

العمارة البيزنطية

Byzantine Architecture

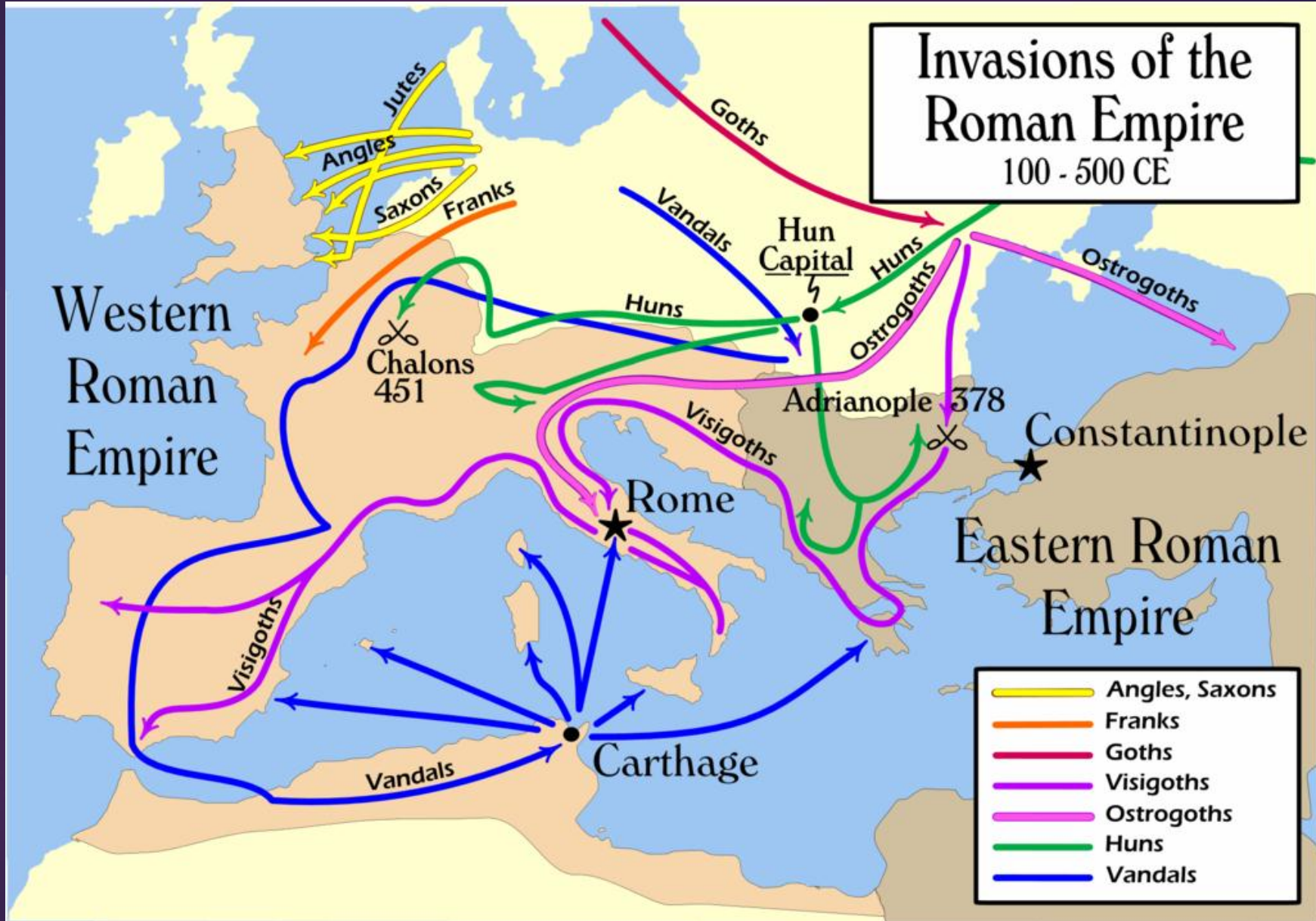
Dr. Kamal Elgabalawy

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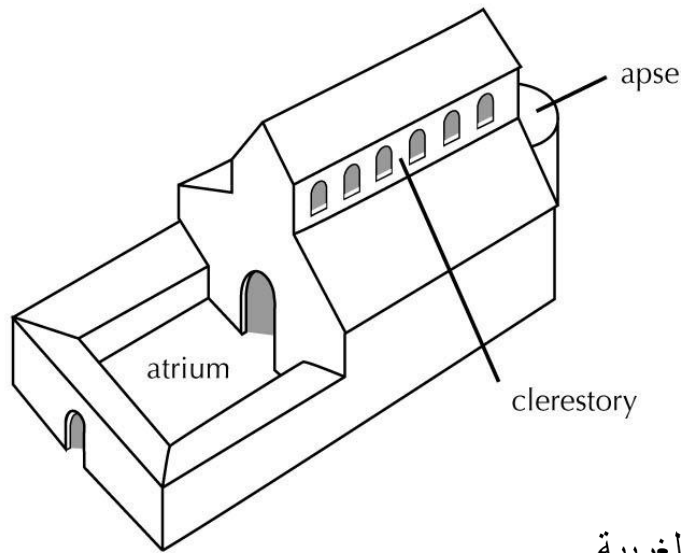
Invasions of the Roman Empire 100 - 500 CE



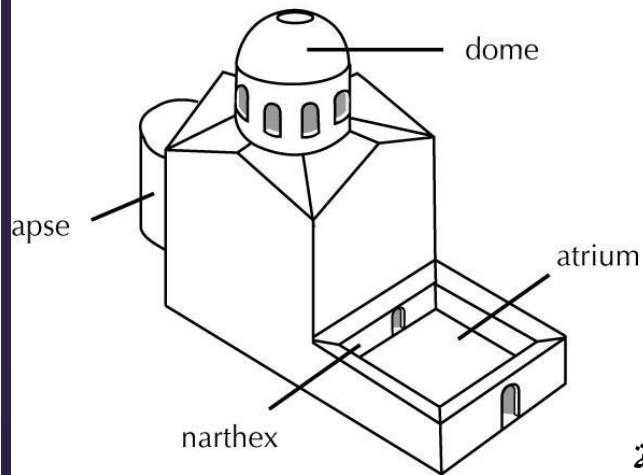
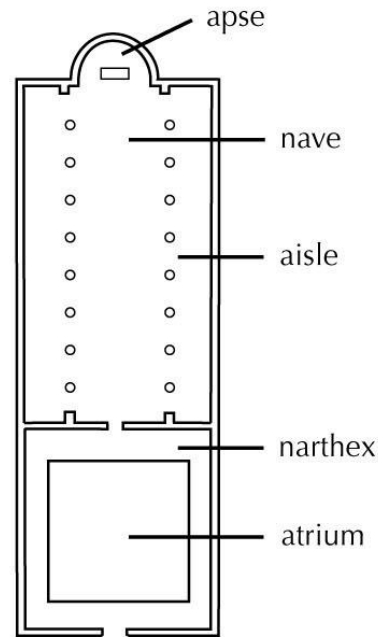
Western Roman Empire

Eastern Roman Empire

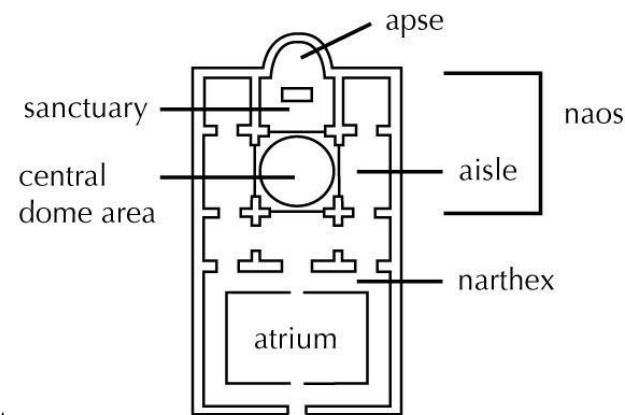
- Angles, Saxons
- Franks
- Goths
- Visigoths
- Ostrogoths
- Huns
- Vandals



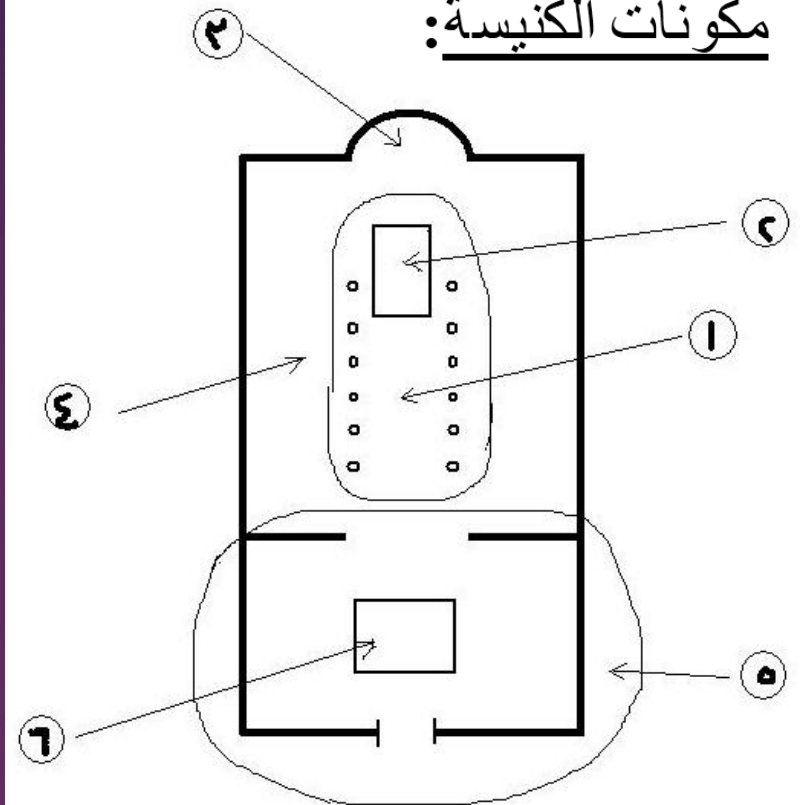
الامبراطورية الغربية
basilica-plan church



الامبراطورية الشرقية
central-plan church

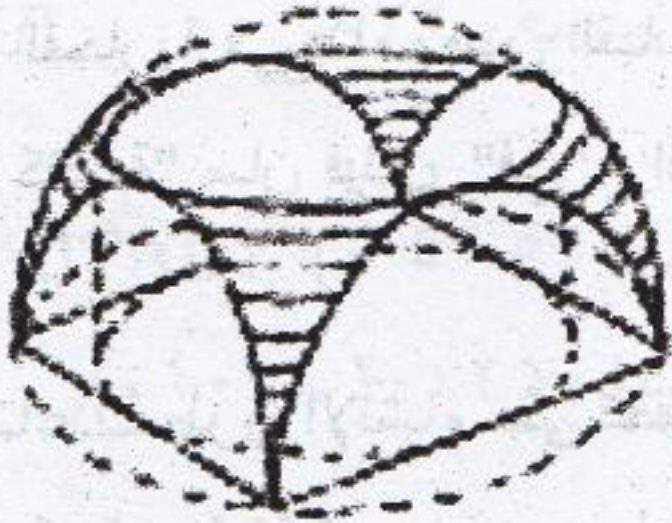


مكونات الكنيسة:

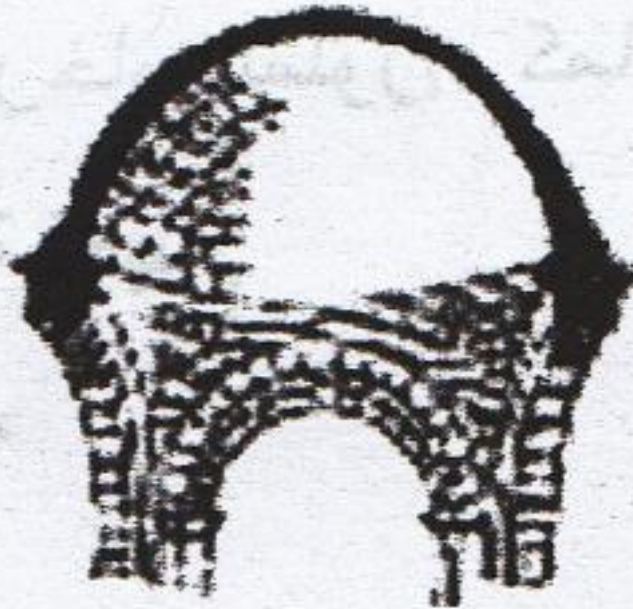
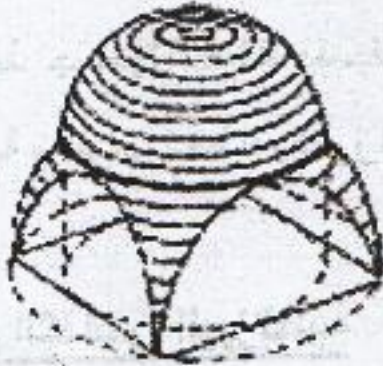


- ١ - الصحن الرئيسي (nave)
- ٢ - منطقة المرتلين (chair)
- ٣ - منطقة القبلة (sanctuary)
- ٤ - الممرات الجانبية (aisles)
- ٥ - رواق الحماية (narthex)
- ٦ - الفناء الداخلى (atrium)

Simple Dome

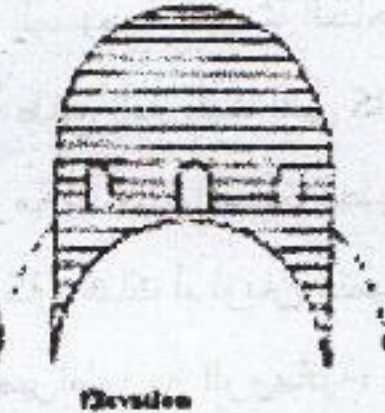
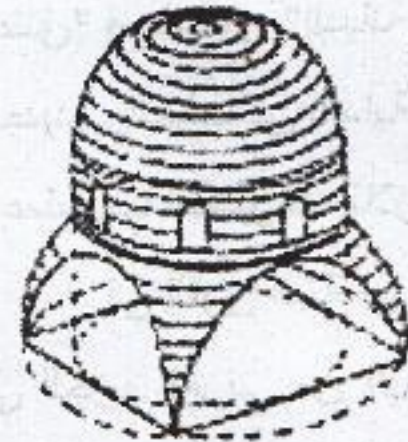


Dome supported on pendentive



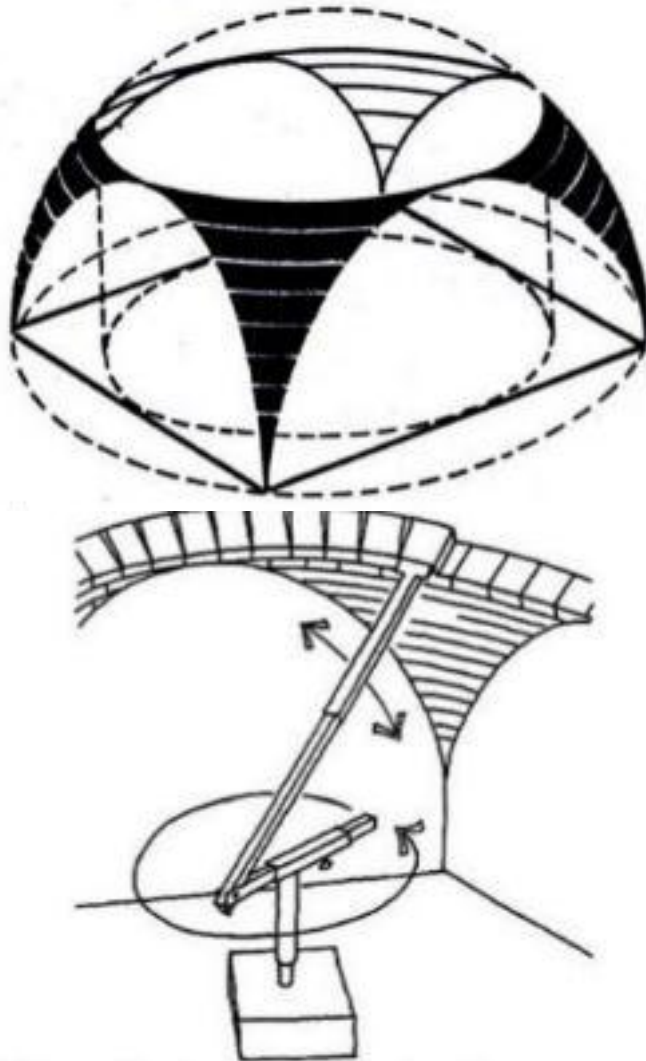
Dome on independent pendentive

Dome with drum



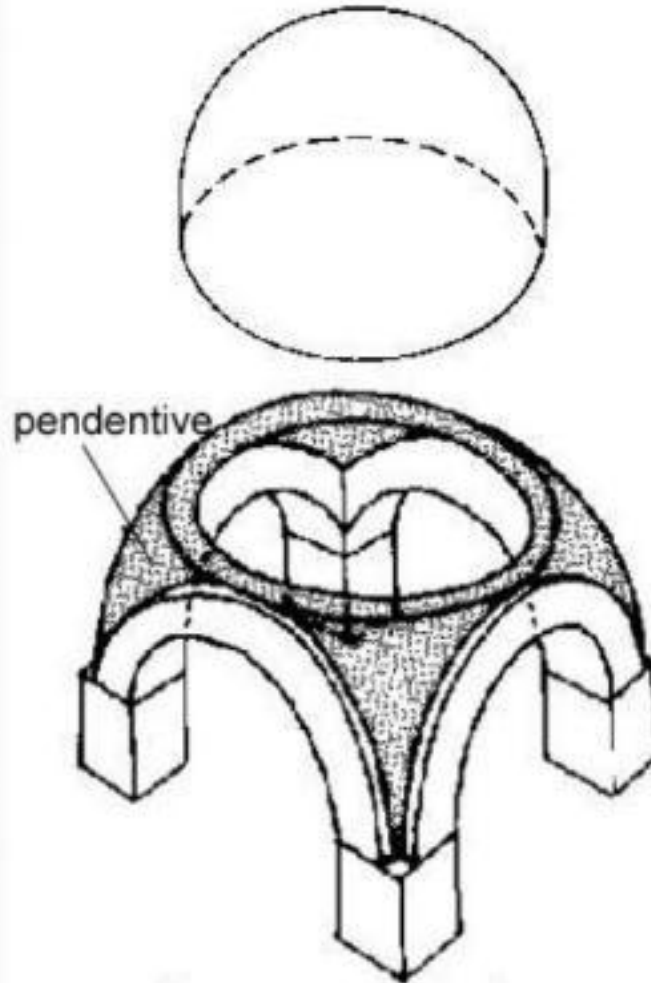
Section through the dome of the drum of ribs, showing thickness of lower dome to form pseudo-drum

Simple Dome



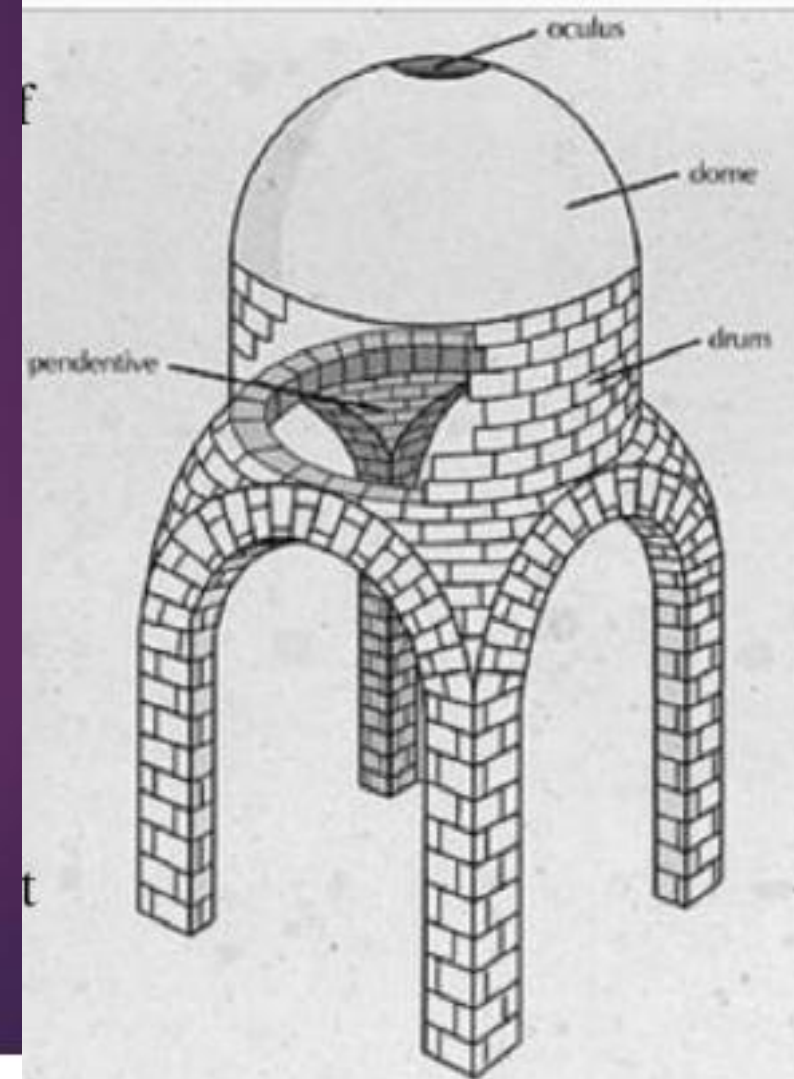
building of a dome on pendentives

Dome supported on pendentive



Dome supported on pendentives

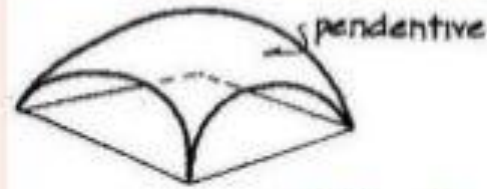
Dome supported on squinches



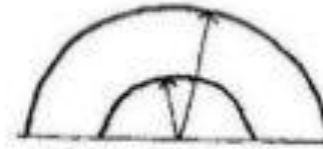
dome on pendentives

a. Simple

Pendentives and domes are part of the same sphere.

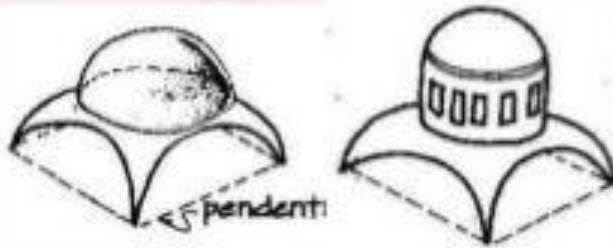


a. Simple



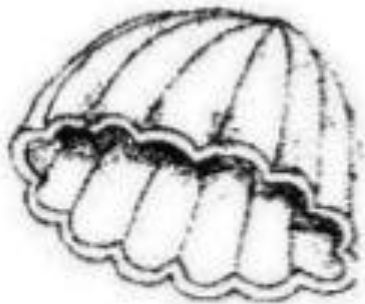
b. Compound

1. The dome is not part of the same sphere as the pendentives and domes rises independently upon them.
2. The dome is raised on a high drum pierced with windows.



b. Compound

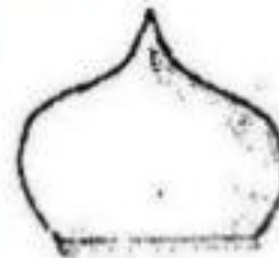
c. Special designs



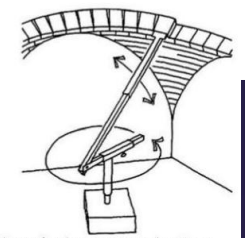
1. melon dome- dome with convolutions



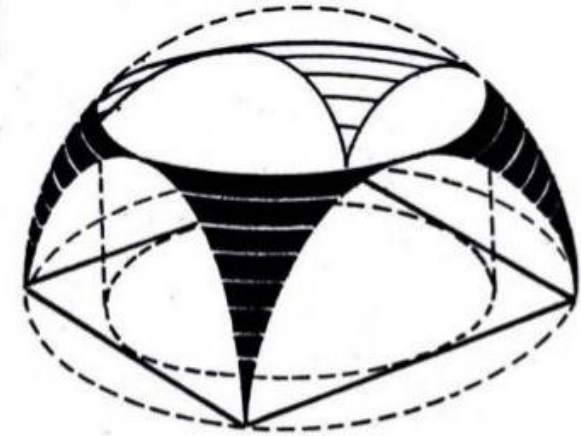
2. Serrated



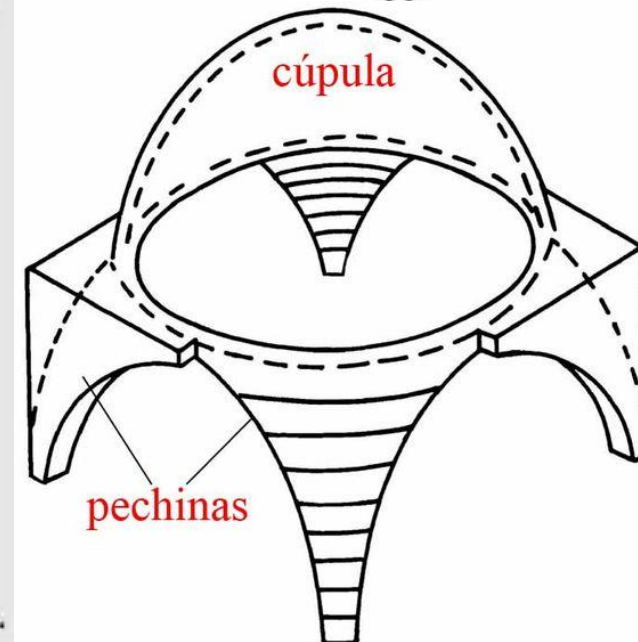
3. Onion or Bulbous sharp



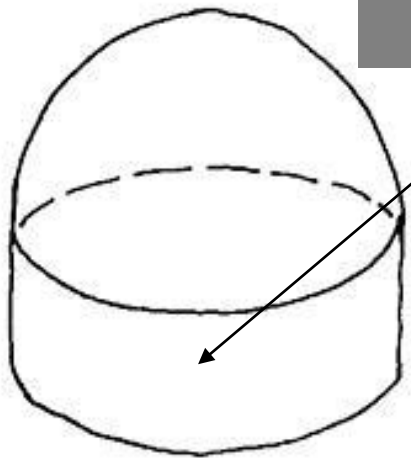
building of a dome on pendentives



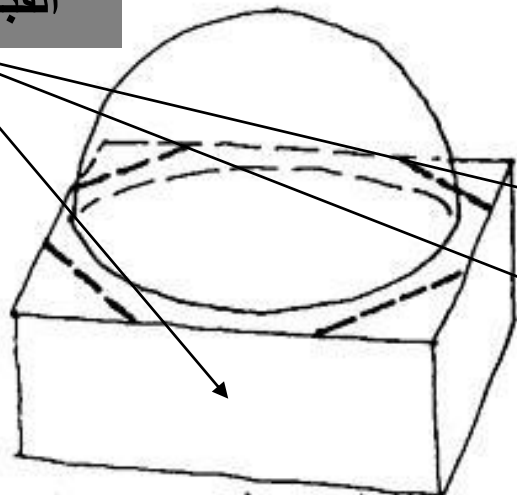
the pi



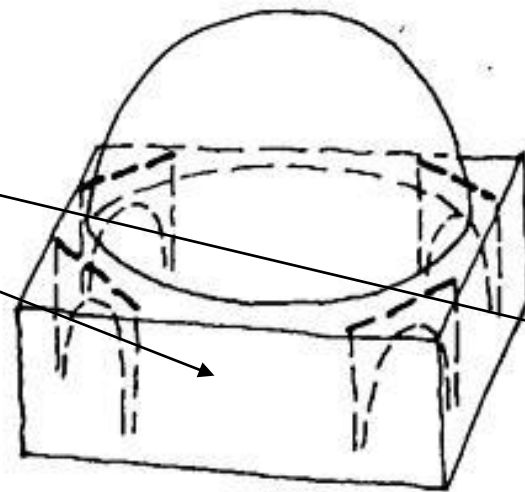
القبة على رقبة



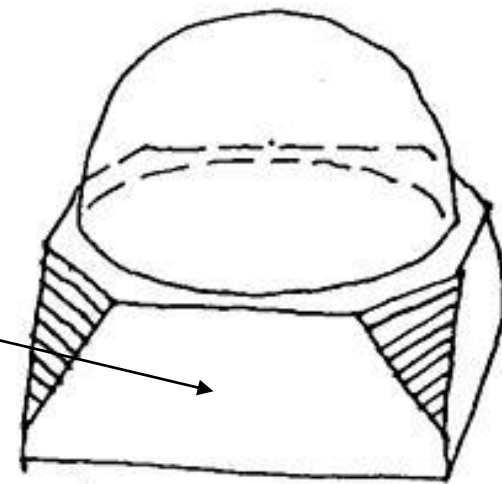
a dome over a circular space
raises no structural problem -
only the problem that it
restricts the plan form.



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

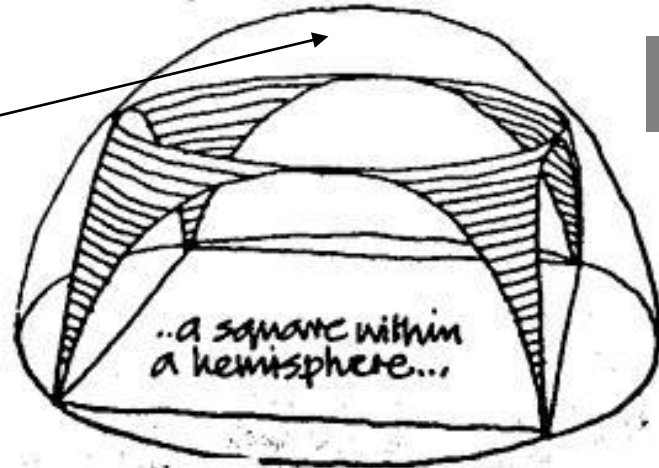


... by putting 'squinch'
arches over the corners..



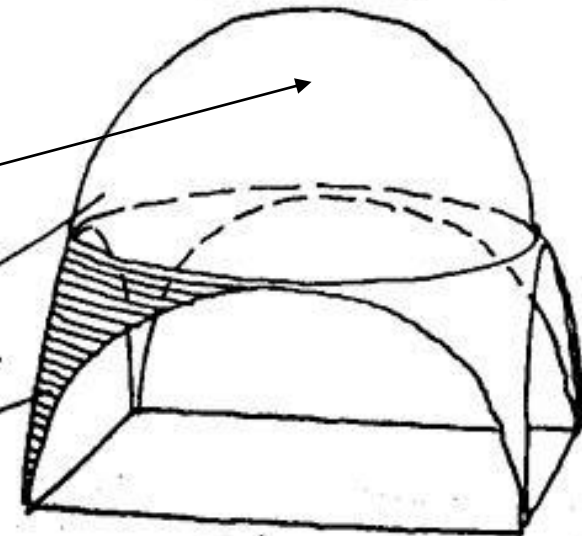
... or by corbeling-out.

القبة البسيطة



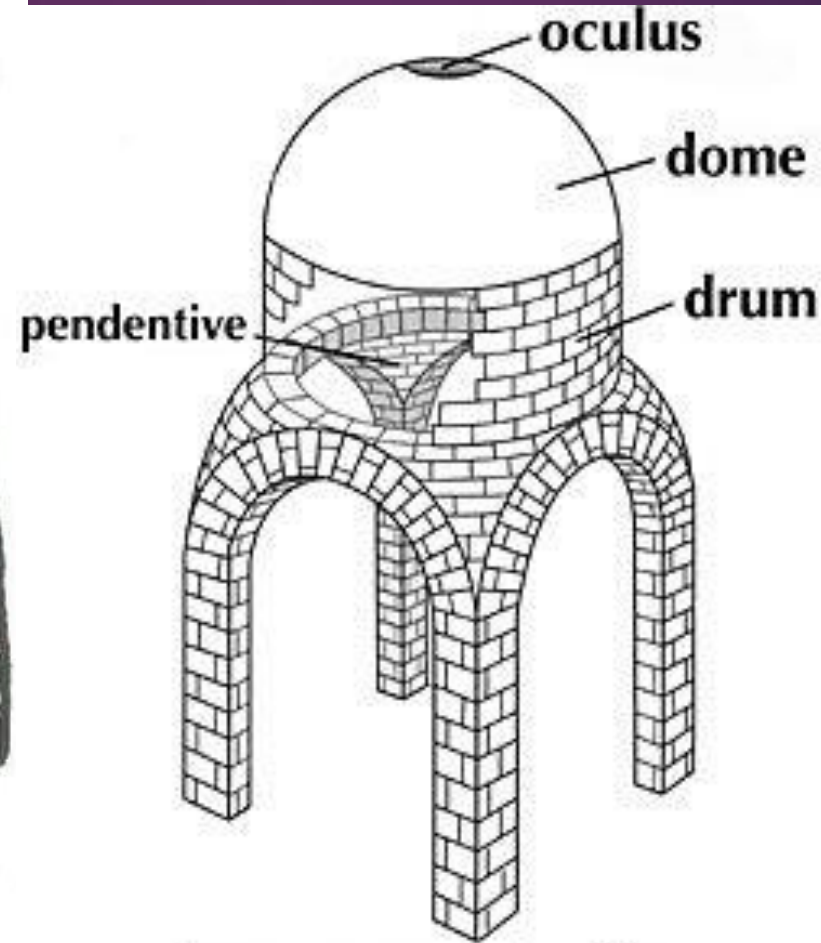
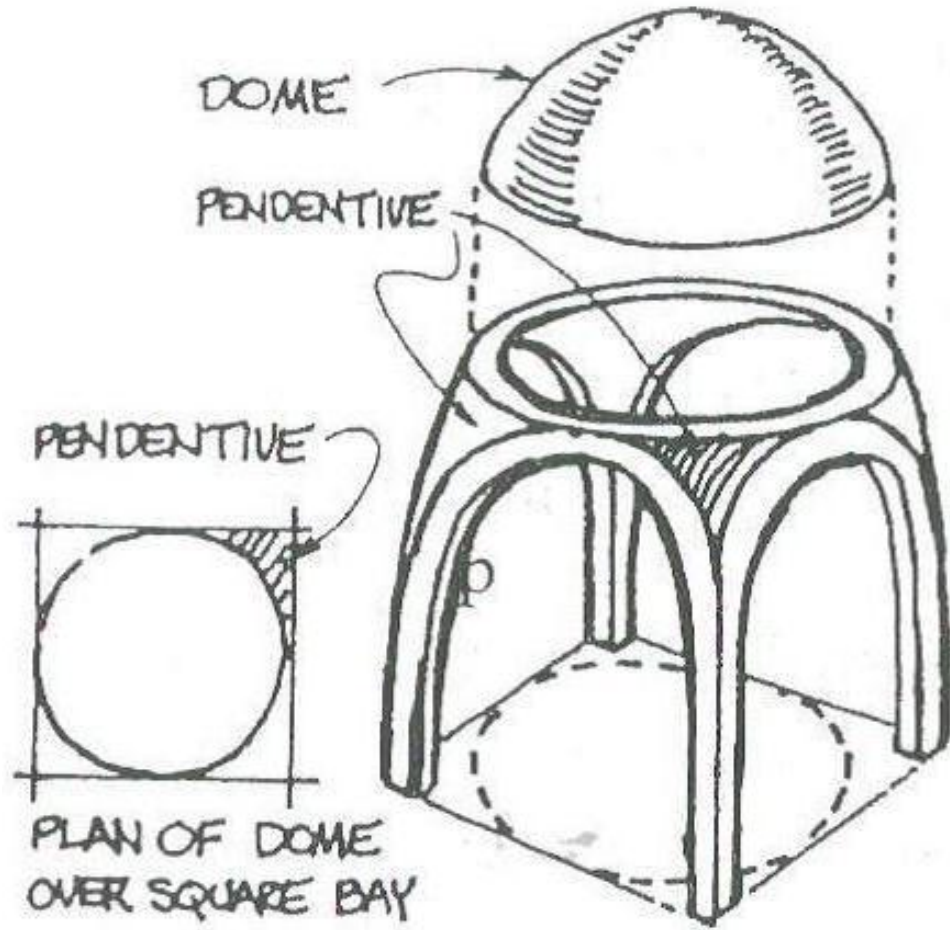
... a square within
a hemisphere...

القبة المركبة

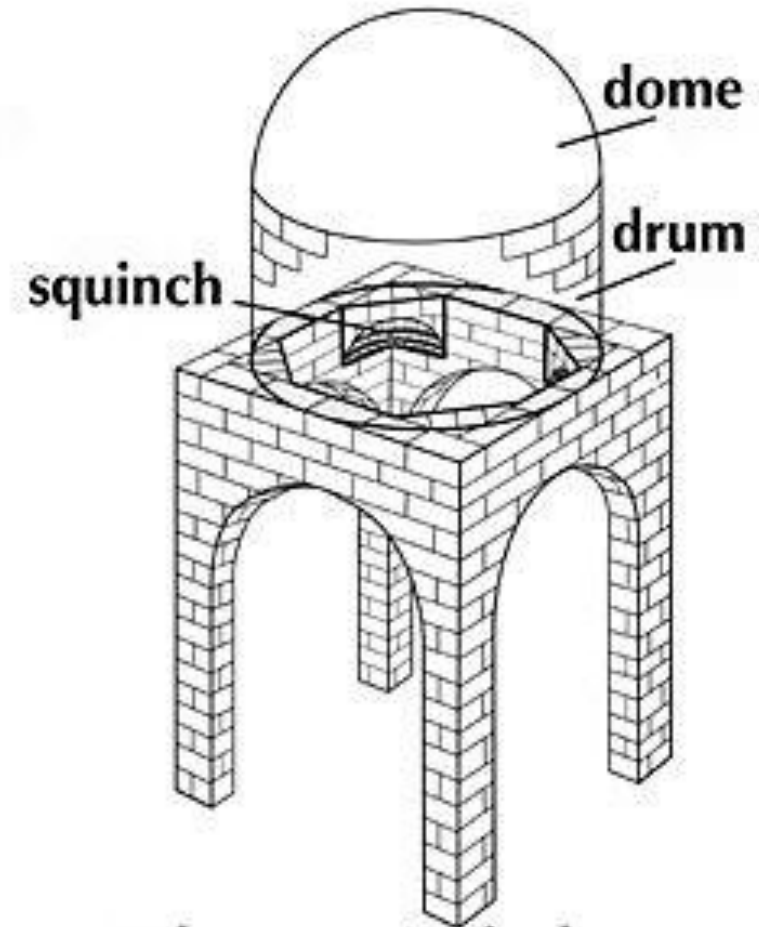


... on top of which the
dome is placed. The
plasticity of the
pendentive is very
appropriate to brick
construction

BYZANTINE CONSTRUCTION

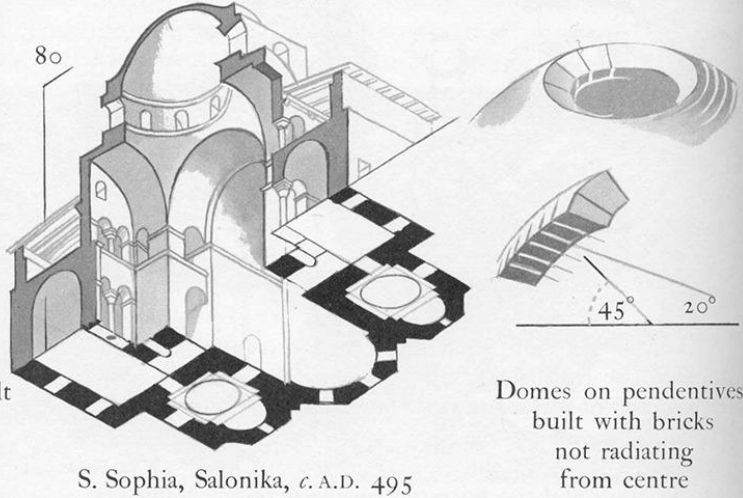
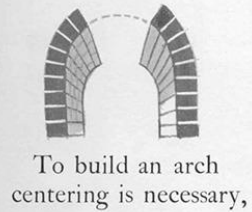
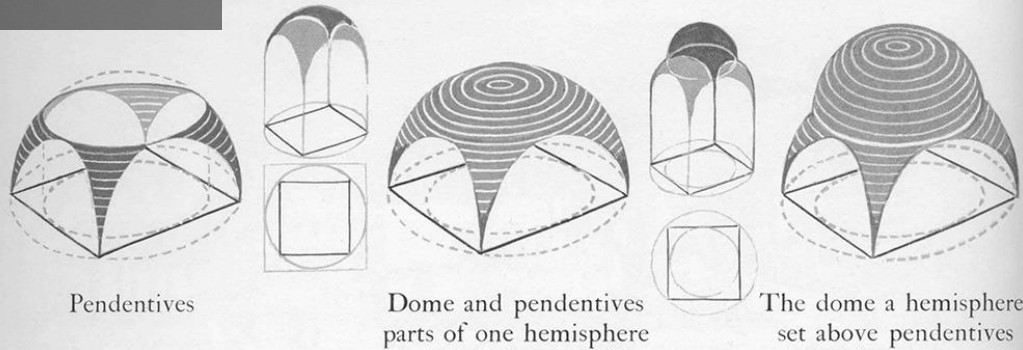


dome on pendentives

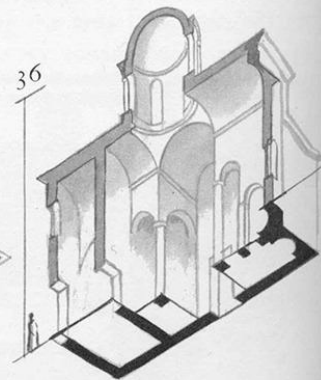
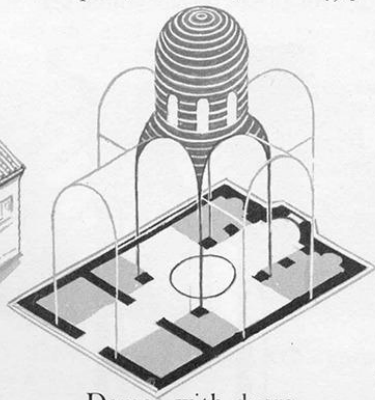


dome on squinches

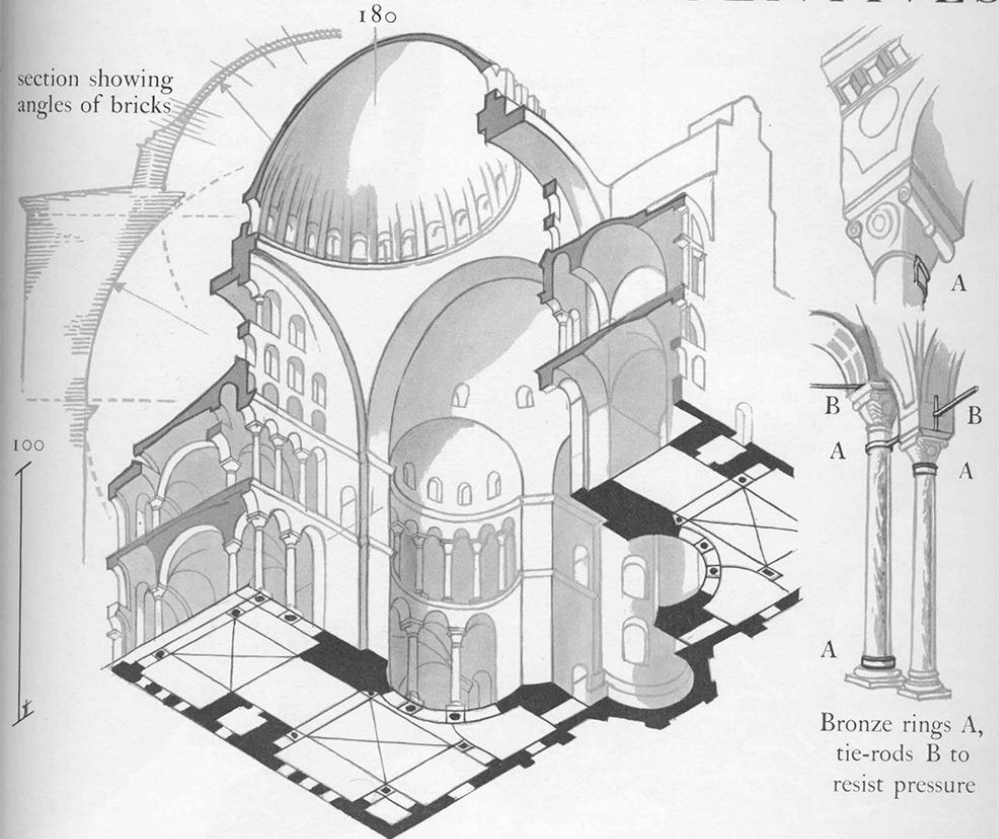
DOME



Metropole Athens, A.D. 1250

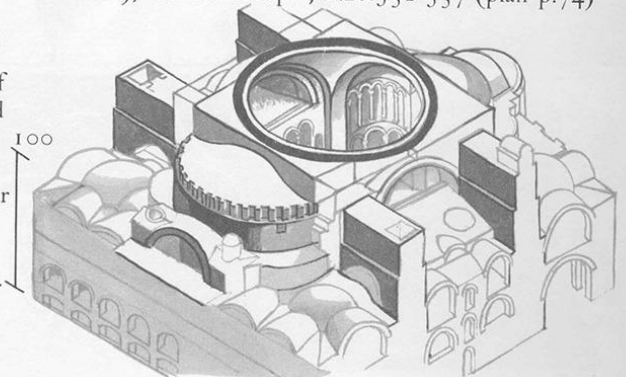


DOMES ON PENDENTIVES

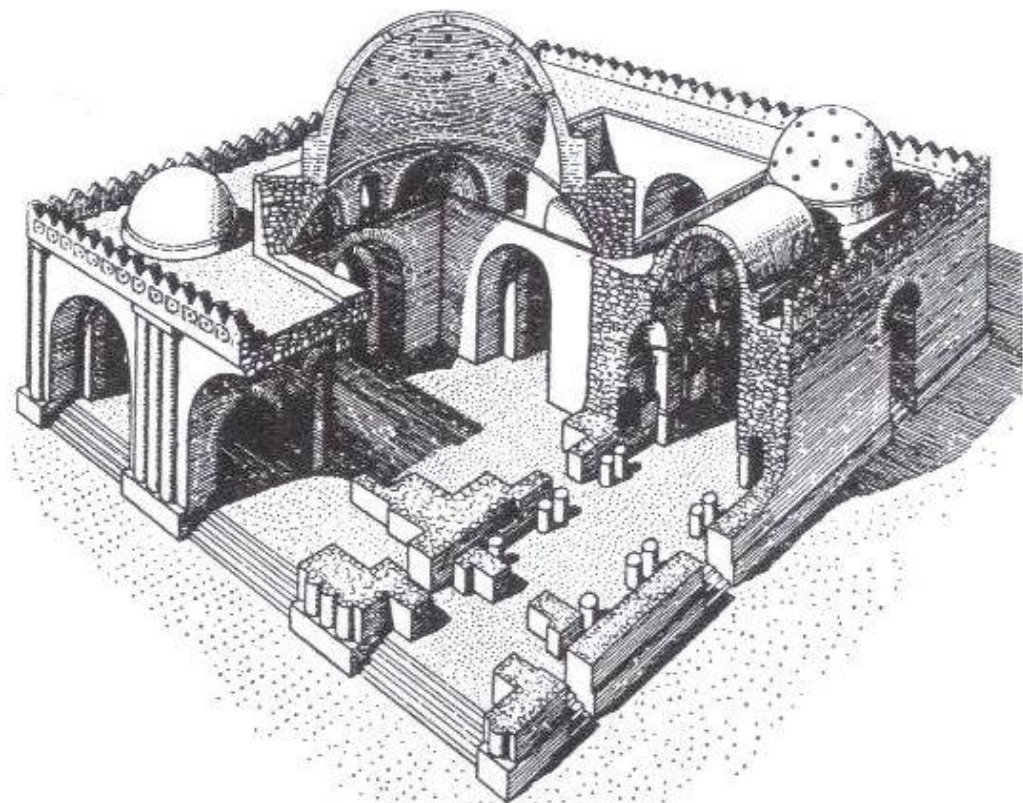


S. Sophia (Hagia Sophia = divine wisdom), Constantinople, A.D. 532-537 (plan p.74)

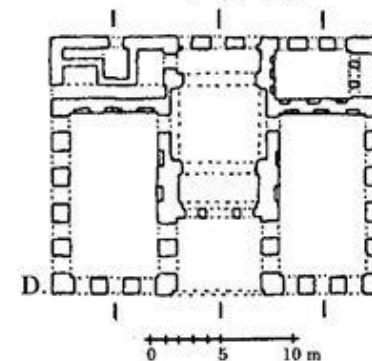
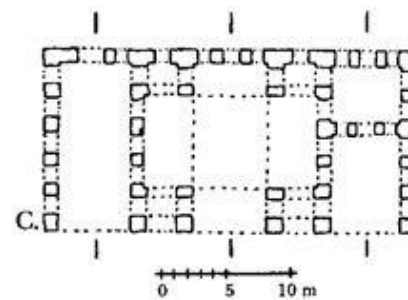
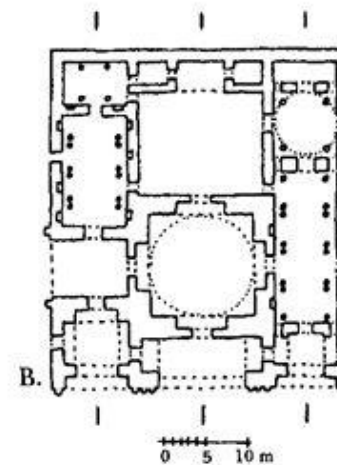
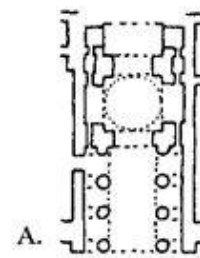
Built for Justinian by two Greek architects, Anthemius of Tralles and Isidorus of Miletus. Built of brick; the dome probably erected without centering, with bricks about 24-27 inches square and 2 inches thick laid in deep mortar and covered with $\frac{1}{4}$ inch lead; the dome supported on 4 piers, the thrust being taken by 2 semi-domes and 4 massive buttresses; the interior lined throughout in coloured marbles and mosaics



Palace at Sarvistan, 420-38, by Bahram V



Sarvistan, reconstruction



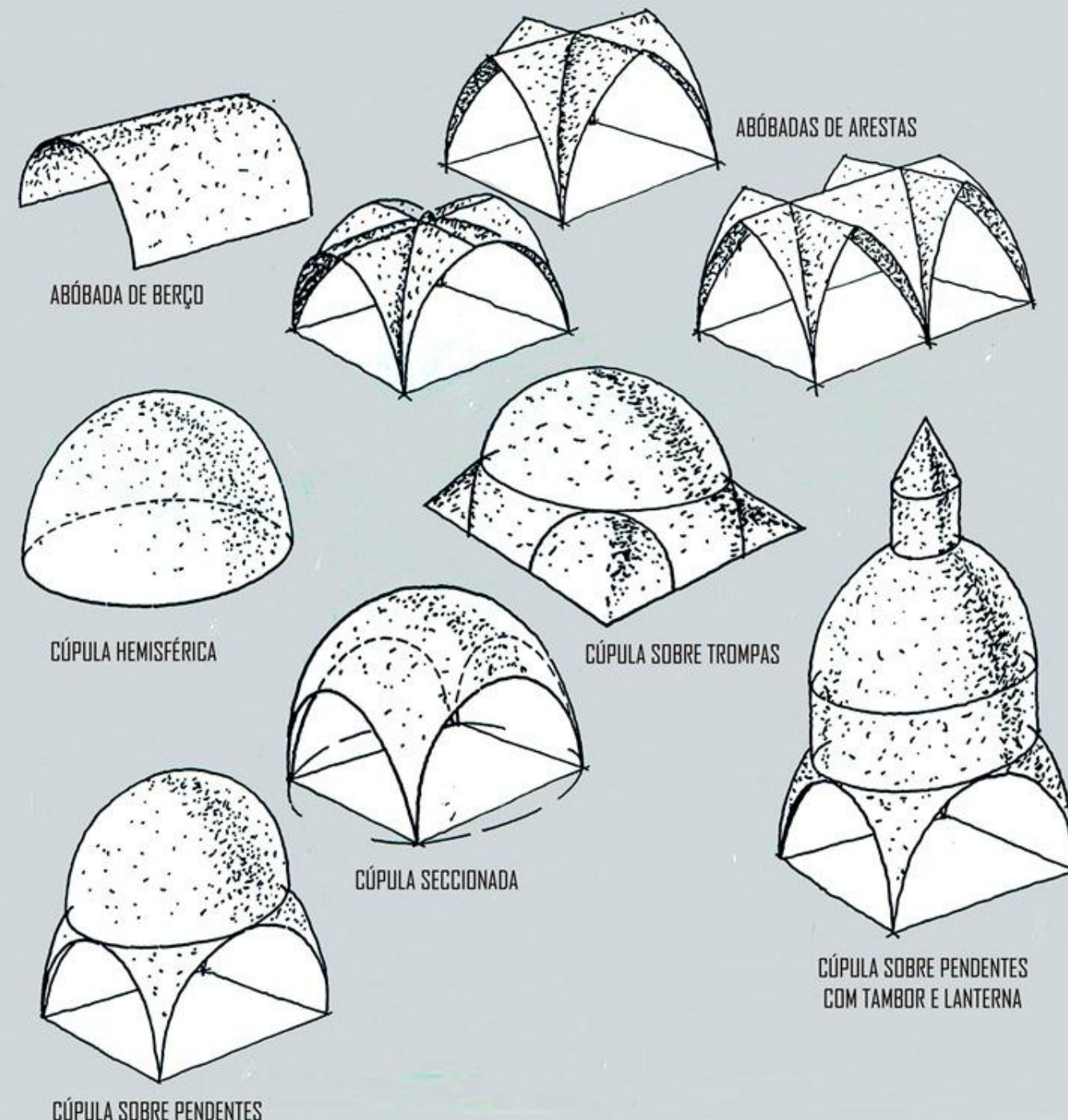
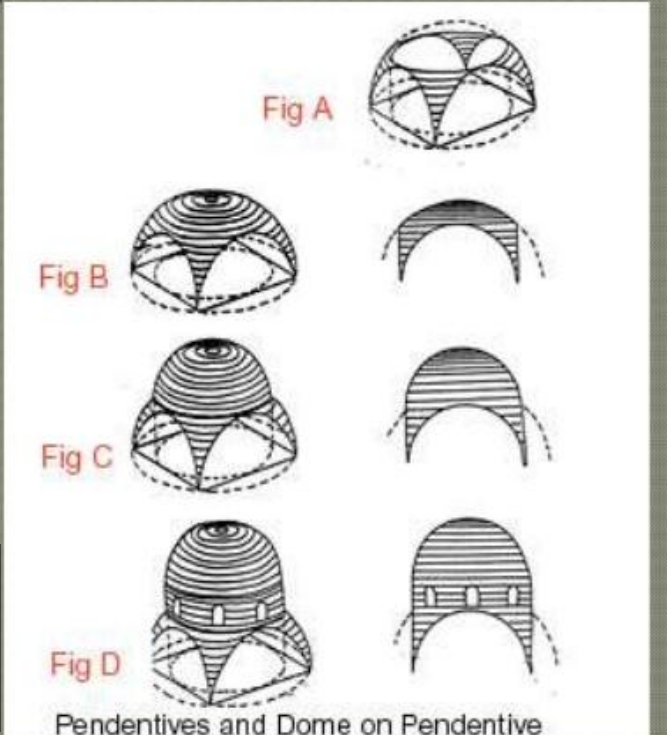
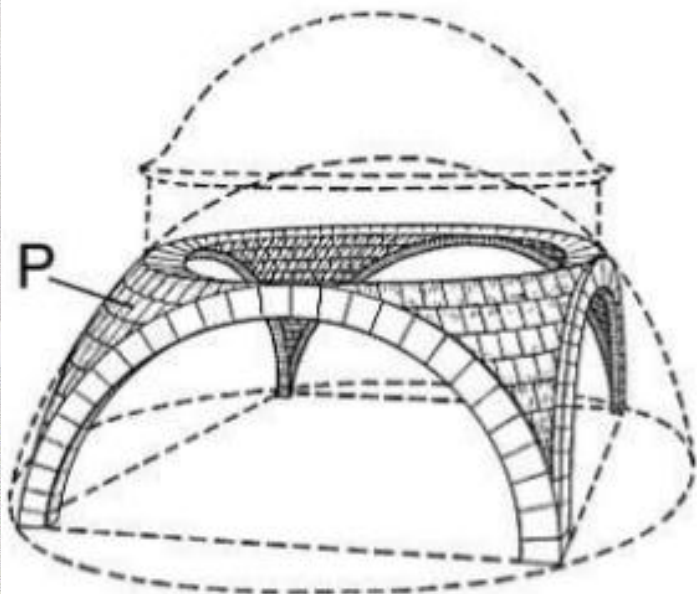
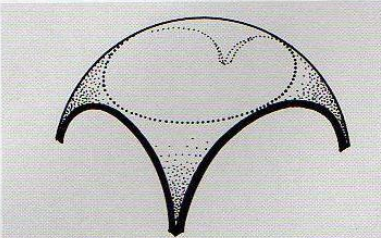
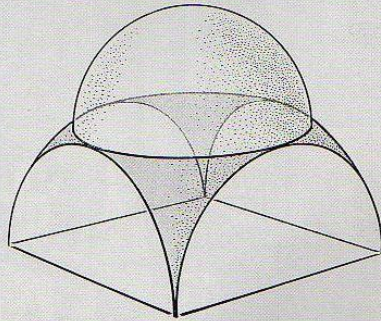
ARCHITECTURAL VOCABULARY
IN PERSIAN CIVILIZATION

TYPES OF DOMES

- Simple
- Compound
- Melon shaped
- Onion shaped.



DOME & VOULT



العمارة البيزنطية

Byzantine Architecture

THANK YOU

Dr. Kamal Elgabalawy

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