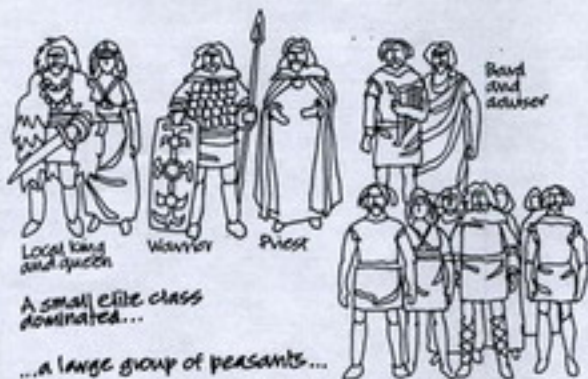
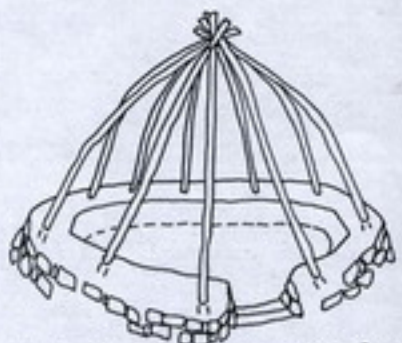


# the tribal system: the structure of Celtic society



... but apart from the power structure, life in Dunbarrow Elmore was in other ways egalitarian. The quality of housing, clothing and food did not vary greatly from one section of society to another. Each local group produced buildings for its own needs. The lack of a central authority meant there was no major concentration of wealth.



Simple circular hut with hollowed floor

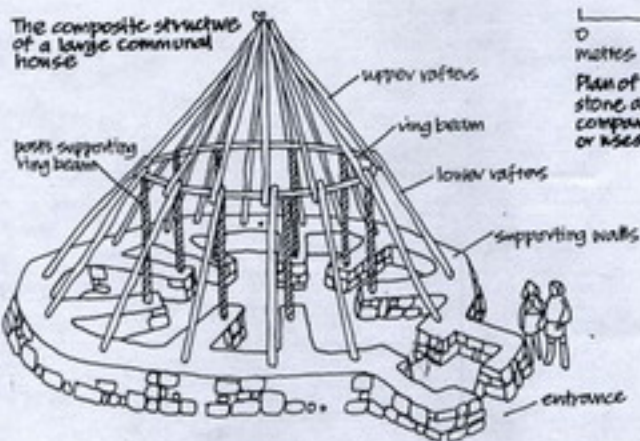


## Celtic dwellings late BC, early AD



0 10 20  
metres

Plan of a 'wheel' house in Shetland: stone and earth walls divide it into compartments for different families or uses.



# buildings of the Germanic tribes

section through long-house showing structure

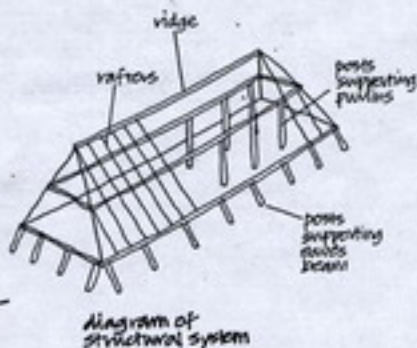
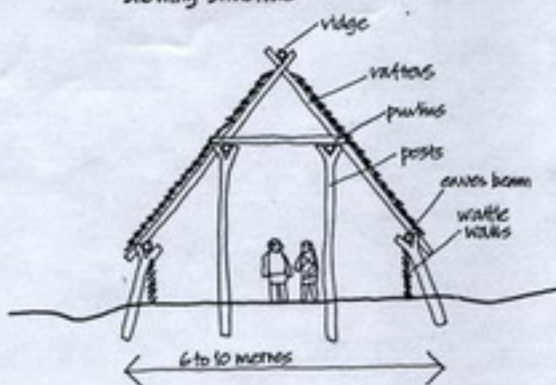
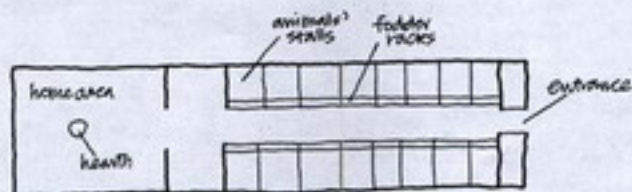
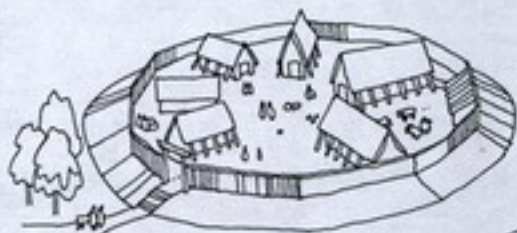


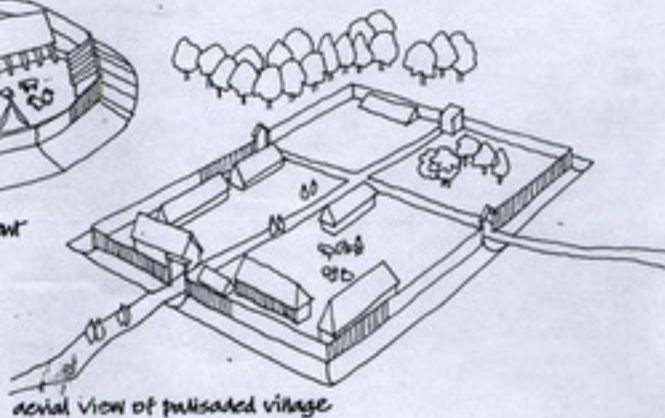
Diagram of structural system



plan of oldest long-house at Feddersen Wierde, Friesland 1st century



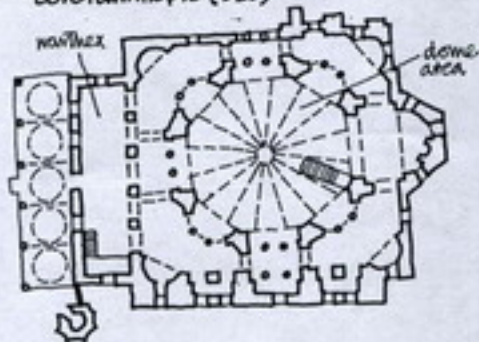
aerial view of Torp development typical of Holland and north Germany



aerial view of palisaded village

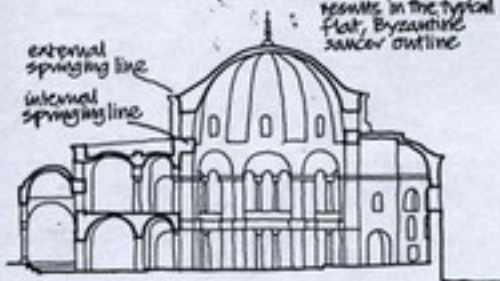


St Sergius and St Bacchus,  
Constantinople (525)



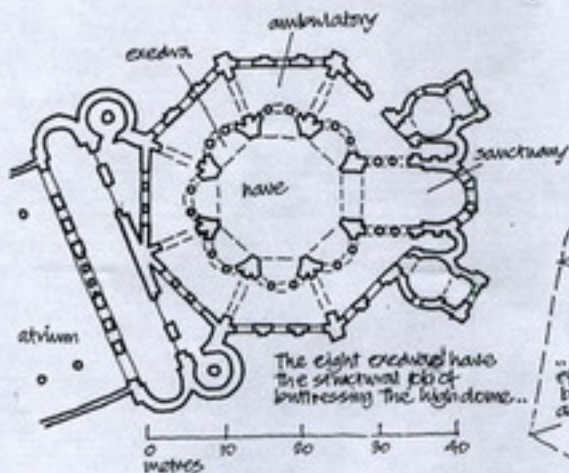
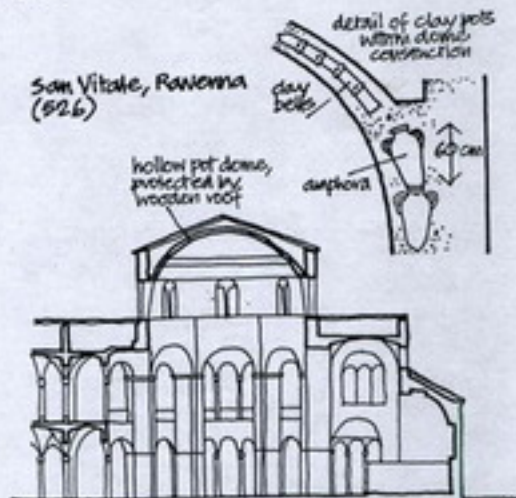
## the Byzantine church 1

As in the Basilica, the springing line of the dome is lower inside than outside. This gives structural thickness there, needed and results in the typical flat, Byzantine saucer outline.



0 10 20 30 40  
metres

San Vitale, Ravenna  
(526)

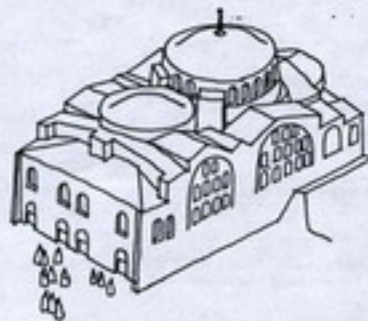


The eight exedrae have the structural job of buttressing the high dome...

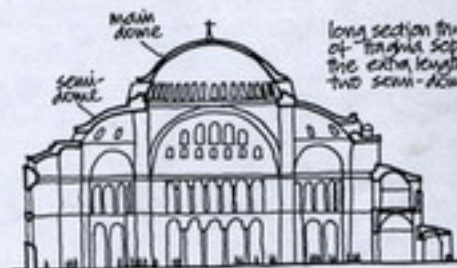
... and spatially their effect is to blur the distinction between nave and ambulatory and add to the lightness and insubstantiality

0 10 20 30 40  
metres

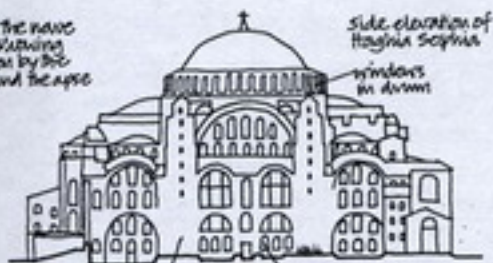
# the Byzantine church 2



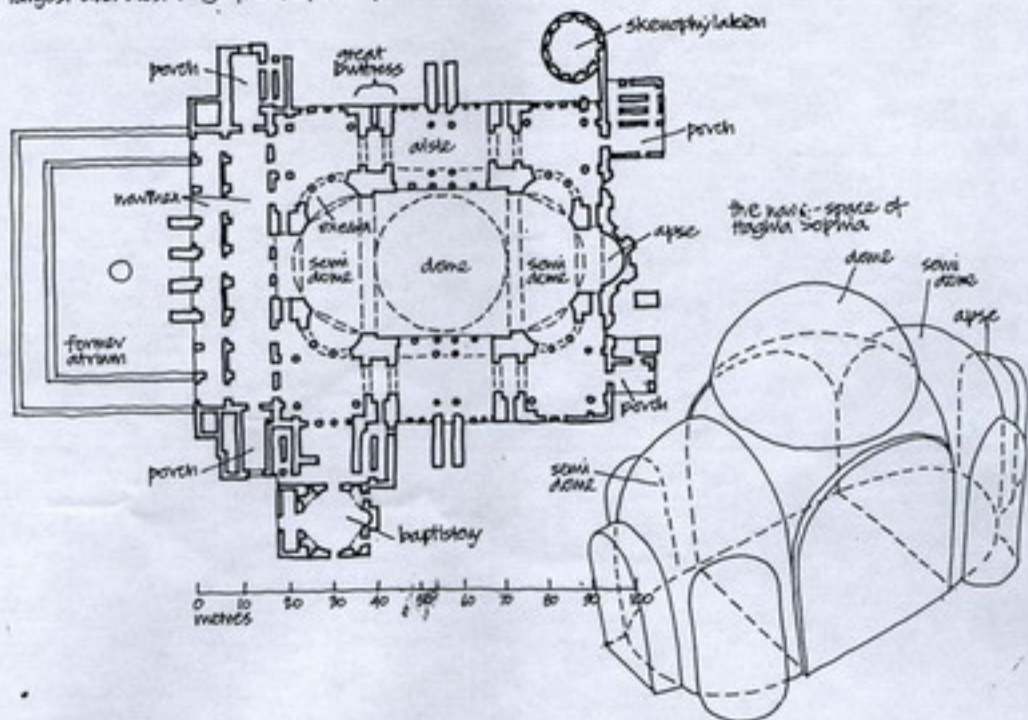
**St Irene, Constantinople (564-740)**  
 is almost a smaller version of Hagia Sophia; the secondary dome adds another dimension, turning a square space into a longitudinal one.



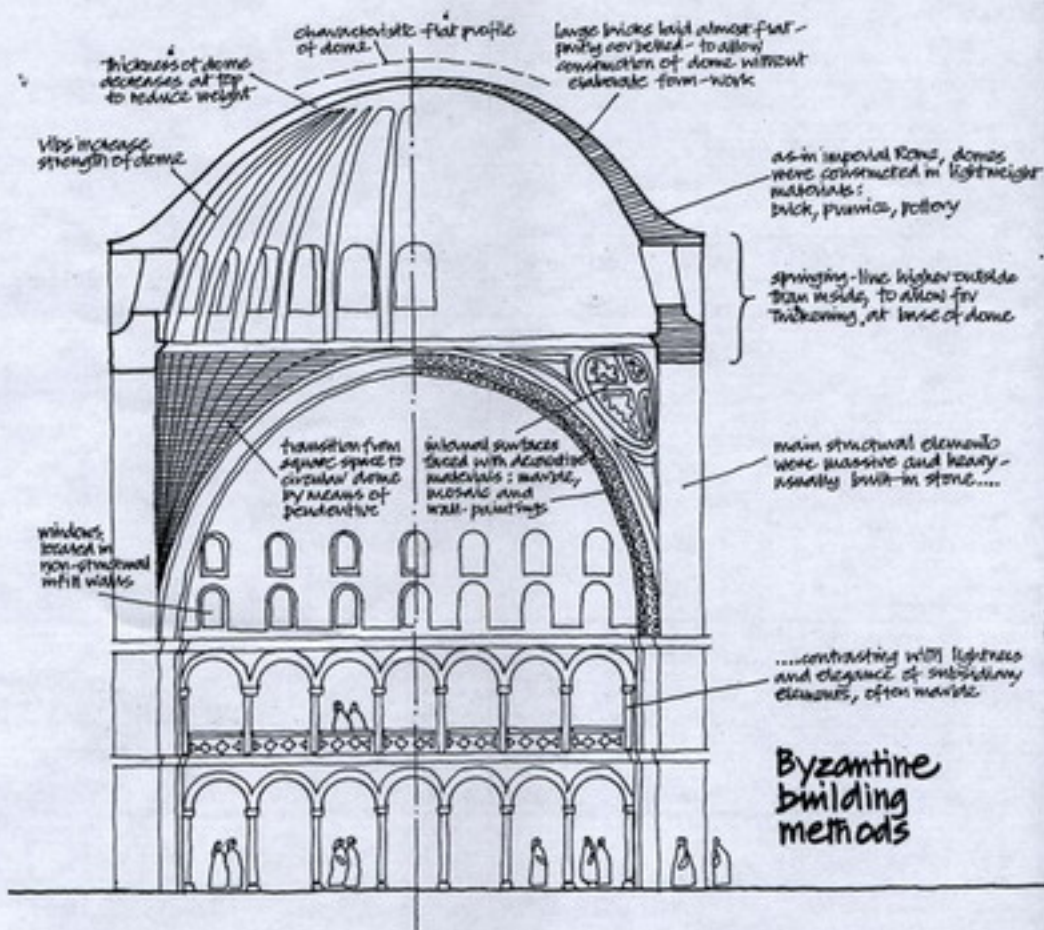
long section through the nave of Hagia Sophia, showing the extra length given by the two semi-domes and the apse



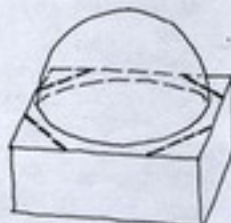
**Hagia Sophia, Constantinople (532)**  
 largest and most magnificent of all Byzantine churches



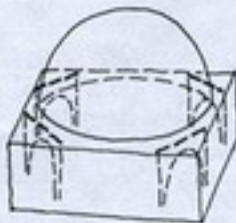




a dome over a circular space raises the structural problem - only the problem that it restricts the plan form.



a dome can be put over a square space if the corners are bridged - a clumsy solution.



... by putting squinch arches over the corners.



... or by corbeling-out.

## The pendentive

but structurally and visually the best solution is the PENDENTIVE, a carefully designed geometrical shape which derives from...

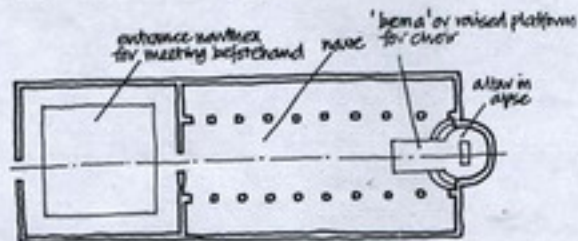


... of a square within a hemisphere.

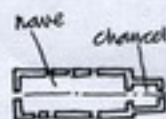
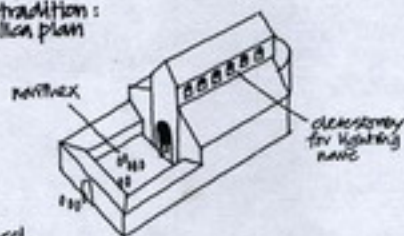
... on top of which the dome is placed. The plasticity of the pendentive is very appropriate to brick construction.



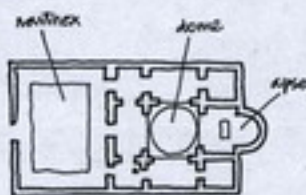
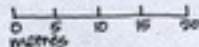
# the early development of the church plan



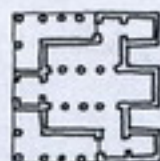
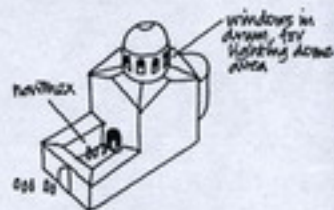
The ROMAN tradition: typical basilica plan



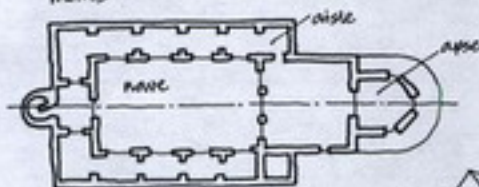
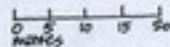
plan of Escomb, County Durham (c 675)



The centralised plan of the BYZANTINE world



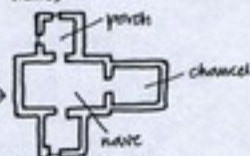
plan of San Juan de Buitras (661)



plan of Brixworth, Northamptonshire (c 675)

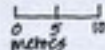
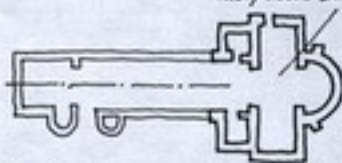


Bradford on Avon, Wiltshire (early 8th c) Roman in form..

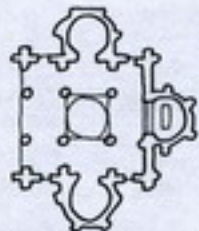


..Byzantine in plan

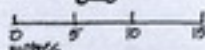
North Elmham, Norfolk (11th c) may have been cruciform..



.. till the addition of a later nave gave it a longitudinal plan

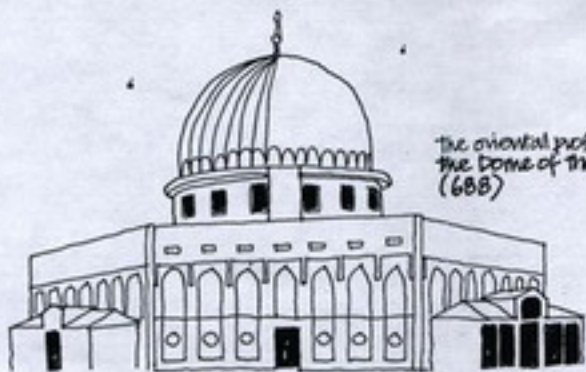


Germigny des Prés (806)





# buildings of the Islamic world



The oriental profile of the Dome of the Rock, Jerusalem (688)

The relatively non-monumental design of the Ibn Tulun Mosque, Cairo (877) - The internal space is all-important, not the external appearance



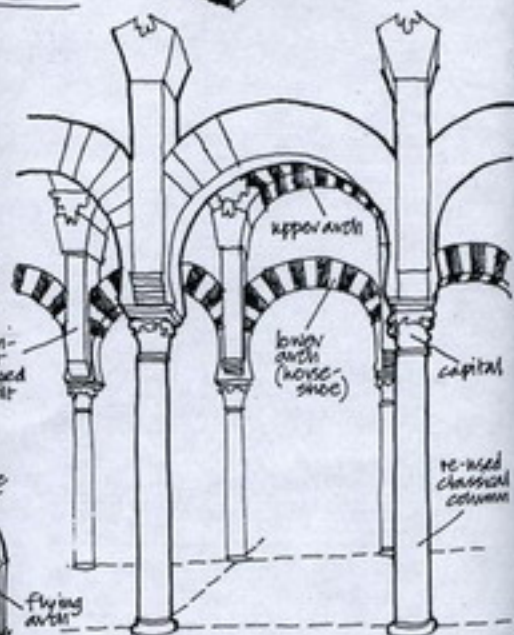
dominant vertical features such as the 'Malwiya' of the Great Mosque, Samarra (846) are rare



The Great Mosque, Córdoba (785) demonstrates many of the major characteristics of Islamic architecture...



... the geometric discipline of its plan...



column-height increased by stair

upper arch

lower arch (horse-shoe)

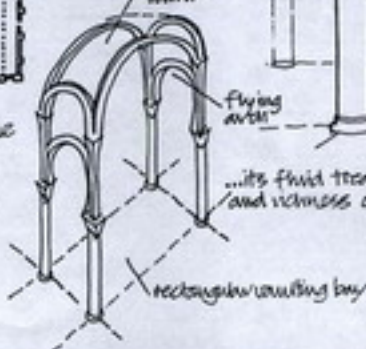
capital

re-used classical column

sculptural ornament

flying arch

... its fluid treatment of internal space and richness of surface decoration



rectangular resulting bay

# Charlemagne's Europe



The Charlemagne of 'La Chanson de Roland' - an idealised portrait-bust of about 1850



The Feudal System was easier to run than that of ancient Rome. There was less bureaucracy - each tier controlled the one below it.

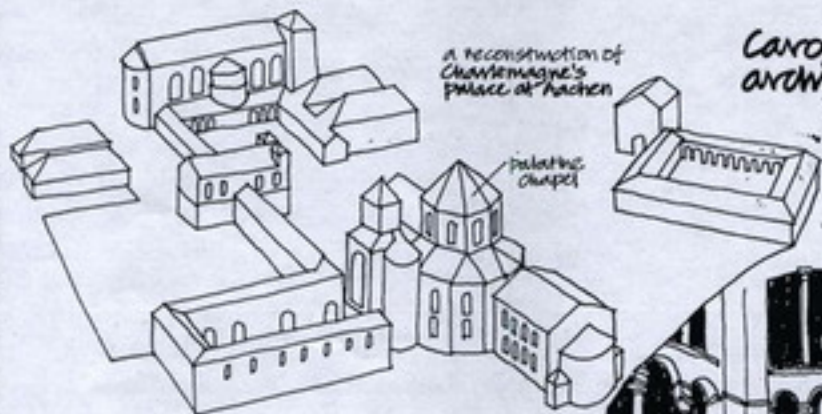
Except at certain times (eg during Charlemagne's rule) there was little centralised power.

The finance of Britain was a local rather than a centralised matter.



# Carolingian architecture

A reconstruction of Charlemagne's palace at Aachen



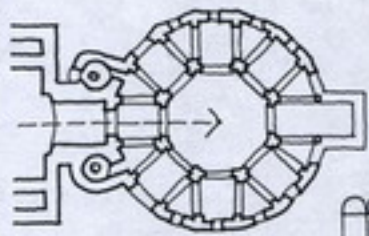
palatine chapel

## The Palatine chapel (792)

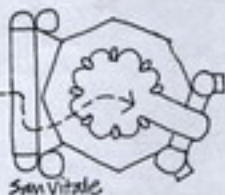
The four-square plan with its direct entry is less subtle than that of San Vitale, with its planned sequence of spaces...



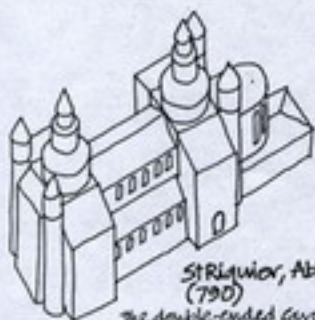
...but the interior has an elegance rare for the period



0 5 10 15 20 metres

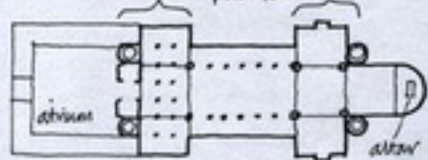


San Vitale

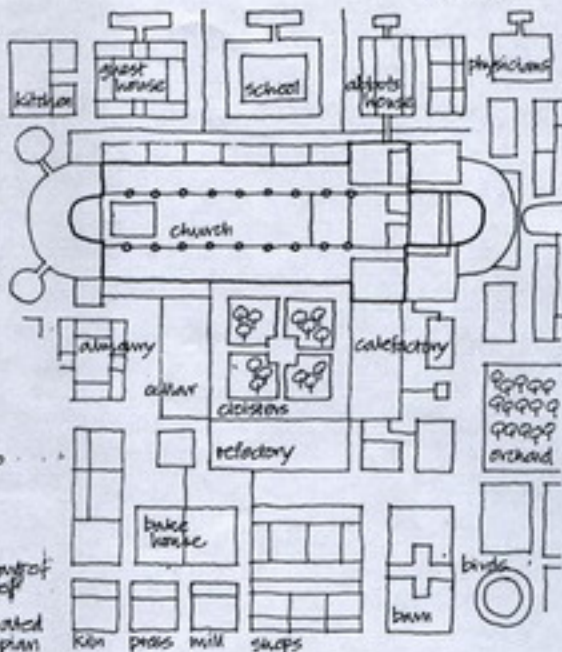


## St Riquier, Abbeville (790)

The double-ended Carolingian plan - town



0 10 20 30 40 50 60 70 80 90 100 110 metres



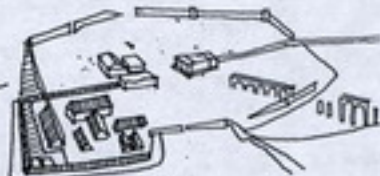
The perfect community; part of a plan from the library of St Gallen, showing the monastery integrated into a community of Western completeness and order

## the growth of the city, 400-1200

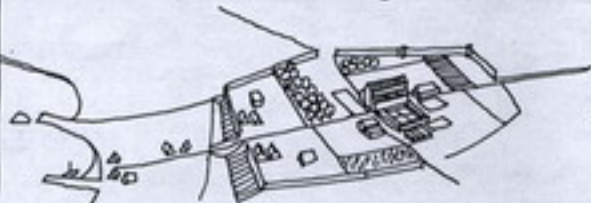


portus  
or harbour

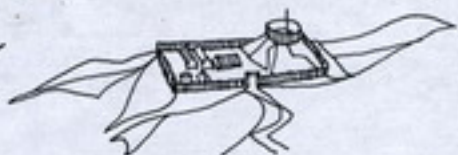
The Roman city lost its economic raison d'être when the barbarians came. The economy had become an agricultural one.



A barbarian settlement might be built within the walls, but the rest of the city would fall into ruin.

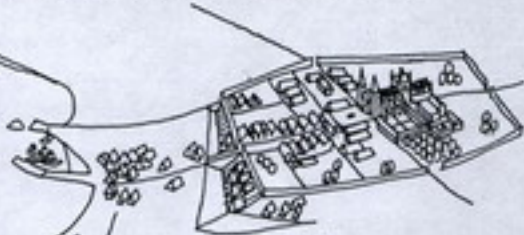


Eventually, it might form the basis of a medieval abbey or see, with a church at its centre. Thus, it did not completely disintegrate, though it lost much population.



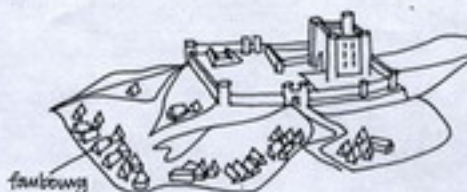
The 9th century saw the establishment of burghs in strategic places, fortified strongholds of military rather than economic origin.

As yet, neither bishopric nor burgh was a real city: neither had an independent economic life and neither engaged in commerce or industry except to provide its own immediate needs. Both were based on the feudal system and lived off the surrounding countryside.



portus  
or commercial  
centre

When cities revived in the 11th and 12th centuries, they expanded. Much of the land inside the old walls might be owned by the church, so a portus of commerce might grow up outside.



faubourg

A burgh at the centre of a similar commercial growth might develop a business area or faubourg outside the fortified centre.

At first, neither portus nor faubourg was fortified. As competition for wealth grew, fear of attack increased. It was also important to protect the 'free' citizens inside the city from the feudal world outside. So now the citizens could afford it, massive outer lines of defence were built.

