ONE

URBAN MAPPINGS

FROM THE HEAVENLY TO THE EARTHLY CITY

The city that lay at the heart of the medieval world – the *axis mundi* – was of course Jerusalem. 'The city of Jerusalem I have set among the nations', Ezekiel proclaims, 'with the other countries round about her.'[1] Just as the round earth was at the centre of a circular Christian cosmos, so the city of Jerusalem was the symbolic centre of the world.[2] The Psalter map, for example, shows Jerusalem as a round red spot encompassed by two concentric rings (illus. 36).[3] This particular form is also used in more detailed visual representations of the city, which typically depict it as a circle of walls. This idealized form of Jerusalem was, in Ousterhout's words, a 'flexible geography and transportable topography',[4] in which the holy city was presented as an archetype, an imagined vision of what the city looked like, rather than how it actually was. To this end, the circular-shaped Jerusalem not only symbolized a wider cosmos, of which it was the sacred and spiritual centre, but it also provided a model on which to fix images of other cities. Jerusalem's idealized geometrical form became the basis for depicting cities all over the medieval Christian world.

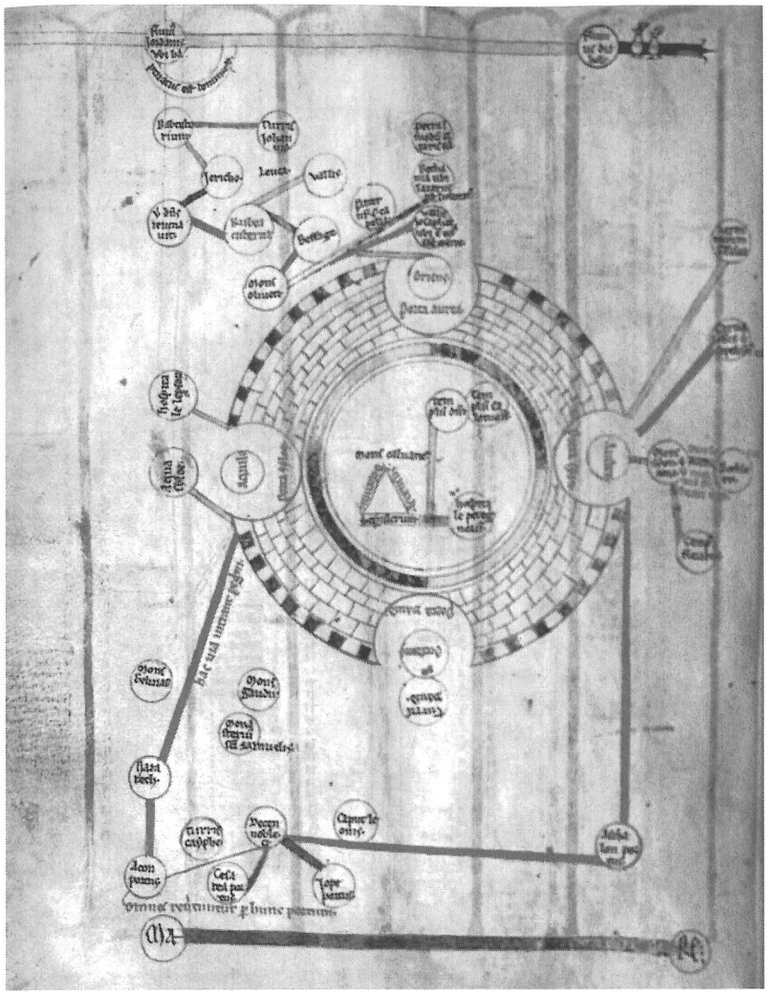
Heavenly Jerusalem, the celestial city, is described in Revelation descending down from heaven: 'and I John saw the holy city, New Jerusalem, coming down from God out of heaven, prepared as a bride adorned for a husband.'[5] The city's richness is conveyed in colourful, beautifully drawn images that illustrate the many medieval manuscripts relating the story of the Apocalypse, an imagery that emerged in the fourth century and gained in popularity through the Middle Ages, particularly the Carolingian period, but also later on in the

thirteenth century.[6] In all these images the Heavenly Jerusalem is depicted slightly differently in its details. Sometimes it is populated with buildings and turrets, as with examples in the Trier and Cambrai manuscripts of the ninth century (illus. 37); sometimes it is simply a space enclosed by walls devoid of detail except for Christ, signified usually either as the Lamb of God or the Tree of Life positioned at its centre, as shown in the Trier, Cambrai and Valenciennes manuscripts (illus. 38).[7] Sometimes the city is shown in elevation, as a bird's-eye view, and sometimes projected as a plan, 'laid flat'.[8]

The Biblical description of the heavenly Jerusalem makes clear what shape the celestial city should be: 'the city lieth four-square, and the length is as large as the breadth', with 'on the east three gates; on the north three gates, on the south three gates; and on the west three gates.'[9] Such a square-shaped city is depicted in the thirteenth-century Trinity Apocalypse manuscript, and the earlier Paris Bibliothèque Nationale manuscript 2290, but in Carolingian drawings of the ninth century the heavenly city is invariably presented as circular in form, a circle of walls, as indeed it is in some later sources, such as the 'Trinity Apocalypse' and Lambert of Saint-Omer's *Liber floridus* (illus. 39 and 40).[10] Depictions of a circular-shaped celestial Jerusalem are clearly at odds with the city's square form described by scripture. The reason for using a circle seems to lie in the cosmological significance of its geometrical form, coupled with the central place of Jerusalem in the Christian world.[11]

There was an imagined symmetry between the shape of Jerusalem and the shape of the world, as Ousterhout has noted: 'the same schema that underlies the medieval world maps defines the plan of Jerusalem – an "O" forming the walls of the city is divided by a cross or a "T" of the main streets', for in each image 'God's order is expressed in geometric terms' (illus. 36).[12] The circular-shaped city was itself the innermost of a series of hierarchically arranged concentric rings that organized the whole of the Christian world spatially and geometrically from its centre, Jerusalem, outwards to the very edge of the celestial sphere. Hence the Jerusalem located at the centre of the Hereford world map (*c.* 1290) has the same topographical details as those found on Crusader maps of the city from the twelfth century (illus. 2).[13]

So although examples such as the Trinity Apocalypse manuscript show a square plan of the heavenly Jerusalem, as it is described in Scripture, an idealized form was also used depicting the city as a



2 Map of Jerusalem, twelfth century.

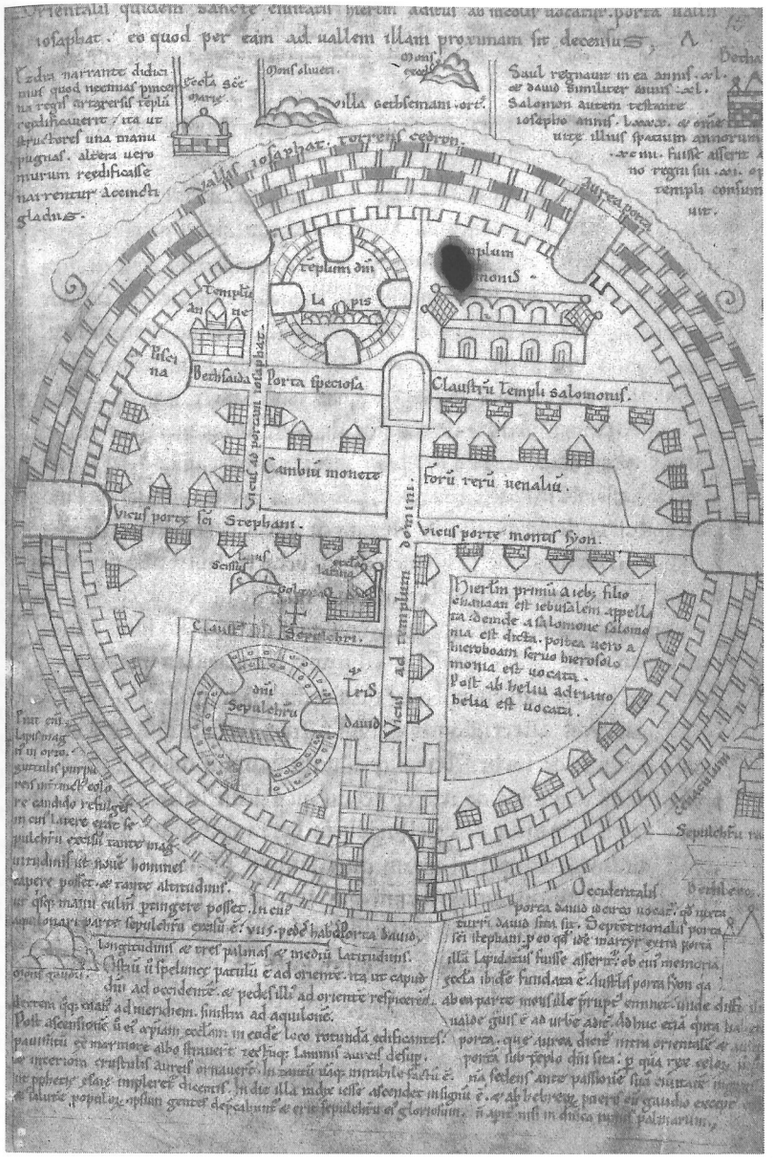
circle, as with the earlier, ninth-century Carolingian examples such as the Valenciennes heavenly Jerusalem (illus. 38). This particular image shows the city's twelve gates, three situated on each opposing side of an encompassing walled circuit as scripture demanded, while the walled circuit itself is circular in form, depicted as twelve concentric rings, just like the order of the wider universe.[14] The symbolic significance of this imagined form is discussed by Frugoni, who follows Gousset in pointing to 'the choice of the circle as a symbol of perfection', and the idea that 'the circle is an image of the cosmos', with the city's gates positioned to form a cross, arranged to

face the cardinal directions and point to the four corners of the world (a view first put forward some 50 years ago by Laveden).[15] Therefore the *imagined* circular form of the heavenly Jerusalem mirrored the imagined geometrical shape of the wider world, their shared geometries connecting one and other. The circle symbolized Jerusalem's cosmological importance.

Reconciling the heavenly city's two geometrical forms – the imagined circle and the scriptural square – also had a cosmological basis. Like the heavenly Jerusalem, the cosmos was also thought to be both circular (according to Neoplatonic cosmological sources) and square-shaped (according to Holy Scripture) (see below). To square the circle, illustrations of the city combined the geometries of the circle and square, a technique used in contemporary depictions of the medieval world as well as images of the holy city. For example, depictions of the circular Jerusalem, such as the Valenciennes manuscript, show opposing gates that form a quartered city, its cross-shape anchored to the cardinal points and the four quarters of a quadrate world. Another way that the imagined form of the heavenly city was geometrically connected to the wider Christian world is evident in the Triers Apocalypse manuscript where, as Frugoni has pointed out, the illustration shows a circle of walls but this time with emphasis on four of the wall's towers, which are coloured differently from the rest so as to form 'an ideal square', as scripture required (illus. 37).[16] Combining circle and square in this way not only reconciled the two forms of the heavenly city, it also connected city with cosmos. By having shared forms – the circle and the square – the heavenly city and the wider cosmos were mirroring each other; their imagery squaring the imagined circular cosmological form of the celestial city with how it and the world at large are both described in scripture, the word of God. These images of a geometrical heavenly Jerusalem, and the forms given to the celestial city, were also superimposed onto *earthly* cities, including Jerusalem itself, so connecting the metaphorical, imagined 'city' of God with the earthly 'cities of man'.

Depicting the holy city

Like its heavenly archetype, the earthly Jerusalem was also often depicted as circular in form. In Crusader descriptions of the city of the twelfth century it has a circle of walls pierced by gates positioned at three of the four cardinal points, with streets arranged to form a



3 Map of Jerusalem, thirteenth century.

cross-shape and various landmark buildings indicated, such as the *Templum Domini* (illus. 2, 3 and 41).[17] This idea of the earthly Jerusalem as itself a reflection of the heavenly city gained currency in the context of the Crusader withdrawal from the city. Its 'loss' in the late twelfth century from Latin Christendom, and the desire to fight for

and defend the city 'against the Infidel', is clear in a twelfth-century Crusader map of Jerusalem complete with fighting knights outside ('beneath') the circular-walled city with its cross of streets (illus. 41).[18]

While not all medieval images of the earthly Jerusalem used the same circular form as the celestial city – the thirteenth-century map of Jerusalem drawn by Matthew Paris for his *Chronica Majora* shows the city as square-shaped, for example – its circular form generally did predominate, as it did in images of the heavenly Jerusalem.[19] That the two Jerusalems shared a common form and layout is therefore clear. Their characteristics point to Jerusalem as an archetype, an idealized urban model visualized in abstract geometrical form.[20] As Alexander notes, 'in many representations of Jerusalem all that is required are walls', depicted as a circle- or square-walled circuit, 'surrounding buildings to signify [the] "city".'[21] These shared forms of the two Jerusalems circulated around the medieval Christian world, ending up far away from Jerusalem itself in cities such as London, Paris, Munich, Stuttgart and Florence.[22] Their impact on the minds of those who saw them can now only be estimated, yet something of their influence can be gauged by how this imagery of a circular Jerusalem took form in representations of other, European, towns and cities in the Latin West.

Medieval maps of Europe's towns and cities have yet to be brought together in a critical study.[23] Stylized urban representations of all sorts – not just 'maps' but other images, too – tend towards showing the city as having a circular or square form, seemingly deliberately and self-consciously imitating the forms of Jerusalem with its cosmological symbolism. Some medieval towns and cities really were geometrical in shape.[24] In those comparatively rare cases where urban forms are described or depicted by contemporaries, they were represented in such a way that over-emphasized beyond reality either the roundness or rectilinearity of their shape. One such example is a late-medieval representation of the city of Bristol (illus. 42). This appeared in a mayoral register begun by Robert Ricart, the town clerk, in the late fifteenth century, and with its circle of walls and four streets arranged in a cross-shape terminating at four gates, the image of Bristol has more than a superficial resemblance to those of Jerusalem.[25] However, it appears long after Crusader images of Jerusalem were being composed and one explanation of this is that 'Ricart was trying to depict what he thought Bristol looked like when it was founded', some five or six hundred years before.[26] This may well be so, for the

earliest part of the city dates to the ninth century at least and was contained by defences that were roughly circular in shape with streets meeting to form a cross.[27]

Crusader images of Jerusalem drawn back in the twelfth century were also evidently circulating much later, as is evidenced by a fourteenth-century copy of an original of *c.* 1180 held by the Arnamagnæan Commission in Copenhagen,[28] and so equally the Bristol image may symbolize something more, echoing in its form the heavenly and earthly Jerusalems. The circular form of Bristol is also apparent in medieval 'maps' of other cities of about the same date, such as those of Vienna and Bratislava, with their chains of circular defences and streetless interiors which show some similarity with the toothed-circular defences of Jerusalem depicted in the Copenhagen and Florence maps, for example.[29] Then there is the rare example of a medieval plan of a town which apparently shows it in the course of being built: the plan of Talamone harbour in Italy of 1306, which has the town encompassed by a circle of walls but an orthogonal layout of streets inside, forming a cross-plan, so pointing once more to the circle and square being brought together in heavenly imitation.[30]

The forms of towns and cities on medieval maps thus reveal clear similarities with the Jerusalem archetype. As well as these cartographic representations of towns and cities, similarities can be found in other urban imagery. For example, images of cities are frequently shown on the wax seals that municipalities appended to their civic and corporate charters that endorsed their legal and constitutional urban status.[31] These seals were thus icons of civic status and authority, a self-image of the town or city as it was conceived by the corporate institution which ruled over the activities of those within its jurisdiction. Little attention has been given to the symbolism of these urban images, and yet they say so much about how the city was understood – how it was imagined – by those who lived in it.[32]

The earliest surviving English municipal seal belongs to a charter of 1191 for Oxford, a place with urban origins stretching back to the time of Alfred the Great.[33] The charter was 'issued by the citizens as a corporate body', and its seal, being 'the common seal of the citizens of the city of Oxford', 'depicts a complete walled city' within whose walls 'are three cylindrical towers'.[34] Some might argue the circle of walls on the seal is simply there because the seal itself is circular, but in Christian thinking 'the circular format is itself mystical since it reproduces the form of the world *in parvo*.'[35] Indeed,

4 Borough seals of Shrewsbury (*top*, fifteenth century) and Worcester (*below*, thirteenth century).

most English medieval municipal seals are circular in shape and thus analogous to ancient and medieval coinage; or else occasionally they are mandorla-shaped.[36] Both shapes were also used to depict the medieval world as well as cities (illus. 4 and 36). The circle was widely understood as an image of both city and cosmos, as we have seen, and the mandorla shape appears in Hildegard of Bingen's image

of the universe, for example, as well as in an oval-shaped map of Rome from the early fourteenth century.[37]

This dualism between the shape of the world and the form of municipal seals is surely significant. Invoking this cosmological image – a circular or mandorla form like a map of the world – spoke 'of a pretended spiritual and temporal authority', reifying and legitimizing the authority and jurisdiction of the civic body (see chapter Five).[38] The circle of walls depicting the city on so many of these municipal seals thus echoed the image of Jerusalem at the centre of the world, imitating at the same time the heavenly city and the spiritual protection that it and its walls offered the inhabitants of the earthly city below.

Describing the city

How imagined forms of the heavenly city were being related to earthly cities emerges in written descriptions as well as visual urban imagery. Here again idealized images of Jerusalem, and the world it symbolized, were drawn upon by contemporaries who sought to describe their local and familiar urban landscapes. Their accounts reveal the imagined parallels between their own city and the city above: the heavenly Jerusalem; and the city at the centre: the earthly Jerusalem. By no means is there a wide abundance of such accounts,[39] but some have survived and make for interesting reading in the context of Christian cosmological symbolism. This is particularly evident in two descriptions of cities discussed here, Chester in north-west England, and Padua in northern Italy. In both cases their authors can be seen to have interpreted the forms of their localities in ways that connected them, and their city, with the holy city and the wider world that it represented.

De Laude Cestrie is a description in praise of Chester.[40] It was written in *c.* 1195 by an incumbent of St Werburgh's abbey named Lucian, who had been educated locally at the Collegiate Church of St John the Baptist in the city.[41] A particular flowering of written 'realistic observation' of the natural and human world was taking place in England at this time and Lucian's laudatory description of his home city forms a part of that tradition, sharing common influences of Classical works – in his case the writing of Virgil and Ovid, among others – as well as a 'spiritual love', as evidenced by his use of scripture and, of particular note here, by the allegories that he reads in and from the city's form.[42] The description appears to have 'originated

as a series of sermons intended to please and edify the citizens of Chester',[43] a point worth bearing in mind for it would suggest that Lucian's reading of Chester's urban landscape reached an audience well beyond the local confines of cloister and court. This is what Lucian says about his city and its shape:

> [Chester] having four gates to the four winds, looks on the east to India, on the west to Ireland, on the north to greater Normandy [Norway] and on the south to Wales . . . There are two excellent straight streets in the form of the Blessed Cross, which through their meeting and crossing themselves, then make four out of two, their heads ending in four gates . . . [and] in the middle of the city, in a position equal for all, [God] willed there to be a market for the sale of goods . . . Now if anyone standing in the middle of the market turns his face to the east, according to the positions of the churches, he finds John the forerunner of the Lord to the east, Peter the Apostle to the west, Werburgh the Virgin to the north, and Archangel Michael to the south. Nothing is more true than that Scripture, 'I have set watchmen upon thy walls, O Jerusalem' [Isaiah 57:6] . . . So behold our city, as it was predicted, entrusted to the holy guardians as it were in fourfold manner. From the east the mercy of the forerunner of the Lord supports it, from the west the power of the doorkeeper of Heaven, to the north the watchful beauty of the virgin, and to the south the wonderful splendour of the angel.[44]

The city's four main streets that Lucian describes were already centuries old by 1195, possibly inheriting their alignments from Chester's Roman layout, and the streets were not in reality perfectly straight.[45] Lucian was therefore imagining the idealized form of the city's streets, and what was important to him was the symbolism that this cross-plan form conveyed. Through praising the urban landscape of Chester, Lucian is able to weave the city's form into a broader Christian allegory, reading from the city the symbolic significance of its landscape and at the same time imbuing it with symbolism from scripture and Classical works for his audience.

Not only is Lucian's Chester cross-shaped but its four streets are orientated to the four corners of the world, each with its own particular association and each pointing to spiritual anchors of the Christian

world – the apostles and their saints. And the streets are not simply cross-shaped, for 'through their meeting and crossing themselves' the streets also imitate the devotional act of marking one's body with the sign of the cross. The cross-plan of the four streets and the city's gates orientated to the four cardinal points is an arrangement that has striking similarities to contemporary depictions of the earthly and heavenly Jerusalems. Indeed this (imagined) orientation and morphology of Chester is explained by Lucian through reference to scripture; 'as it was predicted, entrusted to the holy guardians as it were in fourfold manner'. His wording here evokes the 'four-square' quadrilateral form of the heavenly Jerusalem described in Revelation (illus. 39).[46]

In drawing parallels between his own earthly city and the celestial city, the heavenly Jerusalem, Lucian uses their shared forms as a heuristic device. Through its urban layout, Lucian was connecting the city of Chester with Christ and the wider cosmos. He is able to do this by interpreting the city's form as an imitation of the heavenly city, which in turn stands not only as a symbol of the Christian world – orientated, quartered and anchored – but also its foundation, its creation and destiny as the work of God, 'as it was predicted' from Holy Scripture. Moreover Lucian acknowledges God's role in making Chester itself, in placing the market at its centre for example, 'in a position equal for all', and also by providing other praiseworthy features, such as 'the rich and beautiful river beneath the city walls', placed there 'by the favour of God'.[47] In the form of Chester, then, Lucian's symbolic reading reflects his Christian understanding of the wider cosmos. One can only guess what kinds of texts he would have encountered as a student of the local collegiate church, but his learning of the *quadrivium* may well have included Neoplatonic works on cosmography and natural philosophy – perhaps extracts of Boethius or Calcidius – that likewise drew parallels that connected city and cosmos.[48]

The second of the two descriptions of cities that provides us with a glimpse of how urban forms were understood in the Middle Ages is later in date than Lucian's of Chester. It is likewise a laudatory piece, and concerns the city of Padua. Written in *c.* 1318 by a local judge named Giovanni da Nono, the description 'comes in the form of a vision given by an angel to comfort Egidius, the defeated legendary king of ancient Padua.'[49] Hyde noted that 'Da Nono puts his *descriptio* into the mouth of an angel who prophesies the future appearance of the city to console King Egidius of Padua after the

destruction of the city by Attila the Hun.'[50] The description thus has cosmogenic resonances. These derive from scripture concerning fall and resurrection, prophecy and salvation. There is also perhaps an Augustinian influence, in that the struggle over Padua has echoes of that existing between the 'city of God' and the 'earthly city' – the Christian and pagan 'cities'.[51]

The vision with which the angel comforts Egidius makes reference to the city's form, and as with Lucian's account of Chester there appears to be a deliberate attempt by da Nono to use urban form in order to connect the city with a broader symbolic cosmology and cosmogony. Da Nono writes:

> I asked the angel in what form the city of Padua would be built. He told me: 'The fine wall of the city built by your Paduans will . . . curve round for a mile like a horse-shoe . . . and the water of the Bacchliglione and 'Tusena' rivers will flow round it . . . The Paduans will place four royal gates in the wall. The first will be called the gate of the mill bridge (Pontemolino) . . . The bridge at this gate will exceed the other bridges of the city in beauty . . . The second gate, towards the west, will be called the gate of San Giovanni delle navi . . . The third gate, to the south, will be called the Gate of the Toricelli, for in this part of the city will be built many more towers than in any other part . . . The fourth gate will be called the Gate of the Altinate bridge . . . From here the road will go to the Porto Ognissanti, from where boats will go to Venice . . . There will also be another fifteen minor gates . . .' [these gates are then each described in turn].[52]

Da Nono's description clearly places special emphasis on the four royal gates of the city, each placed at one of the four cardinal points.[53] Once again this appears to be an indication that he is drawing parallels between his city and the heavenly Jerusalem, with its gates on all four sides. The outline of Padua is also marked by a curved 'fine wall'. Perhaps most significant of all is his statement that the outline of the city was ordained from on high from an angel, one of God's own messengers in the celestial hierarchy, and that Egidius' image of Padua came to him in the form of a vision, just as in Revelation the heavenly Jerusalem is revealed to John as a mystical vision, a city of salvation descending from God (illus. 37). With

da Nono's description of Padua's imagined mythical origins, such parallels with the heavenly city and all that it stood for, cosmologically and also cosmogenically, were surely being deliberately played up, for as Hyde has pointed out, 'while most description writers intended to praise and boast, da Nono's purpose was to warn,'[54] and in this case, as with the warnings in Revelation, and as developed in Augustine's *City of God*, the stakes were high for those who chose to ignore these prophecies.

With both Lucian's and da Nono's descriptions, then, there is evidence that urban forms – the imagined physical shape of a city – had meaning. In both cases features in the urban landscape were understood symbolically through the connotations they had, particularly their walls and gates. It is as if the authors were describing their respective cities to draw out parallels between them and the cities they knew from Scripture, cities that were to them redolent with significances to do with the history of the world – its cosmogony – their archetype being the earthly and heavenly Jerusalems.

As well as this, the cities that authors were imagining in their descriptions have an order and structure which replicated the order and structure of Jerusalem, as it was described in Scripture and as it was so often depicted in contemporary images of the period, such as those of the holy city with its circle of walls and opposing gates (illus. 38).[55] This was a city that not only had *cosmogenic* symbolism, as foretold by Scripture, but *cosmological* meaning too, as a microcosm of the wider world, evidenced in its form and structure, a scaled-down imitation of the form and structure of the cosmos. Through these two descriptions, therefore, we are able to see some indication that there were imagined cosmological and cosmogenic meanings associated with urban forms, at least in the later Middle Ages.

For the early Middle Ages there are fewer written descriptions of cities existing, and so the development of such symbolism is difficult to trace.[56] Nevertheless, one early example is a description of Dijon made by Gregory of Tours in his seventh-century *Historiarum*,[57] where once again we find a focus on city walls and cardinally positioned gates:

> It is a fortified place with very strong walls, built in the middle of a plain . . . Four gates face the four corners of the earth [*quattuor plagis mundi sunt positae*] and thirty three towers guard the walls. These towers are built of squared stones to a height of twenty feet and above these are courses of small stones. The

> total height of the walls comes to thirty feet and they have a thickness of fifteen feet. Why this place is not called a *civitas* I do not know.[58]

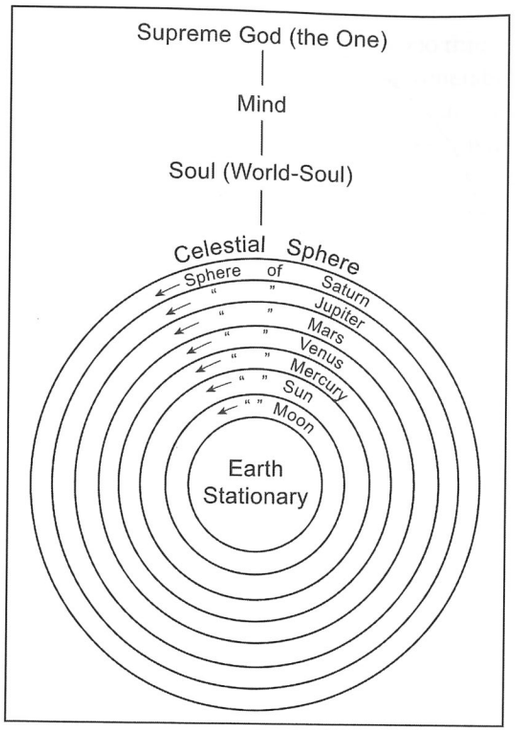
Here Gregory provides us with a particularly explicit statement acknowledging the cosmological orientation of the arrangement of Dijon's gates and walls, perhaps made all the more significant if we take into account Gregory's known connections with Cassiodorus, whose writings on cosmography at this time 'had become representative of the opinions of the more enlightened clergy' and 'enjoyed the respect and esteem of educators in the church schools'.[59]

Again, as with Lucian, it would seem highly likely that the authors of these descriptions were drawing not only upon scriptural works to inform their symbolic interpretations of urban forms but also other sources, including materials that pointed to a physical likeness between the city and cosmos. To understand this connection further requires us first to look more closely at medieval images of the world, at maps of the Christian cosmos, and examine the geometrical forms that it took, and second, to look at how geometry also provided a symbolic link between the city and world history. This will help to show how in their imaginings of both cosmology and cosmogony Christians of the Latin West were drawing close parallels between the city and their cosmos.

CHRISTIAN IMAGININGS OF THE MEDIEVAL WORLD

The circles and squares used to depict the heavenly and earthly city were present too in Christian imaginings of the medieval world. As conceptions of the cosmos, both circle and square were being used long before Carolingian cosmographers were drawing them in the ninth century.[60] In the tradition of Classical Greek cosmology the circle represented a spherical universe centred on a spherical stationary earth (illus. 43). Plato explains in the *Timaeus* how the universe came to be such a 'rounded spherical shape . . . a figure that has the greatest degree of completeness and uniformity', crafted by God.[61]

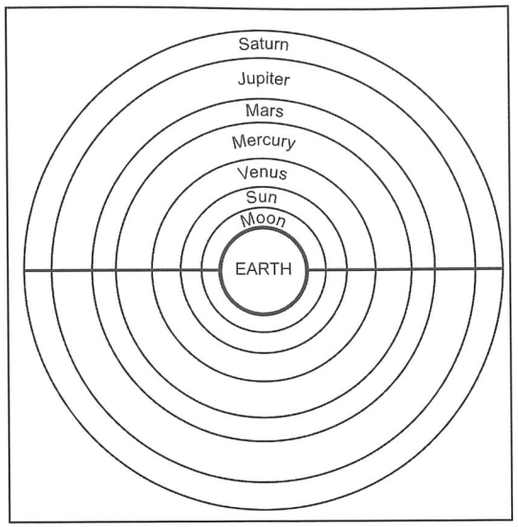
This Platonic view of the world held sway in the medieval Christian mind, passed along in a current of Neoplatonic thought through the writing of Macrobius, Calcidius, Boethius, Isidore of Seville, Eriugena and Gerbert, to achieve eventual intellectual dominance



5 The Neoplatonic universe, diagram from Macrobius' *Commentary on the Dream of Scipio.*

in the eleventh and, more particularly, the twelfth century in the scholarship of William of Conches, Bernard of Chartres and other (Neo-)platonic Christian thinkers of this time, circulating through the many glosses on the *Timaeus* and copies of Calcidius' *Commentary*.[62] Even with the import of Aristotelian cosmology in the thirteenth century, the circular cosmos, 'with its succession of tightly nested concentric spheres', looked to all intents and purposes the same as it had in earlier Neoplatonic images of the universe (though of course they differed in their metaphysics).[63] The circle thus symbolized the geometrical form of the ordered cosmos, encompassing the celestial sphere, the planetary orbs and at the centre the earth itself.[64]

Platonic and Aristotelian images of the cosmos were set out time and again in the various drawings and diagrams accompanying cosmographies of the Middle Ages. In Macrobius' *Commentary on the Dream of Scipio*, for example, he used concentric circles to illustrate the spheres of the universe and motions of the planets, explaining how, 'since our eyes often open the way to the understanding of a



6 The celestial sphere: diagram from Calcidius' *Commentary on Plato's Timaeus.*

problem, it would be well to draw a diagram' (illus. 5).[65] Similarly, concentric circles depicted the cosmos in Calcidius' *Commentary on Plato's Timaeus*, with its circular-shaped earth and outlying planetary orbits (illus. 6).[66] Together these two influential early fifth-century texts were 'the most important source of Platonism in the Latin West in the Middle Ages', offering later medieval cosmographers a largely unified and unifying geometrical view of the terrestrial and heavenly worlds around them.[67]

The circular universe described in these Neoplatonic texts, and depicted in manuscripts as abstract diagrammatic images in their margins, was perpetuated through the *mappaemundi* that followed in later centuries; those medieval, and fundamentally Christian world-views that even today are still taken in vain by many modern commentators to be medieval 'maps'. But as Woodward and others have repeatedly made clear, these *mappaemundi* were symbolic representations, let us say imaginings, of the Christian world, and not charts by which to navigate the earth or maps used in the modern sense to mark out and define territories.[68] As symbolic imaginings of the Christian world, *mappaemundi* are richly iconographic and allegoric, and while there are differences in how features of the earth's surface are treated between *mappaemundi* 'types', the shapes used to encompass the globe are predominantly circular in form.[69]

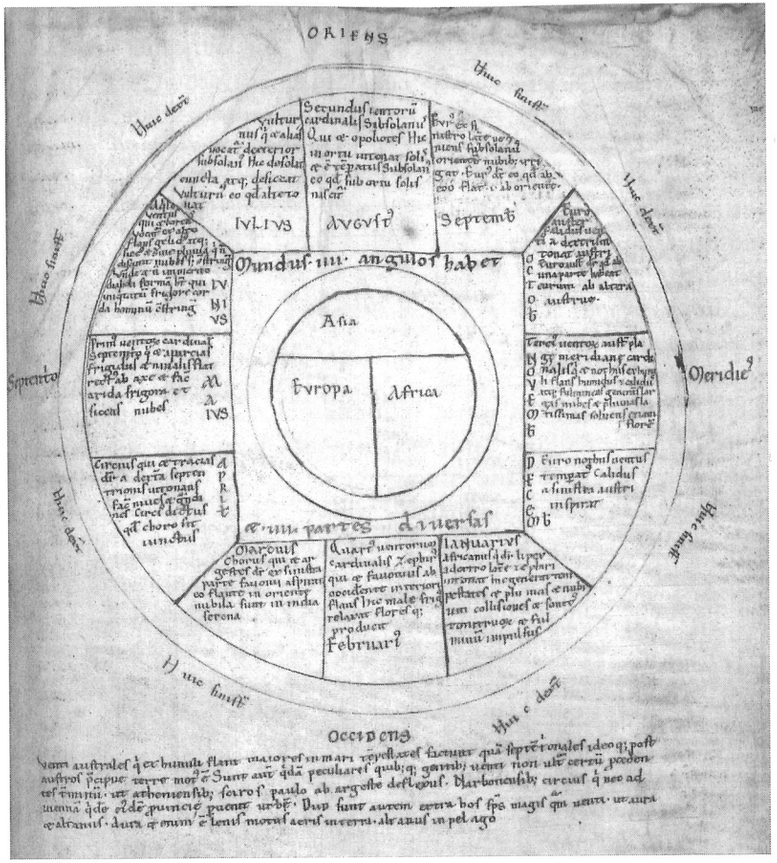
Medieval conceptions of the world as revealed by the *mappaemundi* fused together Classical cosmology and Christian doctrine.

This fusion took place in the centuries prior to 1000 through the work of encyclopaedists, such as Isidore of Seville, the Venerable Bede and, later, Hildegard of Bingen, who sought to describe the visual appearance and form of the world.[70] A *mappamundi* accompanying the early seventh-century *Etymologies* of Isidore of Seville provided a model image for later *mappae*, featuring a circular-shaped earth with a tripartite division representing the three continents of Asia, Africa and Europe, the whole sitting at the centre of the circular Platonic universe.[71]

Mappaemundi such as the well-known 'Psalter' and 'Ebstorf' 'maps', both from the thirteenth century, and many other less well-known examples, perpetuated this particular 'geometric scheme' (illus. 36 and 44).[72] At the same time, images such as these also presented a view of the earth as a 'map' of Christian belief. The 'T' formed by the tripartite arrangement of the three continents symbolized the *tau* cross-shape;[73] while, as Kühnel observes, the earth depicted as 'a concentric entity' represents 'in one image the whole history of salvation, backed up by Christ himself embracing the disc', as in the 'Psalter' and 'Ebstorf' maps where 'Christ is at one and the same time the Crucified (suggested by the position of his head, hands and feet at the four cardinal points of the 'Ebstorf' map), the Resurrected (suggested by the censers held by the angels in the 'Psalter' map), the Creator (suggested by the way he holds the disc of the world . . .), and the Saviour of the end of days.'[74] By the twelfth and thirteenth centuries, then, 'a *mappamundi* could thus represent simultaneously the complete history of the Christian world: its creation, salvation, and final judgement',[75] and as such the circular form of the world came to symbolize the Christian universe and its past, present and future.

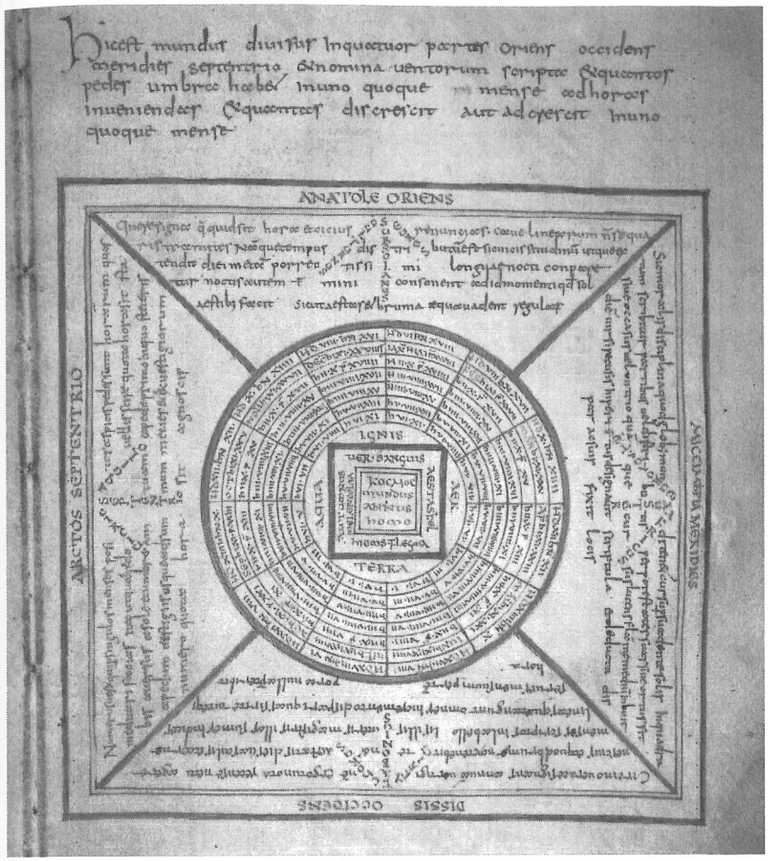
While the circle certainly dominated in medieval conceptions of the cosmos, it was by no means unique. The square also featured as a geometric form in Christian imaginings of the world, sometimes in combination with circles to represent the motion of the sun around the earth. A four-cornered, rectangular-shaped earth is to be found, for example, in computistic compendia dating from the ninth to the eleventh centuries.[76] In these the *mundus* is four-cornered, as it is described in the Bible and as it was seen by Cosmas Indicopleustes in his *Christian Topography* of the sixth century.[77] In one of these diagrams, an eleventh-century manuscript, a rectangular-shaped *mundus* encloses the three continents of Asia, Europe and Africa, while in another contemporary example the *mundus* is more square-shaped,

7 Eleventh-century image of the world.



and within it is shown a circular form of the earth, again with the tripartite division of the three continents, with 'a caption placed along the inner upper and lower sides of the square specif[ying] that the world has four angles and four different parts.'[78] (illus. 7) Here, then, the circle and square are combined, and brought together to simultaneously represent the two shapes of the world as they were in depicting the heavenly city. In Cologne Cathedral library a further example of *c.* 800, identified by Obrist, has a perfectly square-shaped earth, placed at the centre of concentric circles, with the whole scheme contained within an outer square (illus. 8).[79] In this image the two, apparently competing forms of the world – the world as rounded and as four-cornered – are reconciled. This was at the time that Rabanus Maurus, the German encyclopaedist, was writing about 'how circular and quadrate shapes could agree', using a Euclidean

8 Image of the world, *c.* 800.



solution to 'squaring the circle', and so reconciling geometrically the *orbis quadratus*.[80]

A square-formed world not only had scriptural backing, but also a broader mysticism associated with the number four which reached back to Classical times and a Timean cosmology. The *Timaeus* relates how the soul of the world was formed by God from two strips 'placed crosswise at their middle points to form a shape like the letter X', which were then bent round to create 'two circles, one inner and one outer'.[81] Plato's description resonated through the Middle Ages, in part through Calcidius' commentary, but more particularly in the twelfth century in glosses and commentaries on the *Timaeus*, at a time when the world-soul was being discussed by the likes of Alan of Lille and Bernard of Silvester in their literary cosmographies.[82]

The eschatological significance of forming the world-soul from a cross-shape would surely not have been lost to those familiar with the Timean account.[83] Certainly, the number symbolism of the *Timaeus*, and the significance of the number four particularly, was taken up by Christian thinkers in their conceptualization of the structure of the world and its components.[84] The *Timaeus* describes the 'four constituents' of 'the body of the world' – air, fire, water and earth – and their proportional and geometrical relationships to one another, that when 'put all together were supposed to form a cube', and which, in subsequent Neoplatonic writings, such as Isidore of Seville's *De Rerum Natura*, came to be presented as 'a single-plan figure', a square.[85] One example of this, where the four elements are combined with a representation of the earth, is a diagram in a ninth-century manuscript of Bede's *De Natura Rerum* showing the relationship between 'the four cardinal directions (and the three continents), the four seasons, the four elements, and four material properties (hot, cold, wet, dry)' (illus. 45).[86] The four corners of the earth itself marked out the shape of the true cross, as one seventh-century Irish commentary on the Gospel of St Mark put it: 'what is the very appearance of the cross if not that of the quadrate form of the world?' (*ipsa species crucis quid est nisi forma quadrata mundi*).[87] The symbolic significance of the number four, a 'symbol of moral perfection', and its association with a square-shaped world, thus converged in the Christian mind through Neoplatonic medieval cosmographies with their images of a spherical universe.[88]

Through looking at medieval images of the cosmos, its geometrical structure, the circle and the square, something of their Christian meanings emerge. The medieval universe was fundamentally ordered, part of a 'celestial hierarchy',[89] as those such as Hugh of St Victor saw it:

> Their universe was a development, by way of Boethius' writings on arithmetic, of the Augustinian principle that God disposes all things in accordance with order and measure – a principle which combined the classical concept of the cosmos as *consentiens conspirans continuata cognatio* [harmonious and continuous relations] with the principle of a Divinity who is life, providence, and destiny.[90]

There was, then, an aesthetic to the 'geometric schema' of the cosmos that not only reflected God's beauty but existed in every-

thing, everywhere, in all that he had created. Again, this is a Neoplatonic and Timean thread woven into and through the fabric of medieval Christian cosmology, especially that of the eleventh and twelfth centuries, when the influence of Platonism was at its peak in circles of medieval theology and philosophy, in the cathedral schools of Chartres and Laon, for example, and within a broader network of intellectual ties that bound together Christian thinkers in the Latin West.[91]

Recently, Kühnel has pointed out how 'Carolingian preoccupations with the shape of the Christian universe influenced not only the shape of "maps of the world", but also the representations of the Heavenly Jerusalem of Revelation, equally forcing them into strict geometrical schemes.'[92] This is seen by placing images of the cosmos, the earthly and heavenly Jerusalems and the world from the ninth to the thirteenth century side by side (illus. 38, 41, 43, 44). In medieval maps of the world, as well as in images of the city, the same geometrical schema are used, the circle and the square. The reason for this, Kühnel suggests, is that the 'city of Jerusalem, and especially its *loca sancta*, were absorbed into the geometrical perfection of the Christian universe', a conceptual dualing of both the heavenly and earthly worlds.[93]

What we can deduce from comparing images of the Christian world with contemporary depictions and descriptions of earthly and heavenly cities is that they share a sacred geometry. Particular shapes – circles and squares, the cross and cardinal axes – connected city and cosmos both imaginatively and materially. In images of city and cosmos, urban form and cosmological form were analogous, and their shared geometrical forms conveyed a common symbolic meaning. Both formed part of a hierarchy of concentrically ordered spaces from centre to edge, and both were marked with the sign of the cross, symbolizing Christ himself. These Christian urban and cosmological imaginings, with their common structuring 'geometric schema', were circulating at the same time as philosophers and theologians were drawing upon Neoplatonic and Aristotelian sources to elucidate and conceptualize the form and order of the cosmos (see Introduction). The same sacred geometries were also being used in contemporary accounts of the world's creation in recounting cosmogony, and again they forged a symbolic link between city and cosmos in the medieval imagination.

COSMOGONY AND THE CITY IMAGINED

In various iconic images, then, the medieval city was represented in ways that tied together city and cosmos. Their shared geometric forms in this imagery point to this conclusion. But while images may show the same forms, this alone might be doubted as evidence of a shared symbolism. The imagined city's shape reflected not only cosmological form but also cosmogony – of how the world came into being and how it will end – as told principally in Scripture by the books of Genesis and Revelation. Medieval sources describing the cosmogenic act also depict God as an architect forming the universe using geometers' tools, the compass and quadrant or set-square, which were also those that were used to form the city and give it its geometrical shape. The city thus represented a microcosm of the formation of the world as well as its form. Both derived from a Timean view of the world, and of creation, which contemporaries attempted to square-up with Scripture.

First, the circle of the *mappamundi* and the circular form of the city represented cosmological time as well as space. Thus, 'the spiritual history of the Christian world, from its Creation to the Last Judgement, with a sequence of divinely planned events in between, such as the Salvation by Jesus Christ, are all carefully portrayed – in more or less detail – on *mappaemundi*', most obviously as shown by the 'Ebstorf' map with the Body of Christ superimposed on the disc of the world, but also in the way that the author of the Hereford map saw 'his graphic work as a "history"' of the world.[94] So, too, did the circular form of these maps represent, allegorically, a wheel that was itself symbolic of the cyclical passage of time.[95] Isidore of Seville 'describes the earth as a "circle of lands" like a wheel' in his *Etymologies*, and saw the roundness of the world (*mundus*) also as a year (*annus*), as is evident in the *orbis quadratus* depictions of the universe of the eighth and ninth centuries (illus. 46).[96]

Later, in the twelfth and thirteenth centuries, world maps were also combined with an image of 'Fortuna's wheel', reinforcing the link between time and space, albeit through the activities of a pagan goddess, as Honorius of Autun asks rhetorically: 'what is this wheel? It is the glory of the world which is carried round in perpetual motion.'[97] A popular image in the medieval Latin West, Fortuna was mythologized in the Neoplatonic literary cosmographies of the twelfth century by Alan of Lille and others: 'her caprices always associated, at least implicitly, with the celestial forces of fate, the gods

and the stars'.[98] The roundness of the medieval world, like Fortune's wheel, thus symbolized its movement as well as its eschatological history, as did the circular form of Jerusalem, 'the place of the end of days', the *axis mundi*, depicted, like the world around it, as a wheel – or, more pointedly, a toothed cog – located at the centre of a *machina mundi*.[99]

In Augustine's *City of God*, the city has a vital place in the Christian history of the world. The 'city' for him was at once both prophecy and salvation, as told by the Bible. The fall of Rome was thus forewarned in holy scripture, in Genesis, by the founding of Enoch, for both it and Rome had been built on fratricide; while the earthly city of Jerusalem foreshadows the coming of the heavenly Jerusalem, in the Final Judgement, as told by Revelation.[100]

For Augustine, then, the cities of Enoch, Rome and Jerusalem, as well as Babylon, were markers in the history of the world as revealed by scripture, while the 'City of God' itself – 'consisting of the good, angels as well as men' and contrasted by Augustine with 'the other of evil', the 'earthly city', the two of which 'are interwoven and intermixed in this era, and await separation at the last Judgement' – is a figurative 'city' of which 'we have longed to become citizens . . . with a love inspired by its founder'; a city, in short, of Christian salvation.[101] Such imagery took pictorial form in the later Middle Ages, when the city of God is 'seen in the shape of a parallelogram, sited on a mountain, and set in a circle' on which 'the figure of Christ is seated at the apex', the corner stone of this 'city', this world.[102] Augustine's 'city' was not only symbolic of the Christian history of the world, therefore, in the guise of the 'earthly city', but was also itself a metaphor for God's hand in its creation in his role as its 'founder', an idea deeply rooted in Timean cosmogony, where it was God 'who proceeded to fashion the whole corporeal world', as would an 'artist' or 'great artificer'.[103] Just as images of a circular city and cosmos symbolized a history of the Christian world, its cosmogony and its yearly cycle, so too was the cosmos imagined to be like the 'city' – whether the 'earthly city' or the 'city of God' – founded by its creator. Both of these images drew the city and cosmos closer together in the medieval Christian imagination.

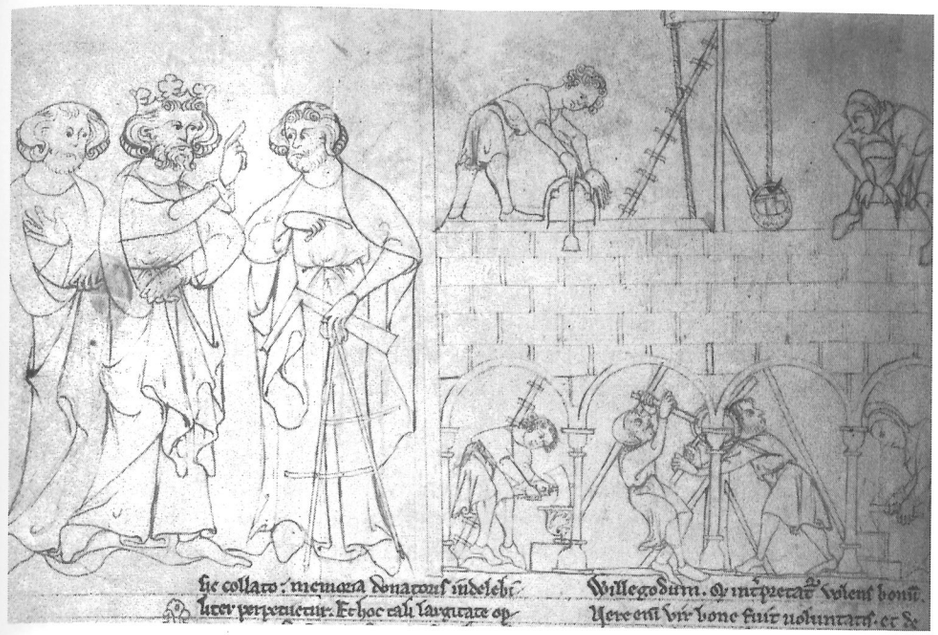
Second, the cosmogenic symbolism of the city is evident in later medieval depictions of God as 'architect' of the universe, and here the circle and square imagery of both the city and cosmos are given additional meaning by God's use of an architect's instruments

in the making of his universe, particularly the compass, or dividers, used to create a perfectly-drawn circle (illus. 47). In a fifteenth-century manuscript of Augustine's *City of God*, the creator is shown with compass in hand 'engaged in his handiwork', an image that earlier in the twelfth and thirteenth centuries was widely used in depicting the act of Creation in illustrations 'extant in psalters, *horae*, picture Bibles and other manuscript books'.[104]

In these 'Creation miniatures', as Friedman notes, 'the compass commonly appears in a symbolic or emblematic role', 'an emblem of the creation itself' based on 'a metaphoric conception of God as an architect or artisan forming the cosmos from unorganized matter'.[105] The Timean idea of God as the 'great artificer', reiterated in twelfth-century Neoplatonic cosmography by William of Conches, Thierry of Chartres and Clarembald of Arras, also appeared at around this time in Creation miniatures, with God depicted tracing out a circular outline of the world with his compass, as an architect would trace out a circle to make plans and designs for building a new cathedral or abbey, or city.[106] Furthermore, the compass is not just a tool for drawing circles but an instrument for measuring them as well. So the circular universe that God had created with his compass was what the geometers of the ancient and medieval world were measuring with theirs in their works on cosmography and cosmimetry.[107]

The compass provided a symbolic link between the city and the cosmos, for the circular world fashioned by God's compass was also the circle of the imagined city, each being formed in the same way. The earthly and heavenly city became, then, a microcosm – *microcosmus* – of the world at large, the two cities and the cosmos having been created by the work of an 'architect', as Philo of Alexandria made clear in his account of God's creation of the world:

> When a city is being founded to satisfy the soaring ambition of some king . . . there comes forward now and again some trained architect who . . . first sketches in his own mind well nigh all parts of the city that is to be wrought out . . . and like a good craftsman he begins to build the city of stones and timber, keeping his eye upon his pattern and making the visible and tangible objects correspond in each case to the incorporeal ideas.
>
> Just such must be our thoughts about God. We must suppose that, when He was minded to found the one great city, He conceived beforehand the model of its parts, and that



9 Life of St Offar, late fourteenth century.

> out of these . . . He brought to completion a world discernible only by the mind, and then, with that pattern, the world which our senses perceive.[108]

God the 'architect', who 'was minded to found the one great city' – the cosmos – is thus symbolically likened to the architect that 'builds the city of stones and timber', the earthly city. Both created something from nothing, as it were, as later sources show so clearly, using compass and square in their work (illus. 9, 47 and 48).[109]

Similar architectural metaphors were of course to be found in the Bible itself, as well as in Neoplatonic works, while later in the twelfth and thirteenth centuries, Hugh of St Victor, Richard of St Victor and Roger Bacon, and others of their kind, realized 'the importance of geometry as an aid to understanding scripture.'[110] What makes this interplay of 'city' and 'cosmos' especially significant is the way that it took shape throughout the Middle Ages in the imagery of *both* city and cosmos. A Christian, cosmological symbolism of circle and square was plain, therefore, to all who used these geometrical forms to picture the world's physical shape. The tools from which God had made it – the compass and square – were likewise those that were used to create the forms of both the heavenly and earthly city, themselves a

symbol of the cosmos. Not only were the compass and the square imbricated in the construction of this sacred cosmogony, so too were other instruments, such as the circular-shaped astrolabe, used in cosmimetry as well as altimetry and planimetry, the surveyor's quadrant, which combined circle with square to measure angles as well as straight-line distances, and the 'geometric square', similar in function to the astrolabe – all were geometrical instruments used for creating and measuring the city and the cosmos in the Middle Ages.[111]

To sum up, conceptions of city and cosmos, and the imagined connections that existed between them, took geometrical form in descriptions and depictions of the heavenly and earthly city, and in cosmological imagery as well. These 'urban mappings' were informed in part by what medieval Christians knew from Scriptures about the world and the place of Jerusalem within it, and the divine order it represented, and in part by the ideas of their contemporaries, Classical commentators and philosophers who saw the city as both macro- and microcosm. It was in their shared sacred geometrical forms that city and cosmos were linked together in the Christian imagination, coupled with a belief in medieval minds that these symbolic geometries expressed the work of God, both as cosmocrator and creator. Through a sacred geometry of circles and squares the imagined earthly and heavenly 'city' became in the medieval mind an image of God's universe, both an image of its form (its cosmology) and its formation (its cosmogony).

TWO

Urban Forms

URBAN LANDSCAPES AND SYMBOLIC FORMS

Idealized urban images and descriptions were circulating at the time that new urban landscapes were being physically formed in the Middle Ages. In some cases these urban landscapes also took geometrical form, raising the question as to whether sacred geometries and cosmological symbolism were being intentionally written into them. While physical aspects of medieval towns and cities have in fact long been a subject for academic study, what has so far escaped attention is how these built forms of medieval urban landscapes were inscribed with symbolism through the particular shapes that were used to set them out on the ground.[1] To begin with here the focus is on the presence of rectilinear and curvilinear layouts in medieval urban landscapes, and their square and circular forms. These geometrical shapes, it is argued, were chosen deliberately by those creating new urban landscapes, but not simply for pragmatic or utilitarian reasons, rather to convey a symbolic form that was itself rooted in sacred geometries common to both city and cosmos.

Since virtually no visual representations exist to show what physical form medieval urban landscapes took at the time of their making, their original ground-plans need to be reconstructed combining analyses of surviving patterns of medieval streets and plots with available historical and archaeological material.[2] These built forms – the structuring framework of street and plot patterns that make up European town-plans – are a monument to medieval urban culture and civic industriousness. In general it is those smaller medieval towns whose plans have attracted most careful study,