of the Gates.

Notes

- 1 See 1 Chr 27.1, 2 Chr 8.14.

Church and Tabernacle, Methodius: before 311 AD

From *The Symposium*, Book 5, sections 6-8, translated from the edition by G. N. Bonwetsch, GCS 27, Berlin-Leipzig 1917

- 6 It has furthermore been a tradition that the community of those who are chaste represent God's unbloody altar. Virginity is such a great and glorious thing that it is to be guarded as something pure and undefiled, and not to be touched by any of the impurities of the flesh. It should also be set up inside the building, 'before the testimony'.¹ Its gilding should be with divine wisdom, and it should be in the Holy of holies to send forth to the Lord the sweet fragrance of love.

Indeed God says, after the passage about the Brasen Altar for the holocausts and other offerings, 'Thou shalt make' another 'altar of shittim-wood ... and thou shalt overlay it with gold ... and thou shalt set it over against the veil ... before the ... testimonies. And Aaron shall burn sweet-smelling incense upon it in the morning. ... He shall neither offer upon it ... an oblation nor a victim'.²

- 7 Since the Apostle tells us that 'the Law is spiritual' and that it contains within itself the images 'of the good things to come', let us now strip it bare, removing the 'veil of the letter' which now covers it, and contemplate its true meaning. The Hebrews were ordered to construct the Tabernacle as an imitation of the church, so that they might have a picture which would, through its physical objects, prophesy things which were divine. For the pattern which was shown upon the mountain, and at which Moses looked when he built the Tabernacle, was an accurate form [*idea*] of the dwelling in the heavens which we now revere. We see the form more clearly than was described in Moses' prophetic acts, but still more dimly than the truth. As it is the ultimate truth has not yet come to mankind. Indeed we are not fit to bear its purity or to gaze on its incorruptibility, since we are not even able to bear seeing the rays of the sun.

The Jews for their part have prophesied only the shadow of the image, that is to say they are three stages from the truth. For our part we view the true image of the dwelling in the heavens clearly. The final truth itself will appear clearly after the resurrection, when we shall behold the heavenly Tabernacle 'face to face', the heavenly city, 'whose builder and maker is God', and by no means 'dimly' nor 'in part'.³

- 8 The Jews have prophesied the things which belong to us, but we prophesy the things of heaven. So therefore the Tabernacle was a symbol of

the Church, and the Church is a symbol of the heavens. But this being so, because the Tabernacle, as has been said, is an image of the Church, its altars too must be represented by something in the church. The Brasen Altar is therefore to be compared with the place of the community of holy widows. They are indeed a living altar of God, and to it we should bring calves and tithes and free-will offerings. But we ought to liken that Golden Altar within the Holy of Holies, the altar that is 'placed before the testimony', and on which it is forbidden to offer 'sacrifices and libation', to those who live in the state of chastity. They have protected their bodies with pure gold, unadulterated by carnal intercourse. ... (The Golden Altar) stands next to the Holy of holies and before the veil, and sends up prayers like incense to the Lord.

Notes

- 1 Ex 30.6.
- 2 See Ex 30.1-9.
- 3 See Heb 11.20.

The Dedication at Tyre, Eusebius: 323 AD

From *Ecclesiastical History*, 10.4, translated from the edition of E. Schwartz and T. Mommsen, in GCS II,2, Berlin-Leipzig 1908, pp. 862-883

Address

- 2 I speak to you, friends and priests of God, who are clothed in the sacred robe¹ and the sacerdotal garment of the Holy Spirit. I speak to you, Bishop Paulinus, to whom ... God has granted the signal honour of building and restoring this house on earth for Christ ... and his sacred and all-holy Bride.
- 3 Maybe we should call you a new Bezaleel, the architect of the holy Tabernacle,² or Solomon, King of a new and far better Jerusalem, or maybe a new Zerubbabel, who added to the Temple a new glory, far
- 4 greater than the glory of the former one.³ And I also speak to you, the lambs of the sacred flock of Christ ...

The Spiritual Church and the Bride of Christ

- 36 (The Bishop,) our new and goodly Zerubbabel ... has clothed the (Bride of Christ) not with the garment which she had possessed beforehand, but which he had learned about by pondering on this sentence of holy Scripture, 'And the latter glory of this house shall be greater than the former'.⁴

The outer wall and gate

- 37 So he enclosed a much greater area than in former times, and by surrounding it with an outer wall strongly defended the whole
- 38 enclosure.⁵ Then he erected a vast lofty entry gate to face the very rays of the rising sun,⁶ providing those who were standing outside an ample view of what lay within ... in the hope that those who observed what was inside would be attracted by what they could see and would decide to come in.

The court

- 39 He did not wish those who entered the gates⁷ to go directly into the building with unholy or unclean feet. So between the outer entry and the Temple he left as large a space as he could. He adorned the four sides of this area with colonnades,⁸ and all round it he placed latticed chancels. They were of a medium height, and joined the columns which rose above them. Thus the middle space was fenced in, and the court⁹ inside it was open to the sky, full of air and sunlight.

The fountains

- 40 There he has placed a symbol of holy cleansing, for in front of the Temple he provided great fountains of flowing water,¹⁰ so that anyone who was going further into the sacred enclosure could wash themselves. Everybody who enters stops here,¹¹ and by its orderly and splendid surroundings it is a very suitable place for the people to pause who still lack the primary teachings.

Doors of the Temple

- 41 Beyond this splendid court the Bishop has made a many-doored entry into the Temple. In fact he set three doors¹² in the east wall. The central one, which was greater and wider than the others, he decorated with bronze plates,¹³ nails of iron and raised patterns.¹⁴ This door was like a queen¹⁵ with her guards on either side.

Aisles, windows and woodwork

- 42 The number of aisles was arranged to match the doors, and they were divided by two colonnades. Above them he has designed the house with openings which give a great deal of light, for he has constructed the windows from carved wood and decorated their frames.¹⁶ And, regardless of expense, he has provided the Palace with even richer woodwork.

The sanctuary

- 44 When the Bishop finished the Temple, he placed at its head a seat to honour the presidents, and on either side of it other benches in strict order. In the centre he added the place of the altar, the Holy of holies. To make this inaccessible to the congregation he surrounded it with wooden rails, and anyone who examines them will be amazed at the consummate mastery of their carving. Nor did the Bishop neglect to make the floor,¹⁷ with fine marble in excellent designs.

The Temple's surroundings

- (45) On either side of the exterior of the Temple he constructed exedrae¹⁸ and very large rooms. These were all round the outer walls of the Palace, and the entries of the central House. The person I shall call our most peaceful Solomon, when he founded the Temple of God, provided these particular places for those who still needed to be purified and sprinkled with water and the Holy Spirit.

— [63-68 Bishop Paulinus is building the Church of souls]

The Temple on earth and in heaven

- 69 This is therefore a great Temple, one of those which have been built all round the earth – that is to say the present world that is lighted by the sun. By his own Word the mighty Creator of the Universe commanded it to be built on earth as an intelligible picture of things which lie
- 70 beyond heaven's vaults ... But no mortal voice can sing hymns which are in the least degree adequate to praise the region above the heavens. In that region are the models of everything on earth. In that region is that Jerusalem we believe to be above, and the heavenly Mount Zion ... for 'eye hath not seen and ear hath not heard, and those things have not entered the heart of man which God hath prepared for those that love him.'¹⁹

Notes

- 1 *Podêrê*, a word for one of Aaron's vestments, Ex 28.4.
 2 Ex 31.1–22.
 3 See Haggai 2.9.
 4 Haggai 2.9.
 5 *To exôthen peribolos*: see Ezek 40.5 LXX.
 6 *Propylon* ... *pros autous anisichontas heliou aktinas*: see Ezek 40.6 LXX.
 7 *Pylôn*: see Ezek. 40.11 LXX.
 8 *Stoai* ... *tetragôna*: see Ezek 40.18 and 41.21 LXX.
 9 *Aithrion*: see Ezek 40.19, where the word is used in a different sense.
 10 *Krênai*: see 3 Kings 2.35e LXX.
 11 *Diatribê*: see perhaps Lev. 13.46 LXX.
 12 For three doors in the Temple see Josephus, *War* 5.208.
 13 *Chalkos*: see Ex 39.7 LXX, or in English versions 38.29.
 14 See 3 Kg 6.35.
 15 The queen in Ps 45 (LXX 44).10–15 is understood to be the Bride of Christ.
 16 See 3 Kg 6.4 LXX.
 17 *Edaphos*: see Ezek 41.16 LXX.
 18 See Ezek 41.9 LXX.
 19 1 Cor 2.9.

The Church, Testamentum Domini: 4th/5th century AD

Testamentum Domini 1.19.1, Syriac canons and liturgy translated mainly by J. Cooper and A. J. Maclean, *The Testament of the Lord*, Edinburgh 1902. One of the sources is Eusebius' sermon at the Dedication at Tyre, and references to this are set in italic type.

- 1 I will tell you then how the House-of-Holiness¹ ought to be. ... Let a church then be thus: *with three entries*² in type of the Trinity. Let the diakonikon be *on the right of the right-hand entrance*³, that the 'eucharists' or offerings may be seen.
- 2 *Let there be a forecourt with a portico going round*⁴ to the diakonikon. Then within the forecourt let there be a place to serve as a baptistery, its length twenty-one cubits as a general type of the Prophets and its width twelve cubits as a type of those appointed to preach the Gospel⁵, with one entrance and three exits. *Let the church have a room for the catechumens*⁶,

- which shall also be the room of the Exorcists: *let it not be detached from the church*⁷, but placed so that those who have entered it can hear the readings and spiritual songs of praise and the Psalms⁸.
- 3 *Let there be a throne*⁹ *by the altar*¹⁰. On the right and the left *let there be places of the presbyters*¹¹, so that those who are more exalted and honoured, and those who labour in the Word¹², may sit on the right, but those who are of middle age on the left.
- 4 But let that place where the throne is *be raised*¹³ three steps, for there *the altar should be*¹⁴. Let that house *have two porticoes*¹⁵ on the right and on the left, for men and for women. *Let all the places be lighted*¹⁶, both for a symbol and also for reading.
- 5 Let the altar have a veil of pure linen, for it is without spot. Also the baptistery likewise, let it be under a veil.
- 6 Let a place be built as for commemoration, so that the priest and chief deacon sitting with the readers may write the names of those who offer the oblations, or of those for whom they have offered [them], so that when the holy things are offered by the bishop, the reader or chief deacon may name them by way of commemoration, which the priests and people offer for them with supplication. For there is this type also in heaven.¹⁷
- 7 Let the place of the presbyters be within the veil, beside that place of commemoration.
- 8 Let the house of the offering and the treasury¹⁸ be all of it beside the diakonikon.
- 9 But let the place of reading be a little outside the altar.
- 10 Let the house of the bishop be beside that place which is called the forecourt.¹⁹ Also that of the widows who are called 'those that sit in front', Also let that of the priests and deacons be behind the baptistery.²⁰ Let the deaconesses abide beside the door of the Lord's House.
- 11 Let the church have a house for entertaining nearby, where the chief deacon shall entertain strangers.

Notes

- 1 Syriac and Hebrew for 'Temple'.
 2 Eusebius, *HE* 10.4.41.3.
 3 Eusebius, *HE* 10.4.45B.3. Compare Ezek 40.38–43: the relation between the gates is the same, whatever the direction of the building.
 4 Eusebius, *HE* 10.4.40.1f.
 5 The twelve apostles.
 6 Eusebius, *HE* 10.4.45.4–6.
 7 Eusebius, *HE* 10.4.45.2.
 8 See also Eph 5.19 and Col 3.16.
 9 Eusebius, *HE* 10.4.44A.2.
 10 Eusebius, *HE* 10.4.44B.1.
 11 Eusebius, *HE* 10.4.44A.2.
 12 See also 1 Tim 5.17.
 13 Eusebius, *HE* 10.4.44A.2.
 14 Eusebius, *HE* 10.4.44B.4.
 15 Eusebius, *HE* 10.4.42A.1f.
 16 Eusebius, *HE* 10.4.42A.4.
 17 Perhaps see Apoc. 8.3, Apoc. 20.12.
 18 *Gazophylakion*, Ezek 40.17 (LXX), was in the outer court.

19 See also Ezek 40. 44-47.

20 See previous note.

The New Church at Edessa c. 550 AD

Professor Kathleen E. McVey's translation is here used by her kind permission. Her informative article on this poem will be found in *Dumbarton Oaks Papers*, 37 (1983) 95.

- 1 Oh Being itself who dwells in the holy Temple, whose glory naturally emanates from it,
Grant me the grace of the Holy Spirit to speak about the Temple that is in Urha.
- 2 Bezalel constructed the Tabernacle for us with the model he learned from Moses,
And Amidonius and Asaph and Addai built a glorious Temple for You in Urha.
- 3 Clearly portrayed in it are the mysteries of both Your Essence and Your Dispensation.
He who looks closely will be filled at length with wonder.
- 4 For it truly is a wonder that its smallness is like the wide world,
Not in size, but in type; like the sea, waters surround it.
- 5 Behold! Its ceiling is stretched out like the sky and without columns it is arched and simple
And it is also decorated with golden mosaic, as the firmament is with shining stars.
- 6 And its lofty dome – behold, it resembles the highest heaven.
And like a helmet it is firmly placed on its lower [part].
- 7 The splendor of its broad arches – they portray the four ends of the earth.
They resemble by the variety of their colors the glorious rainbow.
- 8 Other arches surround it like crags jutting out from a mountain,
Upon, by and through which its entire ceiling is fastened on the vaults.
- 9 Its marble resembles an image not made by hands, and its walls are suitably overlaid [with marble].
And from its brightness, polished and white, light gathers in it like the sun.
- 10 Lead was put on its roof so it would not be damaged by streams of rain:
There is no wood at all in its ceiling, which is as if entirely cast from stone.
- 11 It is surrounded by magnificent courts with two porticoes composed of columns
Which portray the tribes of Israelites who surround the temporal Tabernacle.
- 12 On every side it has the same façade: the form of the three of them is one,
Just as the form of the holy Trinity is one.
- 13 One light shines forth also in its sanctuary by three open windows,
And announces to us the mystery of the Trinity, of the Father, and the Son and the holy Spirit.
- 14 And the light of its three sides abides in many windows.

- It portrays the Apostles, Our Lord, the prophets, martyrs and confessors.
- 15 The ambo is placed in the middle of [the church] on the model of the Upper Room at Zion.
And under it are eleven columns, like the eleven apostles that were hidden.
 - 16 The column that is behind the ambo portrays Golgotha in its form,
And fastened above it is the cross of light, like our Lord between the thieves.
 - 17 Five doors open into [the church] like the five virgins,
And the faithful enter by them, gloriously like the virgins to the bridal couch of light.
 - 18 Portrayed by the ten columns that support the Cherubim of its altar
Are the ten apostles, those who fled at the time our Savior was crucified.
 - 19 The structure of nine steps that are placed in the sanctuary of [the church] together with the synthronos
Portrays the throne of Christ and the nine orders of angels.
 - 20 Exalted are the mysteries of this temple in which heaven and earth
Symbolize the most exalted Trinity and our Saviour's Dispensation.
 - 21 The apostles, [the church's] foundations in the Holy Spirit, and prophets and martyrs are symbolized in it.
By the prayer of the Blessed Mother may their memory abide above in heaven.
 - 22 May the most exalted Trinity that strengthened those who built [the church]
Keep us from all evils and preserve us from injuries.

Scriptural Numbers, Isidore: c. 600 AD

Extract on the number Seven from *The Numbers which occur in the Holy Scriptures*, ed. F. Arevalo, SJ, in *PL* 83,179–200. The short paragraphs, are independent meditations on the numbers. The footnotes link this text with earlier non-Christian works. Most references to scriptural numbers have been omitted, since they are repeated in any concordance.

What Is Number?

- (1) It is by no means a waste of time to consider the reasons for the numbers which occur in the sacred Scriptures, for they teach us a certain amount of science and are the ground of many mystical interpretations. So, I am going to summarise some rules for numbers, as you have desired.
- (2) A definition of what a number is must come first. A number is an assembly of units, or a group beginning with one,¹ and its size cannot be defined, as its sum has no limit.
- (3) An even number is one which may be divided into two equal parts, but an odd number is one which cannot be divided into two equal parts, since the middle unit is either missing or superfluous.² Equally an equal number is one which can be divided by equal numbers until it reaches one, for example 64. Half of this is 32. Of this half is 16, of 16 eight, of the eighth number four, or the fourth number two, and of the second number one, which is simple and indivisible. ...

VIII The Seventh Number

The seventh number is not produced by any other. It is neither born nor generated.³ For all the numbers below ten either produce others or are produced by them, but this number neither bears nor is borne. For in some way six or eight are generated; four and two create, and are created; but seven does not bear and is not borne ...

It is a perfect number according to some of the wise men of this world because it is made up of the first odd number and the first even.

For the first odd number is the third, and the first even is the fourth, and seven is made up of these two numbers.

Yet multiplied together these parts give the twelfth number ... But three enlightens the mystery of the Trinity and four the action of good works. And by this number with these parts the good works may be perfected by the appearance of the Trinity, and by the good works it is possible to come to know the Trinity. Again when it comes to twelve, and reveals the twelve apostles made perfect by the sevenfold gifts of the Spirit, their preaching through the four kinds of virtues makes faith in the Trinity grow throughout the world.

In Holy Scripture this number sometimes means the whole of time in this world, and sometimes means rest ...

Hence also in the Law the seventh day is to be kept holy, in order that it shall signify eternal rest ...

[Twenty-nine favourable examples of seven follow.]

Even so there is something opposite about this number, and we read about the beast with seven heads: there are also the seven principal vices of demons. But the number of examples of this number in the Holy Writings is infinite.

Again we must pass to other things which are assigned to this number.

There are seven kinds of philosophy according to the ancient scholars, first arithmetic, second geometry, third music, fourth astronomy, fifth astrology, sixth mechanics and seventh medicine.

And the same seventh number embraces the shape of the moon, for this is the number of its faces: for first it is two-horned, second in a thin layer (which is called mid-moon), third half, fourth full, fifth half becoming less, sixth a thin layer, and seventh, two horned and almost the shape of the first⁴ ...

And this number means also the length of the 'moon', for 1, 2, 3, 4, 5, 6 and 7 make 28.⁵

In heaven according to the seventh number there are the circles⁶ and the planets⁷ ...

A seven months' birth brings a complete human being.⁸

On the seventh day the sick are in danger.

In Greek script there are seven vowels.⁹

In a human's head there are seven openings for the senses, two eyes, ears and nostrils and a mouth.

In children the teeth grow in the seventh month, and they change in the seventh year.

In a second series of seven, that is at the age of fourteen, the child becomes a youth, and receives the possibility of begetting. In the third he grows a beard and hair on his cheeks. In the fourth his growth stops, in the fifth his youthful

appearance is mature. In the sixth his health becomes worse, and the seventh is the beginning of old age.¹⁰ ...

[After going through the Scripture passages up to the number 'ten' Isidore studies eleven to twenty, paying special attention to twelve, and then 24, 30, 40, 46, 50 (Pentecost) and 60, ending with 153.]

Notes

- 1 See Nicomachus, *Intro. Arithm.* 1.7f.
- 2 See Fragment 5 of Philolaus (v-iv century) in Diels I³, p. 310.
- 3 See Nicomachus in *Theol. Arithm.* 44, p. 58 lines 24f.
- 4 See Nicomachus in *Theol. Arithm.* 45, p. 60 lines 2-8.
- 5 See Nicomachus in *Theol. Arithm.* 45, p. 59 line 17.
- 6 See Plato, *Tim.* 36D.
- 7 See Nicomachus in *Theol. Arithm.* 42, p. 55 line 9.
- 8 Nicomachus treats this at length in *Theol. Arithm.* 45-8, pp. 61-5.
- 9 See Nicomachus, quoting Hippocrates, in *Theol. Arithm.* 42, p. 55 line 12.
- 10 See Nicomachus in *Theol. Arithm.* 42, p. 55 line 13.

The Mystagogies, Maximus the Confessor: c. 650 AD

'The Mystagogies', translated from the edition by C. Soteropoulos, *Hê Mystagogia tou Hagiou Maximou tou Homologêtou*, Athens 1978. The text of this chapter may have been added to by other authors.¹

(2) When he explained the second mystical meaning he said that the holy Church of God is a figure and image of the universe – the whole universe which consists of visible and invisible beings. Like the universe it ... is divided into a place which is allotted exclusively to the priests and ministers (called the sanctuary²), and the place where all the faithful people are allowed to enter (called the Temple³). ... The wise person also sees that the church which we build is like the Church 'not built by human hands',⁴ for the sanctuary represents the world above, allotted to the powers above, and the nave the lower world, inhabited by those whose lot it is to live by the (five) senses. ... To those who can see it this way, the whole of the spiritual world is imprinted on the world of the senses by symbolic figures. ...

(3) Furthermore he said that the holy Church of God was a symbol of the sensible world by itself. For it has the sanctuary as the sky and the earth, represented by the decoration of the nave. ...

(4) Once again, in another mode of the mystical sense, he said that the holy Church of God is like a human being. It has the sanctuary as soul, the holy altar as mind, and the Temple as body ...

(8) Now we must go on to ... the Assemblies of this holy Church ... The first Entry of the Bishop for the holy Church's Assembly is a figure and image of the first appearance of ... the incarnate Christ in this world. ... And after this appearance, his ascension and the fact that he sat on the throne which is in the heaven of heavens is symbolised by the Bishop's entry into the sanctuary, and his ascent to the priestly throne. ...

(13) The sacred order of the holy Church prescribes the reading of the holy

Gospel, which specifically sets out to the earnest the suffering which they are going to have on account of the Word. But after it the Word of contemplative mystery, like a High Priest from heaven, visits us, and takes away the lusts of the flesh, as taking away the material world. Through the closing of the doors, and the entry of the holy Mysteries, he rejects any considerations which are directed to earth, leading them away to an intellectual vision, and closing off the view of words and deeds provided only by the (five) senses. Then, as if to people who are beyond the flesh and beyond the world, he teaches things which are unspeakable. ...

(14) In general this represents the ending of this world. For after the sacred reading of the holy Gospel, the Bishop comes down from his throne, and the ministers dismiss the catechumens and the others who are not worthy to see the setting forth of the Mysteries, and send them away. By this part of the liturgy is signified and pictured the truth (of which it is an image and imprint) that 'after the Gospel of the kingdom has been preached in all the world', as Scripture says, 'then cometh the end'. ...

(15) Thus the closing of the doors ... and the ejection of the catechumens are the passing away of the material world, the judgement ... and the entry of those who are worthy into the intellectual world, that is to say the Bride-chamber of Christ. And it is the utter destruction of the (five) senses and their power to deceive us.

(16) The entry of the holy and venerable Mysteries ... is the beginning and introduction of the future teaching which will take place in heaven about the dispensation of God for us, and the revealing of the mystery of salvation which has been hidden in the holy darkness of the sanctuary. For our God and Word said to his disciples, 'I will not drink of the fruit of the vine until that day when I shall once more drink it with you in the kingdom of my Father'.⁵ ...

(19) What happens next is that there are three cries of 'Holy' by all the faithful. This is to show their future union with the bodiless and intelligible powers, like whom they are to be honoured.

Notes

1 See Bornert 87-90, and compare Riou 168, n. 40.

2 *Hierateion*.

3 *Naos*.

4 Mark 15.48, 2 Cor 5.1, Col 2.11.

5 Mat 26.29.

Church Symbolism, Germanus: c. 720 AD

Translated from text edited by F. E. Brightman in JTS 10 (1908) 248-267, and 387-397.

The Church

(1) The Church is a Temple of God, a holy precinct, a House of Prayer, the Body of Christ. Its name is 'The Bride of Christ'.¹ It is cleansed by the water of his Baptism, sprinkled also with his blood, apparelled as a Bride and sealed with the ointment of the Holy Spirit. ... The Church is heaven upon earth, in which the

heavenly God dwells and moves, and it bears the mark of the crucifixion, the grave and the resurrection of Christ. It has a glory greater than that of Moses' Tabernacle of Witness, which contained the mercy-seat and the Holy of holies.

The Apse

(2) The apse is like both the cave in Bethlehem where Christ was born, and the cave where he was buried: as the evangelist says, 'There was a cave quarried out from the rock, and there they laid Jesus'.²

The Holy Table

(3) The Holy Table is the place of the Tomb where Christ was buried, and on it is set forth the true and heavenly bread, the mystic and unbloody sacrifice which Christ the victim set before the faithful, his flesh and blood to be the food of eternal life. It is also the throne of God on which he is seated, who is 'the God that rideth upon the cherubim'.³ At this table also at his mystic Supper he sat in the midst with his disciples, and took bread and wine, and said to them, 'Take this, eat and drink it. This is my body and blood'. Under the Law it was prefigured by the Table on which was the Manna. Since the manna came down from heaven it means Christ.

The Ciborium

(4) The Ciborium symbolises the place where Jesus was crucified, for the place where he was buried [i.e. the Altar] was 'close at hand'⁴ and might overhang it. It is arranged in the church to symbolise Jesus' Crucifixion, Burial, and Resurrection. It is also symbolically linked to the Ark of the Covenant of the Lord, which Scripture says was the Holy of Holies, and the sacred place at the ends of which the Lord commanded that the figures of the cherubim should stand.

The Altar

(5) The Altar is like Christ's holy Tomb, where he offered himself in sacrifice to God the Father. He offered himself like a lamb that was slain. And as both High Priest and Son of Man he both offered and was offered to be a mystic and unbloody sacrifice ... for the faithful. Through him we become partakers in eternal and immortal life. This very lamb was prefigured in Egypt by Moses ... and with its blood it turned away the Destroyer from overthrowing the people ... Indeed 'Christ our passover hath been sacrificed for us'.⁵ The reason why the Altar is called an altar, is because its name comes from the heavenly and intelligible altar. The earthly and material priests attending it represent the intelligible servants in the hierarchy of the immaterial and supernal Powers. ... Indeed the Son of God and Judge of All has ordained earthly things according to the pattern of the heavenly.

The Sanctuary

(6) The Sanctuary is a raised place, and the throne on which Christ, the King of All, presides with his apostles, even as he said to them, 'You shall sit on thrones, judging the twelve tribes of Israel'.⁶ Thus he foretold his second appearance, when he is to come, seated on a glorious throne, in order to judge the world. For as the prophet says, 'Thrones were set for judgement over the House of David'.⁷

The Rails

(8) The rails indicate in which place one should pray. Outside them is the place for the laity, and inside is the Holy of holies, only accessible to the priests. Indeed those rails are also like the bronze rails in the Holy Tomb, placed there to prevent people from simply wandering in.

The Ambo

(9) The Ambo symbolizes the stone of the Holy Tomb, which the angel rolled back from the door. He sat upon it near the door of the Tomb, and announced the Lord's Resurrection to the spice-bearers. This is also like the saying of the Prophet, 'On a bare hill raise a signal. Rise up, herald of the Gospel, and lift up your voice'.⁸ For the ambo is a hill which stands in a flat and level place.

Praying towards the East

(10) The prophets said (that God or Christ was in the east) in order to prevent us being disappointed, for we hope to receive once again 'the Garden of Eden towards the East',⁹ and it is from the east that we are expecting the bright dawn of Christ's second appearance.

The Number of Presbyters

(16) Among the heavenly ministers and hierarchies in the supernal glory there are twenty-four Presbyters and seven Deacons. Our Presbyters in their vestments are 'winged' like the seraphic Powers ... and the Deacons also, modelling themselves on the angelic Powers, hasten about in the light 'wings' of their Deacons' habit.

The Entry of the Gospel

(33) The Entry of the Gospel signifies the appearance and entry of the Son of God into this world. ... He was wrapped in swaddling clothes and laid, not in the manger of the animals, but on the reasonable table of reasoning human beings.

The Blessing at the start of the Liturgy

(36) When the Priest goes up into the synthronon and blesses the people, it is like what the Son of God did, as he was going to finish his ministry for us in the flesh. He then lifted up his hands and blessed his holy disciples, saying to them, 'Peace I leave with you'.¹⁰ ... (38) The Father said to the Son ... 'Sit thou on my right hand',¹¹ and he 'sat down at the right hand of the majesty on high'.¹²

The Second Entry

(49) The procession of the Deacons, and the representations of cherubs on their fans, and the Cherubic Hymn, signifies the arrival before the cherubic Powers and the angelic hosts, of all the righteous saints invisibly advancing with Christ the King at their head. ... (50) This also follows the pattern of the burial of Christ, and is like the time when Joseph took down his body from the cross and ... and placed it in a new Tomb cut into the rock.

The prayer of the Priest at the Altar

(59) With the eyes of his intellect (the Priest) sees the heavenly worship, and beholds the splendour of the life-giving Trinity ... And he cries a threefold 'Holy', the words of praise of the seraphic Powers and of the four Living Creatures. ... (60) Indeed 'Christ is entered into heaven, into holy places made without hands, and has appeared in glory in the presence of God for us. Becoming a great High Priest he has passed into the heavens'.¹³

Notes

- 1 See Apoc 21.2.
- 2 Mk 15.46.
- 3 Ps 79.1.
- 4 See John 19.42.
- 5 1 Cor 5.7.
- 6 Matt 19.28.
- 7 Ps 121.5.
- 8 Isa 13.2, 40.9.
- 9 Gen 2.8.
- 10 Lk 24.50.
- 11 Ps 109.1.
- 12 Heb 8.1, 13.
- 13 Heb 9.24, 6.20, 4.14.

Laying the Foundations, John of Odzun: before 729 AD

Translated by Professor Robert Thomson from Aucher, pp. 256-264. The capitalized words were perhaps part of the service and the text which follows is John of Odzun's explanation.

- 1 THE GODLY HIGH PRIEST ASSEMBLES THE GROUP OF CLERGY AND MINISTERS TOGETHER AT THE AGREED¹ SITE.

It was in this way that the heavenly High Priest assembled the first Presbyters on the summit of Mount Tabor²: the maker of the Tabernacle of Witness, the great Moses, the builder of the altar, Elijah, among the prophets the most Jealous for God's glory; as well as those from among his eyewitnesses, Peter, who was named the Rock of Faith, and the Sons of Thunder. They had mentioned the Tabernacle, but in its place he showed them the vault of the sky, made of clouds and the colour of light. [This happened] in order that through two or three witnesses should be confirmed the mystery of the Church, which was to be built on them, the Holy Catholic Church assemblage. [This is also] in accordance with the Apostle, who said, 'They were built on the foundation of the Apostles and the Prophets'.³

- 2 AND HE RECEIVES TWELVE STONES WHICH HAVE NOT BEEN DRESSED.⁴

This is like Joshua the Son of Nun, who [placed the stones] in the middle of the Jordan, as a witness to the crossing of the people through the Jordan on dry ground. Likewise our Lord took twelve disciples from the transient course of this life as a witness to the mystical crossing of the Gentiles through the water of the Font of Baptism: to these he said, 'Go, and baptize in the name of the Father, and of the Son and of the Holy Spirit'.⁵

- 3 The psalms which are sung are appropriate to this mystery.

'GREAT IS THE LORD, AND VERY MUCH TO BE PRAISED'⁶: this is how this great ceremony begins. 'The city of God and his holy mountain', that is, this mystery is as exalted as heaven, so that 'all the earth may joyfully exult firmly' like the rejoicing of the heavenly [beings]. [For] from 'Mount Zion' even to 'the north side', the City will belong to 'the great King', and be a temple of the Living God. For 'as we have heard' from the Prophets, 'thus we have also seen', since 'God has founded this' with mystical stones.

Another psalm⁷ describes as 'beloved' the 'Tabernacle of the Lord of Hosts' and 'desired' the dwelling of those 'whose heart and flesh rejoice in the living God', so that those worthy of dwelling [there] are blessed. This point is in harmony with the same: 'Thou hast been pleased, O Lord, with thy land,' which we have dedicated to be thy place of dwelling. There 'thou shalt turn back our captivity' which is brought about by the Devil; in this thou shalt 'forgive the wickedness of thy people', and by the water of Baptism 'hide their sins'. Thou wilt save us by a renewal of two kinds, so that becoming thy people we may perpetually rejoice in thee.

The next Psalm⁸ explains also, that 'its foundations are upon his holy mountain' whose foundations he⁹ ineradicably placed into the mind of Moses in Sinai. But 'he loves the gates of Zion', whence he saved the New Israel, 'above' the original 'tents of Jacob', the Tabernacle and the Temple. Of this 'he said that it would be glorious', because through the inspired Prophets, 'it would be the city of the living God.'

- 4 AFTER THESE PSALMS THE DEACON ANNOUNCES, 'LET THERE BE SILENCE. IN FAITH LET US PRAY THAT THE WORKS OF OUR HANDS MAY PROSPER IN THE PLEASURE OF HIS WILL'.

- 5 'LORD, HAVE MERCY' IS SAID THREE TIMES. These are mystical prayers that his mercy may remain among us at the beginning, in the course [of the work], and at the end [of it].

- 6 THEN THEY PLACE ONE STONE IN THE MIDDLE OF THE SANCTUARY¹⁰:

as an example of the spiritual stone hewn from the holy Mountain, which fills all things with itself.¹¹

- 7 AND THEY TAKE TWELVE STONES, WHICH ARE FIRST WASHED WITH WATER, THEN WITH WINE. These figure the twelve Apostles, whose feet the Lord washed in the Upper Room, and afterwards he enraptured them with incorruptible wine to drink, for a memory of the blood and the water which he poured from his side. But after his resurrection he told them to be baptised in fire and Holy Spirit, and through the sacramental water of the Font to baptize the Gentiles in the name of the Holy Trinity.

Indeed these stones are placed at the four corners of the church to indicate their directions towards the four corners of the world, and to be appropriate by [their] solidity to be the foundation for the Temple of God, for we are based on them, and they on Christ the Head.

- 8 THE MEMBERS OF THE CLERGY GO FIRST WITH LIGHTS AND INCENSE: with the mysteries of glorious knowledge, with fragrant life and with prayer.

- 9 AFTER THIS THE BISHOP READS THE PRAYERS, and taking up all the petitions of the Clergy, he offers them to God.

- 10 THEN HE ASKS TO BE GIVEN THE TOOL FOR DIGGING, AND DRAWS ON THE SITE THE MEASURE OF THE SIZE OF THE BUILDING: according to the vision of Ezekiel about the Temple, and the design of Saint Gregory¹² for the holy martyria: in

order to show that the immeasurable God makes his tabernacle and a sanctuary measurable to our [human] nature, though [his] nature is always present everywhere; and is not confined to any space.

- 11 THE STONES ARE ANOINTED WITH THE DIVINE CHRISM,¹³ WITH AN INVOCATION OF THE MYSTIC TRINITY. This is because in Sion the [Apostles] were anointed with the Spirit of God, according to the Lord's [saying,] 'You shall be baptised in the Holy Spirit'¹⁴ Furthermore to say 'Amen' three times is to promise all things we possess to Almighty God, to him, that is to say, who is all in all.

- 12 And to say THE PSALM WITH ITS ANTIPHON 'DIRECT THE WORKS OF OUR HANDS',¹⁵ is to pray that, like this work of building, all our good works may prosper according to God's will.

- 13 THE READINGS, mystically linked together, are in harmony with the rites which have gone before.

- 14 THUS THE PSALM 'LORD, THE LIGHT'¹⁶ and

- 15 THIS GOSPEL are concerned with the same mysteries.

- 16 THE PROCLAMATION 'FROM ON HIGH', AND ITS PRAYER, announce the peace of God and teach us to pray.

- 17 AGAIN THE DEACON ANNOUNCES 'IN FAITH LET US PRAY'.

- 18 AND THE BISHOP SAYS BRIEFLY, 'BLESSING AND GLORY BE TO THE FATHER, AND TO THE SON, AND TO THE HOLY SPIRIT, FOR AGES OF AGES', since through the help of God and by reverently receiving the blessing one should approach the beginning of the work God has given us to do.

- 19 IMMEDIATELY THE BISHOP TAKES A HOE, AND FIRST DIGS THE CONSECRATED GROUND HIMSELF, AND AFTERWARDS GIVES IT TO THE WORKMEN. This is because the Lord himself set his hand to hoeing and eradicating from [our human] nature the thorns which wound, making them gentle and tender by the suffering on the Cross; and to sow in us the word of faith and, in accordance with one's religious conduct, of being crucified together [with Christ].

- 20 THE DIGGING TAKES PLACE THREE TIMES: to show that in three periods of time the mystery of the church is typified, through the Tabernacle of Witness, through the Temple of Solomon, and through the restoration of Zerubbabel. Four times three, in the four sides complete the number twelve, according to the number of the stones, making the number twelve, as a mystery of the Twelve Apostles, and the principal limbs of the body. And because of the supreme art this is shown to be [greater] than the other numbers, having six as half, and four threes, and three fours, and one twelve. And in this number the moon becomes full, and the Law is fulfilled in Christ, the Builder of the Church.

- 21 THEY START HOLDING THE SERVICE IN THE PLACE OF THE ALTAR: since it is there that the fulfilment of the mystery is completed:

- 22 AND THEY SING ALLELUIA IN AN ELABORATE MANNER.

- 23 'HIS FOUNDATIONS ARE IN HIS HOLY MOUNTAIN': The foundations of the church are the first examples: the Paradise of God, the Ark of Noah, the Tent of Abraham, the thing Jacob saw¹⁷, what was shown to Moses on Sinai¹⁸, and what he erected in the desert. These foundations are fulfilled in holy Mount Sion and in the heavenly Jerusalem.

- 24 Therefore the completion of the Laying of the Foundation of a Church here ends with a PROCLAMATION, 'FROM ON HIGH',

25 WITH READINGS, [p. 264]

26 AND WITH THE GOSPEL to the glory of Christ [our] God, who is blessed for ever.

Notes

- 1 Which could either mean 'ordained' or 'consecrated'.
- 2 At the Transfiguration: see Mat 17, Mk 9 and Lk 9. See also d-ODZ.1.
- 3 Eph 2.20.
- 4 Joshua 4.1-9: for undressed stones see also Joshua 8.30.
- 5 Mt 28.19.
- 6 Ps 48.
- 7 Ps.84.
- 8 Ps 87.
- 9 That is 'God'.
- 10 *Bema*.
- 11 Dan 2.34f, 'But the stone that struck the image [of Nebuchadnezzar] became a great mountain, and filled the whole earth'.
- 12 The Illuminator.
- 13 *Myron*, a Greek word used in Armenian.
- 14 Ac 1.5.
- 15 Perhaps this is Ps 90.
- 16 Ps 27.
- 17 The ladder, Gen 28.12.
- 18 The heavenly Tabernacle, Ex 26.

The Mass, Amalarius of Metz: 830 AD

Extracts from *The Services of the Church*, III, PL 105, 1101-55

With the help of God ... we are ready to take up the godly duty ... of learning about the service of the Mass.

- 2 The Church is called *kyriakê* since it is 'the Lord's' [dominicalis] ... It is also called *basilikê*, that is 'royal' ... so Isidore says that *basilica* was formerly the name of kings' dwellings.¹ ... The men stand on the south side and the women on the north.
 - 5 The entry of the Bishop to the Mass, since he takes the part of Christ, recalls Christ coming to be present with us ... The altar is Jerusalem.
 - 8 Christ ascended into heaven that he might sit at the right hand of the Father. The Bishop, since he is taking the part of Christ ... should now 'enthroned' in our minds Christ's ascension and enthronement. So, after the work and service of his ministry, he goes up to his throne.
 - 17 Readers and singers go up on the platform, the old custom as recorded by Ezra, 'Ezra the scribe stood on a wooden platform
 - 18 which he had made for his speeches'.² ... The platform on which the deacon stands for reading is called by Cyprian a '*tribunal*'.³
- Up to this point the service illustrates both Christ's preaching to the start of his passion, and that of his preachers even to the end of the world and beyond. The remaining rites will both illustrate Christ's passion, resurrection, and ascension into heaven, and also those of his followers.
- 19 The archetype of the altar in this service is the altar of sacrifice.
 - 21 Singing 'Holy, holy, holy' recalls to our mind the entry of Christ to the

supper ... where he spoke much to his disciples and uttered a hymn to God his Father ... until he goes out to the Mount of Olives.

At the time when the hymn before the passion is joyfully sung, our altar is likened to the altar of incense. This specially means the life of the more perfect among us.

- 24 The linen corporal which lies on the altar symbolises the linen shroud in which Christ was wrapped the altar is the Table of the Lord.
- 25 The present altar is the altar of the cross.

Notes

- 1 Amalarius derived the church building from Solomon's palace, not his temple (1103D), and said that people assembled in the basilica to hear judgements (1104A).
- 2 Neh 8.4.
- 3 Or 'Platform'.

Book of Governors, Thomas of Marga: c. 840 AD

Extracts from *The Book of Governors*, 15, based on the translation by Sir E. A. Wallis Budge, London 1893, Vol. 2, 540-47. Thomas was a Nestorian.

- 1 One Sunday when ... Shûbhhâl-Mâran, the Abbot, appointed him to be with him in the bema for the church liturgy, he saw that he was so deep in meditation that he was physically unconscious. He did not attend to the acts of the service ... his eyes were closed and he did not know where he was.
- 2 When Rabban Shûbhhâl-Marân had gone up with him to his cell, he fell at his feet and took an oath. He said, 'I will not stand up again until you tell me about the vision you saw in the church'. The holy Mar Narses asked the Abbot to keep this matter secret until his death, and answered as follows.
- 3 'Every time I am in church for the service of the Holy Mysteries, my mind is lifted up above the sight of the liturgical actions, and above the church and its congregation, to the things which are in heaven. The things which are before my eyes are explained by the things which are secret and hidden from every man.
- 4 'The church of my thoughts is that of Jerusalem which is upon earth. The bema in it is Zion. The altar in it represents the Ark of the Old Covenant, and the cross on it and the Gospel-book are the New Covenant, the throne of Christ at the time of his dispensation here, and the connection which both the two Covenants possess with each other. The body of Priests in it are the companies of the Apostles.
- 5 'The path from the bema to the dome beyond is the narrow path which goes up to heaven. The three steps which are in front of the bema are the third heaven, to which the blessed Apostle Paul was taken up; the *kestrôma*¹ the space which extends from here to the firmament, and the mark of the firmament itself being the lattice which surrounds the door of the chancel and the veils on it.
- 6 'The chancel is the place above the heavens; the ciborium is the heaven of heavens and the veils on it are symbols of the hiddenness of the Godhead

even from the angels. The altar is the throne of the Godhead, and the priests are the angels ...

- 7 'The light in the chancel represent the divine glory and the god-given knowledge of all things which makes the spiritual beings sparkle and shine. The censer which has been passed down by the earliest priests ... to those of these last times teaches us what the angels have taught one another about the future events, which the divine dispensation demands. The sweet-smelling incense filling our Holy Temple is our knowledge of the future and our insight into the things which are hidden, which moves us to be thankful and happy.
- 8 'Our gathering in the church represents the universal assembling before the face of the Lord in the celestial heights, and the liturgy of the two choirs which face each other represents the beings who cry each to each, saying 'Holy, holy, holy, is the Lord the Mighty One'.
- 9 'So then, O chosen one of Christ, I forget myself when I am exalted to the immaterial assemblies of spiritual beings. My intellect passes from the symbols to the supernal things which are symbolized.

Notes

- 1 A wide platform outside the chancel, and at the same height.

Division of the Church, by a Nestorian: c. 850 AD

Translated from R. C. Connolly's Latin translation of the Syriac *Anonymi Auctoris Expositio Officiorum Ecclesiae, Georgio Arbelensi vulgo adscripta*, I and II, Rome 1913, 1915, CSCO (Scr. Syri, series 2), vols 91 and 92.

Treatise 2, Chapter 2

- (1) *Question*: Why do we separate the church into the Apse, the Temple, and the House of the Women? and why did (Patriarch) Isho'yabh (III) instruct us that the baptistery should be on the south side?
- (5) *Answer*: Our Lord first exercised his ministry in Jerusalem, first descending from heaven and putting on our human nature, and secondly from Jerusalem He ascended to the heaven. Nestorius arranged the church to express this. He arranged that the Holy of holies should represent Heaven, and the Pavement Paradise. This latter region is as high as the heavenly atmosphere, but though it equals Heaven in height, it is nevertheless within the boundaries of Earth. The Pavement is similar, for though it reaches the height of the Apse it is connected with the Temple, and a closed door is placed between the Pavement and the Apse, which is Heaven. It shares its height with heaven, but is in reality a part of Earth. The Readers are admitted to this Pavement, who are symbolic of the lower angels of the Church, or those who are sent to men.
- (6) The Temple is the whole earth, and the Bema in the middle of the Temple represents Jerusalem, which is 'in the centre of the earth'.¹ The altar in the middle of the Bema signifies Golgotha. The seat of the Bishop is the place of the Chief Priest, the son of Aaron. He sits in front of their sanctuary, that is to say facing eastwards towards the whole city of Jerusalem. The place of the Readers is

to his right and left: from one side the reading is from the Prophets and from the other the Apostle and the Gospel. On one side, the less honourable one, stands the deacon who represents the Levite. ...

(7) Again the straight passage which leads from the Bema to the Apse, called the 'Gangway', is the way of truth, by which if a person walks he enters Heaven. For if anyone means to enter Heaven he should first go to the start of his journey, Jerusalem.² Let him believe in the Scriptures and the ministry which Christ carried out in Jerusalem, let him undertake to keep his commandments and laws. Soon he will behold guides who are ready to take him from Earth to Heaven, the deacons, who descend like angels and receive those who are found worthy to receive the inheritance of life.

(8) Gates are set in the Gangway, which stand open in three places between the Bema and the Apse (that is, in front of the Apse, in the middle, and in front of the Bema). These represent the gates which stand open for everyone who wishes to go along this holy way, when they begin from Jerusalem, go from Jerusalem to Paradise, and from Paradise into Heaven.

(9) Moreover the Temple stands for the whole earth, but the Place of Men is the east side of Earth towards Eden, and the Place of Women is to its west. And since the eastern part of the Earth and the parts near it are greater in honour, you should think of the House of Men as the dwelling of the ten generations who lived before the flood. And think of the House of Women as the place into which Canaan was exiled, when he had sinned against his father. But ... the gates of heaven are open to all who wish to go in. ...

The Dedication³

(13) The creation of the sky had not yet been finished when light was created. So although the church is decorated with white hangings (which are like light) the veils are not yet hung up, which signify the firmament. (14⁴) What is the arrival of the bishop and clergy? It is the coming of God and the spiritual beings. The fact that they enter through the little door into the apse means that their coming in symbolizes that only God and the angels are in Heaven. They go in then as an image of the creation of the world. Thus when they go in it is the first creation.

The veils are the sky; the lamps which they light represent the lights being created in the sky. Their voice is the creation of Adam.

(16) They begin the parts of three Psalms.⁵ (17) Then the deacons, like the Levites, arrive and bring the (altar). The fact that the deacons carry it and walk through the Temple signifies the wandering of the children of Israel, when the children of Levi carried the altar. ... They go to all parts of the church to be like the children of Israel, who wandered in many places.

(18) The fact that they go back and enter the Apse means that they founded the building for a second time under Solomon ... The fact that they say 'The place of thy dwelling'⁶ and 'Lord, strengthen this' means that so far they express themselves entirely in likenesses from the Old Testament, and show no sign of knowing the New Testament until the image of the Old is complete. They arrange the altar firmly, just as the spiritual beings disposed affairs for the people of Israel, and never tired of their ministry.

(19)⁷ THE OIL

Question: What is the meaning of the oil which the Priest now consecrates?

(20) *Answer:* This oil, which the Priest consecrates, is like the oil with which God commanded blessed Moses to prepare the Tabernacle, with which also he was to anoint the Tabernacle itself and all the implements which belonged to it. ... (21) When the oil has been consecrated the Bishop first uses it to sign the top of the altar, which represents the propitiatory over the Ark.

Notes

- 1 Ezek 5.5.
- 2 About the Gangway the author says that the Bishop 'comes down from heaven by a way trodden by the Prophets, the Ladder seen by Jacob, and comes to Jerusalem. (Treatise 4, Chapter 3).
- 3 From Treatise 6, Chapter 2.
- 4 From Treatise 6, Chapter 6.
- 5 The Syriac word is *Shurrāya*.
- 6 3 Kg 8.13 Syr.
- 7 From Treatise 6, Chapter 7.

Laying a Church's Foundation (Greek): c. 950 AD

The earliest Greek order from Goar, *Euchologium*, 485)

- 2-3 When the foundations have been laid out for the church which is to be built, the Bishop arrives there. And when he has put on his stole and his pallium he says,

Blessed be our God forever, now and always and throughout eternity, adding Most holy Trinity ... and Our Father.

- 4 Now the Bishop goes round the foundations with his censer, while the Singers read the Conclusion proper to the Saint in whose name the church is to be built. And other hymns which the President wishes.
- Then, standing in the place where the holy altar is to be set up, he says this prayer.

Let us beseech the Lord.

O Lord our God, who hast been pleased to build thy church on this rock ... Guard its foundations that they may be firm and unshaken: and grant that we may so complete thy House that in it we may with holy songs and hymns praise thee, our True God. For to thee belongs all glory ... for the ages of eternity. Amen.

When the prayer is finished he makes the Conclusion. Then he takes one of the stones and on it makes the sign of the cross. He himself with his own hands places it on the foundation and says,

God most high has founded her. God is in the midst of her and shall not be removed from her. God will help her, and that right early.¹

- 6 And thus the builders begin their work.

Notes

- 1 Ps 46.5.

Dedication of a Church (Greek): c. 950 AD

Extracts from the earliest Greek Dedication text from Goar, *Euchologium*, 655-663.

(1) On the day before the Dedication, the parts of the altar are taken to the new church, and the Bishop takes the relics of the Martyrs to a neighbouring church. (2) On the day of the Dedication [in the church] ... (3) the Bishop then says a preparatory prayer and assembles the altar. (Psalm 145¹). (4) While the glue is drying the choir says Psalm 23, (5) When the altar has been assembled, a cushion is placed by the doors, and the Bishop, kneeling down, says a prayer, 'O God ... who out of nothing hast created all that is;' (6) The Deacon continues with a litany. (7) Then the Bishop washes the altar. (Psalm 84). (8) The Bishop then makes three crosses with wine on the Table (Psalm 51.7) ... (9) The Bishop takes Chrism (as in Baptism) and makes three crosses on the Table (Psalm 133). (10) The bishop puts on the table the Linen-Cloth: (Psalm 132). (11) Then the Bishop takes the upper cloth² and lays it upon the altar (Psalm 93). (12) He spreads the Corporal³ and the Gospel-book.

(13) He is given the censer. While he is censuring the table, the sanctuary and the whole church, Psalm 26 is said. (14) A Bishop who is a guest follows with oil, and makes the sign of the cross on the columns and walls of the church. (15) The Bishop says a long prayer:

'O Lord of heaven and earth ... we pray thee, the Merciful, to fill this Temple, built to celebrate thy Name, with thy divine glory, and to make the altar erected in it a holy of holies.' (16) He continues with a thanksgiving. (17) He fills a new lamp and places it on the altar, and tells the attendants to decorate the church. (18) If necessary he postpones the service till the next day.

(19) Then the bishop, the clergy and the people go to the church which houses the relics of the Martyrs. (20) From there the Bishop leads a procession to the new church, with the choir singing hymns. The relics are on a paten. He lifts them up, with a suitable prayer, and carries them on his head.

(21) When the Bishop comes to the middle door of the new church, which is still closed, he cries, 'Blessed be Christ our God for ever, now and always and to the end of the ages'. The Bishop puts down the relics on a table.

(22) The first choir sings, *Lift up the gates*. A second choir answers three times, *Who is the King?* During the singing the Bishop says two prayers, of which the second is an entry prayer:

Mighty Lord, our God, who hast stationed in heaven ranks and armies of angels and archangels to minister to thy glory, Ordain that when we enter there may be also an entry of the holy angels ministering with us to thine Excellence. ...

(23) He takes up the holy Relics, holding them above his head. All make the sign of the Cross, and approach the entry. The cantors sing a hymn ...

(24) and the first part of the dedication hymn ... The relics are placed in the altar, they are anointed and sealed up.

(25) Then follows the liturgy, and the dismissal of the people.

(30) The liturgy must be said in the church for a week before the altar is fully consecrated.

Notes

1 Psalms are given their Hebrew numbers.

2 *To haplōma*.

3 *To eilēton*.

Building a Church, Yahya ibn Jarir: before 1089 AD

From *The Book of the Counsellor*, chapter 29, translated from the French version of the Arabic text by J. Khouri-Sarkis, 'Le Livre du Guide de Yahya ibn Jarir' in *L'Orient Syrien* 12 (Vernon) 1967, pp. 303–331.

The Building of the Church

- 3 The apostle Paul says ... 'The first-born people' of the Church 'whose names have been written in heaven',¹ and he means by these words that in heaven there is a spiritual home, not a corporal one, which is called heavenly Jerusalem, and the earthly Jerusalem below is in its likeness ... And this Mount Zion which one can see, and in which men congregate, is the likeness of a home in the heights, inhabited by myriads of angels and spiritual creatures, and the multitude of 'the first-born whose names have been written in heaven', who are not so much mortal men as immortal spiritual angels. ... And as Jerusalem was the noblest of earthly cities, and was the dwelling of the Prophets and the Righteous Ones, so also the home (above) of the saints and the righteous is the noblest and most honourable of dwellings.
- 6 The first to have built a church according to the plan we know today was the apostle James, according to the instructions of Simon Cephas. This plan is that of the ancient Temple [alternatively, Jerusalem] which Melchizedek had built before the Kings came to alter it.
- 7 The church is the likeness of the world: at its east end the sanctuary is like Paradise where our father Adam was. Between the nave² and the sanctuary are three steps, which signifies that we will arrive in Paradise by confessing our faith in the One God, one in his Being and threefold in his Persons.
- 9 The altar in the centre of the sanctuary resembles the Tomb of Christ: in another tradition it resembles the Tree of Life planted in Paradise. The ciborium above the altar is like the Tabernacle which sheltered the Ark of the Covenant. God commanded Moses to have it made, and it contained all the holy objects of God. It is also said that the altar is like the table at which our Lord ate the Passover with his disciples, and that the offering and the chalice are like the bread he broke for them and the cup which he distributed to them.
- 10 The persons who approach the altar in the sanctuary and gather round it are like the disciples surrounding the table of the last supper, and because they must surround it the Jacobites and Melkites place the altar near the centre of the dome. The Nestorians place the altar at the end of it to signify that it is the climax.
- 11 The bema, that is to say the ambo at the centre of the nave, is like Jerusalem [alternatively, the Temple], which is at the centre of the earth, and like the

- place where our Lord was crucified. It is called Golgotha, that is to say the place where the head of our father Adam had been buried.
- 13 The pair of partitions running between the sanctuary and the bema are like the garden which lay between the Tomb and the Place of Crucifixion. They are also like the ladder stretching from earth to heaven, which Jacob saw at a place called Bethel (which means 'the House of God').
- 14 Between these partitions runs the 'Desert', the way the priests and deacons take to go and read the holy books. It is like the path taken by our Lord when he went to the Mountain to teach his law to mankind. Each partition has an empty space, as a symbol that the doors of penitence are open, and that this entry is open to any who desire it.
- 15 There are two places on the right and the left of the bema and they are like the two places where our Saviour taught his disciples about his law. In the first of these the Old Testament is read, in the second the Epistles of Paul and the Acts, and the Gospel is read in the middle. In the middle of the bema the Nestorians place a ciborium which represents the Tomb of Adam.
- 16 The baptistery is to the left of the sanctuary to symbolise that a person called to this law is to be led from the left side, the sinners' side, to the side of the good, the right. He is to become a Son of the Right instead of a Son of the Left, and this is to follow the Lord's words, that he is going to separate on the last day the good from the bad, as a good shepherd separates the sheep from the goats. He places the sheep on his right and the goats on his left.
- 17 The books of the Old Testament must be read from the left side of the bema and those of the New from the right. The Gospel at the end of the prayers is read at the centre of the bema, just as our Lord taught his disciples at the centre of the world, that is to say at Jerusalem [alternatively, the Temple]. The crowd of priests and deacons about the Gospeller is like the disciples crowding round Christ. They surround the priest, and go up with him onto the bema, just as the disciples surrounded Christ and went up with him to the place where he taught them about his law. ...
- 21 When the priest raises the gospel-book before opening it he says 'Peace!' This means the Christ greets you as he once greeted the apostles in the Upper Room, when he entered through the doors which had been closed ...
- 23 The cross placed on the bema by the Nestorians symbolizes the crucifixion of Christ on Golgotha. According to the other Christian groups and sects Christ is symbolised by placing it on the altar in the sanctuary. The two fans placed on the left and right represent the two men crucified with him. But by another tradition they represent the two cherubim who used to be in the sanctuary of the Israelites.
- 25 One tradition says that the baptistery being to the left of the sanctuary symbolises the desert, for when a person is baptised he journeys to the sanctuary, as the Israelites journeyed to the land which God had promised them.
- 26 The curtain at the gate of the sanctuary represents the cherubim who guard the gate of Paradise after Adam had left it.

Notes

1 Heb 12.22.

2 The Arabic word is *haikal*.

The Church's Meaning, W. Durandus: before 1296 AD

Translated from *Rationale divinorum officiorum*, Lyons 1672

(1) On Mount Sinai the Lord instructed Moses to make a Tabernacle with curtains which were marvellously made. The structure was divided into two parts, and between these a veil hung. The first part was called the Holy [Place], and this is where the people used to sacrifice. The inner room was called the Holy of holies, and this is where the Priest and the Levites used to minister, as will be said below in the introduction to Book Four. Afterwards, when this structure had become old and been destroyed, the Lord commanded the Temple to be constructed, which was marvellously built by Solomon. This also had two parts,¹ like the Tabernacle, and our material church has taken its form from these buildings, that is both from the Tabernacle and from the Temple. In the first room the people listen and pray, and in the sanctuary the clergy not only pray, but they preach and praise and minister. (*Rat.* 1, 1, 4-5)

(2) Moreover because the Tabernacle was made by a transient people it signifies the transient world and its desires. The fact that its curtains were made of four colours corresponds to the world being made of four elements. ... In a special way therefore the Tabernacle means the Church Militant, which here has no continuing city, but seeks for one in the future.² ... The first room in the Tabernacle, in which the people used to sacrifice, is the active life, where the people's work is to love their neighbour. The other part, in which the Levites used to minister, is the contemplative life, in which the religious part of mankind, devote their time with faithful attentiveness to the love and contemplation of God. (*Rat.* 1, 1, 6)

(3) The arrangement of the material church is like that of the human body. For the Chancel (the place where the altar is) is taken to represent the head; the cross-transepts stretching out on either side the arms and the hands; and the western part of the church the rest of the body. The sacrifice of the altar signifies the prayer of the heart. (*Rat.* 1, 1, 14)

(4) The Rails by which the altar is divided from the Choir signify the boundary between heaven and earth. Alternatively this division may come at the limit of the Choir, as will be said below, in the section on pictures. (*Rat.* 1, 1, 31)

(5) The altar is mentioned many times in Scripture, for instance the higher and the lower altar, or an exterior altar outside and an interior. The higher altar is God in Trinity ... it is also the Church Triumphant. The lower altar is the Church Militant ... it is also the Table in the Temple. ... Fifthly it signifies the Table at which Christ had supper with his disciples. In the Ark of the Covenant ... were placed the ... tables on which the Law was written. The Ark supported the propitiatory ... and some churches, to imitate this, place the Ark or the Tabernacle above the altar, within which are placed the Body of the Lord or relics. (*Rat.* 1, 2, 3-5)

(6) The first (kind of veil), that is to say the curtains which hang on either side of the altar, which are used by the priest when he begins the Secret prayer ... is signified by what is told in the thirty-fourth chapter of Exodus, where Moses placed the veil on his head because the children of Israel could not bear to look upon the brightness of his face. The second veil, that is to say the curtain which is drawn in front of the altar in Lent at the Office of the Mass, is signified by the fact that the veil was hung in the Tabernacle in order to divide the Holy of holies from the Holy (Place). (*Rat.* 1, 2, 35)

(7) Scripture says that the Lord commanded Moses to make ointment with which he was to anoint the Tabernacle at its dedication and the Ark of the Covenant ... Thus the twelve crosses are anointed, which are painted on the walls of the church ... The Bishop therefore pours the oil and the chrism (on the altar), and sings, 'Jacob set up a stone, and poured oil over it'. (*Rat.* 1, 7, 28)

(8) Moreover the Temple was once separated into two parts by the veil which lay between them. The first part of it was called the Holy (Place) and the inner room the Holy of holies. In the Office of the Mass what happens before the Secret prayer is done, as it were, in the first of the rooms, but what happens in the Secret is inside the Holy of holies. The objects inside the Holy of holies were the Altar of Incense and the Ark of the Covenant. ... All these were signs, but the signs have disappeared now that what they had been meaning has arrived. Thus the first room signifies the present Church, the Holy of holies heaven, and the priest Christ. (*Rat.* 4, 1, 13-14)

(9) (At the start of the Mass, as the ministers) proceed, the singers of the pair of choirs receive them with rejoicing, singing the introit and the Gloria in excelsis. The singers (or the robed clergy) who are rejoicing are like the angels in the heights, who were glorifying and praising the ascended Christ when they received him. ... The procession treads the way to the heavenly country. (*Rat.* 4, 6, 16)

(10) When the ministers are seated this means the enthronement of those of whom the Scripture says, 'You shall sit upon thrones, judging the twelve tribes of Israel'. In other words it represents the enthronement of those who now reign in heaven. (*Rat.* 4, 18, 2)

11 After this the deacon goes up into the ambo or pulpit. ... One gets to the ambo by steps. In some churches there are two matching sets of steps rising to it. It stands in the centre of the choir. There is one set to the left (on its east) by which people customarily go up, and another to the right (the west) by which they go down. Alternatively one can go up from steps on the south, like Christ ... coming from Bethlehem (which is to the south) to Jerusalem ... The deacon goes up in order that he can in a loud voice proclaim the Gospel ... as the prophet said, 'Go up to a high mountain, you who preach the Gospel' to Zion ... This is also to imitate the Lord, who went up into a mountain to preach the Gospel ... The Law was also given on a mountain. (*Rat.* 4, 24, 16-18)

Notes

1 1 Kg 8.6,8.

2 See Heb 11.10, 16.

The Eucharist, Simeon of Thessalonika: c.1420 AD

Edited by Dositheus, Jassy 1683, reprinted in PG 155. 'Dialogue' stands for Simeon's *Dialogue against all the Heresies and about the Only Faith*.

(1) *The significance of the sections of the Church.*

The Sanctuary¹ represents the Holy of holies above the heavens or heaven itself, and the Holy Table the throne of God, the resurrection of Christ, and his holy Tomb. The Nave² also represents the heaven above and paradise, and the parts at the end of the nave, or the nartheces, represent the world which was created for us, consisting of the Earth and what lies over it.

(2) *The First Entry*

The movement of the High Priest, dressed in his holy Garments, represents the incarnate Lord coming to the earth, and beyond earth's furthest edge going with his holy angels to Hell, and there defeating the King of Darkness, and liberating the souls who have been imprisoned there in previous ages. The First Entry thus means his Appearance on earth, his Death, his Resurrection and his Ascension. [*Dialogue: The Liturgy*, 98 (292AB)]

(3) *The Second Entry*

After the (departure of the) catechumens is the great Second Entry, which signifies the glorious Second Appearance of Christ. ... He is then seen as a lamb which has been sacrificed, both living and wounded. ... The gates (of the Sanctuary) are shut, since all this represents the future, nor can the highest things be seen by us, for we are the imperfect who dwell below. ... This therefore means that the principal High Priest, who approaches and touches and sanctifies the Mysteries, represents Him who has been sacrificed for us, [*Dialogue: The Liturgy*, 98-99 (296AB)]

(4) *The Church as Heaven*

Then the gates (of the nave) are shut. For the church then becomes Heaven, and is filled with the presence of the Holy Spirit. [*Dialogue: The Holy Temple*, 105 (312B)]

(5) *The Floor*

When (the floor) has been blessed, it is honoured by the kisses of many faithful people, as being the floor of heaven. [*Dialogue: The Holy Temple*, 106 (313A)]

(6) *Commemoration of ancient Holy Buildings*

(The Bishop prays to God). He strengthened both Moses to construct the old Tabernacle, and Bezaleel to decorate it, and gave wisdom to Solomon for the building and finishing of the old Temple, and strengthened the Apostles to set up holy altars throughout the world. Let him make this Temple holy, and make it a Tabernacle of his glory.

[*Dialogue: The Holy Temple*, 106 (313B)]

(7) *The significance of the Altar*

For this reason the Altar truly is the Table of Christ, the throne of glory, the dwelling of God, and the Tomb and monument of Christ and his resting-place. [*Dialogue: The Holy Temple*, 111 (316CD)]

(8) *The Altar is the Throne of God*

The embroidered cloth [*trapezophoron*] on the Altar is decorated because it signifies the glory of God, for the Altar is the throne of God. [*Dialogue: The Holy Temple*, 112 (317A)]

(9) *The Altar as the Tomb of Christ*

After this the head-covering (is placed on the Holy Table) to show not only the death of Christ, but also his resurrection. For after the resurrection the Apostles saw this wrapped up among the graveclothes. [*Dialogue: The Holy Temple*, 112 (317AB)]

(10) *The Church as Heaven*

Thus the Bishop, knocking at the (nave) doors and opening them, comes as it were into Heaven, or into the heavenly Tabernacle, which has been opened for us by Jesus Christ, the great witness to the Father. [*Dialogue: The Holy Temple*, 118 (321D)]

(11) *The Sanctuary*

The First Entry signifies the Resurrection and the Ascension of the Saviour, and the shutting and opening of the royal doors of the [Sanctuary] the entry into Heaven, and what was done by the angels at the ascension of Christ. The sanctuary is a sign of the heaven of heavens, and the Holy of holies which is there, into which the all-holy Jesus ascended bodily. [*Dialogue: The Holy Temple*, 118 (324A)]

(12) *The holiness of the objects of the Old Covenant*

These things began before the giving of the Law, for Abel had an altar at which God smelled the odour of sweetness ... and in this God was seen. ... It was seen more clearly by Moses, since he was shown spiritual things. Thus, although it was made of skins, the Tabernacle was holy, and all the things it contained, the Ark and the Table prefigured the things here (and above all things the Holy Virgin), and they were called and indeed were the Holy of holies. [*Dialogue: The Holy Temple*, 129 (337AB)]

(13) *The Church as the Universe*

The Temple, since it is the House of God, represents the whole universe, since God is everywhere and above all. And to show this it is divided into three parts (for God is a Trinity). This threefold design was that of the Tabernacle, and also of Solomon's Temple, as Paul says. The first section was the Holy of holies, the second the Holy (Place) and the third the worldly³ Holy (Place). These things were shadows which foretold the truth. And for this reason the all-holy Sanctuary⁴ is patterned after the Heaven of Heavens or Heaven, where the immaterial God is said to have his throne, and his place of rest. ... The Bishop represents Christ. The nave represents this visible world – the parts above it the

visible sky and those below the earth and paradise. The exterior represents the lower parts of the earth, which is the earth inhabited by the animals, who are not able to know anything that is higher in scope. [*Dialogue: The Holy Temple*, 131 (337D–340A)]

(14) *The Synthronon*

The all-holy Synthronon represents the Ascension of Christ, and the fact that he sits above all rule and power and fleshly force at the right hand of God. The steps below show the rank and order of all the angels and spiritual beings. For, as Dionysius says, our own hierarchy imitates in all this the heavenly hierarchy. [*Dialogue: The Holy Temple*, 131 (340BC)]

(15) *The Rails*

The Rails⁵ show the difference between the world of the (five) senses and the intelligible world, and are like a firmament dividing material things from the spiritual. In addition they make the Sanctuary represent the area round the Tomb of Christ, the Altar being his grave. [*Dialogue: The Holy Temple*, 136 (345C)]

(16) *The Prothesis*

The small room in the corner of the Sanctuary, called the Prothesis, represents Bethlehem and its cave. [*Dialogue: The Holy Temple*, 137 (348A)]

(18) *The Ambo*

The Ambo in front of the Sanctuary represents the rolling stone of the Tomb, where the deacons and priests (in an image of the angels) proclaim the Holy Gospel. [*The Holy Temple, to the Cretans*, 23 (708B)]

(19) *The circle of lights*

The circle (of lights hanging in the middle of the nave) represents the firmament. [*The Holy Temple, to the Cretans*, 24 (708C)]

Notes

1 The Greek word is *bēma*.

2 *Naos*.

3 *Kosmikon*: see Heb 9.1.

4 *Bēma*.

5 *Diastyla*, meaning rails which supported columns, and the curtains which could be drawn between them.

Churches and Basilicas, L. B. Alberti: c. 1450 AD

From *de Re Aedificatoria*, 7.5 (Orlandi and Portoghese, Vol. 2, pp. 547–9),

Thus as I interpret it, this is what happened: people designed different types of temple building for each different type of sacrifice ... But for the sacrifice which is usual among [Christians] they took over basilicas.

There are also the following reasons to consider: first from the very start people used to come together and assemble in the basilicas of private citizens;¹

next that the altar could be arranged in great splendour in basilicas, and there was a beautiful space round the altar for a choir;² and lastly that since the basilica contains both nave and porticoes, people may use it either to walk about, or to attend the sacrifice.³

The beamed roof of a basilica might also be more convenient for hearing the priest preach than the pointed roof of a temple.⁴

Notes

1 See Vitruvius, *Arch.* 6.5.2.

2 See Vitruvius, *Arch.* 6.5.7.

3 Possibly an echo of Vitruvius, *Arch.* 6.5.8.

4 See Vitruvius, *Arch.* 6.5.10.

Biblical Measurements, P. de l'Orme: 1567 AD

This extract is from the 'Épître aux Lecteurs', in *Le Premier Tome De l'Architecture De Philibert De Lorme*, Paris, Chez Federic Moral, 1567, pp. 4R and 4V.

God ordained and by his Word alone created the whole contrivance of the world, both the heavenly things, and earthly things made of the elements. We shall be speaking below of the holy and godlike measures and proportions which were given by God to the holy Fathers of the Old Testament, like those he gave to his Patriarch Noah to make the Ark for a defence against cataclysm and flood: or to Moses, for the Tabernacle and the Altar, the Tables, the Curtain, the Court and all the rest: or to Solomon, for the Temple which he built in Jerusalem, and the pair of houses he erected, for himself and for his wife, the daughter of Pharaoh. In Ezekiel there is a similar example, when a man like a bronze being appeared to him, holding with one hand a string, and in the other a reed or cane. This man brought with him the measurements and proportions which God had himself revealed to him in order to restore and rebuild the Temple in Jerusalem. If I so wished I could continue and could quote many other examples which appear in Holy Scripture. These proportions are so holy and marvellous that I can never tire of reading about them and wondering at them. I also particularly reverence them (if I may say so) because the one who has given and uttered them is both King and God.

What a great and generous gift God has thus given to men! And how magnificently this great supernatural Architect has deigned specially to honour the architect. For his sake he sends him from the high heaven and utters with his all-holy mouth, the very measures and proportions which might truly help him to success. Of course his buildings will not compete with those of the holy Fathers of the Old Testament, but they will still be far better than the modern buildings which the architects of Emperors, Kings or Princes have erected.

The fact that these measurements and proportions, divine as they are, have neither been recognised nor noted nor practised by either the men of the past or of the present, fills me with frank amazement. And as for all the palaces, castles, churches and houses which have been built under my control (which by God's grace men have treasured and admired), I freely and frankly state that they mean nothing to me. For even though they were built using the most correct

proportions of human architecture, when I compare them with those divine proportions from heaven which I have mentioned, and those proportions which exist in a man's body, I think nothing of them. If they all had to be rebuilt, I would give them qualities of excellence and dignity quite other than those which men see in them today.

Things mathematical, John Dee: 1570 AD

Extract from John Dee's preface to *The Elements of Geometrie of the most auncient Philosopher EUCLIDE of Megara*, (John Daye), London 1570

To the unfained lovers of truthe, and constant Students of Noble Sciences, JOHN DEE of London, heartily wisheth grace from heaven . . .

All things which are and have being are found under a triple diversitie generall. For, either, they are demed Supernaturall, Natural, or of a Third Being. Things Supernaturall are immateriall, simple, indivisible, incorruptible, & unchangeable. Things Naturall, are materiall, compound, divisible, corruptible, and chaungeable. Things Supernaturall, are, of the mind only, comprehended. Things Naturall of the sense exterior, are able to be perceived . . .

By which properties and comparisons of these two, more easily may be described the state, condition, nature and property of those things which we have termed of a third being: which, by a peculiar name also are called, *Thynges Mathematicall*.

For these, beyng (in a maner) middle, betwene things supernatural and natural: are not so absolute and excellent, as thinges supernatural: Nor yet so bare and grosse as things Naturall: But are things immateriall: and nevertheless, by material things able somewhat to be signified. And though their particular Images, by Art, are aggregable and divisible: yet the general *Formes*, notwithstanding, are constant, unchaungeable, untransformable, and incorruptible. Neither of the sense, can they, at any time, be perceived or judged . . .

A mervaylous newtralitie have these things Mathematicall: and also a strange participation betwene things supernaturall, immortal, intellectual, simple and indivisible: and things naturall, mortall, sensible, compounded and divisible.

Probabilitie and sensible proof, may well serve in things naturall: and is commendable: In Mathematicall reasonings a probable argument is nothing regarded: nor yet the testimony of sense, any whit credited: But only a perfect demonstration, of truthe certain, necessary, and invincible: universally and necessarily concluded: is allowed as sufficient for an Argument exactly and purely Mathematical . . .

And therefore the great and godly Philosopher Anitius Boetius, sayd . . . *All thinges (which from the very first originall being of thinges, have been framed and made) do appear to be Formed by the reason of Numbers. For this was the principall example or patterne in the minde of the Creator.*

O comfortable allurements, O ravishing persuasion, to deal with a Science, whose Subject is so Auncient, so pure, so excellent, so surmounting all creatures, so used of the Almighty and incomprehensible wisdom of the Creator, in the distinct creation of all creatures: in all their distinct partes, properties, natures,

and vertues, by order, and most absolute number, brought, from *Nothing* to the *Formalitie* of their being and state. By *Numbers* propertie therefore of us, by all possible means, (to the perfection of the Science) learned, we may both winde and draw ourselves into the inward and deepe search and vew, of all creatures distinct vertues, natures, properties, and *Formes*. And also, further, arise, clime, ascend, and mount up (with speculative winges) in spirit, to behold in the Glas of Creation, the *Forme of Formes*, the *Exemplar Number* of all things *Numerable*: both visible and invisible, mortall and immortal, Corporall and Spirituall.

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Appendix 1 The Analysis of Ancient Buildings

This appendix describes how this book analyses synagogues and churches.¹ It is described in an appendix because the author takes sole responsibility for this method. This presentation of a modern system is not to be confused with the main text of the book, where the interpretation of ancient documents and ancient buildings provide the evidence.

This book has argued that numerical proportions lay behind the design of Jewish and Christian Holy buildings. Thus if someone today were to measure the distances which the original builders set out, he should find an exact proportion. Obviously the word 'exact' will need to be defined, but we can leave that question till later.

These proportions are based on articles or buildings which the Holy Scriptures said that God had commanded men to make. All these scriptural proportions are arithmetically exact, so there are no irrational numbers, like the square root of two or the golden section. Those who have searched for irrationals have sometimes found them, or what seemed approximately like them. But there are some arithmetical values which are very close to the irrational numbers with which they are concerned. For instance 48: 68 is very like 1: $\sqrt{2}$.²

Proportions are of three kinds. The first is the rectangle-proportion for the Ark of the Covenant (Exod 25.10) illustrated in Figure A1.1. This is a rectangle-proportion because it compares length and width. Its description as a proportion is 1.5:2.5, and this book usually describes it in this way to clarify its link with the Scriptures. But in calculations it is usually expressed as a four-figure decimal result of dividing the length by the width, in this case 1.6667.

The second kind is a length-proportion. This consists of three points in a straight line. The first point is zero, the next point marks the smaller number and the third point the bigger number. Its geometry is shown in Figure A1.2.

Arithmetically it is expressed as 37:100, with the colon meaning 'in proportion to'. Its decimal expression is 0.3700.

The third kind is a width-proportion, shown in Figure A1.3.

This differs from the length proportion because its lengths do not start from the same place. Instead they have the same centre. The inner length is compared with the outer length, and the numerical description of a width proportion, 20:50, is the same as the description for a length proportion. Its decimal expression is 0.4000.

All three proportional systems derive from scriptural models. Some models are not symmetrical in their length, but they are all symmetrical across their width.

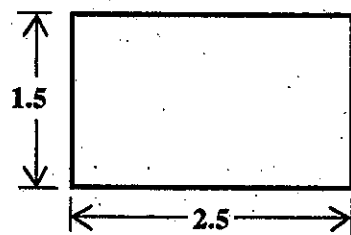


Figure A1.1 A rectangle-proportion



Figure A1.2 A length-proportion

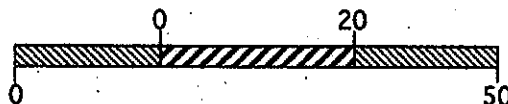


Figure A1.3 A width proportion

How do we measure these proportions? Say an archaeologist excavated an ancient building with a step going across the floor. An inscription identified it as a synagogue. He made a plan of it (Figure A1.4).

Needless to say we wish to know what did the architect intend the length-proportion to be of the step to the interior of the building? But before we measure the plan, we are interrupted by some strict logicians. 'Even if you measure the building', they tell us, 'you can't say what the architect intended'. And this, of course, is part of the truth. You can't logically step straight across from your measurements to the architect's intentions. There may perhaps be some mistakes, whether deliberate or not, between what he intended and the result in the building. Examples of this may be found in Appendix 9.

But there is another part to the truth. A synagogue is attached to a particular religion, namely Judaism. So if the proportions correspond to the Holy Scriptures they are part of what we have identified as a tradition and have a traditional meaning. And where certain proportions are repeated over and over again, they may well have been produced intentionally.

Let us therefore go on to measure. What we are to measure is a length-proportion. From the interior of the left hand end to the step measures 2.00 centimetres. And from the same point to the interior of the other end of the building measures 5.40. And if the smaller measurement, 2.00, is divided by the greater, 5.40, we get the proportion, 0.3704.

This is very close to a commonly repeated length-proportion from the Temple, 37:100, or 0.3700 which we have already taken as an example (Figure A1.5). This proportion divides the Holy of Holies from the longest room, the Holy Place. So the question which remains before us is this, 'Can 0.3704 be interpreted as the same as 0.3700?'

Obviously one should make more of an allowance for large objects like buildings than for more precise ones like jewellery. Even the accurate buildings of stone or brick should have some allowance made. The question is, how much.

Thus how faithfully does experience suggest that a synagogue or church corresponds to its architect's plans? This is a question which can be answered only by familiarity with the measurement of buildings.

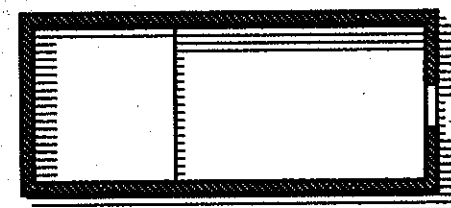


Figure A1.4 Step across building

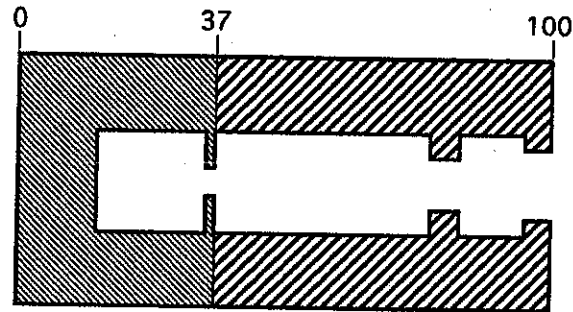


Figure A1.5 A length-proportion from Ezekiel's Temple

Rectangle-proportions

Let us then say that in ancient times, the Ark of the Covenant proportions (shown in Figure A1.1), was chosen as the plan for a four-walled enclosure. The result is shown in Figure A1.6. The grey lines are the walls, and the thin black line is an imaginary enlargement of the plan.

Experience suggests that many ancient buildings do not correspond with their plans. The main thing wrong with the present building, is the misjudgement of the right angles. So the first statement to be made is that this building does not follow its plan. But the argument of this book is that numerical proportions lay behind the design of Jewish and Christian Holy buildings. If the building as a whole is wrong, but some measurements are right, the building might have followed its plan, albeit untidily.

I have measured all the rectangles of the synagogues and churches in this book. In each case at least two of the sides were in scriptural proportions. So in the plan, Figure A1.1 the left side is 1.5 and the bottom is 2.5. The correct decimal for the planned measurements, 1.5 divided by 2.5, is 0.6000. But when I measured the walls of the building, the left side is 2.46 cm and the bottom 4.105 cm. The decimal for the building is 0.5993. The difference between the plan decimal and the building decimal is $0.6000 - 0.5993 = 0.0007$ which equals a seventh of a thousandth. On the basis of experience I reckon as 'exact' any building measurements which in decimal form fall on or within a thousandth of the correct scriptural proportion.

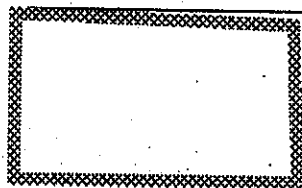


Figure A1.6 Building walls according to the plan in A1.1

This may at first sight seem a desperate attempt to find the appropriate proportions. To this there are two answers. The first, and less important, is that our standard variation is one thousandth, far more accurate than any of the systems hitherto devised. The second is that the workmen's instructions were in the form of a mathematical proportion, 1.5: 2.5. They worked this out in terms of length,³ and then they measured the two walls, as shown in Figure A1.7. Afterwards the mistakes began because they could not accurately measure a right angle, but not because the numbers were wrong.

Length-proportions

Since the instructions for length proportions were also given in whole numbers they have the same allowances for accuracy as rectangle-proportions, namely anything up to one thousandth of the ratio decimal.

The main problem about measuring length-proportions comes in the difference between theory and practice. In theory the lengths are all measured down the central axis, as set out in Figure A1.8. But in practice synagogues and churches were irregularly built.

In theory the length-proportions should be measured along the building's central axis. And there are many ancient buildings which correspond in practice to this theory, so that even when measured along the axis they provide scriptural length-proportions.

But the researcher who measures along the axis may be in for a disappointment. What if there are no scriptural measurements?

Though the idea of scriptural proportions measured along the axis is right in theory, it is not necessarily carried out in the building itself. The builders might have measured it along the colonnade. Whenever I have

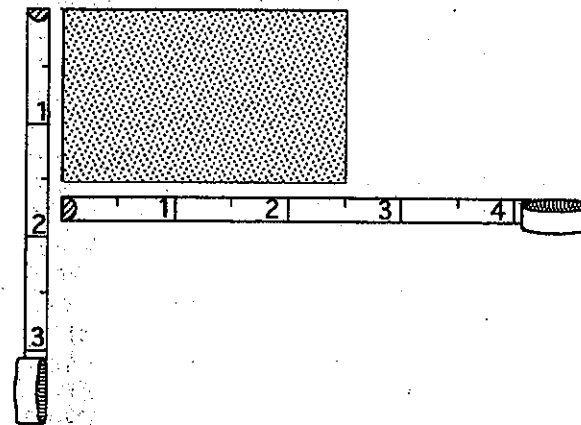


Figure A1.7 Measurement of sides of rectangle

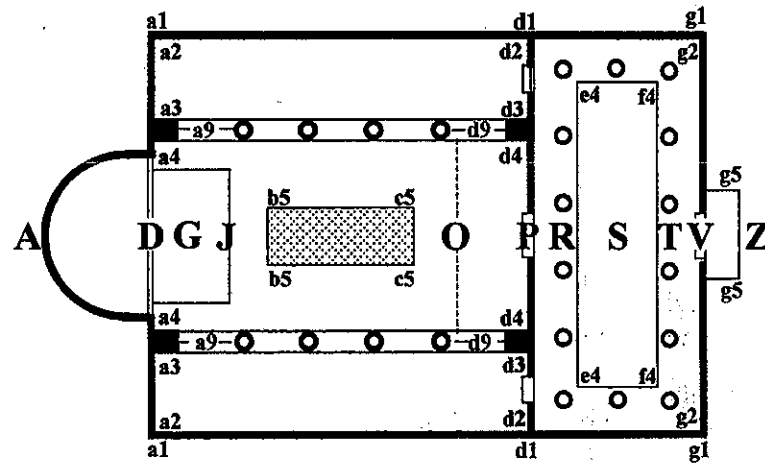


Figure A1.8 Common marking of buildings

found it difficult to find proportions along the axis for my own two archaeological samples, it proved quite easy to find them along the colonnade. The person analysing a plan should follow the measurements of the builders.

My experiment with the proportions of synagogues and churches was unexpectedly rewarding. A large number of scriptural rectangles were revealed, almost all of which the builders had measured to within an accuracy of a thousandth. This book's main argument is thus consistent for the buildings examined and the period covered. But a great deal more research has to be done.

In the appendices which follow a common system of marking has been employed, in order to compare the different buildings. This is a plan which shows the essential characteristics of a synagogue or of a church (Figure A1.8).

The Lengths are marked with capital letters and are followed by a number. A1 would be the outside of the apse and A2 the inside. Widths are entered twice: a1 would be the outside and a2 the inside of the corners of the main hall, a3 and a4 the inside and the outside of the colonnade (with a9 as the centre, should it be needed). In the widths it is a help to number things according to the amount their width or narrowness (an example being e4 where 4 is a number near the centre).

Notes

1 See Chapter 4, p. 37, Chapter 6, p. 70.

2 In length proportions 60: 85 are also like $1/\sqrt{2}$, 48: 83 like $1/\sqrt{3}$, and 37: 83 like $1/\sqrt{5}$. The difference is less than two thousandths.

3 Perhaps by Al Nairizi's method. See p. 72.

Appendix 2 Scriptural Proportions

The length proportions for the Tabernacle and the Temple are based on fractions of the numbers in the descriptions of the Tabernacle in Exodus and of the Temple in Ezekiel¹. First comes the decimal, and then the smaller scriptural number in proportion to the greater. The letter indicates in which of the plans in Appendix 3 it is to be found.

Length Proportions, not including plans N to Q

.9692	63:65	B	.7700	77:100	A	.4217	35:83	A	.1948	15:77	A
.9667	58:60	D	.7692	40:52	J	.4054	15:37	A	.1923	10:52	E
.9583	46:48	F	.7647	65:85	B	.3895	37:95	A	.1895	18:95	D
.9524	40:42	J	.7500	75:100	B	.3700	37:100	A	.1807	15:83	A
.9500	95:100	A	.7500	60:80	D	.3684	35:95	A	.1724	10:58	E
.9459	35:37	A	.7429	52:70	E	.3651	23:63	B	.1714	12:70	D
.9412	80:85	C	.7412	63:85	B	.3548	22:62	C	.1714	12:70	E
.9333	70:75	E	.7391	17:23	B	.3538	23:65	B	.1700	17:100	B
.9277	77:83	A	.7385	48:65	G	.3500	35:100	A	.1667	5:30	T
.9206	58:63	K	.7368	70:95	D	.3333	10:30	T	.1667	2:12	L
.9118	62:68	C	.7294	62:85	C	.3247	25:77	A	.1613	10:62	C
.9091	20:22	C	.7250	58:80	D	.3235	22:68	C	.1600	12:75	E
.8966	52:58	E	.7143	25:35	A	.3226	20:62	C	.1579	15:95	A
.8824	75:85	B	.7059	48:68	F	.3103	18:58	D	.1500	12:80	D
.8750	70:80	D	.6988	58:83	F	.3067	23:75	B	.1500	15:100	A
.8737	83:95	A	.6933	52:75	E	.3012	25:83	A	.1471	10:68	C
.8696	40:46	K	.6897	40:58	K	.3000	18:60	D	.1429	10:70	E
.8667	65:75	B	.6774	42:62	J	.2941	20:68	C	.1333	10:75	E
.8571	60:70	D	.6765	46:68	F	.2941	5:17	B	.1304	6:46	F
.8529	58:68	F	.6757	25:37	A	.2857	10:35	M	.1263	12:95	D
.8500	85:100	B	.6753	52:77	H	.2750	22:80	C	.1250	10:80	C
.8500	68:80	C	.6667	20:30	T	.2706	23:85	B	.1250	6:48	F
.8421	80:95	D	.6500	65:100	B	.2698	17:63	B	.1176	10:85	C
.8400	63:75	B	.6452	40:62	J	.2632	25:95	A	.1034	6:58	F
.8387	52:62	J	.6316	60:95	D	.2615	17:65	B	.0909	2:22	L
.8333	25:30	T	.6300	63:100	B	.2588	22:85	C	.0882	6:68	F
.8333	10:12	E	.6105	58:95	D	.2571	18:70	D	.0794	5:63	B
.8300	83:100	A	.6000	15:25	A	.2500	20:80	C	.0769	5:65	B
.8286	58:70	E	.5783	48:83	F	.2500	25:100	A	.0723	6:83	F
.8276	48:58	F	.5542	46:83	F	.2353	20:85	C	.0667	5:75	B
.8193	68:83	F	.5455	42:77	J	.2308	12:52	E	.0588	5:85	B
.8105	77:95	A	.5195	40:77	J	.2300	23:100	B	.0541	2:37	L
.8077	42:52	J	.5000	10:20	C	.2267	17:75	B	.0500	5:100	B
.8052	62:77	J	.5000	10:20	M	.2250	18:80	D	.0476	2:42	G
.8000	48:60	G	.4805	37:77	A	.2174	5:23	B	.0417	2:48	G
.8000	68:85	C	.4545	35:77	A	.2069	12:58	D	.0333	2:60	G
.7931	46:58	F	.4545	10:22	C	.2069	12:58	E	.0308	2:65	G
.7750	62:80	C	.4458	37:83	A	.2000	17:85	B			
.7733	58:75	E	.4286	15:35	A	.2000	12:60	D			

In the rectangle proportions the first scriptural number is the width and the second the length. There are two additions to the rectangles to be considered, namely Noah's Ark and the Ark of the Covenant.

Rectangle Proportions including plans AC (H & V) NA and T (TB)

5.3333	32:6	O	.8065	50:62	C	.4348	20:46	F
2.5	50:20	C	.8	20:25	A	.4324	32:74	O
2.2727	50:22	C	.7937	50:63	B	.4167	20:48	F
2.0	50:25	A	.7692	50:65	B	.4	10:25	T
1.7500	32:20	P	.7353	50:68	C	.3448	20:58	E
1.6667	2.5:1.5	H	.6957	32:46	O	.3333	20:60	D
1.4545	32:22	P	.6667	32:48	O	.3333	10:30	T
1.4286	50:35	A	.6494	50:77	A	.3226	20:62	C
1.3514	50:37	A	.6250	50:80	C	.3175	20:63	B
1.25	50:40	J	.6024	50:83	A	.3077	20:65	B
1.2308	32:26	N	.6	1.5:2.5	V	.2941	20:68	C
1.1905	50:42	G	.5882	50:85	B	.2597	20:77	A
1.1429	32:28	N	.5714	20:35	A	.25	20:80	C
1.0870	50:46	K	.5405	20:37	A	.2410	20:83	A
1.0417	50:48	F	.5263	50:95	A	.2353	20:85	B
1	20:20	C	.5	20:40	K	.2105	20:95	A
.9091	20:22	C	.5	50:100	A	.2	20:100	A
.8621	50:58	E	.4762	20:42	J	.1667	50:300	NA
.8333	50:60	D	.4706	32:68	N			

Notes

1 See Chapter 6, p. 75.

Appendix 3 Numbers and Scriptural Plans

This appendix lists all the scriptural models for the church's proportions known to me.¹ It starts off with a number of different plans of Ezekiel's vision of the Temple. The plans are split into halves, counting down in the first column and up in the second. Plans A – M show plans of the complete temple with different numbered divisions. These in turn provide the scriptural proportions. Plans N – Q show the inner 'Tabernacle' of the Temple from which some rectangle proportions are derived. The plans also include the Tabernacle described in Exodus, the Ark of the Covenant, and Noah's Ark.

Notes

1 See Chapter 6, p. 75.

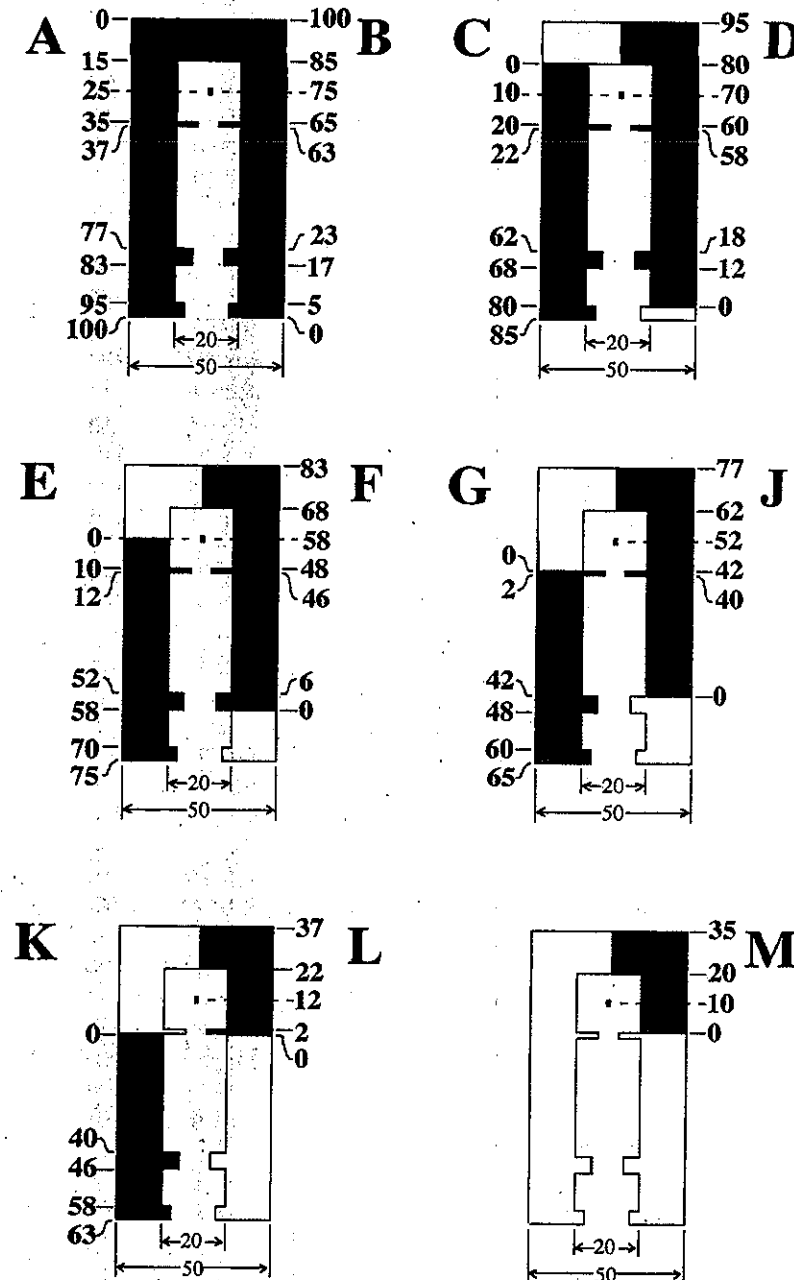


Figure A3.1 Scriptural models for the church's proportions: A-M Plans

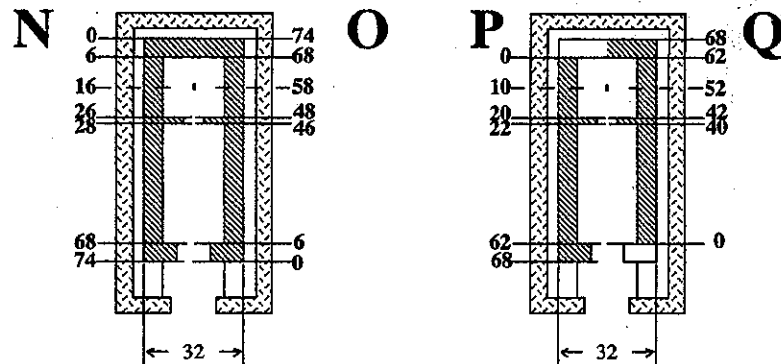


Figure A3.2 Scriptural models for the church's proportions (continued): N-Q Plans

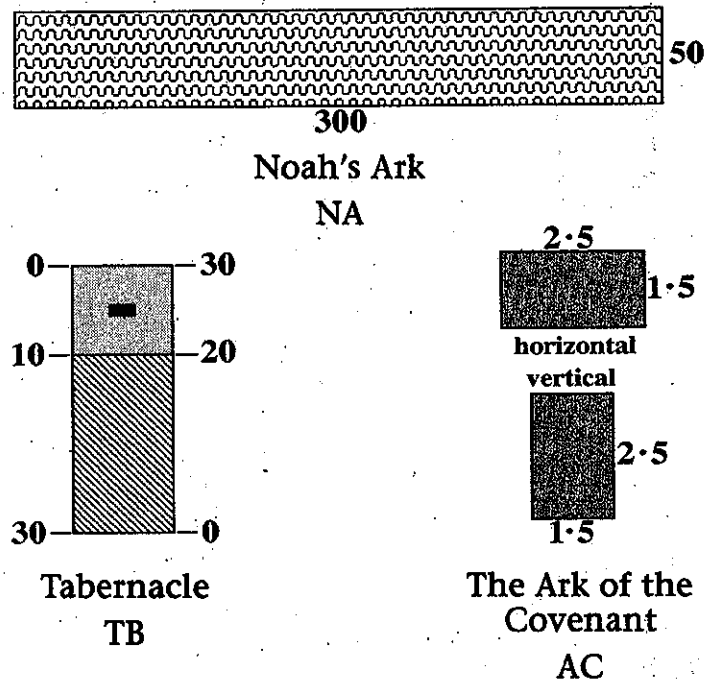


Figure A3.3 Noah's Ark, the Tabernacle and the Ark of the Covenant

Appendix 4 Synagogue Rectangle Proportions¹

- A Outer and inner rectangle proportions were used in the design of synagogues. This table illustrates their regularity in the synagogue sample, and the smallness of their variations.
- B For the published plans see the third section of the Bibliography, p. 259 below. A number of the plans also appear as the figures in this book. They are listed in the Bibliography.
- C The two columns headed 'walls' give the walls which were measured. The codes which identify the walls are explained in Figure A1.8, p. 226. Widths start with small letters and lengths with a capital.
- D The two columns marked 'var' show the variation. A rectangle proportion is the result of a width being divided by a length. These were measured on the plan. The result was compared with the mathematical proportion from the Scriptures, from Appendix 2. The difference between the two is the variation, measured in ten-thousandths.
- E The outer and the inner rectangles follow. Proportions in numbers are linked with their temple or other equivalents in the plans in Appendix 3.
- F The length of the axes of the synagogues, including both outside walls, are measured. There was no one measurement for synagogues.

Notes

¹ Ch. 6, p. 74, Ch. 9, p. 134.

Date	NAME	walls	var.	OUTER	INNER	walls	var.	Axis in m.
I BC	Ostia	a2 - D2/V2	2	20:42	20:62	d4 - G2/P1	-1	15.62
Her	Gamla	b2 - A1/P2	0	1.5:2.5	50:80	c1 - J1/O2	-1	26.59
40	Magdala	a1 - D1/P2	-3	20:22	50:68	b3 - J2/P1	-1	8.25
132	Herodium	c1 - E1/P2	0	20:25	20:62	c4 - E1/P2	-3	16.80
132	Masada 2	j1 - D1/P3	-3	50:60	20:35	f3 - J2/P3	9	14.59
225	Hth Tiberias S. 1	d4 - D2/R2	8	50:65	32:68	d9 - D2/P2	-1	13.33
225	Dura-Europos 1	a1 - D1/W2	-1	50:83				7.75
244	Dura-Europos 2	a3 - D2/T1	0	1.5:2.5	32:48	c9 - D1/R9	0	9.52
250	Bar'am, large	a2 - D2/R9	1	20:35	20:40	b5 - J2/P1	0	19.88
250	Susiya 1 [mosaic]	b6 - D2/R2	-1	20:95	20:83	c6 - D2/P2	8	17.45
280	Merón [cols ?]	b2 - D2/V1	-3	20:46	unknown			28.72
284	Shema' H.(o.wall)	b1 - D1/X1	9	50:68	20:48	b9 - J1/X1	-4	15.10
300	Ammudim, H.	c3 - D1/P2	-1	50:65	20:62	c6 - J1/P2	0	24.54
300	Beth She'arim	a1 - D1/R2	3	20:48	20:80	b3 - D1/P1	0	29.18
330	Gush Halav 2	c2 - D1/P2	2	50:77	20:58	d1 - D1/P2	1	17.50
335	Hth Tiberias S, 2	b1 - A2/P1	5	20:22	20:62	a3 - J1/P2	-3	13.29
350	Arbel	c2 - A2/P1	0	50:58	20:46	a6 - A1/O2	-5	21.69
350	En Gedi 2	b3 - D2/Y5	0	50:83	20:40	c4 - D2/Y5	0	14.40
350	Eshtemoa 2	b2 - D2/P2	-1	50:37	50:22	a2 - F1/O1	-7	22.89

Date	NAME	walls	var.	OUTER	INNER	walls	var.	Axis in m.
350	Rimmon, H.	d1 - A1/V2	0	20:37	20:65	b6 - D2/P2	0	17.33
350	Shema', H., 2	b1 - D1/X1	9	50:68	20:48	b9 - J1/X1	-4	18.60
375	Chorazin	a2 - D3/P2	3	32:46	32:74	c4 - F1/P2	-8	22.94
375	Rehob	a2 - D2/P1	-9	20:22	20:58	a3 - J1/P2	-1	18.68
375	Sardis 2	a1 - A2/V1	4	20:77	20:62	b2 - A2/P1	9	61.48
400	Anim, H.	a0 - D1/P2	-4	50:68	20:35	a1 - D1/P2	-1	13.35
400	Capernaum 2	c1 - D1/P2	-5	50:65	20:42	c4 - J1/P2	8	24.88
400	Hth Tiberias N. 2	a2 - J1/P1	10	50:46	20:46	a3 - J2/P2	7	11.50
400	Meroth (early)	c1 - D1/P2	-7	50:77	50:85	b3 - J1/P1	1	19.84
400	Priene	d1 - D1/R2	5	20:22	50:62	c3 - A2/O1	5	12.71
400	Susiya 2	b1 - D2/R2	0	20:68	20:65	b1 - D2/R2	0	17.45
425	Dikke, ed	a3 - D1/P3	4	20:37	20:77	a9 - D1/P1	0	15.93
425	Sepphoris	a1 - J1/P1	6	20:35	20:63	a5 - D2/P1	1	20.70
450	Qasrin	d1 - F1/O1	8	50:46	32:74	b4 - D2/P1	-4	18.07
475	En Nashut 2	d2 - D1/P1	8	50:63	2.5:1.5	a9 - X9/Y9	-6	12.80
490	Qanatir, Umm el	c1 - D2/P2	-5	50:65	32:74	b2 - J2/P2	0	18.88
500	Hammath Gader	b3 - A2/P1	-7	50:60	50:62	d4 - J5/O2	2	18.50
520	Kanaf	b2 - D1/P1	5	32:46	20:63	b9 - D1/P1	-8	16.10
525	Na'aran	b2 - D2/R2	0	20:37	20:46	b3 - E1/P1	-6	20.15
550	Beth Alfa 2	c2 - A1/P1	-4	50:58	20:42	b3 - A2/P1	0	14.49
550	Beth She'an, Sam.				20:58	b9 - A2/P1	3	16.84
550	Aegina	b2 - D2/P1	9	20:42	50:83	c1 - D1/O2	-2	22.93
550	Gaza	a2 - D2/P1	1	50:58	20:80	b5 - D2/P2	8	unknown
550	Ma'oz Hayyim 2	a1 - A1/R2	-4	1.5:2.5	20:37	e3 - J1/P1	-1	18.65
564	Nevoraya 3	a1 - D2/R2	9	1.5:2.5	20:95	b4 - D2/R1	7	16.61
575	Beth She'an, Leon.	c3 - D3/O1	1	32:38	20:20	z2 - K2/N2	1	?
600	Jericho	a1 - A2/P3	-7	32:48	20:65	b3 - A1/P3	-3	14.81

Appendix 5 Synagogue Apse Proportions

A Because not many synagogues have apses this table is short.¹ It is however important as a means of comparison with churches. And it is also an opportunity to show entries in the form in which they are produced by the computer program.

B The sign 'l' identifies this entry as a length proportion. Three wall identification codes then follow, explained in Figure A1.8, p. 226. The scriptural proportion follows, e.g. 77:100, and it is found in the following way. The first thing to find is the measured proportion. Two lengths starting at the same point are measured to produce the length proportion. The shorter length (for example, 77.02 m.) is divided by the longer (for example 100.13 m.). This produces a four-figure decimal of 0.7692. A search through the scriptural proportions in Appendix 2 produces a very similar decimal, 0.7700. The variation is the difference between them, that is 0.0008, that is less than a thousandth. Any variation measuring a thousandth or less is ignored.

C The second column is headed with the word 'similar', a statement about the way round the model Tabernacle or Temple is. 'Similar' means that the model's door is at the same end as the main door of the synagogue, and 'reversed' means that its door is at the other end. Aegina was originally a non-Jewish building and does not have all the length-proportions appropriate to a synagogue. I cannot see a similar set of proportions for Priene. but all the other buildings have them.

Notes

1 Ch 6, p. 84.

NAME	SIMILAR	REVERSED
Sardis	A1/G2/M1 = 37:83 A v 1 A2/D2/M1 = 15:95 A v 6	A1/O1/P2 = 35:37 A v -5 A2/V2/Z3 = 62:68 C v -6
H.Tiberias.2	A1/D1/P1 = 20:85 C v -1 A2/D2/P2 = 20:85 C v -6	A1/M1/P2 = 63:100 B v -4 A2/P1/P2 = 40:42 J v 3
Arbel	A2/D2/J2 = 37:95 A v -10	A1/O2/P2 = 65:85 B v -5 A2/O1/P1 = 58:80 D v -2
Priene		A1/P1/P2 = 40:42 J v 0 A2/P1/P2 = 95:100 A v -3
H.Gader	A1/J1/P1 = 5:17 B v 0 A2/J4/O9 = 22:80 C v 2	A1/J1/P1 = 20:68 C v 0 A2/O9/P2 = 80:95 D v 4
B.She'an S	A1/P2/R2 = 68:80 C v 0 A1/D2/M1 = 35:100 A v -2	A3/J3/M1 = 5:17 B v 4 A1/P2/R2 = 85:100 B v 0
B.Alfa	A2/D2/R1 = 15:100 A v -2	A1/P1/P2 = 40:42 J v 1 A2/M1/P1 = 63:100 B v -2 A2/S1/V2 = 77:100 A v -6
(Aegina)		
Ma'oz Hayyim	A2/D2/P2 = 15:100 A v 0 A1/J1/P2 = 20:68 C v 5	A1/J1/P2 = 5:17 B v 5 A2/D2/P2 = 12:80 D v 0
Jericho	A1/O2/P3 = 68:80 C v -5 A1/O2/P3 = 85:100 B v -5	A2/F1/P2 = 18:70 D v -2 A2/P2/P3 = 40:42 J v 8

Appendix 6 Church Rectangle Proportions

A The object of this table is to show the regular occurrence of Outer and Inner Scriptural rectangles of 73 churches in the sample.¹ Some churches have more than one proportion.

B The meaning of the codes which identify the walls is explained in Figure A1.8 p. 226. The meaning of the proportional numbers in relation to the scriptural models can be seen in the list of scriptural proportions, Appendix 2, and in the Plan corresponding to the letter in Appendix 3. It may save time if you have a calculator to divide the first proportional number by the second. This produces a decimal and decimals govern the order of the list of proportions in Appendix 2. Some difficulties are also solved in the introduction to Appendix 4 on Synagogue Rectangle Proportions.

C The variations have not been shown. All have a variation of a thousandth or less.

D The sources of the plans and some examples of them in this book are at the end of the Bibliography.

E Geographical names are without political significance.

Notes

1 Chapter 9, p. 134, Chapter 11, p. 163.

Region	Date	NAME	walls	OUTER	INNER	walls
Georgia	VI-VII	Zegani	OWw-A1/P2	32:48	20:63	b4-A2/P1
Georgia	634	Tsromi	a1(chapels)-A1/R1	50:62	50:80	b4-A1/P2
Armenia	V	Dvin Cathedral 1	OL-Ow	20:46	20:95	Iw-A2/P1
Armenia	612	Dvin Cathedral 2	OL east-Ow	20:35	as above	
Corsica	.	Mariana	On-A2/P2	32:48	20:68	Ow-A2/P2
					20:80	Iw-A2/P2
Babylonia	.	Al Hira XI	In-Arches	20:40	20:100	O-A2/P2
Spain	VII	Zorita de los Canes	Ocross-A1/P2	32:46	20:77	I-A1/P1
					20:85	I-A2/R1
Spain	VII	Cabeza del Griego	Os-Ow	20:22	20:100	O-A1/P1
Libya	525	Latrun B, west	On-Oe	50:83	50:95	Osides D2/O1
Libya	385	Zuara 4	On-Oe	50:83	20:80	Mw-A2/1
Libya	425	Zuara 1	On-Ow	50:65	20:83	Wax-A2/P1
Libya	540	Lebda 1	On-ED1-EO2	10:25	20:80	Osw-A2/P1
Tunisia	<533	Sayda, Redemptus	S1-D1/P2	50:80	20:83	Is-D2/P1
Algeria	425	Tébessa	Oe-Os	20:42	20:77	M-A2/P2
Tunisia	IV	Es Skhira 1	O-Ow	50:62	20:42	Mew-A1/P2
					20:80	Intww-A2/P2
Tunisia	568	Haïdra 1 Melleus	Ow-Opresb/P2	10:25	20:100	Iw-A2/P1
Tunisia	.	Hammam Jaraji 1	[outline not clear]			
Rome	340	Rome, S. Agnese film	Os-Ow	32:48	20:40	Ew-D2/O2
Rome	450	Rome, S. Agata d.G.	Oe-Oc	32:48	20:40	Oe-D2/P1
Rome	325	Rome, S. Lorenzo film	Oe-On	20:63	50:300	Wm-A2/P1
Dalmatia	V	Solin, Anastasius B.	Oe-Os	50:80	20:65	Ie-A2/P1
Dalmatia	.	Solin, next to Anast	Oe-s.D1-P2	50:85	20:65	Ow-A2/P1
			Ow-S.D1-P2	1.5:2.5		
Macedonia	500	Stobi, Episcopal	Oe-Oc	20:35	20:83	Ie-A2/R2
Croatia	550	Porec, Eufraiana	Oe-D1/R2	20:40	20:100	Ie-A2/R2
Dardania	VI	Caricin Grad South	Enave-On	50:68	20:65	Iw-A2/P1
			Tr.-Oc[ct]N	50:85	20:62	Mw-A2/R1
Cyprus	525	Kourion	Oe[in]-A1/P2	20:35	20:83	Oe-A1/R2
			Oe[out]-Os/R2	32:48	20:80	Ie-A2/P1
Cyprus	VI	Pegeia, S. George Ae	Ow-A1/Wend ct	20:46	20:80	Oe-A2/R1
			Ow-A1/R2	20:35		
Cyprus	VI	Pegeia, S. George Aw	Ow-On	32:46	20:63	Oe-A2/P2
Crete		Suia	Ow-On	50:83	20:63	Ow-A2/O2
			Ow-Os	50:68	20:100	Iw-A2/P2
Greece	IV/V	Nea Anchialos C	Oe-On	20:40	20:80	Oe-A2/P2
					20:80	Ow-A2/O1
					20:100	Ow-A2/R2

Region	Date	NAME	walls	OUTER	INNER	walls
Greece	.	Nea Anchialos D (court missing)	Ow-Oc	1.5:2.5	20:68	Oe-A2/P2
			Ow-NO2	50:58	20:65	Ie-A2/O1
			Ow-Os	32:22		
Greece	V	Thasos, Alikí	Ow-Oc	20:46	20:80	Ie-A2/O1
					20:68	Ow-A2/O2
					20:95	Iw-A2/P1
					20:83	Iw-A2/O2
					20:77	Ow-A2/P1
Greece	550	Klausaion	Oc-Tr	32:48	20:77	OCircle-A2/P1
			Oe-Oon	50:80	20:85	ICircle-A2/P2
					20:83	ICircle-A2/P1
					20:77	Oestw-A2/P1
					20:80	Oeste-A2/P2
Greece	.	Chersonesos B	Ie.int-D1-O2	50:95	20:80	Oe-A2/O1
			Ie.int-A1/P2	10:25	20:83	Ie-D1/O1
			Iw.int-A1/T1	20:63	20:85	Ie-D1/O2
			Iw.int-A2/T1	20:62	20:100	Ie-D1/P2
Greece	455	Corinth, Lechaion	Oe.chap-D1/O2	20:37	20:83	Ie-A2/R2
			Porch-D1/P2	20:46		
		[ē = inside nave walls]	Oe m.Tr-D1/P2	20:48		
			Ow.crt-D1/P2	20:62		
			Oe m.Tr-A1/Scircle	20:63		
			Oe m.Tr-A1/court	20:80		
Macedonia	525	Philippi Cemetery	Ows D1/R2	20:46	20:62	Icol-D_2/O2
Macedonia	465	Thess. S. Demetrius	EETran-S	32:54	20:46	Iout-A2/P1
			incl.Porch			
			Wnave-A1-R2	32:54	20:77	Ow-A2/P1
			EWTran-S	50:83	20:85	Ie-A2/P1
			incl.Porch			
			EWTran-D1/P2	50:63	50:80	IETr-A2/P2
			EWTran-A1/P2	32:40	20:40	Oout-A2/P2
					20:83	Oe-A2/R1
					20:95	Ie-A2/R1
					20:100	Iw-A2/R2
					20:48	Iout-A1/P2
					10:25	Oout-A1/R1
					20:85	Oe-A1/R1
					20:35	OeTr-A1/R2
Macedonia	<500	Philippi A	ETrW-D1/R2	32:46	50:83	Eout-A2/O2
			Enave-A1/P2	1.5:2.5	20:80	Iw-A2/P1
			Wnave-D1/R2	1.5:2.5	20:42	Iout-A2/P2
					20:46	Iout-A2/R2
					20:80	Ow-A2/R2
					20:80	Oe-A1/R1
					20:95	Ie-A1/R2
Isauria	.	Alahan Baptistery	[altered]		20:65	Iw-A2/P1
Isauria	485	Alahan	Iw[-ij]-OCR2	20:48	20:77	Ow-A2/P1
Asia		Priene	Owe-OnR2	20:40	20:83	Oe-A2-R2
			Owi-A1/R2	20:40		
Cilicia	.	Kiz Kalesi, Cath	Ie-Oc	20:46	20:83	Oe-A2/P2
			Ie-NP2	20:35	20:80	Ie-A2/P1

Region	Date	NAME	walls	OUTER	INNER	walls
Phrygia	VI	Selçikler	Oe-Oc	20:35	20:58	Inavee-A2/O1
					20:77	Inavee-A2/P1
					20:58	Onavee-A2-P1
					20:85	Sanc-A2/P2
					20:60	Onavew-A2/P2
					20:80	Iw-A2/P1
Cappadocia	V	Ihlara, Direkli Kilise	[in cave]			
Blemmyes		Addendan North	Ow-A2/P2	32:46	20:60	Iw-A2/P2
			Ow-A2/R1	50:83		
Egypt	470	Saqqara, Jerem. E	Ie-A2/P2	20:35	20:62	Ow-A2/P2
					20:77	Ie-A2/P2
					20:63	Oe-A2/P2
					20:60	Iw-D2/P1
Egypt	<470	Saqqara, Jerem. W	Ie-A2/P1	50:80	20:63	Oe-A2/P1
			Iw-A1/P2	20:35	20:68	Ow-A2/P2
			Iw-A2/P2	1.5:2.5	20:48	Ow-D1/P1
					20:95	Iw-A1/P2
Egypt	V	Abu Mina, Old Cem.	Ow-On	20:37	20:83	Iw-A2/P1
					20:83	Ie-A2/P2
					20:85	Iw-A2/P2
					20:80	Oe-A2/R1
					20:95	W-A2/R1
					20:60	Oe-D2/P1
Egypt	VI	Med.Habu DSTudrus	[see plan]	20:60	20:60	Oe-A1/O1
					20:58	Ie-D2/P2
Egypt	485	Abu Mina Basilica	Ow-OcP2	20:48	32:48	Tranw0-A2/P2
			TranEs-OcR2	32:46	50:83	TranEO-A2/R1
					50:85	ItranE-A2-R1
					20:95	Ow-A2/R1
					1.5:2.5	OTanE-A2/R2
					20:95	Oe-A2/R2
					20:83	Iw-D2/P1
					20:85	Iw-D2/P2
					50:68	Iw-D2/P2
					20:95	Iw-D2/R2
		Abu Mina North	Oe-D2/P2	50:77	20:63	Oe-A2/R1
					10:25	Oe-D2/P2
					20:48	D2-O2Ie-D22/o2
Blemmyes	VI/VII	Qasr el Wizz	Ow-A2/P1	50:62	20:60	Ow-A1/P2
			Oe-D2/P1	50:48	32:54	Oe-D1/O1
					50:77	Oe-D2/O1
					20:42	Oe-D2/P1
					20:46	Oe-D2/P2
Blemmyes		Faras North	Oe-Onp	50:62	20:95	Iw-A1/R2
			Ow-Osp	50:63	20:46	Ow-A2/P2
					20:100	Ie-A2/R1
					20:58	Ow-A2/R2
					20:63	Ie-D2/P1
					20:37	Ow-D2/P2
					20:83	Ie-D2/R1

Region	Date	NAME	walls	OUTER	INNER	walls
Egypt	435	Ashmunein	[See plan]		20:60	Oets-A1/R2
			Ieo-A1/P2	20:46	32:54	Oetn-A1/R2
			Oee-D2/O2	32:48	20:35	Iet-A1/R1
			Oei-D2/R1	20:42	32:42	Oet-A1-O1
					50:80	Oet-A2/R1
					20:80	Ie-A2/R1
					50:58	Iet-D2/O1
					20:68	Ow-D2/R1
Jordan	594	Rihab S.Basil	Iw-A1/P2	50:95	20:83	Ie-A1/P2
					20:63	Ow-A2/P2
Jordan	495	Jarash, S.Theodore	Ow-D1/P2	50:85	20:80	Iw-A2/P2
					20:80	Oe-A2/R2
Jordan	565	Jarash, Propylaea	Ow-D1/X1	20:58	20:80	Ie-A1/R2
			Ow-D1/X2	20:60	20:68	Oe-A2/P1
			Ow-A1/R1	20:48	20:77	Ow-A2/R2
			Ow-A2/P2	20:42		
Syria	240	Dura-Europos	Are walls existing?		50:100	
			Oe-D1/P1		50:95	
Syria	V	Gubelle	Oe-S0D1	20:20	20:63	Iw-A1/P1
		[All proportions without variation].			20:60	Ie-A2/P1
					20:62	Ie-A2/P2
Syria	501	Baqirha W	Oe-OsD1	32:46	20:68	Iw-old A2/P2
Syria	V	Behyo	Oe-A2-1	50:77	20:58	Oe-A2/P2
					20:85	Ie-A2/R1
					20:68	Ow-A2/R2
Syria	V	Bettir	Oe-A2/R1	20:35	20:65	Ow-A1/P2
					20:65	Oe-A2/P1
					20:85	Ie-A2/P1
Syria	V	Deihes East	Iw-A2/P2	32:48	20:60	Oe-sA1/P2
					20:62	Ow-A2/P2
Syria		Kimar	Oe-A2/P1	50:83	20:68	Ow-A1/P2
Syria	392	Ba'uda	Ow-A1/Pp2	32:46	20:62	IePilast-A1/P1
Israel	450	Mamshit West	Oe-A1/P2	32:46	20:68	Iw-A1/P1
		[ç = column]	Ow-A2/R1	50:80	20:83	Iw-A1/R2
					20:83	Iwç-A1/R1
Israel	330	Bethlehem, Nat	Ow-D1/P2	50:63		See plan
			Ow-A1/P1	50:80		
			Ow-A2/P2	50:80		
Israel	625	Jer. S.Anna [DFlev]	Ow-A2/P2	50:95	20:46	Ie-A2/P1
					20:48	Iw-A2/P2
Israel	450	Mamshit East	Oe-Os	32:54	20:100	Ie-A2/R2
					20:85	Iw-A1/P1
					20:83	Iw-A2/P1
Israel	VI/VII	Kh. Umm er Rus	Ow-A1/R2	50:80	20:62	Ieç-A1/P1
					20:63	Owç-A1-R1
					20:65	Oeç-A1-R2
					20:63	Iwç-A2/P2
					20:60	Oeç-A2/R1
					20:65	Oee-A2/R2

Region	Date	NAME	walls	OUTER	INNER	walls
Israel	450	Kursi	Oew-A1/P2	50:77	20:65	Iw-A1/P1
			Ow-A1/P2	32:48	20:68	Ie-A1/P2
Turkey	532	Agia Sofia, Istanbul	Oe-Ost [OP = outside main pillars IP = inside main outer pillars]	32:42	20:65	Ow-A1/R2
					20:63	Ow-A2/R2
					20:60	IP-A1/T2
					20:42	OP-A2/R1
Rome	326	St Peter's. Rome	Tr-NP Ctw-SP	50:60	20:58	IP-A2/R2
				32:54	20:63	Nw-A1/P2
					20:63	NW-A1/V1 NW-A2/V2

Appendix 7 Church Altar Proportions

The object of this table is to show that, with one exception, the altars in churches in the sample occupy the proportional position of the Ark of the Covenant.¹ Variations are a thousandth or less. Several churches have repeated proportions for the Ark.

The one exception is at Zuara in Libya. This is in the position of the Ark of the Covenant, but it is not measured in the main church, but in the small reversed Tabernacle in the nave. This stretches from the upper step of the apse area to the edge of the ciborium.

Notes

¹ Ch. 10, p. 154.

NAME	walls	ALTAR
Zegani	A1/G/P2	10:62
Tsromi	A2/G/R2	10:62
Dvin Cathedral 1	A1/G/P1	10:68
Dvin Cathedral 2	A1/G/P1	5:30
Mariana	outs. sm. apse/G/P2	5:30
Al Hira XI	A2/G/outs. sanc. door	5:30
Zorita de los Canes	A1/G/P2	5:30
Cabeza del Griego	A2/G/P1	10:68
Latrun B, west	A2/G/P1	25:100
Zuara 4	K1/G/end ambo	58:83
Zuara 1	K1/G/end ambo	52:62
Lebda 1(except.)	in rev. Tabernacle	25:30
Sayda, Redemptus	A1/G/bottom step	25:83
Tébessa	A2/G/P2	25:83
Es Skhira 1	K3/G/O1	10:80
Haïdra 1 Melleus	K3/G/P1	10:80
Hammam Jarajl 1	K3/G/O1	10:80
Rome, S. Agnese film	K3/G/P2	10:80
Rome, S. Agata d.G.	A1/G/P1	10:62
Rome, S. Lorenzo film	A1/G/P1	25:77

NAME	walls	ALTAR
Solin, Anastasius B.	D1/G/joint in mos.	10:62
Solin, next to Anast	A2/G/O1	10:62
Stobi, Episcopal	A2/G/P1	10:62
Porec, Eufraiana	A2/G-cib./R1	10:85
Caricin Grad South	A2/G-cib./R1	10:68
Kourion	D2/G/J2	25:83
Pegeia, SGeorge Ae	A1/G/R2	5:30
Pegela, SGeorge Aw	A2/G/2(right)	10:62
Suia, Crete	D2/G/J2(rail)	25:83
Nea Anchialos C	D2/G/J2(rail)	25:77
Nea Anchialos D	D2/G/J3(outs.rail)	25:95
	A1/G/P1	25:95
Thasos, Alik	D2/G/J3	10:62
	A1/G/R1	10:62
	A2/G/P1	10:62
Klauseion	D2/G/circle	25:95
Chersonesos B	A1/G/P1	25:95
Corinth, Lechaion	A1/G/P2	10:85
	A2/G/ambo	25:95
Philippi Cemetery	A1/G/P1	25:95
Thess. S. Demetrius	A1/G/P2	10:62
	A2/G/ambo	25:95
Philippi A	A2/G/R1	5:30
Alahan Baptistery	A2/G/centre of font	25:95
Alahan	A1/G/P2	10:62
	A2/G/R1	10:80
Priene	A2/G/R1(right)	10:62
Kiz Kalesi, Cath	A1/G/P1	10:62
	A2/G/P2	10:80
Selçikler	D2/G/step	25:77
Ihlara, Direkli Kilise	A2/G/D2	10:62
Addendan North	A1/G/P1	10:85
Saqqara, Jerem. E	A1/G/O2(left)	10:80
Saqqara, Jerem. W	A1/G/P1	10:62
Abu Mina, Old Cem.	D2/G/P2	5:30
Med. Habu DSTudrus	A1/G/P1	25:83
Old Cairo A. Tudrus	A2/G/P2	10:85
Old Cairo Mercurios	A1/G/P1	25:83
Abu Mina Basilica	A1/G/R2(cols)	25:100
	D2/G/R2	5:30
	rail/G/R1	10:80
Abu Mina North	A1/G/O2	25:83
	A2/G/P1	25:100
	D3(w. of cols)/G/O2	10:68
Qasr el Wizz	A1/G/P2	25:83
	J1/G/P1	10:85
Faras North	A1/G/O2	25:95
Ashmunein	A1/G/O2	25:100
Rihab S. Basil	A2/G/P2	10:80
Jarash, S. Theodore	A1/G/P2	10:68
	A2/G/P2	10:80

NAME	walls	ALTAR
Jarash, Propylaea	A2/G/R2	5:30
Dura-Europos	A1/G/2	25:100
Gubelle	A2/G/J2	25:95
Baqirha W	A0/G/K3	25:77
	A1/G/E.end bema	10:68
	A2/G/K1	25:95
Behyo	A1/G/J3	25:83
Bettir	A1/G/front bema	5:30
	A2/G/J2[cent.rail]	25:83
Deihes East	A1/G/front bema	5:30
	A2/G/J1	25:95
	A2/G/J3	25:100
Kimar	A2/G/front bema	10:80
Ba'uda	A1/G/front bema	10:80
	A1/G/mid-bema	
Mamshit West	A1/G/R2	10:68
	A2/G/R2	10:80
	A1/G/R1	10:62
	A2/G/P1	10:62
Bethlehem, Nat	A1/G/W.end sm.nave	25:95
Jer. S. Anna [DFlev]	A2/G/1	10:68
Kh. Umm er Rus	A2/G/P2	10:68
Kursi	A2/G/P2	25:95
Agia Sofia, Istanbul	no altar	
St Peter's. Rome	no altar	

Appendix 8 Proportions of Church Sanctuary and Nave

The object of this table is to show that frequently at the junction between sanctuary and nave churches have reversed and similar divisions.¹ All variations are of a thousandth or less.

Notes

¹ Ch. 9, p. 00 (110), Ch. 11, p. 00 (134).

Region	Date	NAME	walls reversed	REVERSED	SIMILAR	walls similar
Georgia	VI-VII	Zegani	A1/D2/P1	17:65	37:100	A1/b.step/P1
Georgia	634	Tsromi	A2/J1/P1	17:85	35:83	A1/K2[arch]/P2
Armenia	V	Dvin Cathedral 1				
Armenia	612	Dvin Cathedral 2	A1/step/P1	17:85		
Corsica		Mariana			35:95	A1/step/P2
Babylonia		Al Hira XI			20:80	A2/D2/P1
Spain	VII	Zorita de los Canes	A2/step/R2	17:100	22:85	A1/step/P1
Spain	VII	Cabeza del Griego			20:68	A2/step/P1
Libya	525	Latrun B, west	A2/step/O2	18:95		
Libya	385	Zuara 4			20:68	A1/b.step/P2
Libya	425	Zuara 1			20:85	A2/b.step/P2
Libya	540	Lebda 1	A2/t.st.E/t.st.W	18:95	15:100	A2/rail/b.step

Region	Date	NAME	walls reversed	REVERSED	SIMILAR	walls similar
Tunisia	<533	Sayda, Redemptus			22:62	A2/rail/b.step
Algeria	425	Tébessa			35:83	A1/rail/P2
Tunisia	IV	Es Skhira 1			22:68	A2/step/P2
Tunisia	568	Haidra 1 Melleus	D2/step/P2	23:85	22:80	D2/step/P1
Tunisia		Hammam Jaraji 1			20:62	A2/step/P1
Rome	340	Rome, S. Agnese flm			35:95	A2/b.step/P2
Rome	450	Rome, S. Agata d.G.			20:85	A1/step/P2
Rome	325	Rome, S. Lorenzo flm			22:68	W.rail/rail/P2
Dalmatia	V	Solin, Anastasius B.			20:85	A2/step/P1
Dalmatia		Solin, next to Anast	A2/E.step/P2	17:85	20:68	A1/rail/W.small mos.
Macedonia	500	Stobi, Episcopal	A2/rail/R1	23:85	22:80	A2/step/R2
Croatia	550	Porec, Eufraiana	A1/t.step/P2	23:100	15:83	A2/b.step/R1
Dardania	VI	Caricin Grad South	A2/step/R1	23:85	10:30	A1/step/R2
Cyprus	525	Kourion			37:83	A1/rail/P2
Cyprus	VI	Pegeia, S. George Ae			20:62	A1/step/P1
Cyprus	VI	Pegeia, S. George Aw			20:62	A1/t.step/P2
Crete		Suia			20:62	D2/J1/P1
Greece	IV/V	Nea Anchialos C			20:62	A1/porch/R2
Greece		Nea Anchialos D			35:77	A1/rail/O2
Greece		Thasos, Alik			35:95	A2/porch/O1
Greece	550	Klauseion			22:62	A1/step/R1
Greece		Chersonesos B			22:62	A2/porch/P2
Greece	455	Corinth, Lechaion	A1/rail/P1	23:100	20:80	A1/rail/O2
Macedonia	525	Philippi Cemetery	[no sanctuary]			
Macedonia	465	Thess. S. Demetrius			20:68	A2[rt.col]/step/P2
Macedonia	<500	Philippi A			37:100	A2/W.rail/O2
Isauria		Alahan Baptistery			22:68	A1/E.rail/P2
Isauria	485	Alahan	A2/E.step/P1	23:100	20:80	A1/E.step/P2
Asia		Priene			20:68	[N] D2/step/R1
Cilicia		Kiz Kalesi, Cath	A1/E.rail/O2	23:85	22:80	A2/E.rail/O1
Phrygia	VI	Selçikler	A2/J1/P1	23:100	37:83	A2/step/P1
Cappadocia	V	Ihlara, Direkli Kilise	A2/J2/P1	18:70	20:80	A2/J3/P2
Blemmyes		Addendan North			20:80	A1/right pillar/P1
Egypt	470	Saqqara, Jerem. E	A1/step/P2	18:80	20:85	A2/step/O1
Egypt	<470	Saqqara, Jerem. W			22:80	A1/step/P2
Egypt	V	Abu Mina, Old Cem.	[no sanctuary]			
Egypt	VI	Med. Habu DSTudrus			20:80	A1/J1/P2
Egypt	485	Abu Mina Basilica	A1/rail/P1	23:63	22:62	A2/rail/P1
		Abu Mina North			37:95	A1/rail/P1
Blemmyes	VI/VII	Qasr el Wizz	A2/W.pil./P2	12:52	22:62	A2/W.pil./R1
Blemmyes		Faras North			35:95	A1/w/P1
Egypt	435	Ashmunein			22:62	A1/rail/R1
Jordan	594	Rihab S. Basil	A2/c.rail/P2	23:100	22:80	A1/c.rail/P1
Jordan	495	Jarash, S. Theodore	A2/rail/R1	17:63	22:68	A1/step/P1
Jordan	565	Jarash, Propylaea			37:95	A1/rail/P2
Syria	240	Dura-Europos	[no sanctuary]			
Syria	V	Gubelle	A2/E.rail/P1	12:68		
Syria	501	Baqirha W	A1[o]/b.step/P2	17:65	22:85	A1[in]/b.step/P2
Syria	V	Behyo	A1/c.rail/P2	23:100	20:85	A1/c.rail/P1
Syria	V	Bettir	A2/E.rail/R2	17:100	22:80	A2/b.step/P2

Region	Date	NAME	walls reversed	REVERSED	SIMILAR	walls similar
Syria	V	Delhes East	A1/c.rail/P1	23:100	20:85	A2/b.step/P2
Syria	.	Kimar	A1/c.rail/P2	12:60	15:95	A1/D2/P1
Syria	392	Ba'uda	A2/c.rail/P1	17:85	20:68	A2/b.step/P1
Israel	450	Mamshit West	A2/b.step/R1	18:60	20:80	A2/W.rail/R2
Israel	330	Bethlehem, Nat	A1/large rise/P1	15:37		
Israel	625	Jer. S.Anna [DFlev]	A2/step/P1	23:63	10:30	A2/c.rail/P2
Israel		Mamshit East	A2/t.step/P2	18:58		
Israel	VI/VII	Kh. Umm er Rus	A1/b.step/R1	23:65	37:100	A2/E.rail/P1
Israel	450	Kursi	A1/D2/P2	23:100	20:85	A1/D2/P1
Turkey	532	Agia Sofia, Istanbul	A1/W.rail/P2	18:58	22:85	A1/W.rail/R4
Rome	326	St Peter's. Rome	A1/J3/P1(?)	17:65	20:85	A1/J3/R1(?)

Appendix 9 Layout of Largvisi Church

This appendix will answer a single question. On the site destined for Largvisi Church how were the lines of the foundations laid out? This was a church in a fortress in the Ksani valley, Georgia, erected in about 1760.¹ It replaced an older church, but the layout is completely new. There is some excellent sculpture in the church, and this may perhaps have come from the older one. But the sculpture made for the church, like the arches containing the doors, is of a far lower standard.

Beridze's plan (Figure A9.1) shows a simple brick built church with four stone pillars in the nave. The outside of the church is faced with rubble. The dome is supported by high aisles joining in a cross shape. Its position is governed by the same system as Agia Sofia in Istanbul (see p. 125 above), but with different proportions. I have supplemented Beridze's excellent plan with my own measurements in metres. The main problem in understanding the church layout is the varying width of the central aisle.

If a donor wished to build a church in 2000 AD, after dealing with officials from the Church, he would enter a management structure consisting in an architect in charge of builders, and usually follow an architect's plan. What was the structure in 1760? The plan of Largvisi Church gives some evidence. It reveals that the builders encountered several problems. One was that the east and west outer walls were not parallel. Another that the dome was intended to be square, but when it was built it was irregular. And the plan shows also that these problems were not solved by a trained architect, but by the builders themselves as they went along.

What kind of management does this indicate? There was perhaps a person who knew how to lay out a church, and a group of local masons and bricklayers. They formed a team at Largvisi which, as a matter of history, succeeded in building a seemingly church which satisfied all the demands of tradition.

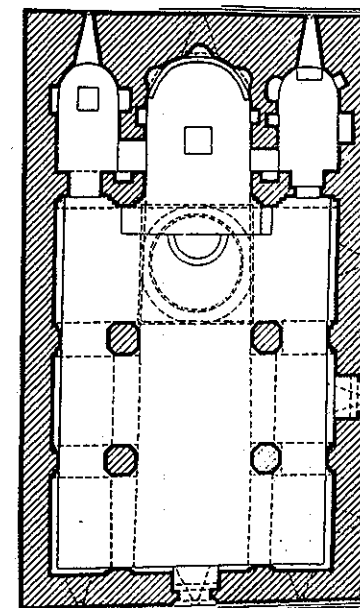


Figure A9.1 Beridze's Plan of Largvisi Church – after Vakhtang Beridze

The first four stages in the layout are concerned with the groundplan of the church. The foundations of the church form a rectangle similar to that of the Holy of Holies and the long room of Ezekiel's Temple, with their surrounding walls (Figure A9.2). The results in the box – to be explained below – consist of a statement and, in the brackets, its justification.

1. OUTER RECTANGLE OF CHURCH

Rect-pr. 11.93:19.80 means 50:83 (0.6025 and 0.6024, var. 1).

The statement first identifies the proportion. This is a rectangle-proportion, or a width set against a length. Then comes 11.93, which is the width in metres of the west outer wall of the church, and 19.80, the length down the middle. This church proportion 'means' (in my special sense of the word) the temple width of 50, set against a length of 83. I must now say what I intend by 'means'.

In fact the church proportion is not precisely the same shape as the proportion from the temple. So 'means' implies that the proportion in the church has so small a difference from the proportion in the temple, that I can allow the proportions to be equal.

The bracketed section in these results contains the variation I am ready to allow. The first figure inside the brackets is 0.6025, the proportion of the church rectangle, in other words the width of the church (11.93)

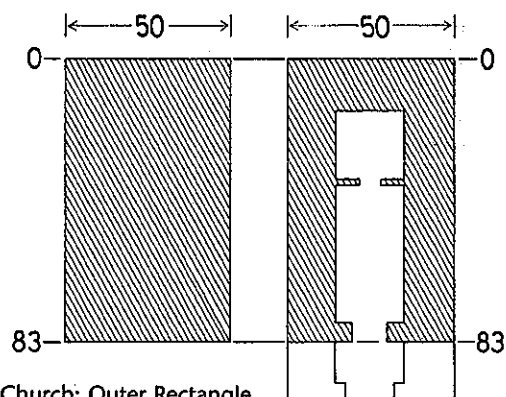


Figure A9.2 Largvisi Church: Outer Rectangle

divided by the length (19.80). Then comes 0.6024, which is the width of the Temple rectangle (50) divided by the length (83). Then 0.6024 is subtracted from 0.6025 and the difference is known as the 'variation'. This is 0.0001, or one ten-thousandth, and is shortened to '1'.

If the church and the Temple have a variation of '10' or less, a thousandth, I will allow that the proportions of both buildings are the same. This is what I intend by 'means'.

The church is now given two length-proportions. These face in opposite directions to express the building as a place where the heavenly Temple meets the earthly Temple, or where God meets his people.

The proportion of the west wall of the church to the whole rectangle is the same as the proportion of the west Temple wall. The Temple thus represented is the same way round as the church (Figure A9.3).

2. WIDTH OF WEST OUTER WALL

Len-pr. 1.17:19.80 means 5:85 (0.0591 and 0.0588, var. 3).

The other length proportion is taken from the inside of the west wall of the church. The thickness of the east wall of the Church is like the west wall of the Temple, and this makes the Temple and the Church face in opposite directions (Figure A9.4).

3. WIDTH OF EAST OUTER WALL

Len-pr. 1.49:18.66 means 5:63 (0.0798 and 0.0794, var. 4).

The original intention for the width of the nave was 3.96 m., the distance between the pilasters attached to the west wall. If the plan had been carried out, and this width had continued for the whole length of the church, the central aisle would have been proportionally 20 wide to the whole church length, 100 (Figure A9.5).

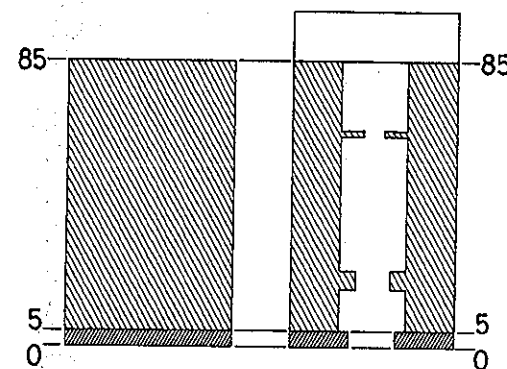


Figure A9.3 Largvisi Church: West wall

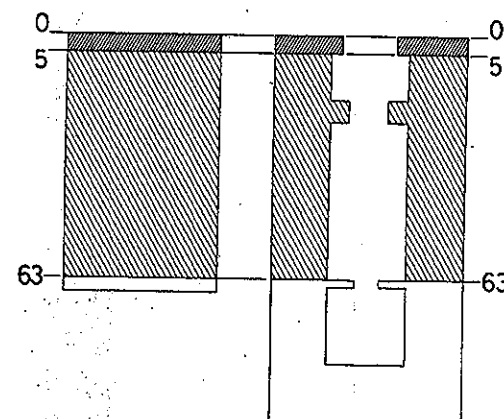


Figure A9.4 Largvisi Church: East wall

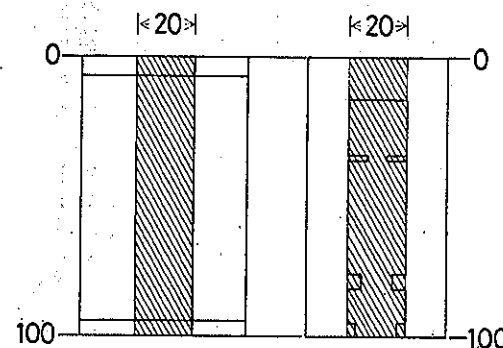


Figure A9.5 Largvisi Church: Width of Nave

4. WIDTH OF NAVE

Rect-pr. 3.96:19.80 means 20:100 (0.2000 and 0.2000, var.0).

Now we turn to the position of the dome. The system of Agia Sofia, Istanbul involves three stages. The centre of the dome must first be marked on the floor. A square must then be marked round it with at its corners four supports for the dome. Thirdly each edge of the square must correspond to the point where the Holy of Holies meets the long room. The measurements are all linked with each other, and in order to work it out mathematically a long factorial sum would be needed. But at Largvisi they were spared some of the calculations because the east and west proportions were the same as another church, the patriarchal church of Svetitskhoveli, in Mtskheta.

The centre of the dome is calculated on the whole length of the church, and is proportionally where the temple Holy of Holies meets the long room (Figure A9.6).

5. CENTRE OF DOME

Len-pr. 8.37:19.80 means 35:83 (0.4227 and 0.4217, var. 10).

Now the West Dome Temple is worked out, with the long room stretching away to the west. The Temple's Holy of Holies forms the square supporting the dome, with the centre of the Dome in the middle. The long room ends with the outer wall. In churches with this layout the side of the square nearest the altar may appear to be the beginning of the sanctuary. But this side is part of the dome's foundation, and has nothing to do with the sanctuary (Figure A9.7).

6. WEST DOME TEMPLE

Len-pr. 3.94:13.40 means 20:68 (0.2942 and 0.2941, var. 1).

The east Dome Temple starts at the centrepont of the dome. It ends with the flat wall closing the east end of the sanctuary (Figure A9.8).

7. EAST DOME TEMPLE

Len-pr. 1.97:8.37 means 20:85 (0.2354 and 0.2353, var. 1).

The next task to be done is to lay out the South and the North Dome Temples. The distance between the stone pillars in the nave (forming one side of the inner rectangle) is 3.77 m. This is taken as the length of the sanctuary end of the South Dome Temple. Its long room ends at the outside of the south wall. The North Dome Temple is the reverse of the South (Figure A9.9).

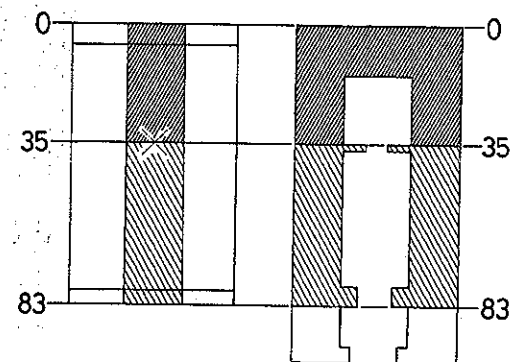


Figure A9.6 Largvisi Church: Centre of Dome

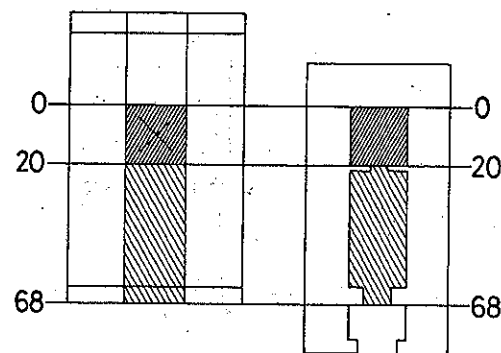


Figure A9.7 Largvisi Church: West Dome Temple

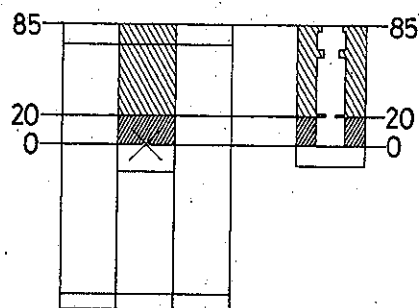


Figure A9.8 Largvisi Church: East Dome Temple

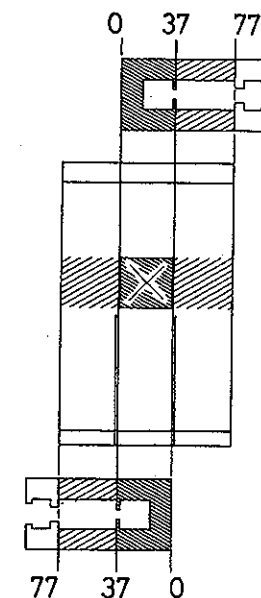


Figure A9.9 Largvisi Church: South and North Dome Temples

8. SOUTH DOME TEMPLE

Len-pr. 3.77:7.84 means 37:77 (0.4809 and 0.4805, var. 4).

9. NORTH DOME TEMPLE

Len-pr. 3.77:7.85 means 37:77 (0.4802 and 0.4805, var. 3).

The side chapels have no connection with temple proportions.

The last item to depend on the centre of the dome is the width of the sanctuary. This is governed by a rectangle proportion. Its length begins at the centre of the dome and runs to the outside of the east wall. This is counted as 46 and the width of the sanctuary is set at 20. This rectangle represents the long room of the Temple and one of its walls. In the Temple which is represented the Holy of Holies is outside the church, expressing the belief that the Largvisi church sanctuary is on earth, but the heavenly Holy of Holies is in some place beyond (Figure A9.10).

10. WIDTH OF SANCTUARY

Rect-pr. 3.64:8.37 means 20:46 (0.4349 and 0.4348, var. 1).

The proportions which depend on the dome are now all laid out. The designer now goes back to the measurements which would apply to any ordinary church.

The sanctuary platform has to end. The whole length of the church is divided at the point in the Temple where the Holy of Holies meets the long room. It is to be noted that the semicircular step does not end at the centre of the dome (Figure A9.11).

11. SANCTUARY STEP

Len-pr. 7.34:19.80 means 37:100 (0.3707 and 0.3700, var. 7).

The apse is drawn with its diameter the width of the sanctuary. And finally the interior length of the church is marked at the centre of the Ark of the Covenant in the Temple. In the church this is going to be the centre of the altar. With these lines this layout is complete (Figure A9.12).

12. ALTAR

Len-pr. 2.78:17.16 means 10:62 (0.1620 and 0.1613, var. 7).

Notes

1 V. Beridze, *L'architecture religieuse géorgienne des XVI^e-XVIII^e siècles*, Tbilisi 1994, 101-6, Figures 85 (plan), 86, 87 and Plates 120-133.

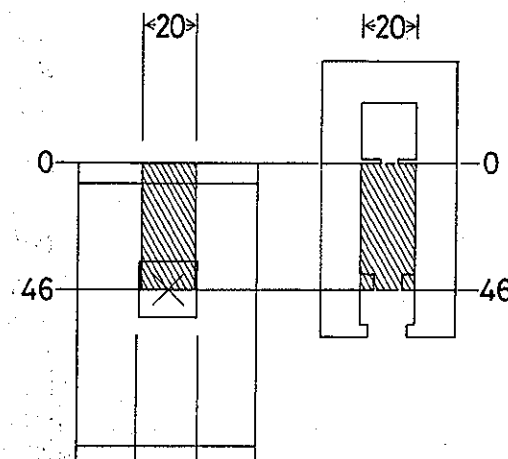


Figure A9.10 Largvisi Church: Width of Sanctuary

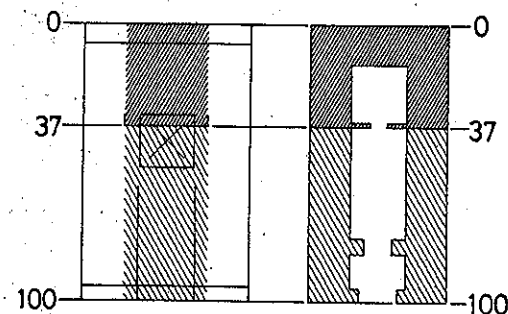


Figure A9.11 Largvisi Church: Sanctuary step

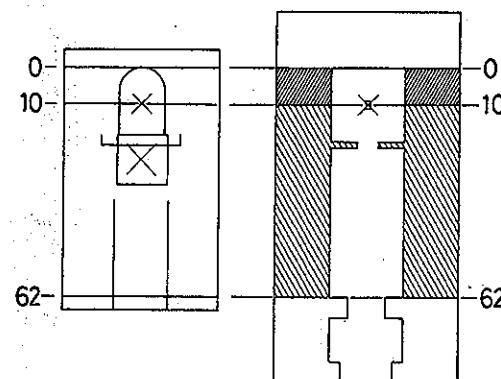


Figure A9.12 Largvisi Church: Altar

Appendix 10 The Computer Program

This is a general description of the computer program.

- 1 The program aims to compare the measurements of a synagogue or a church with proportions in the Scriptures.
- 2 The program is initially set to report on building proportions which come within 1/400 of the scriptural proportion. This variation can be altered.
- 3 The operator enters the lengths and widths of the building.
- 4 The first question asked of this set of data is about symmetries in length. If there happen to be any symmetries, and the centre is not marked, it will be added to the list of lengths.
- 5 The program contains length-proportions and rectangle-proportions from the Tabernacle, Ezekiel's Temple, Noah's Ark, and the Ark of the Covenant. It now compares these with the proportions of the building.
- 6 Width proportions are rare. But any there are will be reported.
- 7 The program's calculation is now complete. It now reports on the proportions which correspond, with their variation from the scriptural proportions.
- 8 The operator is now responsible for guessing which of the proportions were intentional. But the designs for these buildings are repeated, since this is guesswork laced with experience.

Chronological List of Sources

The dates given are mostly a rough conjecture. This is not a complete list, but it aims to show what a wide period is covered in this book.

The Law	On the Tabernacle (Exodus 25-30, 40)
The Prophets	On Solomon's Temple (1 Kings 6-8)
The Prophets	Vision of the Temple (Ezekiel 40-41)
The Writings	The Post-exilic Temple (Ezra 9)
380 BC	Plato, <i>Republic</i>
300 BC	Euclid
170 BC	1 Enoch
140 BC	Testament of Levi
125 BC	Book of Jubilees
100 BC	<i>Letter of Aristeas</i>
after 27 BC	Vitruvius, <i>de Architectura</i>
after 70 AD	Gospel according to Luke
78-94	Josephus
90	The Apocalypse of John the Divine
2nd century	Theon of Smyrna on Plato
2nd century	Nicomachus of Gerasa
before 200	Mishnah, <i>The Ma'amad</i>
200	Clement of Alexandria, <i>Stromata</i>
before 230	<i>Sifre</i> on Deuteronomy
275	Anatolius on Architects
300	[Iamblichus], <i>Theologia Arithmeticae</i>
before 311	Methodius of Olympus
320	Eusebius
390	<i>The Mysteries of Numbers</i>
393	Gregory of Nyssa, <i>Life of Moses</i>
400	<i>Testamentum Domini</i>
400	Jerome on Ezekiel
420	Augustine on numbers and measurement
450	Palestinian Talmud
520	Caesarius of Arles
550	The New Church at Edessa
600	Isidore on Scriptural Numbers

- 650 Maximus the Confessor
- 720 Germanus, *Church Symbolism*
- before 729 John of Odzun, *Laying the Foundations*
- 750 Roman Dedication Ordo XLII
- 810 Roman Dedication Ordo XLI
- 830 Amalarius of Metz on the Mass
- 840 Thomas of Marga, *Book of Governors*
- 850 A Nestorian, on Division of the Church
- 920 ps-Rémy of Auxerre on Dedication
- 950 Greek *Laying a Church's Foundation*
- 950 Greek *Dedication of a Church*
- before 1089 Yahya ibn Jarir on church building
- 1125 Honorius 'of Autun' on church designs
- before 1296 William Durandus
- 1420 Simeon of Thessalonika on the Eucharist
- 1450 Leon Battista Alberti on churches and basilicas
- 1567 P. De l'Orme on biblical Measurements
- 1570 Benedictus Arias Montanus, *Biblia Sacra*
- 1570 John Dee on mathematics

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These abbreviations are peculiar to this book, but for theological abbreviations not given here please see IATG (below).

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Atti = *Atti del VI Congresso Internazionale di Archaologia Cristiana*, Ravenna 1962.

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BA = *Biblical Archaeologist*.

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